240 Continental Drive
Suite 200
Newark, Delaware 19713
Tel. (302) 738–7551
Fax (302) 454-5980

Addendum No. 11

OWNER: Delaware Army National Guard (DEARNG)

PROJECT: **DESIGN-BUILD PROJET – BETHANY BEACH TRAINING SITE (BBTS) TRANSIENT TRAINING OFFICER QUARTERS**
LOCATION: Bethany Beach, Delaware

DEARNG Contract No.: 2020-16
National Guard PN No: 100103

Tt Project No. 213-76984-22001

Addendum No. 11
to
RFP Bridging Documents
April 26, 2024

To: ALL BIDDERS

This ADDENDUM forms a part of the BIDDING AND CONTRACT DOCUMENTS and modifies the following documents:

Original RFP DRAWINGS dated June 20, 2023
RFP MANUAL dated June 20, 2023

Acknowledge receipt of the ADDENDUM in the space provided on the FORM OF PROPOSAL.

This ADDENDUM consists of four (4) pages and the following:

11.1 GENERAL

A. All questions and to purchase the RFP package, please email Tabi Heath at Tetra Tech tabi.heath@tetratech.com. Please also copy the following addresses: michael.berninger@tetratech.com, chuck.dobbs@tetratech.com, **tt-projectadmin@tetratech.com.**

B. Critical Dates:

1. **Bid Due Date: CHANGED: Tuesday, June 25, 2024 @1:00pm.**
2. Cut off for questions and clarifications: Thursday, February 8, 2024, by COB (EST).

11.2 REQUEST FOR PROPOSAL (RFP) & SCOPE OF WORK (SOW) MODIFICATIONS

A. Section B. Div 00- Procurement and Contracting Requirements

a. B.1 Procurement & Contracting

i. 00 41 13 Bid Form: **CHANGE** Bid Form to the attached version. Note: the changes are the Bid Options/Alternates. They are also reflected in the revised Civil drawings.

B. Div 01 – General Requirements

1. 01 02 00.00 48 Statement of Work

a. Part 01- Design Objectives & Functional Area Requirements:

i. **CHANGE** sub paragraph 1.10.1.1 to the following wording: Bid Option 1 Scope: The Base Bid: includes providing Units 1, 2, 3, 4 & 5. Bid Option no 1: Add Unit 6. See building no's on revised drawing C-01B dated 03/22/24.

ii. **CHANGE** subparagraph 1.10.1.2 to the following wording: Bid Option 2 - Roofing: The Base bid: Provide Standing Seam roofing (SSR) with bar-type snow guards. Basis of design: Merchant & Evans- "Zip Rib" or approved equal. Option no. 2 – In lieu of SSR provide Asphalt shingles. Basis of design: GAF "Timberline HDZ" or approved equal.

iii. **DELETE** the two sub-paragraphs numbered 1.10.13 Option V3 and 1.10.1.4 Option V4

iv. Sub-paragraph 1.4.1 (Topo survey and Geotechnical Information): **ADD** the following sentence to the end of the paragraph:

"Any additional Topo survey or Geotechnical investigation work, beyond the reports and information provided in this RFP, shall be at the cost of the Design-Build team."

v. **REPLACE** the Architectural Program (space list) in Paragraph 1.9.

b. Part 11 – HVAC Design: **REPLACE** the entire section with the Attached revised version.

(a) NOTES:

(i) In compliance with the Federal government's Anti Terrorism requirements (UFC 4-010-01) for DOD building there cannot be any air intake devices for the mechanical system lower than 10' above the finished grade. For the LCCA (see item 2 below) winning HVAC system of thru-wall PTAC units, the internal make-up air component system of these units must be disabled, and a DOAS fresh air system must be added to the building's HVAC system. The design intent is that the DOAS unit and all associated ductwork will be located in the attic space of each building.

(ii) All changes in the attached version of this document are shown in red text.

2. 01 03 00.00 Statement of Work – Attachments

a. **REPLACE** Attachment M (originally issued in Addendum 10), with the attached document: "Design Analysis – Energy Report." This report is the "Whole Building Life Cycle Cost Analysis (LCCA)," that is required to guide the energy profile for all new building projects, for the US Federal Government. The LCCA follows the requirements outlined in the United Facilities Criteria (UFC) no 1-200-02 (6/2022) This analysis compares optional systems to establish the most energy and cost efficient building in terms of initial and 40 year time cycle costs. The systems include, the Building Envelope (Walls, Roof and Glazing), the HVAC system, the Hot Water system and the Electrical power source. for the Building Mechanical system and Power System, attached to this Addendum**.**

NOTE: The design submitted for these buildings (all duplicates), must use the winning system types, established in this LCCA report. Failure to do so without adequate reasons, that define will deem the Design and the submission non-compliant, and subject to rejection.

C. **SPECIFICATION MODIFICATIONS**

1. Specification Section 01 40 00:

a. Paragraph 1.11 QUALITY CONTROL,

i. Sub-paragraph A2: **CHANGE** wording to read as follows: "DEARNG will hire a third party Commissioning Agent for the HVAC System. Any LEED related Commissioning, such as the building envelope, shall be the responsibility of the DB Team."

ii. Sub-Paragraph B1: **CHANGE** the wording to read as follows:" The DB team shall be responsible for all structural material testing, including soil bearing capacity, concrete strength, and steel bolt torque compliance."

D. **DRAWING MODIFICATIONS**

1. **REPLACE** the following drawings: C-01B, C-02B, C-03B, C-04B, C-05B, C-06B, C-07B, C-08B, A-100B

11.3 QUESTIONS/CLARIFICATIONS

Question No.1:

Question: Per Addendum 9, Question 1, we recognize that the DB team will be the engineer of record and will required to provide full drawings, specifications, etc, as part of the review and approval process. However, for DB selection it seems redundant and not a valuable use of time to just recreate a drawing for selection purposes only. Request reconsideration that the DB selection team drawings need to be on the bidders' title block.
Response: The requirement for a full set of drawings and specifications is in line with the National Guard Bureau's RFP component requirements. The intent is for the review team to use a full design to evaluate compliance with the RFP.

Question No. 2:

Question: If the answer to question 1, is no, that all drawings need to be on the title block of the DB team, then we request release of CAD drawings specifically the existing condition plans for use by the respective DB teams.
Response: The RFP CAD files are available for the submitting DB teams that would like to receive them. Please follow the following process for those teams interested in obtaining the CAD files: 1. Send an e-mail request to Tetra Tech's project team's administrative assistant, Tabi Heath (tabi.heath@tetratech.com), with Signed copies of both of the attached CAD RELEASE FORMS (Tetra Tech's and Landmark Engineering's). Upon receipt of the signed Release forms, Tabi will send you a link to download the CAD files. NOTE: The drawings the DB team includes in their submission must be on the Designer of Record's title block and need to include a State of Delaware Professional Seal on the discipline-related sheets.

Question No. 2:

Question: Drawing C-03B, "Existing tree to be relocated", is that meant to be for all 35 trees, and if so, where are they being replanted, somewhere onsite?4
Response: Yes – the intent is to relocate all 35 trees on the Bethany Beach NG Post. The final locations will be determined after the

Question No. 4:

Question: Drawing C-04B, are the 18 bollards part of the base bid?
Response: Yes – they are in the base bid scope of work.

Question No. 5:

Question: Please clarify the intent of Attachment M - Preliminary Life Cycle Cost Analysis: Mechanical system and Power System.
Response: See item 11.2,B 2 a above

Question No. 6:

Question: Please Solar panels are not required for the base bid. confirm solar panels are not required as a base bid item or bid option.
Response: Solar panels are not required for the base bid.

Question No. 7:

Question: There will be 6 buildings total?
Response: The base bid includes 5 buildings, and Bid Option 1 adds 1 additional building. See the revised bid form.

Question No. 8:

Question: Do you want us to choose the finish materials?
Response: The following are the requirements for the Interior Finishes:

- **The Dorm spaces (SLQ's): Flooring - carpet tile- BOD: Interface, "Open Air 417", 4" Vinyl Base, BOD-Roppe,"Pinicle", Walls: painted (Egg Shell) Gyp. Bd, Ceiling Suspended Acoustical Tile: BOD- Armstrong 2'x2' Fissured 405, 15/16" Grid**
- **Corridors, Lounge Vending: Flooring - LVT, BOD: Mannington "Adura Apex Vinyl Plank, Domain-Slate ApX121", Walls, Base and Ceiling- Same as Dorm.**
- **Bathrooms: Flooring – 8x8 porcelain tile, two colors 50% each BOD: Dal Tile "Step Wise", Walls- Gyp. Bd. With 4x4 Ceramic tile floor to ceiling. Provide Aluminum tile trim at all inside and outside corners. Two colors 50% each. Ceiling - Painted (Semi Gloss) Gyp. Bd.**

Question No. 09:

Question: Will the LVT go under the kitchen cabinets?
Response: Yes

Question No. 11:

Question: Is this union labor?
Response: Labor for this project must comply with State of Delaware Prevailing wage requirements.

Question No. 12:

Question: I don't have any elevations for the bathrooms, is it tile on the shower walls and sink walls to ceiling and tile cove on the other walls?
Response: See response to question no 8.

ATTACHMENTS

- Section B. Div 00- Procurement and Contracting Requirements, B.1 Procurement & Contracting, 00 41 13: Bid Form
- 01 03 00.00 Statement of Work – Revised Attachment M: Preliminary LCCA- Mech & Power,
- 01 02 00.00 48_Part11 - HVAC
- Revised Drawings – C
- Tt Cadd Release
- Landmark Cadd Release

END OF ADDENDUM No. 11

CC: all plan holders

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TRANSIENT TRAINING OFFICER BARRACKS
DELAWARE ARMY NATIONAL GUARD
BETHANY BEACH TRAINING SITE
163 SCANNELL BLVD.
BETHANY BEACH, DELAWARE
DEARNG CONTRACT NO.: 2020-16
DIVISION 00, B1 PROCUREMENT REQUIREMENTS

BID FORM

For Bids Due: **April 30, 2023** **To:** Delaware Army National Guard
Joint Forces Reserve Center
1 Vavala Way
New Castle, DE 19720

Name of Bidder: _____

Delaware Business License No.: _____ **Taxpayer ID No.:** _____

(Other License Nos.): _____

Phone No.: ( ) _____ - _____ **Fax No.: ( ) _____ - _____**

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for for the BASE BID lump sum itemized below.

Bidders are only required to submit on one of the two identified Concepts (Motel or Village), but can provide a quote for both concepts. If your proposal is for one of concepts only, please input "NA" in the Concept line below that you are not submitting on

BASE BID

VILLAGE CONCEPT $_____
($)

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BID FORM

BID OPTIONS (ALTERNATES) & BETTERMENTS

OPTIONS:

BID OPTION no 1 – Additional Unit
Base Bid – Provide Units no's 1,2 (ADA), 3, 4 & 5
Bid Option: Add Unit no 6

.

ADD: $_____(Date and Initial)_____

BID OPTION no 2 – Roofing
Base Bid – Standing Seam Metal Roofing
Bid Option: In Lieu of Standing Seam Metal Roofing, provide 30 year Architectural grade Asphalt Shingles (Provide GAF, "Timberline HTZ" or approved equal)

.

ADD: $_____(Date and Initial)_____

BETTERMENTS:

Use this page and or attachments(s) with supporting documentation, for describing any building system components, and or materials that are provided with your Base Bid Design, which provide enhanced Quality (use or longevity), or Sustainability to the intended systems goals outlined in the section C. Div 01 General Requirements, Statement of Work Narratives (Parts 00-15) and the Concept Drawings Attachment .

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BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ **By:** _____
(Authorized Signature)

(SEAL)

_____
(Title)

Date: _____

ATTACHMENTS

Revised Section 00 43 13 Bid Form
Revised Drawings Dated 11/30/23: A-100B, C-101B, C-04B & C-06B

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BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 69, Section 6962(d)(10)b of the Delaware Code, the following subcontractor listing must accompany any bid submittal. The bidder must list **in each category** the full name and address (City & State) of the sub-contractor that the bidder will be using to perform the work and provide material for that subcontractor category. Should the bidder's listed subcontractor intend to provide any of their subcontractor category of work through a third-tier contractor, the bidder shall list that third-tier contractor's full name and address (City & State). **If the bidder intends to perform any category of work itself, it must list its full name and address.** For clarification, if the bidder intends to perform the work themselves, the bidder **may not** insert "not applicable", "N/A", "self" or anything other than its own full name and address (City & State). To do so shall cause the bid to be rejected. In addition, the failure to produce a completed subcontractor list with the bid submittal shall cause the bid to be rejected. If you have more than three (3) third-tier contractors to report in any subcontractor category, print out additional page(s) containing the appropriate category, complete the rest of your list of third-tier contractors for that category, notate the addition in parentheses as (CONTINUATION) next to the subcontractor category and an asterisk (*) next to any additional third-tier contractors, and submit it with your bid.

NOTE: For Subcontractors listed that are integral with the Modular Manufacturer's team, just input "MMT"

Subcontractor Category		Subcontractor	Address (City & State)	Subcontractors tax-payer ID # or Delaware Business license #
1.	Sitework			
	A.			
	B.			
	C.			
2.	Foundation Installer			
	A.			
	B.			
	C.			

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BID FORM (Continued)

3.	Rough Carpentry			
	A.			
	B.			
	C.			
4.	Modular Manufacturer (If included in DB Team's Submission)			
	A.			
	B.			
	C.			
5.	HVAC			
	A.			
	B.			
	C.			
6.	Electrical			
	A.			
	B.			
	C.			

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BID FORM (Continued)

7.	Plumbing	_____	_____	_____
	A.	_____	_____	_____
	B.	_____	_____	_____
	C.	_____	_____	_____

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BID FORM

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date.

All the terms and conditions of *DEARNG NO.: 2020-16* have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

E-MAIL: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

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AFFIDAVIT OF EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors, that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

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AFFIDAVIT OF CONTRACTOR QUALIFICATIONS

We hereby certify that we will abide by the contractor's qualifications outlined in the construction bid specifications for the duration of the contract term.

In accordance with Title 29, Chapter 69, Section 6962(d)(10)b.3 of the Delaware Code, after a contract has been awarded the successful bidder shall not substitute another subcontractor whose name was submitted on the Subcontractor Form except for the reasons in the statute and not without written consent from the awarding agency. Failure to utilize the subcontractors on the list will subject the successful bidder to penalties as outlined in the General Requirements Section 5.2 of the contract.

Contractor Name: _____

Contractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

PART 11

HVAC DESIGN (issued with Addendum 11)

11.1 DESIGN CRITERIA

11.1.1 Design and install the HVAC systems (labor, material, permits, licenses, etc.). The HVAC systems shall be designed, installed, and tested in accordance with all Applicable Criteria located in Part 2.

11.1.2 HVAC control schemes and sequences shall at a minimum meet the requirements of ASHRAE Standard 90.1, Energy Standard for Buildings – Except Low-Rise Residential Buildings. Provide system enhancements beyond the minimum requirements of ASHRAE Standard 90.1 as required to meet energy conservation requirements in Section 01 02 00.0048 Part 12 - Energy Conservation.

11.1.3 The Contractor is responsible for obtaining any available rebates from the local utility and crediting those rebates to the Government in the bid.

11.1.4 Piping systems shall be identified per ANSI requirements. Equipment shall be identified with engraved and laminated plastic nameplates or black lamicoid sheets with white lettering. VAV units or similar units are to be labeled at their underside to allow identification after installation. Valves shall be provided with tags and indexed to a master schedule.

11.1.5 Fuel gas burning systems: Not applicable for this project.

11.1.6 The design of HVAC systems with respect to noise and vibration control shall be in accordance with ASHRAE HVAC Applications.

11.1.7 Exhaust vents for all buildings shall have low leakage dampers and be located at least 30 feet from outdoor air intakes in accordance with UFC 3-410-01 requirements to prevent short-circuiting of exhaust air.

11.1.8 All materials and equipment shall be the standard cataloged product of manufacturers regularly engaged in production of such materials and equipment and shall be the manufacturer's latest standard design.

11.1.9 The Contractor shall comply with minimum Antiterrorism/Force Protection criteria in accordance with UFC 4-010-01 requirements to include locating outdoor air intakes at least 10 feet above grade with low leakage dampers. Contracting Officer will designate the locations of the emergency air distribution shut-off switches.

11.1.10 Roof-mounted make-up air and exhaust equipment is not permitted for this project

11.1.11 Equipment layout shall make provisions for manufacturer's recommended clearance and code requirements.

11.1.12 Select mechanical equipment utilizing replacement HFC-type refrigerants. Equipment utilizing CFC-type, HCFC-22 and other HCFC-type refrigerants shall not be permitted.

11.1.13 The HVAC systems listed in this part have proven in the past to provide reasonable efficiency (i.e. meet EPACT 2005) when coupled with minor envelope improvements. To meet increasing energy goals these systems may need to be enhanced (energy recovery, demand controlled ventilation, economizers, more envelope improvements) or substituted with systems such as ground source heat pumps and VRF systems. However, the general zoning capability of the systems listed in this part shall be maintained if a substitute system is proposed. Section 01 0200.0048 Part 12 - Energy Conservation further details the energy requirements of this this project.

11.2 DESIGN CALCULATIONS

11.2.1 **Load Calculations.** Provide a design narrative and calculations as indicated in the Army Reserve Design Process and Submittal Requirements. Heat gain and loss calculations shall be, at a minimum, in accordance with the current edition of the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Handbook of Fundamentals and the latest edition of the ASHRAE Cooling and Heating Load Calculation Manual. The load calculations shall be in accordance with ASHRAE Non-residential Cooling and Heating Load Calculations. Calculations shall be performed on a room-by-room basis. Heating load calculations shall not consider lights or internal loads as supplementing the heating system. Clearly describe the features of the systems being used. Demonstrate compliance with ASHRAE 90.1 by completing the proper compliance forms available from ASHRAE. Note that the envelope requirements of ASHRAE 90.1 form the basis for modeling the building. The building envelope for this facility shall meet or exceed the requirements as updated in ASHRAE 189.1 which exceed the requirements of ASHRAE 90.1. Summarize the outdoor and indoor design conditions used. State the design objectives and design assumptions to provide a comfortable building environment within ASHRAE 55 requirements. Outline design decisions made that affect the operation and maintenance of the systems. Provide all calculations used to support equipment selections, including but not limited to items such as; hydronic piping analysis, duct design analysis for air handler selection, air separator selection, utility service piping selection, boiler and chiller loads, etc. Calculations shall be checked for accuracy and initialed or signed by the design professional. The method of zoning the building spaces used for computerized building load calculation input shall be clearly shown as part of the calculations.

11.2.2 The cooling coil load shall be calculated at the cooling outside design condition and the 0.4% Dew Point / Mean Coincident Dry bulb condition (Dehumidification). The equipment shall be designed for the greater of the two cooling loads.

11.2.3 **Outside Design Conditions.** Obtain outside design conditions for cooling and heating from the ASHRAE Handbook – Fundamentals. The 1% dry bulb temperature with mean coincident wet bulb temperature shall be used for the cooling outside design condition. The 0.4% dew point temperature with the mean coincident dry bulb temperature shall be used for the high wet bulb cooling outside design condition. The 99% dry bulb temperature shall be used for the heating outside design condition.

11.2.4 **Heating and Cooling – Design Conditions**: Refer to Transient Training Officers Quarters Standard Design from the Department of the Army Facilities Standardization Program Design Guide for Specific Space Criteria.

11.2.5 **Occupancy Loads**: The sensible and latent loads for the occupied spaces shall be in accordance with the ASHRAE Handbook – Fundamentals. The number of people shall be determined by using UFC 4-171-05, DG 415-2 and ASHRAE recommendations.

11.2.6 **Lighting Load**: Fixture count and heat release data shall be used to calculate the lighting loads in each space.

11.2.7 **Equipment Loads**: A 1.5 watt per square foot allowance shall be included the spaces. A 200 watt allowance shall be included for each computer workstation.

11.2.8 A direct digital control (DDC) automatic temperature control system shall be provided to control and monitor all HVAC and plumbing systems. The system shall monitor energy usage through electric, water and gas meters. The DDC system shall provide remote monitoring and alarm notification via direct connection to the DEARNG Central BAS system. The system shall meet BacNet protocol requirements.

11.3 **HVAC SYSTEMS**

11.3.1.1 In accordance with Army National Guard G-9 Guidance - Electrification Implementation Policy for Military Construction (MILCON), and Renovation and Modernization (R&M) Projects, all proposed HVAC systems for these buildings must be electric based only.

11.3.2 The following system are based on LCCA results and shall be provided:

PTHP - air cooled packaged terminal heat pumps with electric backup for the individual rooms. These systems will deliver heating and cooling for the spaces and will have high efficiency inverter compressors.

DOAS - Ventilation air shall be provided directly to the spaces via a dedicated outdoor air (DOAS) unit including an integral energy recovery ventilator (ERV). The DOAS is required per UFC 4-720-01, Lodging Facilities. Outside air will be conditioned and dehumidified via DX cooling coil and hot gas reheat, which will then be distributed to each zone. Exhaust air will be ducted and will be routed through the ERV from the restroom spaces. It is intented that this unit be mounted in the attic space of each of the buildings

11.3.3 Exhaust air will be ducted and will be routed through the DOAS ERV from the restroom spaces.

11.3.4 Provide exhaust fans for the Kitchen range oven. Exhaust through the wall or through the roof.

11.3.5 Bathrooms shall not be directly cooled. Air shall be transferred from the adjacent rooms into these areas. Exhaust air shall be directed through the ERV (LCCA).

11.3.6 IT rooms shall be individually heated and cooled using a split system specially designed for that purpose. The outdoor unit shall be located on the ground on a concrete pad.

11.3.7 **Exhaust Systems**.

11.3.7.1 Each fan and drop shall be sized to exhaust 75 CFM. Makeup air shall be provided by the DOAS air units.

11.3.8 Controls

11.3.8.1 A DDC control system shall be provided to control all HVAC systems. The DDC system shall also include and shall monitor energy usage through the electric, water and gas meters.

11.3.8.2 The system installed with this project shall be fully integrated into the existing DDC incorporating all requirements of UFC 3-410-01 BacNet Direct Digital Control for HVAC and Other Local Building Systems, with Change 1.

11.4 **DUCTWORK, PIPING AND ACCESSORIES**.

11.4.1 **Duct System Design**.

11.4.1.1 The ductwork shall be sized using industry standard friction rates and velocities. Duct locations shall be coordinated with all disciplines. Insulate ductwork as required by ASHRAE 90.1. Provide volume control dampers at supply and return branch duct work take-off locations. Balancing shall not be performed at the grilles, registers and diffusers.

11.4.1.2 Flexible duct shall be insulated metallic and shall be limited to 5’-0” spans with no elbows allowed.

11.4.1.3 Provide duct access panels before and after all duct-mounted equipment.

11.4.2 **Fire Dampers and Smoke Dampers**.

11.4.2.1 Fire dampers and smoke dampers shall be fire rated according to the areas being protected. Fire dampers and smoke dampers shall be dynamically rated.

11.4.3 **Hydronic and Refrigerant Piping**.

11.4.3.1 Hydronic piping shall be designed to be efficient, easily hydraulically balanced, and accessible. Pipe size to be within ASHRAE standards. Riser piping located in interior partitions or exterior walls is prohibited. Insulate hydronic and refrigerant piping systems.

11.4.4 **Access Panels**.

11.4.4.1 Access panels/doors shall be provided for valves and appurtenances of the HVAC system located behind hard walls or ceilings.

11.4.5 **Diffusers, Grilles and Registers**.

11.4.5.1 Air distribution devices shall be factory-fabricated of corrosion-resistant steel, or aluminum and shall distribute the specified quantity of air evenly over space intended without causing noticeable drafts.

11.5 TESTING, ADJUSTING, AND BALANCING

11.5.1 Testing, adjusting, and balancing shall be provided for all HVAC systems. Air balancing shall not begin until after building envelope sealing and testing is completed. See the Technical Outline Specifications for additional requirements.

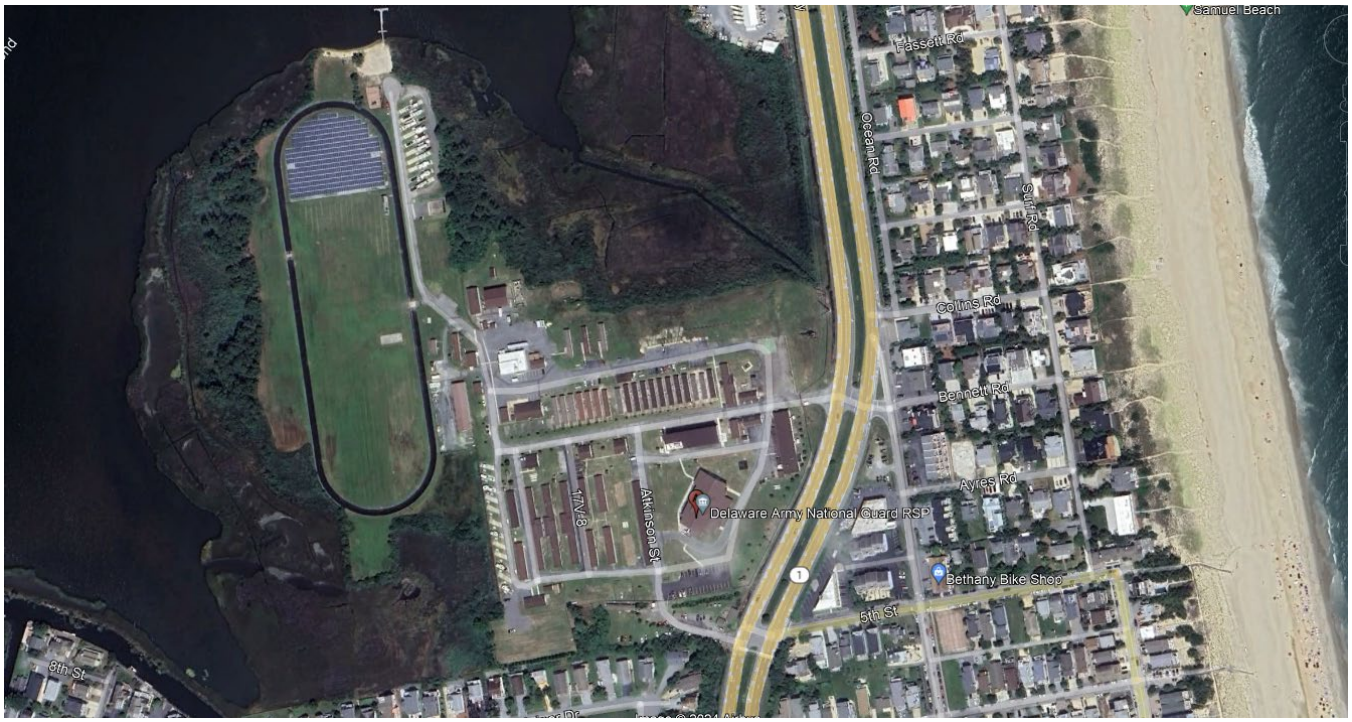
11.6 COMMISSIONING

11.6.1 A commissioning agent will be provided by the DEARNG to perform LEED fundamental and enhanced commissioning. Contractor shall be responsible for supporting the commissioning efforts.

11.7 BUILDING OCCUPANCY FOR ENERGY CALCULATIONS

11.7.1 For bidding purposes the following occupancy shall be used, 90% occupied 24 hours per day. Actual occupancy rates shall be determined during design and coordinated with the Users.

ATTACHMENT "M"



TRANSIENT TRAINING OFFICIERS QUARTERS/BARRACKS
Design Analysis – Energy Report – RFP
BETHANY BEACH TRAINING SITE (BBTS)

NGB PN: 100103
STATE NO: 2020-16
Report Date: 22 March 2024

TETRA TECH

Tetra Tech Inc.
2000 Warrington Way, Suite 245, Louisville, KY 40222
Tel. 502.584.5555 www.tetratech.com

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NA

1.0 GENERAL

The following life cycle cost analyses were performed using BLCC5.3. Reports from BLCC5.3 for each of the sections below are provided as attachments. Cost information for the alternatives listed below are provided as attachments. Other supporting documentation and attachments are described within each section.

1.1 ENERGY COSTS

- Electrical utility costs are based on EIA DE Commercial: $0.1098/kwh
- Natural gas utility costs are based on EIA DE Commercial: $1.38/Therm

The energy and load calculation reports are provided as attachments to this report. Refer to the bookmarked report titled "Site Consumption Summary" which details the utility consumptions for all of the various alternatives.

2.0 BUILDING ENVELOPE

2.1 WALL ASSEMBLY

2.1.1 Baseline Wall Assembly

The baseline for the wall assembly is a wood framed wall from ASHRAE 90.1, Appendix A and contains the following components from exterior layer to interior layer: Exposed fastener corrugated galvanized steel panels, 5/8" zip system sheathing, Wood studs at 16" OC, R19 Kraft faced Batt Insulation, and 5/8" Gyp. Board. **The approximate U-factor for the assembly is 0.052.**

2.1.2 Alternative 1 Wall Assembly

The Alternative 1 wall assembly contains the following components from exterior layer to interior layer: Exposed fastener v-rib Kynar coated, steel panels. BOD: McElroy - "Max Rib Panel", 5/8" zip system sheathing, Wood studs at 16" OC, R19 Kraft faced Batt Insulation, and 5/8" Gyp. Board. **The approximate U-factor for the assembly is 0.052.**

2.1.3 Alternative 2 Wall Assembly

The Alternative 2 wall assembly contains the following components from exterior layer to interior layer: Composite wood siding - BOD: Resysta, Model RESRPH340312, 5/8" zip system sheathing, , Wood studs at 16" OC, R19 spray foam insulation, and 5/8" Gyp. Board. **The approximate U-factor for the assembly is 0.052.**

2.1.4 Alternative 3 Wall Assembly

The Alternative 3 wall assembly contains the following components from exterior layer to interior layer: Composite wood siding - BOD: Resysta, Model RESRPH340312, Air Barrier - Dupont Tyvek , Structural Insulated Panels (SIPs) - R19 (BOD- Ray-COR), and 5/8" Gyp. Board. **The approximate U-factor for the assembly is 0.052.**

2.1.5 Recommendation

The proposed and most Life Cycle Cost Effective (LCCE) wall assembly is the Alternative 1 Wall Assembly.

Table 1-1 – Wall Assembly LCCA Summary

DESIGN SOLUTION:	**BASELINE**	**ALT. #1 (Proposed, LCCE)**	**ALT. #2**	**ALT.#3**
	ASHRAE 90.1-2019 Table A3 Wood Framed, corrugated steel panels w/ R-19 Batt insulation	Kynar Coated steel panels w/ R-19 Batt insulation	Composite wood siding w/ R-19 spray insulation	Composite wood siding w/ R-19 closed cell foam insulation
	(U-factor - 0.052)	(U-factor – 0.052)	(U-factor – 0.052)	(U-factor – 0.052)
First Cost	$84,681	$102,825	$110,644	$111,291
Annual Energy Consumption (Kbtu)	247,238	247,162	247,162	247,162
Annual Energy Utility Cost	$6,358	$6,357	$6,357	$6,390
Energy Utility Cost (Over 40 Years)	$146,954	$146,946	$146,946	$147,702
Annual Preventative Maintenance Cost	$2,139	$2,139	$2,139	$2,139
Maintenance Cost (Over 40 Years)	$49,437	$49,437	$49,437	$49,437
Major Replacements PV	$31,785	$0	$0	$0
Net Present Value LCC	$310,244	***$297,120***	$304,779	$308,429

2.2 ROOF ASSEMBLY

2.2.1 Baseline Roof Assembly

The baseline for the roof assembly is a wood framed roof from ASHRAE 90.1, Appendix A and contains the following components from exterior layer to interior layer: Exposed fastener Corrugated Galv, steel panels, 1x3 treated strapping at 16" OC, Peal and stick Asphaltic roofing underlayment (Grace Ice and Water shield), 5/8" zip system sheathing, Wood Trusses w/2x10 base board for attic floor, and R19 Batts in attic floor. **The approximate U-factor for the assembly is 0.052.**

2.2.2 Alternative 1 Roof Assembly

The Alternative 1 roof assembly contains the following components from exterior layer to interior layer: Exposed fastener Kynar Coated steel panels. BOD: McElroy - "5V" panels, 1x4 treated strapping at 16" OC, Peal and stick Asphaltic roofing underlayment (Grace Ice and Water shield), R10 - 1- 1/2" Poly Iso Rigid Insulation , 5/8" zip system sheathing, 2x10 Rafters w/ air vent, and R-30 Batt insulation. **The approximate U-factor for the assembly is 0.023.**

2.2.1 Alternative 2 Roof Assembly

The Alternative 2 roof assembly contains the following components from exterior layer to interior layer: Standing Seam Metal (Steel) Roof. BOD: McElroy- "138T Panels" (18" W), Peal and stick Asphaltic roofing underlayment (Grace Ice and Water shield), R10 - 1- 1/2" Poly Iso Rigid Insulation , 5/8" zip system sheathing, 2x10 Rafters w/ air vent, and R-30 Batt insulation. **The approximate U-factor for the assembly is 0.023.**

2.2.1 Alternative 3 Roof Assembly

The Alternative 3 roof assembly contains the following components from exterior layer to interior layer: Standing Seam Metal (Steel) Roof. Peal and stick Asphaltic roofing underlayment (Grace Ice and Water shield), Structural Insulated Panels (SIPs) - R38 (BOD- Ray-COR). **The approximate U-factor for the assembly is 0.025.**

2.2.1 Recommendation

The proposed and most Life Cycle Cost Effective (LCCE) roof assembly is the Alternative 3 Roof Assembly.

Table 1-2 - Roof Assembly LCCA Summary

DESIGN SOLUTION:	**BASELINE**	**ALT. #1**	**ALT. #2**	**ALT.#3 (Proposed & LCCE)**
	ASHRAE 90.1 Corrugated steel panels, R-19 Batt insulation in attic (U-factor - 0.052)	Kynar coated steel panels, w/ R-10 poly iso rigid insulation and R-30 Batt insulation (U-factor - 0.023)	Standing seam metal roof, w/ R-10 poly iso rigid insulation and R-30 Batt insulation (U-factor - 0.023)	Standing seam metal roof, w/ R-38 structural insulated panels (U-factor - 0.025)
First Cost	$98,248	$113,242	$101,493	$96,705
Annual Energy Consumption (Kbtu)	327,291	316,855	316,827	317,291
Annual Energy Utility Cost	$8,521	$8,438	$8,439	$8,477
Energy Utility Cost (Over 40 Years)	$198,281	$195,027	$195,053	$195,945

Annual Preventative Maintenance Cost	$2,139	$2,139	$2,139	$2,139
Maintenance Cost (Over 40 Years)	$49,437	$49,437	$49,437	$49,437
Major Replacements PV	$37,138	$0	$0	$0
Net Present Value LCC	$380,067	$355,407	$343,922	**$342,087**

2.3 WINDOW ASSEMBLY

2.3.1 Baseline Case (ASHRAE 90.1-2019)

10.1% to 20.0%	U_{air} 0.57	$SHGC_{air}$ 0.39	VT_{air} 0.43	U_{air} 0.57	$SHGC_{air}$ 0.39	VT_{air} 0.43	U_{air} 1.22	$SHGC_{air}$ 0.40	VT_{air} 0.44

2.3.2 Alternative 1 – Double Pane, Low-E

Window Assembly: Double pane: 1/8" Low-E clear outside pane, 1/2" argon, 1/4" clear inside pane, aluminum framing. **R-3.85 / SHGC = 0.59 / (U-factor - 0.263) VLT 75%**

2.3.3 Alternative 2 – Triple Pane, Low-E

Window Assembly: Triple pane: 1/8" Low-E clear outside pane, 1/2" argon, 1/8" clear middle pane, 1/2" argon, 1/8" clear inside pane, aluminum frame. **R-5.12 / SHGC = 0.55 / (U-factor - 0.195) VLT 70%**

2.3.4 Alternative 3 – Double Pane, Reflective

Window Assembly: Reflective Double Pane: 1/4" electrochromic reflective 2-colored outer pane, 1/2" argon, 1/2" clear inner pane, aluminum framing. **R-3.86 / SHGC = 0.142 / (U-factor - 0.259) VLT 13%**

2.3.5 Recommendation

The Alternative 1 double pane, low-e glazing is the most LCCE effective window and is selected for the project.

Table 1-3 - Window Assembly LCCA Summary

DESIGN SOLUTION:	**BASELINE**	**ALT. #1 (Proposed & LCCE)**	**ALT. #2**	**ALT.#3**
	ASHRAE 90.1 APPENDIX G	Double Pane, Low-E	Triple Pane, Low-E	Reflective Double Pane.
First Cost	$24,527	$24,388	$28,753	$33,174
Annual Energy Consumption (Kbtu)	332,561	322,495	320,504	325,537
Annual Energy Utility Cost	$8,641	$8,549	$8,517	$8,557
Energy Utility Cost (Over 40 Years)	$199,736	$197,600	$196,860	$197,792
Annual Preventative Maintenance Cost	n/a	n/a	n/a	n/a
Maintenance Cost (Over 40 Years)	n/a	n/a	n/a	n/a
Net Present Value LCC	$223,765	**$221,493**	$225,029	$230,966

3.0 ELECTRIC SYSTEMS

3.1 LED LIGHTING

The project will use LED lighting. See Design Analysis under Electrical for more information.

3.2 RENEWABLE ENERGY

An LCCA for solar panels was conducted and solar panels are not LCCE. See LCCA appendix for additional information.

4.0 DOMESTIC HOT WATER SYSTEMS

4.1 HOT WATER

4.1.1 Water Heater Alternatives Discussion

ASHRAE 90.1 Appendix G, Table 3.1.1-2 "Baseline Service Water Heating System" indicates that for a dormitory type building, the baseline system shall be a gas storage water heater. It is understood that natural gas is not readily available at the site and therefore this alternative was not considered.

An electric Air-to-Water Heat Pump was not considered due to the addition of storage tanks and outdoor heat pumps which would have limitations due to the site. An electric instantaneous type water heater was also not considered due to the number of fixtures for the building.

The proposed water heating system is an electric resistance storage type with a hot water re-circulating loop. This will provide similarities to the baseline, with the exception of being electric. A full LCCA was not provided since the other alternatives above have been ruled out.

4.1.2 Solar Hot Water Heating

The Federal Energy Management Program (FEMP) Solar Hot Water System Calculator was used to determine whether heating 30% of the annual hot water consumption with solar energy is LCCE per UFC 3-420-01. The inputs required for the spreadsheet are as follows:

- # of Occupants: 16
- Inlet and Outlet water temperatures: 57 deg F & 140 deg F
- Cost / Therm for electric heating: $3.21/therm
- Efficiency of electric heating: 93%
- Maximum daily solar insolation on tilt=latitude. (Wilmington, DE) 1776 btu/ft^2/day
- Average daily solar insolation on tilt=latitude. (Wilmington, DE) 1459 btu/ft^2/day
- Unit cost of solar heating system < 100 sf: $216/sf

A printout of the FEMP Calculator has been provided as an attachment. The calculator determined that heating 30% of the annual hot water demand is not life cycle cost effective due to the simple payback of 56 years.

5.0 HVAC SYSTEMS

5.1 DESIGN CRITERIA

5.1.1 Envelope

Description	Baseline (ASHRAE 90.1-2019)	Proposed
Exterior Walls	Wood Framed, U-0.052 (R-19)	Wall Alt. 1 (see 2.1.2)
Roofs	Corrugated Steel panels, insulation above deck, U-0.052 (R-19)	Roof Alt. 2 (see 2.2.3)
Windows	10.1-20% Glazing, U-0.57, SHGC-0.39, VLT-0.43	Window – 1 (see 2.3.2)
Slabs on Grade	F – 0.73	F – 0.73

5.1.2 Occupants

The occupancy of the room types was identically modeled for the baseline and proposed cases as follows:

Room Name or Type	# of Occupants / Room
COMM Room, Electrical Room, Mechanical, Corridors, storage, restrooms	None
Barracks quarters	1 person (each)
Circulation / Billeting	15 sq ft / person

5.1.3 Lighting

The lighting power density for the baseline case is modeled per the requirements of table ASHRAE G3.7 and the proposed power densities are based on ASHRAE Table 9.6.1. We anticipate the actual power densities to be less than the proposed values indicated since LED lights typically use less power than those prescribed on table 9.6.1.

Room Name or Type (ASHRAE Classification)	Baseline (ASHRAE 90.1 Table G3.7) [Watts/SF]	Proposed (ASHRAE 90.1 Table 9.6.1) [Watts/SF]
Corridor (all other)	0.5	0.41
Sleeping quarters	1.11	0.50
Electrical/Mechanical Room	1.5	0.43
Lounge	1.2	0.59
Office – Enclosed / IT	1.1	0.74
Restrooms (all other)	0.9	0.63

5.1.4 Miscellaneous Equipment Loads

The miscellaneous equipment loads of the room types was identically modeled for the baseline and proposed cases as follows:

Miscellaneous Equipment Power Density		
Room Type	**Design Watts / SF**	**Notes**
Restrooms	0	
Billeting	2650 Watts	Refrigerator, Coffee Maker, Microwave Oven.
Sleeping quarters	0.26	Residential type plug loads
Corridors	0	
Electrical / Mechanical Rooms	0.43	
Comm Room	3,000 Watts	
Storage	0	

5.1.5 Schedules

Schedules used to estimate usage over a typical day such as lighting or equipment usage were kept identical for both the baseline and proposed cases.

5.2 SYSTEM ALTERNATIVES – LCCA NARRATIVES

5.2.1 Overview

The mechanical system LCCA calculations are generated based on the requirements of UFC 1-200-02 High Performance and Sustainable Building Requirements. Trane Trace 3D Plus is used for the energy calculations and the BLCC 5.3 program is utilized to perform the life cycle calculations. The analysis is conducted over a study period of forty years and includes the comparison of the ASHRAE 90.1-2019 Baseline HVAC system and three other feasible system options.

Note that a DOAS (Dedicated Outside Air System) was provided as an addition to all system alternatives. The UFC 4-720-01 (Lodging Facilities) indicates that guest rooms shall be supplied continuously with conditioned outside air via a central ventilation system and exhaust air is to be taken from restrooms by a central exhaust system. This can only be accomplished with a DOAS type system component.

Additionally, in accordance with Army National Guard G-9 Guidance - Electrification Implementation Policy for Military Construction (MILCON), and Renovation and Modernization (R&M) Projects, the HVAC and Water heating systems that were analyzed are electric based only.

5.2.2 ASHRAE 90.1-2019 Baseline Zone 4A - PTAC

ASHRAE 90.1-2019 Appendix G, Table G3.1.1-3 indicates that the baseline HVAC system for climate zone 4A and Residential type buildings, is System 1 - PTAC. Table G3.1.1-4 describes this system as a constant volume packaged terminal air conditioner with DX cooling and hot heating by water fossil fuel boiler. When this system is modeled, there is a system assigned to each zone. Load calculations are performed to determine the size of each zone. Data such as zone CFM, zone heating BTU/hr were used to determine the fan bhp, and heating thermal efficiency, etc..

- ASHRAE 90.1 Table G3.5.1 indicates the cooling efficiency for air-cooled air conditioners. For systems with a cooling capacity less than 65,000 btu/hr the coefficient of performance (COP) is prescribed as 3.0. For systems with a cooling capacity 135,000 – 240,000 btu/hr the COP = 3.4.

The COMM room is cooled/heated by a dedicated ductless split system heat pump.

5.2.3 Alternative 1 – Inverter Driven PTHP w/ DOAS Unit

This system consists of through-wall variable volume, packaged terminal air heat pumps with inverter compressors. The system is controlled with zone thermostats and a variable supply of air is provided through the system while in heating or cooling mode to meet the zone setpoints.

Ventilation air is provided directly via a dedicated outdoor air (DOAS) unit including an integral energy recovery ventilator (ERV). Outside air will be conditioned and dehumidified via DX cooling coil and hot gas reheat, which will then be distributed to each zone. Exhaust air will be ducted and will be routed through the ERV from the restroom spaces.

The COMM room is cooled/heated by a dedicated ductless split system heat pump.

5.2.4 Alternative 2 – Ground Source Heat Pump (GSHP) w/ DOAS Unit

This system will provide heating and cooling through means of heat transfer between the earth and indoor air. Heat will be rejected or absorbed through a vertical closed loop well field located outside of the building. Wells for each vertical piping loop are placed approximately 20 feet apart and reach a depth ranging from 100–400 feet. Piping from the well field is connected to the heat pumps which are in the individual zones. Water from the well field is circulated to and from the heat pumps to provide a heat sink. A dry cooler is used to recharge the well field based on demand of the system. A DOAS unit similar in configuration and size as Alternative 1 is provided for zone ventilation and latent cooling requirements.

The COMM room is cooled/heated by a dedicated ductless split system heat pump.

5.2.5 Alternative 3 – Variable Refrigerant Flow (VRF) w/ DOAS Unit

Primary cooling and heating is provided by a variable refrigerant flow (VRF) air-cooled heat pump system with refrigerant heat recovery. A single multi-zone air-cooled heat pump is provided with three refrigerant pipes routed to a branch selector box. Refrigerant liquid and suction lines are routed from the branch selector box to each of the evaporator fan coil units. Small zones would use ductless ceiling cassettes whereas larger zones would use the concealed ducted fan coil units (FCUs). A DOAS unit similar in configuration and size as Alternative 1 is provided for zone ventilation and latent cooling requirements.

The COMM room is cooled/heated by a dedicated ductless split system heat pump.

5.2.6 Costs

5.2.6.1 Investment / Maintenance / Replacement Cost

Refer to attachments for costing data. The data was primarily taken from the BEST (Building Efficiency System Tool) version 6.2.1.0 and RSMeans cost data as needed.

5.2.7 Results

5.2.7.1 LCCA Results

The Mechanical LCCA results show that Alternative 1: Inverter PTHP w/ DOAS is the most life cycle cost effective option and is the recommended system. While the GSHP system (Alternative 2) was more energy efficient, the higher initial cost resulted in a higher cost over the life of the system. The VRF system had a similar result with higher first costs which resulted in a higher LCC overall.

Table 4-1 - HVAC Systems LCCA Summary

DESIGN SOLUTION:	**BASELINE**	**ALT. #1 (Proposed, LCCE)**	**ALT. #2**	**ALT.#3**
	ASHRAE 90.1-2019 App G System 1– PTAC	Inverter PTHP w/ DOAS	GSHP w/ DOAS	VRF w/ DOAS
First Cost	$107,360	$107,360	$270,939	$230,816
Annual Energy Consumption (Kbtu)	376,416	301,624	295,624	324,589
Annual Energy Utility Cost	$9,943	$8,609	$8,437	$9,264
Energy Utility Cost (Over 40 Years)	$229,828	$198,978	$195,009	$214,124
Annual Preventative Maintenance Cost	$8,840	$7,895	$3,145	$7,986
Maintenance Cost (Over 40 Years)	$204,338	$184,564	$72,705	$184,597
Major Replacements PV	$184,698	$137,920	$107,544	$212,461
Net Present Value LCC	$719,574	**$623,168**	$637,444	$833,560

6.0 ATTACHMENTS

6.1 BUILDING ENVELOPE

6.1.1 LCCA for Envelope (Walls, Roof, Windows)

6.2 ELECTRICAL SYSTEMS

6.2.1 LCCA for Solar PV

6.3 DOMESTIC WATER SYSTEMS

6.3.1 Solar Hot Water LCCA

6.4 HVAC SYSTEMS

6.4.1 LCCA for Mechanical Systems

LCCA ATTACHMENTS

NIST BLCC 5.3-23: Lowest LCC

ATTACHMENT 6.1 BUILDING ENVELOPE LCCA

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Wall.xml
Date of Study:	Wed Mar 20 17:15:55 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Wall LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Lowest LCC

Comparative Present-Value Costs of Alternatives
(Shown in Ascending Order of Initial Cost, * = Lowest LCC)

Alternative	Initial Cost (PV)	Life Cycle Cost (PV)	
Baseline Wall Assembly	$84,681	$310,244	
Alt. Wall Assembly No. 1	$102,825	$297,120	*
Alt. Wall Assembly No. 2	$110,644	$304,779	
Alt. Wall Assembly No. 3	$111,291	$308,429	

NIST BLCC 5.3-23: Input Data Listing

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Wall.xml
Date of Study:	Wed Mar 20 17:13:55 CDT 2024
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Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Wall Assembly

Energy: Electricity

Annual Consumption:	59,076.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%

April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	457.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%
April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%
April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Baseline Wall Assembly

Initial Investment

Initial Cost (base-year $):	$84,681
Annual Rate of Increase:	2%
Expected Asset Life:	20 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Major Repair

Years/Months:	20 years 0 months
Amount:	$38,634
Annual Rate Of Increase:	2%
Expected Asset Life:	20 years 0 months
Residual Value Factor:	2%

Routine Recurring OM&R: Annual Maintenance

Amount:	$1,500
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: Alt. Wall Assembly No. 1

Energy: Electricity

Annual Consumption:	59,086.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

State: Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%

April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	456.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%
April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%

April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Alt Wall Assebmly No. 1

Initial Investment

Initial Cost (base-year $): $102,825

Annual Rate of Increase: 2%

Expected Asset Life: 45 years 0 months

Residual Value Factor: 3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Routine Recurring OM&R: Annual Maintenance

Amount: $1,500

Annual Rate of Increase: 2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: Alt. Wall Assembly No. 2

Energy: Electricity

Annual Consumption: 59,086.0 kWh

Price per Unit: $0.10980

Demand Charge: $0

Utility Rebate:	$0
Location:	South Dakota
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%

April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	456.0 kWh
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%

April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%
April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Alt. Wall Assembly No. 2

Initial Investment

Initial Cost (base-year $):	$110,644
Annual Rate of Increase:	2%
Expected Asset Life:	45 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Routine Recurring OM&R: Annual Maintenance

Amount:	$1,500
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: Alt. Wall Assembly No. 3

Energy: Electricity

Annual Consumption:	59,086.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Alabama
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%

April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	456.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Residential
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-4.56%
April 1, 2024	1 year 0 months	-3.19%
April 1, 2025	1 year 0 months	-2.51%
April 1, 2026	1 year 0 months	-1.25%
April 1, 2027	1 year 0 months	-0.15%
April 1, 2028	1 year 0 months	0.6%
April 1, 2029	1 year 0 months	0.89%
April 1, 2030	1 year 0 months	1.17%
April 1, 2031	1 year 0 months	1.23%
April 1, 2032	1 year 0 months	1.43%
April 1, 2033	1 year 0 months	1.27%
April 1, 2034	1 year 0 months	1.12%
April 1, 2035	1 year 0 months	0.69%
April 1, 2036	1 year 0 months	0.75%
April 1, 2037	1 year 0 months	0.95%

April 1, 2037	1 year 0 months	0.95%
April 1, 2038	1 year 0 months	0.4%
April 1, 2039	1 year 0 months	0.8%
April 1, 2040	1 year 0 months	0.86%
April 1, 2041	1 year 0 months	0.46%
April 1, 2042	1 year 0 months	0.2%
April 1, 2043	1 year 0 months	0.13%
April 1, 2044	1 year 0 months	0.26%
April 1, 2045	1 year 0 months	0.33%
April 1, 2046	1 year 0 months	0.13%
April 1, 2047	1 year 0 months	0.19%
April 1, 2048	1 year 0 months	0.13%
April 1, 2049	1 year 0 months	0.26%
April 1, 2050	1 year 0 months	0.26%
April 1, 2051	1 year 0 months	0.19%
April 1, 2052	1 year 0 months	0.19%
April 1, 2053	Remaining	0.21%

Component: Alt. Wall Assembly No. 3

Initial Investment

Initial Cost (base-year $):	$111,291
Annual Rate of Increase:	0%
Expected Asset Life:	45 years 0 months
Residual Value Factor:	0%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Routine Recurring OM&R: Copy of: Annual Maintenance

Amount:	$1,500
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

NIST BLCC 5.3-23: Detailed LCC Analysis

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Wall.xml
Date of Study:	Wed Mar 20 17:14:43 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Wall LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Wall Assembly

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $84,681

Component: Baseline Wall Assembly

Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$84,681
Total (for Component)		$84,681

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
59,076.0 kWh	$0.10980	$6,487	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average	Average	Average	Average

Annual Usage	Price/Unit	Annual Cost	Annual Demand	Annual Rebate
457.0 Therm	$1.38800	$634	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$84,681	$3,664
Energy Costs		
Energy Consumption Costs	$146,954	$6,358
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$146,954	$6,358
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Baseline Wall Assembly		
Routine Annually Recurring Costs	$49,437	$2,139
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$49,437	$2,139
Major Repair and Replacements		
Component: Baseline Wall Assembly	$31,785	$1,375
Subtotal (for Repair and Replacements):	$31,785	$1,375
Residual Value of Original Capital Components		
Component: Baseline Wall Assembly	-$2,090	-$90
Subtotal (for Residual Value):	-$2,090	-$90
Residual Value of Major Repair and Replacements		
Component: Baseline Wall Assembly	-$523	-$23

Subtotal (for Residual Value):	−$523	−$23
Total Life-Cycle Cost	$310,244	$13,422

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	23,247.45 kg	929,834.50 kg
SO2	8.51 kg	340.28 kg
NOx	9.78 kg	391.32 kg
Natural Gas:		
CO2	2,413.87 kg	96,548.21 kg
SO2	19.48 kg	779.17 kg
NOx	2.84 kg	113.79 kg
Total:		
CO2	25,661.32 kg	1,026,382.71 kg
SO2	27.99 kg	1,119.45 kg
NOx	12.63 kg	505.11 kg

Alternative: Alt. Wall Assembly No. 1

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $102,825

Component: Alt Wall Assebmly No. 1
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$102,825
Total (for Component)		$102,825

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
59,086.0 kWh	$0.10980	$6,488	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
456.0 Therm	$1.38800	$633	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$102,825	$4,449
Energy Costs		
Energy Consumption Costs	$146,946	$6,357
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$146,946	$6,357
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt Wall Assebmly No. 1		
Routine Annually Recurring Costs	$49,437	$2,139
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$49,437	$2,139
Major Repair and Replacements		
Component: Alt Wall Assebmly No. 1	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt Wall Assebmly No. 1	-$2,088	-$90
Subtotal (for Residual Value):	-$2,088	-$90
Residual Value of Major Repair and Replacements		
Component: Alt Wall Assebmly No. 1	$0	$0

Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$297,120	$12,855

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	23,251.39 kg	929,991.90 kg
SO2	8.51 kg	340.34 kg
NOx	9.79 kg	391.39 kg
Natural Gas:		
CO2	2,408.59 kg	96,336.94 kg
SO2	19.44 kg	777.47 kg
NOx	2.84 kg	113.54 kg
Total:		
CO2	25,659.98 kg	1,026,328.84 kg
SO2	27.95 kg	1,117.80 kg
NOx	12.62 kg	504.93 kg

Alternative: Alt. Wall Assembly No. 2

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $110,644

Component: Alt. Wall Assembly No. 2
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$110,644
Total (for Component)		$110,644

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
59,086.0 kWh	$0.10980	$6,488	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
456.0 kWh	$1.38800	$633	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$110,644	$4,787
Energy Costs		
Energy Consumption Costs	$146,946	$6,357
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$146,946	$6,357
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt. Wall Assembly No. 2		
Routine Annually Recurring Costs	$49,437	$2,139
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$49,437	$2,139
Major Repair and Replacements		
Component: Alt. Wall Assembly No. 2	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt. Wall Assembly No. 2	-$2,247	-$97
Subtotal (for Residual Value):	-$2,247	-$97
Residual Value of Major Repair and Replacements		
Component: Alt. Wall Assembly No. 2	$0	$0

Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$304,779	$13,186

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	8,119.04 kg	324,739.49 kg
SO2	1.91 kg	76.58 kg
NOx	3.40 kg	136.13 kg
Natural Gas:		
CO2	82.18 kg	3,287.14 kg
SO2	0.66 kg	26.53 kg
NOx	0.10 kg	3.87 kg
Total:		
CO2	8,201.23 kg	328,026.63 kg
SO2	2.58 kg	103.10 kg
NOx	3.50 kg	140.01 kg

Alternative: Alt. Wall Assembly No. 3

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $111,291

Component: Alt. Wall Assembly No. 3
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$111,291
Total (for Component)		$111,291

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
59,086.0 kWh	$0.10980	$6,488	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
456.0 Therm	$1.38800	$633	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$111,291	$4,815
Energy Costs		
Energy Consumption Costs	$147,702	$6,390
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$147,702	$6,390
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt. Wall Assembly No. 3		
Routine Annually Recurring Costs	$49,437	$2,139
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$49,437	$2,139
Major Repair and Replacements		
Component: Alt. Wall Assembly No. 3	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt. Wall Assembly No. 3	$0	$0
Subtotal (for Residual Value):	$0	$0
Residual Value of Major Repair and Replacements		

Component: Alt. Wall Assembly No. 3	$0	$0
Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$308,429	$13,344

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	20,123.49 kg	804,884.62 kg
SO2	3.62 kg	144.64 kg
NOx	6.59 kg	263.76 kg
Natural Gas:		
CO2	2,408.59 kg	96,336.94 kg
SO2	19.44 kg	777.47 kg
NOx	2.84 kg	113.54 kg
Total:		
CO2	22,532.08 kg	901,221.56 kg
SO2	23.05 kg	922.11 kg
NOx	9.43 kg	377.30 kg

NIST BLCC 5.3-23: Summary LCC

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Wall.xml
Date of Study:	Wed Mar 20 17:15:24 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Wall LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Wall Assembly

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$84,681	$3,664
Energy Consumption Costs	$146,954	$6,358
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$49,437	$2,139
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$31,785	$1,375
Less Remaining Value	-$2,613	-$113
Total Life-Cycle Cost	$310,244	$13,422

Alternative: Alt. Wall Assembly No. 1

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$102,825	$4,449

Energy Consumption Costs	$146,946	$6,357
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$49,437	$2,139
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	−$2,088	−$90
Total Life-Cycle Cost	$297,120	$12,855

Alternative: Alt. Wall Assembly No. 2

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$110,644	$4,787
Energy Consumption Costs	$146,946	$6,357
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$49,437	$2,139
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	−$2,247	−$97
Total Life-Cycle Cost	$304,779	$13,186

Alternative: Alt. Wall Assembly No. 3

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$111,291	$4,815
Energy Consumption Costs	$147,702	$6,390
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$49,437	$2,139

Routine Annually Recurring OM&R Costs	$19,137	$2,139
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	$0	$0
Total Life-Cycle Cost	$308,429	$13,344

DEARNG Mechanical LCCA-Wall



Building Owner:
Location:

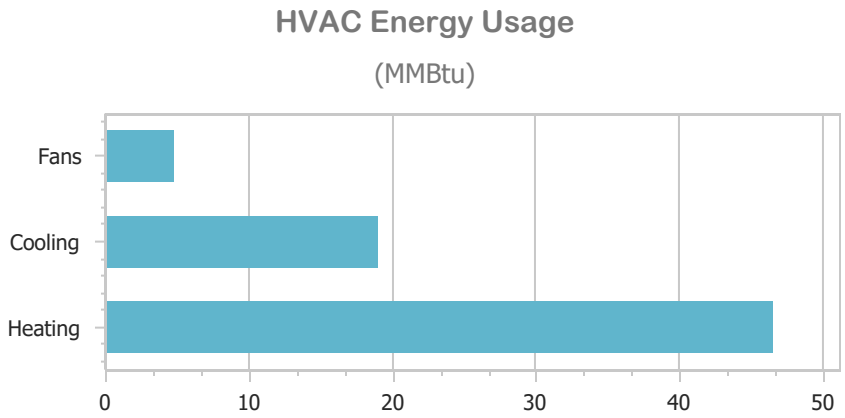
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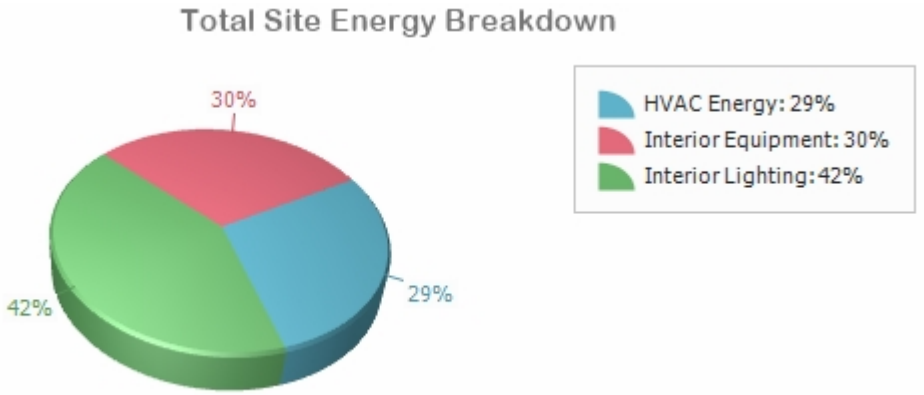
File name: DEARNG Mechanical LCCA-Wall.mdfz

Simulated by: TRACE 3D Plus 6.00.106

Site Consumption Summary

Energy Consumption



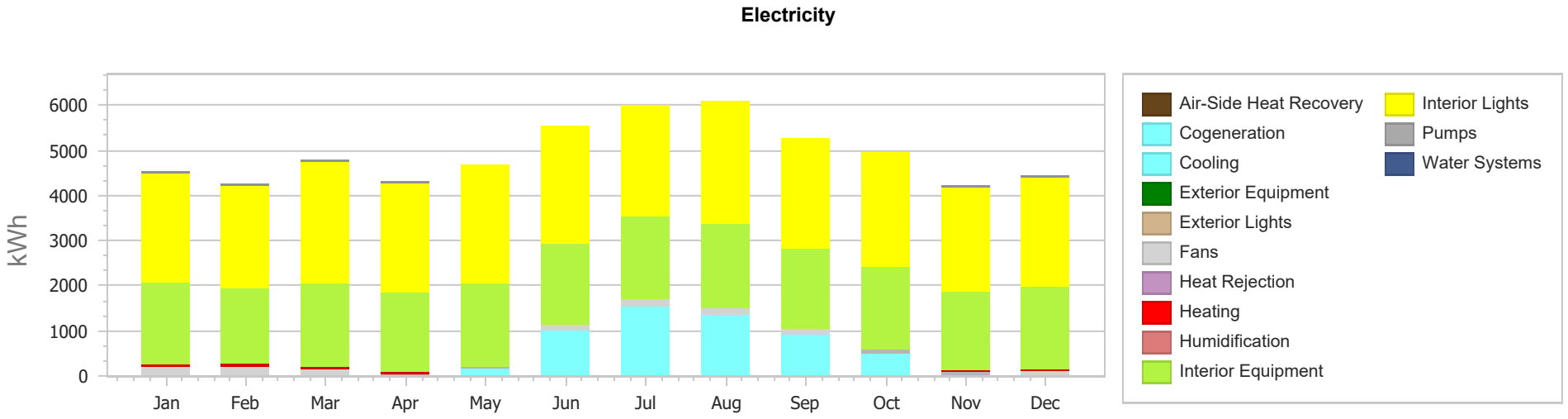


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	264	46	0	0	0	46,576	4.33	52,364	4.86	0
Cooling	5,519	0	0	0	0	18,833	1.75	59,645	5.54	0
Fans	1,508	0	0	0	0	5,147	0.48	16,299	1.51	0
Pumps	56	0	0	0	0	190	0.02	600	0.06	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	7,347	46	0	0	0	70,745	6.57	128,908	11.97	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	30,108	0	0	0	0	102,734	9.54	325,358	30.22	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	21,617	0	0	0	0	73,759	6.85	233,595	21.7	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	51,725	0	0	0	0	176,493	16.39	558,953	51.92	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	59,072	46	0	0	0	247,238	22.97	687,861	63.9	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

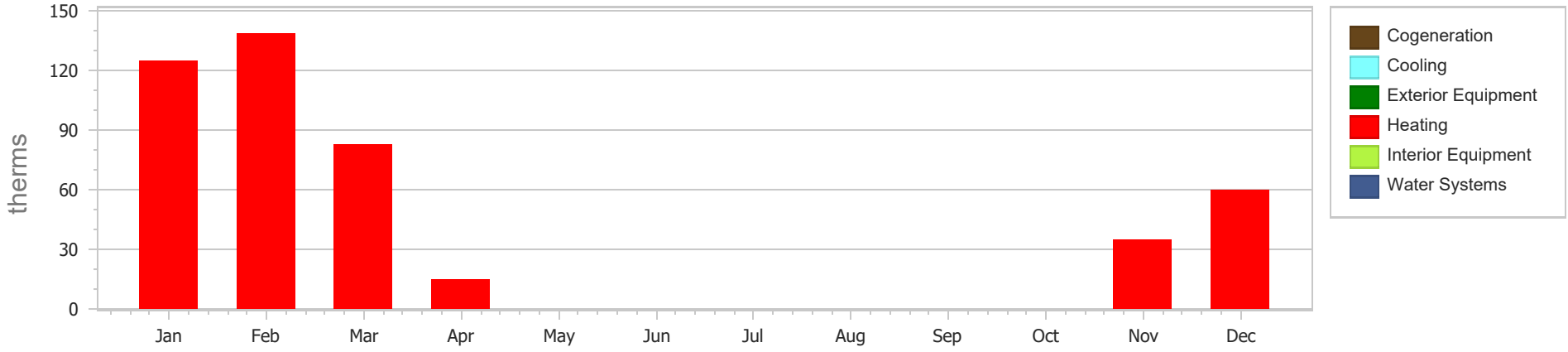
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	19	166	1,010	1,537	1,348	917	503	21	0	5,520
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	191	202	151	54	42	125	176	163	123	80	85	118	1,510
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	72	80	48	9	0	0	0	0	0	0	20	35	264
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	1,817	1,657	1,858	1,776	1,844	1,795	1,825	1,858	1,776	1,831	1,755	1,825	21,618
Interior Lights	2,439	2,300	2,726	2,445	2,630	2,616	2,459	2,726	2,445	2,535	2,329	2,459	30,108
Pumps	14	14	10	3	0	0	0	0	0	0	6	9	57
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	4,532	4,254	4,794	4,306	4,683	5,546	5,998	6,095	5,261	4,948	4,216	4,445	59,076

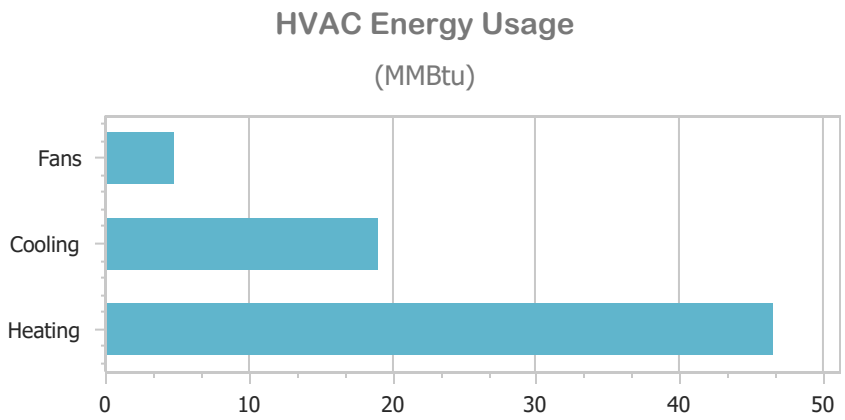
Natural Gas

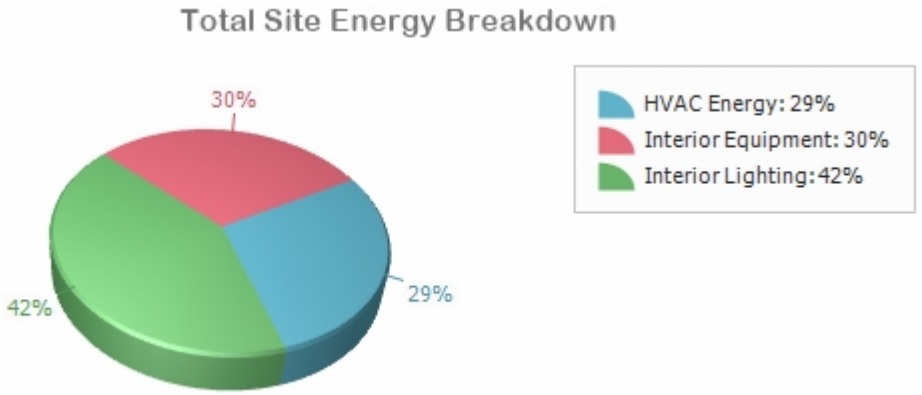


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	125	139	83	15	0	0	0	0	0	0	35	60	457
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	125	139	83	15	0	0	0	0	0	0	35	60	457

Site Consumption Summary

Energy Consumption



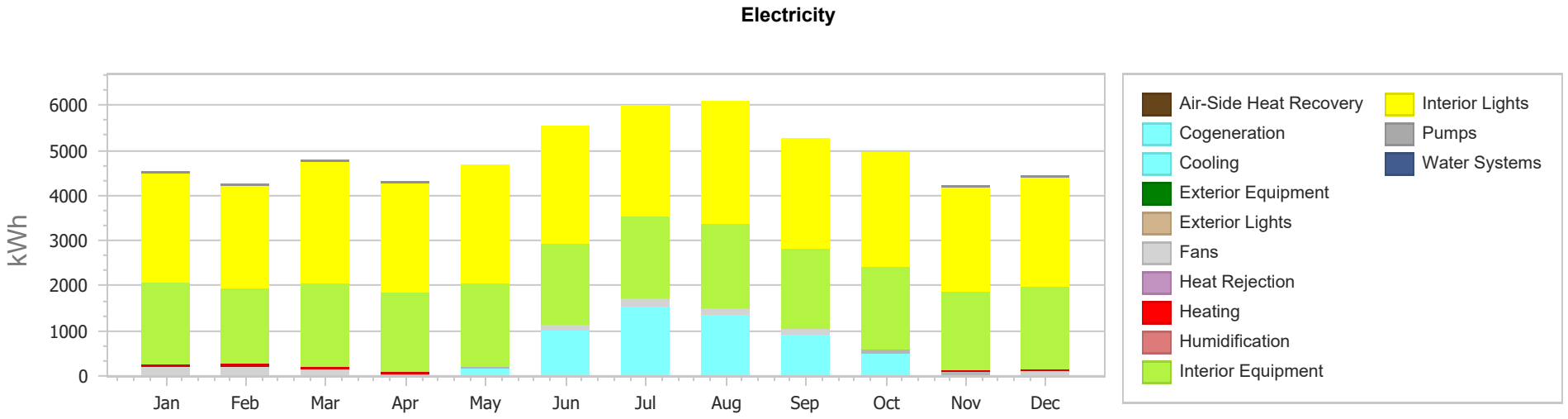


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	264	46	0	0	0	46,453	4.31	52,230	4.85	0
Cooling	5,531	0	0	0	0	18,871	1.75	59,765	5.55	0
Fans	1,511	0	0	0	0	5,156	0.48	16,329	1.52	0
Pumps	56	0	0	0	0	190	0.02	600	0.06	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	7,361	46	0	0	0	70,669	6.56	128,924	11.98	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	30,108	0	0	0	0	102,734	9.54	325,358	30.22	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	21,617	0	0	0	0	73,759	6.85	233,595	21.7	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	51,725	0	0	0	0	176,493	16.39	558,953	51.92	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	59,086	46	0	0	0	247,162	22.96	687,878	63.9	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

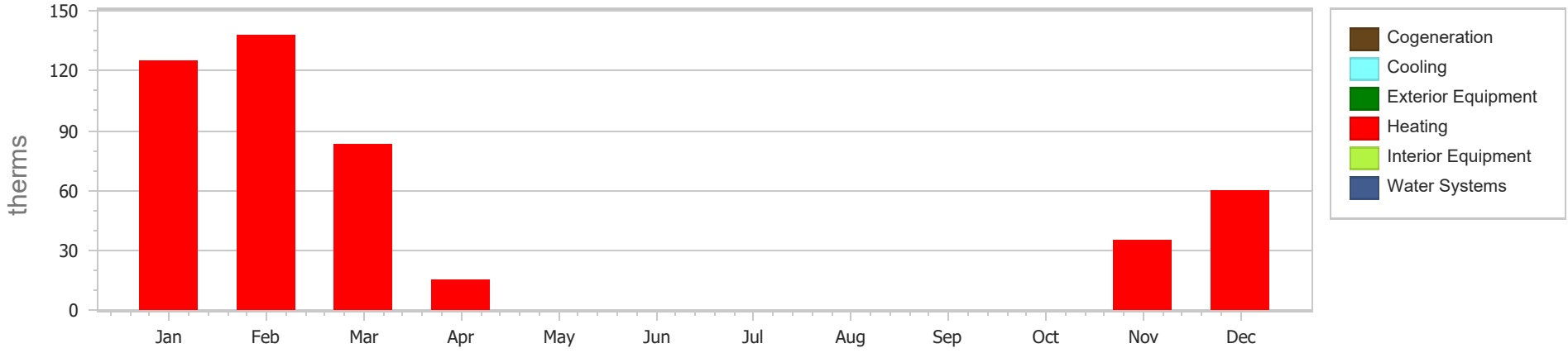
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Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	19	167	1,011	1,538	1,349	919	505	21	0	5,530
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	191	203	151	54	42	125	176	163	123	80	85	118	1,511
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	72	80	48	9	0	0	0	0	0	0	20	35	263
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	1,817	1,657	1,858	1,776	1,844	1,795	1,825	1,858	1,776	1,831	1,755	1,825	21,618
Interior Lights	2,439	2,300	2,726	2,445	2,630	2,616	2,459	2,726	2,445	2,535	2,329	2,459	30,108
Pumps	14	14	11	3	0	0	0	0	0	0	6	9	57
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	4,533	4,254	4,794	4,306	4,684	5,548	5,998	6,096	5,263	4,950	4,216	4,445	59,086

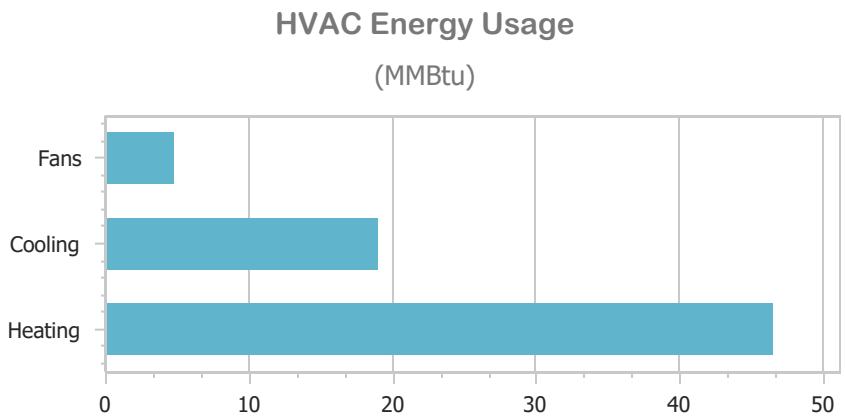
Natural Gas

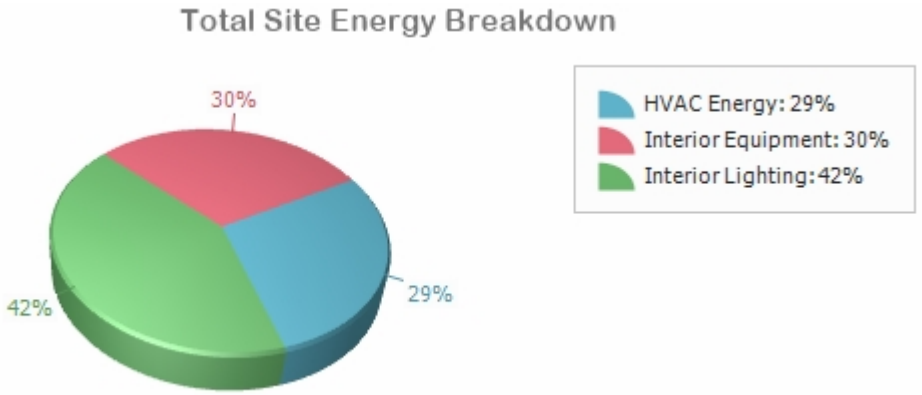


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	125	138	83	15	0	0	0	0	0	0	35	60	456
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	125	138	83	15	0	0	0	0	0	0	35	60	456

Site Consumption Summary

Energy Consumption



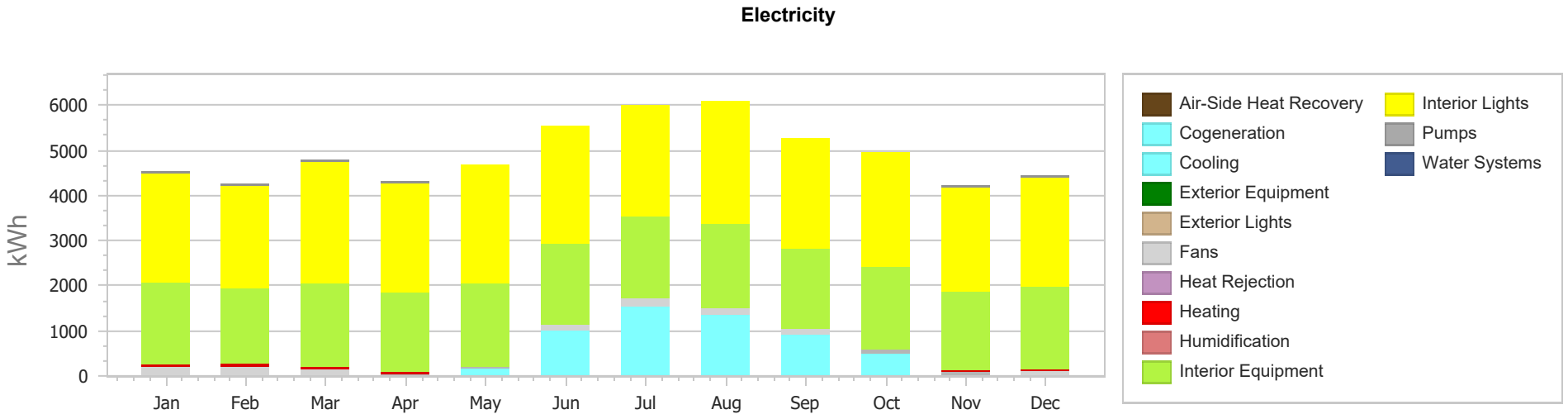


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	264	46	0	0	0	46,453	4.31	52,230	4.85	0
Cooling	5,531	0	0	0	0	18,871	1.75	59,765	5.55	0
Fans	1,511	0	0	0	0	5,156	0.48	16,329	1.52	0
Pumps	56	0	0	0	0	190	0.02	600	0.06	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	7,361	46	0	0	0	70,669	6.56	128,924	11.98	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	30,108	0	0	0	0	102,734	9.54	325,358	30.22	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	21,617	0	0	0	0	73,759	6.85	233,595	21.7	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	51,725	0	0	0	0	176,493	16.39	558,953	51.92	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	59,086	46	0	0	0	247,162	22.96	687,878	63.9	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

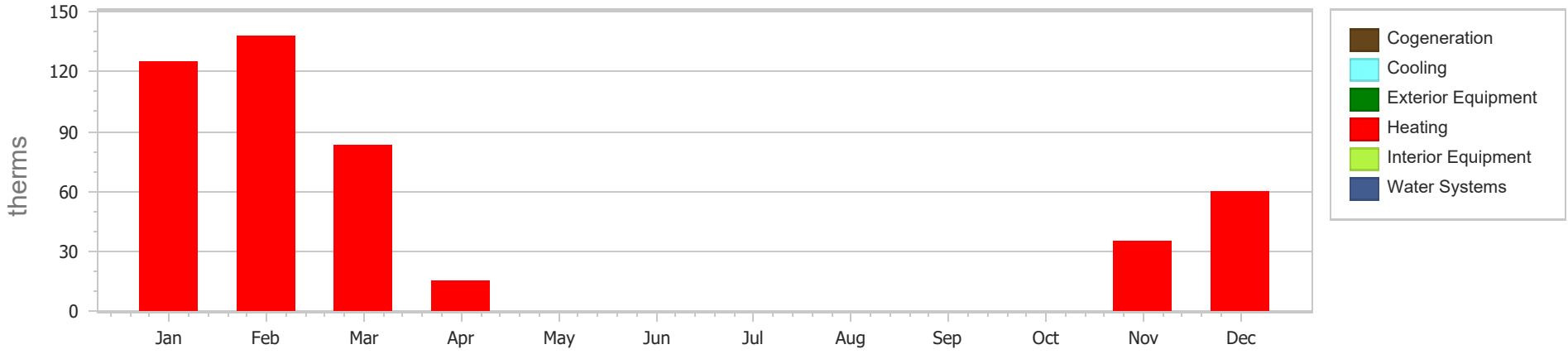
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Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	19	167	1,011	1,538	1,349	919	505	21	0	5,530
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	191	203	151	54	42	125	176	163	123	80	85	118	1,511
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	72	80	48	9	0	0	0	0	0	0	20	35	263
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	1,817	1,657	1,858	1,776	1,844	1,795	1,825	1,858	1,776	1,831	1,755	1,825	21,618
Interior Lights	2,439	2,300	2,726	2,445	2,630	2,616	2,459	2,726	2,445	2,535	2,329	2,459	30,108
Pumps	14	14	11	3	0	0	0	0	0	0	6	9	57
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	4,533	4,254	4,794	4,306	4,684	5,548	5,998	6,096	5,263	4,950	4,216	4,445	59,086

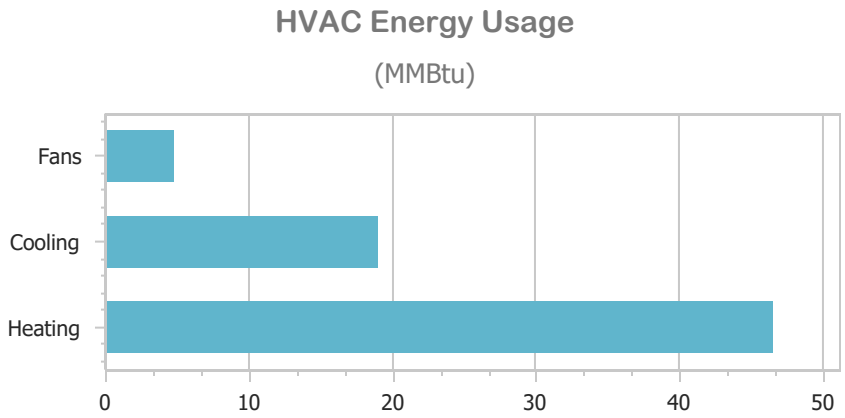
Natural Gas

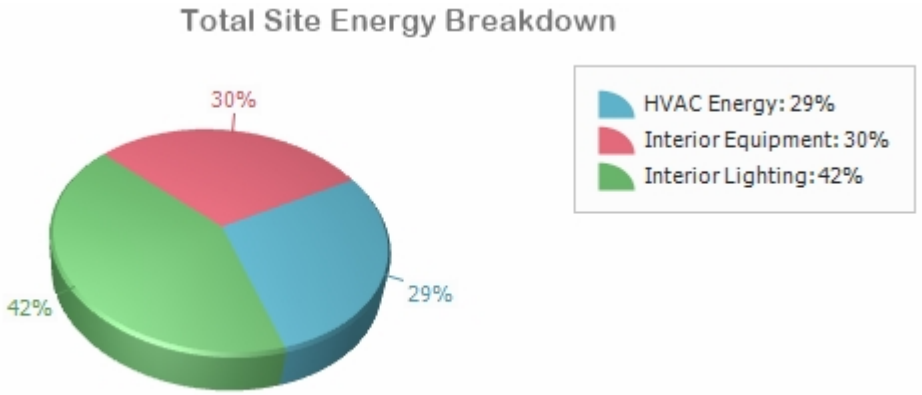


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	125	138	83	15	0	0	0	0	0	0	35	60	456
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	125	138	83	15	0	0	0	0	0	0	35	60	456

Site Consumption Summary

Energy Consumption



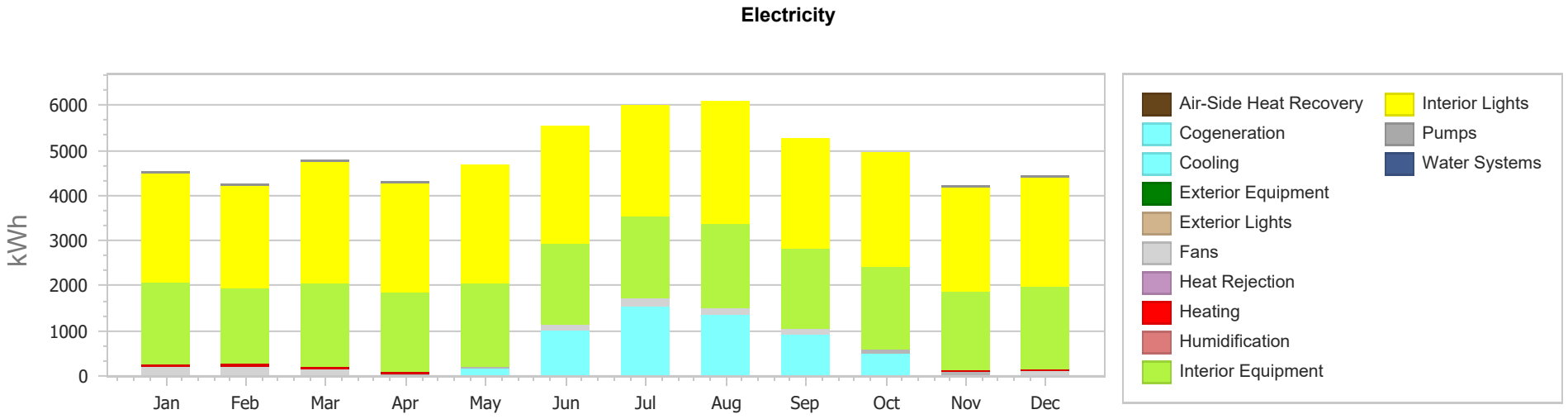


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
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Cooling	5,531	0	0	0	0	18,871	1.75	59,765	5.55	0
Fans	1,511	0	0	0	0	5,156	0.48	16,329	1.52	0
Pumps	56	0	0	0	0	190	0.02	600	0.06	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	7,361	46	0	0	0	70,669	6.56	128,924	11.98	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	30,108	0	0	0	0	102,734	9.54	325,358	30.22	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	21,617	0	0	0	0	73,759	6.85	233,595	21.7	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	51,725	0	0	0	0	176,493	16.39	558,953	51.92	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	59,086	46	0	0	0	247,162	22.96	687,878	63.9	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

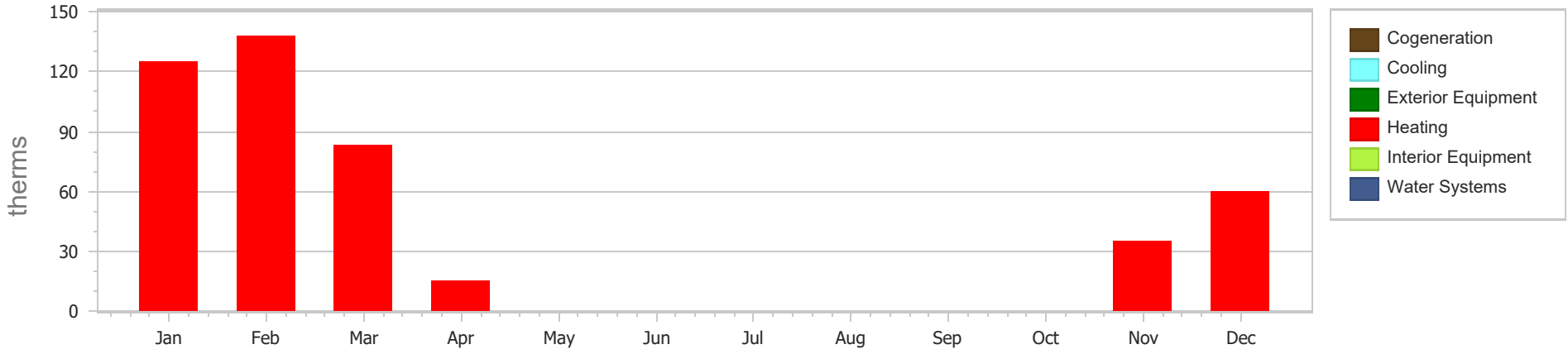
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	19	167	1,011	1,538	1,349	919	505	21	0	5,530
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	191	203	151	54	42	125	176	163	123	80	85	118	1,511
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	72	80	48	9	0	0	0	0	0	0	20	35	263
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	1,817	1,657	1,858	1,776	1,844	1,795	1,825	1,858	1,776	1,831	1,755	1,825	21,618
Interior Lights	2,439	2,300	2,726	2,445	2,630	2,616	2,459	2,726	2,445	2,535	2,329	2,459	30,108
Pumps	14	14	11	3	0	0	0	0	0	0	6	9	57
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	4,533	4,254	4,794	4,306	4,684	5,548	5,998	6,096	5,263	4,950	4,216	4,445	59,086

Natural Gas



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	125	138	83	15	0	0	0	0	0	0	35	60	456
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	125	138	83	15	0	0	0	0	0	0	35	60	456

System Component Selection Summary

Baseline Wall Assembly

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		0.2	2.7	2.2	0.3	N/A	73	9	80.8	71.29	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	8/21 15:00	73	2,187	73	55.0		0	0	73	95.0
	SS - 1		108	6/21 18:00	73	1,853	73	55.0	1/21 24:00	73	1,825	73	95.0
		118B - IT	108	6/21 18:00	72	1,827	72	55.0	1/21 24:00	72	1,812	72	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	73	.03	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.4	5.4	4.2	0.8	N/A	154	20	80.2	72.48	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 24:00	5.8	1.1	N/A	161	20	61.5	95.0	0.24	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	8/21 17:00	154	4,066	N/A	55.0	1/21 24:00	161	2,115	N/A	95.0
		102A - SLQ 4	146	8/21 17:00	91	2,390	N/A	55.0	1/21 24:00	94	1,239	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	64	1,710	N/A	55.0	1/21 24:00	68	846	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	161	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	4.1	3.2	0.5	N/A	117	13	80.0	71.39	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 24:00	4.4	0.8	N/A	126	13	62.4	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	117	3,184	N/A	55.0	1/21 24:00	126	1,713	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	117	3,156	N/A	55.0	1/21 24:00	125	1,687	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	126	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.4	4.5	3.4	0.6	N/A	127	20	79.7	72.50	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 24:00	5.2	1.2	N/A	138	20	60.3	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 10:00	127	3,487	N/A	55.0	1/21 24:00	138	2,061	N/A	95.0
		108A - BATHROOM 1	91	7/21 10:00	53	1,488	N/A	55.0	1/21 24:00	59	842	N/A	95.0
		109A - SLQ 3	148	7/21 10:00	78	2,143	N/A	55.0	1/21 24:00	85	1,215	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	138	.04	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.3	4.0	3.2	0.6	N/A	114	14	80.2	71.92	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 24:00	4.3	0.8	N/A	120	14	62.1	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	114	3,028	N/A	55.0	1/21 24:00	120	1,690	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	113	3,005	N/A	55.0	1/21 24:00	119	1,666	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	120	.04	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.3	3.4	2.6	0.4	N/A	94	14	79.7	71.94	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 24:00	3.8	0.8	N/A	104	14	60.8	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	94	2,629	N/A	55.0	1/21 24:00	104	1,736	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	95	2,646	N/A	55.0	1/21 24:00	105	1,708	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	104	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.3	3.4	2.6	0.5	N/A	96	14	79.7	73.28	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 24:00	3.8	0.8	N/A	102	14	60.9	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 10:00	96	2,583	N/A	55.0	1/21 24:00	102	1,709	N/A	95.0
		105A - SLQ 1	162	8/21 10:00	97	2,621	N/A	55.0	1/21 24:00	104	1,684	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	102	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	DX	Peak		0.3	4.0	3.2	0.6	N/A	116	14	80.1	71.81	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	Water	Peak	1/21 24:00	4.4	0.8	N/A	123	14	62.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	116	3,108	N/A	55.0	1/21 24:00	123	1,744	N/A	95.0
		114A - SLQ 8	164	8/21 17:00	115	3,096	N/A	55.0	1/21 24:00	122	1,718	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	123	.04	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.4	5.3	4.0	0.6	N/A	148	21	79.6	71.55	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 24:00	6.0	1.2	N/A	165	21	61.2	95.0	0.24	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	148	4,164	N/A	55.0	1/21 24:00	165	2,390	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	95	2,674	N/A	55.0	1/21 24:00	106	1,471	N/A	95.0
		113A - BATHROOM 3	98	7/21 10:00	56	1,576	N/A	55.0	1/21 24:00	62	893	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	165	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.3	3.6	2.8	0.4	N/A	104	14	79.9	71.27	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 24:00	4.1	0.8	N/A	113	14	61.5	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	104	2,864	N/A	55.0	1/21 24:00	113	1,452	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	103	2,853	N/A	55.0	1/21 24:00	113	1,426	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	113	.04	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		1.5	17.7	14.0	2.1	N/A	507	66	80.1	71.55	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	19.6	3.8	N/A	543	66	61.6	95.0	0.80	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	507	13,724	N/A	55.0	1/21 24:00	543	6,782	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	202	5,753	N/A	55.0	1/21 24:00	227	2,929	N/A	95.0
		101A - BILLETING	184	8/21 17:00	153	4,210	N/A	55.0	1/21 24:00	166	1,995	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 18:00	21	604	N/A	55.0	1/21 24:00	24	360	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	59	1,552	N/A	55.0	1/21 24:00	61	813	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	63	1,661	N/A	55.0	1/21 24:00	66	867	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	543	.17	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.4	5.0	3.9	0.6	N/A	141	20	79.9	71.75	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 24:00	5.6	1.1	N/A	153	20	61.1	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	141	3,864	N/A	55.0	1/21 24:00	153	2,039	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	59	1,631	N/A	55.0	1/21 24:00	64	834	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	86	2,328	N/A	55.0	1/21 24:00	92	1,204	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.4	4.8	3.6	0.6	N/A	134	20	79.6	71.68	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 24:00	5.4	1.1	N/A	148	20	61.0	95.0	0.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	134	3,734	N/A	55.0	1/21 24:00	148	2,064	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	80	2,214	N/A	55.0	1/21 24:00	88	1,209	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	55	1,573	N/A	55.0	1/21 24:00	62	825	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	148	.05	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		1.5	18.1	14.5	2.3	N/A	523	67	80.2	71.55	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	20.0	3.8	N/A	553	67	61.6	95.0	0.81	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	523	13,991	N/A	55.0	1/21 24:00	553	6,849	N/A	95.0
		100B - CIRCULATION	310	7/21 16:00	225	6,138	N/A	55.0	1/21 24:00	243	3,026	N/A	95.0
		101B - BILLETING	183	7/21 09:00	135	4,011	N/A	55.0	1/21 24:00	159	1,964	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	20	570	N/A	55.0	1/21 24:00	23	360	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	61	1,560	N/A	55.0	1/21 24:00	62	805	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	67	1,734	N/A	55.0	1/21 24:00	69	881	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	553	.18	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.8	3.6	0.5	N/A	135	19	79.4	71.37	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.5	1.1	N/A	153	19	61.5	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	135	3,858	N/A	55.0	1/21 24:00	153	3,502	N/A	95.0
		116B - MECH STORAGE	113	6/21 18:00	73	2,064	N/A	55.0	1/21 24:00	82	1,852	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	64	1,830	N/A	55.0	1/21 24:00	72	1,623	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.5	5.7	4.5	0.7	N/A	163	21	79.8	70.86	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 24:00	6.4	1.2	N/A	180	21	62.0	95.0	0.26	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	163	4,552	N/A	55.0	1/21 24:00	180	2,385	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	61	1,697	N/A	55.0	1/21 24:00	67	863	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	103	2,887	N/A	55.0	1/21 24:00	114	1,495	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	180	.06	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.3	3.4	2.5	0.3	N/A	95	14	79.3	71.48	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 24:00	4.0	0.8	N/A	108	14	61.2	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 09:00	95	2,743	N/A	55.0	1/21 24:00	108	1,448	N/A	95.0
		114B - SLQ 8	164	7/21 09:00	96	2,764	N/A	55.0	1/21 24:00	109	1,421	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	108	.03	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.3	3.5	2.7	0.5	N/A	99	13	79.7	72.49	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 24:00	3.9	0.8	N/A	108	13	61.4	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	99	2,724	N/A	55.0	1/21 24:00	108	1,684	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	101	2,789	N/A	55.0	1/21 24:00	110	1,658	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	108	.03	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.4	5.4	4.1	0.6	N/A	151	21	79.6	71.06	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 24:00	6.1	1.2	N/A	169	21	61.6	95.0	0.25	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	151	4,272	N/A	55.0	1/21 24:00	169	2,222	N/A	95.0
		110B - SLQ 6	148	7/21 09:00	94	2,751	N/A	55.0	1/21 24:00	109	1,349	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	59	1,669	N/A	55.0	1/21 24:00	66	860	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	169	.05	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.5	6.0	4.8	0.8	N/A	173	21	80.0	71.80	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 24:00	6.6	1.2	N/A	184	21	62.1	95.0	0.27	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	8/21 17:00	173	4,660	N/A	55.0	1/21 24:00	184	2,290	N/A	95.0
		110A - SLQ 6	149	8/21 17:00	110	2,968	N/A	55.0	1/21 24:00	117	1,386	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	67	1,803	N/A	55.0	1/21 24:00	71	893	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	184	.06	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.89	55	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	70.98	82.0

System Component Selection Summary

Wall Assembly 2

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		0.2	2.7	2.2	0.3	N/A	73	9	80.8	71.34	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	8/21 15:00	73	2,174	73	55.0		0	0	73	95.0
	SS - 1		108	6/21 18:00	73	1,841	73	55.0	1/21 24:00	73	1,825	73	95.0
		118B - IT	108	6/21 18:00	72	1,827	72	55.0	1/21 24:00	72	1,812	72	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	73	.03	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.5	5.5	4.3	0.8	N/A	156	20	80.1	72.34	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 24:00	5.9	1.1	N/A	164	20	61.6	95.0	0.24	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	8/21 17:00	156	4,145	N/A	55.0	1/21 24:00	164	2,115	N/A	95.0
		102A - SLQ 4	146	8/21 17:00	91	2,390	N/A	55.0	1/21 24:00	94	1,239	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	64	1,710	N/A	55.0	1/21 24:00	68	846	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	164	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	4.1	3.2	0.5	N/A	118	13	80.0	71.38	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 24:00	4.5	0.8	N/A	126	13	62.4	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	118	3,189	N/A	55.0	1/21 24:00	126	1,713	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	117	3,156	N/A	55.0	1/21 24:00	125	1,687	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	126	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.4	4.6	3.5	0.6	N/A	130	20	79.7	72.30	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 24:00	5.3	1.2	N/A	142	20	60.5	95.0	0.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 10:00	130	3,590	N/A	55.0	1/21 24:00	142	2,061	N/A	95.0
		108A - BATHROOM 1	91	7/21 10:00	53	1,488	N/A	55.0	1/21 24:00	59	842	N/A	95.0
		109A - SLQ 3	148	7/21 10:00	78	2,143	N/A	55.0	1/21 24:00	85	1,215	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	142	.05	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.3	4.0	3.2	0.6	N/A	115	14	80.2	71.88	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 24:00	4.3	0.8	N/A	120	14	62.1	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	115	3,040	N/A	55.0	1/21 24:00	120	1,691	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	113	3,005	N/A	55.0	1/21 24:00	119	1,666	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	120	.04	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.5	6.1	4.8	0.8	N/A	176	21	80.0	71.69	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 24:00	6.7	1.2	N/A	187	21	62.2	95.0	0.27	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	8/21 17:00	176	4,736	N/A	55.0	1/21 24:00	187	2,290	N/A	95.0
		110A - SLQ 6	149	8/21 17:00	110	2,968	N/A	55.0	1/21 24:00	117	1,386	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	67	1,803	N/A	55.0	1/21 24:00	71	893	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	187	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.3	3.4	2.6	0.4	N/A	96	14	79.6	71.81	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 24:00	3.9	0.8	N/A	106	14	61.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	96	2,686	N/A	55.0	1/21 24:00	106	1,736	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	95	2,646	N/A	55.0	1/21 24:00	105	1,708	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	106	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.3	3.5	2.7	0.5	N/A	98	14	79.7	73.11	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 24:00	3.8	0.8	N/A	105	14	61.1	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 10:00	98	2,651	N/A	55.0	1/21 24:00	105	1,709	N/A	95.0
		105A - SLQ 1	162	8/21 10:00	97	2,621	N/A	55.0	1/21 24:00	104	1,684	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	105	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	DX	Peak		0.3	4.1	3.2	0.6	N/A	117	14	80.0	71.75	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	Water	Peak	1/21 24:00	4.4	0.8	N/A	124	14	62.1	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	117	3,137	N/A	55.0	1/21 24:00	124	1,744	N/A	95.0
		114A - SLQ 8	164	8/21 17:00	115	3,096	N/A	55.0	1/21 24:00	122	1,718	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	124	.04	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.5	5.4	4.1	0.6	N/A	152	21	79.6	71.40	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 24:00	6.1	1.2	N/A	169	21	61.4	95.0	0.25	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	152	4,266	N/A	55.0	1/21 24:00	169	2,390	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	95	2,674	N/A	55.0	1/21 24:00	106	1,471	N/A	95.0
		113A - BATHROOM 3	98	7/21 10:00	56	1,576	N/A	55.0	1/21 24:00	62	893	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	169	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.3	3.7	2.9	0.4	N/A	105	14	79.9	71.21	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 24:00	4.1	0.8	N/A	114	14	61.6	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	105	2,893	N/A	55.0	1/21 24:00	114	1,452	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	103	2,853	N/A	55.0	1/21 24:00	113	1,426	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	114	.04	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		1.5	17.8	14.0	2.1	N/A	509	66	80.1	71.52	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	19.7	3.8	N/A	545	66	61.6	95.0	0.80	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	509	13,778	N/A	55.0	1/21 24:00	545	6,782	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	202	5,753	N/A	55.0	1/21 24:00	227	2,929	N/A	95.0
		101A - BILLETING	184	8/21 17:00	153	4,210	N/A	55.0	1/21 24:00	166	1,995	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 18:00	21	604	N/A	55.0	1/21 24:00	24	360	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	59	1,552	N/A	55.0	1/21 24:00	61	813	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	63	1,661	N/A	55.0	1/21 24:00	66	867	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	545	.17	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.4	5.0	3.9	0.6	N/A	143	20	79.9	71.64	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 24:00	5.7	1.1	N/A	155	20	61.2	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	143	3,923	N/A	55.0	1/21 24:00	155	2,039	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	59	1,631	N/A	55.0	1/21 24:00	64	834	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	86	2,328	N/A	55.0	1/21 24:00	92	1,204	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	155	.05	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.4	4.9	3.7	0.6	N/A	136	20	79.6	71.50	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 24:00	5.6	1.1	N/A	151	20	61.1	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	136	3,828	N/A	55.0	1/21 24:00	151	2,064	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	80	2,214	N/A	55.0	1/21 24:00	88	1,209	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	55	1,573	N/A	55.0	1/21 24:00	62	825	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	151	.05	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		1.5	18.2	14.5	2.3	N/A	524	67	80.2	71.54	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	20.0	3.8	N/A	554	67	61.6	95.0	0.81	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	524	14,012	N/A	55.0	1/21 24:00	554	6,849	N/A	95.0
		100B - CIRCULATION	310	7/21 16:00	225	6,138	N/A	55.0	1/21 24:00	243	3,026	N/A	95.0
		101B - BILLETING	183	7/21 09:00	135	4,011	N/A	55.0	1/21 24:00	159	1,964	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	20	570	N/A	55.0	1/21 24:00	23	360	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	61	1,560	N/A	55.0	1/21 24:00	62	805	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	67	1,734	N/A	55.0	1/21 24:00	69	881	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	554	.18	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.9	3.8	0.6	N/A	138	19	79.7	71.39	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.6	1.1	N/A	153	19	61.5	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 18:00	138	3,875	N/A	55.0	1/21 24:00	153	3,502	N/A	95.0
		116B - MECH STORAGE	113	6/21 18:00	73	2,064	N/A	55.0	1/21 24:00	82	1,852	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	64	1,830	N/A	55.0	1/21 24:00	72	1,623	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.5	5.8	4.5	0.7	N/A	165	21	79.8	70.77	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 24:00	6.5	1.2	N/A	182	21	62.0	95.0	0.26	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	165	4,612	N/A	55.0	1/21 24:00	182	2,385	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	61	1,697	N/A	55.0	1/21 24:00	67	863	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	103	2,887	N/A	55.0	1/21 24:00	114	1,495	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	182	.06	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.3	3.5	2.6	0.3	N/A	97	14	79.3	71.36	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 24:00	4.0	0.8	N/A	111	14	61.4	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 09:00	97	2,796	N/A	55.0	1/21 24:00	111	1,448	N/A	95.0
		114B - SLQ 8	164	7/21 09:00	96	2,764	N/A	55.0	1/21 24:00	109	1,421	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	111	.04	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.3	3.6	2.8	0.5	N/A	102	13	79.7	72.24	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 24:00	4.0	0.8	N/A	111	13	61.6	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	102	2,820	N/A	55.0	1/21 24:00	111	1,684	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	101	2,789	N/A	55.0	1/21 24:00	110	1,658	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	111	.04	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.5	5.5	4.2	0.6	N/A	154	21	79.6	70.92	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 24:00	6.2	1.2	N/A	173	21	61.7	95.0	0.25	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	154	4,365	N/A	55.0	1/21 24:00	173	2,222	N/A	95.0
		110B - SLQ 6	148	7/21 09:00	94	2,751	N/A	55.0	1/21 24:00	109	1,349	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	59	1,669	N/A	55.0	1/21 24:00	66	860	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	173	.06	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.89	55	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	70.98	82.0

System Component Selection Summary

Wall Assembly 3

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		0.2	2.7	2.2	0.3	N/A	73	9	80.8	71.34	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	8/21 15:00	73	2,174	73	55.0		0	0	73	95.0
	SS - 1		108	6/21 18:00	73	1,841	73	55.0	1/21 24:00	73	1,825	73	95.0
		118B - IT	108	6/21 18:00	72	1,827	72	55.0	1/21 24:00	72	1,812	72	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	73	.03	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.5	5.5	4.3	0.8	N/A	156	20	80.1	72.34	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 24:00	5.9	1.1	N/A	164	20	61.6	95.0	0.24	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	8/21 17:00	156	4,145	N/A	55.0	1/21 24:00	164	2,115	N/A	95.0
		102A - SLQ 4	146	8/21 17:00	91	2,390	N/A	55.0	1/21 24:00	94	1,239	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	64	1,710	N/A	55.0	1/21 24:00	68	846	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	164	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	4.1	3.2	0.5	N/A	118	13	80.0	71.38	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 24:00	4.5	0.8	N/A	126	13	62.4	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	118	3,189	N/A	55.0	1/21 24:00	126	1,713	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	117	3,156	N/A	55.0	1/21 24:00	125	1,687	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	126	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.4	4.6	3.5	0.6	N/A	130	20	79.7	72.30	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 24:00	5.3	1.2	N/A	142	20	60.5	95.0	0.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 10:00	130	3,590	N/A	55.0	1/21 24:00	142	2,061	N/A	95.0
		108A - BATHROOM 1	91	7/21 10:00	53	1,488	N/A	55.0	1/21 24:00	59	842	N/A	95.0
		109A - SLQ 3	148	7/21 10:00	78	2,143	N/A	55.0	1/21 24:00	85	1,215	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	142	.05	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.3	4.0	3.2	0.6	N/A	115	14	80.2	71.88	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 24:00	4.3	0.8	N/A	120	14	62.1	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	115	3,040	N/A	55.0	1/21 24:00	120	1,691	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	113	3,005	N/A	55.0	1/21 24:00	119	1,666	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	120	.04	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.5	6.1	4.8	0.8	N/A	176	21	80.0	71.69	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 24:00	6.7	1.2	N/A	187	21	62.2	95.0	0.27	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	8/21 17:00	176	4,736	N/A	55.0	1/21 24:00	187	2,290	N/A	95.0
		110A - SLQ 6	149	8/21 17:00	110	2,968	N/A	55.0	1/21 24:00	117	1,386	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	67	1,803	N/A	55.0	1/21 24:00	71	893	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	187	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.3	3.4	2.6	0.4	N/A	96	14	79.6	71.81	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 24:00	3.9	0.8	N/A	106	14	61.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	96	2,686	N/A	55.0	1/21 24:00	106	1,736	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	95	2,646	N/A	55.0	1/21 24:00	105	1,708	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	106	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.3	3.5	2.7	0.5	N/A	98	14	79.7	73.11	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 24:00	3.8	0.8	N/A	105	14	61.1	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 10:00	98	2,651	N/A	55.0	1/21 24:00	105	1,709	N/A	95.0
		105A - SLQ 1	162	8/21 10:00	97	2,621	N/A	55.0	1/21 24:00	104	1,684	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	105	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	DX	Peak		0.3	4.1	3.2	0.6	N/A	117	14	80.0	71.75	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	Water	Peak	1/21 24:00	4.4	0.8	N/A	124	14	62.1	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	117	3,137	N/A	55.0	1/21 24:00	124	1,744	N/A	95.0
		114A - SLQ 8	164	8/21 17:00	115	3,096	N/A	55.0	1/21 24:00	122	1,718	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	124	.04	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.5	5.4	4.1	0.6	N/A	152	21	79.6	71.40	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 24:00	6.1	1.2	N/A	169	21	61.4	95.0	0.25	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	152	4,266	N/A	55.0	1/21 24:00	169	2,390	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	95	2,674	N/A	55.0	1/21 24:00	106	1,471	N/A	95.0
		113A - BATHROOM 3	98	7/21 10:00	56	1,576	N/A	55.0	1/21 24:00	62	893	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	169	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.3	3.7	2.9	0.4	N/A	105	14	79.9	71.21	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 24:00	4.1	0.8	N/A	114	14	61.6	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	105	2,893	N/A	55.0	1/21 24:00	114	1,452	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	103	2,853	N/A	55.0	1/21 24:00	113	1,426	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	114	.04	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		1.5	17.8	14.0	2.1	N/A	509	66	80.1	71.52	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	19.7	3.8	N/A	545	66	61.6	95.0	0.80	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	509	13,778	N/A	55.0	1/21 24:00	545	6,782	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	202	5,753	N/A	55.0	1/21 24:00	227	2,929	N/A	95.0
		101A - BILLETING	184	8/21 17:00	153	4,210	N/A	55.0	1/21 24:00	166	1,995	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 18:00	21	604	N/A	55.0	1/21 24:00	24	360	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	59	1,552	N/A	55.0	1/21 24:00	61	813	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	63	1,661	N/A	55.0	1/21 24:00	66	867	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	545	.17	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.4	5.0	3.9	0.6	N/A	143	20	79.9	71.64	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 24:00	5.7	1.1	N/A	155	20	61.2	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	143	3,923	N/A	55.0	1/21 24:00	155	2,039	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	59	1,631	N/A	55.0	1/21 24:00	64	834	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	86	2,328	N/A	55.0	1/21 24:00	92	1,204	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	155	.05	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.4	4.9	3.7	0.6	N/A	136	20	79.6	71.50	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 24:00	5.6	1.1	N/A	151	20	61.1	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	136	3,828	N/A	55.0	1/21 24:00	151	2,064	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	80	2,214	N/A	55.0	1/21 24:00	88	1,209	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	55	1,573	N/A	55.0	1/21 24:00	62	825	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	151	.05	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		1.5	18.2	14.5	2.3	N/A	524	67	80.2	71.54	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	20.0	3.8	N/A	554	67	61.6	95.0	0.81	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	524	14,012	N/A	55.0	1/21 24:00	554	6,849	N/A	95.0
		100B - CIRCULATION	310	7/21 16:00	225	6,138	N/A	55.0	1/21 24:00	243	3,026	N/A	95.0
		101B - BILLETING	183	7/21 09:00	135	4,011	N/A	55.0	1/21 24:00	159	1,964	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	20	570	N/A	55.0	1/21 24:00	23	360	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	61	1,560	N/A	55.0	1/21 24:00	62	805	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	67	1,734	N/A	55.0	1/21 24:00	69	881	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	554	.18	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.9	3.8	0.6	N/A	138	19	79.7	71.39	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.6	1.1	N/A	153	19	61.5	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 18:00	138	3,875	N/A	55.0	1/21 24:00	153	3,502	N/A	95.0
		116B - MECH STORAGE	113	6/21 18:00	73	2,064	N/A	55.0	1/21 24:00	82	1,852	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	64	1,830	N/A	55.0	1/21 24:00	72	1,623	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.5	5.8	4.5	0.7	N/A	165	21	79.8	70.77	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 24:00	6.5	1.2	N/A	182	21	62.0	95.0	0.26	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	165	4,612	N/A	55.0	1/21 24:00	182	2,385	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	61	1,697	N/A	55.0	1/21 24:00	67	863	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	103	2,887	N/A	55.0	1/21 24:00	114	1,495	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	182	.06	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.3	3.5	2.6	0.3	N/A	97	14	79.3	71.36	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 24:00	4.0	0.8	N/A	111	14	61.4	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 09:00	97	2,796	N/A	55.0	1/21 24:00	111	1,448	N/A	95.0
		114B - SLQ 8	164	7/21 09:00	96	2,764	N/A	55.0	1/21 24:00	109	1,421	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	111	.04	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.3	3.6	2.8	0.5	N/A	102	13	79.7	72.24	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 24:00	4.0	0.8	N/A	111	13	61.6	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	102	2,820	N/A	55.0	1/21 24:00	111	1,684	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	101	2,789	N/A	55.0	1/21 24:00	110	1,658	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	111	.04	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.5	5.5	4.2	0.6	N/A	154	21	79.6	70.92	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 24:00	6.2	1.2	N/A	173	21	61.7	95.0	0.25	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	154	4,365	N/A	55.0	1/21 24:00	173	2,222	N/A	95.0
		110B - SLQ 6	148	7/21 09:00	94	2,751	N/A	55.0	1/21 24:00	109	1,349	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	59	1,669	N/A	55.0	1/21 24:00	66	860	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	173	.06	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.89	55	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	70.98	82.0

System Component Selection Summary

Wall Assembly 1

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		0.2	2.7	2.2	0.3	N/A	73	9	80.8	71.34	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	8/21 15:00	73	2,174	73	55.0		0	0	73	95.0
	SS - 1		108	6/21 18:00	73	1,841	73	55.0	1/21 24:00	73	1,825	73	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	73	.03	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.5	5.5	4.3	0.8	N/A	156	20	80.1	72.34	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 24:00	5.9	1.1	N/A	164	20	61.6	95.0	0.24	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	8/21 17:00	156	4,145	N/A	55.0	1/21 24:00	164	2,115	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	164	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	4.1	3.2	0.5	N/A	118	13	80.0	71.38	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 24:00	4.5	0.8	N/A	126	13	62.4	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	118	3,189	N/A	55.0	1/21 24:00	126	1,713	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	126	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.4	4.6	3.5	0.6	N/A	130	20	79.7	72.30	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 24:00	5.3	1.2	N/A	142	20	60.5	95.0	0.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 10:00	130	3,590	N/A	55.0	1/21 24:00	142	2,061	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	142	.05	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.3	4.0	3.2	0.6	N/A	115	14	80.2	71.88	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 24:00	4.3	0.8	N/A	120	14	62.1	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	115	3,040	N/A	55.0	1/21 24:00	120	1,691	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	120	.04	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.5	6.1	4.8	0.8	N/A	176	21	80.0	71.69	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 24:00	6.7	1.2	N/A	187	21	62.2	95.0	0.27	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	8/21 17:00	176	4,736	N/A	55.0	1/21 24:00	187	2,290	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	187	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.3	3.4	2.6	0.4	N/A	96	14	79.6	71.81	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 24:00	3.9	0.8	N/A	106	14	61.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	96	2,686	N/A	55.0	1/21 24:00	106	1,736	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	106	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.3	3.5	2.7	0.5	N/A	98	14	79.7	73.11	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 24:00	3.8	0.8	N/A	105	14	61.1	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 10:00	98	2,651	N/A	55.0	1/21 24:00	105	1,709	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	105	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	DX	Peak		0.3	4.1	3.2	0.6	N/A	117	14	80.0	71.75	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	Water	Peak	1/21 24:00	4.4	0.8	N/A	124	14	62.1	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	117	3,137	N/A	55.0	1/21 24:00	124	1,744	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	124	.04	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.5	5.4	4.1	0.6	N/A	152	21	79.6	71.40	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 24:00	6.1	1.2	N/A	169	21	61.4	95.0	0.25	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	152	4,266	N/A	55.0	1/21 24:00	169	2,390	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	169	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.3	3.7	2.9	0.4	N/A	105	14	79.9	71.21	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 24:00	4.1	0.8	N/A	114	14	61.6	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	105	2,893	N/A	55.0	1/21 24:00	114	1,452	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	114	.04	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		1.5	17.8	14.0	2.1	N/A	509	66	80.1	71.52	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	19.7	3.8	N/A	545	66	61.6	95.0	0.80	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	509	13,778	N/A	55.0	1/21 24:00	545	6,782	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	545	.17	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.4	5.0	3.9	0.6	N/A	143	20	79.9	71.64	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 24:00	5.7	1.1	N/A	155	20	61.2	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	143	3,923	N/A	55.0	1/21 24:00	155	2,039	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	155	.05	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		1.5	18.2	14.5	2.3	N/A	524	67	80.2	71.54	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	20.0	3.8	N/A	554	67	61.6	95.0	0.81	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	524	14,012	N/A	55.0	1/21 24:00	554	6,849	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	554	.18	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.5	5.8	4.5	0.7	N/A	165	21	79.8	70.77	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 24:00	6.5	1.2	N/A	182	21	62.0	95.0	0.26	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	165	4,612	N/A	55.0	1/21 24:00	182	2,385	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	182	.06	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.3	3.5	2.6	0.3	N/A	97	14	79.3	71.36	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 24:00	4.0	0.8	N/A	111	14	61.4	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 09:00	97	2,796	N/A	55.0	1/21 24:00	111	1,448	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	111	.04	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.3	3.6	2.8	0.5	N/A	102	13	79.7	72.24	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 24:00	4.0	0.8	N/A	111	13	61.6	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	102	2,820	N/A	55.0	1/21 24:00	111	1,684	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	111	.04	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.5	5.5	4.2	0.6	N/A	154	21	79.6	70.92	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 24:00	6.2	1.2	N/A	173	21	61.7	95.0	0.25	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	154	4,365	N/A	55.0	1/21 24:00	173	2,222	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	173	.06	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.4	4.9	3.7	0.6	N/A	136	20	79.6	71.50	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 24:00	5.6	1.1	N/A	151	20	61.1	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	136	3,828	N/A	55.0	1/21 24:00	151	2,064	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	151	.05	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.9	3.8	0.6	N/A	138	19	79.7	71.39	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.6	1.1	N/A	153	19	61.5	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 18:00	138	3,875	N/A	55.0	1/21 24:00	153	3,502	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.89	55	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	70.98	82.0

NIST BLCC 5.3-23: Lowest LCC

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Windows.xml
Date of Study:	Wed Mar 20 17:39:46 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Roof LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Lowest LCC

Comparative Present-Value Costs of Alternatives
(Shown in Ascending Order of Initial Cost, * = Lowest LCC)

Alternative	Initial Cost (PV)	Life Cycle Cost (PV)	
Alt. Window Assembly No. 1	$24,388	$221,493	*
Baseline Window Assembly	$24,527	$223,765	
Alt. Window Assembly No. 2	$28,753	$225,029	
Alt. Window Assembly No. 3	$33,174	$230,966	

NIST BLCC 5.3-23: Input Data Listing

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Windows.xml
Date of Study:	Wed Mar 20 17:37:51 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Roof LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Window Assembly

Energy: Electricity

Annual Consumption:	81,180.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%

April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	556.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%
April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%
April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Baseline Window Assembly

Initial Investment

Initial Cost (base-year $):	$24,527
Annual Rate of Increase:	2%
Expected Asset Life:	40 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Alternative: Alt. Window Assembly No. 1

Energy: Electricity

Annual Consumption:	81,957.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%

April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	−0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	−0.15%
April 1, 2045	1 year 0 months	−0.8%
April 1, 2046	1 year 0 months	−0.95%
April 1, 2047	1 year 0 months	−0.63%
April 1, 2048	1 year 0 months	−0.52%
April 1, 2049	1 year 0 months	−1.16%
April 1, 2050	1 year 0 months	−0.98%
April 1, 2051	1 year 0 months	−0.88%
April 1, 2052	1 year 0 months	−0.85%
April 1, 2053	Remaining	−0.88%

Energy: Natural Gas

Annual Consumption:	429.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%
April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%
April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Alt Window Assembly No. 1

Initial Investment

Initial Cost (base-year $): $24,388

Annual Rate of Increase: 2%

Expected Asset Life: 40 years 0 months

Residual Value Factor: 3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Alternative: Alt. Window Assembly No. 2

Energy: Electricity

Annual Consumption: 81,873.0 kWh

Price per Unit: $0.10980

Demand Charge: $0

Utility Rebate: $0

Location: South Dakota

Rate Schedule: Commercial

State: Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%

April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	411.0 kWh
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%

April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%
April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%
April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Alt. Roof Assembly No. 2

Initial Investment

Initial Cost (base-year $):	$28,753
Annual Rate of Increase:	2%
Expected Asset Life:	40 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Alternative: Alt. Window Assembly No. 3

Energy: Electricity

Annual Consumption:	80,666.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Alabama
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%

April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	503.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Residential
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-4.56%
April 1, 2024	1 year 0 months	-3.19%
April 1, 2025	1 year 0 months	-2.51%
April 1, 2026	1 year 0 months	-1.25%
April 1, 2027	1 year 0 months	-0.15%
April 1, 2028	1 year 0 months	0.6%
April 1, 2029	1 year 0 months	0.89%

April 1, 2030	1 year 0 months	1.17%
April 1, 2031	1 year 0 months	1.23%
April 1, 2032	1 year 0 months	1.43%
April 1, 2033	1 year 0 months	1.27%
April 1, 2034	1 year 0 months	1.12%
April 1, 2035	1 year 0 months	0.69%
April 1, 2036	1 year 0 months	0.75%
April 1, 2037	1 year 0 months	0.95%
April 1, 2038	1 year 0 months	0.4%
April 1, 2039	1 year 0 months	0.8%
April 1, 2040	1 year 0 months	0.86%
April 1, 2041	1 year 0 months	0.46%
April 1, 2042	1 year 0 months	0.2%
April 1, 2043	1 year 0 months	0.13%
April 1, 2044	1 year 0 months	0.26%
April 1, 2045	1 year 0 months	0.33%
April 1, 2046	1 year 0 months	0.13%
April 1, 2047	1 year 0 months	0.19%
April 1, 2048	1 year 0 months	0.13%
April 1, 2049	1 year 0 months	0.26%
April 1, 2050	1 year 0 months	0.26%
April 1, 2051	1 year 0 months	0.19%
April 1, 2052	1 year 0 months	0.19%
April 1, 2053	Remaining	0.21%

Component: Alt. Roof Assembly No. 3

Initial Investment

Initial Cost (base-year $):	$33,174
Annual Rate of Increase:	0%
Expected Asset Life:	40 years 0 months
Residual Value Factor:	0%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

NIST BLCC 5.3-23: Detailed LCC Analysis

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Windows.xml
Date of Study:	Wed Mar 20 17:38:25 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Roof LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Window Assembly

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $24,527

Component: Baseline Window Assembly

Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$24,527
Total (for Component)		$24,527

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
81,180.0 kWh	$0.10980	$8,914	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average	Average	Average	Average

Annual Usage	Price/Unit	Annual Cost	Annual Demand	Annual Rebate
556.0 Therm	$1.38800	$772	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$24,527	$1,061
Energy Costs		
Energy Consumption Costs	$199,736	$8,641
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$199,736	$8,641
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Baseline Window Assembly		
Routine Annually Recurring Costs	$0	$0
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$0	$0
Major Repair and Replacements		
Component: Baseline Window Assembly	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Baseline Window Assembly	-$498	-$22
Subtotal (for Residual Value):	-$498	-$22
Residual Value of Major Repair and Replacements		
Component: Baseline Window Assembly	$0	$0

Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$223,765	$9,681

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	31,945.77 kg	1,277,743.33 kg
SO2	11.69 kg	467.60 kg
NOx	13.44 kg	537.74 kg
Natural Gas:		
CO2	2,936.79 kg	117,463.47 kg
SO2	23.70 kg	947.97 kg
NOx	3.46 kg	138.44 kg
Total:		
CO2	34,882.56 kg	1,395,206.79 kg
SO2	35.39 kg	1,415.56 kg
NOx	16.91 kg	676.18 kg

Alternative: Alt. Window Assembly No. 1

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $24,388

Component: Alt Window Assembly No. 1

Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$24,388
Total (for Component)		$24,388

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
81,957.0 kWh	$0.10980	$8,999	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
429.0 Therm	$1.38800	$595	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$24,388	$1,055
Energy Costs		
Energy Consumption Costs	$197,600	$8,549
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$197,600	$8,549
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt Window Assembly No. 1		
Routine Annually Recurring Costs	$0	$0
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$0	$0
Major Repair and Replacements		
Component: Alt Window Assembly No. 1	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt Window Assembly No. 1	-$495	-$21
Subtotal (for Residual Value):	-$495	-$21
Residual Value of Major Repair and Replacements		
Component: Alt Window Assembly No. 1	$0	$0

Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$221,493	$9,583

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	32,251.53 kg	1,289,973.02 kg
SO2	11.80 kg	472.07 kg
NOx	13.57 kg	542.88 kg
Natural Gas:		
CO2	2,265.97 kg	90,632.78 kg
SO2	18.29 kg	731.44 kg
NOx	2.67 kg	106.82 kg
Total:		
CO2	34,517.51 kg	1,380,605.80 kg
SO2	30.09 kg	1,203.51 kg
NOx	16.24 kg	649.70 kg

Alternative: Alt. Window Assembly No. 2

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $28,753

Component: Alt. Roof Assembly No. 2
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$28,753
Total (for Component)		$28,753

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
81,873.0 kWh	$0.10980	$8,990	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
411.0 kWh	$1.38800	$570	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$28,753	$1,244
Energy Costs		
Energy Consumption Costs	$196,860	$8,517
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$196,860	$8,517
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt. Roof Assembly No. 2		
Routine Annually Recurring Costs	$0	$0
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$0	$0
Major Repair and Replacements		
Component: Alt. Roof Assembly No. 2	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt. Roof Assembly No. 2	−$584	−$25
Subtotal (for Residual Value):	−$584	−$25
Residual Value of Major Repair and Replacements		
Component: Alt. Roof Assembly No. 2	$0	$0

Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$225,029	$9,736

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	11,250.22 kg	449,977.94 kg
SO2	2.65 kg	106.11 kg
NOx	4.72 kg	188.64 kg
Natural Gas:		
CO2	74.07 kg	2,962.75 kg
SO2	0.60 kg	23.91 kg
NOx	0.09 kg	3.49 kg
Total:		
CO2	11,324.29 kg	452,940.69 kg
SO2	3.25 kg	130.02 kg
NOx	4.80 kg	192.13 kg

Alternative: Alt. Window Assembly No. 3

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $33,174

Component: Alt. Roof Assembly No. 3
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$33,174
Total (for Component)		$33,174

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
80,666.0 kWh	$0.10980	$8,857	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
503.0 Therm	$1.38800	$698	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$33,174	$1,435
Energy Costs		
Energy Consumption Costs	$197,792	$8,557
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$197,792	$8,557
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt. Roof Assembly No. 3		
Routine Annually Recurring Costs	$0	$0
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$0	$0
Major Repair and Replacements		
Component: Alt. Roof Assembly No. 3	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt. Roof Assembly No. 3	$0	$0
Subtotal (for Residual Value):	$0	$0
Residual Value of Major Repair and Replacements		

Component: Alt. Roof Assembly No. 3	$0	$0
Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$230,966	$9,992

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	27,473.20 kg	1,098,852.90 kg
SO2	4.94 kg	197.47 kg
NOx	9.00 kg	360.09 kg
Natural Gas:		
CO2	2,656.84 kg	106,266.41 kg
SO2	21.44 kg	857.60 kg
NOx	3.13 kg	125.24 kg
Total:		
CO2	30,130.05 kg	1,205,119.31 kg
SO2	26.38 kg	1,055.07 kg
NOx	12.13 kg	485.34 kg

NIST BLCC 5.3-23: Summary LCC

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Windows.xml
Date of Study:	Wed Mar 20 17:39:02 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Roof LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Window Assembly

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$24,527	$1,061
Energy Consumption Costs	$199,736	$8,641
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$0	$0
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	−$498	−$22
Total Life-Cycle Cost	$223,765	$9,681

Alternative: Alt. Window Assembly No. 1

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$24,388	$1,055

Energy Consumption Costs	$197,600	$8,549
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$0	$0
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	-$495	-$21
Total Life-Cycle Cost	$221,493	$9,583

Alternative: Alt. Window Assembly No. 2

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$28,753	$1,244
Energy Consumption Costs	$196,860	$8,517
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$0	$0
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	-$584	-$25
Total Life-Cycle Cost	$225,029	$9,736

Alternative: Alt. Window Assembly No. 3

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$33,174	$1,435
Energy Consumption Costs	$197,792	$8,557
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$0	$0

Routine Annually Recurring OM&R Costs	$0	$0
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	$0	$0
Total Life-Cycle Cost	$230,966	$9,992

DEARNG Mechanical LCCA-Window



Building Owner:
Location:

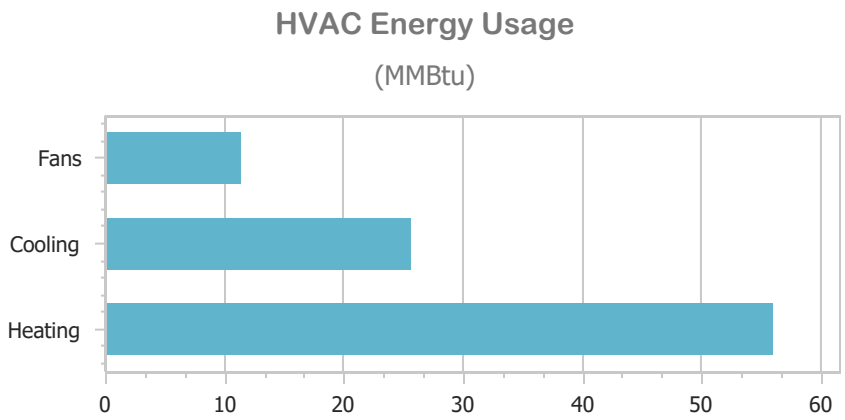
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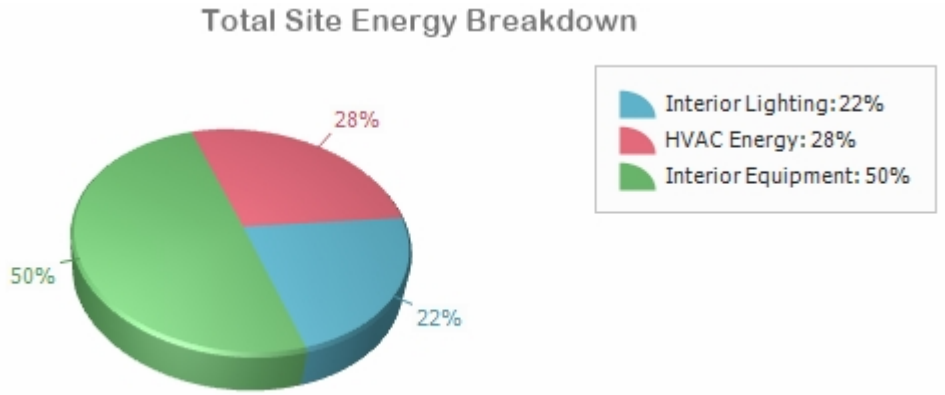
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Simulated by: TRACE 3D Plus 6.00.106

Site Consumption Summary

Energy Consumption



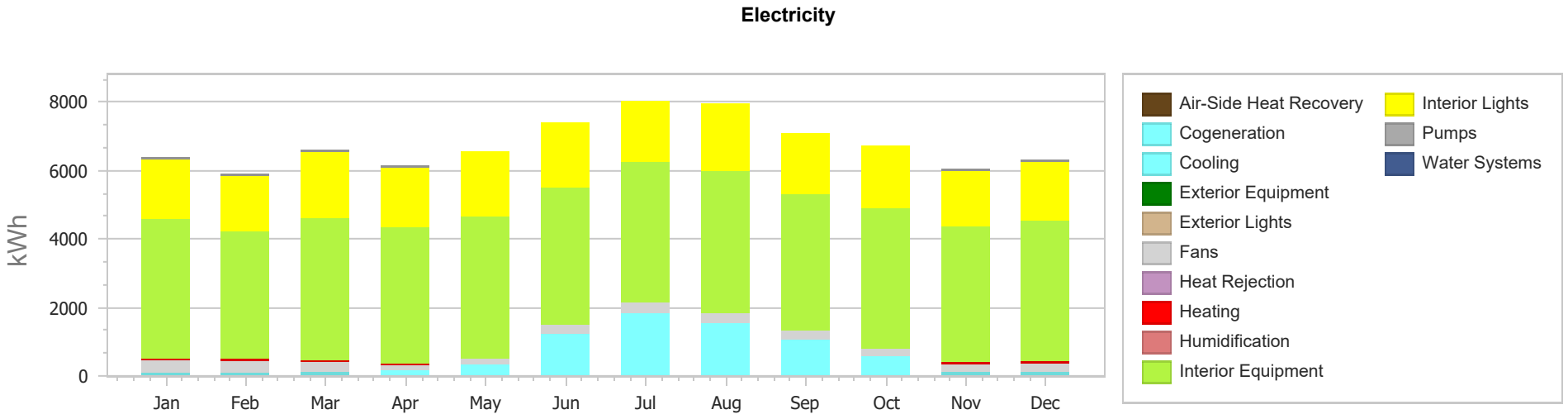


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	208	56	0	0	0	56,272	5.23	62,479	5.8	0
Cooling	7,378	0	0	0	0	25,174	2.34	79,726	7.41	0
Fans	3,236	0	0	0	0	11,042	1.03	34,970	3.25	0
Pumps	56	0	0	0	0	190	0.02	600	0.06	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	10,878	56	0	0	0	92,678	8.61	177,776	16.51	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	81,181	56	0	0	0	332,561	30.89	937,486	87.08	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

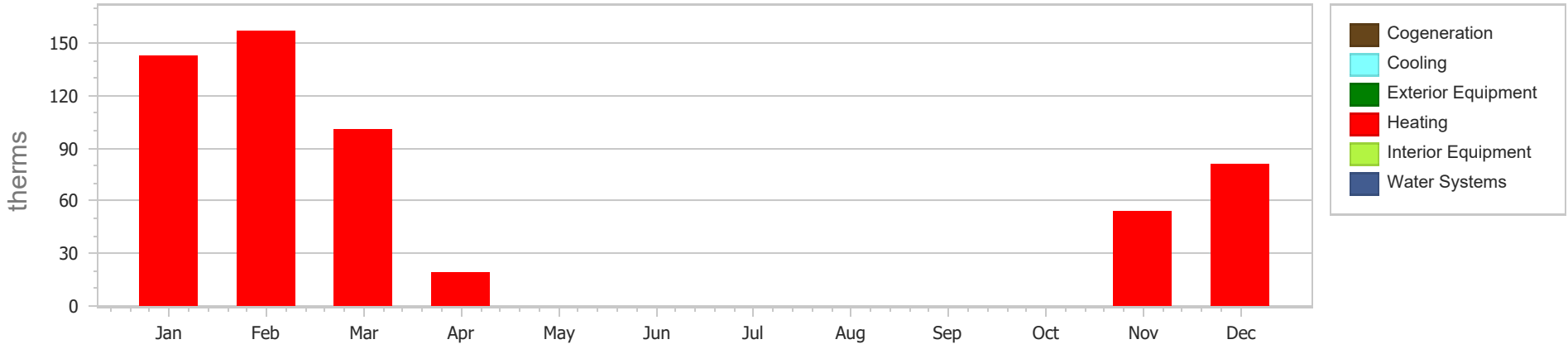
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	105	91	114	177	341	1,237	1,838	1,554	1,080	592	138	112	7,378
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	356	354	314	193	174	254	316	292	245	201	247	287	3,235
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	54	59	38	7	0	0	0	0	0	0	20	31	210
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	12	13	10	4	0	0	0	0	0	0	7	9	55
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	6,387	5,900	6,599	6,137	6,551	7,397	8,039	7,969	7,081	6,741	6,055	6,323	81,180

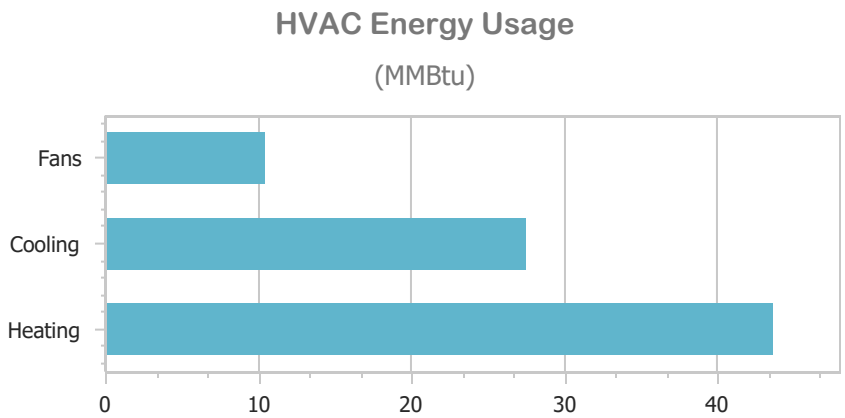
Natural Gas

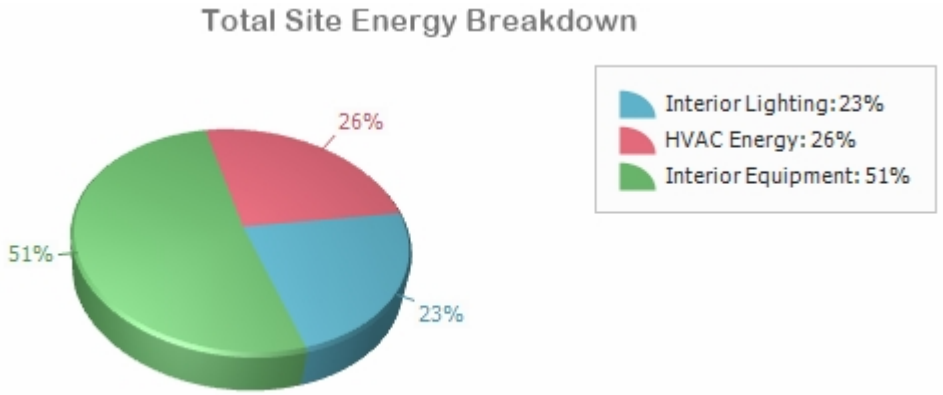


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	143	157	101	19	0	0	0	0	0	0	54	81	556
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	143	157	101	19	0	0	0	0	0	0	54	81	556

Site Consumption Summary

Energy Consumption



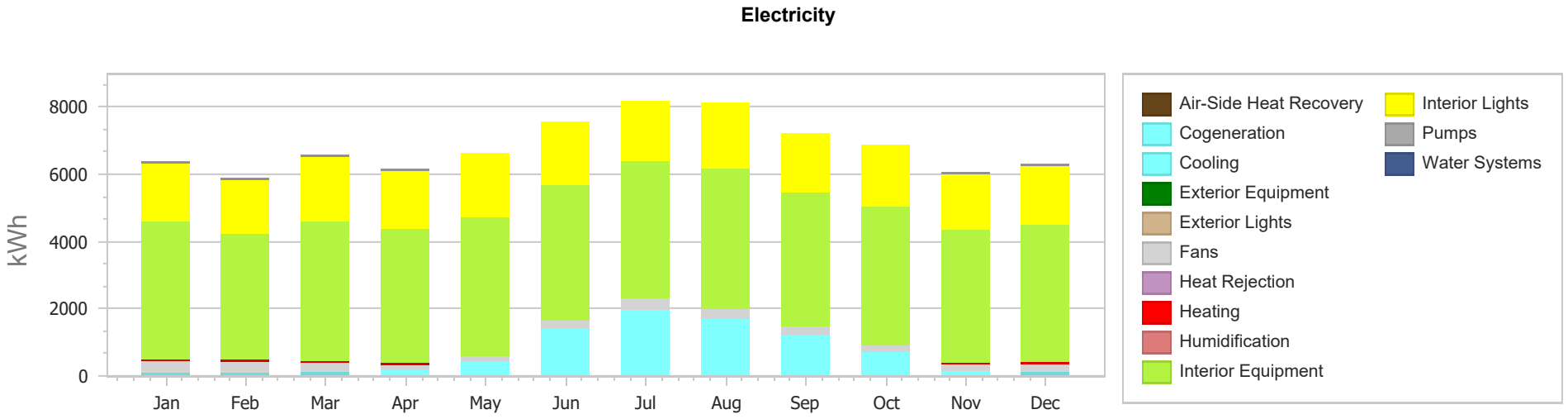


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	247	43	0	0	0	43,694	4.06	49,122	4.56	0
Cooling	8,181	0	0	0	0	27,913	2.59	88,401	8.21	0
Fans	3,181	0	0	0	0	10,853	1.01	34,370	3.19	0
Pumps	44	0	0	0	0	152	0.01	480	0.04	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	11,653	43	0	0	0	82,612	7.67	172,373	16.01	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	81,956	43	0	0	0	322,495	29.96	932,083	86.58	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

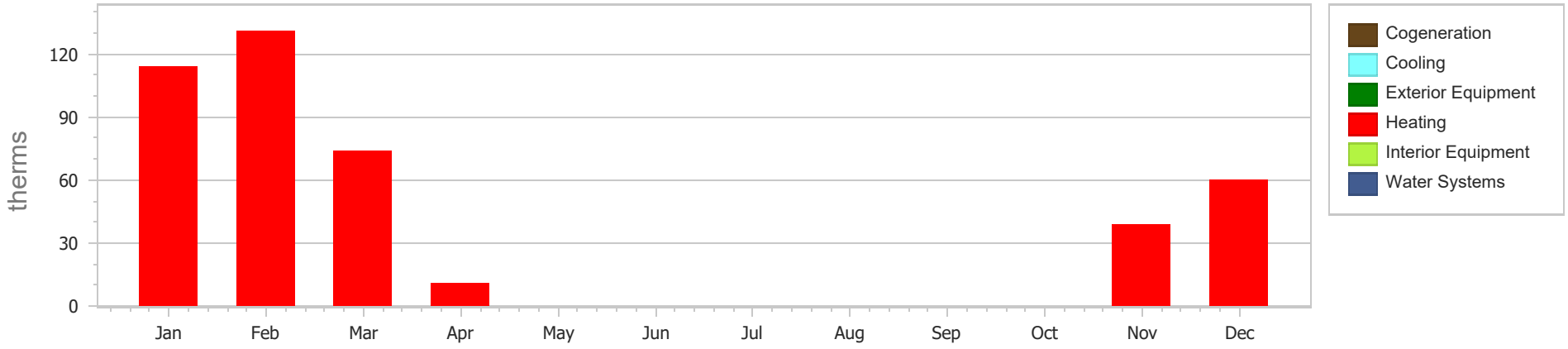
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	106	91	116	201	419	1,390	1,969	1,697	1,218	710	150	114	8,181
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	327	333	285	182	183	270	330	308	260	214	228	262	3,181
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	66	75	43	6	0	0	0	0	0	0	22	35	247
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	11	12	8	2	0	0	0	0	0	0	5	7	46
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	6,370	5,896	6,574	6,147	6,637	7,566	8,184	8,128	7,234	6,872	6,048	6,302	81,957

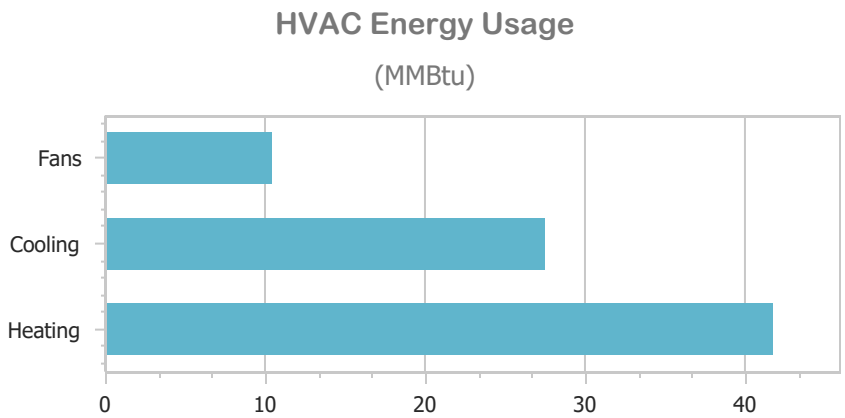
Natural Gas

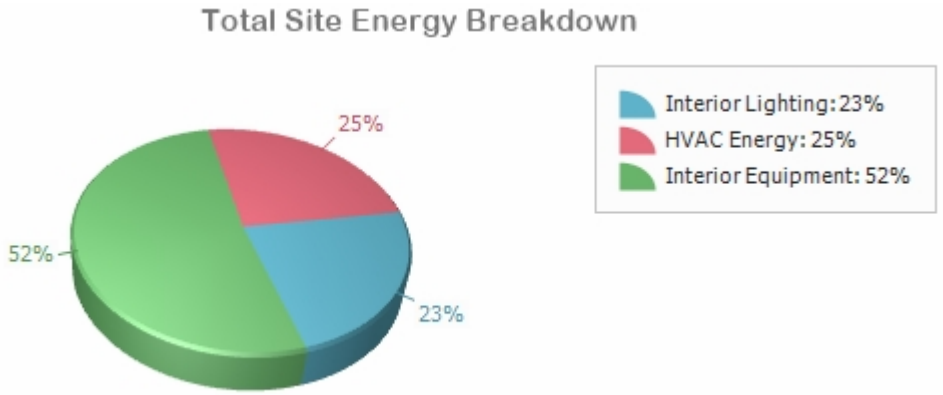


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	114	131	74	11	0	0	0	0	0	0	39	60	429
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	114	131	74	11	0	0	0	0	0	0	39	60	429

Site Consumption Summary

Energy Consumption



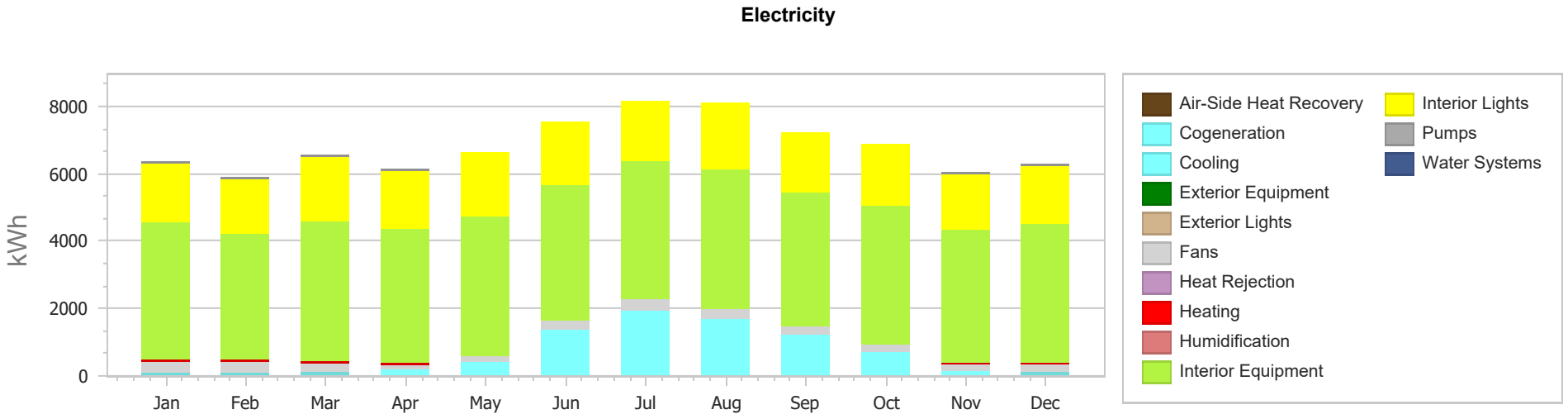


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	242	41	0	0	0	41,960	3.9	47,202	4.38	0
Cooling	8,139	0	0	0	0	27,771	2.58	87,951	8.17	0
Fans	3,147	0	0	0	0	10,739	1	34,010	3.16	0
Pumps	44	0	0	0	0	152	0.01	480	0.04	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	11,572	41	0	0	0	80,621	7.49	169,643	15.76	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	81,875	41	0	0	0	320,504	29.77	929,353	86.33	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

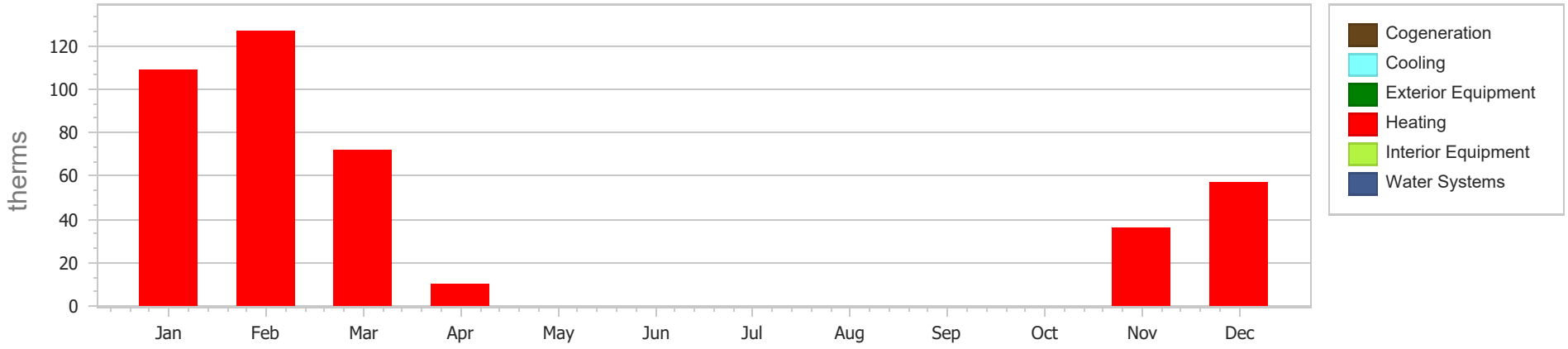
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Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	106	91	116	201	418	1,375	1,951	1,686	1,216	714	152	114	8,138
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	319	327	280	181	183	268	328	307	260	215	224	256	3,148
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	64	74	42	6	0	0	0	0	0	0	21	33	240
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	11	12	8	2	0	0	0	0	0	0	5	7	44
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	6,359	5,889	6,568	6,146	6,636	7,549	8,163	8,116	7,231	6,876	6,044	6,295	81,873

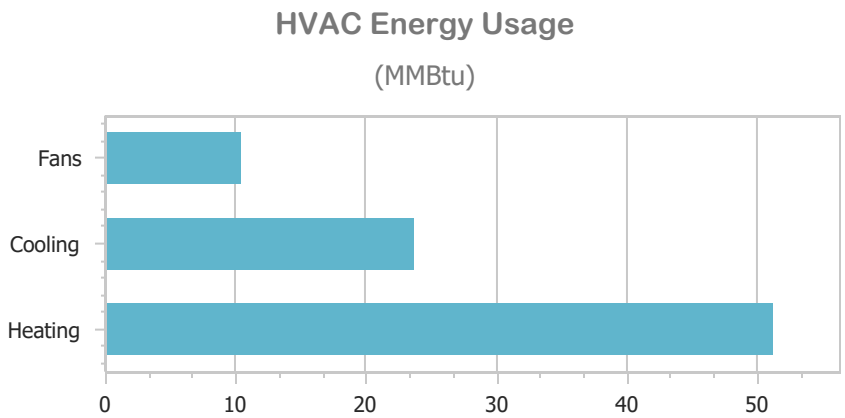
Natural Gas

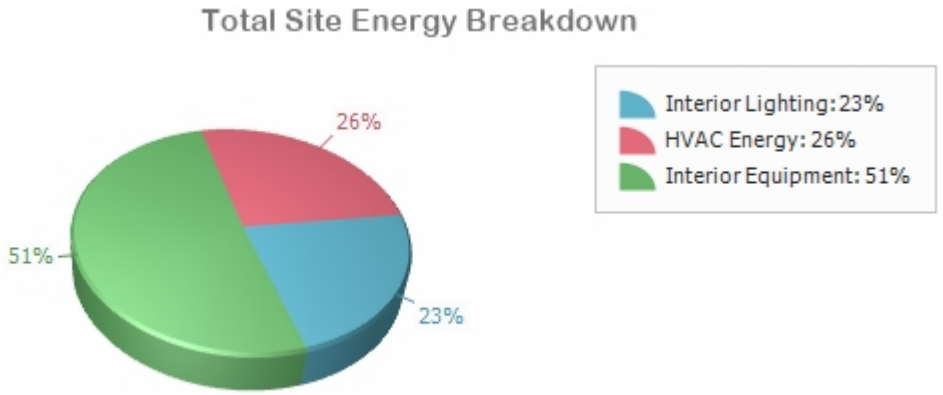


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	109	127	72	10	0	0	0	0	0	0	36	57	411
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	109	127	72	10	0	0	0	0	0	0	36	57	411

Site Consumption Summary

Energy Consumption



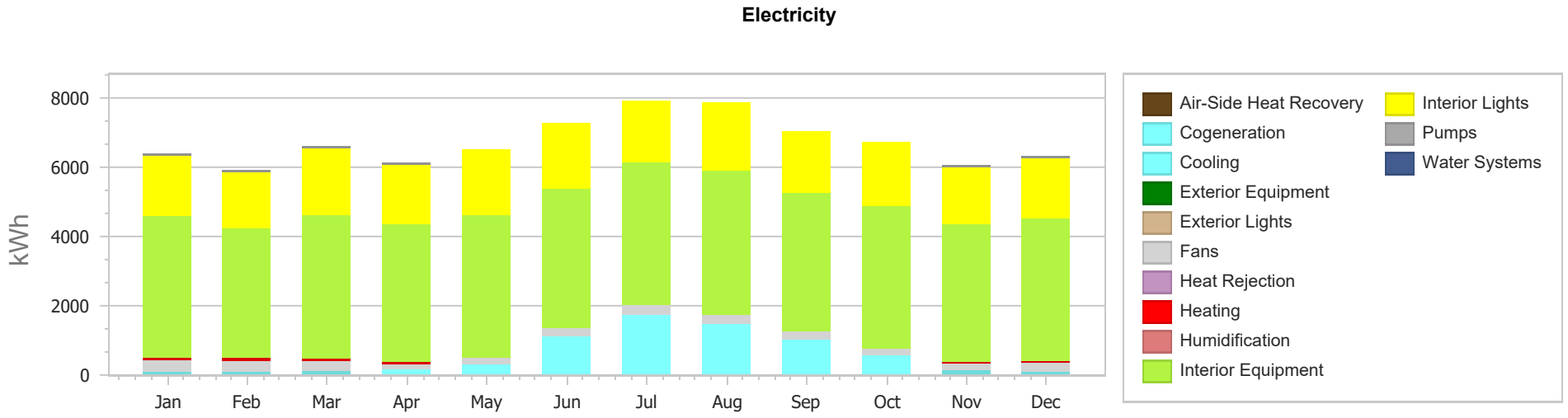


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	289	50	0	0	0	51,286	4.76	57,648	5.35	0
Cooling	6,961	0	0	0	0	23,752	2.21	75,224	6.99	0
Fans	3,067	0	0	0	0	10,464	0.97	33,139	3.08	0
Pumps	44	0	0	0	0	152	0.01	480	0.04	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	10,361	50	0	0	0	85,654	7.96	166,491	15.47	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	80,664	50	0	0	0	325,537	30.24	926,200	86.04	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

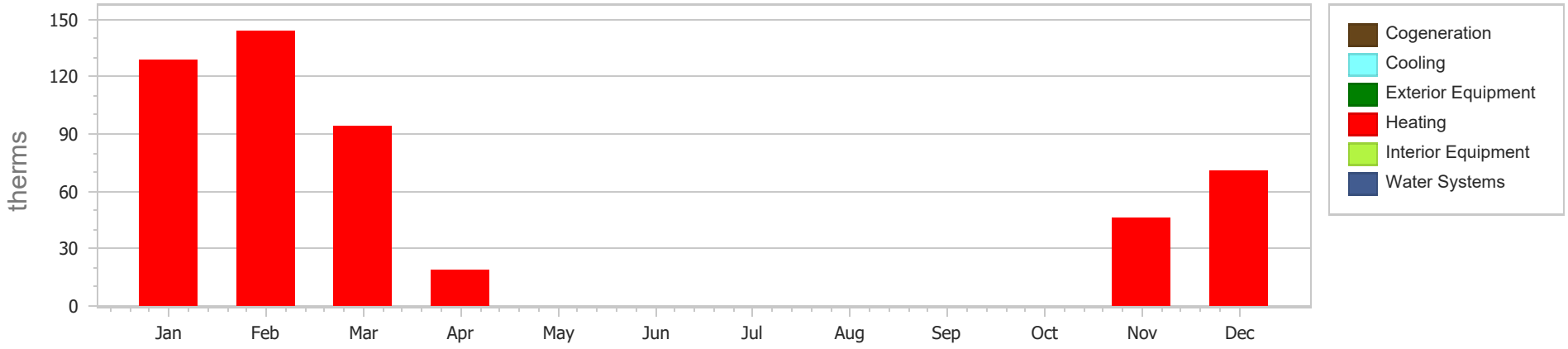
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Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	105	91	114	170	315	1,123	1,725	1,463	1,029	575	140	112	6,962
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	327	327	295	190	171	241	303	282	239	199	229	264	3,067
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	74	83	54	11	0	0	0	0	0	0	26	41	290
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	11	11	8	3	0	0	0	0	0	0	5	7	45
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	6,376	5,897	6,595	6,129	6,522	7,270	7,913	7,867	7,024	6,722	6,043	6,309	80,666

Natural Gas



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	129	144	94	19	0	0	0	0	0	0	46	71	503
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	129	144	94	19	0	0	0	0	0	0	46	71	503

System Component Selection Summary

Baseline Window Assembly

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.8	12.7	0.0	N/A	468	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 15:00	468	12,685	468	55.0		0	0	468	95.0
	SS - 1		108	7/21 15:00	468	11,851	468	55.0	1/21 24:00	468	2,456	468	95.0
		118B - IT	108	7/21 15:00	468	11,840	468	55.0	1/21 24:00	468	2,436	468	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	468	.21	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.4	4.2	3.2	0.0	N/A	123	0	79.0	66.92	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	4.4	0.0	N/A	150	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	7/21 18:00	123	3,798	N/A	55.0	1/21 19:00	150	3,499	N/A	95.0
		102A - SLQ 4	146	7/21 18:00	68	2,052	N/A	55.0	1/21 19:00	81	1,703	N/A	95.0
		104A - BATHROOM 2	89	7/21 18:00	51	1,624	N/A	55.0	1/21 24:00	64	1,134	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _EXHAUST FAN	Zone	10.00	N/A	0.00	178	.00	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	150	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 7	DX	Peak		0.3	3.2	2.5	0.0	N/A	95	0	79.0	67.48	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 7	Water	Peak	1/21 19:00	3.3	0.0	N/A	113	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	95	2,862	N/A	55.0	1/21 19:00	113	3,114	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	93	2,797	N/A	55.0	1/21 19:00	111	2,463	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	113	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.3	3.4	2.6	0.0	N/A	97	0	79.0	67.63	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	3.4	0.0	N/A	117	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 11:00	97	2,961	N/A	55.0	1/21 19:00	117	3,364	N/A	95.0
		108A - BATHROOM 1	91	7/21 11:00	40	1,282	N/A	55.0	1/21 24:00	51	1,126	N/A	95.0
		109A - SLQ 3	148	7/21 11:00	55	1,610	N/A	55.0	1/21 19:00	64	1,644	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _EXHAUST FAN	Zone	10.00	N/A	0.00	182	.00	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	117	.04	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 9	DX	Peak		0.3	3.1	2.4	0.0	N/A	90	0	79.0	68.01	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 9	Water	Peak	1/21 19:00	3.1	0.0	N/A	106	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	90	2,667	N/A	55.0	1/21 19:00	106	3,086	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	88	2,601	N/A	55.0	1/21 19:00	103	2,439	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	106	.03	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.4	5.1	3.9	0.0	N/A	147	0	79.0	66.64	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 19:00	5.3	0.0	N/A	181	0	68.0	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	7/21 18:00	147	4,572	N/A	55.0	1/21 19:00	181	3,983	N/A	95.0
		110A - SLQ 6	149	7/21 18:00	88	2,693	N/A	55.0	1/21 19:00	106	1,803	N/A	95.0
		112A - BATHROOM 4	96	7/21 18:00	54	1,723	N/A	55.0	1/21 24:00	68	1,196	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _EXHAUST FAN	Zone	10.00	N/A	0.00	192	.00	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	181	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 2	DX	Peak		0.3	3.1	2.4	0.0	N/A	89	0	79.0	69.28	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 2	Water	Peak	1/21 19:00	3.1	0.0	N/A	105	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	89	1,903	N/A	55.0	1/21 19:00	105	3,077	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	73	1,842	N/A	55.0	1/21 19:00	85	2,498	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	105	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.3	3.1	2.4	0.0	N/A	89	0	79.0	68.87	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	3.0	0.0	N/A	104	0	68.0	95.0	0.12	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 11:00	89	1,970	N/A	55.0	1/21 19:00	104	3,045	N/A	95.0
		105A - SLQ 1	162	8/21 11:00	72	1,910	N/A	55.0	1/21 19:00	84	2,466	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	104	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	DX	Peak		0.3	3.1	2.4	0.0	N/A	90	0	79.0	67.52	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	Water	Peak	1/21 19:00	3.2	0.0	N/A	108	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	7/21 18:00	90	2,620	N/A	55.0	1/21 19:00	108	3,158	N/A	95.0
		114A - SLQ 8	164	7/21 18:00	84	2,552	N/A	55.0	1/21 19:00	101	2,506	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	108	.03	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.3	3.9	3.0	0.0	N/A	113	0	79.0	67.45	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 19:00	4.0	0.0	N/A	138	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	113	3,496	N/A	55.0	1/21 19:00	138	3,987	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	68	2,038	N/A	55.0	1/21 19:00	81	1,918	N/A	95.0
		113A - BATHROOM 3	98	7/21 11:00	43	1,364	N/A	55.0	1/21 24:00	54	1,195	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _EXHAUST FAN	Zone	10.00	N/A	0.00	197	.00	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	138	.04	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.2	2.7	2.1	0.0	N/A	78	0	79.0	68.05	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	2.7	0.0	N/A	93	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	78	2,347	N/A	55.0	1/21 19:00	93	2,449	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	76	2,281	N/A	55.0	1/21 19:00	90	1,804	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	93	.03	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		2.5	30.1	23.3	3.2	N/A	837	119	80.3	79.08	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	29.8	6.8	N/A	788	119	60.1	95.0	1.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	837	19,913	N/A	55.0	1/21 24:00	788	9,526	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	175	5,190	N/A	55.0	1/21 24:00	205	3,433	N/A	95.0
		101A - BILLETING	184	8/21 17:00	529	11,376	N/A	55.0	1/21 24:00	451	2,473	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 19:00	21	653	N/A	55.0	1/21 24:00	26	430	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	45	1,228	N/A	55.0	1/21 20:00	49	945	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	48	1,325	N/A	55.0	1/21 20:00	52	1,003	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	788	.25	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.3	3.9	3.0	0.0	N/A	113	0	79.0	67.30	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	4.0	0.0	N/A	137	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	113	3,469	N/A	55.0	1/21 19:00	137	3,417	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	47	1,508	N/A	55.0	1/21 20:00	60	1,117	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	63	1,876	N/A	55.0	1/21 19:00	74	1,634	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _EXHAUST FAN	Zone	10.00	N/A	0.00	180	.00	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	137	.04	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.3	3.8	2.8	0.0	N/A	108	0	79.0	67.28	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	3.9	0.0	N/A	132	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	108	3,351	N/A	55.0	1/21 19:00	132	3,369	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	60	1,800	N/A	55.0	1/21 19:00	71	1,668	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	45	1,445	N/A	55.0	1/21 20:00	57	1,109	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _EXHAUST FAN	Zone	10.00	N/A	0.00	177	.00	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	132	.04	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		2.5	30.4	23.9	3.4	N/A	851	119	80.5	78.92	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	30.0	6.8	N/A	793	119	60.1	95.0	1.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	851	20,054	N/A	55.0	1/21 24:00	793	9,779	N/A	95.0
		100B - CIRCULATION	310	8/21 16:00	203	5,683	N/A	55.0	1/21 24:00	225	3,599	N/A	95.0
		101B - BILLETING	183	7/21 10:00	478	10,902	N/A	55.0	1/21 24:00	432	2,433	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	21	626	N/A	55.0	1/21 24:00	25	432	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	46	1,237	N/A	55.0	1/21 20:00	49	935	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	52	1,381	N/A	55.0	1/21 19:00	55	1,001	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	793	.25	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.5	3.4	0.4	N/A	127	13	79.3	68.33	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.2	0.8	N/A	153	13	63.4	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	127	3,663	N/A	55.0	1/21 24:00	153	4,465	N/A	95.0
		116B - MECH STORAGE	113	6/21 19:00	70	2,025	N/A	55.0	1/21 24:00	85	2,491	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	56	1,646	N/A	55.0	1/21 24:00	67	1,951	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.4	4.5	3.5	0.0	N/A	132	0	79.0	66.89	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	4.7	0.0	N/A	161	0	68.0	95.0	0.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	132	4,082	N/A	55.0	1/21 19:00	161	4,125	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	49	1,572	N/A	55.0	1/21 20:00	62	1,152	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	79	2,380	N/A	55.0	1/21 19:00	94	1,995	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _EXHAUST FAN	Zone	10.00	N/A	0.00	189	.00	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	161	.05	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.3	3.0	2.3	0.0	N/A	86	0	79.0	68.52	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	3.0	0.0	N/A	103	0	68.0	95.0	0.12	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	86	2,163	N/A	55.0	1/21 19:00	103	3,016	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	70	2,106	N/A	55.0	1/21 19:00	83	2,433	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	103	.03	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.4	4.5	3.4	0.0	N/A	130	0	79.0	66.92	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	4.7	0.0	N/A	161	0	68.0	95.0	0.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	130	4,077	N/A	55.0	1/21 19:00	161	3,787	N/A	95.0
		110B - SLQ 6	148	7/21 10:00	79	2,432	N/A	55.0	1/21 19:00	96	1,760	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	48	1,544	N/A	55.0	1/21 20:00	61	1,146	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _EXHAUST FAN	Zone	10.00	N/A	0.00	190	.00	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	161	.05	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.2	2.6	1.9	0.0	N/A	73	0	79.0	68.07	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	2.6	0.0	N/A	88	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 10:00	73	2,233	N/A	55.0	1/21 19:00	88	2,382	N/A	95.0
		114B - SLQ 8	164	7/21 10:00	71	2,176	N/A	55.0	1/21 19:00	86	1,800	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	88	.03	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	4.42	84	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	108.66	82.0

System Component Selection Summary

Alt 1 Window Assembly

System Name: CV PTAC - 18

System Type: Constant Volume (CV)
Number of Zones 1
Number of Rooms 5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		2.4	28.3	22.3	3.4	N/A	792	119	80.6	78.87	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	28.3	6.8	N/A	737	119	59.5	95.0	1.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	792	18,628	N/A	55.0	1/21 24:00	737	7,695	N/A	95.0
		100B - CIRCULATION	310	8/21 16:00	243	6,968	N/A	55.0	1/21 24:00	275	4,552	N/A	95.0
		101B - BILLETING	183	7/21 10:00	493	11,343	N/A	55.0	1/21 24:00	450	2,738	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	22	646	N/A	55.0	1/21 24:00	26	444	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	49	1,323	N/A	55.0	1/21 20:00	52	977	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	55	1,490	N/A	55.0	1/21 19:00	59	1,057	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	737	.24	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.5	3.4	0.4	N/A	126	13	79.3	68.33	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.2	0.8	N/A	152	13	63.4	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	126	3,691	N/A	55.0	1/21 24:00	152	4,446	N/A	95.0
		116B - MECH STORAGE	113	6/21 19:00	71	2,045	N/A	55.0	1/21 24:00	86	2,506	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	56	1,662	N/A	55.0	1/21 24:00	67	1,965	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	152	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.4	5.3	4.1	0.0	N/A	155	0	79.0	66.51	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	5.6	0.0	N/A	191	0	68.0	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	155	4,823	N/A	55.0	1/21 19:00	191	2,863	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	63	2,024	N/A	55.0	1/21 20:00	80	1,483	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	104	3,213	N/A	55.0	1/21 19:00	127	2,635	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _EXHAUST FAN	Zone	10.00	N/A	0.00	189	.00	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	191	.06	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.3	3.1	2.3	0.0	N/A	88	0	79.0	67.39	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	3.1	0.0	N/A	107	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 10:00	88	2,715	N/A	55.0	1/21 19:00	107	1,635	N/A	95.0
		114B - SLQ 8	164	7/21 10:00	96	2,978	N/A	55.0	1/21 19:00	118	2,377	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	107	.03	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.2	3.0	2.3	0.0	N/A	86	0	79.0	67.74	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	3.0	0.0	N/A	104	0	68.0	95.0	0.12	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	86	2,634	N/A	55.0	1/21 19:00	104	2,263	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	94	2,907	N/A	55.0	1/21 19:00	115	3,011	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	104	.03	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.4	5.1	3.9	0.0	N/A	146	0	79.0	66.48	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	5.4	0.0	N/A	183	0	68.0	95.0	0.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	146	4,631	N/A	55.0	1/21 19:00	183	2,618	N/A	95.0
		110B - SLQ 6	148	7/21 10:00	104	3,254	N/A	55.0	1/21 19:00	129	2,336	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	61	1,989	N/A	55.0	1/21 20:00	79	1,445	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _EXHAUST FAN	Zone	10.00	N/A	0.00	190	.00	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	183	.06	N/A	100.00

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design						Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.8	12.7	0.0	N/A	469	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 15:00	469	12,698	469	55.0		0	0	469	95.0
	SS - 1		108	7/21 15:00	469	11,863	469	55.0	1/21 24:00	469	2,447	469	95.0
		118B - IT	108	7/21 15:00	469	11,856	469	55.0	1/21 24:00	469	2,449	469	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	469	.21	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.4	4.8	3.7	0.0	N/A	139	0	79.0	66.61	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	5.0	0.0	N/A	171	0	68.0	95.0	0.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	7/21 18:00	139	4,321	N/A	55.0	1/21 19:00	171	2,650	N/A	95.0
		102A - SLQ 4	146	7/21 18:00	82	2,492	N/A	55.0	1/21 19:00	98	2,032	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	66	2,098	N/A	55.0	1/21 24:00	83	1,461	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _EXHAUST FAN	Zone	10.00	N/A	0.00	178	.00	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	171	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	3.8	2.9	0.0	N/A	111	0	79.0	67.03	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 19:00	3.9	0.0	N/A	133	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	111	3,369	N/A	55.0	1/21 19:00	133	2,279	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	122	3,716	N/A	55.0	1/21 19:00	147	3,109	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	133	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.3	3.8	2.9	0.0	N/A	108	0	79.0	67.56	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	3.9	0.0	N/A	132	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 10:00	108	3,345	N/A	55.0	1/21 19:00	132	2,573	N/A	95.0
		108A - BATHROOM 1	91	7/21 10:00	51	1,655	N/A	55.0	1/21 24:00	65	1,417	N/A	95.0
		109A - SLQ 3	148	7/21 10:00	65	1,951	N/A	55.0	1/21 19:00	77	1,942	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _EXHAUST FAN	Zone	10.00	N/A	0.00	182	.00	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	132	.04	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.3	3.5	2.7	0.0	N/A	104	0	79.0	67.58	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 19:00	3.6	0.0	N/A	123	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	104	3,100	N/A	55.0	1/21 19:00	123	2,257	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	115	3,444	N/A	55.0	1/21 19:00	136	3,081	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	123	.04	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.5	5.6	4.4	0.0	N/A	166	0	79.0	66.56	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 19:00	5.9	0.0	N/A	201	0	68.0	95.0	0.24	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	8/21 17:00	166	5,097	N/A	55.0	1/21 19:00	201	2,685	N/A	95.0
		110A - SLQ 6	149	8/21 17:00	119	3,621	N/A	55.0	1/21 19:00	143	2,446	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	70	2,204	N/A	55.0	1/21 24:00	87	1,530	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _EXHAUST FAN	Zone	10.00	N/A	0.00	192	.00	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	201	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.2	2.7	2.0	0.0	N/A	76	0	79.0	68.43	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 19:00	2.7	0.0	N/A	91	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	76	2,310	N/A	55.0	1/21 19:00	91	2,332	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	87	2,543	N/A	55.0	1/21 19:00	105	3,072	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	91	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.2	2.7	2.0	0.0	N/A	77	0	79.0	68.98	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	2.7	0.0	N/A	91	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 10:00	77	2,308	N/A	55.0	1/21 19:00	91	2,298	N/A	95.0
		105A - SLQ 1	162	8/21 10:00	87	2,560	N/A	55.0	1/21 19:00	104	3,040	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	91	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	DX	Peak		0.3	3.5	2.7	0.0	N/A	103	0	79.0	67.33	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	Water	Peak	1/21 19:00	3.6	0.0	N/A	123	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	103	3,118	N/A	55.0	1/21 19:00	123	2,318	N/A	95.0
		114A - SLQ 8	164	8/21 17:00	114	3,461	N/A	55.0	1/21 19:00	137	3,152	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	123	.04	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.4	4.6	3.5	0.0	N/A	133	0	79.0	66.98	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 19:00	4.8	0.0	N/A	164	0	68.0	95.0	0.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	133	4,152	N/A	55.0	1/21 19:00	164	2,849	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	90	2,763	N/A	55.0	1/21 19:00	109	2,490	N/A	95.0
		113A - BATHROOM 3	98	7/21 10:00	54	1,742	N/A	55.0	1/21 24:00	69	1,490	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _EXHAUST FAN	Zone	10.00	N/A	0.00	197	.00	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	164	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.3	3.2	2.4	0.0	N/A	92	0	79.0	67.45	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	3.3	0.0	N/A	112	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	92	2,822	N/A	55.0	1/21 19:00	112	1,622	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	101	3,114	N/A	55.0	1/21 19:00	123	2,444	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	112	.04	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		2.5	29.5	22.8	3.2	N/A	819	119	80.3	78.94	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	29.4	6.8	N/A	772	119	59.9	95.0	1.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	819	19,516	N/A	55.0	1/21 24:00	772	7,628	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	208	6,304	N/A	55.0	1/21 24:00	249	4,286	N/A	95.0
		101A - BILLETING	184	8/21 17:00	542	11,770	N/A	55.0	1/21 24:00	467	2,746	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 19:00	22	674	N/A	55.0	1/21 24:00	27	443	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	47	1,306	N/A	55.0	1/21 20:00	52	987	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	52	1,424	N/A	55.0	1/21 20:00	56	1,056	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	772	.25	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.4	4.4	3.4	0.0	N/A	129	0	79.0	66.95	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	4.6	0.0	N/A	157	0	68.0	95.0	0.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	129	3,970	N/A	55.0	1/21 19:00	157	2,536	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	61	1,946	N/A	55.0	1/21 20:00	77	1,443	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	77	2,334	N/A	55.0	1/21 19:00	92	1,969	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _EXHAUST FAN	Zone	10.00	N/A	0.00	180	.00	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	157	.05	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.4	4.3	3.3	0.0	N/A	123	0	79.0	66.87	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	4.5	0.0	N/A	153	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	123	3,868	N/A	55.0	1/21 19:00	153	2,605	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	73	2,222	N/A	55.0	1/21 19:00	88	1,963	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	58	1,874	N/A	55.0	1/21 20:00	74	1,402	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _EXHAUST FAN	Zone	10.00	N/A	0.00	177	.00	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.90	55	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	71.22	82.0

System Component Selection Summary

Alt 2 Window Assembly

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.8	12.7	0.0	N/A	469	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 15:00	469	12,696	469	55.0		0	0	469	95.0
	SS - 1		108	7/21 15:00	469	11,860	469	55.0	1/21 24:00	469	2,445	469	95.0
		118B - IT	108	7/21 15:00	468	11,851	468	55.0	1/21 24:00	468	2,449	468	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	469	.21	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.4	4.7	3.6	0.0	N/A	136	0	79.0	66.67	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	4.9	0.0	N/A	166	0	68.0	95.0	0.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	7/21 18:00	136	4,212	N/A	55.0	1/21 19:00	166	2,599	N/A	95.0
		102A - SLQ 4	146	7/21 18:00	79	2,402	N/A	55.0	1/21 19:00	95	2,047	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	64	2,004	N/A	55.0	1/21 24:00	79	1,476	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _EXHAUST FAN	Zone	10.00	N/A	0.00	178	.00	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	166	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	3.7	2.8	0.0	N/A	107	0	79.0	67.12	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 19:00	3.8	0.0	N/A	129	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	107	3,261	N/A	55.0	1/21 19:00	129	2,231	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	116	3,544	N/A	55.0	1/21 19:00	140	3,139	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	129	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.3	3.7	2.8	0.0	N/A	106	0	79.0	67.64	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	3.8	0.0	N/A	129	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 10:00	106	3,255	N/A	55.0	1/21 19:00	129	2,525	N/A	95.0
		108A - BATHROOM 1	91	7/21 10:00	49	1,580	N/A	55.0	1/21 24:00	62	1,430	N/A	95.0
		109A - SLQ 3	148	7/21 11:00	63	1,877	N/A	55.0	1/21 19:00	74	1,956	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _EXHAUST FAN	Zone	10.00	N/A	0.00	182	.00	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	129	.04	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.3	3.4	2.7	0.0	N/A	101	0	79.0	67.67	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 19:00	3.5	0.0	N/A	119	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	101	3,004	N/A	55.0	1/21 19:00	119	2,209	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	110	3,298	N/A	55.0	1/21 19:00	130	3,111	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	119	.04	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.5	5.4	4.2	0.0	N/A	158	0	79.0	66.36	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 19:00	5.7	0.0	N/A	195	0	68.0	95.0	0.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	7/21 18:00	158	4,931	N/A	55.0	1/21 19:00	195	2,611	N/A	95.0
		110A - SLQ 6	149	8/21 17:00	113	3,445	N/A	55.0	1/21 19:00	136	2,476	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	67	2,106	N/A	55.0	1/21 24:00	83	1,545	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _EXHAUST FAN	Zone	10.00	N/A	0.00	192	.00	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	195	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.2	2.6	1.9	0.0	N/A	74	0	79.0	68.56	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 19:00	2.6	0.0	N/A	88	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	74	2,229	N/A	55.0	1/21 19:00	88	2,286	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	88	2,410	N/A	55.0	1/21 19:00	106	3,100	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	88	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.2	2.6	2.0	0.0	N/A	75	0	79.0	69.12	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	2.6	0.0	N/A	88	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 10:00	75	2,225	N/A	55.0	1/21 19:00	88	2,252	N/A	95.0
		105A - SLQ 1	162	8/21 10:00	88	2,427	N/A	55.0	1/21 19:00	105	3,068	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	88	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	DX	Peak		0.3	3.4	2.6	0.0	N/A	98	0	79.0	67.11	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	Water	Peak	1/21 19:00	3.5	0.0	N/A	119	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	7/21 18:00	98	3,012	N/A	55.0	1/21 19:00	119	2,269	N/A	95.0
		114A - SLQ 8	164	8/21 17:00	109	3,291	N/A	55.0	1/21 19:00	130	3,183	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	119	.04	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.4	4.5	3.4	0.0	N/A	129	0	79.0	67.06	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 19:00	4.6	0.0	N/A	159	0	68.0	95.0	0.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	129	4,020	N/A	55.0	1/21 19:00	159	2,779	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	85	2,621	N/A	55.0	1/21 19:00	104	2,518	N/A	95.0
		113A - BATHROOM 3	98	7/21 10:00	52	1,664	N/A	55.0	1/21 24:00	66	1,504	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _EXHAUST FAN	Zone	10.00	N/A	0.00	197	.00	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	159	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.3	3.1	2.4	0.0	N/A	89	0	79.0	67.56	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	3.1	0.0	N/A	108	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	89	2,722	N/A	55.0	1/21 19:00	108	1,574	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	96	2,953	N/A	55.0	1/21 19:00	117	2,474	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	108	.03	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		2.5	29.6	22.9	3.2	N/A	822	119	80.3	78.97	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	29.4	6.8	N/A	775	119	59.9	95.0	1.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	822	19,593	N/A	55.0	1/21 24:00	775	7,524	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	202	6,082	N/A	55.0	1/21 24:00	240	4,328	N/A	95.0
		101A - BILLETING	184	8/21 17:00	540	11,693	N/A	55.0	1/21 24:00	464	2,758	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 19:00	22	667	N/A	55.0	1/21 24:00	26	443	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	47	1,282	N/A	55.0	1/21 20:00	51	987	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	51	1,394	N/A	55.0	1/21 20:00	55	1,056	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	775	.25	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.4	4.3	3.3	0.0	N/A	125	0	79.0	67.02	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	4.5	0.0	N/A	153	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	125	3,863	N/A	55.0	1/21 19:00	153	2,487	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	58	1,858	N/A	55.0	1/21 20:00	73	1,458	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	74	2,240	N/A	55.0	1/21 19:00	89	1,984	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _EXHAUST FAN	Zone	10.00	N/A	0.00	180	.00	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.3	4.2	3.2	0.0	N/A	120	0	79.0	66.94	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	4.4	0.0	N/A	149	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	120	3,766	N/A	55.0	1/21 19:00	149	2,556	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	70	2,135	N/A	55.0	1/21 19:00	84	1,976	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	55	1,785	N/A	55.0	1/21 20:00	71	1,415	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _EXHAUST FAN	Zone	10.00	N/A	0.00	177	.00	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	149	.05	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		2.4	29.4	23.1	3.4	N/A	822	119	80.5	78.78	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	29.2	6.8	N/A	767	119	59.8	95.0	1.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	822	19,395	N/A	55.0	1/21 24:00	767	7,584	N/A	95.0
		100B - CIRCULATION	310	8/21 16:00	236	6,740	N/A	55.0	1/21 24:00	266	4,598	N/A	95.0
		101B - BILLETING	183	7/21 10:00	489	11,245	N/A	55.0	1/21 24:00	446	2,752	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	21	639	N/A	55.0	1/21 24:00	25	444	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	48	1,297	N/A	55.0	1/21 20:00	51	978	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	54	1,456	N/A	55.0	1/21 19:00	58	1,057	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	767	.25	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.5	3.4	0.4	N/A	126	13	79.3	68.34	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.2	0.8	N/A	152	13	63.4	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	126	3,686	N/A	55.0	1/21 24:00	152	4,441	N/A	95.0
		116B - MECH STORAGE	113	6/21 19:00	71	2,038	N/A	55.0	1/21 24:00	86	2,506	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	56	1,657	N/A	55.0	1/21 24:00	67	1,965	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	152	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.4	5.2	4.0	0.0	N/A	150	0	79.0	66.59	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	5.4	0.0	N/A	184	0	68.0	95.0	0.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	150	4,666	N/A	55.0	1/21 19:00	184	2,791	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	60	1,932	N/A	55.0	1/21 20:00	76	1,498	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	99	3,051	N/A	55.0	1/21 19:00	121	2,665	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _EXHAUST FAN	Zone	10.00	N/A	0.00	189	.00	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	184	.06	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.2	3.0	2.2	0.0	N/A	85	0	79.0	67.50	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	3.0	0.0	N/A	104	0	68.0	95.0	0.12	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 10:00	85	2,621	N/A	55.0	1/21 19:00	104	1,588	N/A	95.0
		114B - SLQ 8	164	7/21 10:00	91	2,817	N/A	55.0	1/21 19:00	111	2,405	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	104	.03	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.2	2.9	2.2	0.0	N/A	83	0	79.0	67.87	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	2.9	0.0	N/A	100	0	68.0	95.0	0.12	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	83	2,541	N/A	55.0	1/21 19:00	100	2,216	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	89	2,751	N/A	55.0	1/21 19:00	109	3,039	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	100	.03	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.4	4.9	3.7	0.0	N/A	142	0	79.0	66.55	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	5.2	0.0	N/A	177	0	68.0	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	142	4,481	N/A	55.0	1/21 19:00	177	2,546	N/A	95.0
		110B - SLQ 6	148	7/21 10:00	99	3,086	N/A	55.0	1/21 19:00	122	2,363	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	58	1,895	N/A	55.0	1/21 20:00	75	1,459	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _EXHAUST FAN	Zone	10.00	N/A	0.00	190	.00	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	177	.06	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.85	54	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	70.16	82.0

System Component Selection Summary

Alt 3 Window Assembly

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.8	12.7	0.0	N/A	468	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 15:00	468	12,670	468	55.0		0	0	468	95.0
	SS - 1		108	7/21 15:00	468	11,837	468	55.0	1/21 24:00	468	2,447	468	95.0
		118B - IT	108	7/21 15:00	468	11,836	468	55.0	1/21 24:00	468	2,449	468	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	468	.21	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.3	3.5	2.7	0.0	N/A	102	0	79.0	67.50	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	3.6	0.0	N/A	123	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	7/21 18:00	102	3,122	N/A	55.0	1/21 19:00	123	2,647	N/A	95.0
		102A - SLQ 4	146	7/21 18:00	69	2,089	N/A	55.0	1/21 19:00	83	2,035	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	53	1,674	N/A	55.0	1/21 24:00	66	1,464	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _EXHAUST FAN	Zone	10.00	N/A	0.00	178	.00	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	123	.04	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.2	2.5	2.0	0.0	N/A	74	0	79.0	68.35	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 19:00	2.5	0.0	N/A	87	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	74	2,205	N/A	55.0	1/21 19:00	87	2,276	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	97	2,924	N/A	55.0	1/21 19:00	116	3,114	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	87	.03	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.2	2.9	2.2	0.0	N/A	83	0	79.0	68.31	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	2.9	0.0	N/A	99	0	68.0	95.0	0.12	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 11:00	83	2,504	N/A	55.0	1/21 19:00	99	2,570	N/A	95.0
		108A - BATHROOM 1	91	7/21 11:00	42	1,321	N/A	55.0	1/21 24:00	52	1,419	N/A	95.0
		109A - SLQ 3	148	7/21 11:00	57	1,646	N/A	55.0	1/21 19:00	66	1,945	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _EXHAUST FAN	Zone	10.00	N/A	0.00	182	.00	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	99	.03	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.2	2.4	1.9	0.0	N/A	72	0	79.0	68.83	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 19:00	2.4	0.0	N/A	83	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	72	2,091	N/A	55.0	1/21 19:00	83	2,254	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	93	2,767	N/A	55.0	1/21 19:00	109	3,086	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	83	.03	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.3	3.7	2.9	0.0	N/A	109	0	79.0	67.34	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 19:00	3.8	0.0	N/A	131	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	7/21 18:00	109	3,326	N/A	55.0	1/21 19:00	131	2,681	N/A	95.0
		110A - SLQ 6	149	8/21 17:00	93	2,811	N/A	55.0	1/21 19:00	111	2,451	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	56	1,761	N/A	55.0	1/21 24:00	70	1,532	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _EXHAUST FAN	Zone	10.00	N/A	0.00	192	.00	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	131	.04	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.2	2.4	1.9	0.0	N/A	70	0	79.0	69.70	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 19:00	2.3	0.0	N/A	80	0	68.0	95.0	0.09	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 16:00	70	1,506	N/A	55.0	1/21 19:00	80	2,329	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	89	1,935	N/A	55.0	1/21 19:00	105	3,077	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	80	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.2	2.3	1.8	0.0	N/A	69	0	79.0	69.22	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	2.3	0.0	N/A	78	0	68.0	95.0	0.09	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 15:00	69	1,803	N/A	55.0	1/21 19:00	78	2,296	N/A	95.0
		105A - SLQ 1	162	8/21 11:00	89	2,000	N/A	55.0	1/21 19:00	104	3,045	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	78	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	DX	Peak		0.2	2.3	1.8	0.0	N/A	67	0	79.0	68.53	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	Water	Peak	1/21 19:00	2.3	0.0	N/A	79	0	68.0	95.0	0.09	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	7/21 18:00	67	1,990	N/A	55.0	1/21 19:00	79	2,315	N/A	95.0
		114A - SLQ 8	164	8/21 17:00	91	2,675	N/A	55.0	1/21 19:00	108	3,158	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	79	.03	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.3	3.2	2.5	0.0	N/A	93	0	79.0	67.91	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 19:00	3.2	0.0	N/A	111	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 11:00	93	2,807	N/A	55.0	1/21 19:00	111	2,845	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	71	2,125	N/A	55.0	1/21 19:00	85	2,495	N/A	95.0
		113A - BATHROOM 3	98	7/21 11:00	44	1,401	N/A	55.0	1/21 24:00	55	1,492	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _EXHAUST FAN	Zone	10.00	N/A	0.00	197	.00	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	111	.04	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.2	2.1	1.6	0.0	N/A	59	0	79.0	69.29	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	2.0	0.0	N/A	69	0	68.0	95.0	0.08	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	59	1,738	N/A	55.0	1/21 19:00	69	1,619	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	79	2,385	N/A	55.0	1/21 19:00	94	2,449	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	69	.02	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		2.4	29.3	22.6	3.2	N/A	811	119	80.4	79.54	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	28.9	6.8	N/A	758	119	59.7	95.0	1.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	811	19,154	N/A	55.0	1/21 24:00	758	7,622	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	178	5,309	N/A	55.0	1/21 24:00	210	4,293	N/A	95.0
		101A - BILLETING	184	8/21 17:00	530	11,408	N/A	55.0	1/21 24:00	453	2,748	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 19:00	21	648	N/A	55.0	1/21 24:00	26	443	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	45	1,215	N/A	55.0	1/21 20:00	48	987	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	48	1,308	N/A	55.0	1/21 20:00	52	1,056	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	758	.24	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.3	3.2	2.5	0.0	N/A	94	0	79.0	67.88	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	3.3	0.0	N/A	112	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	7/21 17:00	94	2,832	N/A	55.0	1/21 19:00	112	2,533	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	49	1,557	N/A	55.0	1/21 20:00	62	1,445	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	65	1,922	N/A	55.0	1/21 19:00	76	1,972	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _EXHAUST FAN	Zone	10.00	N/A	0.00	180	.00	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	112	.04	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.3	3.2	2.4	0.0	N/A	91	0	79.0	67.79	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	3.2	0.0	N/A	109	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 11:00	91	2,768	N/A	55.0	1/21 19:00	109	2,602	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	61	1,837	N/A	55.0	1/21 19:00	73	1,965	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	46	1,480	N/A	55.0	1/21 20:00	58	1,404	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _EXHAUST FAN	Zone	10.00	N/A	0.00	177	.00	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	109	.04	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		2.4	28.7	22.5	3.3	N/A	799	119	80.6	79.71	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	28.3	6.8	N/A	735	119	59.5	95.0	1.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	799	18,574	N/A	55.0	1/21 24:00	735	7,689	N/A	95.0
		100B - CIRCULATION	310	8/21 16:00	210	5,918	N/A	55.0	1/21 24:00	234	4,560	N/A	95.0
		101B - BILLETING	183	7/21 10:00	478	10,912	N/A	55.0	1/21 24:00	433	2,741	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	21	622	N/A	55.0	1/21 24:00	25	444	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	46	1,224	N/A	55.0	1/21 20:00	48	977	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	51	1,364	N/A	55.0	1/21 19:00	54	1,057	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	735	.24	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.5	3.4	0.4	N/A	126	13	79.3	68.35	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.2	0.8	N/A	152	13	63.4	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	126	3,632	N/A	55.0	1/21 24:00	152	4,445	N/A	95.0
		116B - MECH STORAGE	113	6/21 19:00	71	2,020	N/A	55.0	1/21 24:00	86	2,506	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	56	1,642	N/A	55.0	1/21 24:00	67	1,965	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	152	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.3	3.6	2.7	0.0	N/A	104	0	79.0	67.57	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	3.6	0.0	N/A	124	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	7/21 17:00	104	3,137	N/A	55.0	1/21 19:00	124	2,859	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	51	1,618	N/A	55.0	1/21 20:00	64	1,485	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	82	2,479	N/A	55.0	1/21 19:00	98	2,640	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _EXHAUST FAN	Zone	10.00	N/A	0.00	189	.00	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	124	.04	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.2	2.0	1.5	0.0	N/A	55	0	79.0	69.45	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	1.9	0.0	N/A	65	0	68.0	95.0	0.08	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 10:00	55	1,646	N/A	55.0	1/21 19:00	65	1,632	N/A	95.0
		114B - SLQ 8	164	7/21 10:00	74	2,255	N/A	55.0	1/21 19:00	89	2,382	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	65	.02	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.2	2.3	1.8	0.0	N/A	68	0	79.0	69.06	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	2.3	0.0	N/A	77	0	68.0	95.0	0.09	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 15:00	68	1,830	N/A	55.0	1/21 19:00	77	2,260	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	86	2,194	N/A	55.0	1/21 19:00	103	3,016	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	77	.02	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.3	3.3	2.6	0.0	N/A	97	0	79.0	67.62	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	3.4	0.0	N/A	116	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 11:00	97	2,939	N/A	55.0	1/21 19:00	116	2,614	N/A	95.0
		110B - SLQ 6	148	7/21 10:00	81	2,503	N/A	55.0	1/21 19:00	99	2,340	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	49	1,575	N/A	55.0	1/21 20:00	62	1,447	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _EXHAUST FAN	Zone	10.00	N/A	0.00	190	.00	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	116	.04	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.89	55	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	71.16	82.0

NIST BLCC 5.3-23: Lowest LCC

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Roof.xml
Date of Study:	Sun Mar 24 18:09:42 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Roof LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Lowest LCC

Comparative Present-Value Costs of Alternatives
(Shown in Ascending Order of Initial Cost, * = Lowest LCC)

Alternative	Initial Cost (PV)	Life Cycle Cost (PV)
Alt. Roof Assembly No. 3	$96,705	$342,087 *
Baseline Roof Assembly	$98,248	$380,067
Alt. Roof Assembly No. 2	$101,493	$343,922
Alt. Roof Assembly No. 1	$113,242	$355,407

NIST BLCC 5.3-23: Input Data Listing

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Roof.xml
Date of Study:	Sun Mar 24 18:07:54 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Roof LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Roof Assembly

Energy: Electricity

Annual Consumption:	81,308.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%

April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	499.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%
April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%
April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Baseline Wall Assembly

Initial Investment

Initial Cost (base-year $):	$98,248
Annual Rate of Increase:	2%
Expected Asset Life:	20 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Major Repair

Years/Months:	20 years 0 months
Amount:	$45,140
Annual Rate Of Increase:	2%
Expected Asset Life:	20 years 0 months
Residual Value Factor:	2%

Routine Recurring OM&R: Annual Maintenance

Amount:	$1,500
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: Alt. Roof Assembly No. 1

Energy: Electricity

Annual Consumption:	81,276.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

State: Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%

April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	395.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%
April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%

April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Alt Roof Assebmly No. 1

Initial Investment

Initial Cost (base-year $): $113,242

Annual Rate of Increase: 2%

Expected Asset Life: 45 years 0 months

Residual Value Factor: 3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Routine Recurring OM&R: Annual Maintenance

Amount: $1,500

Annual Rate of Increase: 2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: Alt. Roof Assembly No. 2

Energy: Electricity

Annual Consumption: 81,301.0 kWh

Price per Unit: $0.10980

Demand Charge: $0

Utility Rebate:	$0
Location:	South Dakota
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%

April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	394.0 kWh
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%

April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%
April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: Alt. Roof Assembly No. 2

Initial Investment

Initial Cost (base-year $):	$101,493
Annual Rate of Increase:	2%
Expected Asset Life:	45 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Routine Recurring OM&R: Annual Maintenance

Amount:	$1,500
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: Alt. Roof Assembly No. 3

Energy: Electricity

Annual Consumption:	81,364.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Alabama
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%

April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	397.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Industrial Boiler, uncontrolled
Rate Schedule:	Residential
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-4.56%
April 1, 2024	1 year 0 months	-3.19%
April 1, 2025	1 year 0 months	-2.51%
April 1, 2026	1 year 0 months	-1.25%
April 1, 2027	1 year 0 months	-0.15%
April 1, 2028	1 year 0 months	0.6%
April 1, 2029	1 year 0 months	0.89%
April 1, 2030	1 year 0 months	1.17%
April 1, 2031	1 year 0 months	1.23%
April 1, 2032	1 year 0 months	1.43%
April 1, 2033	1 year 0 months	1.27%
April 1, 2034	1 year 0 months	1.12%
April 1, 2035	1 year 0 months	0.69%
April 1, 2036	1 year 0 months	0.75%
April 1, 2037	1 year 0 months	0.95%

April 1, 2037	1 year 0 months	0.95%
April 1, 2038	1 year 0 months	0.4%
April 1, 2039	1 year 0 months	0.8%
April 1, 2040	1 year 0 months	0.86%
April 1, 2041	1 year 0 months	0.46%
April 1, 2042	1 year 0 months	0.2%
April 1, 2043	1 year 0 months	0.13%
April 1, 2044	1 year 0 months	0.26%
April 1, 2045	1 year 0 months	0.33%
April 1, 2046	1 year 0 months	0.13%
April 1, 2047	1 year 0 months	0.19%
April 1, 2048	1 year 0 months	0.13%
April 1, 2049	1 year 0 months	0.26%
April 1, 2050	1 year 0 months	0.26%
April 1, 2051	1 year 0 months	0.19%
April 1, 2052	1 year 0 months	0.19%
April 1, 2053	Remaining	0.21%

Component: Alt. Roof Assembly No. 3

Initial Investment

Initial Cost (base-year $): $96,705

Annual Rate of Increase: 0%

Expected Asset Life: 45 years 0 months

Residual Value Factor: 0%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Routine Recurring OM&R: Copy of: Annual Maintenance

Amount: $1,500

Annual Rate of Increase: 2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

NIST BLCC 5.3-23: Detailed LCC Analysis

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Roof.xml
Date of Study:	Sun Mar 24 18:08:42 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Roof LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Roof Assembly

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $98,248

Component: Baseline Wall Assembly

Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$98,248
Total (for Component)		$98,248

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
81,308.0 kWh	$0.10980	$8,928	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average	Average	Average	Average

Annual Usage	Price/Unit	Annual Cost	Annual Demand	Annual Rebate
499.0 Therm	$1.38800	$693	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$98,248	$4,251
Energy Costs		
Energy Consumption Costs	$198,281	$8,578
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$198,281	$8,578
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Baseline Wall Assembly		
Routine Annually Recurring Costs	$49,437	$2,139
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$49,437	$2,139
Major Repair and Replacements		
Component: Baseline Wall Assembly	$37,138	$1,607
Subtotal (for Repair and Replacements):	$37,138	$1,607
Residual Value of Original Capital Components		
Component: Baseline Wall Assembly	-$2,425	-$105
Subtotal (for Residual Value):	-$2,425	-$105
Residual Value of Major Repair and Replacements		
Component: Baseline Wall Assembly	-$611	-$26

Subtotal (for Residual Value):	−$611	−$26
Total Life-Cycle Cost	$380,067	$16,443

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	31,996.14 kg	1,279,758.00 kg
SO2	11.71 kg	468.33 kg
NOx	13.47 kg	538.58 kg
Natural Gas:		
CO2	2,635.71 kg	105,421.35 kg
SO2	21.27 kg	850.78 kg
NOx	3.11 kg	124.25 kg
Total:		
CO2	34,631.85 kg	1,385,179.35 kg
SO2	32.98 kg	1,319.12 kg
NOx	16.57 kg	662.83 kg

Alternative: Alt. Roof Assembly No. 1

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $113,242

Component: Alt Roof Assebmly No. 1
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$113,242
Total (for Component)		$113,242

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
81,276.0 kWh	$0.10980	$8,924	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
395.0 Therm	$1.38800	$548	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$113,242	$4,899
Energy Costs		
Energy Consumption Costs	$195,027	$8,438
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$195,027	$8,438
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt Roof Assebmly No. 1		
Routine Annually Recurring Costs	$49,437	$2,139
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$49,437	$2,139
Major Repair and Replacements		
Component: Alt Roof Assebmly No. 1	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt Roof Assebmly No. 1	-$2,300	-$99
Subtotal (for Residual Value):	-$2,300	-$99
Residual Value of Major Repair and Replacements		
Component: Alt Roof Assebmly No. 1	$0	$0

Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$355,407	$15,376

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	31,983.55 kg	1,279,254.33 kg
SO2	11.70 kg	468.15 kg
NOx	13.46 kg	538.37 kg
Natural Gas:		
CO2	2,086.39 kg	83,449.77 kg
SO2	16.84 kg	673.47 kg
NOx	2.46 kg	98.35 kg
Total:		
CO2	34,069.93 kg	1,362,704.10 kg
SO2	28.54 kg	1,141.62 kg
NOx	15.92 kg	636.72 kg

Alternative: Alt. Roof Assembly No. 2

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $101,493

Component: Alt. Roof Assembly No. 2
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$101,493
Total (for Component)		$101,493

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
81,301.0 kWh	$0.10980	$8,927	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
394.0 kWh	$1.38800	$547	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$101,493	$4,391
Energy Costs		
Energy Consumption Costs	$195,053	$8,439
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$195,053	$8,439
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt. Roof Assembly No. 2		
Routine Annually Recurring Costs	$49,437	$2,139
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$49,437	$2,139
Major Repair and Replacements		
Component: Alt. Roof Assembly No. 2	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt. Roof Assembly No. 2	-$2,061	-$89
Subtotal (for Residual Value):	-$2,061	-$89
Residual Value of Major Repair and Replacements		
Component: Alt. Roof Assembly No. 2	$0	$0

Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$343,922	$14,879

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	11,171.62 kg	446,834.20 kg
SO2	2.63 kg	105.37 kg
NOx	4.68 kg	187.32 kg
Natural Gas:		
CO2	71.01 kg	2,840.20 kg
SO2	0.57 kg	22.92 kg
NOx	0.08 kg	3.35 kg
Total:		
CO2	11,242.63 kg	449,674.40 kg
SO2	3.21 kg	128.29 kg
NOx	4.77 kg	190.66 kg

Alternative: Alt. Roof Assembly No. 3

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $96,705

Component: Alt. Roof Assembly No. 3
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$96,705
Total (for Component)		$96,705

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
81,364.0 kWh	$0.10980	$8,934	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
397.0 Therm	$1.38800	$551	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$96,705	$4,184
Energy Costs		
Energy Consumption Costs	$195,945	$8,477
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$195,945	$8,477
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: Alt. Roof Assembly No. 3		
Routine Annually Recurring Costs	$49,437	$2,139
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$49,437	$2,139
Major Repair and Replacements		
Component: Alt. Roof Assembly No. 3	$0	$0
Subtotal (for Repair and Replacements):	$0	$0
Residual Value of Original Capital Components		
Component: Alt. Roof Assembly No. 3	$0	$0
Subtotal (for Residual Value):	$0	$0
Residual Value of Major Repair and Replacements		

Component: Alt. Roof Assembly No. 3	$0	$0
Subtotal (for Residual Value):	$0	$0
Total Life-Cycle Cost	$342,087	$14,800

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	27,710.93 kg	1,108,361.24 kg
SO2	4.98 kg	199.18 kg
NOx	9.08 kg	363.21 kg
Natural Gas:		
CO2	2,096.95 kg	83,872.30 kg
SO2	16.92 kg	676.88 kg
NOx	2.47 kg	98.85 kg
Total:		
CO2	29,807.88 kg	1,192,233.53 kg
SO2	21.90 kg	876.05 kg
NOx	11.55 kg	462.06 kg

NIST BLCC 5.3-23: Summary LCC

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Roof.xml
Date of Study:	Sun Mar 24 18:09:12 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - Roof LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: Baseline Roof Assembly

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$98,248	$4,251
Energy Consumption Costs	$198,281	$8,578
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$49,437	$2,139
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$37,138	$1,607
Less Remaining Value	-$3,036	-$131
Total Life-Cycle Cost	$380,067	$16,443

Alternative: Alt. Roof Assembly No. 1

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$113,242	$4,899

Energy Consumption Costs	$195,027	$8,438
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$49,437	$2,139
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	−$2,300	−$99
Total Life-Cycle Cost	$355,407	$15,376

Alternative: Alt. Roof Assembly No. 2

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$101,493	$4,391
Energy Consumption Costs	$195,053	$8,439
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$49,437	$2,139
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	−$2,061	−$89
Total Life-Cycle Cost	$343,922	$14,879

Alternative: Alt. Roof Assembly No. 3

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$96,705	$4,184
Energy Consumption Costs	$195,945	$8,477
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$49,437	$2,139

Routine Annually Recurring OM&R Costs	$19,137	$2,139
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$0	$0
Less Remaining Value	$0	$0
Total Life-Cycle Cost	$342,087	$14,800

DEARNG Mechanical LCCA-Roof



Building Owner:
Location:

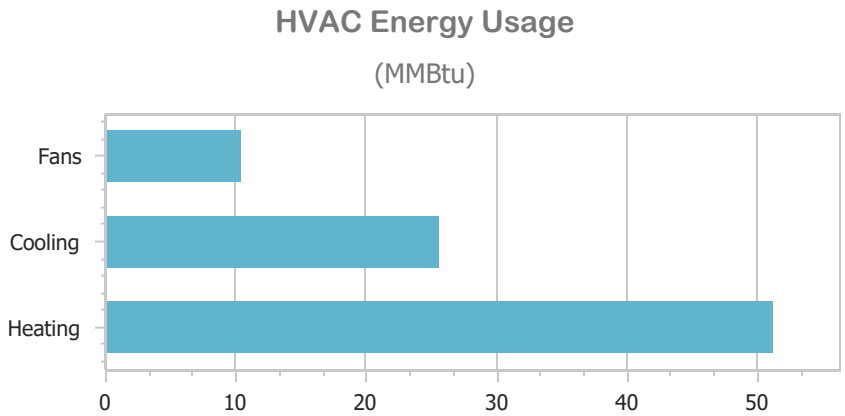
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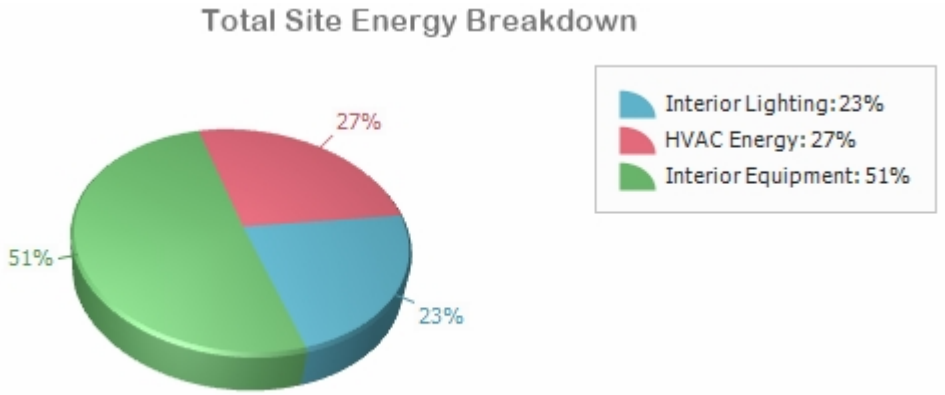
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Simulated by: TRACE 3D Plus 6.00.106

Site Consumption Summary

Energy Consumption



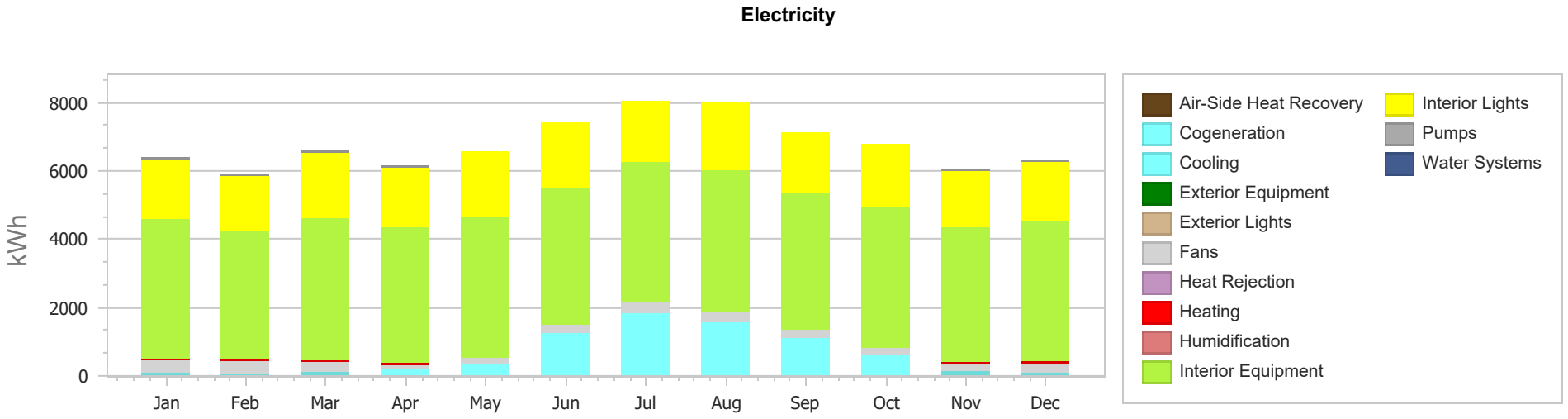


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	278	50	0	0	0	50,812	4.72	57,055	5.3	0
Cooling	7,508	0	0	0	0	25,619	2.38	81,137	7.54	0
Fans	3,169	0	0	0	0	10,815	1	34,250	3.18	0
Pumps	47	0	0	0	0	161	0.01	510	0.05	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	11,003	50	0	0	0	87,408	8.12	172,952	16.07	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	81,306	50	0	0	0	327,291	30.4	932,662	86.64	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

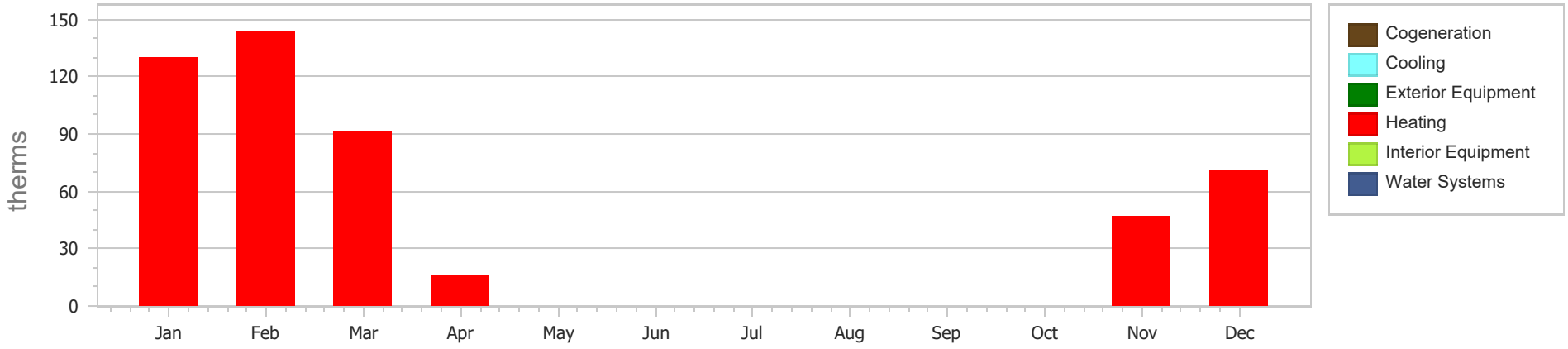
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	106	92	116	182	356	1,248	1,844	1,570	1,110	625	144	114	7,508
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	339	339	300	189	176	255	317	294	248	205	236	272	3,171
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	72	80	50	9	0	0	0	0	0	0	26	40	278
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	12	13	8	3	0	0	0	0	0	0	5	7	48
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	6,389	5,909	6,599	6,138	6,568	7,409	8,045	7,988	7,114	6,778	6,054	6,318	81,308

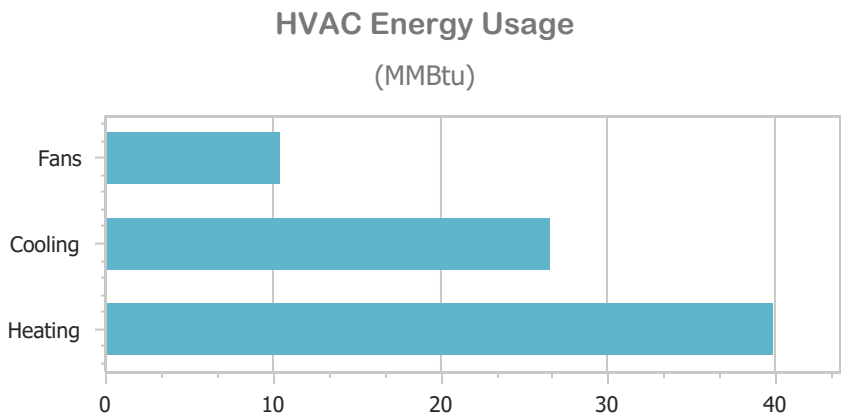
Natural Gas

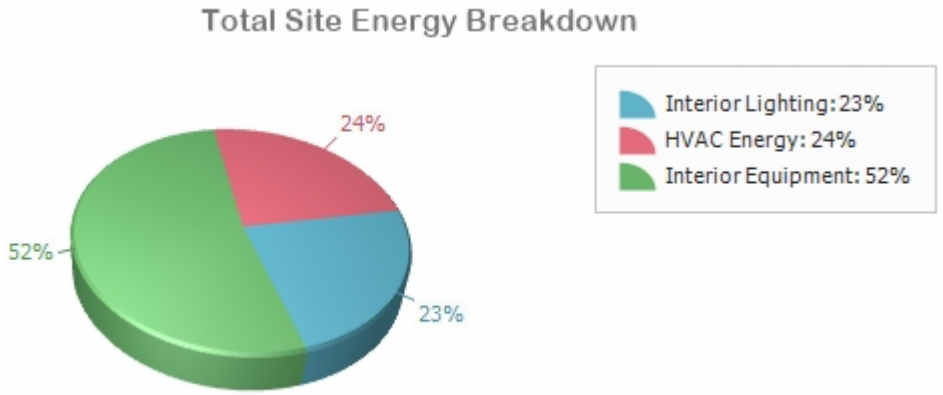


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	130	144	91	16	0	0	0	0	0	0	47	71	499
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	130	144	91	16	0	0	0	0	0	0	47	71	499

Site Consumption Summary

Energy Consumption



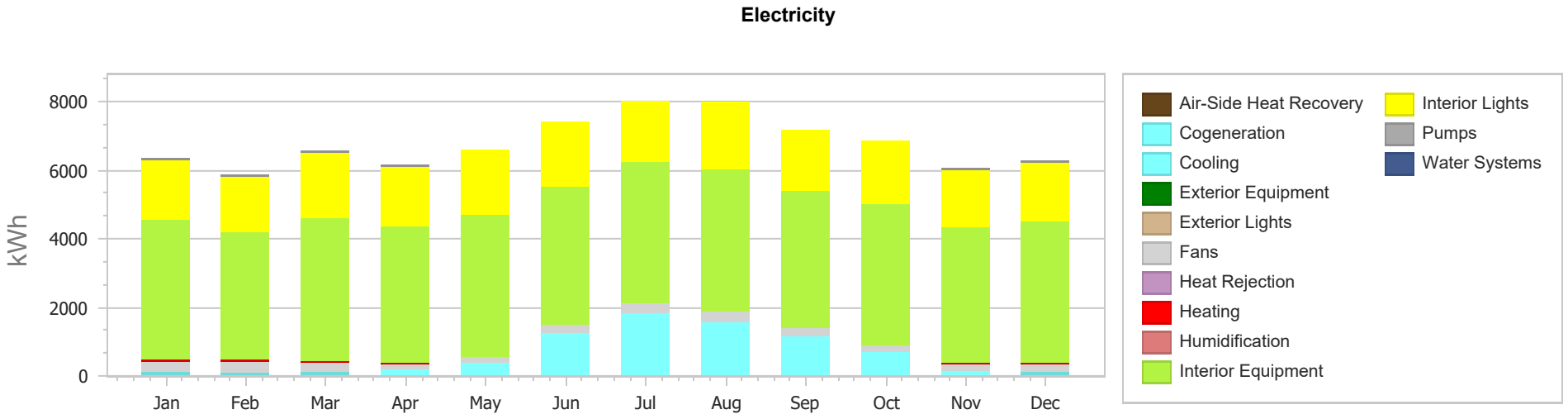


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	206	40	0	0	0	40,235	3.74	45,076	4.19	0
Cooling	7,675	0	0	0	0	26,188	2.43	82,938	7.7	0
Fans	3,050	0	0	0	0	10,407	0.97	32,959	3.06	0
Pumps	42	0	0	0	0	142	0.01	450	0.04	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	10,972	40	0	0	0	76,972	7.15	161,423	14.99	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	81,275	40	0	0	0	316,855	29.43	921,132	85.56	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

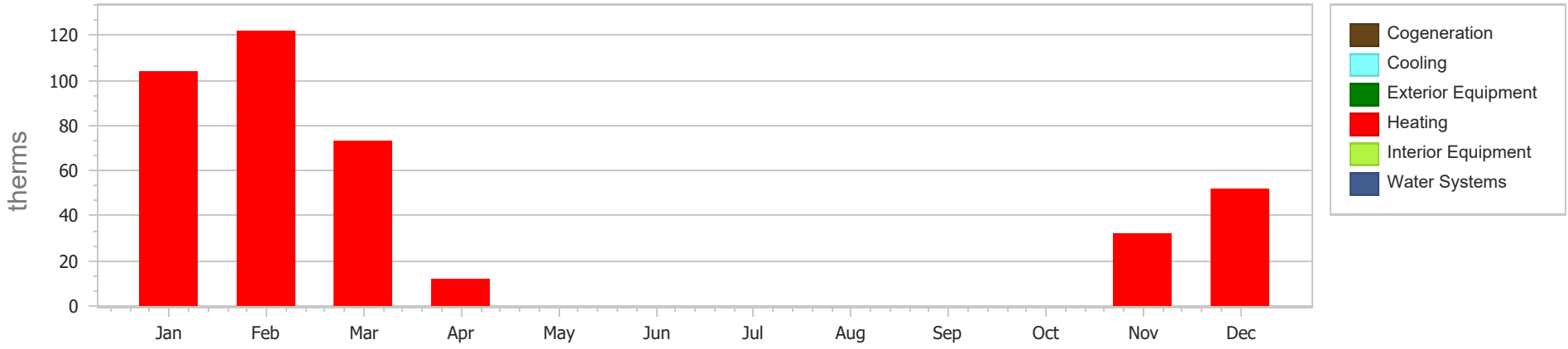
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	112	96	122	194	378	1,243	1,820	1,580	1,155	689	165	121	7,675
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	308	315	279	183	178	254	313	294	252	211	217	246	3,051
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	55	64	38	6	0	0	0	0	0	0	17	27	207
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	10	11	8	3	0	0	0	0	0	0	4	6	41
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	6,344	5,871	6,570	6,141	6,591	7,403	8,018	7,997	7,163	6,848	6,046	6,285	81,276

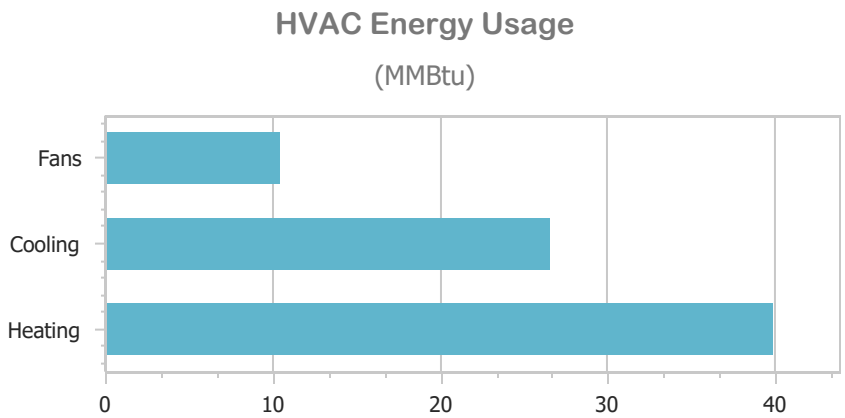
Natural Gas

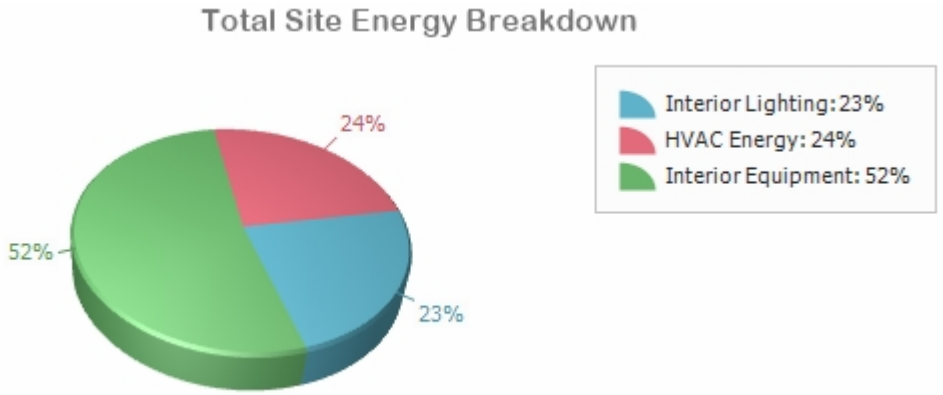


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	104	122	73	12	0	0	0	0	0	0	32	52	395
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	104	122	73	12	0	0	0	0	0	0	32	52	395

Site Consumption Summary

Energy Consumption



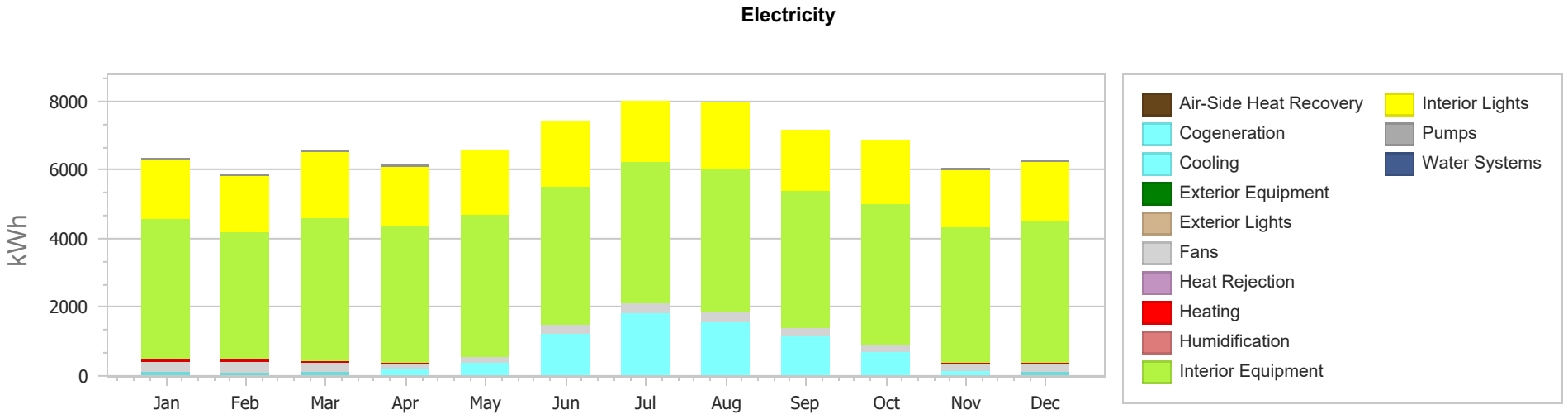


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	233	39	0	0	0	40,216	3.74	45,252	4.2	0
Cooling	7,672	0	0	0	0	26,179	2.43	82,908	7.7	0
Fans	3,050	0	0	0	0	10,407	0.97	32,959	3.06	0
Pumps	42	0	0	0	0	142	0.01	450	0.04	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	10,997	39	0	0	0	76,944	7.15	161,570	15.01	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	81,300	39	0	0	0	316,827	29.43	921,279	85.58	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

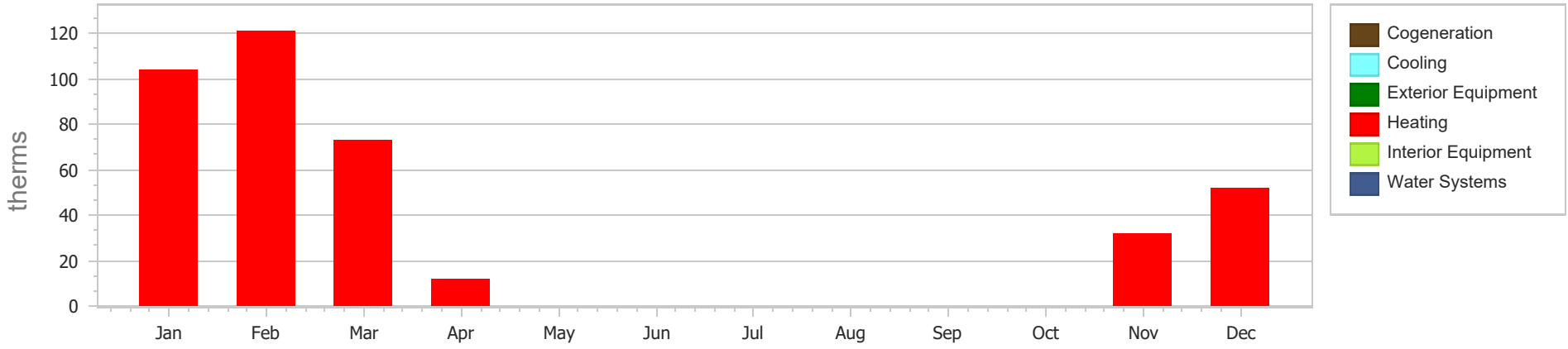
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	112	96	122	194	378	1,242	1,819	1,579	1,155	689	165	121	7,673
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	308	315	279	183	178	254	313	294	252	211	217	246	3,051
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	62	72	43	7	0	0	0	0	0	0	19	31	234
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	10	11	7	2	0	0	0	0	0	0	4	6	41
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	6,351	5,879	6,575	6,142	6,591	7,402	8,017	7,996	7,163	6,848	6,048	6,288	81,301

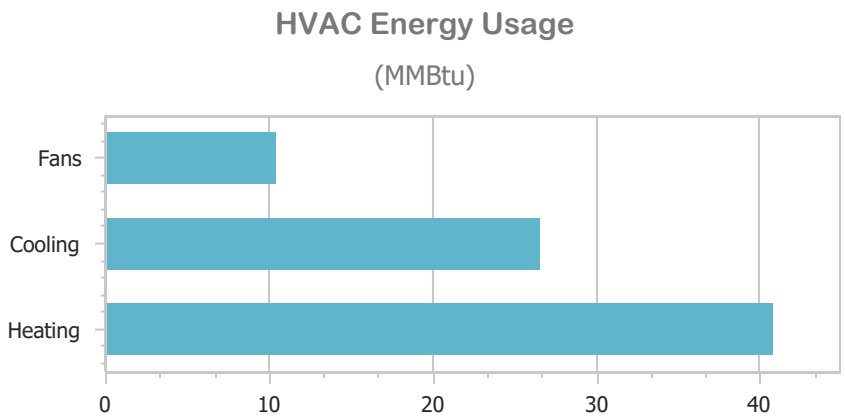
Natural Gas

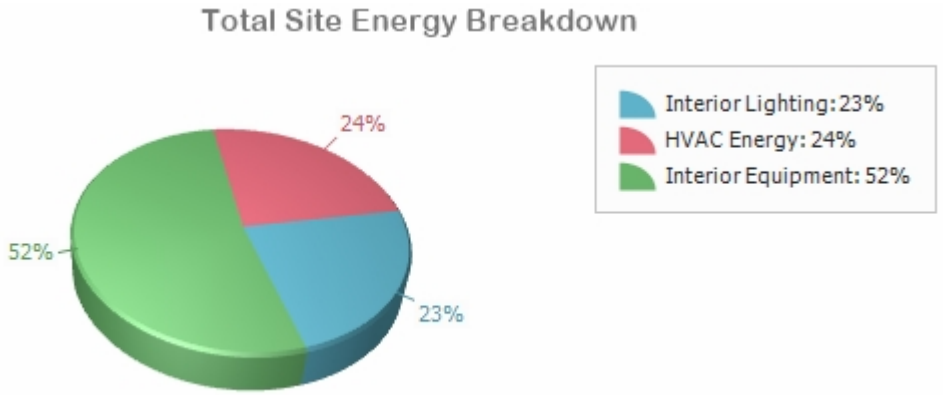


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	104	121	73	12	0	0	0	0	0	0	32	52	394
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	104	121	73	12	0	0	0	0	0	0	32	52	394

Site Consumption Summary

Energy Consumption



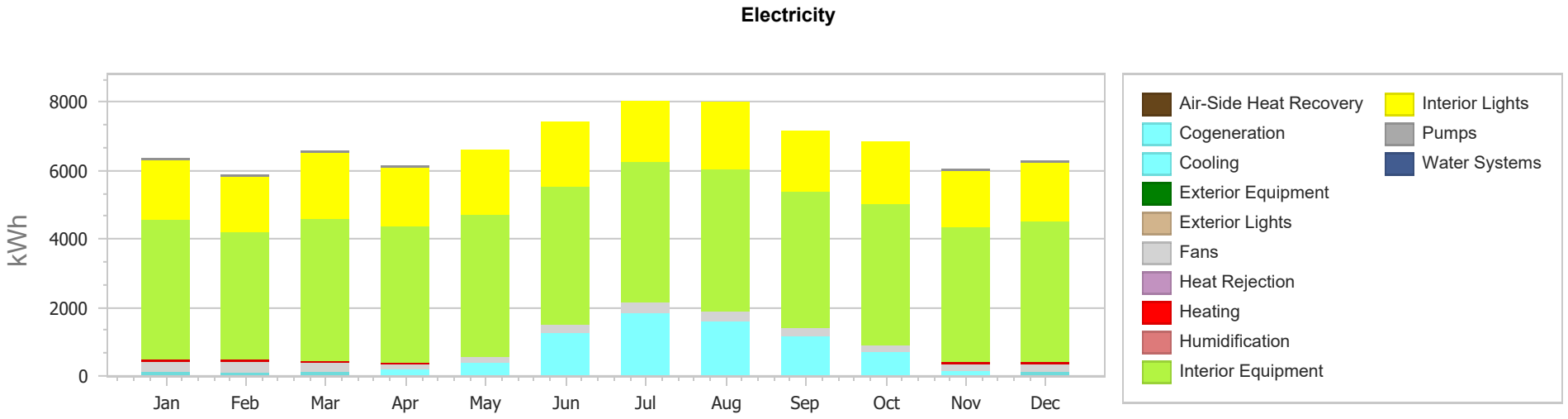


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	233	40	0	0	0	40,462	3.76	45,520	4.23	0
Cooling	7,725	0	0	0	0	26,359	2.45	83,478	7.75	0
Fans	3,061	0	0	0	0	10,445	0.97	33,079	3.07	0
Pumps	42	0	0	0	0	142	0.01	450	0.04	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	11,061	40	0	0	0	77,408	7.19	162,527	15.1	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	81,364	40	0	0	0	317,291	29.47	922,237	85.67	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

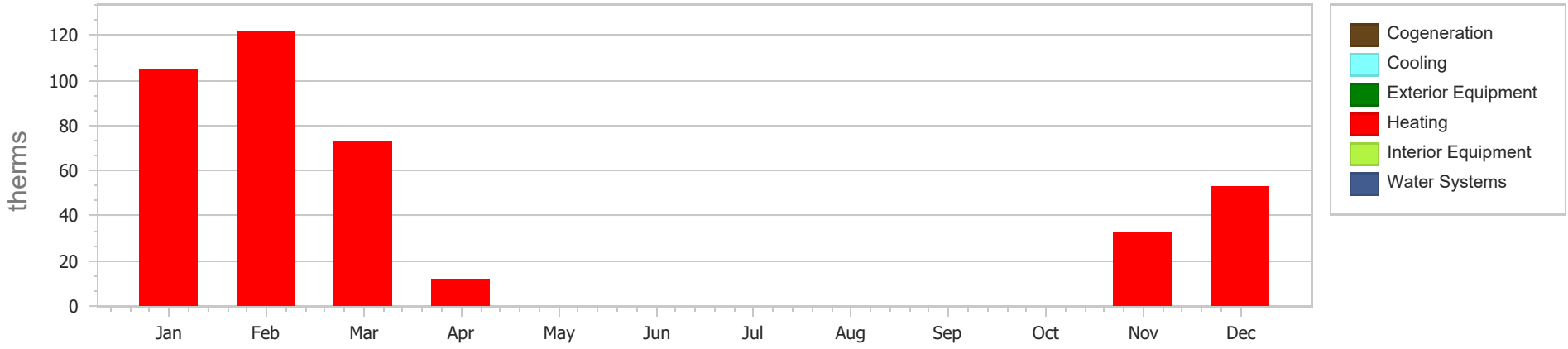
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	112	96	122	196	384	1,256	1,834	1,589	1,161	692	164	121	7,725
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	309	316	279	182	179	255	315	295	253	212	218	247	3,061
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	62	72	43	7	0	0	0	0	0	0	19	31	234
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	10	11	7	2	0	0	0	0	0	0	4	6	41
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	6,352	5,880	6,575	6,143	6,598	7,417	8,033	8,007	7,170	6,851	6,048	6,289	81,364

Natural Gas



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	105	122	73	12	0	0	0	0	0	0	33	53	397
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	105	122	73	12	0	0	0	0	0	0	33	53	397

System Component Selection Summary

Baseline Roof Assembly

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.8	12.7	0.0	N/A	469	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 15:00	469	12,695	469	55.0		0	0	469	95.0
	SS - 1		108	7/21 15:00	469	11,860	469	55.0	1/21 24:00	469	2,411	469	95.0
		118B - IT	108	7/21 15:00	468	11,840	468	55.0	1/21 24:00	468	2,434	468	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	469	.21	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.4	4.3	3.3	0.0	N/A	124	0	79.0	66.89	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	4.4	0.0	N/A	152	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	7/21 18:00	124	3,834	N/A	55.0	1/21 19:00	152	2,764	N/A	95.0
		102A - SLQ 4	146	7/21 18:00	69	2,062	N/A	55.0	1/21 19:00	82	1,679	N/A	95.0
		104A - BATHROOM 2	89	7/21 18:00	51	1,635	N/A	55.0	1/21 24:00	65	1,109	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _EXHAUST FAN	Zone	10.00	N/A	0.00	178	.00	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	152	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	3.3	2.5	0.0	N/A	96	0	79.0	67.45	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 19:00	3.3	0.0	N/A	114	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	96	2,894	N/A	55.0	1/21 19:00	114	2,406	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	94	2,817	N/A	55.0	1/21 19:00	111	2,415	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	114	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.3	3.4	2.6	0.0	N/A	99	0	79.0	67.59	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	3.5	0.0	N/A	119	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 11:00	99	3,001	N/A	55.0	1/21 19:00	119	2,673	N/A	95.0
		108A - BATHROOM 1	91	7/21 11:00	41	1,289	N/A	55.0	1/21 24:00	51	1,104	N/A	95.0
		109A - SLQ 3	148	7/21 11:00	55	1,617	N/A	55.0	1/21 19:00	64	1,620	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _EXHAUST FAN	Zone	10.00	N/A	0.00	182	.00	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	119	.04	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 9	DX	Peak		0.3	3.1	2.4	0.0	N/A	91	0	79.0	67.97	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 9	Water	Peak	1/21 19:00	3.1	0.0	N/A	106	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	91	2,694	N/A	55.0	1/21 19:00	106	2,382	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	89	2,615	N/A	55.0	1/21 19:00	103	2,392	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	106	.03	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.4	4.8	3.7	0.0	N/A	140	0	79.0	66.61	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 19:00	5.0	0.0	N/A	173	0	68.0	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	7/21 18:00	140	4,366	N/A	55.0	1/21 19:00	173	2,877	N/A	95.0
		110A - SLQ 6	149	7/21 18:00	89	2,714	N/A	55.0	1/21 19:00	107	1,755	N/A	95.0
		112A - BATHROOM 4	96	7/21 18:00	54	1,734	N/A	55.0	1/21 24:00	69	1,171	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _EXHAUST FAN	Zone	10.00	N/A	0.00	192	.00	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	173	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.2	2.5	1.9	0.0	N/A	71	0	79.0	69.17	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 19:00	2.4	0.0	N/A	84	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	71	1,938	N/A	55.0	1/21 19:00	84	2,446	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	71	1,860	N/A	55.0	1/21 19:00	84	2,455	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	84	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.2	2.4	1.9	0.0	N/A	71	0	79.0	68.79	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	2.4	0.0	N/A	82	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 11:00	71	2,001	N/A	55.0	1/21 19:00	82	2,412	N/A	95.0
		105A - SLQ 1	162	8/21 11:00	71	1,923	N/A	55.0	1/21 19:00	83	2,423	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	82	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	DX	Peak		0.2	3.0	2.3	0.0	N/A	87	0	79.0	67.47	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	Water	Peak	1/21 19:00	3.1	0.0	N/A	105	0	68.0	95.0	0.12	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	7/21 18:00	87	2,650	N/A	55.0	1/21 19:00	105	2,446	N/A	95.0
		114A - SLQ 8	164	7/21 18:00	84	2,572	N/A	55.0	1/21 19:00	102	2,458	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	105	.03	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.3	4.0	3.0	0.0	N/A	115	0	79.0	67.39	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 19:00	4.1	0.0	N/A	140	0	68.0	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	115	3,554	N/A	55.0	1/21 19:00	140	3,014	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	68	2,056	N/A	55.0	1/21 19:00	81	1,875	N/A	95.0
		113A - BATHROOM 3	98	7/21 11:00	43	1,371	N/A	55.0	1/21 24:00	54	1,172	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _EXHAUST FAN	Zone	10.00	N/A	0.00	197	.00	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	140	.04	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.2	2.7	2.1	0.0	N/A	79	0	79.0	68.01	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	2.7	0.0	N/A	94	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	79	2,374	N/A	55.0	1/21 19:00	94	1,745	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	76	2,299	N/A	55.0	1/21 19:00	91	1,757	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	94	.03	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		2.5	30.1	23.3	3.2	N/A	836	119	80.3	79.05	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	29.8	6.8	N/A	787	119	60.1	95.0	1.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	7/21 17:00	836	19,902	N/A	55.0	1/21 24:00	787	7,775	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	175	5,219	N/A	55.0	1/21 24:00	206	3,370	N/A	95.0
		101A - BILLETING	184	8/21 17:00	529	11,387	N/A	55.0	1/21 24:00	452	2,452	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 19:00	21	654	N/A	55.0	1/21 24:00	26	429	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	45	1,231	N/A	55.0	1/21 20:00	49	939	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	49	1,328	N/A	55.0	1/21 20:00	52	995	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	787	.25	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.3	3.9	3.0	0.0	N/A	114	0	79.0	67.27	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	4.0	0.0	N/A	138	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	114	3,502	N/A	55.0	1/21 19:00	138	2,648	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	48	1,517	N/A	55.0	1/21 20:00	60	1,093	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	64	1,886	N/A	55.0	1/21 19:00	75	1,609	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _EXHAUST FAN	Zone	10.00	N/A	0.00	180	.00	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	138	.04	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.3	3.8	2.9	0.0	N/A	109	0	79.0	67.24	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	3.9	0.0	N/A	134	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	109	3,399	N/A	55.0	1/21 19:00	134	2,710	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	60	1,812	N/A	55.0	1/21 19:00	72	1,645	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	45	1,456	N/A	55.0	1/21 20:00	58	1,087	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _EXHAUST FAN	Zone	10.00	N/A	0.00	177	.00	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	134	.04	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		2.5	30.2	23.7	3.4	N/A	846	119	80.5	78.90	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	29.9	6.8	N/A	789	119	60.1	95.0	1.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	7/21 16:00	846	19,946	N/A	55.0	1/21 24:00	789	7,871	N/A	95.0
		100B - CIRCULATION	310	8/21 16:00	204	5,707	N/A	55.0	1/21 24:00	226	3,529	N/A	95.0
		101B - BILLETING	183	7/21 10:00	479	10,918	N/A	55.0	1/21 24:00	433	2,408	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	21	627	N/A	55.0	1/21 24:00	25	430	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	46	1,240	N/A	55.0	1/21 20:00	49	929	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	52	1,384	N/A	55.0	1/21 19:00	55	993	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	789	.25	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.4	4.6	3.5	0.0	N/A	133	0	79.0	66.86	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	4.8	0.0	N/A	163	0	68.0	95.0	0.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	133	4,126	N/A	55.0	1/21 19:00	163	3,047	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	50	1,582	N/A	55.0	1/21 20:00	63	1,127	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	79	2,399	N/A	55.0	1/21 19:00	95	1,948	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _EXHAUST FAN	Zone	10.00	N/A	0.00	189	.00	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	163	.05	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.2	2.6	1.9	0.0	N/A	73	0	79.0	68.51	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	2.5	0.0	N/A	87	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	73	2,202	N/A	55.0	1/21 19:00	87	2,381	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	71	2,127	N/A	55.0	1/21 19:00	84	2,389	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	87	.03	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.4	4.4	3.3	0.0	N/A	125	0	79.0	66.88	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	4.5	0.0	N/A	155	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	125	3,925	N/A	55.0	1/21 19:00	155	2,797	N/A	95.0
		110B - SLQ 6	148	7/21 10:00	80	2,455	N/A	55.0	1/21 19:00	97	1,717	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	48	1,556	N/A	55.0	1/21 20:00	61	1,123	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _EXHAUST FAN	Zone	10.00	N/A	0.00	190	.00	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	155	.05	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.4	3.3	0.4	N/A	124	13	79.3	68.39	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.1	0.8	N/A	149	13	63.3	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	124	3,671	N/A	55.0	1/21 24:00	149	4,371	N/A	95.0
		116B - MECH STORAGE	113	6/21 19:00	70	2,026	N/A	55.0	1/21 24:00	85	2,489	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	56	1,647	N/A	55.0	1/21 24:00	67	1,948	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	149	.05	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.2	2.6	2.0	0.0	N/A	74	0	79.0	68.00	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	2.6	0.0	N/A	90	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 10:00	74	2,273	N/A	55.0	1/21 19:00	90	1,751	N/A	95.0
		114B - SLQ 8	164	7/21 10:00	72	2,197	N/A	55.0	1/21 19:00	87	1,757	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	90	.03	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	3.00	57	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	73.54	82.0

System Component Selection Summary

Roof Assembly 1

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.9	12.7	0.0	N/A	471	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 13:00	471	12,742	471	55.0		0	0	471	95.0
	SS - 1		108	7/21 13:00	471	11,904	471	55.0	1/21 24:00	471	2,384	471	95.0
		118B - IT	108	7/21 13:00	469	11,878	469	55.0	1/21 24:00	469	2,287	469	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	471	.21	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.4	4.3	3.3	0.0	N/A	126	0	79.0	66.85	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	4.5	0.0	N/A	154	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	7/21 18:00	126	3,885	N/A	55.0	1/21 19:00	154	2,718	N/A	95.0
		102A - SLQ 4	146	7/21 18:00	70	2,093	N/A	55.0	1/21 19:00	83	1,551	N/A	95.0
		104A - BATHROOM 2	89	7/21 18:00	52	1,655	N/A	55.0	1/21 24:00	65	1,030	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _EXHAUST FAN	Zone	10.00	N/A	0.00	178	.00	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	154	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 7	DX	Peak		0.3	3.3	2.6	0.0	N/A	97	0	79.0	67.40	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 7	Water	Peak	1/21 19:00	3.4	0.0	N/A	116	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	97	2,938	N/A	55.0	1/21 19:00	116	2,271	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	95	2,858	N/A	55.0	1/21 19:00	113	2,285	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	116	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.3	3.5	2.7	0.0	N/A	101	0	79.0	67.61	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	3.6	0.0	N/A	122	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 11:00	101	3,087	N/A	55.0	1/21 19:00	122	2,654	N/A	95.0
		108A - BATHROOM 1	91	7/21 11:00	42	1,324	N/A	55.0	1/21 24:00	52	1,023	N/A	95.0
		109A - SLQ 3	148	7/21 11:00	57	1,671	N/A	55.0	1/21 19:00	66	1,494	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _EXHAUST FAN	Zone	10.00	N/A	0.00	182	.00	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	122	.04	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.3	3.1	2.4	0.0	N/A	92	0	79.0	67.84	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 19:00	3.2	0.0	N/A	108	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	92	2,736	N/A	55.0	1/21 19:00	108	2,248	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	90	2,656	N/A	55.0	1/21 19:00	105	2,262	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	108	.03	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.4	4.9	3.7	0.0	N/A	142	0	79.0	66.58	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 19:00	5.1	0.0	N/A	175	0	68.0	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	7/21 18:00	142	4,417	N/A	55.0	1/21 19:00	175	2,856	N/A	95.0
		110A - SLQ 6	149	8/21 17:00	91	2,747	N/A	55.0	1/21 19:00	109	1,631	N/A	95.0
		112A - BATHROOM 4	96	7/21 18:00	55	1,755	N/A	55.0	1/21 24:00	69	1,087	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _EXHAUST FAN	Zone	10.00	N/A	0.00	192	.00	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	175	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.2	2.4	1.8	0.0	N/A	68	0	79.0	69.88	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 19:00	2.3	0.0	N/A	79	0	68.0	95.0	0.09	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	68	1,998	N/A	55.0	1/21 19:00	79	2,304	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	67	1,918	N/A	55.0	1/21 19:00	79	2,319	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	79	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.2	2.4	1.9	0.0	N/A	70	0	79.0	69.29	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	2.4	0.0	N/A	82	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 11:00	70	2,065	N/A	55.0	1/21 19:00	82	2,274	N/A	95.0
		105A - SLQ 1	162	8/21 11:00	67	1,983	N/A	55.0	1/21 19:00	78	2,290	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	82	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	DX	Peak		0.3	3.1	2.4	0.0	N/A	90	0	79.0	67.78	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	Water	Peak	1/21 19:00	3.1	0.0	N/A	106	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	90	2,689	N/A	55.0	1/21 19:00	106	2,307	N/A	95.0
		114A - SLQ 8	164	7/21 18:00	85	2,606	N/A	55.0	1/21 19:00	103	2,324	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	106	.03	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.3	4.1	3.1	0.0	N/A	119	0	79.0	67.69	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 19:00	4.2	0.0	N/A	144	0	68.0	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	119	3,653	N/A	55.0	1/21 19:00	144	2,969	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	70	2,120	N/A	55.0	1/21 19:00	84	1,729	N/A	95.0
		113A - BATHROOM 3	98	7/21 11:00	44	1,408	N/A	55.0	1/21 24:00	56	1,085	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _EXHAUST FAN	Zone	10.00	N/A	0.00	197	.00	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	144	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.2	2.7	2.1	0.0	N/A	80	0	79.0	67.96	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	2.8	0.0	N/A	95	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	80	2,404	N/A	55.0	1/21 19:00	95	1,711	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	77	2,331	N/A	55.0	1/21 19:00	92	1,623	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	95	.03	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		2.6	30.8	23.9	4.0	N/A	855	119	80.4	80.36	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	29.8	6.8	N/A	786	119	60.0	95.0	1.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	8/21 17:00	855	19,866	N/A	55.0	1/21 24:00	786	7,937	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	179	5,339	N/A	55.0	1/21 24:00	211	3,105	N/A	95.0
		101A - BILLETING	184	8/21 17:00	531	11,435	N/A	55.0	1/21 24:00	454	2,299	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 19:00	21	662	N/A	55.0	1/21 24:00	26	373	N/A	95.0
		103A - CORRIDOR 1	125	8/21 18:00	48	1,262	N/A	55.0	1/21 24:00	50	824	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	49	1,358	N/A	55.0	1/21 24:00	54	874	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	786	.25	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.3	4.0	3.1	0.0	N/A	116	0	79.0	67.23	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	4.1	0.0	N/A	140	0	68.0	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	116	3,548	N/A	55.0	1/21 19:00	140	2,634	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	48	1,537	N/A	55.0	1/21 24:00	61	1,013	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	64	1,916	N/A	55.0	1/21 19:00	76	1,485	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _EXHAUST FAN	Zone	10.00	N/A	0.00	180	.00	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	140	.04	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.3	3.9	3.0	0.0	N/A	112	0	79.0	67.37	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	4.0	0.0	N/A	137	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	112	3,476	N/A	55.0	1/21 19:00	137	2,665	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	62	1,863	N/A	55.0	1/21 19:00	74	1,520	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	46	1,488	N/A	55.0	1/21 24:00	59	1,008	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _EXHAUST FAN	Zone	10.00	N/A	0.00	177	.00	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	137	.04	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		2.6	31.0	24.3	4.2	N/A	865	119	80.6	80.20	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	29.8	6.8	N/A	788	119	60.1	95.0	1.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	8/21 16:00	865	19,913	N/A	55.0	1/21 24:00	788	8,059	N/A	95.0
		100B - CIRCULATION	310	8/21 16:00	206	5,787	N/A	55.0	1/21 24:00	229	3,269	N/A	95.0
		101B - BILLETING	183	7/21 10:00	481	10,985	N/A	55.0	1/21 24:00	436	2,259	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	21	635	N/A	55.0	1/21 24:00	25	373	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	47	1,267	N/A	55.0	1/21 20:00	50	814	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	53	1,413	N/A	55.0	1/21 20:00	56	866	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	788	.25	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.4	3.3	0.4	N/A	123	13	79.3	68.41	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.1	0.8	N/A	148	13	63.2	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	123	3,677	N/A	55.0	1/21 24:00	148	4,333	N/A	95.0
		116B - MECH STORAGE	113	6/21 19:00	66	2,036	N/A	55.0	1/21 24:00	80	2,336	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	55	1,656	N/A	55.0	1/21 24:00	65	1,798	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	148	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.4	4.6	3.6	0.0	N/A	135	0	79.0	66.83	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	4.8	0.0	N/A	165	0	68.0	95.0	0.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	135	4,178	N/A	55.0	1/21 19:00	165	3,001	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	50	1,602	N/A	55.0	1/21 24:00	63	1,043	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	80	2,433	N/A	55.0	1/21 19:00	96	1,810	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _EXHAUST FAN	Zone	10.00	N/A	0.00	189	.00	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	165	.05	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.2	2.7	2.0	0.0	N/A	76	0	79.0	68.15	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	2.7	0.0	N/A	92	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 10:00	76	2,329	N/A	55.0	1/21 19:00	92	1,711	N/A	95.0
		114B - SLQ 8	164	7/21 10:00	74	2,255	N/A	55.0	1/21 19:00	89	1,623	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	92	.03	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.2	2.6	2.0	0.0	N/A	75	0	79.0	68.45	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	2.6	0.0	N/A	89	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	75	2,259	N/A	55.0	1/21 19:00	89	2,247	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	72	2,183	N/A	55.0	1/21 19:00	86	2,260	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	89	.03	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.4	4.5	3.4	0.0	N/A	128	0	79.0	66.98	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	4.6	0.0	N/A	158	0	68.0	95.0	0.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	128	4,004	N/A	55.0	1/21 19:00	158	2,771	N/A	95.0
		110B - SLQ 6	148	7/21 10:00	81	2,505	N/A	55.0	1/21 19:00	99	1,594	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	49	1,590	N/A	55.0	1/21 24:00	63	1,039	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _EXHAUST FAN	Zone	10.00	N/A	0.00	190	.00	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	158	.05	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	3.19	60	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	78.34	82.0

System Component Selection Summary

Roof Assembly 2

System Name: CV PTAC - 16

System Type: Constant Volume (CV)
Number of Zones 1
Number of Rooms 1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.2	2.7	2.0	0.0	N/A	76	0	79.0	68.15	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	2.7	0.0	N/A	92	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 10:00	76	2,329	N/A	55.0	1/21 19:00	92	1,613	N/A	95.0
		114B - SLQ 8	164	7/21 10:00	72	2,197	N/A	55.0	1/21 19:00	87	1,757	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	92	.03	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.2	2.6	2.0	0.0	N/A	75	0	79.0	68.45	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	2.6	0.0	N/A	89	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	75	2,259	N/A	55.0	1/21 19:00	89	2,247	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	71	2,127	N/A	55.0	1/21 19:00	84	2,389	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	89	.03	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.4	4.5	3.4	0.0	N/A	128	0	79.0	66.98	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	4.6	0.0	N/A	158	0	68.0	95.0	0.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	128	4,004	N/A	55.0	1/21 19:00	158	2,590	N/A	95.0
		110B - SLQ 6	148	7/21 10:00	80	2,455	N/A	55.0	1/21 19:00	97	1,717	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	48	1,556	N/A	55.0	1/21 20:00	61	1,123	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _EXHAUST FAN	Zone	10.00	N/A	0.00	190	.00	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	158	.05	N/A	100.00

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design						Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.9	12.7	0.0	N/A	471	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 13:00	471	12,742	471	55.0		0	0	471	95.0
	SS - 1		108	7/21 13:00	471	11,904	471	55.0	1/21 24:00	471	2,260	471	95.0
		118B - IT	108	7/21 15:00	468	11,840	468	55.0	1/21 24:00	468	2,434	468	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	471	.21	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.4	4.3	3.3	0.0	N/A	126	0	79.0	66.85	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	4.5	0.0	N/A	154	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	7/21 18:00	126	3,885	N/A	55.0	1/21 19:00	154	2,556	N/A	95.0
		102A - SLQ 4	146	7/21 18:00	69	2,062	N/A	55.0	1/21 19:00	82	1,679	N/A	95.0
		104A - BATHROOM 2	89	7/21 18:00	51	1,635	N/A	55.0	1/21 24:00	65	1,109	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _EXHAUST FAN	Zone	10.00	N/A	0.00	178	.00	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	154	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	3.3	2.6	0.0	N/A	97	0	79.0	67.40	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 19:00	3.4	0.0	N/A	116	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	97	2,938	N/A	55.0	1/21 19:00	116	2,271	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	94	2,817	N/A	55.0	1/21 19:00	111	2,415	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	116	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.3	3.5	2.7	0.0	N/A	101	0	79.0	67.61	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	3.6	0.0	N/A	122	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 11:00	101	3,087	N/A	55.0	1/21 19:00	122	2,465	N/A	95.0
		108A - BATHROOM 1	91	7/21 11:00	41	1,289	N/A	55.0	1/21 24:00	51	1,104	N/A	95.0
		109A - SLQ 3	148	7/21 11:00	55	1,617	N/A	55.0	1/21 19:00	64	1,620	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _EXHAUST FAN	Zone	10.00	N/A	0.00	182	.00	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	122	.04	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 9	DX	Peak		0.3	3.1	2.4	0.0	N/A	92	0	79.0	67.84	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 9	Water	Peak	1/21 19:00	3.2	0.0	N/A	108	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	92	2,736	N/A	55.0	1/21 19:00	108	2,248	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	89	2,615	N/A	55.0	1/21 19:00	103	2,392	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	108	.03	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 4	DX	Peak		0.4	4.9	3.7	0.0	N/A	142	0	79.0	66.58	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 4	Water	Peak	1/21 19:00	5.1	0.0	N/A	175	0	68.0	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	7/21 18:00	142	4,417	N/A	55.0	1/21 19:00	175	2,667	N/A	95.0
		110A - SLQ 6	149	7/21 18:00	89	2,714	N/A	55.0	1/21 19:00	107	1,755	N/A	95.0
		112A - BATHROOM 4	96	7/21 18:00	54	1,734	N/A	55.0	1/21 24:00	69	1,171	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _EXHAUST FAN	Zone	10.00	N/A	0.00	192	.00	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	175	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.2	2.4	1.8	0.0	N/A	68	0	79.0	69.88	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 19:00	2.3	0.0	N/A	79	0	68.0	95.0	0.09	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	68	1,998	N/A	55.0	1/21 19:00	79	2,304	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	71	1,860	N/A	55.0	1/21 19:00	84	2,455	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	79	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.2	2.4	1.9	0.0	N/A	70	0	79.0	69.29	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	2.4	0.0	N/A	82	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 11:00	70	2,065	N/A	55.0	1/21 19:00	82	2,274	N/A	95.0
		105A - SLQ 1	162	8/21 11:00	71	1,923	N/A	55.0	1/21 19:00	83	2,423	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	82	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	DX	Peak		0.3	3.1	2.4	0.0	N/A	90	0	79.0	67.78	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	Water	Peak	1/21 19:00	3.1	0.0	N/A	106	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	90	2,689	N/A	55.0	1/21 19:00	106	2,307	N/A	95.0
		114A - SLQ 8	164	7/21 18:00	84	2,572	N/A	55.0	1/21 19:00	102	2,458	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	106	.03	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 3	DX	Peak		0.3	4.1	3.1	0.0	N/A	119	0	79.0	67.69	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 3	Water	Peak	1/21 19:00	4.2	0.0	N/A	144	0	68.0	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	119	3,653	N/A	55.0	1/21 19:00	144	2,779	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	68	2,056	N/A	55.0	1/21 19:00	81	1,875	N/A	95.0
		113A - BATHROOM 3	98	7/21 11:00	43	1,371	N/A	55.0	1/21 24:00	54	1,172	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _EXHAUST FAN	Zone	10.00	N/A	0.00	197	.00	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	144	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.2	2.7	2.1	0.0	N/A	80	0	79.0	67.96	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	2.8	0.0	N/A	95	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	80	2,404	N/A	55.0	1/21 19:00	95	1,606	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	76	2,299	N/A	55.0	1/21 19:00	91	1,757	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	95	.03	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		2.6	31.2	24.2	4.0	N/A	866	119	80.4	80.29	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	30.1	6.8	N/A	797	119	60.2	95.0	1.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	8/21 17:00	866	20,142	N/A	55.0	1/21 24:00	797	7,071	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	175	5,219	N/A	55.0	1/21 24:00	206	3,370	N/A	95.0
		101A - BILLETING	184	8/21 17:00	529	11,387	N/A	55.0	1/21 24:00	452	2,452	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 19:00	21	654	N/A	55.0	1/21 24:00	26	429	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	45	1,231	N/A	55.0	1/21 20:00	49	939	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	49	1,328	N/A	55.0	1/21 20:00	52	995	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	797	.26	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.3	4.0	3.1	0.0	N/A	116	0	79.0	67.23	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	4.1	0.0	N/A	140	0	68.0	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	116	3,548	N/A	55.0	1/21 19:00	140	2,445	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	48	1,517	N/A	55.0	1/21 20:00	60	1,093	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	64	1,886	N/A	55.0	1/21 19:00	75	1,609	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _EXHAUST FAN	Zone	10.00	N/A	0.00	180	.00	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	140	.04	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.3	3.9	3.0	0.0	N/A	112	0	79.0	67.37	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	4.0	0.0	N/A	137	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	112	3,476	N/A	55.0	1/21 19:00	137	2,507	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	60	1,812	N/A	55.0	1/21 19:00	72	1,645	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	45	1,456	N/A	55.0	1/21 20:00	58	1,087	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _EXHAUST FAN	Zone	10.00	N/A	0.00	177	.00	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	137	.04	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		2.6	31.3	24.6	4.2	N/A	875	119	80.6	80.13	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	30.1	6.8	N/A	798	119	60.2	95.0	1.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	8/21 16:00	875	20,166	N/A	55.0	1/21 24:00	798	7,171	N/A	95.0
		100B - CIRCULATION	310	8/21 16:00	204	5,707	N/A	55.0	1/21 24:00	226	3,529	N/A	95.0
		101B - BILLETING	183	7/21 10:00	479	10,918	N/A	55.0	1/21 24:00	433	2,408	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	21	627	N/A	55.0	1/21 24:00	25	430	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	46	1,240	N/A	55.0	1/21 20:00	49	929	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	52	1,384	N/A	55.0	1/21 19:00	55	993	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	798	.26	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.3	3.2	0.4	N/A	121	13	79.3	68.47	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.0	0.8	N/A	145	13	63.2	95.0	0.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	121	3,677	N/A	55.0	1/21 24:00	145	4,058	N/A	95.0
		116B - MECH STORAGE	113	6/21 19:00	70	2,026	N/A	55.0	1/21 24:00	85	2,489	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	56	1,647	N/A	55.0	1/21 24:00	67	1,948	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	145	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.4	4.6	3.6	0.0	N/A	135	0	79.0	66.83	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	4.8	0.0	N/A	165	0	68.0	95.0	0.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	135	4,178	N/A	55.0	1/21 19:00	165	2,825	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	50	1,582	N/A	55.0	1/21 20:00	63	1,127	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	79	2,399	N/A	55.0	1/21 19:00	95	1,948	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _EXHAUST FAN	Zone	10.00	N/A	0.00	189	.00	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	165	.05	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.81	53	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	69.11	82.0

System Component Selection Summary

Roof Assembly 3

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.9	12.7	0.0	N/A	471	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 13:00	471	12,747	471	55.0		0	0	471	95.0
	SS - 1		108	7/21 13:00	471	11,909	471	55.0	1/21 24:00	471	2,274	471	95.0
		118B - IT	108	7/21 15:00	468	11,840	468	55.0	1/21 24:00	468	2,434	468	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	471	.21	N/A	100.00

System Name: CV PTAC - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	DX	Peak		0.4	4.3	3.3	0.0	N/A	126	0	79.0	66.85	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	4.5	0.0	N/A	154	0	68.0	95.0	0.18	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 5		234	7/21 18:00	126	3,898	N/A	55.0	1/21 19:00	154	2,575	N/A	95.0
		102A - SLQ 4	146	7/21 18:00	69	2,062	N/A	55.0	1/21 19:00	82	1,679	N/A	95.0
		104A - BATHROOM 2	89	7/21 18:00	51	1,635	N/A	55.0	1/21 24:00	65	1,109	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 5 _EXHAUST FAN	Zone	10.00	N/A	0.00	178	.00	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	154	.05	N/A	100.00

System Name: CV PTAC - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	DX	Peak		0.3	3.3	2.6	0.0	N/A	98	0	79.0	67.39	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 7	Water	Peak	1/21 19:00	3.4	0.0	N/A	116	0	68.0	95.0	0.14	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 7		158	8/21 17:00	98	2,944	N/A	55.0	1/21 19:00	116	2,284	N/A	95.0
		106A - SLQ 2	158	8/21 17:00	94	2,817	N/A	55.0	1/21 19:00	111	2,415	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	116	.04	N/A	100.00

System Name: CV PTAC - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	DX	Peak		0.3	3.5	2.7	0.0	N/A	102	0	79.0	67.60	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	3.6	0.0	N/A	122	0	68.0	95.0	0.15	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 6		239	7/21 11:00	102	3,098	N/A	55.0	1/21 19:00	122	2,484	N/A	95.0
		108A - BATHROOM 1	91	7/21 11:00	41	1,289	N/A	55.0	1/21 24:00	51	1,104	N/A	95.0
		109A - SLQ 3	148	7/21 11:00	55	1,617	N/A	55.0	1/21 19:00	64	1,620	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 6 _EXHAUST FAN	Zone	10.00	N/A	0.00	182	.00	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	122	.04	N/A	100.00

System Name: CV PTAC - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	DX	Peak		0.3	3.1	2.4	0.0	N/A	92	0	79.0	67.84	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 9	Water	Peak	1/21 19:00	3.2	0.0	N/A	108	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 9		159	8/21 16:00	92	2,742	N/A	55.0	1/21 19:00	108	2,260	N/A	95.0
		106B - SLQ 1	159	8/21 16:00	89	2,615	N/A	55.0	1/21 19:00	103	2,392	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	108	.03	N/A	100.00

System Name: CV PTAC - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	DX	Peak		0.4	4.9	3.8	0.0	N/A	142	0	79.0	66.57	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 4	Water	Peak	1/21 19:00	5.1	0.0	N/A	175	0	68.0	95.0	0.21	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 4		245	7/21 18:00	142	4,430	N/A	55.0	1/21 19:00	175	2,686	N/A	95.0
		110A - SLQ 6	149	7/21 18:00	89	2,714	N/A	55.0	1/21 19:00	107	1,755	N/A	95.0
		112A - BATHROOM 4	96	7/21 18:00	54	1,734	N/A	55.0	1/21 24:00	69	1,171	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 4 _EXHAUST FAN	Zone	10.00	N/A	0.00	192	.00	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	175	.06	N/A	100.00

System Name: CV PTAC - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	DX	Peak		0.2	2.4	1.8	0.0	N/A	68	0	79.0	69.84	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 2	Water	Peak	1/21 19:00	2.3	0.0	N/A	79	0	68.0	95.0	0.09	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 2		167	7/21 10:00	68	2,006	N/A	55.0	1/21 19:00	79	2,317	N/A	95.0
		115A - SLQ 7	167	7/21 10:00	71	1,860	N/A	55.0	1/21 19:00	84	2,455	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	79	.03	N/A	100.00

System Name: CV PTAC - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	DX	Peak		0.2	2.4	1.9	0.0	N/A	71	0	79.0	69.27	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	2.4	0.0	N/A	82	0	68.0	95.0	0.10	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 8		162	8/21 11:00	71	2,071	N/A	55.0	1/21 19:00	82	2,287	N/A	95.0
		105A - SLQ 1	162	8/21 11:00	71	1,923	N/A	55.0	1/21 19:00	83	2,423	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	82	.03	N/A	100.00

System Name: CV PTAC - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	DX	Peak		0.3	3.1	2.4	0.0	N/A	90	0	79.0	67.77	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
PTAC-1	PTAC - 1	Water	Peak	1/21 19:00	3.1	0.0	N/A	107	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	90	2,695	N/A	55.0	1/21 19:00	107	2,320	N/A	95.0
		114A - SLQ 8	164	7/21 18:00	84	2,572	N/A	55.0	1/21 19:00	102	2,458	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	107	.03	N/A	100.00

System Name: CV PTAC - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	DX	Peak		0.3	4.2	3.1	0.0	N/A	119	0	79.0	67.68	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 3	Water	Peak	1/21 19:00	4.2	0.0	N/A	145	0	68.0	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 3		250	7/21 10:00	119	3,666	N/A	55.0	1/21 19:00	145	2,801	N/A	95.0
		111A - SLQ 5	152	7/21 10:00	68	2,056	N/A	55.0	1/21 19:00	81	1,875	N/A	95.0
		113A - BATHROOM 3	98	7/21 11:00	43	1,371	N/A	55.0	1/21 24:00	54	1,172	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 3 _EXHAUST FAN	Zone	10.00	N/A	0.00	197	.00	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	145	.05	N/A	100.00

System Name: CV PTAC - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	DX	Peak		0.2	2.8	2.1	0.0	N/A	80	0	79.0	67.95	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	2.8	0.0	N/A	95	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 15		164	6/21 17:00	80	2,413	N/A	55.0	1/21 19:00	95	1,619	N/A	95.0
		115B - SLQ 7	164	6/21 17:00	76	2,299	N/A	55.0	1/21 19:00	91	1,757	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	95	.03	N/A	100.00

System Name: CV PTAC - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	DX	Peak		2.6	31.2	24.2	4.0	N/A	867	119	80.4	80.27	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	30.1	6.8	N/A	798	119	60.2	95.0	1.22	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 17		776	8/21 17:00	867	20,179	N/A	55.0	1/21 24:00	798	7,136	N/A	95.0
		100A - CIRCULATION	308	7/21 10:00	175	5,219	N/A	55.0	1/21 24:00	206	3,370	N/A	95.0
		101A - BILLETING	184	8/21 17:00	529	11,387	N/A	55.0	1/21 24:00	452	2,452	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 19:00	21	654	N/A	55.0	1/21 24:00	26	429	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	45	1,231	N/A	55.0	1/21 20:00	49	939	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	49	1,328	N/A	55.0	1/21 20:00	52	995	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	798	.26	N/A	100.00

System Name: CV PTAC - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	DX	Peak		0.3	4.0	3.1	0.0	N/A	116	0	79.0	67.22	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	4.1	0.0	N/A	141	0	68.0	95.0	0.17	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 11		237	6/21 17:00	116	3,561	N/A	55.0	1/21 19:00	141	2,464	N/A	95.0
		108B - BATHROOM 1	90	6/21 17:00	48	1,517	N/A	55.0	1/21 20:00	60	1,093	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	64	1,886	N/A	55.0	1/21 19:00	75	1,609	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 11 _EXHAUST FAN	Zone	10.00	N/A	0.00	180	.00	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	141	.05	N/A	100.00

System Name: CV PTAC - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	DX	Peak		0.3	3.9	3.0	0.0	N/A	112	0	79.0	67.36	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	4.0	0.0	N/A	138	0	68.0	95.0	0.16	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 12		233	7/21 10:00	112	3,487	N/A	55.0	1/21 19:00	138	2,526	N/A	95.0
		102B - SLQ 4	145	7/21 10:00	60	1,812	N/A	55.0	1/21 19:00	72	1,645	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	45	1,456	N/A	55.0	1/21 20:00	58	1,087	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 12 _EXHAUST FAN	Zone	10.00	N/A	0.00	177	.00	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	138	.04	N/A	100.00

System Name: CV PTAC - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	DX	Peak		2.6	31.4	24.6	4.2	N/A	876	119	80.6	80.11	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	30.2	6.8	N/A	799	119	60.2	95.0	1.23	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 18		789	8/21 16:00	876	20,199	N/A	55.0	1/21 24:00	799	7,235	N/A	95.0
		100B - CIRCULATION	310	8/21 16:00	204	5,707	N/A	55.0	1/21 24:00	226	3,529	N/A	95.0
		101B - BILLETING	183	7/21 10:00	479	10,918	N/A	55.0	1/21 24:00	433	2,408	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	21	627	N/A	55.0	1/21 24:00	25	430	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	46	1,240	N/A	55.0	1/21 20:00	49	929	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	52	1,384	N/A	55.0	1/21 19:00	55	993	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	799	.26	N/A	100.00

System Name: CV PTAC - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	DX	Peak		0.4	4.3	3.3	0.4	N/A	122	13	79.3	68.45	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	5.0	0.8	N/A	146	13	63.2	95.0	0.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	122	3,702	N/A	55.0	1/21 24:00	146	4,086	N/A	95.0
		116B - MECH STORAGE	113	6/21 19:00	70	2,026	N/A	55.0	1/21 24:00	85	2,489	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	56	1,647	N/A	55.0	1/21 24:00	67	1,948	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	146	.05	N/A	100.00

System Name: CV PTAC - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	DX	Peak		0.4	4.7	3.6	0.0	N/A	135	0	79.0	66.82	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	4.8	0.0	N/A	166	0	68.0	95.0	0.20	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 13		243	6/21 17:00	135	4,191	N/A	55.0	1/21 19:00	166	2,845	N/A	95.0
		113B - BATHROOM 3	95	6/21 17:00	50	1,582	N/A	55.0	1/21 20:00	63	1,127	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	79	2,399	N/A	55.0	1/21 19:00	95	1,948	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 13 _EXHAUST FAN	Zone	10.00	N/A	0.00	189	.00	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	166	.05	N/A	100.00

System Name: CV PTAC - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	DX	Peak		0.2	2.7	2.0	0.0	N/A	77	0	79.0	68.14	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	2.7	0.0	N/A	92	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 16		164	7/21 10:00	77	2,336	N/A	55.0	1/21 19:00	92	1,625	N/A	95.0
		114B - SLQ 8	164	7/21 10:00	72	2,197	N/A	55.0	1/21 19:00	87	1,757	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	92	.03	N/A	100.00

System Name: CV PTAC - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	DX	Peak		0.2	2.6	2.0	0.0	N/A	75	0	79.0	68.44	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	2.6	0.0	N/A	90	0	68.0	95.0	0.11	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 10		159	8/21 10:00	75	2,264	N/A	55.0	1/21 19:00	90	2,259	N/A	95.0
		105B - SLQ 2	159	8/21 10:00	71	2,127	N/A	55.0	1/21 19:00	84	2,389	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	90	.03	N/A	100.00

System Name: CV PTAC - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	2

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	DX	Peak		0.4	4.5	3.4	0.0	N/A	128	0	79.0	66.97	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	4.6	0.0	N/A	159	0	68.0	95.0	0.19	180.0	130.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 14		243	7/21 10:00	128	4,016	N/A	55.0	1/21 19:00	159	2,609	N/A	95.0
		110B - SLQ 6	148	7/21 10:00	80	2,455	N/A	55.0	1/21 19:00	97	1,717	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	48	1,556	N/A	55.0	1/21 20:00	61	1,123	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 14 _EXHAUST FAN	Zone	10.00	N/A	0.00	190	.00	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	159	.05	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.82	54	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	69.52	82.0

DEARNG BARRACKS - ARCHITECTURAL SYSTEMS - for LCCA's

EDIT DATE: 3/22/24

ARCH SYSTEM AREAS

SYSTEM	AREA - sf	COMMENTS
ROOF	3,150	
WALLS	2,696	W/O glazed areas
Glass	190	7 % of wall area

ARCHITECTURAL ASSEMBLIES

	ASSEMBLY DESCRIPTIONS	REMARKS	COST		
			Item Unit Cost	Item Total Cost	Assembly Total
ROOF ASSEMBLIES	**BASELINE ROOF ASSEMBLY**				
	Exposed fastner Corrugated Galv, steel panels	Life span - 20 years	$ 14.33	$ 45,139.50	
	1x3 treated strapping at 16" OC		$ 2.13	$ 6,709.50	
	Peal and stick Alphaltic roofing underlayment (Grace Ice and Water shield)		$ 2.22	$ 6,993.00	$ 98,248.50
	5/8" zip system sheathing		$ 3.64	$ 11,466.00	
	Wood Trusses w/2x10 base board for attic floor	24" OC	$ 7.12	$ 22,428.00	
	R19 Batts in attic floor	Does not meet energy code minimum	$ 1.75	$ 5,512.50	
	ROOF ALTERNATIVE (ALT.) ASSEMBLY NO 1				
	Exposed fastner Kynar Coated steel panels. BOD: McElroy - "5V" panels	Life span - 45 years	$ 18.09	$ 56,983.50	
	1x4 treated strapping at 16" OC		$ 2.83	$ 8,914.50	
	Peal and stick Alphaltic roofing underlayment (Grace Ice and Water shield)		$ 2.22	$ 6,993.00	$ 113,242.50
	R- 10 - 1- 1/2" Poly Iso Rigid Insulation		$ 2.16	$ 6,804.00	
	5/8" zip system sheathing		$ 3.64	$ 11,466.00	
	2x10 Rafters w/ air vent	24" OC	$ 4.91	$ 15,466.50	
	R-30 Batt insulation		$ 2.10	$ 6,615.00	
	ROOF ALT. ASSEMBLY NO 2				
	Standing Seam Metal (Steel) Roof. BOD: McElroy- "138T Panels" (18" W)	Life span - 45 years	$ 17.19	$ 54,148.50	
	Peal and stick Alphaltic roofing underlayment (BOD - Grace Ice and Water shield)		$ 2.22	$ 6,993.00	
	R- 10 - 1- 1/2" Poly Iso Rigid Insulation		$ 2.16	$ 6,804.00	$ 101,493.00
	5/8" zip system sheathing		$ 3.64	$ 11,466.00	
	2x10 Rafters w/ air vent	24" OC	$ 4.91	$ 15,466.50	
	R-30 Batt insulation		$ 2.10	$ 6,615.00	
	ROOF ALT. ASSEMBLY NO 3				
	Standing Seam Metal (Steel) Roof	Life span - 45 years	$ 17.19	$ 54,148.50	
	Peal and stick Alphaltic roofing underlayment (BOD - Grace Ice and Water shield)		$ 2.22	$ 6,993.00	$ 96,705.00
	Structural Insulated Panels (SIPs) - R38 (BOD- Ray-COR)		$ 11.29	$ 35,563.50	
Wall ASSEMBLIES	**BASELINE WALL ASSEMBLY**				
	Exposed fastner Corrigated Galv, steel panels	Life span - 20 years	$ 14.33	$ 38,633.68	
	5/8" zip system sheathing		$ 5.86	$ 15,798.56	$ 84,681.36
	Wood studs at 16" OC		$ 5.80	$ 15,636.80	
	R19 Kraft faced Batt Insulation		$ 1.86	$ 5,014.56	
	5/8" Gyp. Bd.		$ 3.56	$ 9,597.76	
	WALL ALT. ASSEMBLY NO. 1				
	Exposed fastner v-rib Kynar coated, steel panels. BOD: McElroy - "Max Rib Panel"	Life span - 45 years	$ 21.06	$ 56,777.76	
	5/8" zip system sheathing		$ 5.86	$ 15,798.56	$ 102,825.44
	Wood studs at 16" OC		$ 5.80	$ 15,636.80	
	R19 Kraft faced Batt Insulation		$ 1.86	$ 5,014.56	
	5/8" Gyp. Bd.		$ 3.56	$ 9,597.76	
	WALL ALT. ASSEMBLY NO. 2				
	Composite wood siding- BOD: Resysta, Model RESRPH340312	Life span - 45 years	$ 20.98	$ 56,562.08	
	5/8" zip system sheathing		$ 5.86	$ 15,798.56	$ 110,643.84
	Wood studs at 16" OC		$ 5.80	$ 15,636.80	
	R19 spray foam insulation		$ 4.84	$ 13,048.64	
	5/8" Gyp. Bd.		$ 3.56	$ 9,597.76	
	WALL ALT. ASSEMBLY NO. 3				
	Composite wood siding- BOD: Resyta, Model RESRPH340312	Life span - 45 years	$ 20.98	$ 56,562.08	
	Air Barrier - Dupont Tyvek		$ 0.61	$ 1,644.56	$ 111,290.88
	Structural Insulated Panels (SIPs) - R19 (BOD- Ray-COR)		$ 11.29	$ 30,437.84	
	R19 closed cell foam Insulation		$ 4.84	$ 13,048.64	
	5/8" Gyp. Bd.		$ 3.56	$ 9,597.76	

WINDOW ASSEMBLIES	**WINDOW / FENESTRATION TYPES**				
	BASELINE WINDOW ASSEMBLY				
	CATEGORY: 10-20% WALL AREA - R-1.75 , SHGC = 0.39, U-Factor = 0.57, VLT 79%				$ 24,527.10
	Frames: Commercial Aluminum				
	Glass: Clear Insulated glass				
	Window types: (6) Double Casements- 4'x4', (4) Single Casements- 2.5' x 4', (1)		$ 129.09	$ 24,527.10	
	WINDOW ALT. ASSEMBLY NO 1				
	R-3.85, SHGC = 0.59, U-Factor - 0.263, VLT 75%				$ 24,388.40
	Frames: Commercial Aluminum				
	Glass: Double Pane Insulated glass - 1/8" clear outside pane with Low-E, 1/2" argon filled				
	Window types: (6) Double Casements- 4'x4', (4) Single Casements- 2.5' x 4', (1) picture- 6' x4'		$ 128.36	$ 24,388.40	
	WINDOW ALT. ASSEMBLY NO 2				
	R-5.12, SHGC = 0.55, U-Factor - 0.195, VLT 70%				$ 28,752.70
	Frames: Commercial Aluminum				
	Glass: Triple Pane Insulated glass - 1/8" clear outside pane with Low-E, 1/2" argon filled air				
	Window types: (6) Double Casements- 4'x4', (4) Single Casements- 2.5' x 4', (1) picture- 6' x4'		$ 151.33	$ 28,752.70	
	WINDOW ALT. ASSEMBLY NO 3				
	R-3.86, SHGC = 0.142, U-Factor - 0.259, VLT 13%				$ 33,174.00
	Frames: Commercial Aluminum				
	Glass: Double Pane insulaed glass - 1/4" electrochromic reflective, 1/2" argon filled air				
	Window types: (6) Double Casements- 4'x4', (4) Single Casements- 2.5' x 4', (1)		$ 174.60	$ 33,174.00	

END OF ATTACHEMENT 6.1 BUILDING ENVELOPE

Subject: PV Calculations Job Number: 213-76984-22001

Per ASHRAE 189.1, 7.4.1.1, at least 32 kWh/m^2 of on-site renewable energy per year is required.

$$32\ kWh/m2\ =\ 2.973\ kWh/ft2$$

$$Total\ Square\ Footage\ =\ 17{,}280\ ft2$$

Yearly minimum kWh required

$$2.973 kWh/ft2\ *\ 17{,}280 ft2\ =\ 51{,}373\ kWh$$

Per attached PV Watts Calculation from NREL:

$$DC\ system\ Size: 38\ kW$$

$$Commercial\ Electricity\ Rate: 0.1164\ \$/kWh$$ *(Assumed per averages)*

$$System\ Output:\ 52{,}062\ kWh/yr$$

Per SAM 2018.11.11

$$Selected\ Module: SunPower\ SPR-E19-310-COM$$

$$Selected\ Inverter: SolarEdge\ Technologies\ Ltd: SE30KUS\ [480V]$$

$$Array\ Size: 38\ kWdc$$

$$DC\ to\ AC\ Ratio: 1.3$$

$$Number\ of\ Modules: 126$$

$$Number\ of\ Strings: 9$$

$$Total\ Module\ Area: 2{,}212\ ft^2$$

$$Total\ Direct\ Cost: \$165{,}834.69$$

$$Total\ Indirect\ Cost: \$6{,}643.39$$

$$Sales\ Tax\ Cost: \$8{,}291.73$$

$$Total\ Installed\ Cost: \$180{,}769.81$$

$$Annual\ O\&M\ Fixed\ Cost\ by\ Capacity: \$500$$

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at //sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

Disclaimer: The PVWatts® Model ("Model") is provided by the National Renewable Energy Laboratory ("NREL"), which is operated by the Alliance for Sustainable Energy, LLC ("Alliance") for the U.S. Department Of Energy ("DOE") and may be used for any purpose whatsoever.

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The energy output range is based on analysis of 30 years of historical weather data, and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

52,062 kWh/Year*

System output may range from 49,750 to 53,488 kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)
January	2.87	2,822
February	3.97	3,492
March	4.81	4,580
April	5.87	5,267
May	6.25	5,629
June	6.33	5,434
July	6.42	5,565
August	5.92	5,186
September	5.11	4,416
October	4.30	3,983
November	3.27	3,039
December	2.74	2,649
Annual	4.82	52,062

Location and Station Identification

Requested Location	bethany beach, deleware
Weather Data Source	Lat, Lng: 38.53, -75.06 0.6 mi
Latitude	38.53° N
Longitude	75.06° W

PV System Specifications

DC System Size	38 kW
Module Type	Standard
Array Type	Fixed (open rack)
System Losses	15.81%
Array Tilt	20°

Performance Metrics

DC Capacity Factor	15.6%

NIST BLCC 5.3-22: Comparative Analysis

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

Base Case: Non- PV

Alternative: PV

General Information

File Name:	C:\Users\jesse.harlan\OneDrive - Tetra Tech, Inc\Documents_My Documents\Projects\BBTS Transient Training Officer's Barracks\Calcs\PV\LCCA.xml
Date of Study:	Tue Dec 19 14:06:11 CST 2023
Project Name:	Bethany Beach Barracks
Project Location:	Delaware
Analysis Type:	MILCON Analysis, Energy Project
Analyst:	JGH
Base Date:	April 1, 2024
Beneficial Occupancy Date:	April 1, 2024
Study Period:	40 years 0 months(April 1, 2024 through March 31, 2064)
Discount Rate:	3%
Discounting Convention:	Mid-Year

Comparison of Present-Value Costs

PV Life-Cycle Cost

	Base Case	Alternative	Savings from Alternative
Initial Investment Costs:			
Capital Requirements as of Base Date	$0	$180,770	-$180,770
Future Costs:			
Energy Consumption Costs	$134,068	$0	$134,068
Energy Demand Charges	$0	$0	$0
Energy Utility Rebates	$0	$0	$0
Water Costs	$0	$0	$0
Routine Recurring and Non-Recurring OM&R Costs	$0	$20,000	-$20,000
Major Repair and Replacements	$0	$180,770	-$180,770
Residual Value at End of Study Period	$0	$0	$0
Subtotal (for Future Cost Items)	$134,068	$200,770	-$66,702
Total PV Life-Cycle Cost	$134,068	$381,540	-$247,471

Net Savings from Alternative Compared with Base Case

PV of Non-Investment Savings	$114,068

- Increased Total Investment	$361,540

Net Savings	-$247,471

Savings-to-Investment Ratio (SIR)

SIR = 0.32

SIR is lower than 1.0; project alternative is not cost effective.

Adjusted Internal Rate of Return

AIRR = 0.07%

AIRR is lower than your discount rate; project alternative is not cost effective.

Payback Period

Estimated Years to Payback (from beginning of Beneficial Occupancy Period)

Simple Payback never reached during study period.

Discounted Payback never reached during study period.

Energy Savings Summary

Energy Savings Summary (in stated units)

Energy Type	Average Annual Consumption: Base Case	Alternative	Savings	Life-Cycle Savings
Electricity	52,062.0 kWh	0.0 kWh	52,062.0 kWh	2,082,337.5 kWh

Energy Savings Summary (in MBtu)

Energy Type	Average Annual Consumption: Base Case	Alternative	Savings	Life-Cycle Savings
Electricity	177.6 MBtu	0.0 MBtu	177.6 MBtu	7,105.2 MBtu

Emissions Reduction Summary

Energy Type	Average Annual Emissions: Base Case	Alternative	Reduction	Life-Cycle Reduction
Electricity				
CO2	20,404.10 kg	0.00 kg	20,404.10 kg	816,108.09 kg
SO2	5.44 kg	0.00 kg	5.44 kg	217.41 kg
NOx	8.81 kg	0.00 kg	8.81 kg	352.36 kg
Total:				
CO2	20,404.10 kg	0.00 kg	20,404.10 kg	816,108.09 kg
SO2	5.44 kg	0.00 kg	5.44 kg	217.41 kg
NOx	8.81 kg	0.00 kg	8.81 kg	352.36 kg

END OF 6.2 ELECTRICAL SYSTEMS LCCA

DEARNG Barracks - Solar HW Calculation

About the Solar Hot Water System Size and Life Cycle Costs spreadsheet:

This tool calculates solar hot water system sizing and life cycle costs given site-specific inputs. Two scenarios can be evaluated in parallel, depending on the solar fraction(s) of interest (solar fraction is the fraction of load met by solar).

- *In Scenario 1, the default solar fraction is calculated given the solar resource data (columns D-E).*
- *In Scenario 2, a user can specify their desired solar fraction (columns G-H).*

Cells requiring user inputs are highlighted and color-coded by data type, and additional tabs provide relevant data for reference.

There is a tab for calculations in English units and another tab for calculations in metric units.

- *If using the metric version and fuel cost is given in English $/therm, divide by 29.3 kWh/therm to get fuel cost in $/kWh.*
- *If using the English version and fuel cost is given in metric $/kWh, multiply by 29.3 kWh/therm to get fuel cost in $/therm.*

Instructions:

1. Input a desired solar fraction to be evaluated in cell H12.

2. Estimate the building's Daily Hot Water Use (row 15). Refer to the 'Hot Water Use' tab for benchmark values for gallons per person per day by building type. Multiply the reference value by the number of building occupants.

3. Input the following data in the Hot Water Use Information section (rows 15-20):

- *Daily Hot Water Use (gallons per day; use the estimate from Step 2 above)*
- *Cold incoming water temperature (F)*
- *Hot water delivery temperature (F)*
- *Cost of electricity or fuel ($/therm) used for water heating (see row 2 on how to convert $/kWh to $/therm)*
- *Thermal efficiency of the heating system (refer to 'Hot Water Use' tab)*

4. Input the solar resource data (rows 25-26; maximum and average daily solar Btu/ft ^{2} /day) using the 'Resource Data' tab. Use the values corresponding to the nearest City and State.

5. Using the calculated system size(s) shown in row 28, identify the approximate unit cost(s) in $/ft ^{2} using the 'Cost Data' t

*6. Input the unit cost(s) into row 35 to calculate the economic results. If the Savings to Investment Ratio in row 40 is greater than 1, the project is cost effective according to federal criteria in 10 CFR 436.**

* https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-436

		Scenario 2: Input desired solar fraction.	
		Solar fraction=fraction of load met by solar	30%
			English Units
Hot Water Use Information			
V_{daily}	Daily Hot Water Use (volume/day)	320.00	gallons/day
T_{cold}	Cold Incoming Water Temperature	57.00	F
T_{hot}	Hot Water Delivery Temperature	140.00	F
Q_{load}	Equation: Building Hot Water Energy Requirement	2.21	therms/day
cfuel	Cost of Electricity or Fuel ($/therm) Used for Water Heating	3.21	$/therm
$\eta_{heating}$	Thermal Efficiency of Conventional Heating System	0.93	
Stipulated Design Values: *These are reasonable default values for the efficiency of the solar water heater (annual average) and the fraction of solar heat that can be used. These inputs may be changed.*			
η_{solar}	Efficiency of Solar Water Heater	0.3	
% Utilization	Fraction of delivered heat that can be used.	0.9	
Solar Resource Data			
$I_{C,max}$	Maximum daily solar insolation on tilt=latitude.	1776	Btu/ft^2/day
$I_{C,ave}$	Average daily solar insolation on tilt=latitude.	1459	Btu/ft^2/day
Calculated Energy Results: *The following rows show the calculated system size (ft ^{2}) and energy delivery.*			
A_C	Equation: Area of Solar Collector	124.6	ft^2
Q_{load}	Equation: Annual Energy to Heat Water	808	therms/year
Q_{solar}	Equation: Annual Solar Heat Delivery	179	therms/year

*assuming 16 ppl and 20 gal/day

SF	Equation: Fraction of Load Provided by Solar	0.22
$Q_{savings}$	Equation: Annual Savings in Heating Fuel	193 therms/year
Q_{pump}	Equation: Annual Parasitic Pump Energy	2 therms/year
Economic Results		
C_{unit}	Unit Cost of Solar Water System	216 $/ft^2
$C_{initial}$	Equation: Initial Cost of Solar Heating System	$26,908
$C_{savings}$	Equation: Annual Energy Cost Savings Energy Cost times ($Q_{savings}$ minus Q_{pump})	$613
$C_{O\&M}$	Annual Operation & Maintenance Cost 0.5% of initial cost per year	$135
SPB (Simple Payback Period, years)	Equation: Simple Payback Period (years)	56.2
SIR (Savings-to-Investment Ratio)	Equation: Savings-to-Investment Ratio	0.31

END OF ATTACHEMENT 6.2
ELECTRICAL SYSTEMS

ATTACHMENT 6.3 -DOMESTIC HOT WATER SYSTEM LCCA

DEARNG Barracks - Solar HW Calculation

About the Solar Hot Water System Size and Life Cycle Costs spreadsheet:

This tool calculates solar hot water system sizing and life cycle costs given site-specific inputs. Two scenarios can be evaluated in parallel, depending on the solar fraction(s) of interest (solar fraction is the fraction of load met by solar).

- *In Scenario 1, the default solar fraction is calculated given the solar resource data (columns D-E).*
- *In Scenario 2, a user can specify their desired solar fraction (columns G-H).*

Cells requiring user inputs are highlighted and color-coded by data type, and additional tabs provide relevant data for reference.

There is a tab for calculations in English units and another tab for calculations in metric units.

- *If using the metric version and fuel cost is given in English $/therm, divide by 29.3 kWh/therm to get fuel cost in $/kWh.*
- *If using the English version and fuel cost is given in metric $/kWh, multiply by 29.3 kWh/therm to get fuel cost in $/therm.*

Instructions:

1. Input a desired solar fraction to be evaluated in cell H12.

2. Estimate the building's Daily Hot Water Use (row 15). Refer to the 'Hot Water Use' tab for benchmark values for gallons per person per day by building type. Multiply the reference value by the number of building occupants.

3. Input the following data in the Hot Water Use Information section (rows 15-20):

- *Daily Hot Water Use (gallons per day; use the estimate from Step 2 above)*
- *Cold incoming water temperature (F)*
- *Hot water delivery temperature (F)*
- *Cost of electricity or fuel ($/therm) used for water heating (see row 2 on how to convert $/kWh to $/therm)*
- *Thermal efficiency of the heating system (refer to 'Hot Water Use' tab)*

4. Input the solar resource data (rows 25-26; maximum and average daily solar Btu/ft ^{2} /day) using the 'Resource Data' tab. Use the values corresponding to the nearest City and State.

5. Using the calculated system size(s) shown in row 28, identify the approximate unit cost(s) in $/ft ^{2} using the 'Cost Data' ta

*6. Input the unit cost(s) into row 35 to calculate the economic results. If the Savings to Investment Ratio in row 40 is greater than 1, the project is cost effective according to federal criteria in 10 CFR 436.**

* https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-436

		Scenario 2: Input desired solar fraction.	
		Solar fraction=fraction of load met by solar	30%
			English Units
Hot Water Use Information			
V_{daily}	Daily Hot Water Use (volume/day)	320.00	gallons/day
T_{cold}	Cold Incoming Water Temperature	57.00	F
T_{hot}	Hot Water Delivery Temperature	140.00	F
Q_{load}	Equation: Building Hot Water Energy Requirement	2.21	therms/day
cfuel	Cost of Electricity or Fuel ($/therm) Used for Water Heating	3.21	$/therm
$\eta_{heating}$	Thermal Efficiency of Conventional Heating System	0.93	
Stipulated Design Values: *These are reasonable default values for the efficiency of the solar water heater (annual average) and the fraction of solar heat that can be used. These inputs may be changed.*			
η_{solar}	Efficiency of Solar Water Heater	0.3	
% Utilization	Fraction of delivered heat that can be used.	0.9	
Solar Resource Data			
$I_{C,max}$	Maximum daily solar insolation on tilt=latitude.	1776	Btu/ft^2/day
$I_{C,ave}$	Average daily solar insolation on tilt=latitude.	1459	Btu/ft^2/day
Calculated Energy Results: *The following rows show the calculated system size (ft ^{2}) and energy delivery.*			
A_C	Equation: Area of Solar Collector	124.6	ft^2
Q_{load}	Equation: Annual Energy to Heat Water	808	therms/year
Q_{solar}	Equation: Annual Solar Heat Delivery	179	therms/year

*assuming 16 ppl and 20 gal/day

SF	Equation: Fraction of Load Provided by Solar	0.22
$Q_{savings}$	Equation: Annual Savings in Heating Fuel	193 therms/year
Q_{pump}	Equation: Annual Parasitic Pump Energy	2 therms/year
Economic Results		
C_{unit}	Unit Cost of Solar Water System	216 $/ft^2
$C_{initial}$	Equation: Initial Cost of Solar Heating System	$26,908
$C_{savings}$	Equation: Annual Energy Cost Savings Energy Cost times ($Q_{savings}$ minus Q_{pump})	$613
$C_{O\&M}$	Annual Operation & Maintenance Cost 0.5% of initial cost per year	$135
SPB (Simple Payback Period, years)	Equation: Simple Payback Period (years)	56.2
SIR (Savings-to-Investment Ratio)	Equation: Savings-to-Investment Ratio	0.31

END OF ATTACHEMENT 6.3 DOMESTIC HOT WATER SYSTEM - LCCA

NIST BLCC 5.3-23: Lowest LCC

ATTACHMENT 6.4 -HVAC SYSTEMS LCCA

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Systems.xml
Date of Study:	Wed Mar 20 15:58:25 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - HVAC LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Lowest LCC

Comparative Present-Value Costs of Alternatives
(Shown in Ascending Order of Initial Cost, * = Lowest LCC)

Alternative	Initial Cost (PV)	Life Cycle Cost (PV)	
ASHRAE 90.1-2019 Baseline (PTAC)	$107,360	$719,574	
Inverter PTHP (Package Terminal Heat Pump) w/ DOAS	$107,360	$623,168	*
VRF (Variable Refrigerant Flow) w/ DOAS	$230,816	$833,560	
GSHP (Ground Source Heat Pump) w/ DOAS	$270,939	$637,444	

NIST BLCC 5.3-23: Detailed LCC Analysis

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Systems.xml
Date of Study:	Wed Mar 20 15:57:11 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - HVAC LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: ASHRAE 90.1-2019 Baseline (PTAC)

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $107,360

Component: PTAC's and accessories
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$77,160
Total (for Component)		$77,160

Component: DOAS with Energy Recovery
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$30,200
Total (for Component)		$30,200

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
95,011.0 kWh	$0.10980	$10,432	$0	$0

Energy Costs: Natural Gas

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
522.0 Therm	$1.38800	$725	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$107,360	$4,645
Energy Costs		
Energy Consumption Costs	$229,828	$9,943
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$229,828	$9,943
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: PTAC's and accessories		
Routine Annually Recurring Costs	$197,747	$8,555
Routine Non-Annually Recurring Costs	$0	$0
Component: DOAS with Energy Recovery		
Routine Annually Recurring Costs	$6,592	$285
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$204,338	$8,840
Major Repair and Replacements		
Component: PTAC's and accessories	$133,734	$5,786
Component: DOAS with Energy Recovery	$50,955	$2,205

Subtotal (for Repair and Replacements):	$184,689	$7,990

Residual Value of Original Capital Components

Component: PTAC's and accessories	-$2,100	-$91
Component: DOAS with Energy Recovery	-$783	-$34
Subtotal (for Residual Value):	-$2,882	-$125

Residual Value of Major Repair and Replacements

Component: PTAC's and accessories	-$2,426	-$105
Component: DOAS with Energy Recovery	-$1,334	-$58
Subtotal (for Residual Value):	-$3,760	-$163

Total Life-Cycle Cost	$719,574	$31,132

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	37,388.51 kg	1,495,438.18 kg
SO2	13.68 kg	547.26 kg
NOx	15.73 kg	629.35 kg
Natural Gas:		
CO2	2,757.20 kg	110,280.45 kg
SO2	22.25 kg	890.00 kg
NOx	0.83 kg	33.04 kg
Total:		
CO2	40,145.71 kg	1,605,718.62 kg
SO2	35.93 kg	1,437.26 kg
NOx	16.56 kg	662.40 kg

Alternative: Inverter PTHP (Package Terminal Heat Pump) w/ DOAS

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $107,360

Component: PTHP's and accessories
Cost-Phasing

Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$77,160
Total (for Component)		$77,160

Component: DOAS with Energy Recovery
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$30,200
Total (for Component)		$30,200

Energy Costs: Electricity
(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
88,399.0 kWh	$0.10980	$9,706	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$107,360	$4,645
Energy Costs		
Energy Consumption Costs	$198,978	$8,609
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$198,978	$8,609
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: PTHP's and accessories		
Routine Annually Recurring Costs	$177,972	$7,700
Routine Non-Annually Recurring Costs	$0	$0
Component: DOAS with Energy Recovery		
Routine Annually Recurring Costs	$6,592	$285

Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$184,564	$7,985
Major Repair and Replacements		
Component: PTHP's and accessories	$86,965	$3,762
Component: DOAS with Energy Recovery	$50,955	$2,205
Subtotal (for Repair and Replacements):	$137,920	$5,967
Residual Value of Original Capital Components		
Component: PTHP's and accessories	-$2,000	-$87
Component: DOAS with Energy Recovery	-$783	-$34
Subtotal (for Residual Value):	-$2,782	-$120
Residual Value of Major Repair and Replacements		
Component: PTHP's and accessories	-$1,537	-$67
Component: DOAS with Energy Recovery	-$1,334	-$58
Subtotal (for Residual Value):	-$2,871	-$124
Total Life-Cycle Cost	$623,168	$26,961

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	34,786.57 kg	1,391,367.73 kg
SO2	12.73 kg	509.18 kg
NOx	14.64 kg	585.55 kg
Total:		
CO2	34,786.57 kg	1,391,367.73 kg
SO2	12.73 kg	509.18 kg
NOx	14.64 kg	585.55 kg

Alternative: GSHP (Ground Source Heat Pump) w/ DOAS

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $270,939

Component: GSHP's, ground loop, and accessories
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$240,739
Total (for Component)		$240,739

Component: DOAS with Energy Recovery
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$30,200
Total (for Component)		$30,200

Energy Costs: Electricity
(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
86,636.0 kWh	$0.10980	$9,513	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$270,939	$11,722
Energy Costs		
Energy Consumption Costs	$195,009	$8,437
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$195,009	$8,437
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Operating, Maintenance & Repair Costs		
Component: GSHP's, ground loop, and accessories		
Routine Annually Recurring Costs	$66,113	$2,860

Routine Annually Recurring Costs	$66,113	$2,860
Routine Non-Annually Recurring Costs	$0	$0
Component: DOAS with Energy Recovery		
Routine Annually Recurring Costs	$6,592	$285
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$72,705	$3,145
Major Repair and Replacements		
Component: GSHP's, ground loop, and accessories	$56,589	$2,448
Component: DOAS with Energy Recovery	$50,955	$2,205
Subtotal (for Repair and Replacements):	$107,544	$4,653
Residual Value of Original Capital Components		
Component: GSHP's, ground loop, and accessories	-$5,659	-$245
Component: DOAS with Energy Recovery	-$783	-$34
Subtotal (for Residual Value):	-$6,442	-$279
Residual Value of Major Repair and Replacements		
Component: GSHP's, ground loop, and accessories	-$978	-$42
Component: DOAS with Energy Recovery	-$1,334	-$58
Subtotal (for Residual Value):	-$2,312	-$100
Total Life-Cycle Cost	$637,444	$27,578

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	34,092.80 kg	1,363,618.76 kg
SO2	12.48 kg	499.02 kg
NOx	14.35 kg	573.88 kg
Total:		
CO2	34,092.80 kg	1,363,618.76 kg
SO2	12.48 kg	499.02 kg
NOx	14.35 kg	573.88 kg

Alternative: VRF (Variable Refrigerant Flow) w/ DOAS

Initial Cost Data (not Discounted)

Initial Capital Costs

(adjusted for price escalation)

Initial Capital Costs for All Components: $230,816

Component: VRF units and accessories
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$200,616
Total (for Component)		$200,616

Component: Copy of: DOAS with Energy Recovery
Cost-Phasing

Date	Portion	Yearly Cost
December 1, 2023	100%	$30,200
Total (for Component)		$30,200

Energy Costs: Electricity

(base-year dollars)

Average Annual Usage	Average Price/Unit	Average Annual Cost	Average Annual Demand	Average Annual Rebate
95,128.0 kWh	$0.10980	$10,445	$0	$0

Life-Cycle Cost Analysis

	Present Value	Annual Value
Initial Capital Costs	$230,816	$9,986
Energy Costs		
Energy Consumption Costs	$214,124	$9,264
Energy Demand Charges	$0	$0
Energy Utility Rebates	$0	$0
Subtotal (for Energy):	$214,124	$9,264
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0

Routine Operating, Maintenance & Repair Costs		
Component: VRF units and accessories		
Routine Annually Recurring Costs	$178,005	$7,701
Routine Non-Annually Recurring Costs	$0	$0
Component: Copy of: DOAS with Energy Recovery		
Routine Annually Recurring Costs	$6,592	$285
Routine Non-Annually Recurring Costs	$0	$0
Subtotal (for OM&R):	$184,597	$7,986
Major Repair and Replacements		
Component: VRF units and accessories	$161,506	$6,987
Component: Copy of: DOAS with Energy Recovery	$50,955	$2,205
Subtotal (for Repair and Replacements):	$212,461	$9,192
Residual Value of Original Capital Components		
Component: VRF units and accessories	-$3,466	-$150
Component: Copy of: DOAS with Energy Recovery	-$783	-$34
Subtotal (for Residual Value):	-$4,249	-$184
Residual Value of Major Repair and Replacements		
Component: VRF units and accessories	-$2,855	-$124
Component: Copy of: DOAS with Energy Recovery	-$1,334	-$58
Subtotal (for Residual Value):	-$4,189	-$181
Total Life-Cycle Cost	$833,560	$36,063

Emissions Summary

Energy Name	Annual	Life-Cycle
Electricity:		
CO2	37,434.56 kg	1,497,279.71 kg
SO2	13.70 kg	547.94 kg
NOx	15.75 kg	630.13 kg

Total:

CO2	37,434.56 kg	1,497,279.71 kg
SO2	13.70 kg	547.94 kg
NOx	15.75 kg	630.13 kg

NIST BLCC 5.3-23: Input Data Listing

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Systems.xml
Date of Study:	Wed Mar 20 15:55:58 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - HVAC LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: ASHRAE 90.1-2019 Baseline (PTAC)

Energy: Electricity

Annual Consumption:	95,011.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%

April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Energy: Natural Gas

Annual Consumption:	522.0 Therm
Price per Unit:	$1.38800
Demand Charge:	$0
Utility Rebate:	$0
End-Use:	Commercial Boiler, controlled-flue gas recirc
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-8.01%
April 1, 2024	1 year 0 months	-4.56%
April 1, 2025	1 year 0 months	-3.29%
April 1, 2026	1 year 0 months	-1.54%
April 1, 2027	1 year 0 months	0%
April 1, 2028	1 year 0 months	0.45%
April 1, 2029	1 year 0 months	0.67%
April 1, 2030	1 year 0 months	1.1%
April 1, 2031	1 year 0 months	1.31%
April 1, 2032	1 year 0 months	1.61%
April 1, 2033	1 year 0 months	1.48%
April 1, 2034	1 year 0 months	1.15%
April 1, 2035	1 year 0 months	0.62%
April 1, 2036	1 year 0 months	0.51%
April 1, 2037	1 year 0 months	1.02%
April 1, 2038	1 year 0 months	0.2%
April 1, 2039	1 year 0 months	0.71%
April 1, 2040	1 year 0 months	0.8%
April 1, 2041	1 year 0 months	0.2%
April 1, 2042	1 year 0 months	-0.1%
April 1, 2043	1 year 0 months	-0.3%
April 1, 2044	1 year 0 months	0%
April 1, 2045	1 year 0 months	0%
April 1, 2046	1 year 0 months	-0.1%
April 1, 2047	1 year 0 months	-0.2%
April 1, 2048	1 year 0 months	-0.1%
April 1, 2049	1 year 0 months	0%
April 1, 2050	1 year 0 months	-0.1%
April 1, 2051	1 year 0 months	-0.1%
April 1, 2052	1 year 0 months	-0.1%
April 1, 2053	Remaining	-0.08%

Component: PTAC's and accessories

Initial Investment

Initial Cost (base-year $):	$77,160
Annual Rate of Increase:	2%
Expected Asset Life:	10 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Replace System (Yr 10)

Years/Months:	10 years 0 months
Amount:	$54,012
Annual Rate Of Increase:	2%
Expected Asset Life:	10 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Replace System (Yr 20)

Years/Months:	20 years 0 months
Amount:	$54,012
Annual Rate Of Increase:	2%
Expected Asset Life:	10 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Replace System (Yr 30)

Years/Months:	30 years 0 months
Amount:	$54,012
Annual Rate Of Increase:	2%
Expected Asset Life:	10 years 0 months
Residual Value Factor:	2%

Routine Recurring OM&R: Annual Maintenance (Includes Major Repairs)

Amount:	$6,000
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Component: DOAS with Energy Recovery

Initial Investment

Initial Cost (base-year $):	$30,200
Annual Rate of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Repair DOAS (Yr 10)

Years/Months:	10 years 0 months
Amount:	$1,378
Annual Rate Of Increase:	2%
Expected Asset Life:	5 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Replace DOAS (Yr 15)

Years/Months:	15 years 0 months
Amount:	$30,200
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Major Repair and Replacement: Repair DOAS (Yr 25)

Years/Months:	25 years 0 months
Amount:	$1,378
Annual Rate Of Increase:	2%
Expected Asset Life:	5 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Replace DOAS (Yr 30)

Years/Months:	30 years 0 months
Amount:	$30,200
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Routine Recurring OM&R: Annual DOAS Maintenance

Amount:	$200
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: Inverter PTHP (Package Terminal Heat Pump) w/ DOAS

Energy: Electricity

Annual Consumption:	88,399.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%

April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Component: PTHP's and accessories

Initial Investment

Initial Cost (base-year $):	$77,160
Annual Rate of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Replace System (Yr 15)

Years/Months:	15 years 0 months
Amount:	$54,012
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Replace System (Yr 30)

Years/Months:	30 years 0 months
Amount:	$54,012
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	2%

Routine Recurring OM&R: Annual Maintenance (Includes Major Repairs)

Amount:	$5,400
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Component: DOAS with Energy Recovery

Initial Investment

Initial Cost (base-year $):	$30,200
Annual Rate of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Repair DOAS (Yr 10)

Years/Months:	10 years 0 months

Amount:	$1,378
Annual Rate Of Increase:	2%
Expected Asset Life:	5 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Replace DOAS (Yr 15)

Years/Months:	15 years 0 months
Amount:	$30,200
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Major Repair and Replacement: Repair DOAS (Yr 25)

Years/Months:	25 years 0 months
Amount:	$1,378
Annual Rate Of Increase:	2%
Expected Asset Life:	5 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Replace DOAS (Yr 30)

Years/Months:	30 years 0 months
Amount:	$30,200
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Routine Recurring OM&R: Annual DOA Maintenance

Amount:	$200
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: GSHP (Ground Source Heat Pump) w/ DOAS

Energy: Electricity

Annual Consumption:	86,636.0 kWh
Price per Unit:	$0.10000

Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%
April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%

April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Component: GSHP's, ground loop, and accessories

Initial Investment

Initial Cost (base-year $): $240,739

Annual Rate of Increase: 2%

Expected Asset Life: 25 years 0 months

Residual Value Factor: 3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Replace System (Yr 25)

Years/Months: 25 years 0 months

Amount: $72,222

Annual Rate Of Increase: 2%

Expected Asset Life: 25 years 0 months

Residual Value Factor: 2%

Routine Recurring OM&R: Annual Maintenance (includes Major Repairs)

Amount: $2,006

Annual Rate of Increase: 2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Component: DOAS with Energy Recovery

Initial Investment

Initial Cost (base-year $): $30,200

Initial Cost (base-year $): $30,200

Annual Rate of Increase: 2%

Expected Asset Life: 15 years 0 months

Residual Value Factor: 3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Repair DOAS (Yr 10)

Years/Months: 10 years 0 months

Amount: $1,378

Annual Rate Of Increase: 2%

Expected Asset Life: 5 years 0 months

Residual Value Factor: 2%

Major Repair and Replacement: Replace DOAS (Yr 15)

Years/Months: 15 years 0 months

Amount: $30,200

Annual Rate Of Increase: 2%

Expected Asset Life: 15 years 0 months

Residual Value Factor: 3%

Major Repair and Replacement: Repair DOAS (Yr 25)

Years/Months: 25 years 0 months

Amount: $1,378

Annual Rate Of Increase: 2%

Expected Asset Life: 5 years 0 months

Residual Value Factor: 2%

Major Repair and Replacement: Replace DOAS (Yr 30)

Years/Months: 30 years 0 months

Amount: $30,200

Annual Rate Of Increase: 2%

Expected Asset Life: 15 years 0 months

Residual Value Factor: 3%

Routine Recurring OM&R: Annual DOAS Maintenance

Routine Recurring O&M: Annual DOAS Maintenance

Amount:	$200
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Alternative: VRF (Variable Refrigerant Flow) w/ DOAS

Energy: Electricity

Annual Consumption:	95,128.0 kWh
Price per Unit:	$0.10980
Demand Charge:	$0
Utility Rebate:	$0
Location:	Delaware
Rate Schedule:	Commercial
State:	Delaware

Usage Indices

From Date	Duration	Usage Index
December 1, 2023	Remaining	100%

Escalation Rates

From Date	Duration	Escalation
April 1, 2023	1 year 0 months	-3.55%
April 1, 2024	1 year 0 months	-3.04%
April 1, 2025	1 year 0 months	-2.89%
April 1, 2026	1 year 0 months	-2.62%
April 1, 2027	1 year 0 months	-2.39%
April 1, 2028	1 year 0 months	-1.28%
April 1, 2029	1 year 0 months	-0.08%
April 1, 2030	1 year 0 months	0.15%
April 1, 2031	1 year 0 months	-0.42%
April 1, 2032	1 year 0 months	1.49%
April 1, 2033	1 year 0 months	1.32%
April 1, 2034	1 year 0 months	0%
April 1, 2035	1 year 0 months	0.37%
April 1, 2036	1 year 0 months	0.56%

April 1, 2037	1 year 0 months	0.78%
April 1, 2038	1 year 0 months	0.26%
April 1, 2039	1 year 0 months	0.33%
April 1, 2040	1 year 0 months	0.22%
April 1, 2041	1 year 0 months	0.11%
April 1, 2042	1 year 0 months	0.04%
April 1, 2043	1 year 0 months	0%
April 1, 2044	1 year 0 months	-0.15%
April 1, 2045	1 year 0 months	-0.8%
April 1, 2046	1 year 0 months	-0.95%
April 1, 2047	1 year 0 months	-0.63%
April 1, 2048	1 year 0 months	-0.52%
April 1, 2049	1 year 0 months	-1.16%
April 1, 2050	1 year 0 months	-0.98%
April 1, 2051	1 year 0 months	-0.88%
April 1, 2052	1 year 0 months	-0.85%
April 1, 2053	Remaining	-0.88%

Component: VRF units and accessories

Initial Investment

Initial Cost (base-year $):	$200,616
Annual Rate of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	2%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Replace system (Yr 15)

Years/Months:	15 years 0 months
Amount:	$100,308
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Replace system (Yr 30)

Years/Months:	30 years 0 months
Amount:	$100,308
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	2%

Routine Recurring OM&R: Annual Maintenance (Includes Major Repairs)

Amount:	$5,401
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

Component: Copy of: DOAS with Energy Recovery

Initial Investment

Initial Cost (base-year $):	$30,200
Annual Rate of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Cost-Phasing

Cost Adjustment Factor: 0%

Years/Months (from Date)	Date	Portion
0 years 0 months	December 1, 2023	100%

Major Repair and Replacement: Copy of: Repair DOAS (Yr 10)

Years/Months:	10 years 0 months
Amount:	$1,378
Annual Rate Of Increase:	2%
Expected Asset Life:	5 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Copy of: Replace DOAS (Yr 15)

Years/Months:	15 years 0 months
Amount:	$30,200

Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Major Repair and Replacement: Copy of: Repair DOAS (Yr 25)

Years/Months:	25 years 0 months
Amount:	$1,378
Annual Rate Of Increase:	2%
Expected Asset Life:	5 years 0 months
Residual Value Factor:	2%

Major Repair and Replacement: Copy of: Replace DOAS (Yr 30)

Years/Months:	30 years 0 months
Amount:	$30,200
Annual Rate Of Increase:	2%
Expected Asset Life:	15 years 0 months
Residual Value Factor:	3%

Routine Recurring OM&R: Copy of: Annual DOA Maintenance

Amount:	$200
Annual Rate of Increase:	2%

Usage Indices

From Date	Duration	Factor
December 1, 2023	Remaining	100%

NIST BLCC 5.3-23: Summary LCC

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

General Information

File Name:	C:\Users\bryan.zelinsky\OneDrive - Tetra Tech, Inc\Desktop\3D Plus Calcs\DEARNG Barracks\BLCC5\DEARNG Barracks_BLCC5 - Systems.xml
Date of Study:	Wed Mar 20 15:57:52 CDT 2024
Analysis Type:	MILCON Analysis, Energy Project
Project Name:	DEARNG Barracks - HVAC LCCA
Project Location:	Delaware
Analyst:	Tetra Tech
Base Date:	December 1, 2023
Beneficial Occupancy Date:	December 1, 2023
Study Period:	40 years 0 months (December 1, 2023 through November 30, 2063)
Discount Rate:	3%
Discounting Convention:	End-of-Year

Discount and Escalation Rates are REAL (exclusive of general inflation)

Alternative: ASHRAE 90.1-2019 Baseline (PTAC)

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$107,360	$4,645
Energy Consumption Costs	$229,828	$9,943
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$204,338	$8,840
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$184,689	$7,990
Less Remaining Value	-$6,642	-$287
Total Life-Cycle Cost	$719,574	$31,132

Alternative: Inverter PTHP (Package Terminal Heat Pump) w/ DOAS

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$107,360	$4,645

Energy Consumption Costs	$198,978	$8,609
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$184,564	$7,985
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$137,920	$5,967
Less Remaining Value	−$5,653	−$245
Total Life-Cycle Cost	$623,168	$26,961

Alternative: GSHP (Ground Source Heat Pump) w/ DOAS

LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$270,939	$11,722
Energy Consumption Costs	$195,009	$8,437
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$72,705	$3,145
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$107,544	$4,653
Less Remaining Value	−$8,753	−$379
Total Life-Cycle Cost	$637,444	$27,578

Alternative: VRF (Variable Refrigerant Flow) w/ DOAS

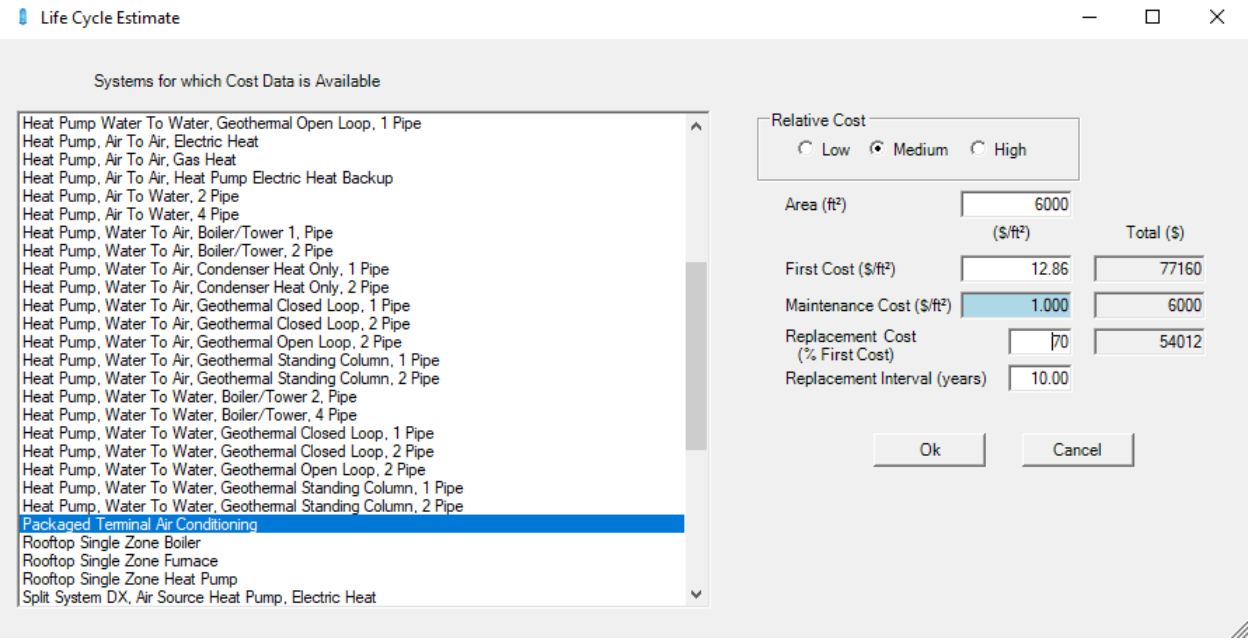
LCC Summary

	Present Value	Annual Value
Initial Cost Paid By Agency	$230,816	$9,986
Energy Consumption Costs	$214,124	$9,264
Energy Demand Costs	$0	$0
Energy Utility Rebates	$0	$0
Water Usage Costs	$0	$0
Water Disposal Costs	$0	$0
Routine Annually Recurring OM&R Costs	$184,597	$7,986

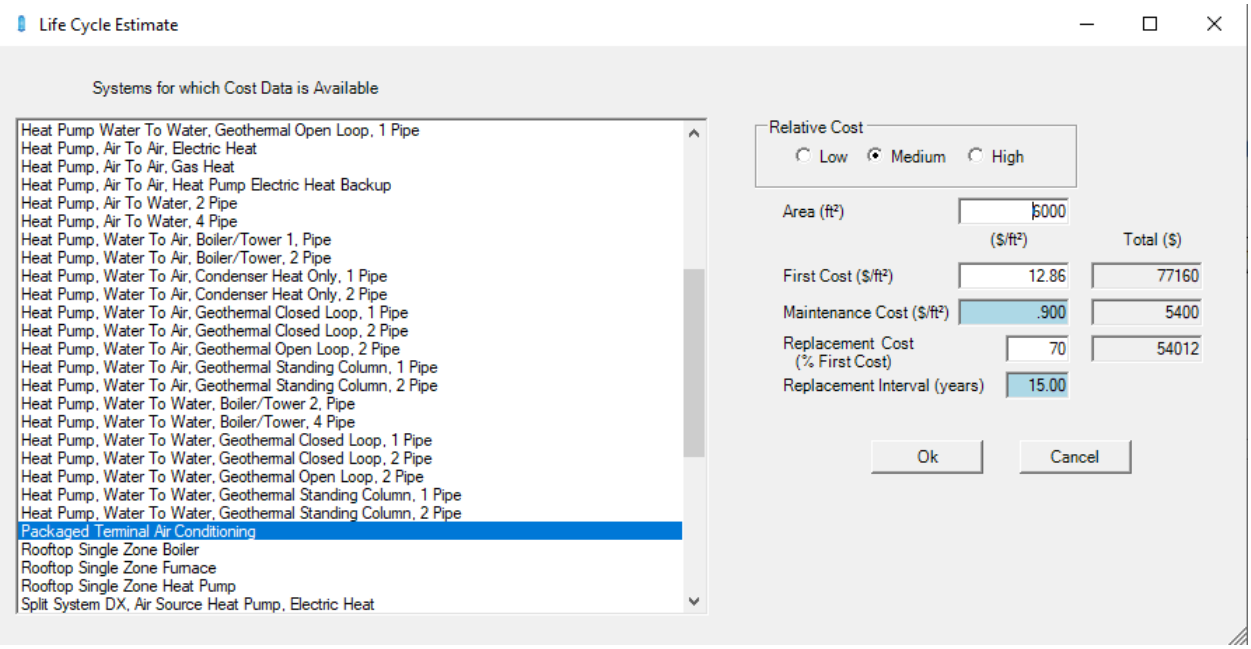
Routine Annually Recurring OM&R Costs	$161,597	$7,980
Routine Non-Annually Recurring OM&R Costs	$0	$0
Major Repair and Replacement Costs	$212,461	$9,192
Less Remaining Value	-$8,438	-$365
Total Life-Cycle Cost	$833,560	$36,063

DEARNG Barracks – System LCCA Cost Data (taken from BEST Program Ver. 6.2.1.0)

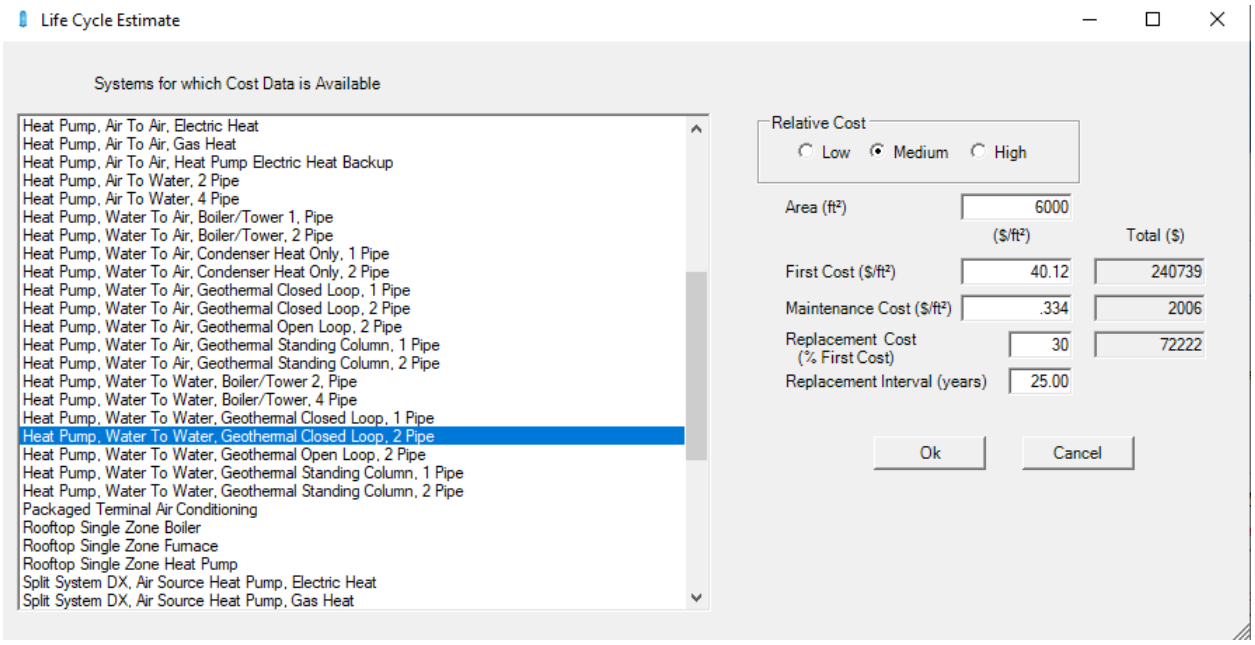
ASHRAE 90.1-2019 Baseline PTAC



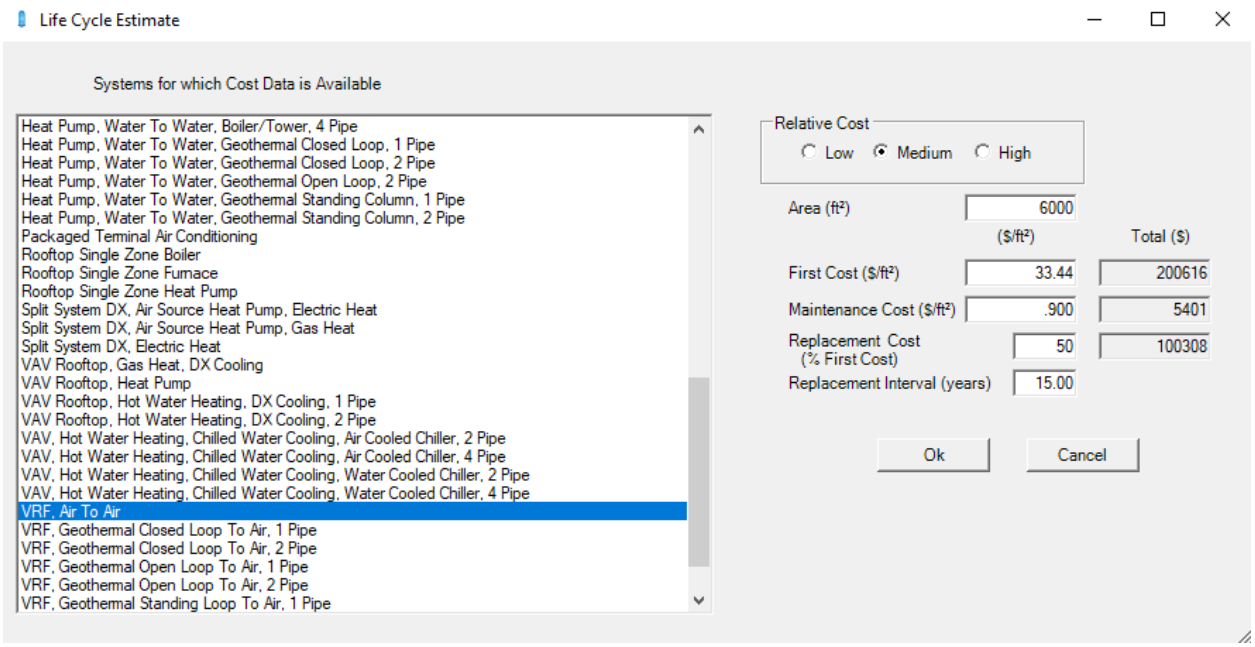
Inverter Driven PTHP (assuming higher efficiency and longer equipment life)



Ground Source Heat Pump (GSHP)

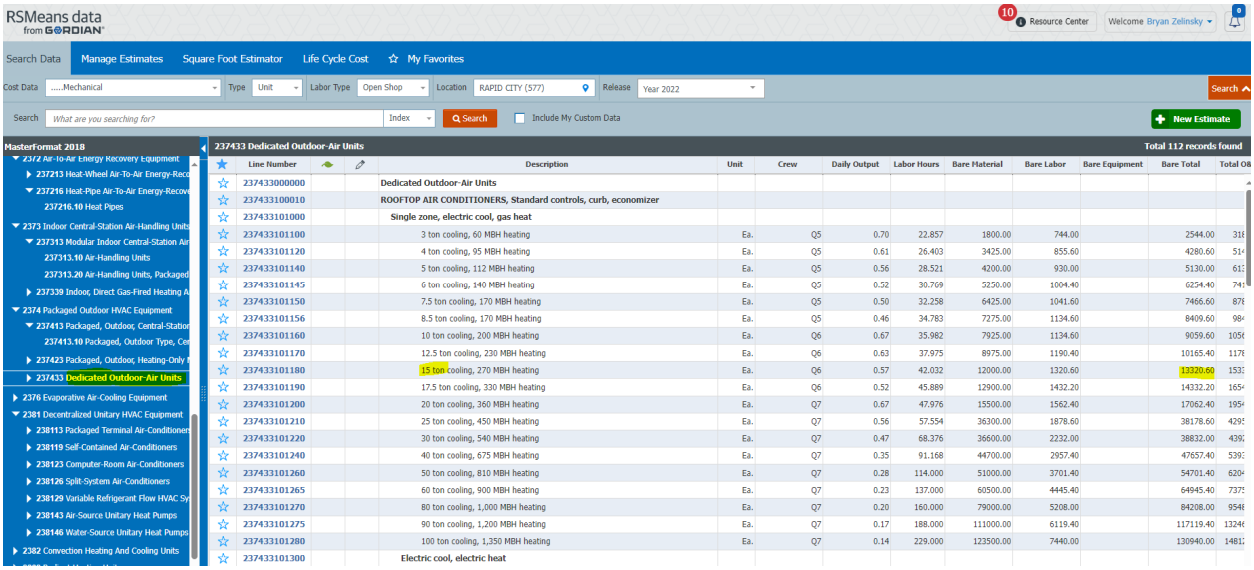


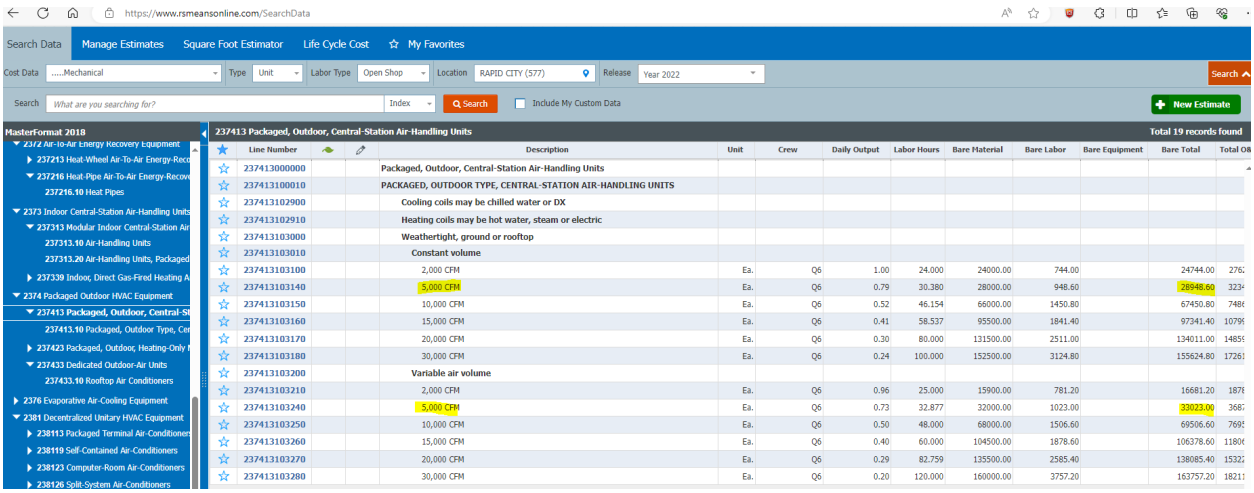
Variable Refrigerant Flow (VRF)



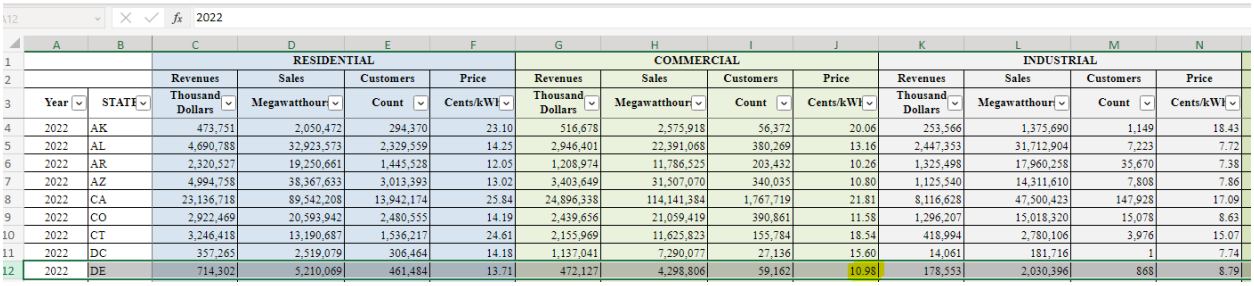
Data from RSMeans (DOAS unit)

-Estimated $200 annual repair cost





Electricity and Gas Prices (EIA 2023)



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1			RESIDENTIAL				COMMERCIAL				INDUSTRIAL			
2			Revenues	Sales	Customers	Price	Revenues	Sales	Customers	Price	Revenues	Sales	Customers	Price
3	Year	STATE	Thousand Dollars	Megawatthour	Count	Cents/kWH	Thousand Dollars	Megawatthour	Count	Cents/kWH	Thousand Dollars	Megawatthour	Count	Cents/kWH
4	2022	AK	473,751	2,050,472	294,370	23.10	516,678	2,575,918	56,372	20.06	253,566	1,375,690	1,149	18.43
5	2022	AL	4,690,788	32,923,573	2,329,559	14.25	2,946,401	22,391,068	380,269	13.16	2,447,353	31,712,904	7,223	7.72
6	2022	AR	2,320,527	19,250,661	1,445,528	12.05	1,208,974	11,786,525	203,432	10.26	1,325,498	17,960,258	35,670	7.38
7	2022	AZ	4,994,758	38,367,633	3,013,393	13.02	3,403,649	31,507,070	340,035	10.80	1,125,540	14,311,610	7,808	7.86
8	2022	CA	23,136,718	89,542,208	13,942,174	25.84	24,896,338	114,141,384	1,767,719	21.81	8,116,628	47,500,423	147,928	17.09
9	2022	CO	2,922,469	20,593,942	2,480,555	14.19	2,439,656	21,059,419	390,861	11.58	1,296,207	15,018,320	15,078	8.63
10	2022	CT	3,246,418	13,190,687	1,536,217	24.61	2,155,969	11,625,823	155,784	18.54	418,994	2,780,106	3,976	15.07
11	2022	DC	357,265	2,519,079	306,464	14.18	1,137,041	7,290,077	27,136	15.60	14,061	181,716	1	7.74
12	2022	DE	714,302	5,210,069	461,484	13.71	472,127	4,298,806	59,162	10.98	178,553	2,030,396	868	8.79

Natural Gas Prices

(Dollars per Thousand Cubic Feet, except where noted)

Data Series: Commercial Price Period: Annual

Download Series History | Definitions, Sources & Notes

Show Data By: Data Series / Area Graph / Clear

	2018	2019	2020	2021	2022	2023	View History
U.S.	7.79	7.61	7.48	8.79	11.32	10.92	1967-2023
Alabama	11.89	11.87	11.93	12.03	13.52	15.28	1967-2023
Alaska	9.99	9.89	9.91	9.88	10.13	10.38	1967-2023
Arizona	8.69	7.29	6.91	8.68	10.81	12.28	1967-2023
Arkansas	7.95	7.68	7.65	8.48	12.80	11.65	1967-2023
California	8.57	9.41	9.78	12.04	16.13	NA	1967-2023
Colorado	6.84	6.92	6.23	7.97	11.38	10.22	1967-2023
Connecticut	9.23	9.75	9.23	10.75	12.85	12.37	1967-2023
Delaware	10.49	10.04	10.78	10.81	12.37	14.41	1967-2023

eia + Sources & Uses + Topics + Geography

FREQUENTLY ASKED QUESTIONS (FAQS)

What are Ccf, Mcf, Btu, and therms? How do I convert natural gas prices in dollars per Ccf or Mcf to dollars per Btu or therm?

Btu—British thermal unit(s)
Ccf—the volume of 100 cubic feet (cf)
M—one thousand (1,000)
MM—one million (1,000,000)
Mcf—the volume of 1,000 cubic feet
MMBtu—1,000,000 British thermal units
Therm—One therm equals 100,000 Btu, or 0.10 MMBtu

In the United States, natural gas can be priced in units of dollars per therm, dollars per MMBtu, or dollars per cubic feet.[1] The heat content of natural gas per physical unit (such as Btu per cubic foot) is needed to convert these prices from one price basis to another. In 2022, the U.S. annual average heat content of natural gas delivered to end use sectors averaged about 1,038 Btu per cubic foot. Therefore, 100 cubic feet (Ccf) of natural gas equals 103,800 Btu, or 1.038 therms. One thousand cubic feet (Mcf) of natural gas equals 1.038 MMBtu, or 10.38 therms.

You can convert natural gas prices from one price basis to another with these formulas (assuming a heat content of natural gas of 1,038 Btu per cubic foot):
$ per Ccf divided by 1.038 equals $ per therm
$ per therm multiplied by 1.038 equals $ per Ccf
$ per Mcf divided by 1.038 equals $ per MMBtu
$ per Mcf divided by 10.38 equals $ per therm
$ per MMBtu multiplied by 1.038 equals $ per Mcf
$ per therm multiplied by 10.38 equals $ per Mcf

DEARNG Mechanical LCCA-Systems



Building Owner:
Location:

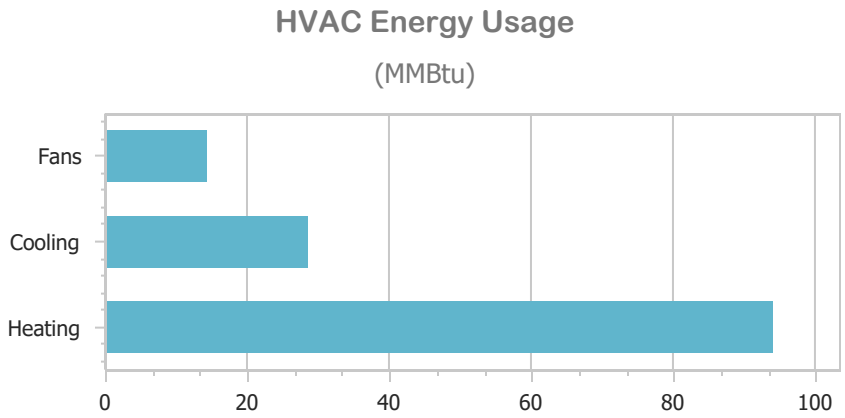
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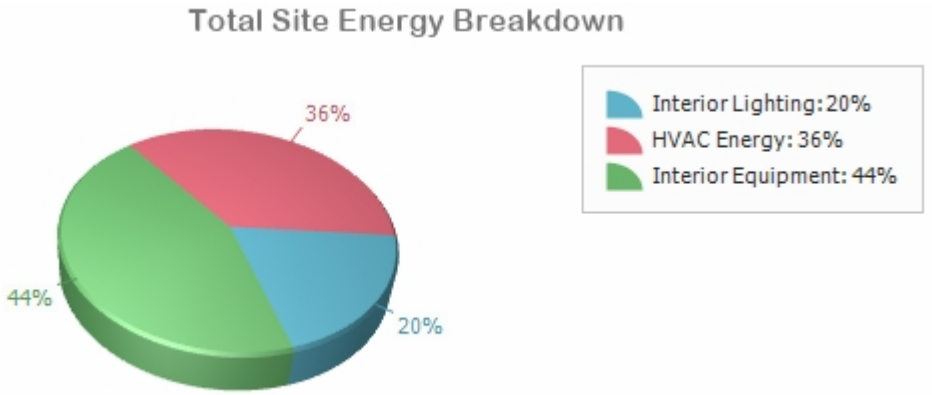
File name: DEARNG Mechanical LCCA-Systems.mdfz

Simulated by: TRACE 3D Plus 6.00.106

Site Consumption Summary

Energy Consumption



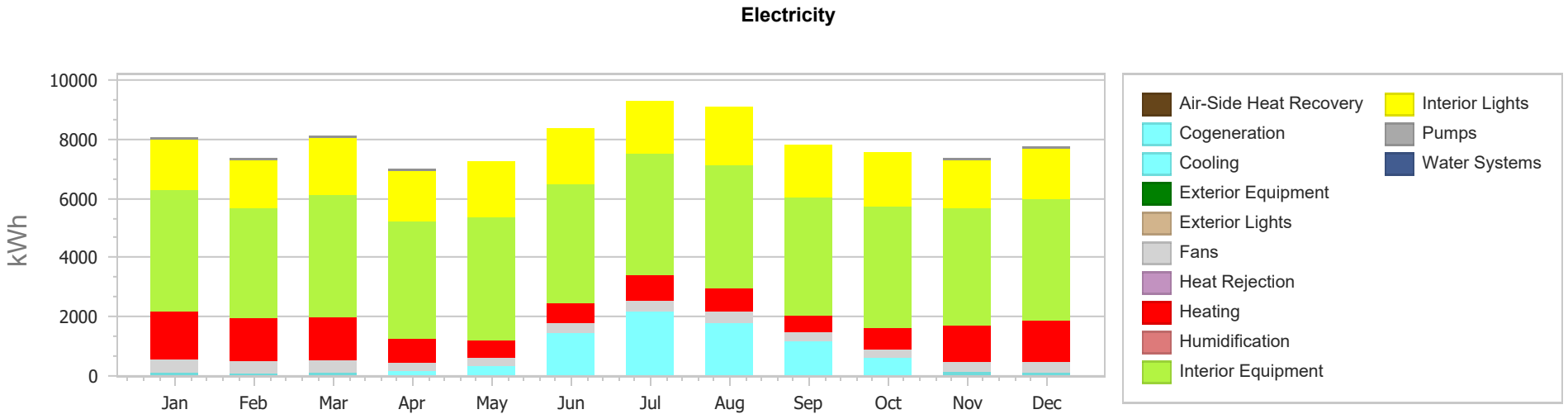


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	12,142	52	0	0	0	93,654	8.7	187,818	17.45	0
Cooling	8,314	0	0	0	0	28,368	2.64	89,842	8.35	0
Fans	4,206	0	0	0	0	14,350	1.33	45,446	4.22	0
Pumps	47	0	0	0	0	161	0.01	510	0.05	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	24,708	52	0	0	0	136,533	12.68	323,616	30.06	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	21,767	0	0	0	0	74,271	6.9	235,216	21.85	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	70,303	0	0	0	0	239,883	22.28	759,710	70.57	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	95,011	52	0	0	0	376,416	34.97	1,083,326	100.63	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

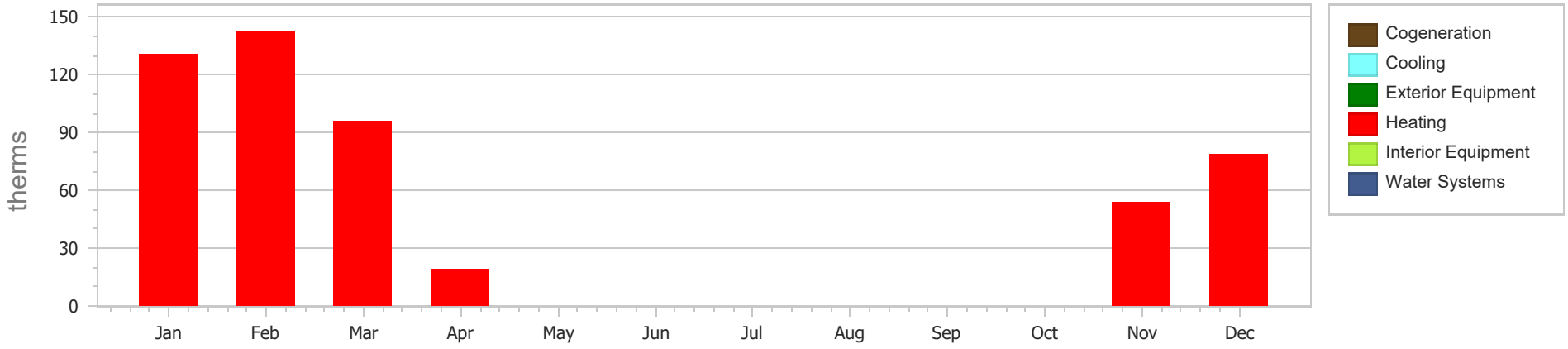
If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	112	91	115	176	349	1,447	2,174	1,804	1,170	612	148	117	8,315
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	437	426	406	283	263	328	381	367	320	285	333	376	4,204
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	1,641	1,435	1,452	786	606	691	854	792	549	726	1,235	1,374	12,142
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,768	1,663	1,964	1,769	1,899	1,886	1,782	1,964	1,769	1,833	1,689	1,782	21,767
Pumps	11	12	8	3	0	0	0	0	0	0	5	7	48
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	8,061	7,348	8,105	7,003	7,253	8,373	9,294	9,085	7,794	7,570	7,365	7,759	95,011

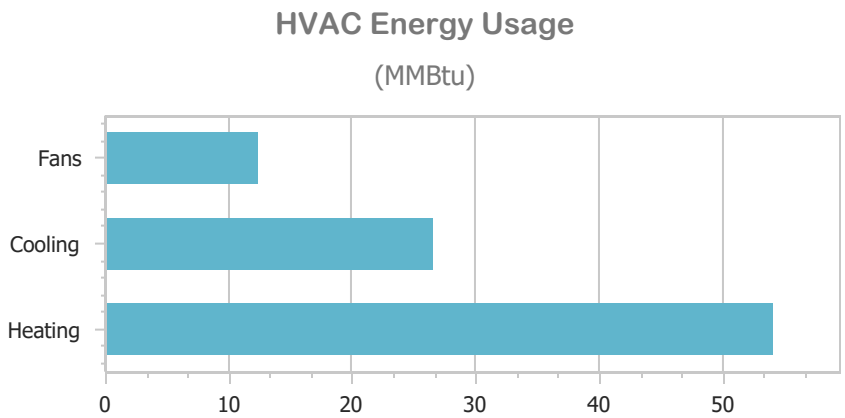
Natural Gas

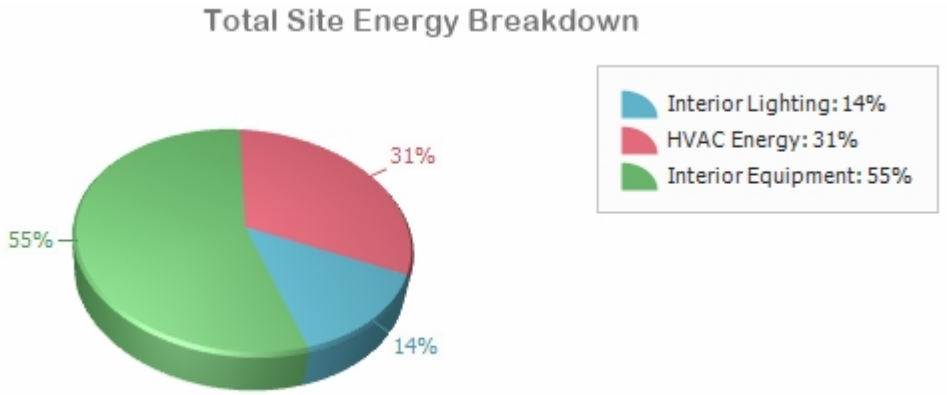


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	131	143	96	19	0	0	0	0	0	0	54	79	522
Interior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	131	143	96	19	0	0	0	0	0	0	54	79	522

Site Consumption Summary

Energy Consumption



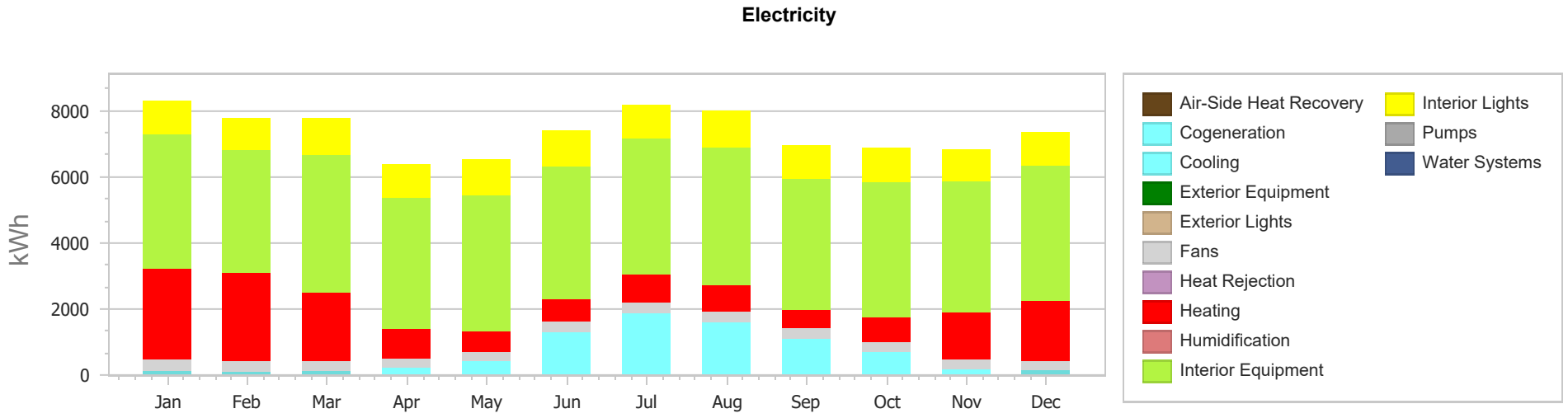


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	15,825	0	0	0	0	53,997	5.02	171,009	15.89	0
Cooling	7,906	0	0	0	0	26,975	2.51	85,429	7.94	0
Fans	3,714	0	0	0	0	12,672	1.18	40,133	3.73	0
Pumps	0	0	0	0	0	0	0	0	0	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	27,444	0	0	0	0	93,644	8.7	296,572	27.55	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	12,417	0	0	0	0	42,367	3.94	134,178	12.46	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	60,953	0	0	0	0	207,980	19.32	658,671	61.18	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	88,397	0	0	0	0	301,624	28.02	955,243	88.73	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

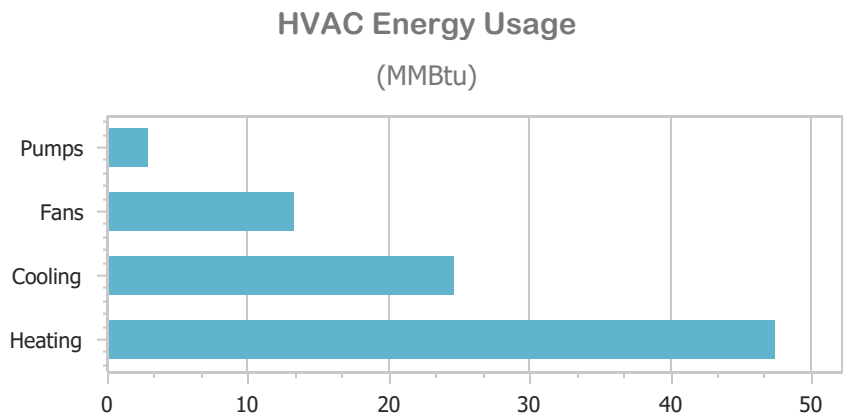
Monthly Energy End Use

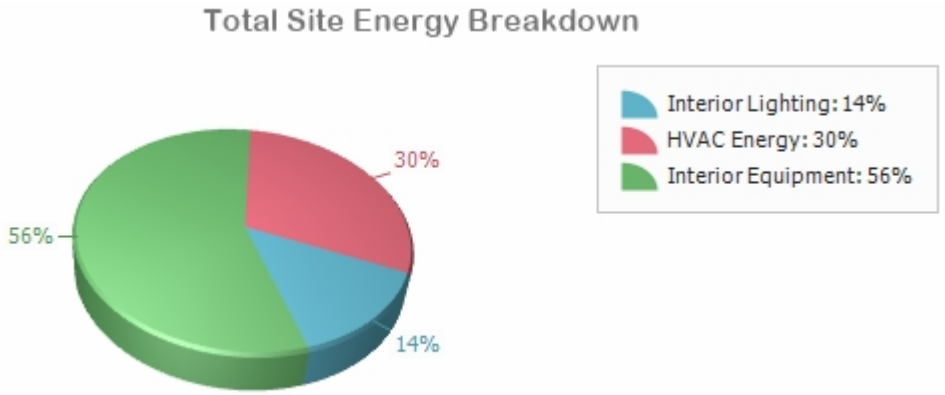


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	130	103	130	218	423	1,307	1,868	1,587	1,102	708	192	139	7,906
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	339	323	313	272	285	313	340	339	313	301	276	299	3,713
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	2,738	2,678	2,049	897	608	691	854	792	549	726	1,443	1,801	15,826
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,008	949	1,121	1,009	1,084	1,076	1,016	1,121	1,009	1,046	963	1,016	12,418
Pumps	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	8,307	7,774	7,772	6,382	6,536	7,409	8,181	7,998	6,960	6,895	6,827	7,358	88,399

Site Consumption Summary

Energy Consumption



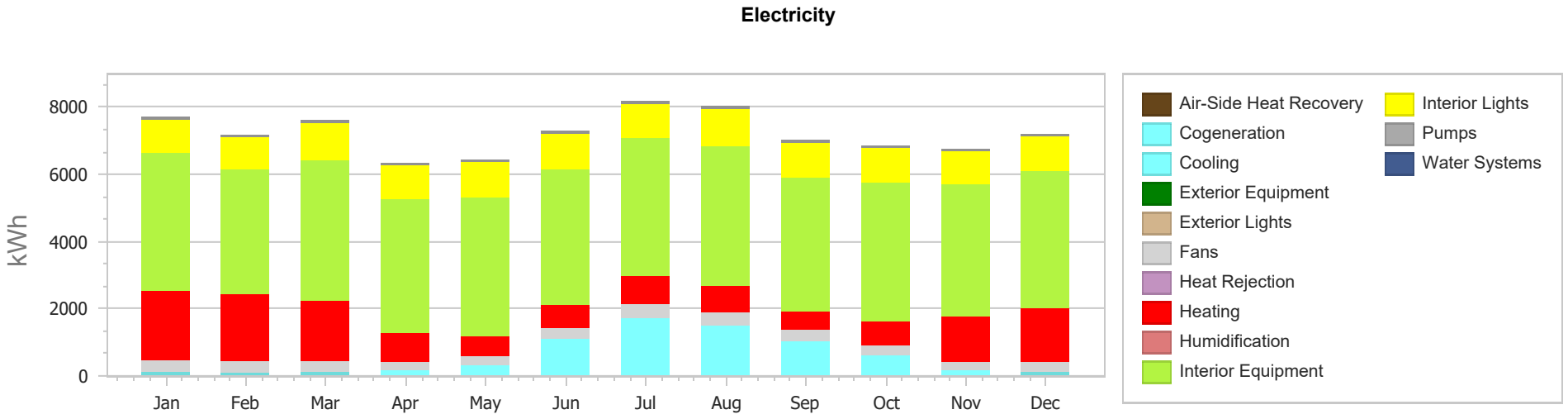


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	13,900	0	0	0	0	47,429	4.41	150,207	13.95	0
Cooling	7,131	0	0	0	0	24,330	2.26	77,055	7.16	0
Fans	3,833	0	0	0	0	13,080	1.21	41,424	3.85	0
Pumps	822	0	0	0	0	2,806	0.26	8,885	0.83	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	25,686	0	0	0	0	87,645	8.14	277,571	25.78	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	12,417	0	0	0	0	42,367	3.94	134,178	12.46	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	60,953	0	0	0	0	207,980	19.32	658,671	61.18	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	86,639	0	0	0	0	295,624	27.46	936,242	86.97	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

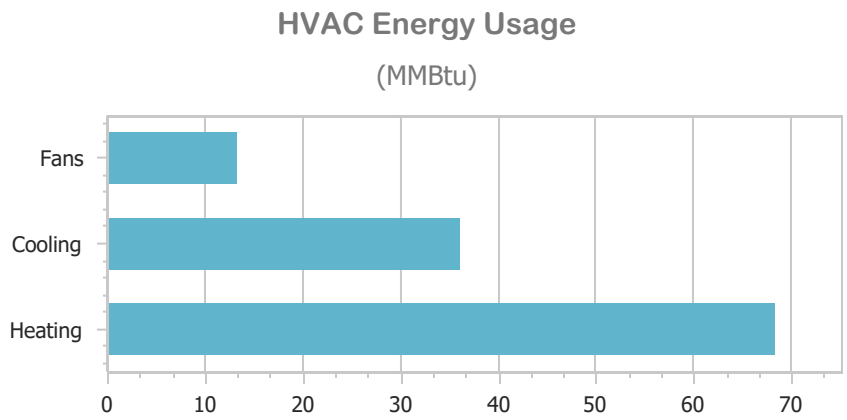
Monthly Energy End Use

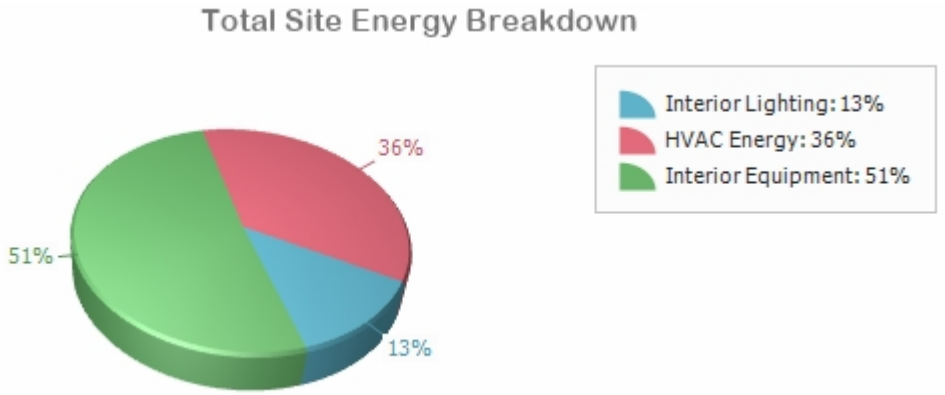


	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	123	102	128	173	319	1,102	1,732	1,498	1,042	614	166	130	7,130
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	335	336	321	254	261	334	401	391	346	302	262	290	3,833
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	2,087	2,001	1,807	852	606	691	854	792	549	726	1,345	1,589	13,899
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,008	949	1,121	1,009	1,084	1,076	1,016	1,121	1,009	1,046	963	1,016	12,418
Pumps	75	70	79	47	34	75	81	81	79	66	60	73	821
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	7,721	7,179	7,616	6,321	6,440	7,300	8,187	8,043	7,012	6,867	6,751	7,201	86,636

Site Consumption Summary

Energy Consumption



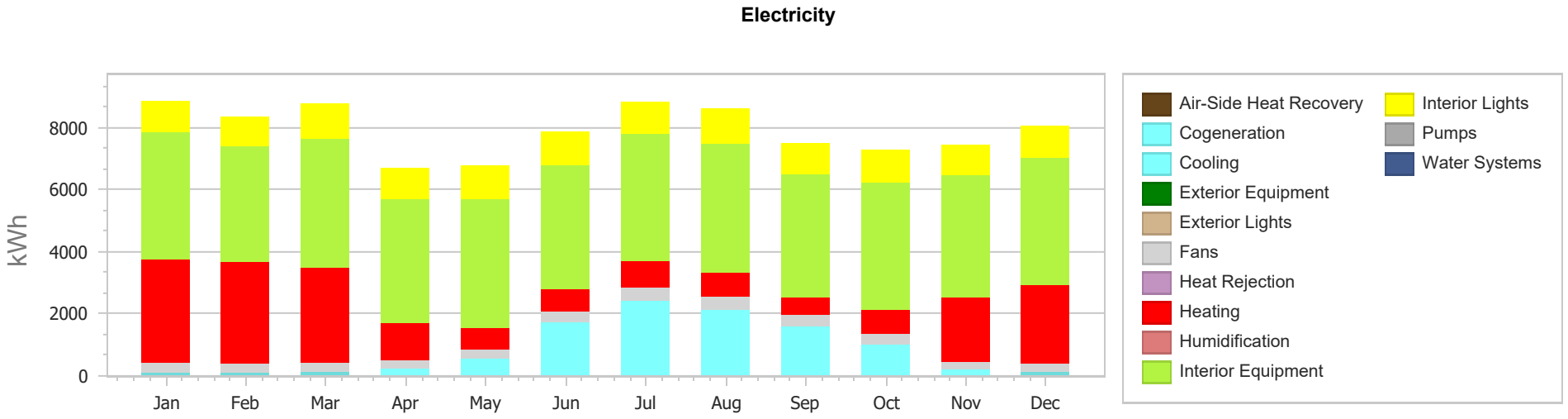


Component	Electricity (kWh)	Gas (MMBtu)	District Cooling (MMBtu)	District Heating (MMBtu)	Other Utilities (MMBtu)	Site Energy (Mbtu)	Site Energy Use Intensity (Mbtu/ft²)	Source Energy (Mbtu)	Source Energy Use Intensity (Mbtu/ft²)	Water (gal)
Heating	19,881	0	0	0	0	67,835	6.3	214,834	19.96	0
Cooling	10,428	0	0	0	0	35,581	3.31	112,685	10.47	0
Fans	3,867	0	0	0	0	13,194	1.23	41,784	3.88	0
Pumps	0	0	0	0	0	0	0	0	0	0
Heat Rejection	0	0	0	0	0	0	0	0	0	0
Humidification	0	0	0	0	0	0	0	0	0	0
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0
HVAC	34,175	0	0	0	0	116,610	10.83	369,304	34.3	0
Water Systems	0	0	0	0	0	0	0	0	0	0
Interior Lighting	12,417	0	0	0	0	42,367	3.94	134,178	12.46	0
Exterior Lighting	0	0	0	0	0	0	0	0	0	0
Interior Equipment	48,536	0	0	0	0	165,612	15.38	524,494	48.72	0
Exterior Equipment	0	0	0	0	0	0	0	0	0	0
Refrigeration	0	0	0	0	0	0	0	0	0	0
Non-HVAC	60,953	0	0	0	0	207,980	19.32	658,671	61.18	0
Generators	0	0	0	0	0	0	0	0	0	0
Site Generation	0	0	0	0	0	0	0	0	0	0
Grand Total	95,128	0	0	0	0	324,589	30.15	1,027,975	95.49	0

Gross Floor Area: 10,762 ft² | Region: South | Building Type: Office | CBECS Survey Year: 2012 | Benchmark EUI: 66.9 Mbtu/ft²/yr

If the region reports as "All US" it means the data for the particular region was withheld because the Relative Standard Error was greater than 50 percent or fewer than 20 buildings were sampled.

Monthly Energy End Use



	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Air-Side Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooling	125	102	138	247	563	1,721	2,432	2,131	1,591	1,030	214	133	10,427
Exterior Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Exterior Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
Fans	300	290	293	251	274	366	431	423	382	327	256	273	3,867
Heat Rejection	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating	3,341	3,287	3,076	1,220	718	700	854	792	549	768	2,055	2,522	19,881
Humidification	0	0	0	0	0	0	0	0	0	0	0	0	0
Interior Equipment	4,092	3,721	4,159	3,987	4,137	4,020	4,103	4,159	3,987	4,114	3,953	4,103	48,536
Interior Lights	1,008	949	1,121	1,009	1,084	1,076	1,016	1,121	1,009	1,046	963	1,016	12,418
Pumps	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	8,865	8,348	8,787	6,713	6,775	7,884	8,836	8,626	7,518	7,286	7,441	8,047	95,128

System Component Selection Summary

Baseline - ASHRAE 90.1-2019 Zone 4A

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.2	13.8	12.7	0.0	N/A	468	0	78.2	64.50	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 15:00	468	12,685	468	55.0		0	0	468	95.0
	SS - 1		108	7/21 15:00	468	11,851	468	55.0	1/21 24:00	468	2,456	468	95.0
		118B - IT	108	7/21 12:00	466	11,787	466	55.0	1/21 24:00	466	1,859	466	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	468	.21	N/A	100.00

System Name: CV PTAC

System Type:	Constant Volume (CV)
Number of Zones	19
Number of Rooms	36

Component	Quantity
Cooling Coils	19
Heating Coils	19
Fans	19

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	DX	Peak		0.3	3.9	2.6	0.0	N/A	99	0	79.0	67.52	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 10	DX	Peak		0.3	3.3	2.2	0.0	N/A	82	0	79.0	68.52	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 11	DX	Peak		0.4	5.2	3.4	0.0	N/A	130	0	79.0	67.30	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 12	DX	Peak		0.4	5.0	3.3	0.0	N/A	124	0	79.0	67.28	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 13	DX	Peak		0.5	6.0	4.0	0.0	N/A	152	0	79.0	66.89	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 14	DX	Peak		0.5	5.7	3.7	0.0	N/A	142	0	79.0	66.92	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 15	DX	Peak		0.3	3.6	2.4	0.0	N/A	89	0	79.0	68.05	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 16	DX	Peak		0.3	3.4	2.2	0.0	N/A	84	0	79.0	68.07	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 17	DX	Peak		2.8	33.3	21.9	0.0	N/A	830	0	79.0	73.00	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 18	DX	Peak		2.8	33.4	22.1	0.0	N/A	839	0	79.0	72.87	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 19	DX	Peak		0.4	5.2	3.4	0.0	N/A	130	0	79.0	64.63	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 2	DX	Peak		0.3	3.4	2.2	0.0	N/A	84	0	79.0	69.28	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 3	DX	Peak		0.4	5.2	3.4	0.0	N/A	130	0	79.0	67.44	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 4	DX	Peak		0.5	6.3	4.2	0.0	N/A	160	0	79.0	66.64	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 5	DX	Peak		0.5	5.6	3.7	0.0	N/A	141	0	79.0	66.92	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 6	DX	Peak		0.4	4.4	3.0	0.0	N/A	112	0	79.0	67.63	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 7	DX	Peak		0.4	4.3	2.9	0.0	N/A	109	0	79.0	67.48	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 8	DX	Peak		0.3	3.3	2.2	0.0	N/A	84	0	79.0	68.87	55.0	64.37	N/A	N/A	N/A
	PTAC-1 PTAC - 9	DX	Peak		0.3	4.0	2.7	0.0	N/A	104	0	79.0	68.01	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTAC-1 PTAC - 1	Water	Peak	1/21 19:00	3.0	0.0	N/A	104	0	68.0	95.0	0.12	180.0	130.0
	PTAC-1 PTAC - 10	Water	Peak	1/21 19:00	2.5	0.0	N/A	86	0	68.0	95.0	0.10	180.0	130.0
	PTAC-1 PTAC - 11	Water	Peak	1/21 19:00	4.0	0.0	N/A	137	0	68.0	95.0	0.16	180.0	130.0
	PTAC-1 PTAC - 12	Water	Peak	1/21 19:00	3.9	0.0	N/A	132	0	68.0	95.0	0.16	180.0	130.0
	PTAC-1 PTAC - 13	Water	Peak	1/21 19:00	4.7	0.0	N/A	161	0	68.0	95.0	0.19	180.0	130.0
	PTAC-1 PTAC - 14	Water	Peak	1/21 19:00	4.5	0.0	N/A	153	0	68.0	95.0	0.18	180.0	130.0
	PTAC-1 PTAC - 15	Water	Peak	1/21 19:00	2.7	0.0	N/A	93	0	68.0	95.0	0.11	180.0	130.0
	PTAC-1 PTAC - 16	Water	Peak	1/21 19:00	2.6	0.0	N/A	88	0	68.0	95.0	0.10	180.0	130.0
	PTAC-1 PTAC - 17	Water	Peak	1/21 24:00	22.7	0.0	N/A	776	0	68.0	95.0	0.92	180.0	130.0
	PTAC-1 PTAC - 18	Water	Peak	1/21 24:00	22.8	0.0	N/A	780	0	68.0	95.0	0.93	180.0	130.0
	PTAC-1 PTAC - 19	Water	Peak	1/21 24:00	4.4	0.0	N/A	149	0	68.0	95.0	0.18	180.0	130.0
	PTAC-1 PTAC - 2	Water	Peak	1/21 19:00	2.5	0.0	N/A	87	0	68.0	95.0	0.10	180.0	130.0
	PTAC-1 PTAC - 3	Water	Peak	1/21 19:00	4.0	0.0	N/A	138	0	68.0	95.0	0.16	180.0	130.0
	PTAC-1 PTAC - 4	Water	Peak	1/21 19:00	5.0	0.0	N/A	171	0	68.0	95.0	0.20	180.0	130.0
	PTAC-1 PTAC - 5	Water	Peak	1/21 19:00	4.4	0.0	N/A	150	0	68.0	95.0	0.18	180.0	130.0
	PTAC-1 PTAC - 6	Water	Peak	1/21 19:00	3.4	0.0	N/A	117	0	68.0	95.0	0.14	180.0	130.0
	PTAC-1 PTAC - 7	Water	Peak	1/21 19:00	3.3	0.0	N/A	113	0	68.0	95.0	0.13	180.0	130.0
	PTAC-1 PTAC - 8	Water	Peak	1/21 19:00	2.5	0.0	N/A	85	0	68.0	95.0	0.10	180.0	130.0
	PTAC-1 PTAC - 9	Water	Peak	1/21 19:00	3.1	0.0	N/A	105	0	68.0	95.0	0.13	180.0	130.0

Load/Airflows

	Location			Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC			5,010	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	7/21 18:00	99	2,620	0	55.0	1/21 19:00	104	2,534	0	95.0
		114A - SLQ 8	164	8/21 17:00	87	2,605	N/A	55.0	1/21 19:00	103	1,766	N/A	95.0
	PTAC - 10		159	8/21 10:00	82	2,163	0	55.0	1/21 19:00	86	2,463	0	95.0
		105B - SLQ 2	159	8/21 10:00	78	2,357	N/A	55.0	1/21 19:00	93	1,713	N/A	95.0
	PTAC - 11		237	6/21 17:00	130	3,469	0	55.0	1/21 19:00	137	2,756	0	95.0
		108B - BATHROOM 1	90	6/21 17:00	48	1,531	N/A	55.0	1/21 20:00	61	821	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	64	1,897	N/A	55.0	1/21 19:00	75	1,192	N/A	95.0
	PTAC - 12		233	7/21 10:00	124	3,351	0	55.0	1/21 19:00	132	2,814	0	95.0
		102B - SLQ 4	145	7/21 10:00	62	1,869	N/A	55.0	1/21 19:00	74	1,207	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	46	1,501	N/A	55.0	1/21 20:00	59	815	N/A	95.0
	PTAC - 13		243	6/21 17:00	152	4,082	0	55.0	1/21 19:00	161	3,182	0	95.0
		113B - BATHROOM 3	95	6/21 17:00	50	1,597	N/A	55.0	1/21 24:00	63	847	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	81	2,449	N/A	55.0	1/21 19:00	97	1,468	N/A	95.0
	PTAC - 14		243	7/21 10:00	142	3,866	0	55.0	1/21 19:00	153	2,923	0	95.0
		110B - SLQ 6	148	7/21 10:00	82	2,533	N/A	55.0	1/21 19:00	100	1,316	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	49	1,600	N/A	55.0	1/21 20:00	63	846	N/A	95.0
	PTAC - 15		164	6/21 17:00	89	2,347	0	55.0	1/21 19:00	93	1,832	0	95.0
		115B - SLQ 7	164	6/21 17:00	77	2,325	N/A	55.0	1/21 19:00	92	1,372	N/A	95.0
	PTAC - 16		164	7/21 10:00	84	2,233	0	55.0	1/21 19:00	88	1,835	0	95.0
		114B - SLQ 8	164	7/21 09:00	74	2,279	N/A	55.0	1/21 19:00	90	1,371	N/A	95.0
	PTAC - 17		776	7/21 17:00	830	19,621	119	55.0	1/21 24:00	776	7,875	119	95.0
		100A - CIRCULATION	308	7/21 10:00	184	5,495	N/A	55.0	1/21 24:00	217	2,791	N/A	95.0
		101A - BILLETING	184	8/21 17:00	532	11,472	N/A	55.0	1/21 24:00	455	1,978	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 18:00	22	667	N/A	55.0	1/21 24:00	26	333	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	46	1,250	N/A	55.0	1/21 24:00	49	752	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	49	1,354	N/A	55.0	1/21 20:00	54	801	N/A	95.0
	PTAC - 18		789	7/21 16:00	839	19,722	119	55.0	1/21 24:00	780	8,000	119	95.0
		100B - CIRCULATION	310	8/21 16:00	208	5,848	N/A	55.0	1/21 24:00	231	2,905	N/A	95.0
		101B - BILLETING	183	7/21 09:00	476	11,183	N/A	55.0	1/21 24:00	443	1,946	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	21	632	N/A	55.0	1/21 24:00	25	334	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	47	1,256	N/A	55.0	1/21 20:00	50	744	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	52	1,408	N/A	55.0	1/21 20:00	56	807	N/A	95.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV PTAC			5,010	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 19:00	130	3,620	13	55.0	1/21 24:00	149	4,364	13	95.0
		116B - MECH STORAGE	113	6/21 18:00	66	1,956	N/A	55.0	1/21 24:00	77	1,897	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	55	1,644	N/A	55.0	1/21 24:00	65	1,591	N/A	95.0
	PTAC - 2		167	7/21 10:00	84	1,903	0	55.0	1/21 19:00	87	2,530	0	95.0
		115A - SLQ 7	167	7/21 10:00	71	2,124	N/A	55.0	1/21 19:00	84	1,760	N/A	95.0
	PTAC - 3		250	7/21 10:00	130	3,496	0	55.0	1/21 19:00	138	3,146	0	95.0
		111A - SLQ 5	152	7/21 10:00	74	2,240	N/A	55.0	1/21 19:00	89	1,428	N/A	95.0
		113A - BATHROOM 3	98	7/21 10:00	46	1,473	N/A	55.0	1/21 24:00	58	880	N/A	95.0
	PTAC - 4		245	7/21 18:00	160	4,319	0	55.0	1/21 19:00	171	3,010	0	95.0
		110A - SLQ 6	149	8/21 17:00	91	2,741	N/A	55.0	1/21 19:00	108	1,348	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	55	1,728	N/A	55.0	1/21 24:00	68	880	N/A	95.0
	PTAC - 5		234	7/21 18:00	141	3,798	0	55.0	1/21 19:00	150	2,873	0	95.0
		102A - SLQ 4	146	8/21 17:00	69	2,026	N/A	55.0	1/21 19:00	80	1,233	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	52	1,634	N/A	55.0	1/21 24:00	65	834	N/A	95.0
	PTAC - 6		239	7/21 11:00	112	2,961	0	55.0	1/21 19:00	117	2,777	0	95.0
		108A - BATHROOM 1	91	7/21 10:00	43	1,389	N/A	55.0	1/21 24:00	55	830	N/A	95.0
		109A - SLQ 3	148	6/21 10:00	58	1,724	N/A	55.0	1/21 19:00	68	1,202	N/A	95.0
	PTAC - 7		158	8/21 17:00	109	2,862	0	55.0	1/21 19:00	113	2,493	0	95.0
		106A - SLQ 2	158	8/21 17:00	91	2,724	N/A	55.0	1/21 19:00	108	1,737	N/A	95.0
	PTAC - 8		162	8/21 11:00	84	1,970	0	55.0	1/21 19:00	85	2,495	0	95.0
		105A - SLQ 1	162	8/21 10:00	72	2,146	N/A	55.0	1/21 19:00	85	1,738	N/A	95.0
	PTAC - 9		159	8/21 16:00	104	2,667	0	55.0	1/21 19:00	105	2,468	0	95.0
		106B - SLQ 1	159	8/21 16:00	87	2,570	N/A	55.0	1/21 19:00	102	1,716	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	104	.03	N/A	100.00
	PTAC - 10 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	86	.03	N/A	100.00
	PTAC - 11 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	137	.04	N/A	100.00
	PTAC - 12 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	132	.04	N/A	100.00
	PTAC - 13 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	161	.05	N/A	100.00
	PTAC - 14 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	153	.05	N/A	100.00
	PTAC - 15 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	93	.03	N/A	100.00
	PTAC - 16 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	88	.03	N/A	100.00
	PTAC - 17 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	776	.25	N/A	100.00
	PTAC - 18 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	780	.25	N/A	100.00
	PTAC - 19 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	149	.05	N/A	100.00
	PTAC - 2 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	87	.03	N/A	100.00
	PTAC - 3 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	138	.04	N/A	100.00
	PTAC - 4 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	171	.05	N/A	100.00
	PTAC - 5 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	150	.05	N/A	100.00
	PTAC - 6 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	117	.04	N/A	100.00
	PTAC - 7 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	113	.04	N/A	100.00
	PTAC - 8 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	85	.03	N/A	100.00
	PTAC - 9 _PTAC-1_SUPPLY FAN	Zone	4.00	N/A	0.10	105	.03	N/A	100.00

System Name: Multi Sys Dehum and Reheat

System Type:	Dedicated Outdoor Air System (DOAS)
Number of Zones	0
Number of Rooms	0

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design						Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Block		1.5	17.7	9.9	17.7	N/A	252	252	90.7	108.29	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SHC-1		Electric	Block	1/21 19:00	16.2	16.2	N/A	252	252	15.5	75.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
Multi Sys Dehum and Reheat			0	8/21 16:00	252	9,883	252	55.0	1/21 19:00	252	16,223	252	75.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
Multi Sys Dehum and Reheat SF-1		System	53.00	N/A	3.00	252	.17	N/A	100.00

Loop Name: **Single Boiler VF**
Loop Type: Hot Water Loop
Number of Assigned Coils: 19

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Single Boiler VF VFDP-1	Pump:VariableSpeed	Intermittent	26	2.55	48	19

Plant Equipment

Name	Type	Nominal Capacity (MBh)	Efficiency (%)
Single Boiler VF BO-1	Boiler:HotWater	62.67	82.0

System Component Selection Summary

Inverter driven PTAC/PTHP with DOAS

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.1	13.8	12.5	0.0	N/A	527	0	75.2	64.49	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 12:00	527	12,531	527	55.0		0	0	527	95.0
	SS - 1		108	7/21 12:00	527	11,587	527	55.0	1/21 24:00	527	1,961	527	95.0
		118B - IT	108	7/21 12:00	538	11,828	538	55.0	1/21 24:00	538	1,776	538	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	527	.24	N/A	100.00

System Name: VAV PTHP

System Type:	Variable Air Volume (VAV)
Number of Zones	19
Number of Rooms	36

Component	Quantity
Cooling Coils	19
Heating Coils	38
Fans	19

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTHP-1 PTAC - 1	DX	Peak		0.2	2.9	2.0	0.0	N/A	87	0	75.6	67.47	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 10	DX	Peak		0.2	2.7	1.8	0.0	N/A	78	0	75.6	67.76	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 11	DX	Peak		0.3	3.6	2.4	0.0	N/A	108	0	75.6	67.05	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 12	DX	Peak		0.3	3.6	2.4	0.0	N/A	105	0	75.6	66.96	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 13	DX	Peak		0.4	4.3	2.9	0.0	N/A	127	0	75.6	66.64	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 14	DX	Peak		0.3	4.1	2.8	0.0	N/A	122	0	75.6	66.62	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 15	DX	Peak		0.2	2.6	1.7	0.0	N/A	76	0	75.6	67.65	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 16	DX	Peak		0.2	2.5	1.7	0.0	N/A	73	0	75.6	67.96	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 17	DX	Peak		2.1	24.7	16.5	0.0	N/A	727	0	75.6	72.32	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 18	DX	Peak		2.1	24.6	16.5	0.0	N/A	730	0	75.6	72.23	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 19	DX	Peak		0.3	3.3	2.2	0.0	N/A	96	0	75.6	64.63	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 2	DX	Peak		0.2	2.4	1.6	0.0	N/A	71	0	75.6	68.26	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 3	DX	Peak		0.3	3.9	2.6	0.0	N/A	115	0	75.6	67.08	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 4	DX	Peak		0.4	4.5	3.1	0.0	N/A	136	0	75.6	66.74	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 5	DX	Peak		0.3	3.9	2.7	0.0	N/A	117	0	75.6	67.07	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 6	DX	Peak		0.3	3.3	2.2	0.0	N/A	97	0	75.6	67.58	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 7	DX	Peak		0.3	3.0	2.1	0.0	N/A	90	0	75.6	67.24	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 8	DX	Peak		0.2	2.4	1.6	0.0	N/A	72	0	75.6	67.95	55.0	64.37	N/A	N/A	N/A
	PTHP-1 PTAC - 9	DX	Peak		0.2	2.9	2.0	0.0	N/A	87	0	75.6	67.67	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTHP-1 PTAC - 1	DX	Peak	1/21 19:00	3.0	0.0	N/A	87	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 1	Electric	Peak	1/21 19:00	1.9	0.0	N/A	71	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 10	DX	Peak	1/21 19:00	2.7	0.0	N/A	78	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 10	Electric	Peak	1/21 19:00	1.9	0.0	N/A	69	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 11	DX	Peak	1/21 19:00	3.7	0.0	N/A	108	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 11	Electric	Peak	1/21 19:00	2.2	0.0	N/A	80	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 12	DX	Peak	1/21 19:00	3.6	0.0	N/A	105	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 12	Electric	Peak	1/21 19:00	2.2	0.0	N/A	82	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 13	DX	Peak	1/21 19:00	4.3	0.0	N/A	127	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 13	Electric	Peak	1/21 19:00	2.5	0.0	N/A	94	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 14	DX	Peak	1/21 19:00	4.2	0.0	N/A	122	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 14	Electric	Peak	1/21 19:00	2.4	0.0	N/A	87	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 15	DX	Peak	1/21 19:00	2.6	0.0	N/A	76	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 15	Electric	Peak	1/21 19:00	1.5	0.0	N/A	56	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 16	DX	Peak	1/21 19:00	2.5	0.0	N/A	73	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 16	Electric	Peak	1/21 19:00	1.5	0.0	N/A	56	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 17	DX	Peak	1/21 24:00	24.9	0.0	N/A	727	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 17	Electric	Peak	1/21 24:00	6.3	0.0	N/A	232	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 18	DX	Peak	1/21 24:00	25.0	0.0	N/A	730	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 18	Electric	Peak	1/21 24:00	6.4	0.0	N/A	235	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 19	DX	Peak	1/21 24:00	3.3	0.0	N/A	96	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 19	Electric	Peak	1/21 24:00	3.6	0.0	N/A	133	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 2	DX	Peak	1/21 19:00	2.4	0.0	N/A	71	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 2	Electric	Peak	1/21 19:00	1.9	0.0	N/A	71	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 3	DX	Peak	1/21 19:00	3.9	0.0	N/A	115	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 3	Electric	Peak	1/21 19:00	2.5	0.0	N/A	93	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 4	DX	Peak	1/21 19:00	4.6	0.0	N/A	136	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 4	Electric	Peak	1/21 19:00	2.4	0.0	N/A	90	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 5	DX	Peak	1/21 19:00	4.0	0.0	N/A	117	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 5	Electric	Peak	1/21 19:00	2.3	0.0	N/A	83	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 6	DX	Peak	1/21 19:00	3.3	0.0	N/A	97	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 6	Electric	Peak	1/21 19:00	2.2	0.0	N/A	81	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 7	DX	Peak	1/21 19:00	3.1	0.0	N/A	91	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 7	Electric	Peak	1/21 19:00	1.9	0.0	N/A	70	0	70.0	95.0	N/A	N/A	N/A

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	PTHP-1 PTAC - 8	DX	Peak	1/21 19:00	2.5	0.0	N/A	72	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 8	Electric	Peak	1/21 19:00	1.9	0.0	N/A	70	0	70.0	95.0	N/A	N/A	N/A
	PTHP-1 PTAC - 9	DX	Peak	1/21 19:00	3.0	0.0	N/A	87	0	70.0	101.6	N/A	N/A	N/A
	PTHP-1 PTAC - 9	Electric	Peak	1/21 19:00	1.9	0.0	N/A	69	0	70.0	95.0	N/A	N/A	N/A

Load/Airflows

	Location			Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VAV PTHP			5,010	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 1		164	8/21 17:00	87	2,574	0	55.0	1/21 19:00	87	1,930	0	95.0
		114A - SLQ 8	164	8/21 17:00	89	2,585	0	55.0	1/21 19:00	118	1,649	0	95.0
	PTAC - 10		159	8/21 10:00	78	2,331	0	55.0	1/21 19:00	78	1,869	0	95.0
		105B - SLQ 2	159	8/21 10:00	80	2,377	0	55.0	1/21 19:00	108	1,597	0	95.0
	PTAC - 11		237	6/21 17:00	108	3,253	0	55.0	1/21 19:00	108	2,173	0	95.0
		108B - BATHROOM 1	90	6/21 17:00	49	1,524	0	55.0	1/21 19:00	69	781	0	95.0
		109B - SLQ 3	147	6/21 17:00	64	1,856	0	55.0	1/21 19:00	84	1,128	0	95.0
	PTAC - 12		233	7/21 10:00	105	3,229	0	55.0	1/21 19:00	105	2,209	0	95.0
		102B - SLQ 4	145	7/21 10:00	64	1,873	0	55.0	1/21 19:00	85	1,136	0	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	47	1,493	0	55.0	1/21 19:00	68	774	0	95.0
	PTAC - 13		243	6/21 17:00	127	3,882	0	55.0	1/21 19:00	127	2,543	0	95.0
		113B - BATHROOM 3	95	6/21 17:00	51	1,588	0	55.0	1/21 19:00	72	807	0	95.0
		11B - SLQ 5	148	6/21 17:00	82	2,413	0	55.0	1/21 19:00	110	1,398	0	95.0
	PTAC - 14		243	7/21 10:00	122	3,758	0	55.0	1/21 19:00	122	2,358	0	95.0
		110B - SLQ 6	148	7/21 10:00	85	2,561	0	55.0	1/21 19:00	116	1,260	0	95.0
		112B - BATHROOM 4	95	7/21 10:00	50	1,591	0	55.0	1/21 19:00	72	805	0	95.0
	PTAC - 15		164	6/21 17:00	76	2,264	0	55.0	1/21 19:00	76	1,517	0	95.0
		115B - SLQ 7	164	6/21 17:00	78	2,304	0	55.0	1/21 19:00	105	1,324	0	95.0
	PTAC - 16		164	7/21 09:00	73	2,213	0	55.0	1/21 19:00	73	1,515	0	95.0
		114B - SLQ 8	164	7/21 09:00	77	2,330	0	55.0	1/21 19:00	106	1,321	0	95.0
	PTAC - 17		776	7/21 17:00	727	19,210	119	55.0	1/21 24:00	727	6,279	119	95.0
		100A - CIRCULATION	308	7/21 10:00	164	5,204	18	55.0	1/21 24:00	237	2,749	18	95.0
		101A - BILLETING	184	8/21 17:00	398	9,440	84	55.0	1/21 24:00	431	1,931	84	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 18:00	19	607	0	55.0	1/21 24:00	28	318	0	95.0
		103A - CORRIDOR 1	125	7/21 18:00	36	1,126	7	55.0	1/21 20:00	51	730	7	95.0
		107A - CORRIDOR	133	7/21 18:00	39	1,223	8	55.0	1/21 19:00	56	778	8	95.0
	PTAC - 18		789	7/21 16:00	730	19,199	119	55.0	1/21 24:00	730	6,364	119	95.0
		100B - CIRCULATION	310	8/21 16:00	181	5,537	19	55.0	1/21 24:00	252	2,855	19	95.0
		101B - BILLETING	183	3/21 09:00	341	9,562	83	55.0	1/21 24:00	436	1,900	83	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	18	577	0	55.0	1/21 20:00	26	318	0	95.0
		103B - CORRIDOR 1	127	7/21 17:00	37	1,130	8	55.0	1/21 19:00	51	723	8	95.0
		107B - CORRIDOR 2	143	7/21 17:00	41	1,267	9	55.0	1/21 19:00	58	788	9	95.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VAV PTHP			5,010	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PTAC - 19		224	6/21 18:00	96	3,132	13	55.0	1/21 24:00	96	3,606	13	95.0
		116B - MECH STORAGE	113	6/21 18:00	54	1,737	7	55.0	1/21 24:00	79	1,811	7	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	46	1,479	7	55.0	1/21 24:00	67	1,555	7	95.0
	PTAC - 2		167	7/21 10:00	71	2,097	0	55.0	1/21 19:00	71	1,920	0	95.0
		115A - SLQ 7	167	7/21 10:00	75	2,196	0	55.0	1/21 19:00	100	1,641	0	95.0
	PTAC - 3		250	7/21 10:00	115	3,512	0	55.0	1/21 19:00	115	2,527	0	95.0
		111A - SLQ 5	152	7/21 10:00	76	2,264	0	55.0	1/21 19:00	103	1,364	0	95.0
		113A - BATHROOM 3	98	7/21 10:00	47	1,467	0	55.0	1/21 20:00	67	836	0	95.0
	PTAC - 4		245	8/21 17:00	136	4,095	0	55.0	1/21 19:00	136	2,431	0	95.0
		110A - SLQ 6	149	8/21 17:00	92	2,686	0	55.0	1/21 19:00	122	1,291	0	95.0
		112A - BATHROOM 4	96	8/21 17:00	56	1,706	0	55.0	1/21 20:00	78	836	0	95.0
	PTAC - 5		234	8/21 17:00	117	3,512	0	55.0	1/21 19:00	117	2,261	0	95.0
		102A - SLQ 4	146	7/21 18:00	67	1,950	0	55.0	1/21 19:00	89	1,162	0	95.0
		104A - BATHROOM 2	89	8/21 17:00	53	1,612	0	55.0	1/21 20:00	73	792	0	95.0
	PTAC - 6		239	7/21 10:00	97	2,924	0	55.0	1/21 19:00	97	2,192	0	95.0
		108A - BATHROOM 1	91	7/21 10:00	44	1,384	0	55.0	1/21 20:00	63	789	0	95.0
		109A - SLQ 3	148	6/21 10:00	59	1,743	0	55.0	1/21 19:00	79	1,138	0	95.0
	PTAC - 7		158	8/21 17:00	90	2,694	0	55.0	1/21 19:00	91	1,898	0	95.0
		106A - SLQ 2	158	8/21 17:00	92	2,700	0	55.0	1/21 19:00	123	1,621	0	95.0
	PTAC - 8		162	8/21 11:00	72	2,120	0	55.0	1/21 19:00	72	1,893	0	95.0
		105A - SLQ 1	162	8/21 10:00	75	2,184	0	55.0	1/21 19:00	99	1,620	0	95.0
	PTAC - 9		159	8/21 16:00	87	2,550	0	55.0	1/21 19:00	87	1,875	0	95.0
		106B - SLQ 1	159	8/21 16:00	88	2,529	0	55.0	1/21 19:00	115	1,602	0	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	PTAC - 1 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	117	.02	N/A	100.00
	PTAC - 10 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	106	.02	N/A	100.00
	PTAC - 11 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	148	.03	N/A	100.00
	PTAC - 12 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	147	.03	N/A	100.00
	PTAC - 13 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	176	.04	N/A	100.00
	PTAC - 14 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	171	.03	N/A	100.00
	PTAC - 15 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	103	.02	N/A	100.00
	PTAC - 16 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	101	.02	N/A	100.00
	PTAC - 17 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	874	.17	N/A	100.00
	PTAC - 18 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	873	.17	N/A	100.00
	PTAC - 19 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	142	.03	N/A	100.00
	PTAC - 2 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	95	.02	N/A	100.00
	PTAC - 3 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	160	.03	N/A	100.00
	PTAC - 4 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	186	.04	N/A	100.00
	PTAC - 5 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	160	.03	N/A	100.00
	PTAC - 6 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	133	.03	N/A	100.00
	PTAC - 7 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	122	.02	N/A	100.00
	PTAC - 8 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	96	.02	N/A	100.00
	PTAC - 9 _PTHP-1_SUPPLY FAN	Zone	4.00	N/A	0.08	116	.02	N/A	100.00

System Name: Multi Sys Dehum and Reheat

System Type:	Dedicated Outdoor Air System (DOAS)
Number of Zones	0
Number of Rooms	0

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design						Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Block		1.5	17.7	9.9	17.7	N/A	252	252	90.7	108.29	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SHC-1		Electric	Block	1/21 19:00	16.2	16.2	N/A	252	252	15.5	75.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
Multi Sys Dehum and Reheat			0	8/21 16:00	252	9,883	252	55.0	1/21 19:00	252	16,223	252	75.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
Multi Sys Dehum and Reheat SF-1		System	53.00	N/A	3.00	252	.17	N/A	100.00

System Component Selection Summary

Ground Source Heat Pump (GSHP)

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.1	13.4	12.3	0.0	N/A	454	0	78.3	64.51	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 12:00	454	12,319	454	55.0		0	0	454	95.0
	SS - 1		108	7/21 12:00	454	11,486	454	55.0	1/21 24:00	454	2,040	454	95.0
		118B - IT	108	7/21 12:00	464	11,742	464	55.0	1/21 24:00	464	1,698	464	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	454	.20	N/A	100.00

System Name: CV WSHP - 3

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 3	DX	Peak		0.3	3.8	3.9	0.0	N/A	147	0	79.0	67.67	55.0	64.37	0.72	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 3	Electric	Peak	1/21 19:00	2.6	0.0	N/A	90	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 3	DX	Peak	1/21 19:00	3.9	0.0	N/A	116	0	68.0	98.8	0.56	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 3			250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 3		250	7/21 10:00	147	3,374	0	55.0	1/21 19:00	116	2,618	0	95.0
		111A - SLQ 5	152	7/21 10:00	98	2,200	N/A	55.0	1/21 19:00	77	1,297	N/A	95.0
		113A - BATHROOM 3	98	7/21 10:00	60	1,430	N/A	55.0	1/21 24:00	47	796	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 3 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	133	.04	N/A	100.00

System Name: CV WSHP - 2

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 2	DX	Peak		0.2	2.3	2.4	0.0	N/A	90	0	79.0	69.22	55.0	64.37	0.44	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 2	Electric	Peak	1/21 19:00	2.0	0.0	N/A	69	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 2	DX	Peak	1/21 19:00	2.4	0.0	N/A	71	0	68.0	98.8	0.34	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 2			167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 2		167	7/21 10:00	90	1,991	0	55.0	1/21 19:00	71	2,029	0	95.0
		115A - SLQ 7	167	7/21 10:00	95	2,117	N/A	55.0	1/21 19:00	75	1,564	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 2 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	79	.03	N/A	100.00

System Name: CV WSHP - 7

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 7	DX	Peak		0.2	3.0	3.0	0.0	N/A	113	0	79.0	67.81	55.0	64.37	0.55	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 7	Electric	Peak	1/21 19:00	2.0	0.0	N/A	69	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 7	DX	Peak	1/21 19:00	3.0	0.0	N/A	89	0	68.0	98.8	0.43	90.0	100.0

Load/Airflows

	Location			Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 7			158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 7		158	8/21 17:00	113	2,592	0	55.0	1/21 19:00	89	2,007	0	95.0
		106A - SLQ 2	158	8/21 17:00	115	2,622	N/A	55.0	1/21 19:00	90	1,546	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 7 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	102	.03	N/A	100.00

System Name: CV WSHP - 9

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 9	DX	Peak		0.2	2.8	2.9	0.0	N/A	108	0	79.0	68.37	55.0	64.37	0.53	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 9	Electric	Peak	1/21 19:00	2.0	0.0	N/A	68	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 9	DX	Peak	1/21 19:00	2.9	0.0	N/A	85	0	68.0	98.8	0.42	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 9			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 9		159	8/21 16:00	108	2,449	0	55.0	1/21 19:00	85	1,983	0	95.0
		106B - SLQ 1	159	8/21 16:00	108	2,449	N/A	55.0	1/21 19:00	85	1,528	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 9 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	97	.03	N/A	100.00

System Name: CV WSHP - 4

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 4	DX	Peak		0.4	4.7	4.8	0.0	N/A	182	0	79.0	67.20	55.0	64.37	0.88	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 4	Electric	Peak	1/21 19:00	2.5	0.0	N/A	87	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 4	DX	Peak	1/21 19:00	4.8	0.0	N/A	143	0	68.0	98.8	0.70	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 4			245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 4		245	8/21 17:00	182	4,216	0	55.0	1/21 19:00	143	2,532	0	95.0
		110A - SLQ 6	149	8/21 17:00	115	2,627	N/A	55.0	1/21 19:00	90	1,229	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	69	1,669	N/A	55.0	1/21 24:00	55	796	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 4 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	167	.05	N/A	100.00

System Name: CV WSHP - 1

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 1	DX	Peak		0.2	2.8	2.9	0.0	N/A	109	0	79.0	68.12	55.0	64.37	0.53	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 1	Electric	Peak	1/21 19:00	2.0	0.0	N/A	70	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 1	DX	Peak	1/21 19:00	2.9	0.0	N/A	86	0	68.0	98.8	0.42	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 1			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 1		164	8/21 17:00	109	2,471	0	55.0	1/21 19:00	86	2,040	0	95.0
		114A - SLQ 8	164	8/21 17:00	110	2,506	N/A	55.0	1/21 19:00	87	1,572	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 1 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	98	.03	N/A	100.00

System Name: CV WSHP - 6

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 6	DX	Peak		0.3	3.2	3.3	0.0	N/A	124	0	79.0	68.28	55.0	64.37	0.60	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 6	Electric	Peak	1/21 19:00	2.3	0.0	N/A	79	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 6	DX	Peak	1/21 19:00	3.3	0.0	N/A	98	0	68.0	98.8	0.48	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 6			239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 6		239	7/21 10:00	124	2,806	0	55.0	1/21 19:00	98	2,306	0	95.0
		108A - BATHROOM 1	91	7/21 10:00	56	1,348	N/A	55.0	1/21 24:00	44	750	N/A	95.0
		109A - SLQ 3	148	6/21 10:00	77	1,694	N/A	55.0	1/21 19:00	61	1,081	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 6 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	111	.04	N/A	100.00

System Name: CV WSHP - 5

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 5	DX	Peak		0.3	3.8	3.9	0.0	N/A	148	0	79.0	67.60	55.0	64.37	0.72	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 5	Electric	Peak	1/21 19:00	2.4	0.0	N/A	80	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 5	DX	Peak	1/21 19:00	3.9	0.0	N/A	116	0	68.0	98.8	0.57	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 5			234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 5		234	8/21 17:00	148	3,395	0	55.0	1/21 19:00	116	2,354	0	95.0
		102A - SLQ 4	146	7/21 18:00	84	1,898	N/A	55.0	1/21 19:00	67	1,105	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	65	1,576	N/A	55.0	1/21 24:00	52	754	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 5 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	134	.04	N/A	100.00

System Name: CV WSHP - 14

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 14	DX	Peak		0.3	4.1	4.1	0.0	N/A	156	0	79.0	67.04	55.0	64.37	0.76	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 14	Electric	Peak	1/21 19:00	2.5	0.0	N/A	84	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 14	DX	Peak	1/21 19:00	4.1	0.0	N/A	123	0	68.0	98.8	0.60	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 14			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 14		243	7/21 10:00	156	3,635	0	55.0	1/21 19:00	123	2,452	0	95.0
		110B - SLQ 6	148	7/21 10:00	109	2,503	N/A	55.0	1/21 19:00	86	1,200	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	64	1,555	N/A	55.0	1/21 20:00	51	766	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 14 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	144	.05	N/A	100.00

System Name: CV WSHP - 8

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 8	DX	Peak		0.2	2.3	2.4	0.0	N/A	90	0	79.0	68.72	55.0	64.37	0.44	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 8	Electric	Peak	1/21 19:00	2.0	0.0	N/A	69	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 8	DX	Peak	1/21 19:00	2.4	0.0	N/A	71	0	68.0	98.8	0.35	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 8			162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 8		162	8/21 11:00	90	2,018	0	55.0	1/21 19:00	71	2,005	0	95.0
		105A - SLQ 1	162	8/21 10:00	96	2,105	N/A	55.0	1/21 19:00	75	1,544	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 8 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	80	.03	N/A	100.00

System Name: CV WSHP - 19

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 19	DX	Peak		0.3	3.3	3.4	0.0	N/A	129	0	79.0	64.69	55.0	64.37	0.63	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 19	Electric	Peak	1/21 24:00	3.7	0.0	N/A	126	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 19	DX	Peak	1/21 24:00	3.4	0.0	N/A	102	0	68.0	98.8	0.50	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 19			224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 19		224	6/21 18:00	129	3,123	13	55.0	1/21 24:00	102	3,679	13	95.0
		116B - MECH STORAGE	113	6/21 18:00	82	1,798	N/A	55.0	1/21 24:00	64	1,731	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	71	1,553	N/A	55.0	1/21 24:00	56	1,485	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 19 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	126	.04	N/A	100.00

System Name: CV WSHP - 12

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 12	DX	Peak		0.3	3.5	3.6	0.0	N/A	135	0	79.0	67.46	55.0	64.37	0.66	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 12	Electric	Peak	1/21 19:00	2.3	0.0	N/A	79	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 12	DX	Peak	1/21 19:00	3.6	0.0	N/A	106	0	68.0	98.8	0.52	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 12			233	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 12		233	7/21 10:00	135	3,114	0	55.0	1/21 19:00	106	2,300	0	95.0
		102B - SLQ 4	145	7/21 10:00	81	1,822	N/A	55.0	1/21 19:00	64	1,081	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	60	1,458	N/A	55.0	1/21 20:00	48	737	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 12 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	123	.04	N/A	100.00

System Name: CV WSHP - 17

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 17	DX	Peak		2.0	23.8	23.8	0.0	N/A	902	0	79.0	73.67	55.0	64.37	4.39	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 17	Electric	Peak	1/21 24:00	6.7	0.0	N/A	230	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 17	DX	Peak	1/21 24:00	23.8	0.0	N/A	711	0	68.0	98.9	3.46	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 17			776	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 17		776	7/21 17:00	902	18,244	119	55.0	1/21 24:00	711	6,730	119	95.0
		100A - CIRCULATION	308	7/21 10:00	247	5,478	N/A	55.0	1/21 24:00	195	2,615	N/A	95.0
		101A - BILLETING	184	8/21 17:00	707	11,169	N/A	55.0	1/21 24:00	557	1,840	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 18:00	28	629	N/A	55.0	1/21 24:00	22	302	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	62	1,265	N/A	55.0	1/21 20:00	49	691	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	67	1,370	N/A	55.0	1/21 20:00	53	737	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 17 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	722	.23	N/A	100.00

System Name: CV WSHP - 10

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 10	DX	Peak		0.2	2.6	2.6	0.0	N/A	99	0	79.0	68.49	55.0	64.37	0.48	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 10	Electric	Peak	1/21 19:00	2.0	0.0	N/A	68	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 10	DX	Peak	1/21 19:00	2.6	0.0	N/A	78	0	68.0	98.8	0.38	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 10			159	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 10		159	8/21 10:00	99	2,230	0	55.0	1/21 19:00	78	1,977	0	95.0
		105B - SLQ 2	159	8/21 10:00	101	2,299	N/A	55.0	1/21 19:00	80	1,524	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 10 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	88	.03	N/A	100.00

System Name: CV WSHP - 15

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 15	DX	Peak		0.2	2.5	2.6	0.0	N/A	97	0	79.0	68.37	55.0	64.37	0.47	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 15	Electric	Peak	1/21 19:00	1.5	0.0	N/A	53	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 15	DX	Peak	1/21 19:00	2.5	0.0	N/A	76	0	68.0	98.8	0.37	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 15			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 15		164	6/21 17:00	97	2,185	0	55.0	1/21 19:00	76	1,547	0	95.0
		115B - SLQ 7	164	6/21 17:00	99	2,242	N/A	55.0	1/21 19:00	78	1,259	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 15 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	86	.03	N/A	100.00

System Name: CV WSHP - 18

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 18	DX	Peak		2.0	23.9	23.9	0.0	N/A	906	0	79.0	73.57	55.0	64.37	4.41	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 18	Electric	Peak	1/21 24:00	6.8	0.0	N/A	234	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 18	DX	Peak	1/21 24:00	23.9	0.0	N/A	714	0	68.0	98.9	3.47	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 18			789	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 18		789	7/21 16:00	906	18,355	119	55.0	1/21 24:00	714	6,830	119	95.0
		100B - CIRCULATION	310	8/21 16:00	270	5,805	N/A	55.0	1/21 24:00	213	2,718	N/A	95.0
		101B - BILLETING	183	7/21 09:00	657	10,910	N/A	55.0	1/21 24:00	518	1,811	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	26	599	N/A	55.0	1/21 24:00	21	303	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	63	1,271	N/A	55.0	1/21 19:00	49	684	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	70	1,427	N/A	55.0	1/21 19:00	56	746	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 18 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	726	.23	N/A	100.00

System Name: CV WSHP - 13

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 13	DX	Peak		0.3	4.2	4.3	0.0	N/A	161	0	79.0	67.13	55.0	64.37	0.79	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 13	Electric	Peak	1/21 19:00	2.6	0.0	N/A	90	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 13	DX	Peak	1/21 19:00	4.3	0.0	N/A	127	0	68.0	98.8	0.62	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 13			243	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 13		243	6/21 17:00	161	3,748	0	55.0	1/21 19:00	127	2,636	0	95.0
		113B - BATHROOM 3	95	6/21 17:00	64	1,551	N/A	55.0	1/21 20:00	51	768	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	103	2,345	N/A	55.0	1/21 19:00	81	1,330	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 13 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	148	.05	N/A	100.00

System Name: CV WSHP - 16

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 16	DX	Peak		0.2	2.5	2.5	0.0	N/A	95	0	79.0	68.74	55.0	64.37	0.46	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 16	Electric	Peak	1/21 19:00	1.5	0.0	N/A	53	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 16	DX	Peak	1/21 19:00	2.5	0.0	N/A	75	0	68.0	98.8	0.36	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 16			164	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 16		164	7/21 09:00	95	2,131	0	55.0	1/21 19:00	75	1,544	0	95.0
		114B - SLQ 8	164	7/21 09:00	100	2,268	N/A	55.0	1/21 19:00	79	1,258	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 16 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	84	.03	N/A	100.00

System Name: CV WSHP - 11

System Type:	Constant Volume (CV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 11	DX	Peak		0.3	3.6	3.6	0.0	N/A	137	0	79.0	67.62	55.0	64.37	0.67	90.0	80.0

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	ZWAHP-1 GSHP - 11	Electric	Peak	1/21 19:00	2.3	0.0	N/A	78	0	68.0	95.0	N/A	N/A	N/A
	ZWAHP-1 GSHP - 11	DX	Peak	1/21 19:00	3.6	0.0	N/A	108	0	68.0	98.8	0.52	90.0	100.0

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
CV WSHP - 11			237	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GSHP - 11		237	6/21 17:00	137	3,141	0	55.0	1/21 19:00	108	2,287	0	95.0
		108B - BATHROOM 1	90	6/21 17:00	62	1,487	N/A	55.0	1/21 20:00	49	743	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	81	1,805	N/A	55.0	1/21 19:00	64	1,073	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	GSHP - 11 _ZWAHP-1_SUPPLY FAN	Zone	18.00	N/A	0.50	124	.04	N/A	100.00

System Name: Multi Sys Dehum and Reheat

System Type:	Dedicated Outdoor Air System (DOAS)
Number of Zones	0
Number of Rooms	0

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Block		1.5	17.7	9.9	17.7	N/A	252	252	90.7	108.29	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SHC-1		Electric	Block	1/21 19:00	16.2	16.2	N/A	252	252	15.5	75.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
Multi Sys Dehum and Reheat			0	8/21 16:00	252	9,883	252	55.0	1/21 19:00	252	16,223	252	75.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Override (kW)	Motor Heat in Air (%)
Multi Sys Dehum and Reheat SF-1		System	53.00	N/A	3.00	252	.17	N/A	100.00

Loop Name: **Ground Source Heat Pump CF**
Loop Type: Mixed Water Loop
Number of Assigned Coils: 38

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)
Ground Source Heat Pump CF MXWP-1	Pump:ConstantSpeed	Intermittent	23	5.77	110	19

Plant Equipment

Name	Type	Nominal Capacity	Efficiency (COP)

System Component Selection Summary

VRF system

System Name: VRF - 14

System Type: Variable Air Volume (VAV)
Number of Zones 1
Number of Rooms 2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 14	DX	Peak		0.3	4.0	3.6	0.0	N/A	144	0	78.6	67.04	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 14	DX	Peak	1/21 19:00	4.2	0.0	N/A	144	0	68.0	94.9	N/A	N/A	N/A
	VRFHP-1 VRF - 14	Electric	Peak	1/21 19:00	2.4	0.0	N/A	84	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 14			243	7/21 10:00	N/A	3,607	N/A	N/A	1/21 19:00	N/A	2,449	N/A	N/A
	VRF - 14		243	7/21 10:00	144	3,635	0	55.0	1/21 19:00	144	2,449	0	95.0
		110B - SLQ 6	148	7/21 10:00	99	2,503	N/A	55.0	1/21 19:00	99	1,200	N/A	95.0
		112B - BATHROOM 4	95	7/21 10:00	61	1,555	N/A	55.0	1/21 20:00	61	766	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 14 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	144	.03	N/A	100.00

System Name: VRF - 10

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 10	DX	Peak		0.2	2.5	2.2	0.0	N/A	88	0	78.6	68.49	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 10	DX	Peak	1/21 19:00	2.7	0.0	N/A	88	0	68.0	95.8	N/A	N/A	N/A
	VRFHP-1 VRF - 10	Electric	Peak	1/21 19:00	2.0	0.0	N/A	68	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 10			159	8/21 10:00	N/A	2,212	N/A	N/A	1/21 19:00	N/A	1,976	N/A	N/A
	VRF - 10		159	8/21 10:00	88	2,230	0	55.0	1/21 19:00	88	1,976	0	95.0
		105B - SLQ 2	159	8/21 10:00	91	2,299	N/A	55.0	1/21 19:00	91	1,524	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 10 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	88	.02	N/A	100.00

System Name: VRF - 11

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 11	DX	Peak		0.3	3.5	3.1	0.0	N/A	124	0	78.6	67.62	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 11	DX	Peak	1/21 19:00	3.7	0.0	N/A	124	0	68.0	95.2	N/A	N/A	N/A
	VRFHP-1 VRF - 11	Electric	Peak	1/21 19:00	2.3	0.0	N/A	78	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 11			237	6/21 17:00	N/A	3,117	N/A	N/A	1/21 19:00	N/A	2,285	N/A	N/A
	VRF - 11		237	6/21 17:00	124	3,141	0	55.0	1/21 19:00	124	2,285	0	95.0
		108B - BATHROOM 1	90	6/21 17:00	59	1,487	N/A	55.0	1/21 20:00	59	743	N/A	95.0
		109B - SLQ 3	147	6/21 17:00	71	1,805	N/A	55.0	1/21 19:00	71	1,073	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 11 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	124	.03	N/A	100.00

System Name: VRF - 15

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 15	DX	Peak		0.2	2.5	2.2	0.0	N/A	86	0	78.6	68.37	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 15	DX	Peak	1/21 19:00	2.6	0.0	N/A	86	0	68.0	95.7	N/A	N/A	N/A
	VRFHP-1 VRF - 15	Electric	Peak	1/21 19:00	1.5	0.0	N/A	53	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 15			164	6/21 17:00	N/A	2,168	N/A	N/A	1/21 19:00	N/A	1,545	N/A	N/A
	VRF - 15		164	6/21 17:00	86	2,185	0	55.0	1/21 19:00	86	1,545	0	95.0
		115B - SLQ 7	164	6/21 17:00	89	2,242	N/A	55.0	1/21 19:00	89	1,259	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 15 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	86	.02	N/A	100.00

System Name: VRF - 17

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 17	DX	Peak		2.0	23.5	18.1	0.0	N/A	722	0	78.6	73.67	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 17	DX	Peak	1/21 24:00	24.0	0.0	N/A	722	0	68.0	98.7	N/A	N/A	N/A
	VRFHP-1 VRF - 17	Electric	Peak	1/21 24:00	6.7	0.0	N/A	230	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 17			776	7/21 17:00	N/A	18,077	N/A	N/A	1/21 24:00	N/A	6,722	N/A	N/A
	VRF - 17		776	7/21 17:00	722	18,244	119	55.0	1/21 24:00	722	6,722	119	95.0
		100A - CIRCULATION	308	7/21 10:00	217	5,478	N/A	55.0	1/21 24:00	217	2,615	N/A	95.0
		101A - BILLETING	184	8/21 17:00	443	11,169	N/A	55.0	1/21 24:00	443	1,840	N/A	95.0
		101A.2 - LAUNDRY CLOSET	26	7/21 18:00	25	629	N/A	55.0	1/21 24:00	25	302	N/A	95.0
		103A - CORRIDOR 1	125	7/21 18:00	50	1,265	N/A	55.0	1/21 20:00	50	691	N/A	95.0
		107A - CORRIDOR	133	7/21 18:00	54	1,370	N/A	55.0	1/21 20:00	54	737	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 17 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	722	.15	N/A	100.00

System Name: VRF - 16

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 16	DX	Peak		0.2	2.4	2.1	0.0	N/A	84	0	78.6	68.74	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 16	DX	Peak	1/21 19:00	2.5	0.0	N/A	84	0	68.0	95.9	N/A	N/A	N/A
	VRFHP-1 VRF - 16	Electric	Peak	1/21 19:00	1.5	0.0	N/A	53	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 16			164	7/21 09:00	N/A	2,114	N/A	N/A	1/21 19:00	N/A	1,543	N/A	N/A
	VRF - 16		164	7/21 09:00	84	2,131	0	55.0	1/21 19:00	84	1,543	0	95.0
		114B - SLQ 8	164	7/21 09:00	90	2,268	N/A	55.0	1/21 19:00	90	1,258	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 16 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	84	.02	N/A	100.00

System Name: VRF - 13

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 13	DX	Peak		0.3	4.1	3.7	0.0	N/A	148	0	78.6	67.13	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 13	DX	Peak	1/21 19:00	4.3	0.0	N/A	148	0	68.0	95.0	N/A	N/A	N/A
	VRFHP-1 VRF - 13	Electric	Peak	1/21 19:00	2.6	0.0	N/A	90	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 13			243	6/21 17:00	N/A	3,719	N/A	N/A	1/21 19:00	N/A	2,634	N/A	N/A
	VRF - 13		243	6/21 17:00	148	3,748	0	55.0	1/21 19:00	148	2,634	0	95.0
		113B - BATHROOM 3	95	6/21 17:00	61	1,551	N/A	55.0	1/21 20:00	61	768	N/A	95.0
		11B - SLQ 5	148	6/21 17:00	93	2,345	N/A	55.0	1/21 19:00	93	1,330	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 13 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	148	.03	N/A	100.00

System Name: VRF - 18

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	5

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 18	DX	Peak		2.0	23.6	18.2	0.0	N/A	726	0	78.6	73.57	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 18	DX	Peak	1/21 24:00	24.1	0.0	N/A	726	0	68.0	98.6	N/A	N/A	N/A
	VRFHP-1 VRF - 18	Electric	Peak	1/21 24:00	6.8	0.0	N/A	233	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 18			789	7/21 16:00	N/A	18,188	N/A	N/A	1/21 24:00	N/A	6,822	N/A	N/A
	VRF - 18		789	7/21 16:00	726	18,356	119	55.0	1/21 24:00	726	6,822	119	95.0
		100B - CIRCULATION	310	8/21 16:00	229	5,805	N/A	55.0	1/21 24:00	229	2,718	N/A	95.0
		101B - BILLETING	183	7/21 09:00	433	10,910	N/A	55.0	1/21 24:00	433	1,811	N/A	95.0
		101B.2 - LAUNDRY CLOSET	27	7/21 17:00	24	599	N/A	55.0	1/21 24:00	24	303	N/A	95.0
		103B - CORRIDOR 1	127	7/21 17:00	50	1,271	N/A	55.0	1/21 19:00	50	684	N/A	95.0
		107B - CORRIDOR 2	143	7/21 17:00	56	1,427	N/A	55.0	1/21 19:00	56	746	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 18 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	726	.15	N/A	100.00

System Name: VRF - 19

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 19	DX	Peak		0.3	3.3	3.2	0.0	N/A	126	0	78.6	64.69	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 19	DX	Peak	1/21 24:00	3.5	0.0	N/A	126	0	68.0	93.5	N/A	N/A	N/A
	VRFHP-1 VRF - 19	Electric	Peak	1/21 24:00	3.7	0.0	N/A	126	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 19			224	6/21 18:00	N/A	3,158	N/A	N/A	1/21 24:00	N/A	3,677	N/A	N/A
	VRF - 19		224	6/21 18:00	126	3,123	13	55.0	1/21 24:00	126	3,677	13	95.0
		116B - MECH STORAGE	113	6/21 18:00	71	1,798	N/A	55.0	1/21 24:00	71	1,731	N/A	95.0
		117B - FACILITIES STORAGE	111	6/21 19:00	61	1,553	N/A	55.0	1/21 24:00	61	1,485	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 19 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	126	.03	N/A	100.00

System Name: Multi Sys Dehum and Reheat

System Type:	Dedicated Outdoor Air System (DOAS)
Number of Zones	0
Number of Rooms	0

Component	Quantity
Cooling Coils	1
Heating Coils	1
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Enter HR (gr/lb)	Leave DB (°F)	Leave HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Block		1.5	17.7	9.9	17.7	N/A	252	252	90.7	108.29	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SHC-1		Electric	Block	1/21 19:00	16.2	16.2	N/A	252	252	15.5	75.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft^2)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
Multi Sys Dehum and Reheat			0	8/21 16:00	252	9,883	252	55.0	1/21 19:00	252	16,223	252	75.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
Multi Sys Dehum and Reheat SF-1		System	53.00	N/A	3.00	252	.17	N/A	100.00

System Name: SS-1

System Type:	Cooling Only
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	0
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design						Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
SCC-1		DX	Peak		1.1	13.4	12.3	0.0	N/A	454	0	78.3	64.51	53.6	61.07	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
SS-1			108	7/21 12:00	454	12,319	454	55.0		0	0	454	95.0
	SS - 1		108	7/21 12:00	454	11,486	454	55.0	1/21 24:00	454	2,040	454	95.0
		118B - IT	108	7/21 12:00	464	11,742	464	55.0	1/21 24:00	464	1,698	464	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
SS-1 SF-1		System	78.00	N/A	3.00	454	.20	N/A	100.00

System Name: VRF - 7

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 7	DX	Peak		0.2	2.9	2.6	0.0	N/A	102	0	78.6	67.81	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 7	DX	Peak	1/21 19:00	3.0	0.0	N/A	102	0	68.0	95.4	N/A	N/A	N/A
	VRFHP-1 VRF - 7	Electric	Peak	1/21 19:00	2.0	0.0	N/A	69	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 7			158	8/21 17:00	N/A	2,572	N/A	N/A	1/21 19:00	N/A	2,006	N/A	N/A
	VRF - 7		158	8/21 17:00	102	2,592	0	55.0	1/21 19:00	102	2,006	0	95.0
		106A - SLQ 2	158	8/21 17:00	104	2,622	N/A	55.0	1/21 19:00	104	1,546	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 7 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	102	.02	N/A	100.00

System Name: VRF - 3

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 3	DX	Peak		0.3	3.8	3.3	0.0	N/A	133	0	78.6	67.67	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 3	DX	Peak	1/21 19:00	3.9	0.0	N/A	133	0	68.0	95.3	N/A	N/A	N/A
	VRFHP-1 VRF - 3	Electric	Peak	1/21 19:00	2.6	0.0	N/A	89	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 3			250	7/21 10:00	N/A	3,348	N/A	N/A	1/21 19:00	N/A	2,616	N/A	N/A
	VRF - 3		250	7/21 10:00	133	3,374	0	55.0	1/21 19:00	133	2,616	0	95.0
		111A - SLQ 5	152	7/21 10:00	87	2,200	N/A	55.0	1/21 19:00	87	1,297	N/A	95.0
		113A - BATHROOM 3	98	7/21 10:00	57	1,430	N/A	55.0	1/21 24:00	57	796	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 3 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	133	.03	N/A	100.00

System Name: VRF - 9

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 9	DX	Peak		0.2	2.8	2.4	0.0	N/A	97	0	78.6	68.37	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 9	DX	Peak	1/21 19:00	2.9	0.0	N/A	97	0	68.0	95.7	N/A	N/A	N/A
	VRFHP-1 VRF - 9	Electric	Peak	1/21 19:00	2.0	0.0	N/A	68	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 9			159	8/21 16:00	N/A	2,430	N/A	N/A	1/21 19:00	N/A	1,982	N/A	N/A
	VRF - 9		159	8/21 16:00	97	2,449	0	55.0	1/21 19:00	97	1,982	0	95.0
		106B - SLQ 1	159	8/21 16:00	97	2,449	N/A	55.0	1/21 19:00	97	1,528	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 9 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	97	.02	N/A	100.00

System Name: VRF - 8

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 8	DX	Peak		0.2	2.3	2.0	0.0	N/A	80	0	78.6	68.72	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 8	DX	Peak	1/21 19:00	2.4	0.0	N/A	80	0	68.0	95.9	N/A	N/A	N/A
	VRFHP-1 VRF - 8	Electric	Peak	1/21 19:00	2.0	0.0	N/A	68	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 8			162	8/21 11:00	N/A	2,002	N/A	N/A	1/21 19:00	N/A	2,003	N/A	N/A
	VRF - 8		162	8/21 11:00	80	2,018	0	55.0	1/21 19:00	80	2,003	0	95.0
		105A - SLQ 1	162	8/21 10:00	83	2,105	N/A	55.0	1/21 19:00	83	1,544	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 8 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	80	.02	N/A	100.00

System Name: VRF - 6

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 6	DX	Peak		0.3	3.2	2.8	0.0	N/A	111	0	78.6	68.28	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 6	DX	Peak	1/21 19:00	3.3	0.0	N/A	111	0	68.0	95.6	N/A	N/A	N/A
	VRFHP-1 VRF - 6	Electric	Peak	1/21 19:00	2.3	0.0	N/A	79	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 6			239	7/21 10:00	N/A	2,784	N/A	N/A	1/21 19:00	N/A	2,303	N/A	N/A
	VRF - 6		239	7/21 10:00	111	2,807	0	55.0	1/21 19:00	111	2,303	0	95.0
		108A - BATHROOM 1	91	7/21 10:00	53	1,348	N/A	55.0	1/21 24:00	53	750	N/A	95.0
		109A - SLQ 3	148	6/21 10:00	67	1,694	N/A	55.0	1/21 19:00	67	1,081	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 6 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	111	.02	N/A	100.00

System Name: VRF - 4

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 4	DX	Peak		0.4	4.7	4.2	0.0	N/A	167	0	78.6	67.20	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 4	DX	Peak	1/21 19:00	4.9	0.0	N/A	167	0	68.0	95.0	N/A	N/A	N/A
	VRFHP-1 VRF - 4	Electric	Peak	1/21 19:00	2.5	0.0	N/A	86	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 4			245	8/21 17:00	N/A	4,184	N/A	N/A	1/21 19:00	N/A	2,530	N/A	N/A
	VRF - 4		245	8/21 17:00	167	4,216	0	55.0	1/21 19:00	167	2,530	0	95.0
		110A - SLQ 6	149	8/21 17:00	104	2,627	N/A	55.0	1/21 19:00	104	1,229	N/A	95.0
		112A - BATHROOM 4	96	8/21 17:00	66	1,669	N/A	55.0	1/21 24:00	66	796	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 4 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	167	.03	N/A	100.00

System Name: VRF - 2

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 2	DX	Peak		0.2	2.3	2.0	0.0	N/A	79	0	78.6	69.22	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 2	DX	Peak	1/21 19:00	2.4	0.0	N/A	79	0	68.0	96.2	N/A	N/A	N/A
	VRFHP-1 VRF - 2	Electric	Peak	1/21 19:00	2.0	0.0	N/A	69	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 2			167	7/21 10:00	N/A	1,975	N/A	N/A	1/21 19:00	N/A	2,028	N/A	N/A
	VRF - 2		167	7/21 10:00	79	1,991	0	55.0	1/21 19:00	79	2,028	0	95.0
		115A - SLQ 7	167	7/21 10:00	84	2,117	N/A	55.0	1/21 19:00	84	1,564	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 2 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	79	.02	N/A	100.00

System Name: VRF - 5

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 5	DX	Peak		0.3	3.8	3.4	0.0	N/A	134	0	78.6	67.60	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 5	DX	Peak	1/21 19:00	4.0	0.0	N/A	134	0	68.0	95.2	N/A	N/A	N/A
	VRFHP-1 VRF - 5	Electric	Peak	1/21 19:00	2.4	0.0	N/A	80	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 5			234	8/21 17:00	N/A	3,369	N/A	N/A	1/21 19:00	N/A	2,352	N/A	N/A
	VRF - 5		234	8/21 17:00	134	3,395	0	55.0	1/21 19:00	134	2,352	0	95.0
		102A - SLQ 4	146	7/21 18:00	75	1,898	N/A	55.0	1/21 19:00	75	1,105	N/A	95.0
		104A - BATHROOM 2	89	8/21 17:00	62	1,576	N/A	55.0	1/21 24:00	62	754	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 5 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	134	.03	N/A	100.00

System Name: VRF - 1

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	1

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 1	DX	Peak		0.2	2.8	2.5	0.0	N/A	98	0	78.6	68.12	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 1	DX	Peak	1/21 19:00	2.9	0.0	N/A	98	0	68.0	95.5	N/A	N/A	N/A
	VRFHP-1 VRF - 1	Electric	Peak	1/21 19:00	2.0	0.0	N/A	70	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 1			164	8/21 17:00	N/A	2,452	N/A	N/A	1/21 19:00	N/A	2,039	N/A	N/A
	VRF - 1		164	8/21 17:00	98	2,471	0	55.0	1/21 19:00	98	2,039	0	95.0
		114A - SLQ 8	164	8/21 17:00	99	2,506	N/A	55.0	1/21 19:00	99	1,572	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 1 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	98	.02	N/A	100.00

System Name: VRF - 12

System Type:	Variable Air Volume (VAV)
Number of Zones	1
Number of Rooms	2

Component	Quantity
Cooling Coils	1
Heating Coils	2
Fans	1

Cooling Coils

Coil Location			Coil Selection at Design							Airflow Conditions at Design						Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (tons)	Total capacity (MBh)	Sensible capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB/HR (°F)	Enter DB/HR (gr/lb)	Leave DB/HR (°F)	Leave DB/HR (gr/lb)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 12	DX	Peak		0.3	3.5	3.1	0.0	N/A	123	0	78.6	67.46	55.0	64.37	N/A	N/A	N/A

*Values do not include effects of plenum loads, heat exchangers such as evaporative cooling devices and similar components.

Heating Coils

Coil Location			Coil Selection at Design					Airflow Conditions at Design				Water Flow Conditions		
System	Zone	Type	Sizing Method	Time of Peak Mo/D/Hr	Total capacity (MBh)	Vent Load (MBh)	Ov/undr sizing (MBh)	Airflow (cfm)	Vent (cfm)	Enter DB (°F)	Leave DB (°F)	Flow (gpm)	Enter Temp (°F)	Leave Temp (°F)
	VRFHP-1 VRF - 12	DX	Peak	1/21 19:00	3.6	0.0	N/A	123	0	68.0	95.2	N/A	N/A	N/A
	VRFHP-1 VRF - 12	Electric	Peak	1/21 19:00	2.3	0.0	N/A	79	0	68.0	95.0	N/A	N/A	N/A

Load/Airflows

Location				Cooling					Heating				
System	Zone	Room	Area (ft²)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)	Time of Peak Mo/D/Hr	Supply Airflow (cfm)	Sensible Load (Btu/h)	Minimum Airflow (cfm)	SAT (°F)
VRF - 12			233	7/21 10:00	N/A	3,090	N/A	N/A	1/21 19:00	N/A	2,298	N/A	N/A
	VRF - 12		233	7/21 10:00	123	3,114	0	55.0	1/21 19:00	123	2,298	0	95.0
		102B - SLQ 4	145	7/21 10:00	72	1,822	N/A	55.0	1/21 19:00	72	1,081	N/A	95.0
		104B - BATHROOM 2 - ADA	88	7/21 10:00	58	1,458	N/A	55.0	1/21 20:00	58	737	N/A	95.0

Fans

System	Zone	Type	Efficiency (%)	Efficiency with PRM Fan Override (%)	Static Pressure (in. Wg)	Flow Rate (cfm)	Power (kW)	Power with PRM Fan Override (kW)	Motor Heat in Air (%)
	VRF - 12 _VRFHP-1_SUPPLY FAN	Zone	43.00	N/A	0.75	123	.03	N/A	100.00

Loop Name: **Air Source VRF**
Loop Type: VRF Loop
Number of Assigned Coils: 0

Pumps

Name	Type	Contol	Head (psig)	Flow (gpm)	Power (W)	Power per Flow (W/gpm)

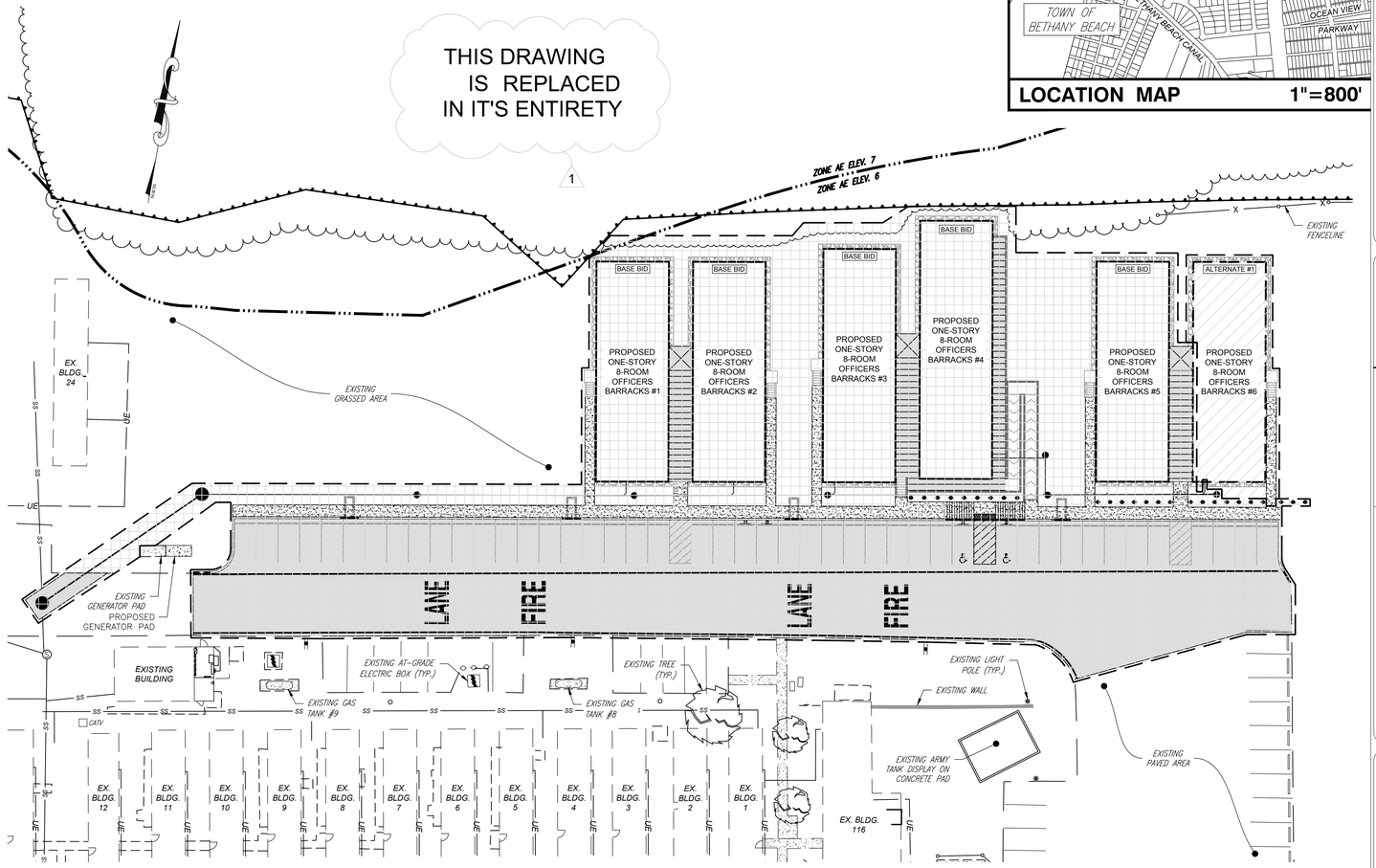
Plant Equipment

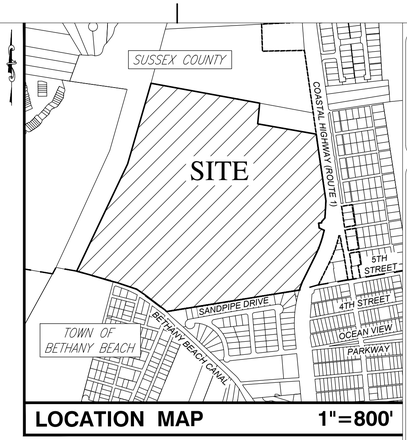
Name	Type	Nominal Capacity (tons)	Efficiency (COP)
Air Source VRF OVRF-1	Condenser Loop	8.74	0.00

END OF ATTACHEMENT 6.4 DOMENTIC HOT WATER SYSTEM LCCA

SITE CONSTRUCTION PLANS
FOR
BBTS TRANSIENT TRAINING OFFICER'S BARRACKS
BETHANY BEACH HUNDRED - SUSSEX COUNTY
DELAWARE

THIS DRAWING IS REPLACED IN IT'S ENTIRETY





SITE DATA

1. TAX PARCEL NUMBER: 134-13.00-132.00
2. SOURCE OF TITLE: ---
3. EXISTING ZONING: MR (MEDIUM RESIDENTIAL - SUSSEX COUNTY)

   BULK AREA RESTRICTIONS:

STREET YARD SETBACK:	40'
SIDE YARD:	10'
REAR YARD:	10'
MINIMUM LOT AREA:	10,000 S.F. (0.23± AC.)
MAXIMUM BUILDING HEIGHT:	42'
PARKING SETBACK (STREET/OTHER):	10'/5'

4. TOPOGRAPHIC SURVEY:

   A. TOPOGRAPHIC INFORMATION BASED ON A FIELD SURVEYS PERFORMED AND COMPLETED BY LANDMARK ENGINEERING IN NOVEMBER 2022.

   B. DATUM: NAVD 83
   BENCHMARK: CORNER OF EXISTING CONCRETE SANITARY MANHOLE FOUNDATION
   ELEVATION: 4.69

   C. MONUMENTS: 7

5. GROSS LOT AREA: 101.02± AC.
6. WATER SUPPLY: SUSSEX SHORES WATER COMPANY

   WATER SUPPLY IS SUBJECT TO THE APPROVAL OF THE DELAWARE STATE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL AND THE DELAWARE DEPARTMENT OF PUBLIC HEALTH.

7. SANITARY SEWER: SUSSEX COUNTY

   SANITARY SEWER DESIGN DATA:

   SEWERAGE IS SUBJECT TO THE APPROVAL OF THE SUSSEX COUNTY DEPARTMENT OF SPECIAL SERVICES. AT THE TIME OF APPROVAL OF THIS PLAN, SEWER CAPACITY EXISTED TO ACCOMMODATE THE ANTICIPATED FLOWS GENERATED BY THIS ADDITIONAL DEVELOPMENT. SUSSEX COUNTY HAS COMMITTED TO PROVIDE SEWER IN ACCORDANCE WITH THE LAND DEVELOPMENT IMPROVEMENT AGREEMENT FOR THIS DEVELOPMENT. THE OWNER OF THIS PROPERTY, HIS SUCCESSOR OR ASSIGNS, SHALL BE RESPONSIBLE FOR EXTENDING SEWER SERVICE TO EACH LOT SHOWN ON OR CREATED BY THIS PLAN. ESTIMATED SEWAGE FLOW GENERATION FOR THIS PROJECT, UP TO 3,600 GPD.

8. REQUIRED PLAN APPROVALS MAY INCLUDE BUT SHALL NOT BE LIMITED TO DNREC, DELDOT, FIRE MARSHAL, SUSSEX COUNTY DEPARTMENTS OF PLANNING AND ZONING AND PUBLIC WORKS AND STATE OFFICE OF DRINKING WATER.

GENERAL CONSTRUCTION NOTES

1. ALL WORK AND MATERIALS WILL BE IN ACCORDANCE WITH THE NEW CASTLE COUNTY STANDARD SPECIFICATIONS AND DETAILS, THE DELAWARE DEPARTMENT OF TRANSPORTATION (DELDOT) STANDARD SPECIFICATIONS, DATED AUGUST 2001, AND/OR THE DELDOT STANDARD DETAILS, LATEST REVISION, OR AS MODIFIED BY THESE PLANS.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK (2019).
3. MATCH PROPOSED PAVING AND CURBING ELEVATIONS TO EXISTING PAVING AND CURBING ELEVATIONS WHERE THEY ADJOIN.
4. SAW CUT AT THE JUNCTION FOR ALL EXISTING PAVEMENT AND FOR ALL PAVEMENT REMOVAL.
5. PLAN LOCATIONS AND DIMENSIONS SHALL BE STRICTLY ADHERED TO, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. ALL RADII AND DIMENSIONS ARE MEASURED TO THE FACE OF CURB, UNLESS OTHERWISE NOTED.
7. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-282-8555 A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.
8. LANDMARK ENGINEERING, INC. MAKES NO GUARANTEE AS TO THE EXISTENCE OR NON-EXISTENCE, LOCATION, DEPTH, SIZE OR CONDITION OF ANY UNDERGROUND UTILITIES SHOWN ON THIS PLAN NOT ACCESSIBLE FROM THE SURFACE OF THE GROUND. EXISTING UTILITIES ARE SHOWN IN ACCORDANCE WITH INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES AT THE TIME THE PLAN WAS PREPARED. THE CONTRACTOR IS TO COORDINATE ALL WORK WITH UTILITY COMPANIES INVOLVED.

   IT IS THE RESPONSIBILITY OF THE OWNER, OR HIS CONTRACTOR, TO VERIFY AND ALLOW FOR THE LOCATION AND DEPTH OF UNDERGROUND UTILITIES WITHIN THE WORK AREA SHOWN ON THIS PLAN. THE CONTRACTOR SHALL NOT BEGIN ANY EXCAVATION OR OTHER CONSTRUCTION AROUND OR IMMEDIATELY ADJACENT TO EXISTING UTILITIES WITHOUT NOTIFYING THE UTILITY OWNERS(S) AT LEAST SEVENTY-TWO (72) HOURS IN ADVANCE OF THE START OF EXCAVATION OR CONSTRUCTION. TEST PITS FOR UTILITY LOCATIONS MAY OR MAY NOT BE REQUIRED.

   PRIOR TO ANY CONSTRUCTION, IT IS RECOMMENDED THE CONTRACTOR EXCAVATE IN THE AREA OF ANY POTENTIAL UTILITY CROSSING TO VERIFY THAT THE UTILITY WILL NOT INTERFERE WITH CONSTRUCTION. IF, AFTER UNCOVERING THE UTILITY, THERE IS ANY QUESTION CONCERNING A POSSIBLE CONFLICT, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE DONE TO THEM DUE TO HIS NEGLIGENCE SHALL BE IMMEDIATELY AND COMPETENTLY REPAIRED AT HIS EXPENSE.
9. EXISTING AERIAL UTILITIES ARE NOT SHOWN.
10. ALL NECESSARY PERMITS, LICENSES, BONDS, INSURANCE POLICIES, ETC. REQUIRED BY LOCAL STATE AND/OR FEDERAL LAWS SHALL BE PROVIDED BY THE CONTRACTOR AT HIS OWN EXPENSE.
11. STORM DRAINAGE PIPE:

    A. ALL CORRUGATED PLASTIC DRAINAGE PIPE SHALL BE HIGH DENSITY CORRUGATED POLYETHYLENE HAVING A MANNING'S "N" VALUE OF 0.012 (HDPE, N-12) AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC. OR APPROVED EQUAL, UNLESS OTHERWISE NOTED. ALL CORRUGATED PLASTIC PIPE SHALL MEET H-20 LOADING SPECIFICATIONS. ALL PIPE LENGTHS INCLUDE FLARED END SECTION (FES) WHEN APPLICABLE.

    B. ALL REINFORCED CONCRETE PIPE SHALL BE CLASS III, UNLESS OTHERWISE NOTED.

    C. CORRUGATED METAL PIPE CMP SHALL BE 14 GAUGE (0.079" THICK) WITH HELICAL CORRUGATED, UNLESS OTHERWISE NOTED. ALUMINIZED STEEL PIPE AND/OR ALUMINUM PIPE MEETING H-20 LOADING SPECIFICATIONS MAY BE USED AS ALTERATIVE MATERIALS WHERE NOTED.

GENERAL CONSTRUCTION NOTES (CON'T.)

12. PIPE BEDDING USED FOR THE INSTALLATION OF SANITARY SEWER SHALL MEET THE REQUIREMENTS INCLUDED IN THE NEW CASTLE COUNTY STANDARD SPECIFICATION FOR CONSTRICTION AND AMENDMENTS. OTHERWISE ALL OTHER PIPE BEDDING SHALL MEET THE REQUIREMENTS OF CLASS "C".
13. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THERE IS SUFFICIENT COVER ON ALL PIPING DURING CONSTRUCTION TO PREVENT FAILURE OF PIPES.
14. ALL SIGNING, TRAFFIC CONTROL AND SAFETY SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR AND SHALL BE SUBJECT TO THE APPROVAL OF THE DIVISION OF HIGHWAYS. ALL TRAFFIC CONTROL SIGNS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
15. PAINT STRIPING AND GRAPHICS FOR LONGITUDINAL STRIPING SHALL BE EPOXY RESIGN PAINT. LATERAL STRIPING/SHAPES SHALL BE ALKYD THERMOPLASTIC TAPE/SYMBOL.
16. ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTION SHALL BE MARKED IN ACCORDANCE WITH DELAWARE STATE FIRE PREVENTION REGULATIONS AND PER THE APPROVED FIRE MARSHAL SITE PLAN.
17. ALL PROPOSED UNDERGROUND UTILITIES SHALL BE MARKED WITH 6-INCH WIDE (MIN.) METALLIC MARKING TAPE OF APPROPRIATE COLOR AND MESSAGE TO CONFORM TO UTILITY BURIED BENEATH IT AND SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.
18. ALL UTILITY EXCAVATION SHALL BE KEPT DRY AT ALL TIMES.
19. 4" PVC PIPE SLEEVES TO BE PROVIDED FOR ALL SIGNS IN SIDEWALK AREAS.
20. ALL AREAS NOT COVERED BY PAVING OR BUILDING SHALL RECEIVE 6" MINIMUM OF TOPSOIL, SEED, AND STRAW MULCH OR MATTING (AS APPLICABLE) AS SOON AS FINAL GRADING IS COMPLETE.
21. NO DEBRIS SHALL BE BURIED ON SITE.
22. DISPOSITION OF ANY EXCESS EXCAVATION AND TOPSOIL TO BE AT THE DISCRETION OF THE OWNER.
23. PROVIDE EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR STEEPER AND IN ALL OPEN CHANNELS.
24. CONCRETE SIDEWALKS SHALL BE 3,000 PSI PORTLAND CEMENT CONCRETE, 4" THICK, ON 4" GRADED AGGREGATE BASE COURSE, UNLESS OTHERWISE NOTED.
25. MINIMUM COMPACTION SHALL BE AS REQUIRED BY THE GEOTECHNICAL ENGINEER.
26. CAST-IN-PLACE CONCRETE BUTTRESSES (2500 PSI MIN.) SHALL BE PLACED AT ALL VERTICAL AND HORIZONTAL WATER MAIN BENDS. BUTTRESSES SHALL BE PLACED AGAINST UNDISTURBED EARTH AND SHALL BE ADEQUATE SIZE TO RESIST THE FORCES DEVELOPED IN THE WATER PIPING. ALL MATERIALS AND METHODS ON CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF NEWARK STANDARDS.
27. ALL WATER MAIN SHALL HAVE 42" MINIMUM COVER FROM PROPOSED FINISHED GRADE, EXCEPT AS NOTED.
28. ALL WATER MAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SUSSEX SHORES STANDARDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL INSPECTIONS AND APPROVALS.
29. SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUSSUX COUNTY SPECIFICATIONS.
30. STORMWATER QUALITY MANAGEMENT FACILITIES, IN ORDER TO MEET STRINGENT TECHNICAL REQUIREMENTS FOR LONG-TERM DETENTION, ARE OFTEN DESIGNED WITH SMALLER THAN NORMAL OUTLET COMPONENTS. THESE OUTLET COMPONENTS WILL REQUIRE FREQUENT MAINTENANCE TO ENSURE CONTINUED FUNCTIONING OF THE STORMWATER QUALITY FACILITY, AS WELL AS THE STORMWATER QUANTITY COMPONENT IN THE CASE OF A COMBINED STRUCTURE.
31. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND STABILIZE EROSION AND SEDIMENT CONTROLS AND STORMWATER MANAGEMENT PRACTICES DURING CONSTRUCTION, INCLUDING AREAS DISTURBED BY UTILITY COMPANIES.
32. CONCRETE BOLLARDS TO BE PLACED AROUND ALL ELECTRIC TRANSFORMERS AND GAS METERS. LOCATIONS OF BOLLARDS TO BE DETERMINED WHEN THE FINAL UTILITY LOCATIONS ARE IDENTIFIED.
33. LANDMARK SCIENCE & ENGINEERING (LSE) MAKES NO GUARANTEE AS TO SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. A GEOTECHNICAL INVESTIGATION BY OTHERS HAS BEEN PERFORMED. VARIATIONS IN CONDITIONS ARE THE RESPONSIBILITY OF THE OWNER, OR HIS CONTRACTOR, INCLUDING BUT NOT LIMITED TO GROUNDWATER, UNSUITABLE MATERIAL ROCK, BURIED TANKS, ETC. LSE RECOMMENDS A GEOTECHNICAL CONSULTANT BE RETAINED TO REVALUATE AND MONITOR CONDITIONS BEFORE AND DURING CONSTRUCTION. SHOULD ADDITIONAL MEASURES BE NECESSARY, SUCH AS UNDERCUTTING, WELL-POINTING, STONE BEDDING UNDER PIPES, TANK REMOVAL, ETC. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS AND FOLLOW THE RECOMMENDATIONS OF THE ENGINEER AND/OR THE GEOTECHNICAL ENGINEER AND COMPLY WITH ALL APPLICABLE LOCAL, STATE AND/OR FEDERAL LAWS.
34. TOTAL LIMIT OF DISTURBANCE: 43,088± S.F. (0.989± AC.)
    TOTAL LIMIT OF CONSTRUCTION: 18,915± S.F. (0.434± AC.)
35. NO EARTHWORK FROM BULK GRADING IS PROPOSED TO LEAVE THE PROJECT SITE. NET CUT/FILL BALANCE = 0.

LEGEND

PROPERTY LINE	EX. LIGHT POLE
EX. BUILDING	EX. SIGN
EX. CURB	PR. LIMIT OF DISTURBANCE (LOD)
EX. SIDEWALK	PR. LIMIT OF CONSTRUCTION (LOC)
EX. FENCE	PR. LIMIT OF DISTURBANCE/SILT FENCE (LOD/SF)
EX. FORCE MAIN	PR. BUILDING
EX. WATER LINE	PR. CURB
EX. GAS LINE	PR. SIDEWALK
EX. ELECTRIC LINE	PR. SANITARY MANHOLE
EX. TELECOMMUNICATIONS LINE	PR. UNDERGROUND ELECTRIC LINE
EX. FIRE HYDRANT	PR. GAS LINE
EX. TREE	PR. 2" AND 6" WATER LINES
EX. INLET/STORM DRAIN	PR. ASPHALT
	PR. BOLLARD
	PR. SIGN

INDEX OF SHEETS

SHEET NO.	CONTENTS
C-01B	INDEX PLAN
C-02B	EXISTING CONDITIONS AND OVERALL SITE PLAN
C-03B	PRE-CONSTRUCTION AND DEMOLITION PLAN
C-04B	PROPOSED CONDITIONS PLAN
C-05B	BID ALTERNATE CONSTRUCTION ARRANGEMENT PLAN
C-06B	PROPOSED SANITARY SEWER PLAN
C-07B	PROPOSED GRADING PLAN
C-08B	SIGNAGE AND STRIPING PLAN
C-09B	CONSTRUCTION DETAILS SHEET
C-10B	SEDIMENT AND EROSION CONTROL DETAILS SHEET

DESIGNATION OF BIDS

AREA FOR BASE BID

AREA FOR ALTERATIVE #1

THE PURPOSE OF THIS PLAN IS TO:

CONSTRUCT UP TO SIX, ELEVATED 8-UNIT ONE-STORY PRE-MANUFACTURED OFFICER BARRACKS BUILDINGS WITH ASSOCIATED PARKING AND SIDEWALK.

BEFORE ACTIVE CONSTRUCTION BEGINS, THESE PLANS SHALL BE SUBJECT TO APPROVALS BY, BUT NOT LIMITED TO, THE FOLLOWING REGULATORY ENTITIES:

- SUSSEX COUNTY DEPARTMENT OF PLANNING AND ZONING
- SUSSEX COUNTY ENGINEERING DEPARTMENT
- SUSSEX SHORES WATER COMPANY
- DELAWARE DEPARTMENT OF TRANSPORTATION
- DELAWARE DEP. OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
- DELAWARE STATE FIRE MARSHAL

811 Know what's below. Call before you dig.

MISS UTILITY PHONE 1-800-282-8555
PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE

0 15 30 60
GRAPHIC SCALE

IMPORTANT - DO NOT DISTRIBUTE

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NO.	DESCRIPTION	DATE
	ISSUED FOR NGB REV	03/22/24

ISSUE DATE:	03/22/24
SOLICITATION NO:	NGB PN 100103
CONTRACT NO:	DEAFING 2020-16
PROJECT NO:	213-76984-22001
DESIGNED BY:	JCM
DRAWN BY:	JCM
CHECKED BY:	KAR
SUBMITTED BY:	KAR
SIZE:	ANSI D

TETRA TECH
240 Continental Drive, Suite 200
Newark, Delaware 19713
(302) 454-3567
(302) 454-5958

DELAWARE ARMY NATIONAL GUARD
BBTS TRANSIENT TRAINING OFFICER'S BARRACKS
BETHANY BEACH, DELAWARE

INDEX PLAN

SHEET ID

C-01B

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THIS DRAWING IS REPLACED IN IT'S ENTIRETY

1

PROPOSED LIMIT OF DISTURBANCE NOT TO OVERLAP INTO EXISTING WETLAND LINE

ZONE AE ELEV. 7

ZONE AE ELEV. 6

PROPOSED FOOTPRINT OF OFFICER BARRACKS (TYP.)

135'±

160'±

PROPOSED LIMIT OF EARTH DISTURBANCE CONSTRUCTION (0.998± AC.)

PROPOSED AREA OF NON-EARTH DISTURBANCE CONSTRUCTION (0.434± AC.)

EXISTING FREESTANDING TREE SAPLING (TYP.)

EXISTING DIRT PILES (TYP.)

EXISTING DELAWARE NATIONAL GUARD SIGNS

EXISTING CAR CHARGING STATION AND SIGNAGE

EXISTING 10 MPH SPEED SIGN

EXISTING UNDERGROUND ELECTRIC LINE (TYP.)

EXISTING TELE-COMM. LINE (TYP.)

EXISTING ELECTRIC PANEL

EXISTING LIGHT POLE (TYP.)

EXISTING GENERATOR PAD

EXISTING GAS TANK #11

EXISTING GAS TANK #10

EX. LIFT STATION
TOP: 3.57
INV. IN: 0.58 (2" PVC)
INV. IN: -4.08 (4" PVC)
INV. OUT: -4.06 (6" DIP)
BOTTOM: -6.33

EXISTING BUILDING

EXISTING GAS TANK #9

EXISTING GAS TANK #8

EXISTING TREE (TYP.)

EXISTING ARMY TANK DISPLAY ON CONCRETE PAD

EXISTING ARMY GUARD PYLON SIGN

EXISTING WALL

EXISTING SIGN (TYP.)

EXISTING GAS TANK #16

EXISTING PARKING LOT

EXISTING BUILDING 117

EX. BLDG. 116

EXISTING WATER LINE (TYP.)

EXISTING FIRE HYDRANT (TYP.)

EXISTING PROPERTY LINE (TYP.)

EXISTING UNDER ROAD CULVERT

EX. BLDG. 22

EX. BLDG. 23

EX. BLDG. 24

EX. BLDG. 16

EX. BLDG. 15

EX. BLDG. 14

EX. BLDG. 13

EX. BLDG. 12

EX. BLDG. 11

EX. BLDG. 10

EX. BLDG. 9

EX. BLDG. 8

EX. BLDG. 7

EX. BLDG. 6

EX. BLDG. 5

EX. BLDG. 4

EX. BLDG. 3

EX. BLDG. 2

EX. BLDG. 1

EX. STORM INLET #4
TOP: 4.06

EX. STORM INLET #5
TOP: 4.15

EX. STORM INLET #6
TOP: 4.80

EXISTING 8" CPP

EXISTING 6" CPP

EXISTING 2" PVC FORCE MAIN

EXISTING FENCE LINE (TYP.)

SCANNELL BOULEVARD

EXISTING 8" TCP

EXISTING 6" TCP

EXISTING SANITARY MH.
TOP: 5.47

EXISTING SANITARY SEWER (TYP.)

EX. BLDG. 104

EXISTING BUILDING 106

EXISTING BUILDING 109

EX. STORM INLET
TOP: 4.14

EX. STORM INLET
TOP: 4.18

EXISTING GAS TANK #18

EX. BLDG. 113

EXISTING BUILDING 114

EXISTING GAS TANK #15

EX. PWBD STORM INLET

EXISTING 12"x18" ECMP

EX. PWBD STORM INLET
TOP: 5.12

EXISTING 10" CIP

EXISTING 6" PERFORATED HDPE

EXISTING 6" TCP

EXISTING SANITARY MH.
TOP: 6.04

EX. BLDG. 129

EX. BLDG. 128

EX. BLDG. 127

ATKINSON STREET

SECURITY APRON

EXISTING ELECTRIC TRANSFORMER PADS

EXISTING FIBER OPTIC LINE (TYP.)

EXISTING PAVED AREA

EXISTING BUILDING 115

EXISTING REGIONAL TRAINING INSTITUTE BUILDING

ACCESS TO SITE TO BE FROM MAIN ENTRANCE OR BY OWNER'S DIRECTION

COASTAL HIGHWAY (S.R. 1) NORTHBOUND

COASTAL HIGHWAY (S.R. 1) SOUTHBOUND

NORTH PENNSYLVANIA AVENUE

ZONING: MR (SUSSEX COUNTY)
ZONING: R-2 (BETHANY BEACH)

0 15 30 60
GRAPHIC SCALE

NO.:	DESCRIPTION:	DATE:
	ISSUED FOR NGB REV	03/22/24

DESIGNED BY:		ISSUE DATE: 03/22/24
DRAWN BY:	JCM	SOLICITATION NO: NGB PN 100103
CHECKED BY:	JCM	CONTRACT NO: DEARNG 2020-16
SUBMITTED BY:	KAR	PROJECT NO: 213-76984-22001
SIZE: ANSI D	KAR	

TETRA TECH
240 Continental Drive, Suite 200
Newark, Delaware 19713
(302) 454-3565
(302) 454-5968

DELAWARE ARMY NATIONAL GUARD

BBTS TRANSIENT TRAINING OFFICER'S BARRACKS

BETHANY BEACH, DELAWARE

EXISTING CONDITIONS AND OVERALL SITE PLAN

SHEET ID

C-02B

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THIS DRAWING IS REPLACED IN IT'S ENTIRETY

1

AREA OF TREE RELOCATION PLANTINGS

SCALE: 1" = 40'

BASE BID

ALTERNATE #1

PROPOSED LOCATION OF OFFICERS BARRACKS #5

PROPOSED LOCATION OF OFFICERS BARRACKS #6

20'±

EXISTING LIGHT POLE

EXISTING DELAWARE NATIONAL GUARD SIGNS

PROPOSED ALLOWABLE AREAS FOR TREE REPLANTINGS. CONTRACTOR SHALL COORDINATE AREA(S) OF PLANTINGS WITH OWNER OR OWNER'S REPRESENTATIVE SO THAT TREES ARE LOCATED BEHIND EXISTING PYLON SIGN.

EXISTING LIGHT POLE

EXISTING ARMY GUARD PYLON SIGN

10'

5'

20'±

50'± (TYP.)

EXISTING PROPERTY LINE

EXISTING PARKING LOT

EXISTING FIRE HYDRANT

FH

10'

EXISTING WATER LINE (TYP.)

ZONE AE ELEV. 7

ZONE AE ELEV. 6

EXISTING FENCELINE

LOD/SF

EXISTING LIMIT OF TREELINE

PROPOSED SILT FENCE TO BE PLACED ON EXISTING WETLANDS LINE

EXISTING SHRUBLINE TO BE CUT BACK AND FENCE TO BE RELOCATED WITHIN LIMITS AS SHOWN OR AS NECESSARY (TYP.)

PLACE AND MAINTAIN SILT FENCE ALONG LIMIT OF DISTURBANCE AS SHOWN AND PER DETAIL

PROPOSED MATERIAL STOCKPILE

SF

EXISTING DIRT PILES TO BE REMOVED AND SILT FENCE TO BE INSTALLED AS SHOWN. CONTRACTOR TO COORDINATE WITH OWNER ON FINAL LOCATION OF EXCESS DIRT (TYP.)

EXISTING 35 TREES TO BE RELOCATED ALONG ROUTE 1 CORRIDOR OF SITE (TYP). SEE INSET ON THIS SHEET.

EXISTING GRASSED AREA

INSTALL CONCRETE MIXING OPERATION PER DETAIL IF READY-MIX IS NOT PROPOSED BY CONTRACTOR

CONCRETE MIXING OPERATION

10' MIN.

50' MIN.

SCE

EXISTING CAR CHARGING STATION AND SIGNAGE TO BE REMOVED BY OTHERS PRIOR TO DEMOLITION

PORTION OF EXISTING ELECTRIC LINE TO BE RELOCATED AS NECESSARY

EXISTING ELECTRIC AND TELE-COMM. BOXES TO BE RELOCATED AND LINES RELOCATED AS NECESSARY WITHIN LIMITS SHOWN.

EXISTING SPEED SIGN TO BE REMOVED

INSTALL CONCRETE WASHOUT AREA PER DETAIL

INSTALL STABILIZED CONSTRUCTION ENTRANCE AS SHOWN AND PER DETAIL.

EXISTING BUILDING BLDG. 24

EXISTING GENERATOR PAD

EXISTING SPEED SIGN TO BE REMOVED

LOD/CFL

LOC

EXISTING ELECTRIC PANEL TO BE RELOCATED

EXISTING BASKETBALL POST AND HOOP TO BE RELOCATED AT OWNER'S DIRECTION.

EXISTING BUMPER BLOCKS TO BE REMOVED

PLACE AND MAINTAIN COMPOST FILTER LOG AND OVERLAP WITH SILT FENCE 2' MIN. ALONG LIMIT OF DISTURBANCE AS SHOWN AND PER DETAIL.

EXISTING GAS TANK #9

EXISTING AT-GRADE ELECTRIC BOX (TYP.)

EXISTING GAS TANK #8

EXISTING UNDERGROUND ELECTRIC DUCT BANK (TYP.)

EXISTING TELE-COMM. LINE (TYP.)

EXISTING UNDERGROUND ELECTRIC LINE (TYP.)

PROPOSED LIMIT OF SAWCUT IN PAVEMENT

EXISTING 270± S.F. OF EXISTING PAVEMENT TO BE SAWCUT AND REMOVED WITHIN LIMITS SHOWN

EXISTING 16,150± S.F. OF EXISTING PAVEMENT TO BE SAWCUT AND REMOVED WITHIN LIMITS SHOWN

EXISTING WALL

EXISTING TREE (TYP.)

EXISTING ARMY TANK DISPLAY ON CONCRETE PAD

EXISTING SIGN (TYP.)

EXISTING PARKING LOT

PROPOSED TEMPORARY CHAIN LINK FENCE AND COMPOST FILTER LOG TO BE PLACED ALONG DRIVE AISLE AS SHOWN AND PER DETAIL (TYP.)

EX. BLDG. 12

EX. BLDG. 11

EX. BLDG. 10

EX. BLDG. 9

EX. BLDG. 8

EX. BLDG. 7

EX. BLDG. 6

EX. BLDG. 5

EX. BLDG. 4

EX. BLDG. 3

EX. BLDG. 2

EX. BLDG. 1

EX. BLDG. 116

EXISTING GAS TANK #16

EXISTING BUILDING 117

BBQ (TYP.)

EXISTING WATER LINE (TYP.)

EXISTING FIRE HYDRANT (TYP.)

EXISTING PROPERTY LINE

0 10 20 40

GRAPHIC SCALE

ISSUE DATE:	03/22/24
SOLICITATION NO:	NGB PN 100103
CONTRACT NO:	DEARNG 2020-16
PROJECT NO:	213-76984-22001

DESIGNED BY:	JCM
DRAWN BY:	JCM
CHECKED BY:	KAR
SUBMITTED BY:	KAR
SIZE:	ANSI D

NO:	DESCRIPTION:	DATE:
	ISSUED FOR NGB REV	03/22/24

TETRA TECH
240 Continental Drive, Suite 200
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(302) 286-1411
(302) 454-5988

DELAWARE ARMY NATIONAL GUARD

BBTS TRANSIENT TRAINING OFFICER'S BARRACKS

BETHANY BEACH, DELAWARE

PRE-CONSTRUCTION AND DEMOLITION PLAN

SHEET ID

C-03B

NOTES:

1. THE PROPOSED OFFICER BARRACKS HOUSING LOCATIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS AND DETAILS FOR FINAL CONFIGURATION.
2. ALTERNATE BUILDING #1, ITS ADDITIONAL SIDEWALK AND EGRESSES ARE SHOWN AS OPTIONAL CONSTRUCTION CONFIGURATIONS FOR THE DELAWARE ARMY GUARD TO CONSTRUCT AS APART OF THIS PLAN. AT A MINIMUM, THIS PLAN SHALL BE USED TO CONSTRUCT THE FIVE MODULAR BARRACKS LABELED AS "BASE BID". SEE SHEET C-05B FOR LIMITS OF ALTERATIVE ARRANGEMENTS.
3. SEE ARCHITECTURAL PLANS FOR ALL PROPOSED STAIRS AND ELEVATED WOODEN DECKS AND MEP PLANS FOR ALL UTILITY CONNECTIONS TO MODULAR BARRACKS.
4. INSTALLATION OF ALL DOMESTIC AND FIRE SERVICE WATER LINES, INCLUDING THRUST BLOCKS, CONCRETE ANCHORS AND CORPORATION STOPS, SHALL BE COMPLETED TO THE STANDARDS, SPECIFICATIONS AND DETAILS OF THE LATEST VERSION OF SUSSEX SHORES WATER COMPANY SPECIFICATION MANUAL.

THIS DRAWING IS REPLACED IN IT'S ENTIRETY

1

IMPORTANT - DO NOT DISTRIBUTE

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ZONE AE ELEV. 7
ZONE AE ELEV. 6
LIMIT OF EXISTING SHRUBLINE TRIMMING SHALL NOT EXTEND INTO WETLANDS AREA (TYP.)
SHRUBLINE BEHIND BARRACK #4 SHALL BE CUT BACK ONLY TO LIMIT OF WETLANDS
EXISTING FENCELINE
EXISTING LIMIT OF TREELINE
5' (TYP.)
BASE BID
PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #1
PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #2
PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #3
PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #4
PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #5
ALTERNATE #1
PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #6
25'
10' TYP.
45'
PROPOSED ELEVATED WOODEN DECK WITH RAILIINGS AND OVERHEAD CANOPY. SEE ARCHITECTURAL DRAWINGS FOR DETAILS (TYP.).
PROPOSED ELEVATED WOODEN RAMP. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
EXISTING GRASSED AREA
PROPOSED STAIRS (TYP.) SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
WATER, SEWER AND ELECTRIC CONNECTIONS TO BE CAPPED FOR FUTURE USAGE.
PROPOSED 6" LAYER OF 3" STONE OVER TOP OF NONWOVEN GEOTEXTILE TO BE PLACED 2'± CLEAR OF BUILDING FOOTPRINT OF BARRACKS
PROPOSED 4' WIDE SIDEWALK TO DRAIN AWAY FROM BUILDINGS. SEE GRADING PLAN ON SHEET C-09B.
PROPOSED CURB SIDEWALK DRAINAGE OPENING. SEE DETAIL ON SHEET C-09B.
PROPOSED TYPE 1-8 CURB
PROPOSED 5' WIDE SIDEWALK ALONG PARKING AREA.
PROPOSED SANITARY LATERAL (TYP.)
PROPOSED CLEANOUT (TYP.)
RELOCATED ELECTRIC VEHICLE CHARGING STATION AND PARKING SIGNS
PROPOSED 1"ø WATER VALVE (TYP.)
PROPOSED 1"ø AND 2"ø 45° BEND
PROPOSED 2"ø WATER VALVE (TYP.)
10' (TYP.)
5' (TYP.)
PROPOSED BOLLARDS PLACED 5' MIN. O.C. (TYP.)
PROPOSED FIRE HYDRANT
PROPOSED 6"ø WATER VALVE
PROPOSED 8"ø 45° BEND
PROPOSED 8"x8"x6" REDUCING TEE WITH 6"x4" REDUCER
EX. BLDG. 24
SEE SHEET C-06B FOR SANITARY SEWER PLAN AND PROFILE
PROPOSED SANITARY MANHOLE (TYP.)
PROPOSED SANITARY SEWER
EXISTING GENERATOR PAD
PROPOSED GENERATOR PAD. CONTRACTOR TO REFER TO STRUCTURAL REQUIREMENTS OF GENERATOR SPECIFICATIONS. EXISTING ELECTRIC LINE TO BE RELOCATED AS NECESSARY
EXISTING BUILDING
18' TYP.
9' (TYP.)
PROPOSED 1"ø 45° ELBOW
PROPOSED 4"ø 45° BEND WITH 4"x2" REDUCER
PROPOSED 4"x4"x1" REDUCING TEE
PROPOSED TYPE 2 CURB RAMP
9'
PROPOSED 4"x4"x2" REDUCING TEE (TYP.)
PROPOSED 4"x4"x1" REDUCING TEE (TYP.)
PORTION OF RELOCATED UNDERGROUND ELECTRIC TO BE RELOCATED AS NECESSARY
EXISTING TELE-COMM. LINE (TYP.)
PROPOSED CURB TO TAPER TO PAVING. SEE DETAIL ON SHEET C-09B.
EXISTING UNDERGROUND ELECTRIC DUCT BANK (TYP.)
EXISTING UNDERGROUND ELECTRIC LINE (TYP.)
EXISTING AT-GRADE ELECTRIC BOX (TYP.)
EXISTING GAS TANK #8
EXISTING GAS TANK #9
PROPOSED HEAVY DUTY PAVEMENT TO BE PAVED TO FINISH GRADE WITHIN LIMITS SHOWN (TYP.) SEE DETAIL ON SHEET C-09B.
EXISTING WALL
EXISTING TREE (TYP.)
EXISTING ARMY TANK DISPLAY ON CONCRETE PAD
EXISTING LIGHT POLE (TYP.)
EXISTING SIGN (TYP.)
EXISTING PARKING LOT
PROPOSED CURB TO TAPER TO PAVING. SEE DETAIL ON SHEET C-09B.
PROPOSED PAVING TO TIE INTO EXISTING PAVING AT TIE-IN LOCATION (TYP.) SEE DETAIL ON SHEET C-09B.
EX. BLDG. 12
EX. BLDG. 11
EX. BLDG. 10
EX. BLDG. 9
EX. BLDG. 8
EX. BLDG. 7
EX. BLDG. 6
EX. BLDG. 5
EX. BLDG. 4
EX. BLDG. 3
EX. BLDG. 2
EX. BLDG. 1
EX. BLDG. 116
EXISTING GAS TANK #16
EXISTING BUILDING 117
PROPOSED 8"x8"x6" REDUCING TEE
EXISTING WATER LINE (TYP.)
EXISTING FIRE HYDRANT (TYP.)
EXISTING PROPERTY LINE
0 10 20 40
GRAPHIC SCALE

NO.	DESCRIPTION	DATE
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DESIGNED BY:	JCM	ISSUE DATE:	03/22/24	SIZE:	ANSI D
DRAWN BY:	JCM	SOLICITATION NO:	NGB PN 100103		
CHECKED BY:	KAR	CONTRACT NO:	DEARNG 2020-16		
SUBMITTED BY:	KAR	PROJECT NO:	213-76984-22001		

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DELAWARE ARMY NATIONAL GUARD
BBTS TRANSIENT TRAINING OFFICER'S BARRACKS
BETHANY BEACH, DELAWARE
PROPOSED CONDITIONS PLAN

SHEET ID
C-04B

NOTES:

1. ALTERNATE #1 CONSTRUCTION CONFIGURATION AREA IS HIGHLIGHTED AS SHOWN. P.C.C. SIDEWALK, CURBING, ASPHALT PAVING, ALL ASSOCIATED SIGNAGE AND STRIPING, SANITARY, WATER, AND ELECTRIC UTILITIES SHALL BE INSTALLED AS SHOWN. UTILITIES ASSOCIATED WITH ALTERATIVE #1 SHALL BE CAPPED FOR FUTURE USAGE.

THIS DRAWING IS REPLACED IN IT'S ENTIRETY

1

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ZONE AE ELEV. 7
ZONE AE ELEV. 6
EXISTING FENCELINE
EXISTING LIMIT OF TREELINE
EXISTING GRASSED AREA

BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #1
BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #2
BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #3
BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #4
BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #5
ALTERNATE #1 — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #6

EX. BLDG. 24
EXISTING GENERATOR PAD
PROPOSED GENERATOR PAD
EXISTING TELE-COMM. LINE (TYP.)
EXISTING BUILDING
EXISTING UNDERGROUND ELECTRIC DUCT BANK (TYP.)
EXISTING UNDERGROUND ELECTRIC LINE (TYP.)
EXISTING AT-GRADE ELECTRIC BOX (TYP.)
EXISTING GAS TANK #8
EXISTING LIGHT POLE (TYP.)
EXISTING GAS TANK #9
EXISTING WALL
EXISTING TREE (TYP.)
EXISTING ARMY TANK DISPLAY ON CONCRETE PAD
EXISTING SIGN (TYP.)
EXISTING GAS TANK #16
EXISTING PARKING LOT
EXISTING WATER LINE (TYP.)
EXISTING FIRE HYDRANT (TYP.)

EX. BLDG. 12
EX. BLDG. 11
EX. BLDG. 10
EX. BLDG. 9
EX. BLDG. 8
EX. BLDG. 7
EX. BLDG. 6
EX. BLDG. 5
EX. BLDG. 4
EX. BLDG. 3
EX. BLDG. 2
EX. BLDG. 1
EX. BLDG. 116
EXISTING BUILDING 117

DESIGNATION OF BIDS
AREA FOR BASE BID
AREA FOR ALTERATIVE #1

0 10 20 40
GRAPHIC SCALE

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DELAWARE ARMY NATIONAL GUARD
BBTS TRANSIENT TRAINING OFFICER'S BARRACKS
BETHANY BEACH, DELAWARE
BID ALTERNATE CONSTRUCTION ARRANGEMENT PLAN

SHEET ID
C-05B

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BARRACKS	LATERAL NUMBER	LATERAL INVERT AT CONNECTION POINT TO SANITARY SEWER MAIN	MINIMUM PLUMBING FIXTURE ELEVATION	ELEVATION OF LOWEST FLOOR SEWERED BY GRAVITY	UPSTREAM CLEANOUT NUMBER AND ELEVATION		DOWNSTREAM LATERAL NUMBER	DISTANCE OF LATERAL CONNECTION FROM UPSTREAM LATERAL	BACKWATER VALVE REQUIRED
#1	#2	-1.72	3.28	7.00	CO #2	3.60	#1	4.5 L.F.	NO
#2	#3	-1.50	3.50	7.00	CO #3	3.60	#2	40 L.F.	NO
#3	#4	-1.29	3.71	7.00	CO #4	3.00	#3	2.5 L.F.	NO
#4	#6	-0.90	4.10	7.00	CO #5	2.50	#4	90 L.F.	NO
#5	#5	-0.73	4.27	7.00	CO #6	3.70	#4	46 L.F.	NO
#6	#5	-0.53	4.47	7.00	CO #6	#4	#4	6 L.F.	NO

THIS DRAWING IS REPLACED IN IT'S ENTIRETY

1

ZONE AE ELEV. 7

ZONE AE ELEV. 6

BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #1 F.F. = 7.0

BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #2 F.F. = 7.0

BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #3 F.F. = 7.0

BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #4 F.F. = 7.0

BASE BID — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #5 F.F. = 7.0

ALTERNATE #1 — PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #6 F.F. = 7.0

PROPOSED MH #2
TYPE: S-1.01
N: 199517.0998
E: 757873.7826

PROPOSED SEWER CONNECTION AND TIE-IN TO EXISTING ON-SITE SYSTEM (TYP.)

PROPOSED MH #1
TYPE: S-1.06
N: 199461.3555
E: 757816.4016

80 LF 6" @ 0.005 FT/FT

CO #1 — CO #2 — CO #3 — CO #4 — CO #5 — CO #6

CO #5
TOP: 2.50
INV.: -0.90

15 L.F. 6" PVC @ 0.005 FT/FT

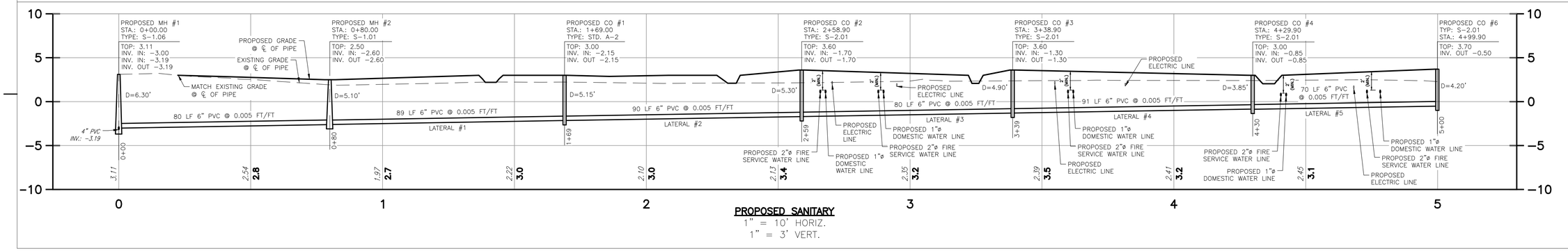
LAT. #1 — LAT. #2 — LAT. #3 — LAT. #4 — LAT. #5 — LAT. #6

EX. LIFT STATION
TOP: 3.57
IN: 0.58 (2" PVC)
IN: -4.06 (4" PVC)
OUT: -4.06 (6" DIP)
BOTTOM: -6.33

EXISTING BUILDING

EX. BLDG. 12 — EX. BLDG. 11 — EX. BLDG. 10 — EX. BLDG. 9 — EX. BLDG. 8 — EX. BLDG. 7 — EX. BLDG. 6 — EX. BLDG. 5 — EX. BLDG. 4 — EX. BLDG. 3 — EX. BLDG. 2 — EX. BLDG. 1 — EX. BLDG. 116

0 10 20 40
GRAPHIC SCALE



PROPOSED SANITARY

1" = 10' HORIZ.

1" = 3' VERT.

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SIZE: ANSI D

TETRA TECH
240 Continental Drive, Suite 200
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(302) 454-5955
(302) 454-5958

DELAWARE ARMY NATIONAL GUARD

BBTS TRANSIENT TRAINING OFFICER'S BARRACKS

BETHANY BEACH, DELAWARE

PROPOSED SANITARY SEWER PLAN

SHEET ID

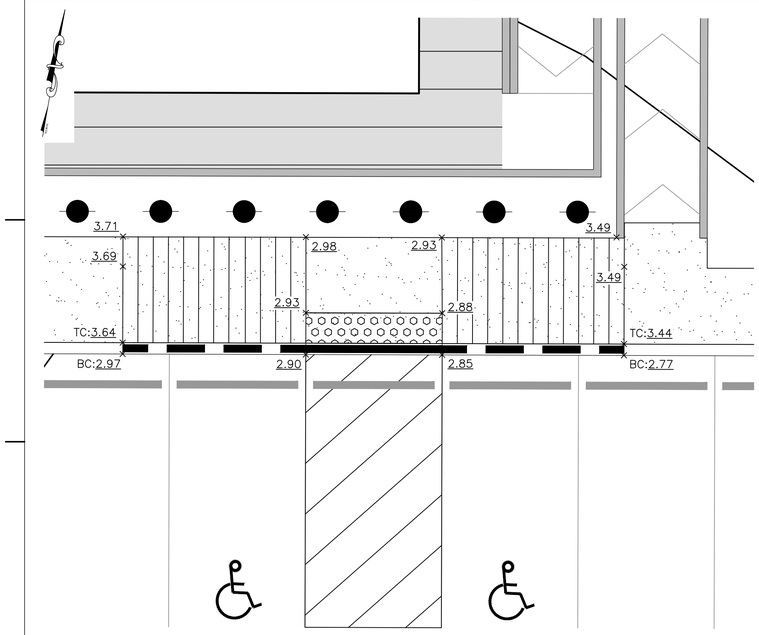
C-06B

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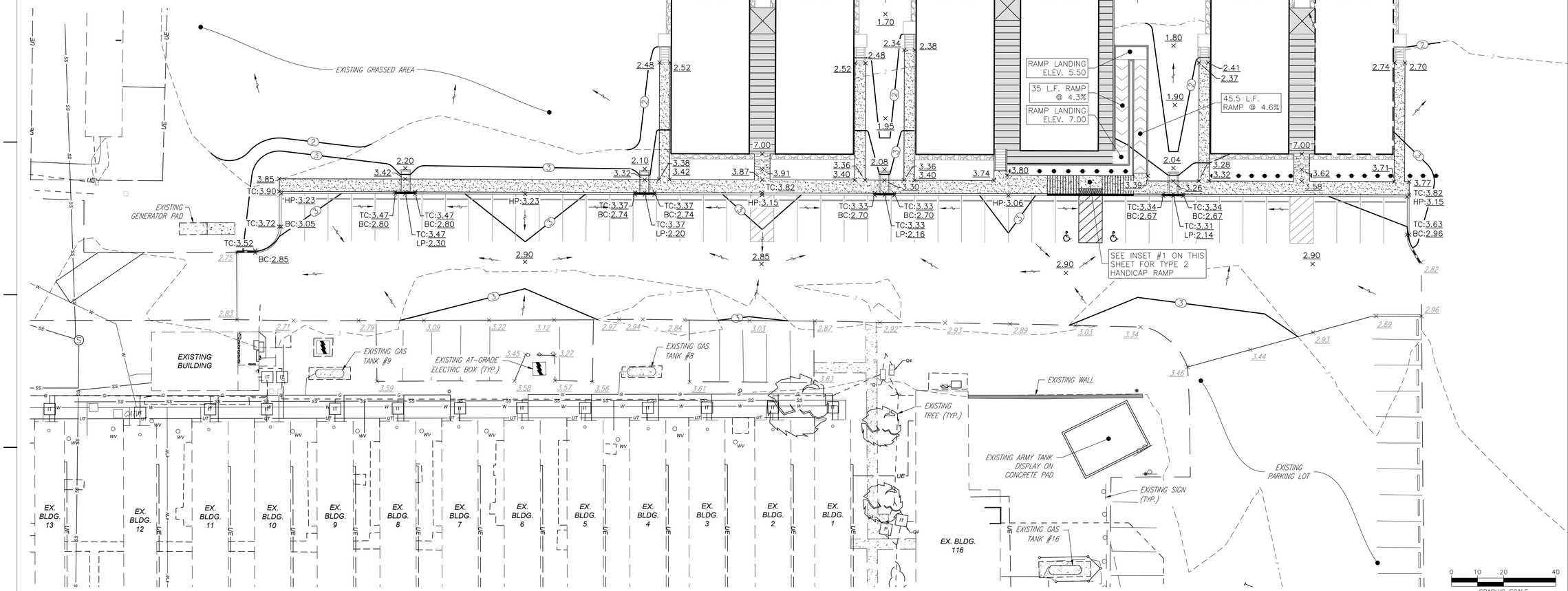
THIS DRAWING IS REPLACED IN IT'S ENTIRETY

1



INSET #1: TYPE 2 CURB SPOT ELEVATIONS

SCALE: 1" = 5'



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DELAWARE ARMY NATIONAL GUARD

BBTS TRANSIENT TRAINING OFFICER'S BARRACKS

BETHANY BEACH, DELAWARE

PROPOSED GRADING PLAN

SHEET ID

C-07B

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THIS DRAWING IS REPLACED IN IT'S ENTIRETY

1

ZONE AE ELEV. 7

ZONE AE ELEV. 6

EXISTING LIMIT OF TREELINE

EXISTING FENCELINE

EXISTING GRASSED AREA

BASE BID

PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #1

BASE BID

PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #2

BASE BID

PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #3

BASE BID

PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #4

BASE BID

PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #5

ALTERNATE #1

PROPOSED ONE-STORY 8-ROOM OFFICERS BARRACKS #6

PROPOSED SIGNS "HANDICAPPED PARKING" R7-8

EXISTING GENERATOR PAD

RELOCATED ELECTRIC CAR CHARGING STATION SIGNAGE

PROPOSED 5" WIDE SOLID BLUE HANDICAP PARKING STALL STRIPE

PROPOSED 5" WIDE SOLID BLUE HANDICAP PARKING STALL STRIPE

PROPOSED BLUE PAINTED HANDICAP LOGO (TYP.)

PROPOSED 5" WIDE SOLID BLUE DIAGONAL STRIPING

PROPOSED 5" WIDE SOLID WHITE DIAGONAL STRIPING (TYP.)

PROPOSED 5" WIDE SOLID WHITE PARKING STALL STRIPE (TYP.)

PROPOSED 5" WIDE YELLOW FIRE LANE STRIPING

FIRE LANE 30' 100' FIRE LANE 30'

PROPOSED SIGNS "NO PARKING FIRE LANE" R7-107-DE

PROPOSED SIGNS "SPEED LIMIT 10 MPH" R2-1

PROPOSED SIGNS "NO PARKING FIRE LANE" R7-107-DE

EXISTING BUILDING

EXISTING GAS TANK #9

EXISTING AT-GRADE ELECTRIC BOX (TYP.)

EXISTING GAS TANK #8

EXISTING WALL

EXISTING TREE (TYP.)

EXISTING ARMY TANK DISPLAY ON CONCRETE PAD

EXISTING SIGN (TYP.)

EXISTING GAS TANK #16

EX. BLDG. 116

EXISTING PARKING LOT

SEE INSET ON SHEET C-03B FOR TREE PLANTING REQUIREMENTS.

EXISTING ARMY GUARD PYLON SIGN

EXISTING LIGHT POLE (TYP.)

EXISTING FIRE HYDRANT (TYP.)

EXISTING PROPERTY LINE

EXISTING WATER LINE (TYP.)

EX. BLDG. 12

EX. BLDG. 11

EX. BLDG. 10

EX. BLDG. 9

EX. BLDG. 8

EX. BLDG. 7

EX. BLDG. 6

EX. BLDG. 5

EX. BLDG. 4

EX. BLDG. 3

EX. BLDG. 2

EX. BLDG. 1

0 10 20 40

GRAPHIC SCALE

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DELAWARE ARMY NATIONAL GUARD

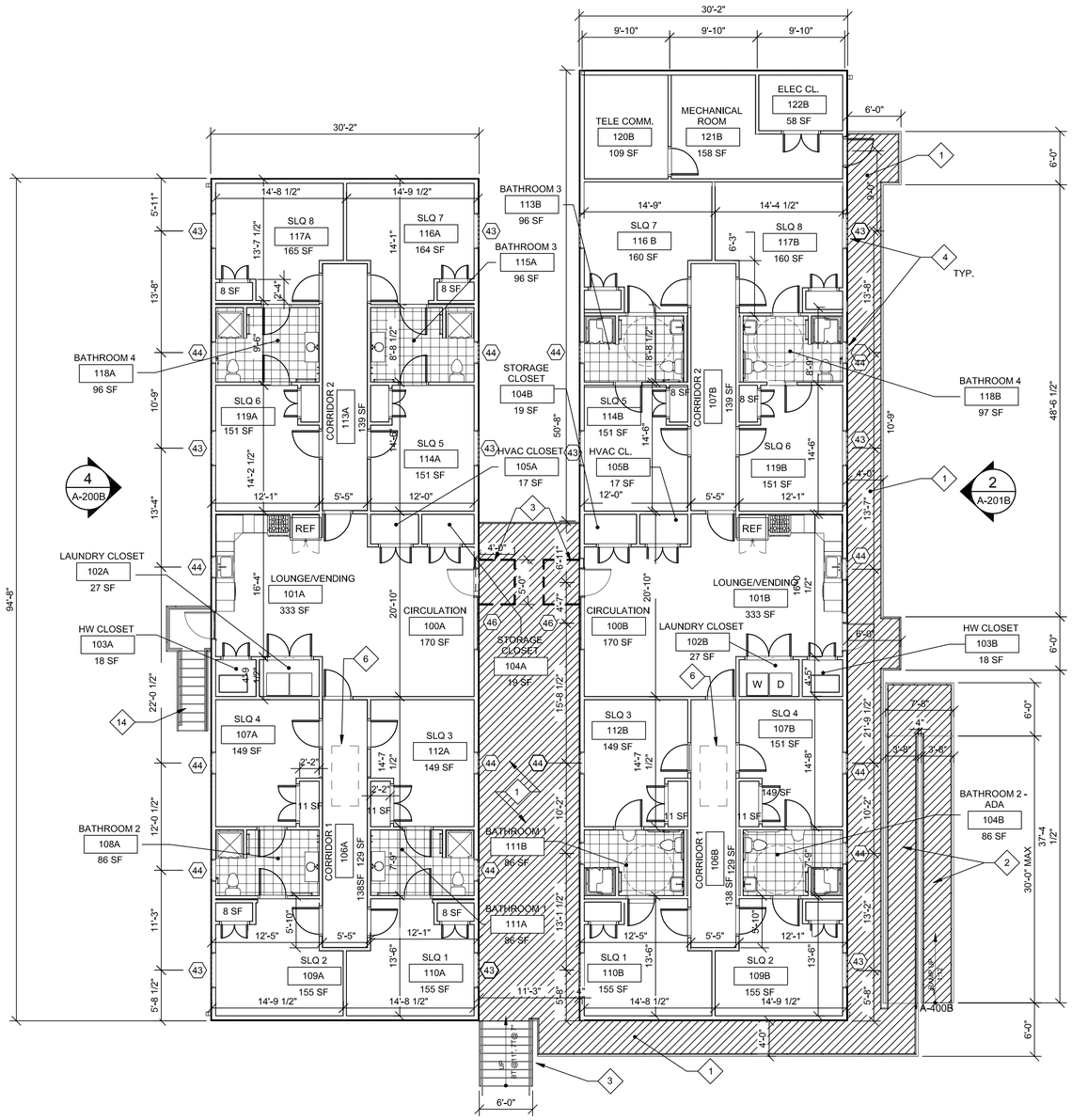
BBTS TRANSIENT TRAINING OFFICERS BARRACKS

BETHANY BEACH, DELAWARE

SIGNAGE AND STRIPING PLAN

SHEET ID

C-08B



STANDARD UNIT - TYPES 'A' & 'A-MIRRORED'

- FLOOR PLAN TYPE 'A' :
  INCLUDES UNITS: 2, 4 AND 6

- FLOOR PLAN TYPE 'A - MIRRORED' :
  UNITS : 1 AND 5 . THEY ARE MIRRORED VERSIONS OF FLOOR PLAN TYPE 'A'

3 A-200B

ADA (ACCESSIBLE) UNIT- TYPE B

- FLOOR PLAN TYPE 'B' -
- UNIT NO.: 3 ONLY
  SIMILAR PLAN AS TYPE 'A - MIRRORED' WITH A ADA LAYOUT FOR THE BATHROOMS, AND THE ADDITION OF THE COMM. RM., THE MECHANICAL RM., AND THE ELEC. RM.

3 A-100B **FLOOR PLAN TYPES - STANDARD & ADA UNITS**
SCALE: 1/8" = 1'-0"

THIS DRAWING IS REPLACED IN IT'S ENTIRETY

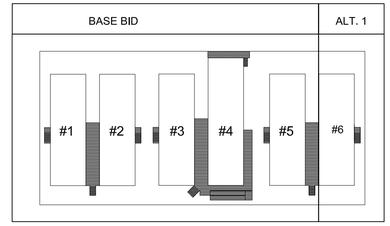
1

KEYNOTES

1. RAISED EXTERIOR DECK:
   - CONCRETE PIER FOOTINGS
   - P.T. FRAMING, W/ S.S. CONNECTORS & FASTNERS
   - COMPOSITE DECKING (TREX OR APP. EQ.)
   - POWDER COATED METAL GUARDRAILES & HANDRAILS W/ S.S. CABLE INFILL (CABLE BULLET OR APP. EQ)
2. H.C. RAMP (UNIT 3 ONLY)
   - COORD. LENGTH OF SLOPED RUNS (1:12, MAX AT 30') WITH ACTUAL GRADE LANDING ELEV.
   - SEE KEY NOTE 1 FOR STRUCTURAL AND GUARDRAIL/HANDRAIL REQ'S.
   - PROVIDE MID LEVEL LANDING.
3. STAIR FROM GRADE TO RAISED DECK:
   - COORD. ACTUAL QTY. OF RISERS AND TREADS WITH LANDING ELEV.
   - SEE KEY NOTE 1 FOR STRUCTURAL & GUARD/HANDRAIL REQ'S
4. LINE OF ENTRANCE CANOPY ABOVE:
   - MATCH ROOFING OF MAIN ROOF (SEE ALT. 2)
5. OPERABLE ALUMINUM WINDOWS - SIZE TO COMPLY WITH EGRESS CLEARANCES.
6. PULL DOWN LADDER FOR ATTIC ACCESS

GENERAL NOTES

1. BUILDINGS 1, 2, 4, 5, & 6 ARE STANDARD UNITS; BUILDING 3 IS A HANDICAP UNIT.
2. BID SCOPE OF WORK:
   - BASE BID: UNITS 1, 2, 3, 4, & 5
   - BID OPTION /ALT. 1: ADD UNIT 6
   - BID OPTION /ALT. 2 = ROOFING: ASPHALT IN LIEU OF STANDING SEAM METAL
3. THIS CONCEPT DESIGN ASSUMES THAT BUILDING SHELL CONSTRUCTION WILL BE A MODULAR PROVIDED SYSTEM.
4. ALL WALLS SHALL HAVE WOOD OR METAL STUD FRAMING.
5. EXTERIOR WALLS AND ROOF SYSTEM SHALL COMPLY WITH MINIMUM STRUCTURAL STANDARDS ESTABLISHED IN THE 2022 IRC AND THE MINIMUM INSULATION REQUIREMENTS ESTABLISHED IN THE 2018 INTERNATIONAL ENERGY CODE (IECC).
6. FOUNDATION COLUMN LINES AND LOCATIONS ARE CONCEPTUAL ONLY, DB SHALL BE RESPONSIBLE FOR ACTUAL CODE AND UFC COMPLIANT DESIGN.
7. ALL INTERIOR WALLS SHALL HAVE STC RATING OF 40 OR HIGHER.
8. THE ARCHITECTURAL DRAWINGS DEPICT ONE OF THE THREE TWO-BUILDING GROUPINGS.
9. FOUNDATION: PROVIDE A RAISED FOUNDATION SYSTEM THAT COMPLIES W/ THE REQUIRED FLOOD ELEVATION FOR THE FINISHED FLOOR & IS COMPATIBLE W/ THE BUILDING SHELL CONSTRUCTION SYSTEM.



4 A-100B **KEY PLAN**
SCALE: 1/64" = 1'-0"

8' 0' 8' 16'
SCALE: 1/8" = 1'-0"

PLAN NORTH

IMPORTANT - DO NOT DISTRIBUTE
NOTE: THESE DRAWINGS ARE CONFIDENTIAL FOR OFFICIAL USE ONLY, NOT FOR PUBLIC DISTRIBUTION. A DETERMINATION HAS BEEN MADE THAT THE PUBLICATION OF THESE PLANS COULD COMPRIMISE PUBLIC SAFETY AND ARE NOT AVAILABLE PURSUANT TO DELAWARE CODE, TITLE 29, § 10002 (l)(17)(a)(2) AND (3).

PLAN NORTH = TRUE NORTH

NO.:	DESCRIPTION:	DATE:
	ISSUED FOR NGB REV	03/22/24

DESIGNED BY:	CED
DRAWN BY:	CVA
CHECKED BY:	Checker
SUBMITTED BY:	Approver
SIZE:	ANSI D

ISSUE DATE: 01/24/23
SOLICITATION NO.: NGB PN 100103
CONTRACT NO.: DEARNG 2020-16
PROJECT NO.: 213-76984-22001

TETRA TECH
240 Continental Drive, Suite 200
Newark, Delaware 19713
(302) 454-0555
(302) 454-0958

DELAWARE ARMY NATIONAL GUARD
BBTS TRANSIENT TRAINING OFFICER'S BARRACKS
BETHANY BEACH, DELAWARE
FLOOR PLAN

SHEET ID
A-100B

3/20/2024 11:22:41 AM

TETRA TECH

240 Continental Drive, Suite 200
Newark, Delaware 19713
Tel. (302) 738-7551
Fax (302) 454-5980

Use and Indemnification Agreement

Re: DEARNG Bethany Beach Training Site – Transient Training Officer Quarters Tt Project No. 213-76984-22001

Whereas, _____ (hereinafter the "Contractor"), acknowledges that it has requested certain electronic files and/or media of the Drawings and/or Specifications for the above-referenced Project which are the property of Tetra Tech Inc. (hereinafter "Tetra Tech").

Now, therefore, Contractor hereby warrants and covenants that it will abide by the following provisions:

A. *Indemnification*

1. In consideration of permission to use electronic files or media, including but not limited to electronic files of drawings created by use of computer, for the Work of this Project only, and which the Contractor has requested from Tetra Tech, the Contractor, to the fullest extent permitted by law, hereby agrees to indemnify and hold harmless Tetra Tech, its agents, employees, officers , directors and consultants from and against any and all claims, damages, losses and expenses, including any attorneys' fees, arising out of, resulting from or in connection with any and all use of said electronic materials, but only if such claim, damage, loss or expense is caused in whole or in part by the Contractor, its employees, agents, officers, directors, or any other party directly or indirectly employed by any of them or any party for whose acts any of them may be liable, regardless of whether or not it is caused by a party indemnified hereunder. Such obligation shall not be construed to reduce or negate any other right or obligation of indemnification that would otherwise exist as to any party hereto. This indemnification shall not apply to the liability of the indemnitee arising out of its own negligence. This indemnification shall not be limited in any way because of any limitation on damages, compensation or benefits under any statute, law or governmental requirement of any sort.

2. The following shall be included within the definition of "expenses" herein: (a) any time expended by the indemnified party of its employees, agents, officers and directors at their usual and customary billing rates, as well as all out-of-pocket expenses such as long-distance telephone calls, costs of reproduction, expenses of travel and lodging; (b) all costs and expenses of experts, consultants, engineers, and any other party retained by the indemnified party reasonably required to defend the claim; (c) all costs, including reasonable attorneys' fees, incurred in bringing any action to enforce the provisions of this indemnification. The following shall be included within the definition of "action" herein: any case brought in any state or federal court, any arbitration, any mediation, and any similar forum for resolution of any dispute herein, and shall also include any counterclaim or third-party action in any such forum.

B. *Use and Compatibility*

1. Tetra Tech' instruments of service are furnished without guarantee of compatibility with the Contractor's software or hardware, and Tetra Tech' sole responsibility for the electronic media is to furnish a replacement for defective disks within thirty (30) days after delivery to Contractor.

2. Because data stored on electronic media can deteriorate undetected or be modified without Tetra Tech' knowledge, the Contractor agrees that Tetra Tech will not be held liable for the completeness or correctness of the electronic media after an acceptance period of thirty (30) days after delivery of the electronic files. Tetra Tech does confirm the accuracy of the final sealed hard copy drawings, previously submitted pursuant to the Prime Agreement for this Project.

3. The electronic files are submitted to the Contractor for a thirty (30) day acceptance period. During this period, the Contractor may review and examine these files, and any errors detected during this time will be corrected by Tetra Tech. Any changes requested after the acceptance period will be considered additional services to be performed on a time and materials basis, at Tetra Tech's standard cost plus terms and conditions.

4. Tetra Tech retains ownership of the printed hard copy Drawings and Specifications and the electronic media. The Contractor is granted a license for their use, but only in the operation and maintenance of the Project. Use of these materials for modification, extension, or expansion of this Project or on any other project, unless under the direction of Tetra Tech, shall be without liability to Tetra Tech and Tetra Tech's consultants.

IN WITNESS WHEREOF:

Contractor: _____
Signed name: _____
Printed Name: _____
Title: _____
Date: _____

If transmission is not received as noted, kindly notify us at once.

TETRA TECH

240 Continental Drive, Suite 200
Newark, Delaware 19713
Tel. (302) 738-7551
Fax (302) 454-5980

Use and Indemnification Agreement – Business Office

Electronic Drawing Files

Prime Contractor Name

Prime Contractor Address

Contact to Receive Invoices

Project Name DELAWARE ARMY NATIONAL GUARD
BBTS – TRANSIENT TRAINING OFFICER'S QUARTERS

Project Number 213-76984-22001

Number of Drawing Files (Each individual drawing in the set of Contract Documents represents 1 file)

List each Drawing # Requested

Contractor Signature _____

If transmission is not received as noted, kindly notify us at once.

Document Transmission Agreement

By receiving, downloading, installing and/or using the drawings, Computer Aided Design (CAD) data, specifications, plans and/or other documents herein or hereby transmitted (collectively "Documents"), whether the Documents are delivered via CD-ROM, DVD-R, electronic mail, facsimile or other electronic medium or form or downloaded from a website, the recipient or user of the Documents ('User") forms an agreement with Landmark Engineering, Inc. ("LEI"), and agrees to be bound by the terms and conditions set forth herein. LEI retains ownership of the Documents and permission to use the Documents is given by LEI only subject to the terms and conditions of this Agreement. If the Documents are related to or provided in connection with a certain Project, that Project is as follows:

Project Name: BETHANY BEACH TRAINING SITE OFFICER'S BARRACKS
Project LEI Commission No: C1868-4

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5. Remedies for Breach: In the event User uses or publishes the Documents in a manner contrary to this Agreement, LEI shall be entitled to all remedies available at law or in equity including without limitation injunctive relief and barring such usage and wrongful publication, without the necessity of prior notice, opportunity to cure or proof of actual damages, and User shall be entitled to recover its reasonable attorney's fees and costs incurred in securing any such relief.

6. Terms of Contract between LEI and User Apply: If User is party to a contract or agreement of any kind with LEI, this Agreement incorporates by reference any restriction on use of the Documents contained in such contract or agreement between LEI and User.

Name of User: _____

Name & Title of Person Authorized to Execute Agreement: _____

Signature of Authorized Person: _____ Date:_____