



Mercer Island City Hall

Project Team

Facilities condition assessment, Long range planning, Capital projects support

northwest studio architect urban designers

Lead consultant for facilities condition assessment and Long Range planning



Building systems design and engineering, leaders in Sustainable Design



Facilities condition assessments



Cost estimating and management

City Hall Context and Scope Overview

City Hall Re-Occupancy

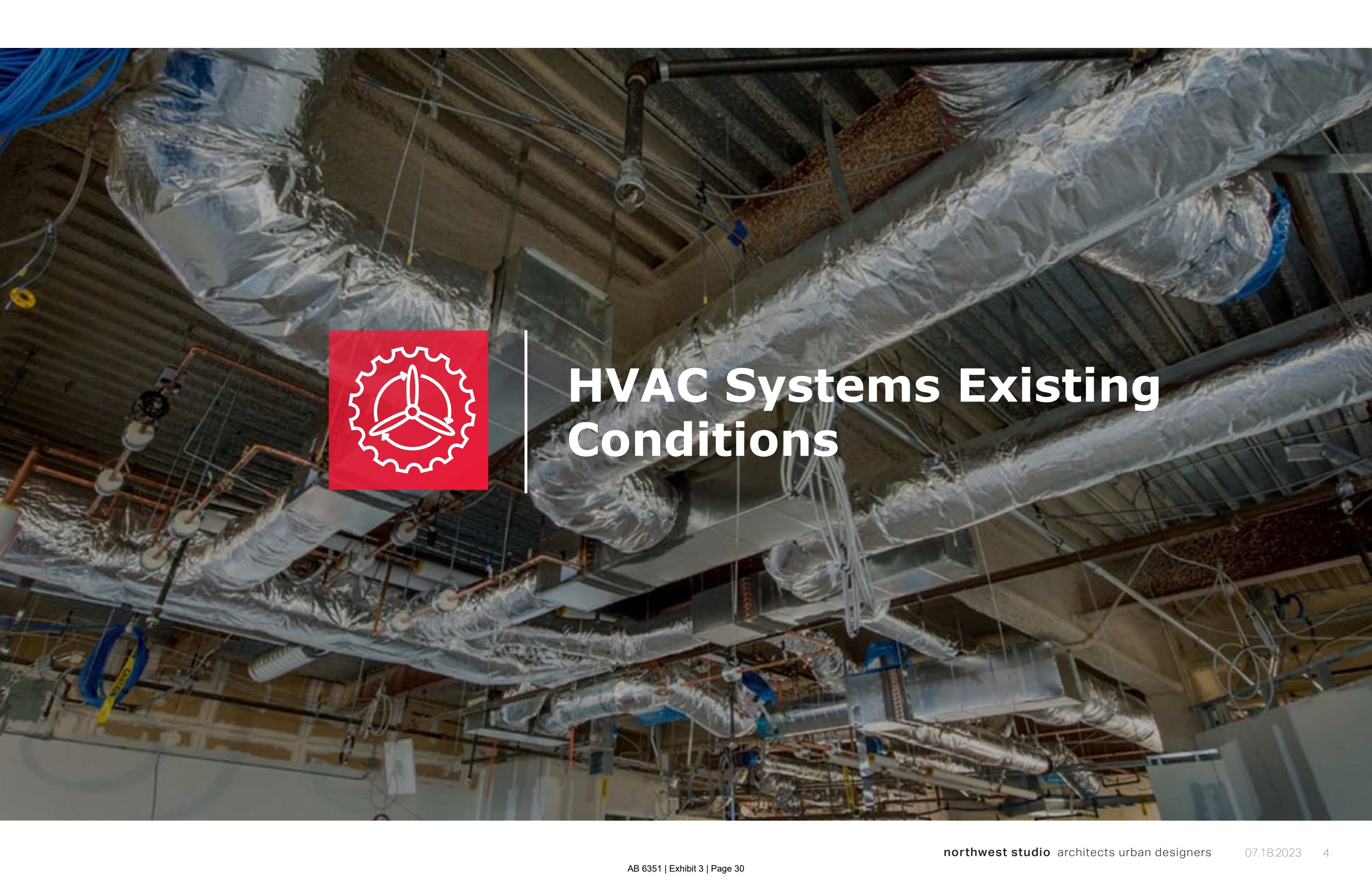
- Concept level scope of work, cost estimate, and estimated timeline for removals and replacement.

Police Department areas Re-Occupancy

- Concept level scope of work, cost estimate, and estimated timeline for removals and replacement.



HVAC Systems Existing Conditions



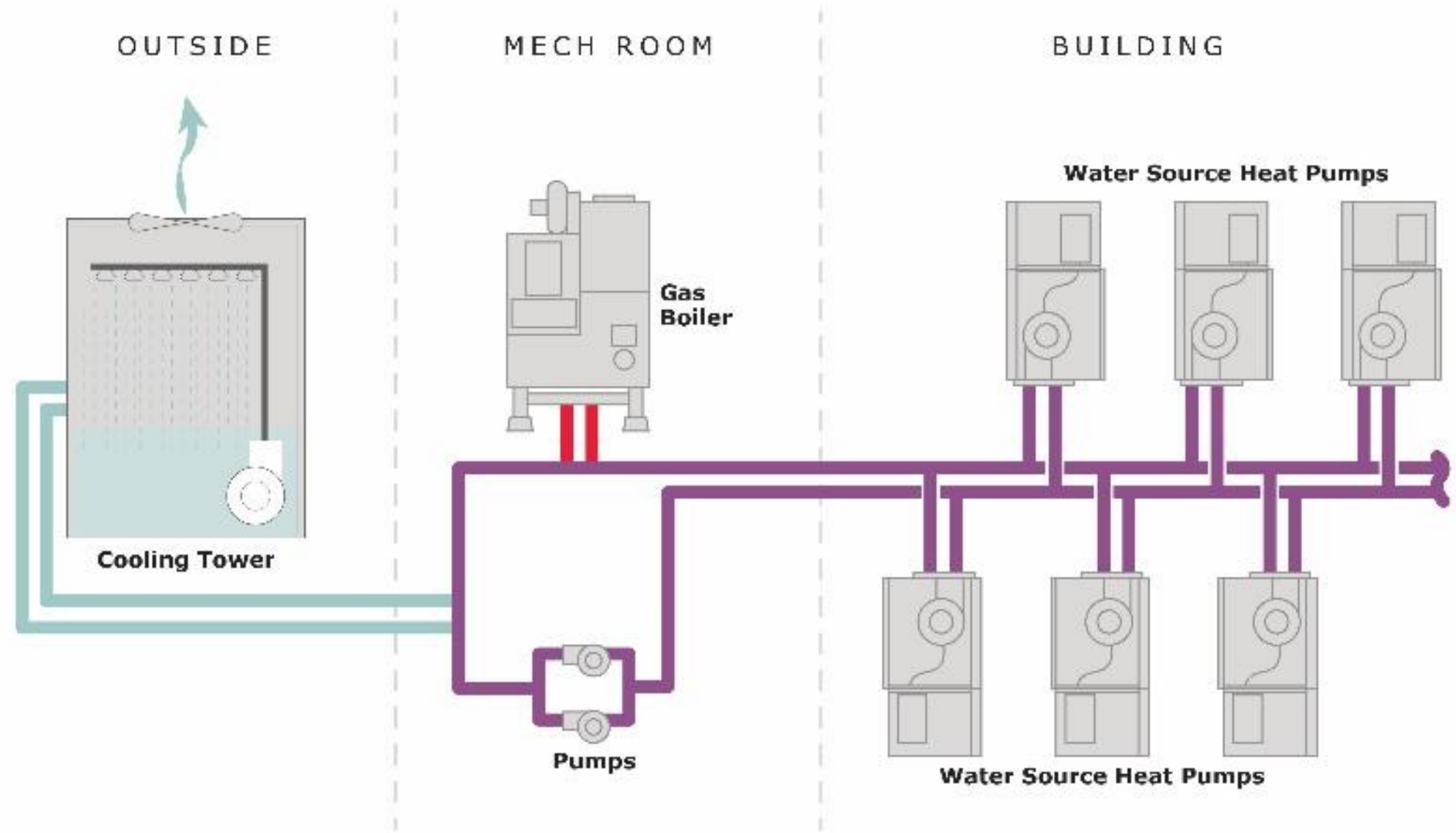
Existing Heating and Cooling System

SYSTEM DEFICIENCIES:

- PVC piping is at risk of catastrophic failure.
- All the equipment is near the end of life.

ENVIRONMENTAL DEFICIENCIES:

- Using fossil fuel (i.e., natural gas for heating)
- Water use for cooling



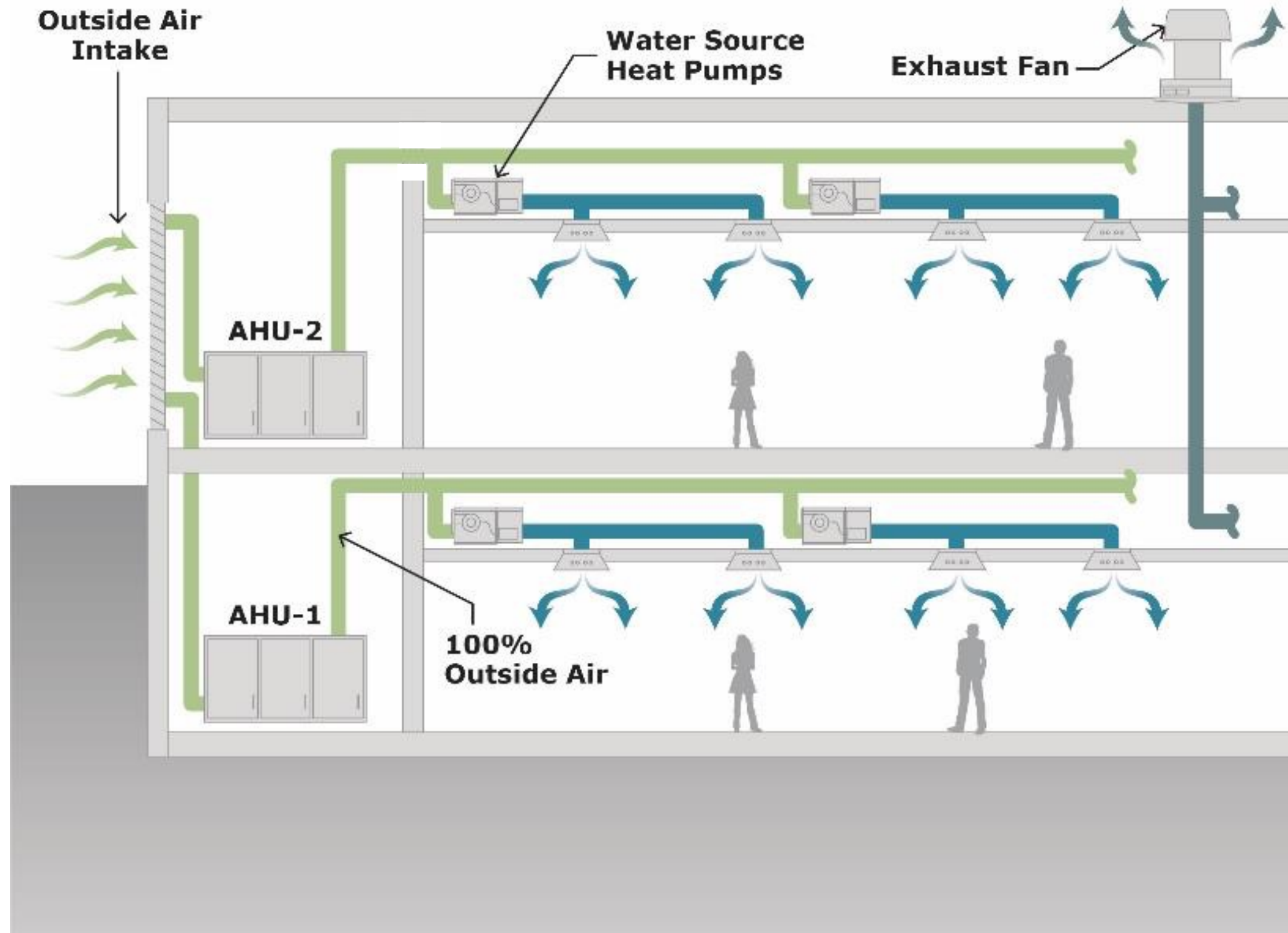
Existing Ventilation System

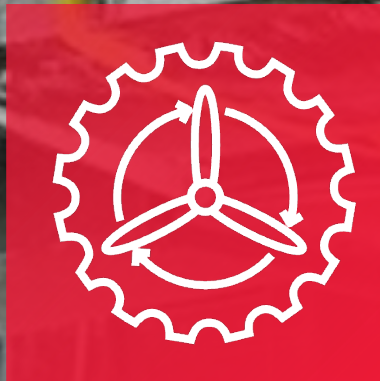
SYSTEM DEFICIENCIES:

- Asbestos found in ductwork.
- All the equipment is near the end of life.

ENVIRONMENTAL DEFICIENCIES:

- No air-to-air heat recovery, which is required when installing a new system under the current Washington State energy code requirement.





Replacement of the HVAC System

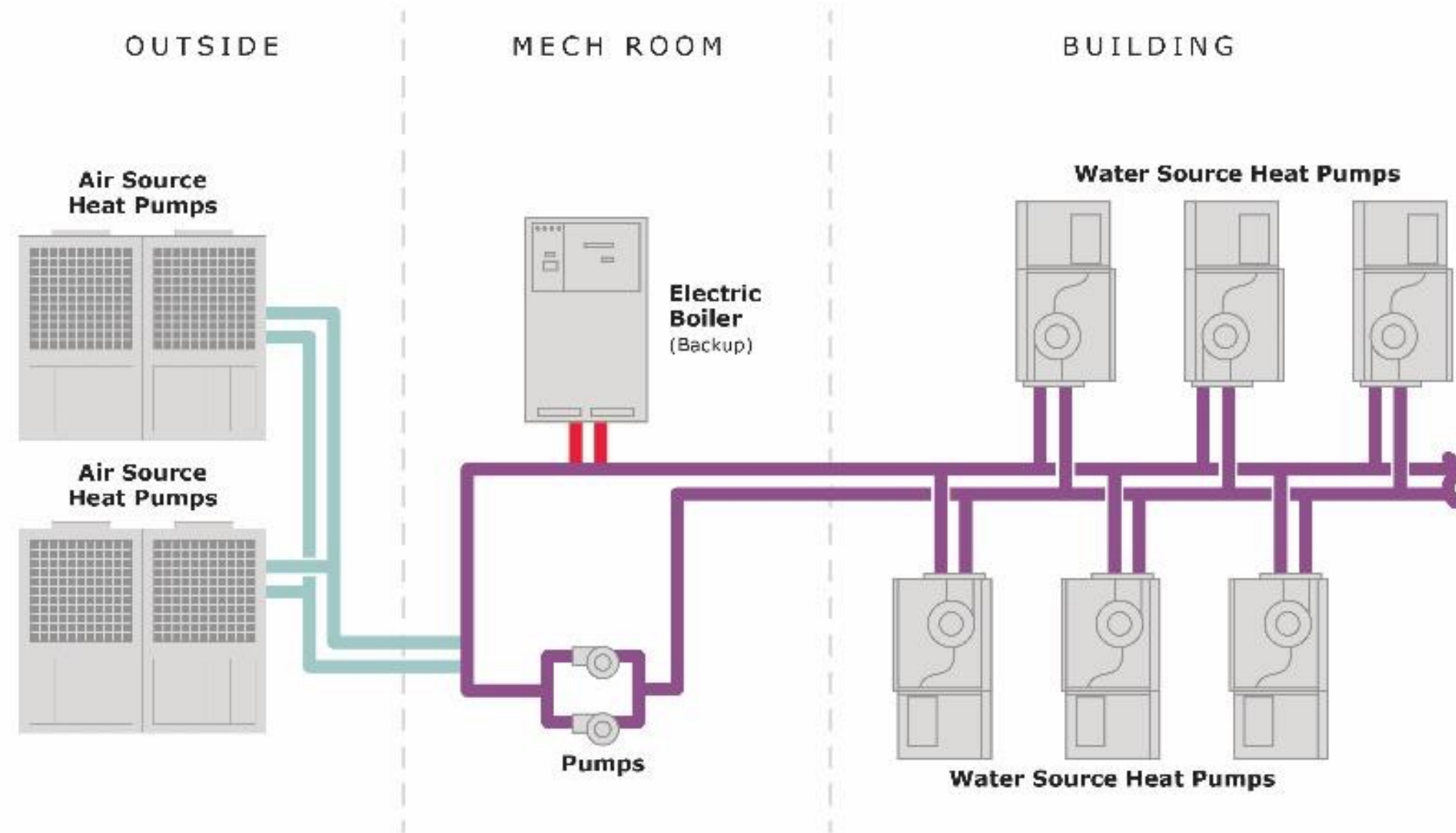
New HVAC Hydronic System

SYSTEM IMPROVEMENTS:

- New copper piping condenser water distribution system.
- New high-efficiency and reduced noise water-to-air heat pumps in the building.
- Low maintenance air-source heat pumps (ASHPs) in place of the cooling tower.
- Partial heating and cooling redundancy if one of the ASHPs is down for maintenance.
- Back-up electric boiler for low-cost winter heating redundancy if one ASHP fails.

ENVIRONMENTAL IMPROVEMENTS:

- Operational Net Zero Carbon HVAC system
- No water used for cooling



Long-Term Operational Cost Savings:

- Energy utility bills
- Water utility bills
- Maintenance

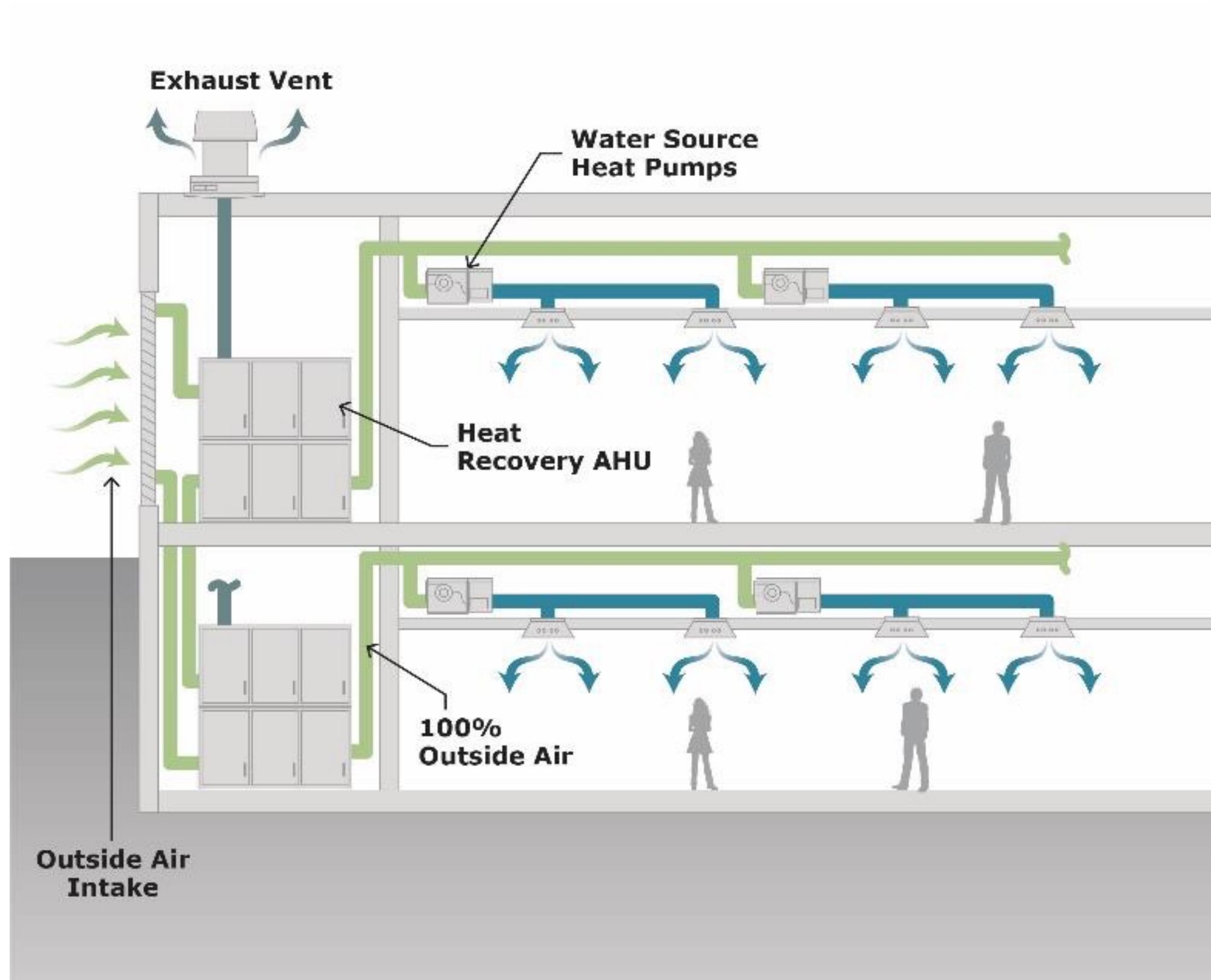
New HVAC Ventilation System

SYSTEM IMPROVEMENTS:

- New heat recovery AHUs will provide outside air for the entire building.
- CO₂ sensors and VAV terminals will control the outside air to high-occupancy spaces based on occupancy.

ENVIRONMENTAL IMPROVEMENTS:

- AHUs with air-to-air heat recovery provide significant energy savings.



Work related to removal and replacement of HVAC system

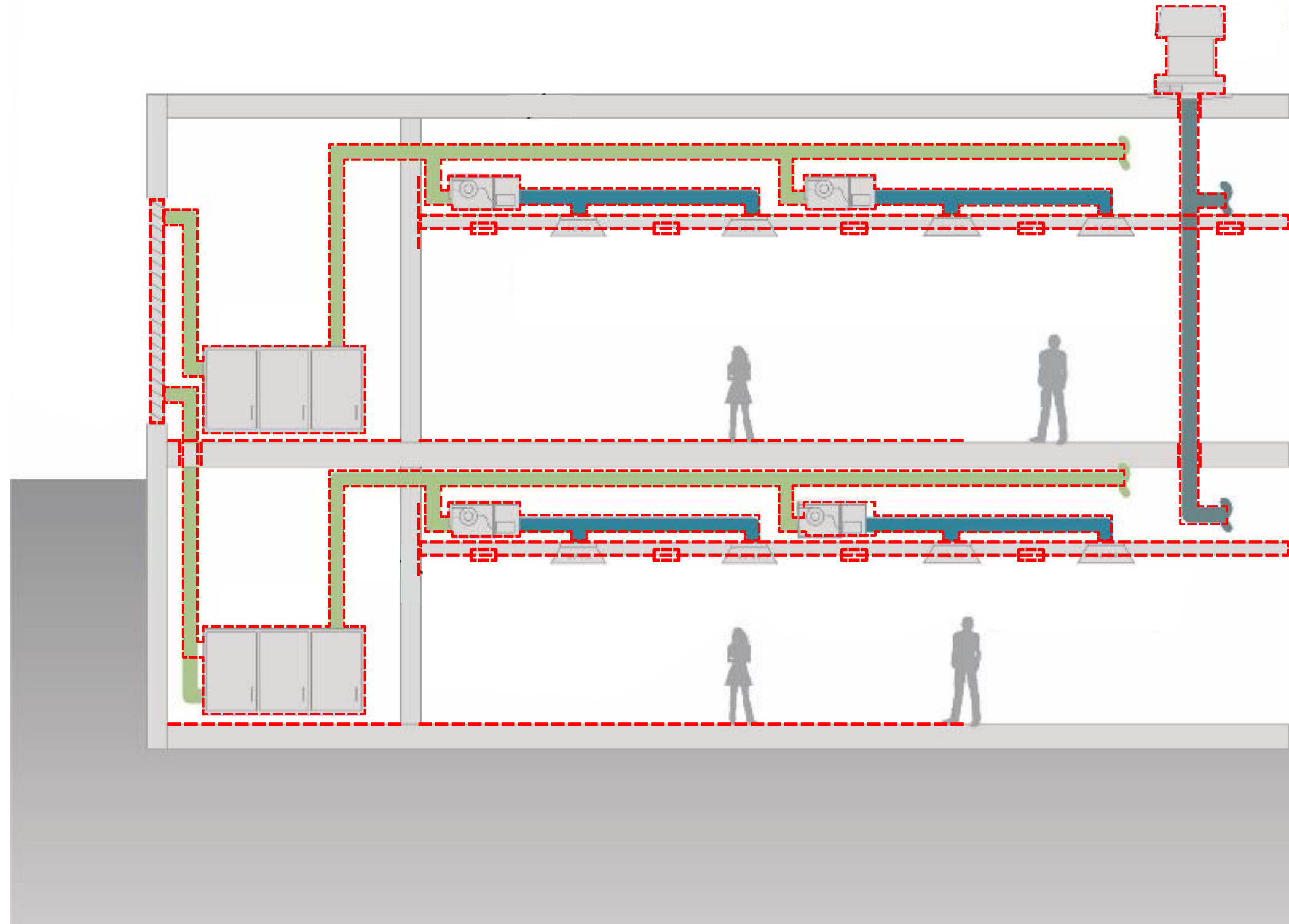
Demolish and Replace:

- Removal or relocation and storage of FF&E (furniture, fixtures & equipment)
- Ceilings
- Light fixtures and control wiring
- Data/ IT cabling, and devices
- Security cabling and devices
- Fire alarm systems
- Mechanical systems
- Attic insulation
- Partial wall removals at penetrations
- Floor finishes (+/- 75%)

Additional scopes of work:

- Patch and repair wall finishes
- Repainting
- Interior partition seismic bracing
- Fire protection systems (sprinklers)
- Interior FF&E replacement or relocation from storage
- Additional potential energy code upgrades

Hazardous materials abatement/ remediation allowance included for partial HVAC removals scope only (pending source and extents reporting and abatement plan definition)



Cost estimate overview

DCW Cost Management prepared a preliminary cost estimate for replacement of existing building-wide HVAC systems, along with related work that is required to undertake the HVAC system replacement scope and return the building to a serviceable condition.

The estimate was developed using existing documents, reports, and prior studies, and is based on building gross square footages multiplied by current regional costs per-square-foot for the scope of work involved. The cost report includes seismic upgrades to non-structural interior partitions and masonry walls, as well as select allowances for asbestos abatement.

The cost report is based on the following notes, assumptions, and inclusions:

- The cost estimate reflects information on-hand at the time of the estimate. Future information or additional findings may alter the required scope of work and preliminary cost estimate.
- The consulting team has not had access to City Hall due to the building's closure for asbestos testing. Preliminary figures should be refined once access becomes available.
- Allowances for hazardous materials abatement do not reflect the potential full scope of work required and should be updated following the development of an abatement scope-of-work.
- The project would be delivered via traditional low-bid procurement with a minimum of four (4) qualified General Contractors to assure competitive pricing.
- The majority of work would be performed during regular business hours.
- Owner's soft costs are not included.
- Escalation is included to Q3 2024.
- Sales tax is excluded.

Cost Estimator

DCW Cost Management is an independent third-party cost consultancy with offices in Seattle, WA and Portland, OR. DCW is embedded in the regional construction community, and has a proven track record of providing accurate cost planning and cost control services, with cost estimates falling within 3% to 5% of project low bid amounts.

Cost estimate (draft)



Renovation				
	Quantity	Unit	Rate	Total
Program Area	34,737	SF		
Level 1	8,975	SF		
Level 2	25,762	SF		
01 Foundations	34,737	SF		
No work anticipated				NIC
02 Vertical Structure	34,737	SF	15.40	535,108
Existing CFS wall bracing	1,861	LF		
400S200-23	1.27	TN	18,000.00	22,946
600T300-54	2.15	TN	18,000.00	38,690
600S300-54	2.30	TN	18,000.00	41,370
Existing masonry bracing	910	LF		
L4x4x1/4, cont	3.00	TN	18,000.00	54,054
L4x4x1/4, angle	11.26	TN	18,000.00	202,703
Threaded rods	228	EA	86.00	19,608
Strapping, nails and screws (allow)	34,737	SF	0.40	13,895
Misc. plates and connections (allow)	1	LS	40,000.00	40,000
Rough carpentry, allow	34,737	SF	2.50	86,843
Temporary shoring	1	LS	15,000.00	15,000
03 Floor and Roof Structure	34,737	SF		
See "Vertical Structure"				<i>incl. above</i>
04 External Cladding	34,737	SF		
No work anticipated				NIC
05 Roofing and Waterproofing	34,737	SF		
No work anticipated				NIC
06 Interior Partitions	34,737	SF	1.66	57,691
Patch and repair existing as required, allow	18,610	SF	3.10	57,691
07 Interior Finishes	34,737	SF	19.65	682,582
Ceiling finish - ACT	24,316	SF	8.50	206,685
Ceiling finish - painted gyp.	10,421	SF	10.50	109,422
Paint, touch up existing to remain (allow)	34,737	SF	1.50	52,106
Prep floor for new finish	34,737	SF	1.80	62,527
Floor finish - resilient flooring	17,369	SF	8.00	138,948
Floor finish - carpet tile	17,369	SF	6.50	112,895

Renovation				
	Quantity	Unit	Rate	Total
08 Equipment and Specialties	34,737	SF	0.64	22,369
Corner guards, allow	1	LS	5,000.00	5,000
Wayfinding signage, allow	34,737	SF	0.50	17,369
09 Vertical Transportation	34,737	SF		
No work anticipated				NIC
10 Plumbing	34,737	SF		
No work anticipated				NIC
11 HVAC	34,737	SF	72.00	2,501,064
Mechanical systems, allow	34,737	SF	72.00	2,501,064
Heating/cooling system				<i>incl. above</i>
Exhaust system				<i>incl. above</i>
Ductwork incl. insulation				<i>incl. above</i>
Ancillary equipment				<i>incl. above</i>
12 Electrical	34,737	SF	40.60	1,410,322
Distribution - modifications as required, allow	34,737	SF	1.60	55,579
Light fixtures, allow	34,737	SF	19.00	660,003
Lighting controls	34,737	SF	4.50	156,317
Fire alarm systems	34,737	SF	4.50	156,317
Voice/data	34,737	SF	8.50	295,265
Equipment connections	34,737	SF	2.50	86,843
13 Fire Sprinklers	34,737	SF	3.00	104,211
Modifications as required, allow	34,737	SF	3.00	104,211
14 Selective Demolition	34,737	SF	19.85	689,455
Area of protection, allow	34,737	SF	3.10	107,685
Demo - ceiling finish	34,737	SF	2.10	72,948
Demo - attic insulation	25,762	SF	1.75	45,084
Demo - floor finish	34,737	SF	2.25	78,158
Trade demolition - plumbing, not required				NIC
Trade demolition - mechanical, allow	34,737	SF	3.60	125,053
Trade demolition - electrical, allow	34,737	SF	2.50	86,843
Hazardous materials remediation, allow	34,737	SF	5.00	173,685
FF&E relocation - by Owner				NIC

Cost estimate (draft)



Renovation Summary

	%	\$/SF	TOTAL	
Gross Area:		34,737 SF		
Foundations	0%	0.00	0	
Vertical Structure	6%	15.40	535,108	
Floor and Roof Structure	0%	0.00	0	
External Cladding	0%	0.00	0	
Roofing and Waterproofing	0%	0.00	0	
1 Shell	6%	15.40	535,108	
Interior Partitions	1%	1.66	57,691	
Interior Finishes	7%	19.65	682,582	
2 Interiors	8%	21.31	740,273	
Equipment and Specialties	0%	0.64	22,369	
Vertical Transportation	0%	0.00	0	
3 Equipment & Vertical Transportation	0%	0.64	22,369	
Plumbing	0%	0.00	0	
HVAC	27%	72.00	2,501,064	
Electrical	15%	40.60	1,410,322	
Fire Protection	1%	3.00	104,211	
4 Mechanical & Electrical	43%	115.60	4,015,597	
Selective Demolition	7%	19.85	689,455	
5 Selective Demolition	7%	19.85	689,455	
BUILDING CONSTRUCTION	64%	172.81	6,002,802	
General Requirements	7.50%	5%	12.96	450,210
Design Contingency	15.00%	10%	27.87	967,952
Construction Contingency	5.00%	4%	10.68	371,048
General Conditions	7.00%	6%	15.70	545,441
Liability Insurance	1.00%	1%	2.40	83,375
Payment & Performance Bonds	1.00%	1%	2.42	84,208
Overhead & Profit Fee	4.00%	4%	9.79	340,201
CONSTRUCTION COST BEFORE ESCALATION	95%	254.63	8,845,237	
Escalation to Start Date (Q3 2024)	5.30%	5%	13.49	468,463
RECOMMENDED BUDGET	100%	268.12	9,313,700	

Recommended hard cost budget: \$ 9,313,700
 WSST + MI (10.10%): \$ 940,683
Recommended hard cost total: \$ 10,254,366

*NIC owner soft costs

Estimated Durations:

Design & Permitting: 6 - 8 months

Abatement: TBD

Construction: 6 - 8 months

Move-in: 1 month

Estimated Total: 13 - 17 months + abatement



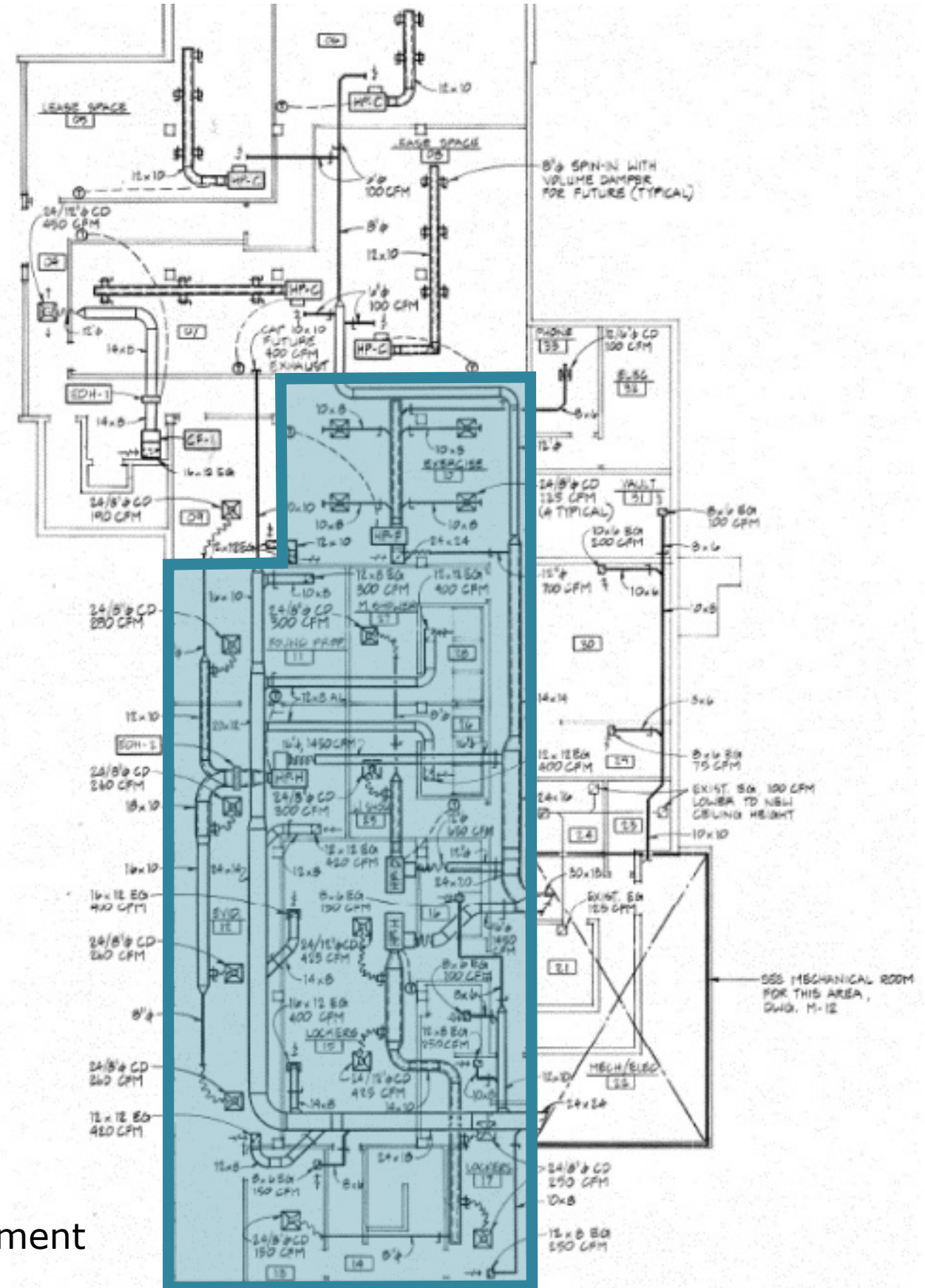
MI PD Areas HVAC System Options

Police Department HVAC System

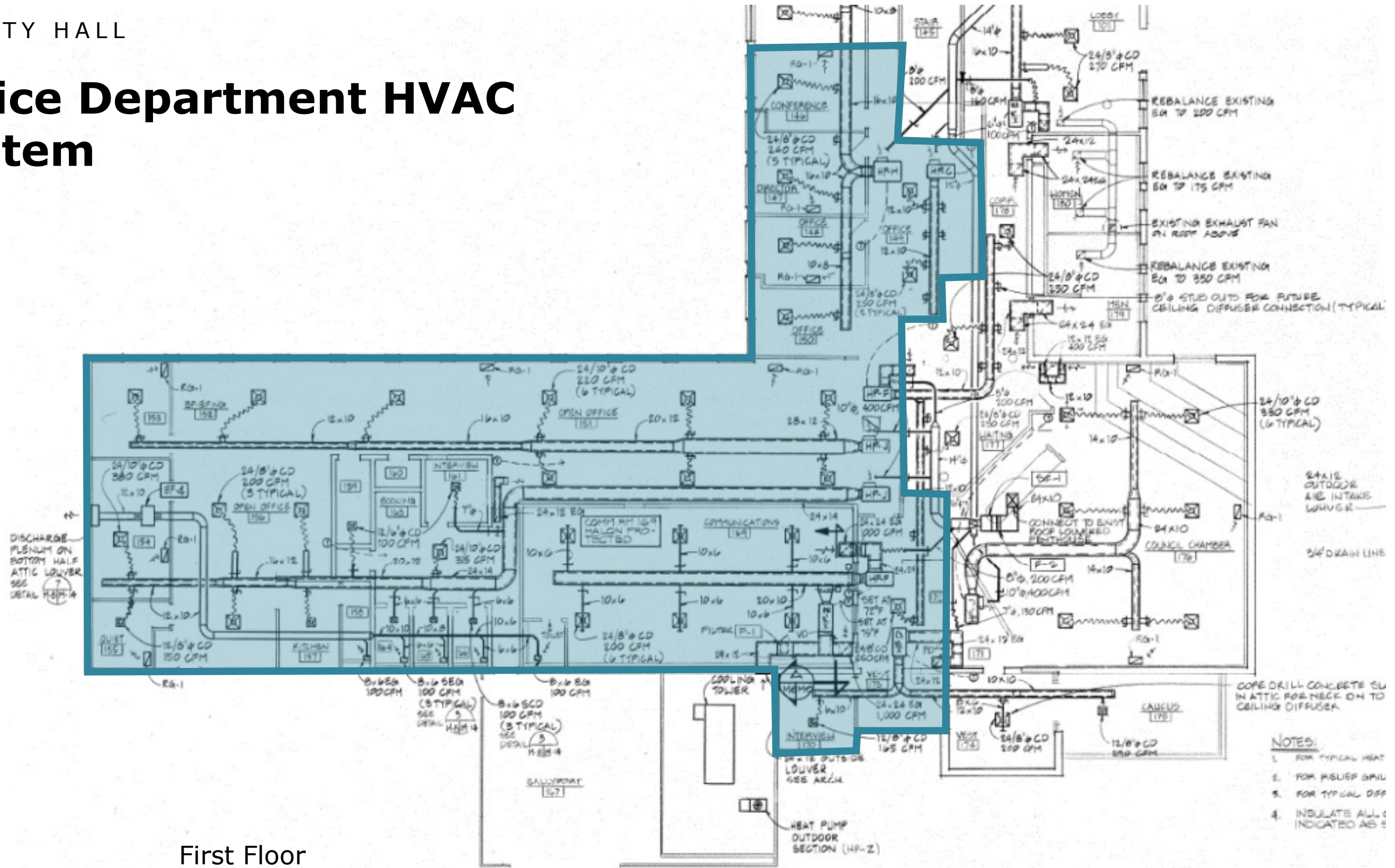
We were asked to study a potential solution for the use of the Police Department areas for 5 to 7 years as an alternative to re-occupancy of all of City Hall.

As an initial option, the team looked at partitioning the existing Police Department spaces from the remainder of the building, abating those spaces, removing the existing HVAC system, and installing a contemporary system to serve this occupancy.

Basement



Police Department HVAC System



- NOTES:**
- 1. FOR TYPICAL HEAT
 - 2. FOR RELIEF GRILL
 - 3. FOR TYPICAL OFF
 - 4. INSULATE ALL INDICATED AS

Police Department HVAC System

FULL REPLACEMENT WITH VRF AND DOAS

Variable Refrigerant Flow (VRF)

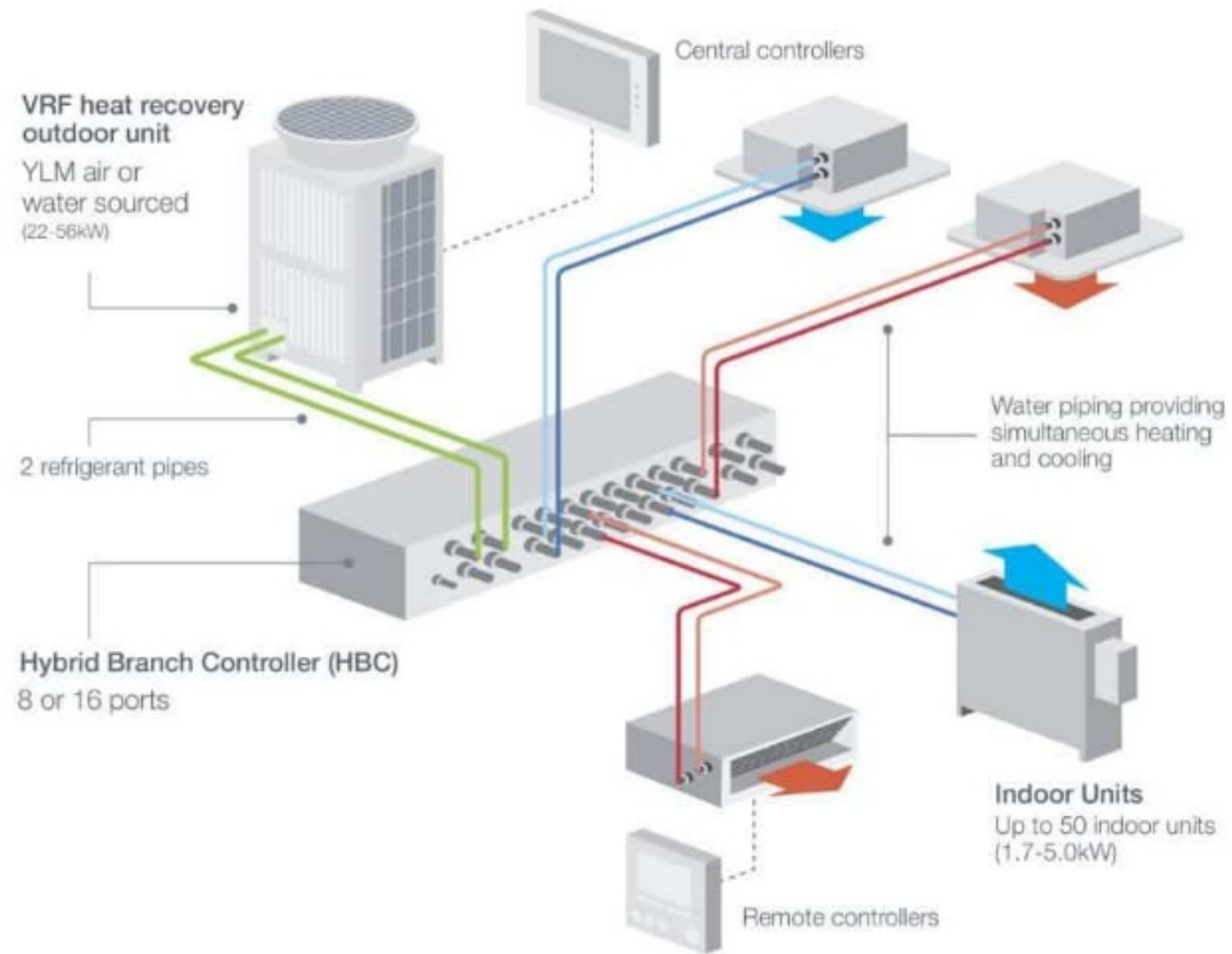
Provide a VRF system with indoor wall and ceiling-mounted cassettes to provide heating and cooling for the space. There would be a new outdoor heat pump located at grade in the location where the existing cooling tower is located. This system comes with it's own control system.

Outside Air System

Provide either 1 or 2 new heat recovery ventilators (HRVs) for ventilation air with new supply and return ductwork.



Heat Recovery Ventilator (HRV)



VRF System Schematic

Police Department areas - work related to removal and replacement of HVAC system

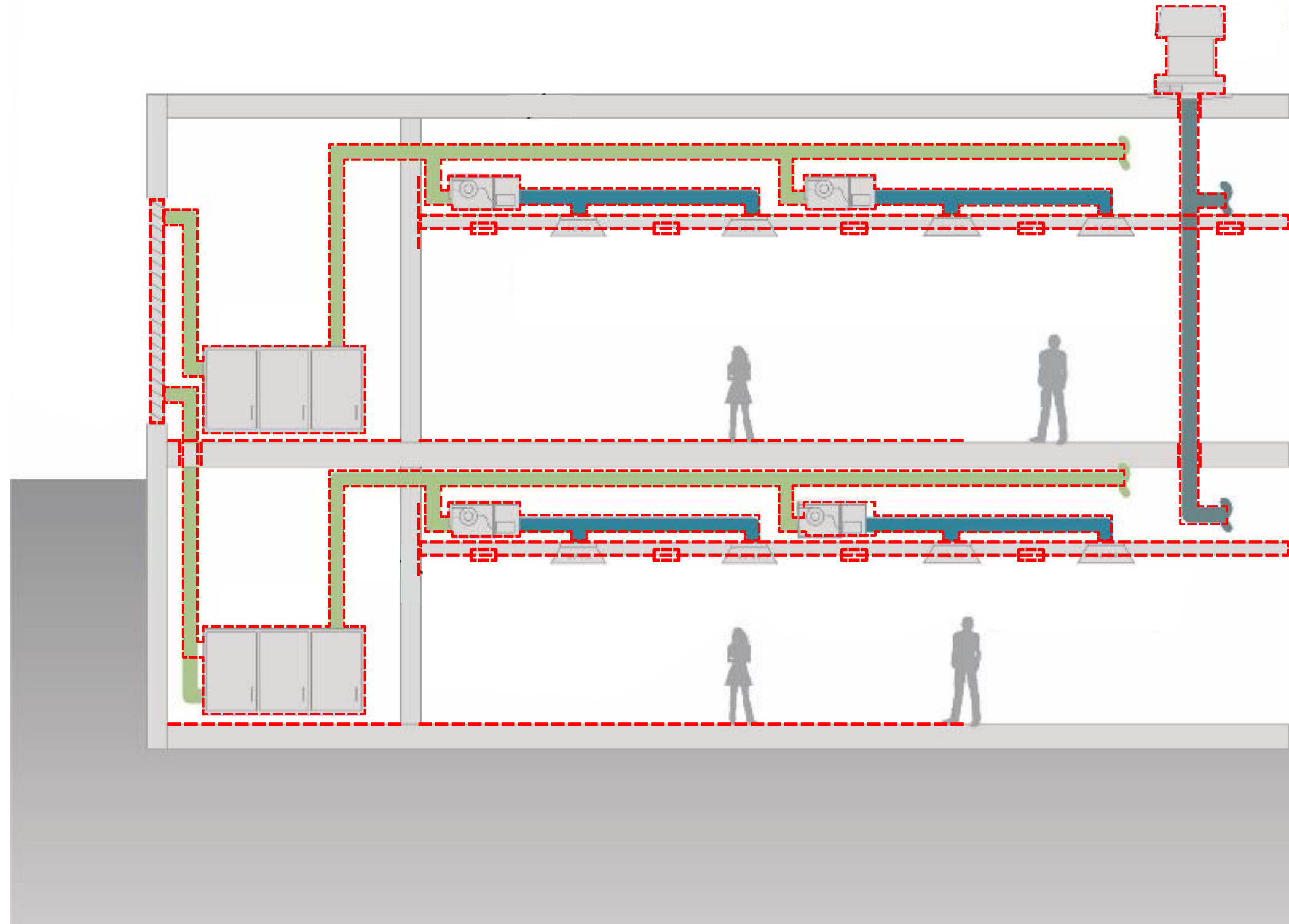
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Cost estimate

Full building estimate for reference only

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	RECOMMENDED BUDGET	100%	268.12	9,313,700	

40.20% of \$9,311,700 equals \$3,744,107

PD approximate area: 13,971 sf
 Area of total facility: 40.20%

40.20% of full-facility costs:

Recommended hard cost budget: \$ 3,744,107
 WSST + MI (10.10%): \$ 378,154
Recommended hard cost total: \$ 4,122,261

*NIC owner soft costs

Estimated Durations:

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 Abatement: TBD
 Construction: 6 - 8 months
 Move-in: 1 month
Estimated Total: 13 - 15 months + abatement



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