

WAKEFIELD ADVISORY WORKING GROUP	WAKEFIELD PUBLIC SAFETY MEETING MINUTES
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Date:	Wednesday, March 3, 2021
Location:	Virtual "Zoom" Meeting
Time:	2:00pm
Prepared By:	Shane Nolan, LeftField

Name		Present
Jason Cohen	Permanent Building Committee	✗
Marc Moccio	Permanent Building Committee (non-voting)	✓
Philip Renzi	Permanent Building Committee (non-voting)	✓
Steven Skory	Chief, Wakefield Police Department	✓
Craig Calabrese	Deputy Chief, Wakefield Police Department	✓
Michael Sullivan	Chief, Wakefield Fire Department	✓
Joseph Bertrand	Chair, Permanent Building Committee	✓
Kevin McCaul	Wakefield Police Department	✓
Scott Reboulet	Wakefield Police Department	✓
Rick DiNanno	Wakefield Police Department	✗
Joseph Conway	Director, Wakefield DPW	✓
Lynn Stapleton	Leftfield Project Management	✓
Shane Nolan	Leftfield Project Management	✓
Janet Slemenda	HKT Architects	✓
Amy Dunlap	HKT Architects	✓
Jim Jackson	Pare Corporation	✓
Brandon Barry	Pare Corporation	✓
Ben Millar	GGD Engineers	✓
Chris Garcia	GGD Engineers	✓
David Pereira	GGD Engineers	✓

I. Meeting Minutes

The meeting minutes of the 01/21/21 Advisory Working Group were presented for review.

Philip Renzi made a motion to approve the 01/21/21 Wakefield Public Safety Advisory Working Group Meeting Minutes as presented. Seconded by Chief Steve Skory. On a roll call vote the motion was approved unanimously.

The meeting minutes of the 02/03/21 Advisory Working Group were presented for review.

Philip Renzi made a motion to approve the 02/03/21 Wakefield Public Safety Advisory Working Group Meeting Minutes as presented. Seconded by Chief Steve Skory. On a roll call vote the motion was approved unanimously.

II. Review of Site, Civil and Landscape

Brandon Barry (Pare Corp.) reviewed the existing building setbacks and the proposed building addition setbacks. The existing building entrance bump out extends into the Union Street setback. The proposed 3 story addition extends out but not beyond the entrance bump out. The new entry vestibule may extend beyond the bump out. Existing flag poles and light pole will need to be relocated. The handicap parking spaces at the front of the building will also need to be reconfigured. The Sallyport addition at the rear also appears to extend out into the setback. Once the final design dimensions are established further review will be required, including review with the Building inspector, to determine if any variances are needed.

BB reviewed the existing utilities. The 3-story addition will require rerouting of the existing 18" drain line and modifications to the roof drains to reconnect. There is an existing sewer line coming out of the building that looks like it works with the elevations. A new sewer manhole would be installed where it exits from under the new addition. Joe Conway requested that a clean out be provided inside the building where the sanitary line changes direction. The drain line also runs under the proposed new vestibule but will be re-routed with modifications to the roof leaders at the Fire Dept side of the building.

At the Sallyport there is an existing drain manhole that will need to be relocated and the drain re-routed. There is also an electric transform in close proximity to the Sallyport addition. This needs to be reviewed with the Municipal Power and Light Dept to confirm set back requirements.

BB noted that the 3-story addition will be constructed in an area that is currently landscaped. There are minimal other opportunities on site to provide any stormwater mitigation system to compensate for the additional impervious areas. The understanding is that because this is a re-development this project may not need to meet all the standards. However, this will not to be verified with the relevant Town Departments/Committees. Pare will provide a schematic stormwater summary and send to Joe Conway at the DPW to begin the preliminary review with the Town Engineering Department.

III. Review of MEP & FP Systems

Ben Millar (GGD) gave an overview of the mechanical systems.

The central boiler plant consists of 2 of the original 3 boilers. It is understood that the building is currently operating under one boiler. It is recommended that the boiler plant be replaced in the near future. The central coiling plant consists of a roof mounted air-cooled chiller. It is recommended that this be replaced. Ventilation and A/C is provided by 3 RTU's and 2 AHU's. These are all at the end of their serviceable life and recommended for replacement. VAV boxes are not working adequately. This was confirmed to include areas of the Fire Station outside the limit of work for this project. Terminal units in lobbies and vestibules appear to be coming to the end of their serviceable life and are recommended for replacement. The building is served by 13 exhaust fans. These generally appear to be working adequately. Concern was expressed about the exhaust in Room 263 with fumes and odors being circulated to other areas. There also appear to be an issue with the Fire Department kitchen hood allowing odors to escape to other areas of the building.

HVAC equipment is controlled remotely by the Building Department through an Automated Logic BMS system. An upgrade to this system is recommended and the ability to monitor and control through a dedicated on site terminal. It was that staying with the Automated Logic System is the most desirable way to proceed. This would require a proprietary spec to be included in the project.

BM reviewed the different types of HVAC systems. It was agreed that the existing system would be maintained and expanded including the replacement of equipment as recommended.

It was suggested that a commission agent or other consultant could be brought in prior to completing design to functionally test and balance the existing systems to provide a baseline of how the system is currently operating. GGD will provide recommendation for a scope that can be used to get someone on board.

David Pereria (GGD) gave an overview of the electrical system. The existing 800 Amp service will be adequate for the renovation and additions.

The existing generator appears to be in good condition, and it is recommended that it is retained. The elevator, chiller and panel HP2 are not tied into emergency generator. Providing emergency power to these does not appear feasible as it would require a larger generator, which will not fit in the existing generator room, providing a suitable space outside the building for a new generator or on the roof.

The existing addressable fire alarm system is by Edwards and appears to be in good condition. It is recommended that it be reused as it is expandable. The FACP and master box location will need to be reviewed as it is located on a wall that is being demolished. A BDA has been added to the building.

All new lighting will be LED. It is proposed that new light be controlled by localized room controllers instead of tying into the existing Pouch Plate system.

The communications system in the IT rooms does not have any wire management system. There does not appear to be any capacity to add to the existing 2 racks. Therefore a 3rd floor mounted or wall mounted rack is recommended for new IT systems.

The access control systems were upgraded and can be expanded on. The camera systems will need to be upgraded.

Chris Garcia (GGD) gave an overview of the fire protection system. The existing system appears to be in good working condition. The system is zoned and controlled by valve assemblies. The existing system can be modified and expanded to accommodate the renovated and building addition areas.

Plumbing systems appear to be adequate and can be expanded to accommodate renovated and building additions. The domestic water heater is nearing the end of its life and should be replaced with a more efficient water heater. Drainage system appears to be in good conditions. Roof drains are in good condition. There will be modification to the underground drainage and sanitary system as noted by the Civil Engineer. Faucets to be manual as Town has had issued at other building with the battery sensor type.

IV. Next Advisory Working Group Meeting was scheduled for March 17th at 2:00PM

Attachments: Pare Corp Site Plan & General Plan
GGD presentation March 3, 2021

AGENDA

ADVISORY WORKING GROUP MEETING

WAKEFIELD PUBLIC SAFETY BUILDING – RENOVATIONS & UPGRADES

NOTICE OF MEETING

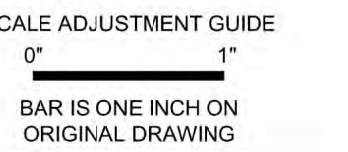
Permanent Building Committee Public Safety Building Advisory Working Group

March 03rd, 2021 | 2:00 p.m.

Via Zoom: <https://us02web.zoom.us/j/88628756716?pwd=Q2Frc2JmY0dJSittWjhVV2xySEg1dz09>

Consistent with the Governor's orders suspending certain provisions of the Open Meeting Law and banning gatherings of more than 10 people, this meeting will be conducted by remote participation to the greatest extent possible. The public may not physically attend this meeting, but every effort will be made to allow the public to view and/or listen to the meeting in real time. Persons who wish to do so are invited to click on the following link <https://us02web.zoom.us/j/88628756716?pwd=Q2Frc2JmY0dJSittWjhVV2xySEg1dz09>. If you do not have a camera or microphone on your computer you may use the following dial in number: 1-312-626-6799 Meeting ID 886 2875 6716 Passcode 875656. Please only use dial in or computer and not both, as audio feedback will distort the meeting. This meeting will be audio and video recorded.

1. **Approval of Advisory Working Group Meeting Minutes**
 - January 21, 2021
 - February 3, 2021
2. **Review Existing MEP & FP Building Systems and Proposed Upgrades**
3. **Site, Civil and Landscape**
4. **Any Other Business**
5. **Next Advisory Working Group Meeting**



Wakefield Public Safety Bldg Addition

Waverfield, Massachusetts

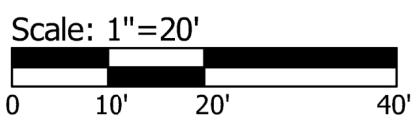
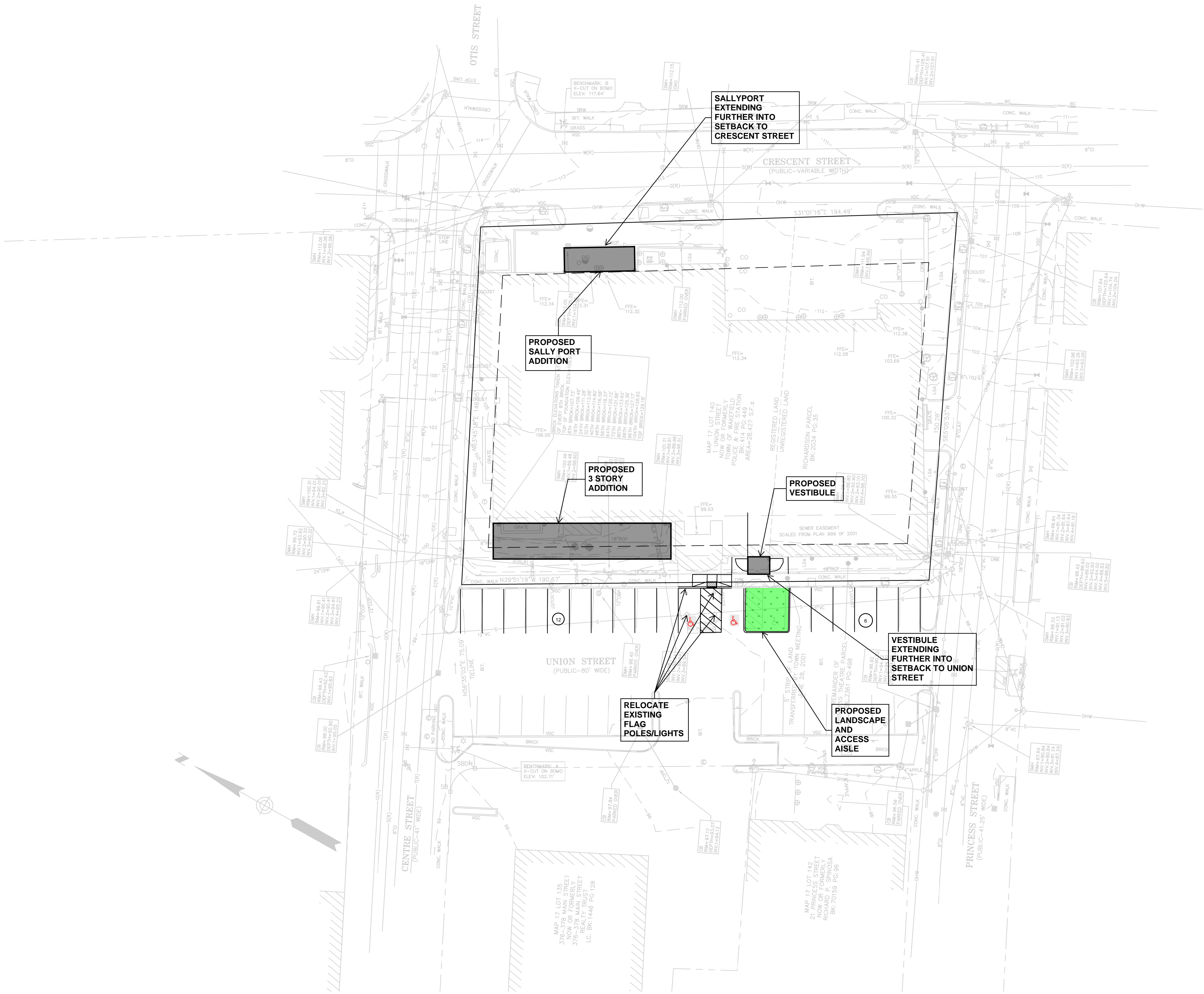
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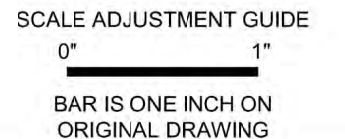
PROJECT NO.:	20209.00
DATE:	MARCH 2021
SCALE:	1"=20'
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	AKL
APPROVED BY:	
DRAWING TITLE:	

GENERAL PLAN

DRAWING NO.: CX

SHEET NO. ____ OF ____





Wakefield, Massachusetts

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Feasibility Study for the Public Safety Building Wakefield, Massachusetts March 3, 2021



AGENDA

- **HVAC, Heating, Ventilation and Air Conditioning Systems**
- Electrical
- Fire Protection
- Plumbing
- Open Discussion



AGENDA

➤ HVAC, Heating, Ventilation and Air Conditioning

Executive Summary

Central Boiler Plant

Ventilation and Air Conditioning

Terminal Heating Equipment & Supplemental Cooling

Building Exhaust

Building Controls

Recommendations

HVAC Systems to choose from

Overhead Variable Air Volume (VAV)

Air Handling Unit Systems

HVAC Plant and Supplemental Systems and Equipment

Variable Refrigerant Flow System

- Electrical
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- Open Discussion





HVAC - HEATING, VENTILATION & AIR CONDITIONING:

Executive Summary:

- Systems and equipment are in poor condition
- All equipment appears to be original from approximately 2002-2003
- Primary heat from Central Boiler Plant
- Cooling from Central Chilled Water Plant.
- Ventilation and air conditioning - roof top units & indoor air handling units, w/ supplemental A.C.
- Majority of ductwork & piping distribution can potentially be reused; with modifications

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EXISTING CONDITIONS: CENTRAL BOILER PLANT



Composed of 2 gas-fired condensing boilers
3 Original, 1 has been removed

Plant includes:

Breaching

Pumps

Combustion air louver intake sys.

Boilers and pumps are at end of expected service life

Heating system is close to not operating appropriately for building



EXISTING CONDITIONS: CENTRAL BOILER PLANT

- Cooling for Air Handling Unit & Rooftop Units is provided from the roof-mounted Air-Cooled Chiller
- Includes pumps, expansion tank, chilled water equipment system
- Central Cooling Plant equipment is recommended to be replaced

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VENTILATION AND AIR CONDITIONING:

- Provided throughout using 3 Rooftop Units (RTUs) & 2 indoor Air Handling Units (AHUs)
- RTUs & Air Handling Units are approaching end of service

Replacement recommended within 5 years

- Most spaces have VAV terminal boxes

Water re-heat coils to raise the discharge air temperatures at the box if the rest of the system is in cooling mode

As we understand it, the system does not work properly

- One RTU is located over Telephone Room 208 in the Police Station

Hot and Chilled Water mains rise-up to the RTU over server rack

Water leakage was noted as an issue and is a serious concern

VENTILATION & AIR CONDITIONING



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EXISTING CONDITIONS:

Terminal Heating Equipment

- ❖ Provided throughout the building in areas such as vestibules and lobbies
- ❖ Appears to be functioning properly
- ❖ Equipment is approaching the end of service
- ❖ Considered replacement within next 5 years

Supplemental Cooling

- ❖ Provided in IT rooms
- ❖ Equipment consists of an indoor evaporator & an outdoor air-cooled condensing unit w/ refrigerant piping between the two



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EXISTING CONDITION: Building Exhaust

Features:

- Approximately 13 exhaust fans serving the building
- Roof-mounted and Inline

Condition:

- Units appeared operational at the time of our visit

Concern:

- Equipment Maintenance Room 263:
- Inadequate exhaust system
- Fumes and/or odors circulate into other portions of the bldg.
- Equipment Maintenance Room 263 return grille is connected to RTU-2.

Solution:

- Directly exhaust from bldg.:
Fire Alarm Maintenance Rm 266, EMT Rm 264, &
Equipment Maintenance Rm 265



EXISTING CONDITIONS:

Fire Station Cooking Hood

While in use odors circulate into the following spaces:
police station, corridors, stairways, & elevator



Source Capture System

Located at the Fire Station Apparatus Bay

Hoses to run to the trucks

Manufactured by Plymovent Industries

Located in Parking Garage:

Ducted exhaust system controlled by CO & nitrogen dioxide sensors activate fan when levels rise



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EXISTING CONDITIONS: BUILDING CONTROLS

The HVAC equipment is connected to a Building Management System (BMS)

- Manufactured by Automated Logic.

It is our understanding that the Public Safety Building BMS is monitored somewhere else in Town.

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RECOMMENDATIONS

Much of the existing equipment **needs replacement**; and is at the **end** of its expected **service life**

The following are our recommendations based on our site visit and discussions with the building occupants:

Problem: heating system is underperforming not meeting desired space comfort levels

Solution: recommend replacement of the majority of HVAC systems, associated components & controls

Central Heating Plant Equipment

Problem: mechanical equipment faults cause downtime which allows the building temperatures to drop below acceptable levels

Central Cooling Plant Equipment

Problem: approaching the end of its anticipated serviceable life expectancy and should be replaced.

Recommended equipment replacement includes:

Roof top units and air handling units

Terminal boxes

Split system ductless cooling units

Further review suggested for the:

Water leakage entering IT Room

Kitchen hood discharge

Upgrade Building Management System

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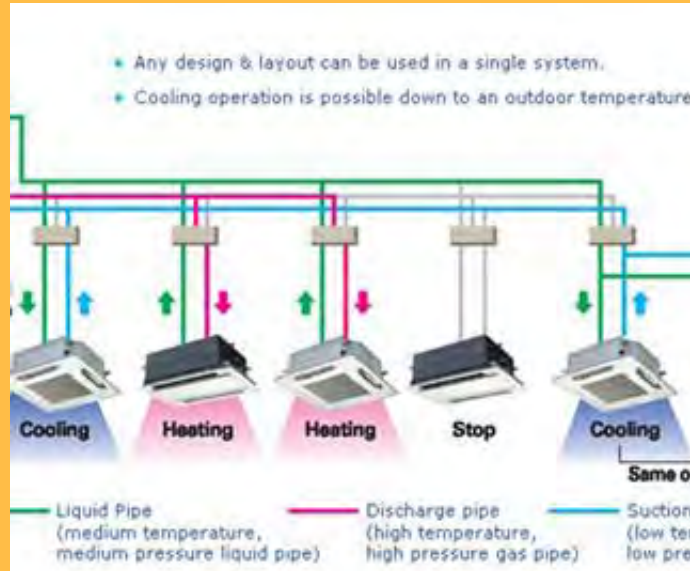
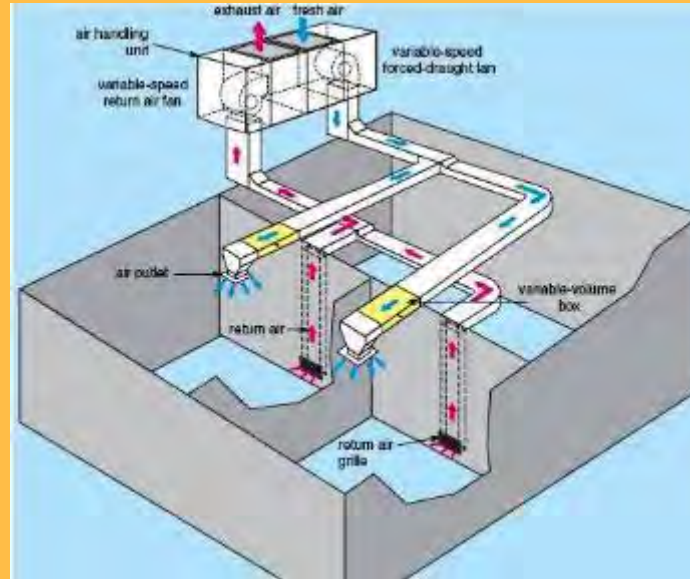
➤ Open Discussion





OVERHEAD VARIABLE AIR VOLUME (MIXING)

Replacement of Existing Equipment



VARIABLE REFRIGERANT FLOW

What are the various HVAC Systems to choose?

AGENDA

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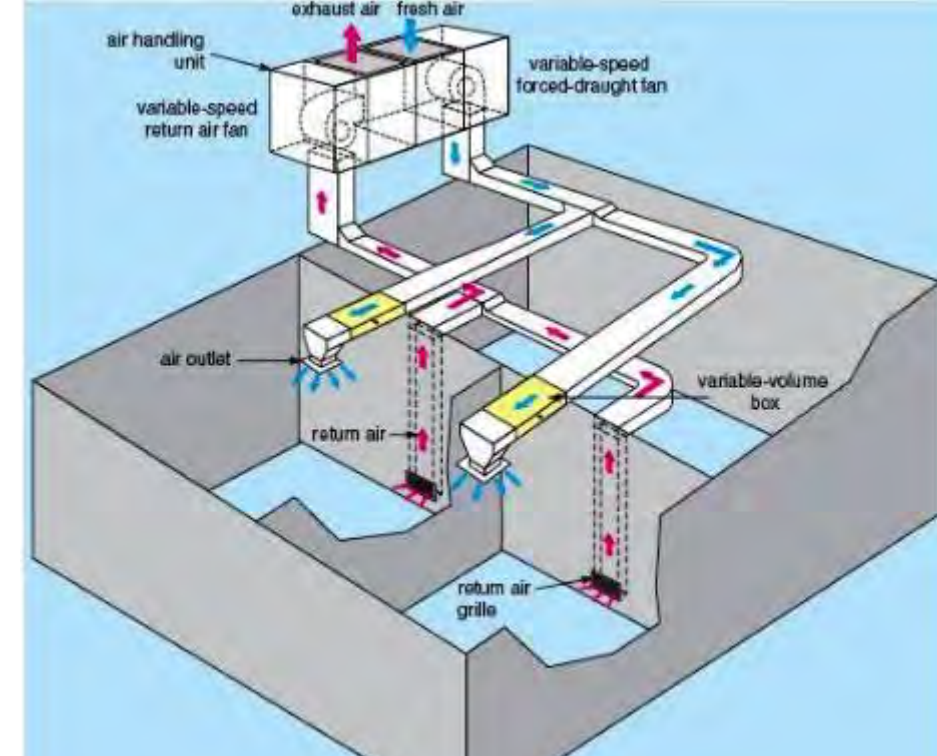
OVERHEAD VARIABLE AIR VOLUME (VAV) (MIXING)

PROS

- Reuse of ductwork and piping in place with minimal rerouting
- Chiller plant and distribution systems or Packaged Direct Expansion (DX) Cooling
- Low maintenance; no condensate drains, fans, or filters at terminal units
- Reduced automatic temperature controls installed costs resulting from reduced control components

CONS

- Noise levels
- Reduced temperature control
- Reduced indoor air quality
- Maintenance of equipment
- Energy consumption would be similar to existing, potentially less provided systems will be operating properly



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AIR HANDLING UNIT SYSTEMS



- Typically used in all HVAC Systems
- Ventilation air is provided from Air Handling Units
- Dedicated Outdoor Air System (DOAS) or Re-Circulation Unit
- Indoor or Outdoor (Rooftop) Units/ Packaged Units, Semi-Custom & Custom Units
- Utilize Energy Recovery for **Increased Energy Efficiency**
- Heating: Hot Water, Gas-Fired or Heat Pump w/ Supplemental Electric Backup
- Cooling: Chilled Water Cooling, DX (Direct Expansion) Air Cooled, Water, or Air Source Heat Pump Cooling
- Filtration: MERV-8 Prefilters, MERV-13 Final Filters
- Improvements: MERV-14, MERV-16 Filters. HEPA Filters for Critical Applications
- Air Disinfection Options: UV-c (aka Germicidal UV, BiPolar Ionization, ElectroStatic Filters)

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HVAC PLANT AND SUPPLEMENTAL SYSTEMS & EQUIPMENT

BOILER PLANT

High efficiency (90%+) gas-fired condensing boilers

- Boiler temperature reset controls
- Variable speed pumps with VFD's

CHILLER PLANT OPTIONS

High efficiency water-cooled chiller

- Air Cooled Chiller
- Water Source Chiller with Cooling Tower or Dry Cooler
- Water Source Heat Pump Chiller/Heater
- Ground Source Heat Pump Chiller/Heater
- Variable speed pumps with VFD's



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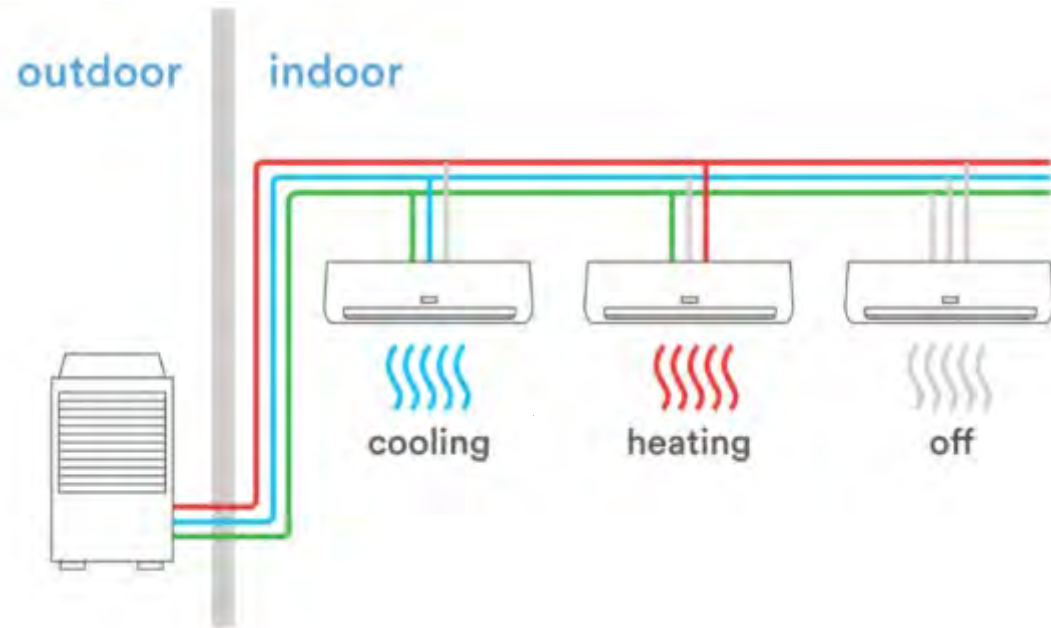
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VARIABLE REFRIGERANT FLOW (VRF) SYSTEM FOSSIL FUEL FREE Air-Source Option

Extracts heat from air, compresses it, and pushes through indoor air-handlers



PROS

More temp. comfort when a unit is provided in each space

High efficiency in cooling mode

Less complexity as it does not require source pumping

Uses less ceiling cavity due to refrigerant piping size

CONS

Outdoor equipment will contribute noise

Compressor replacement every 10 years

Consumes more electricity in heating mode under low outdoor temperatures

Modules share same refrigerant circuit (less redundancy)

Requires an AHU/RTU to provide ventilation to each space



AGENDA

- HVAC, Heating, Ventilation and Air Conditioning Systems
- **Electrical**
- Fire Protection
- Plumbing
- Open Discussion



AGENDA

➤ HVAC, Heating, Ventilation and Air Conditioning

➤ **Electrical**

Executive Summary

Electrical Distribution System

Emergency Power System

Fire Alarm System

Interior/Exterior Lighting System

Communications System

Security System

Recommendations

➤ Fire Protection

➤ Plumbing

➤ Open Discussion



ELECTRICAL SYSTEMS:

Executive Summary:

- Systems and equipment are in fair condition
- All equipment appears to be original from approximately 2002-2003
- 800 amp, 277/480V service
- Generator is in good condition, however, does not backup the elevator, chiller, and panel HP2
- CCTV may be extended
- Extension of existing systems is possible



AGENDA

➤ HVAC, Heating, Ventilation and Air Conditioning

➤ **Electrical**

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ELECTRICAL DISTRIBUTION SYSTEM:

- 800 Ampere, 277/480V, 3 phase, 4 wire
- Wakefield Municipal Gas and Light Dept. pad mounted transformer
- Equipment is in good condition



AGENDA

➤ HVAC, Heating, Ventilation and Air Conditioning

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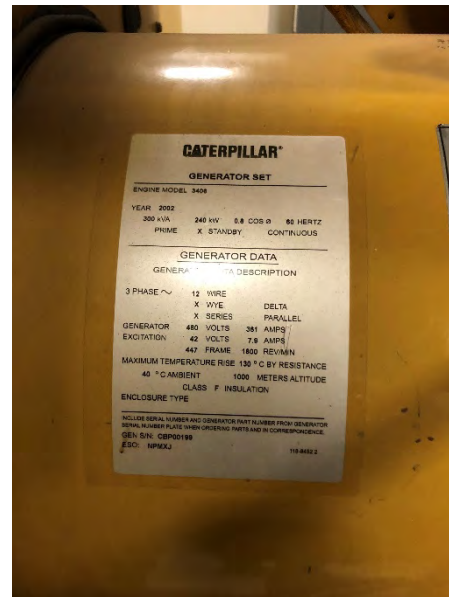
➤ Plumbing

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Emergency Power System:

- 240 KW, 300 KVA natural gas-fired Caterpillar generator in good condition
- ATS#1 has been upgraded within the last few years
- Load on UPS has increased since the 2016 visit from 26% to 45%
- Chiller, elevator and HP2 are not on the emergency generator - *is this an issue?*



AGENDA

➤ HVAC, Heating, Ventilation and Air Conditioning

➤ **Electrical**

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FIRE ALARM SYSTEM:

- Addressable Edwards EST Fire Alarm System is in fair condition
- Local energy masterbox #343
- A BDA system has been installed, no BDA annunciator
- Existing system can be extended
- Location of the fire alarm control panel needs to be reviewed w/ respect to renovation





AGENDA

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➤ **Electrical**

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INTERIOR / EXTERIOR LIGHTING SYSTEM

- Exterior lighting is in good condition, there are some updated exterior wall fixtures that can be re-used by the sallyport
- Condition of fixtures vary and are generally fluorescent or have LED tube replacements
- Garage lighting has been upgraded
- Line voltage switching with some central lighting control manufactured by Touch Plate lighting controls





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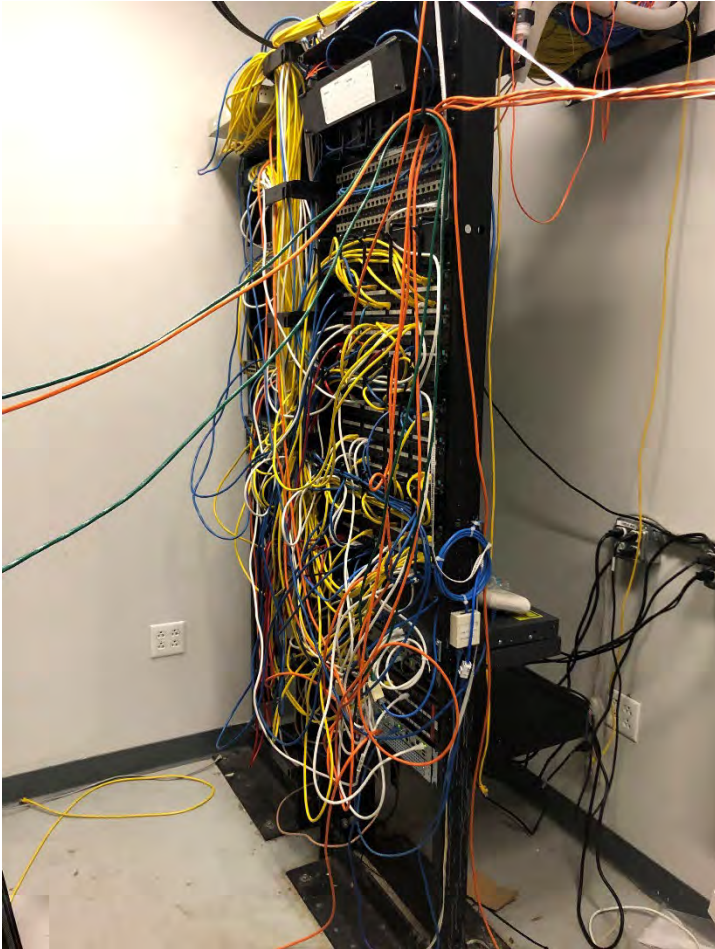
➤ Fire Protection

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COMMUNICATIONS SYSTEM:



- ❖ CAT 6 data wiring (minimal wire management resulting in poor patching)
- ❖ No room for expansion on existing racks
- ❖ Rauland Telecenter ICS for paging
- ❖ Cisco VOIP phones
- ❖ Radio room has had significant upgrades since 2016 visit

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SECURITY SYSTEM:

- CCTV camera upgrades to IP need to determine expansion and storage capacity
- Access control system upgrade from Hirsch to Lenel



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RECOMMENDATIONS



Existing Distribution System:

- reuse in a renovation program

- utility bills will be studied to determine existing demand vs. new load

Emergency System:

- reuse existing system unless load becomes the issue or there is a desire to include the chiller & elevator on the existing generator

- increased generator size would require exterior location due to space constraints

Lighting: new fixtures will be LED

Automated Lighting Control System:

- upgrade existing with up-to-date technology and new spaces connected to it

Fire Alarm System:

- expand to accommodate renovations

Data:

- existing data rack patch cabling should be re-dressed

- new rack will need to be relocated to accommodate new data drops

A vestibule in the fire dept. lobby with access control should be provided to restrict public access to the fire dept. business area. Add two additional proximity readers in the back door to the Training Rm. & to the door to the Apparatus Bay from the elevator lobby.

AGENDA

- HVAC, Heating, Ventilation and Air Conditioning Systems
- Electrical
- **Fire Protection**
- Plumbing
- Open Discussion





AGENDA

- HVAC, Heating, Ventilation and Air Conditioning Systems
- Electrical
- **Fire Protection**

Executive Summary

Existing Conditions

Recommendations (Scope of Work)

- Plumbing
- Open Discussion



FIRE PROTECTION SYSTEMS:

Executive Summary:

- Building is fully protected with an automatic sprinkler system.
- System installed as part of 2003 renovations.
- All equipment appears to be in good working condition.



AGENDA

➤ HVAC, Heating, Ventilation and Air Conditioning Systems

➤ Electrical

➤ **Fire Protection**

Executive Summary

Existing Conditions

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➤ Plumbing

➤ Open Discussion



EXISTING CONDITIONS:

- Existing 6-inch fire service, double check valve assembly and wet alarm valve. Existing backflow preventer & alarm valve to remain.
- 4" Storz Fire Department connection in good condition and accessible.
- Wet type sprinkler system with multiple zones. Each zone controlled by valve assembly. Existing to remain.
- Sprinkler in ceilings are chrome pendent type. Sprinklers to remain in non-renovated areas.





AGENDA

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 - Executive Summary

 - Existing Conditions

 - Recommendations (Scope of Work)***

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FIRE PROTECTION SCOPE OF WORK



- Existing system will be modified & extended to protect renovated areas and new additions
- New sprinklers in building additions to be quick response type
- Existing sprinklers in renovated areas to be replaced w/ new quick response type sprinkler heads



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AGENDA

- HVAC, Heating, Ventilation and Air Conditioning Systems
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- **Plumbing**

 - Executive Summary***

 - Plumbing Fixtures

 - Water System

 - Drainage System

 - Recommendations (Scope of Work)

- Open Discussion



PLUMBING SYSTEMS:

Executive Summary:

- In general, plumbing systems replaced during 2003 building renovation project.
- Plumbing Systems serving the building are cold water, hot water, sanitary, waste and vent system, storm drain piping, and natural gas.
- Municipal sewer and municipal water service the Building.
- Systems appear to be in good condition.



AGENDA

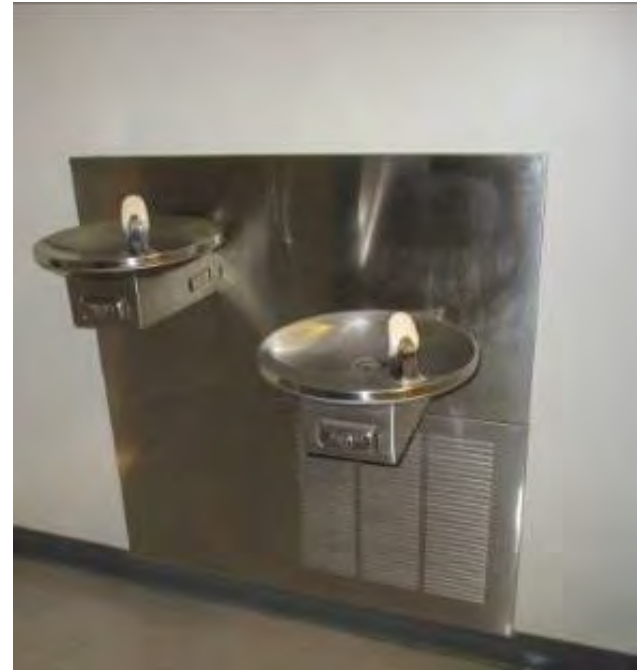
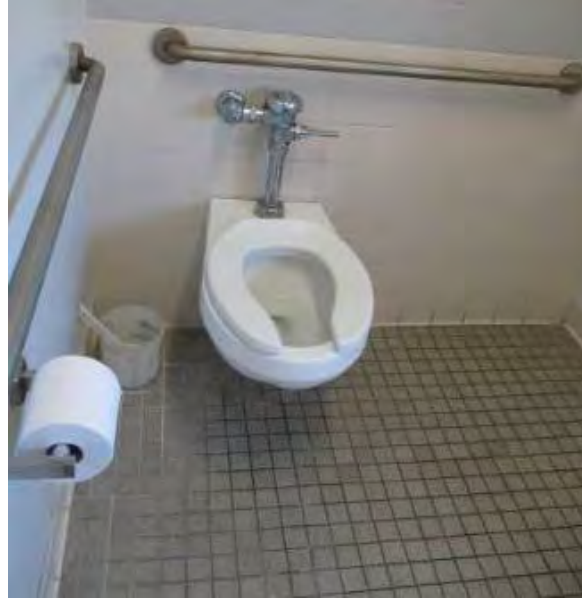
- HVAC, Heating, Ventilation and Air Conditioning Systems
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EXISTING CONDITIONS:

Plumbing Fixtures

- Water closets and urinals have manually operated flush valves.
- Lavatories manual faucets.
- Electric water coolers are wall hung, hi-lo units.
- Janitor's sinks are floor mounted basins with vacuum breaker faucets. Sinks are fitted with soap dispensing systems.





AGENDA

- HVAC, Heating, Ventilation and Air Conditioning Systems
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EXISTING CONDITIONS:

Water System

- Main water service is 4-inch and includes 3-inch meter and backflow preventer.
- Distribution piping is copper tubing with sweat joints. Existing shutoff valves appear to be in good condition.
- Dedicated fill system in Fire Apparatus protected with backflow preventer.
- Domestic water heater is natural gas fired and include two indirect HTP storage tanks. The water heater is original to construction and near the end of its life expectancy. Water heater should be replaced.
- Existing storage tanks and mixing valve shall remain.





AGENDA

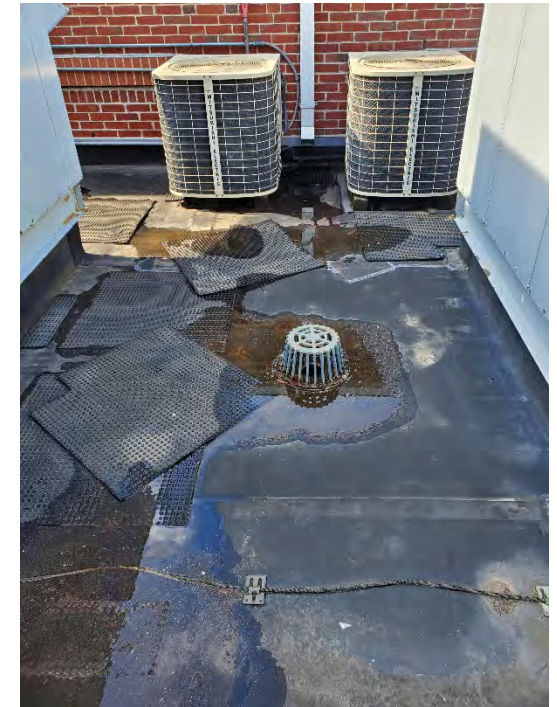
- HVAC, Heating, Ventilation and Air Conditioning Systems
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EXISTING CONDITIONS:

Drainage System:

- Cast iron is used for sanitary and storm drainage.
- Where visible, the cast iron pipe appears to be in good condition.
- In general, the cast iron drainage piping can be reused even in a major renovation where adequately sized for the intended new use.
- Roof drains are provided at all flat roof areas. Roof drains appear to be in good/fair condition.





AGENDA

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PLUMBING SCOPE OF WORK

- New Soil, Waste, & Vent piping system is provided to connect to all new/renovated plumbing fixtures & equipment. New piping will connect to existing building systems.
- Existing domestic water service to remain. New piping will be extended from existing systems to connect to new/renovated plumbing fixtures.
- Ex. domestic hot water heater is near end of useful life. Replace with new high efficiency water heater of similar size/input.
- New plumbing fixtures provided where required. Water conserving fixtures an option.
- Natural gas service to remain. Gas piping to be modified if required.



Manual Flush Valve
1.28 gpf Water Closet



Battery Sensor
Faucet
0.5 GPM outlet



AGENDA

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