AMERESCO

WA State DSHS

Washington State Clean Buildings Standards

Submetering Report and Estimation

Prepared for

Washington State Department of Social and Health Services

April, 2024

AMERESCO

Table of Contents

Section 1

Introduction

The State of Washington Clean Buildings Standards Act, enacted in 2019 and later expanded in 2022, requires the Department of Commerce to develop and implement a building standard for commercial buildings that exceed 20,000 square feet. The intent of the law is to reduce overall energy consumption and improve energy efficiency of existing buildings by requiring each building to meet the expected Energy Use Index (EUI) target, implement an operations and maintenance plan as well as an energy management plan per building. The Department of Commerce created four different compliance deadlines depending on building size, starting in 2026 for buildings over 220,000 square feet, 2027 for buildings over 90,000 square feet, 2028 for buildings over 50,000 sq feet, and 2030 for buildings over 20,000 square feet. For larger campuses, sub-metering is required to separate the individual building's energy use to ensure every building within the campus is reported to the State.

Ameresco audited several campuses and buildings around the State as described in this report. The intent was to determine energy sources entering each building falling under the guidelines described above, in order to locate any existing meters, or determine locations for new ones, so that an EUI can be calculated. An estimated cost to install the required meters and to connect them to the nearest IT gateway is provided. Connecting to a cloud-based software such as Ameresco's AssetPlanner's Energy & Sustainability Module would enable DHSH to continuously monitor energy use and calculate and report an Energy Use Index (EUI) per building.

Scope of Work

1. Locate and document any energy source (electricity, gas, steam, heating water, chilled water) entering building.
2. Determine if an existing meter is already installed or if a new meter is required.
3. Determine what hardware is required to install in order to network data from the existing or new meter to a gateway that can connect to AssetPlanner's E&S Module.
4. Create a rough order of magnitude (ROM) pricing estimate for this work.

Section 2

Campus Summary and Pricing Overview

The table on the following pages provides insight into the type of energy sources that enter each building on each campus that was included in the scope of work. It also indicates if any of those entering energy sources is currently metered or not. The utility providers are noted and a cost estimate broken out by building is documented.

The combined cost estimates broken out by campus are below:

- Fircrest School - $247,146
- Maple Lane - $222,146
- Transitional Care Center of Seattle - $30,306
- Rainier School - $550,602
- Eastern State Hospital - $186,896
- Lakeland Village - $277,320
- Pine Lodge - $68,500
- Yakima Valley School - $68,800
- Western State Hospital - $630,400
- Child Study Treatment Center - $67,168
- McNeil Island - $163,574

Grand Total: $ 2,512,858

Utility Submeter Master Summary

Campus	Building List	Electric	Gas	Steam	Domestic Water	Chilled Water	Heating Water	Exist. Meters?	Elec Util	Gas Utility	Water Utility	SOW - New Meters Installed	Cost Estimate
Fircrest School	4A67-Activity Building And Swimming	Yes	Yes	No	Yes	No	No	G,W	PSE	PSE	Shoreline - N. City Water	Elec, Gas	$40,800
	4A66-200 Apartments	Yes	No	Yes	Yes	No	No	None	PSE	PSE	Shoreline - N. City Water	Elec, Steam, Water	$56,066
	4A65-Administration & Medical Services	Yes	No	Yes	Yes	No	No	None	PSE	PSE	Shoreline - N. City Water	Elec, Steam, Water	$56,066
	4A20-Food Lifeline Warehouse	Yes	Yes	No	Yes	No	No	G,W,E	PSE	PSE	Shoreline - N. City Water	Elec, Gas	$27,114
	4A39-Kitchen & Dining	Yes	Yes	Yes	Yes	No	No	G	PSE	PSE	Shoreline - N. City Water	Elec, Gas, Steam, Water	$67,100
												Campus Total	**$247,146**
Maple Lane Corrections Center	MLCC - 10 - Administration	Yes	No	No	Yes	No	Yes	None	PSE	PSE	Own Well	Elec, Heat Water	$72,494
	MLCC - 15A,B,C - Gym, School, Pool	Yes	No	Yes	Yes	No	No	None	PSE	PSE	Own Well	Elec, Steam	$62,186
	MLCC - 11A,B,C - Multi Service Kitchen, Classroom, Clinic	Yes	No	Yes	Yes	No	No	None	PSE	PSE	Own Well	Elec, Steam	$87,466
												Campus Total	**$222,146**
Transitional Care Center of Seattle	5A01 - Transitional Care Center of Seattle	Yes	Yes	No	Yes	No	No	G,W,E	PSE	PSE	Seattle Public Utilities	Elec, Gas	$30,306
												Campus Total	**$30,306**

Campus	Building List	Electric	Gas	Steam	Domestic Water	Chilled Water	Heating Water	Exist. Meters?	Elec Util	Gas Utility	Water Utility	SOW - New Meters Installed	Cost Estimate
Rainier School	4C02A-Office	Yes	No	Yes	Yes	No	No	None	PSE	None	Own Well	Elec, Steam	$73,000
	4C07-Instructional Services Building (ISB)	Yes	No	No	Yes	No	No	None	PSE	None	Own Well	Elec	$36,868
	4C19-Olsen	Yes	No	Yes	Yes	No	No	W	PSE	None	Own Well	Elec, Steam	$68,714
	4C31-Laundry & Sewing Room	Yes	No	Yes	Yes	No	No	W	PSE	None	Own Well	Elec, Steam	$82,066
	4C36-Central Kitchen	Yes	No	Yes	Yes	No	No	None	PSE	None	Own Well	Elec, Steam	$64,534
	4C40-2010 4Th Avenue	Yes	No	Yes	Yes	No	No	None	PSE	None	Own Well	Elec, Steam	$69,420
	4C50A,B - Spruce and Hemlock	Yes	No	Yes	Yes	No	No	None	PSE	None	Own Well	Elec, Steam	$72,532
	4C51A,B - Fir and Pine	Yes	No	Yes	Yes	No	No	None	PSE	None	Own Well	Elec, Steam	$83,468
												Campus Total	**$550,602**
Eastern State Hospital	3A21-Martin Hall	Yes	Yes	No	Yes	No	No	E,G,W	Avista	Avista	Own Well	Elec, Gas	$54,266
	3A27-Westlake Hospital	Yes	Yes	No	Yes	No	No	E,G,W	Avista	Avista	Own Well	Elec, Gas	$60,266
	3A20A,B,C - Office, Library-Craft-Shop-Café, and Gym	Yes	No	No	Yes	No	Yes	E,W	Avista	Avista	Own Well	Elec	$72,364
												Campus Total	**$186,896**
Lakeland Village	4D30-Laundry	Yes	No	Yes	Yes	No	No	W	Avista	Avista	Own Well	Elec, Steam	$77,120
	4D03-School	Yes	No	Yes	Yes	Yes	No	E,W	Avista	Avista	Own Well	Elec, Steam, Chill Water	$99,400
	4D05 - Habitation Center	Yes	No	Yes	Yes	Yes	No	E,W	Avista	Avista	Own Well	Elec, Steam, Chill Water	$100,800
												Campus Total	**$277,320**
Pine Lodge	7A02-Service Center - E	Yes	Yes	No	Yes	No	No	G,W	Avista	Avista	Own Well	Elec, Gas	$68,500
												Campus Total	**$68,500**

Campus	Building List	Electric	Gas	Steam	Domestic Water	Chilled Water	Heating Water	Exist. Meters?	Elec Util	Gas Utility	Water Utility	SOW - New Meters Installed	Cost Estimate
Yakima Valley School	4E01A - Office, Kitchen, Nursing Facility, & Clinic	Yes	Yes	No	Yes	No	No	E,G,W	Pacific	Cascade	Yakima County	Elec, Gas, Water	$68,800
												Campus Total	**$68,800**
Western State Hospital	3B06-Auditorium	Yes	No	Yes	Yes	No	No	None	Tacoma	PSE	Own Service	Elec, Steam	$68,234
	3B08-Research, Security & Library	Yes	No	Yes	Yes	No	No	None	Tacoma	PSE	Own Service	Elec, Steam	$70,900
	3B09-Office	Yes	No	Yes	Yes	Yes	No	None	Tacoma	PSE	Own Service	Elec, Steam, Chill Water	$269,866
	3B17-Central Campus Wards C-7,8, &9												
	3B18-Administration												
	3B19-Central Campus Wards, C-4, 5 & 6												
	3B20-Central Campus Wards, C-1, 2, & 3												
	3B27-HMH & FSCRP	Yes	No	Yes	Yes	No	No	None	Tacoma	PSE	Own Service	Elec, Steam	$72,400
	3B28-Center For Forensic Services	Yes	No	Yes	Yes (2)	No	No	W	Tacoma	PSE	Own Service	Elec, Steam	$77,166
	3B29-East Campus, Wards E-1 Thru E-8	Yes	No	Yes	Yes (2)	No	No	None	Tacoma	PSE	Own Service	Elec, Steam	$71,834
												Campus Total	**$630,400**
Child Study and Treatment Center	3E01-Administrative Building	Yes	Yes	No	Yes	No	No	None	Tacoma	PSE	Own Service	Elec, Gas	$67,168
												Campus Total	**$67,168**
McNeil Island	6J02-VoTech Building	Yes	No	Yes	Yes	No	No	None	Tacoma		Own Service	Elec, Steam	$77,654
	6J04,5,6 - Health Services, North Housing, and South Housing	Yes	No	Yes	Yes	No	No	W	Tacoma		Own Service	Elec, Steam	$85,920
												Campus Total	**$163,574**

Section 3

Fircrest School Campus

The Fircrest Campus is composed of 35 different buildings. Only 5 of those buildings are over 20,000 square feet and covered in this report. Many of the buildings on this campus are served by a steam powered heating system. The energy sources documented within the buildings assessed are limited to electricity, gas, and steam. Facilities at the Fircrest Campus assessment include:

- Bldg 4A67 – Activity Building and Swimming
- Bldg 4A65 – Administrative and Medical Services
- Bldg 4A66 – 200 Apartments
- Bldg 4A20 – Food Lifeline Warehouse
- Bldg 4A39 – Kitchen and Dining

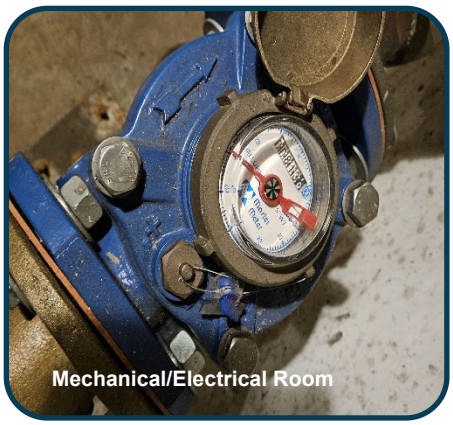
Bldg 4A67 – Activity Building and Swimming

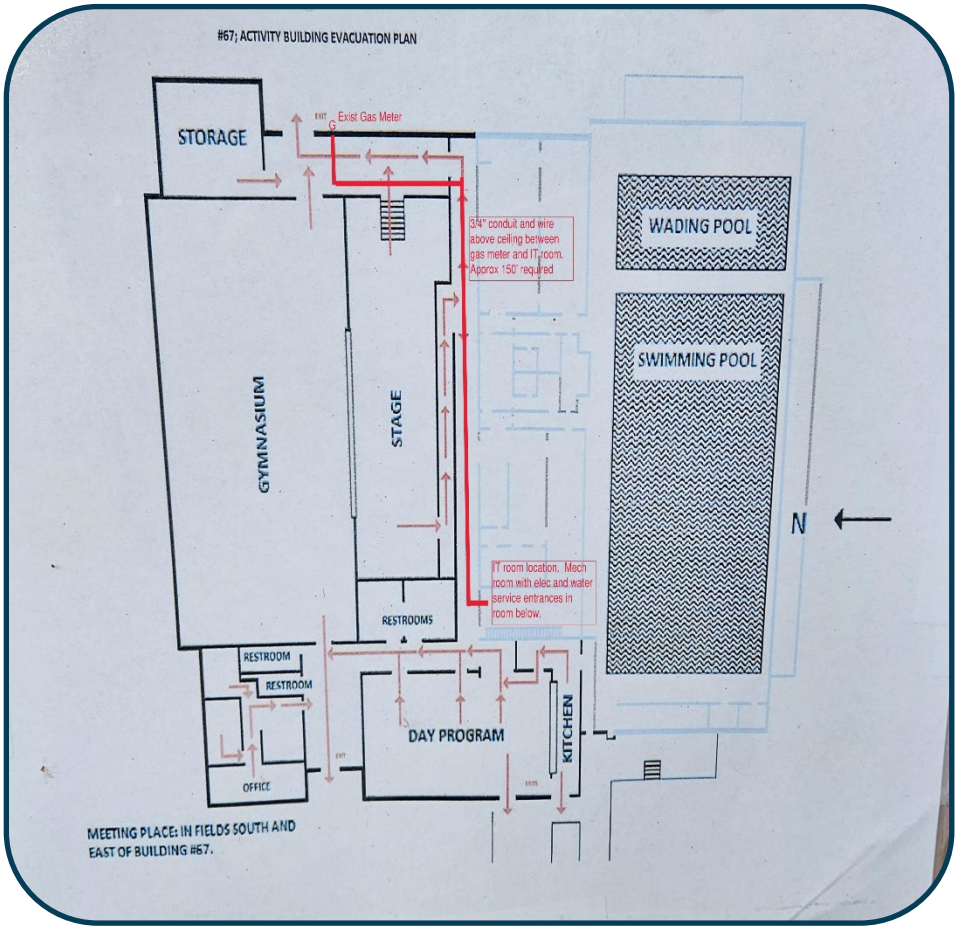
This is a 35,341 square foot multi-use Activities building that includes a gym, a pool, a day program area and some office spaces. There are two energy sources for this building: gas and electric. The gas is currently metered with an existing meter exterior to the building. The main electric service is located in a basement mechanical room in the interior of the building and is not metered.

The domestic water service entrance is also located in the mechanical room adjacent to the main electric gear and is currently metered.

The gas and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located directly above the basement mechanical room, then each gateway connected to the internet via ethernet cable to the nearest network drop.


East Exterior


Mechanical/Electrical Room



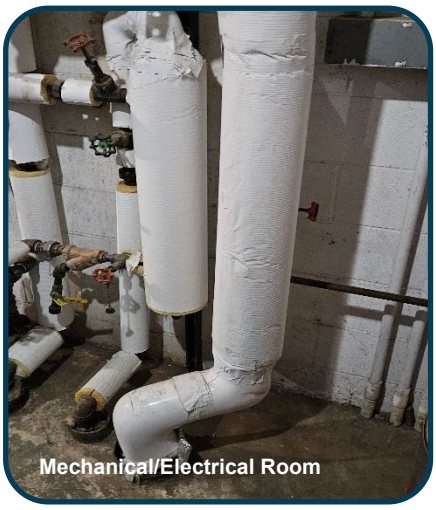
Bldg 4A65 – Administrative and Medical Services


Mechanical/Electrical Room

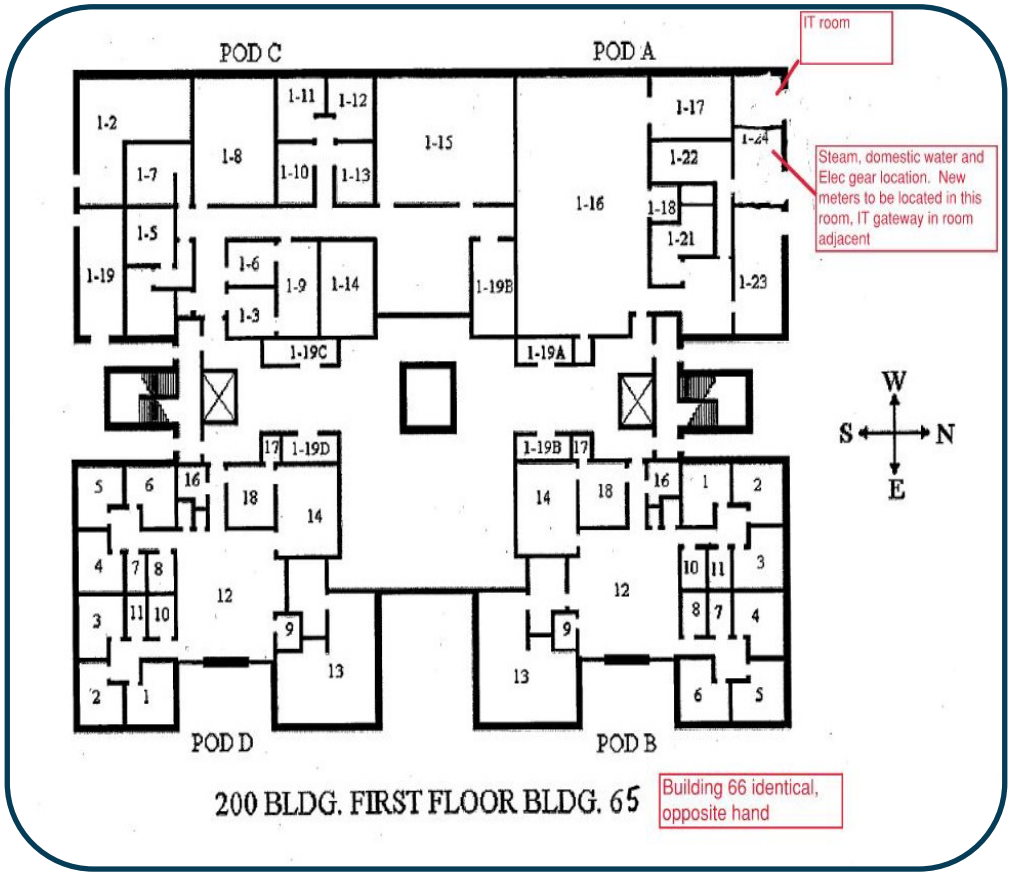
Buildings 65 and 66 are mirrored twins of each other and are both 34,915 square feet. Both buildings have electric, water, and steam energy sources. The service entrances are all co-located; on the NW side of the building for Building 65 and on the SW side of the building for Building 66. There is an IT closet directly adjacent to the service entrances on both buildings. There are currently no meters on either the steam or the electric at either building.

The domestic water service entrances for these buildings are located in the same room as the steam and electric service entrances, and neither is metered.

New steam and electric meters will have to be provided and installed, then hardwired to a network gateway located in the adjacent IT closet. Each gateway would then be connected to the internet via ethernet cable to the nearest network drop.

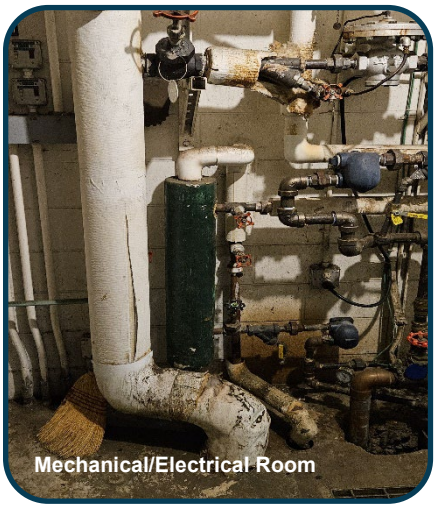

Mechanical/Electrical Room

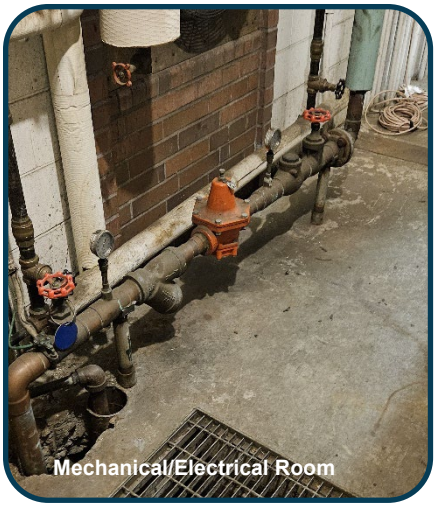

Mechanical/Electrical Room



Bldg 4A66 – 200 Apartments

Mechanical/Electrical Room

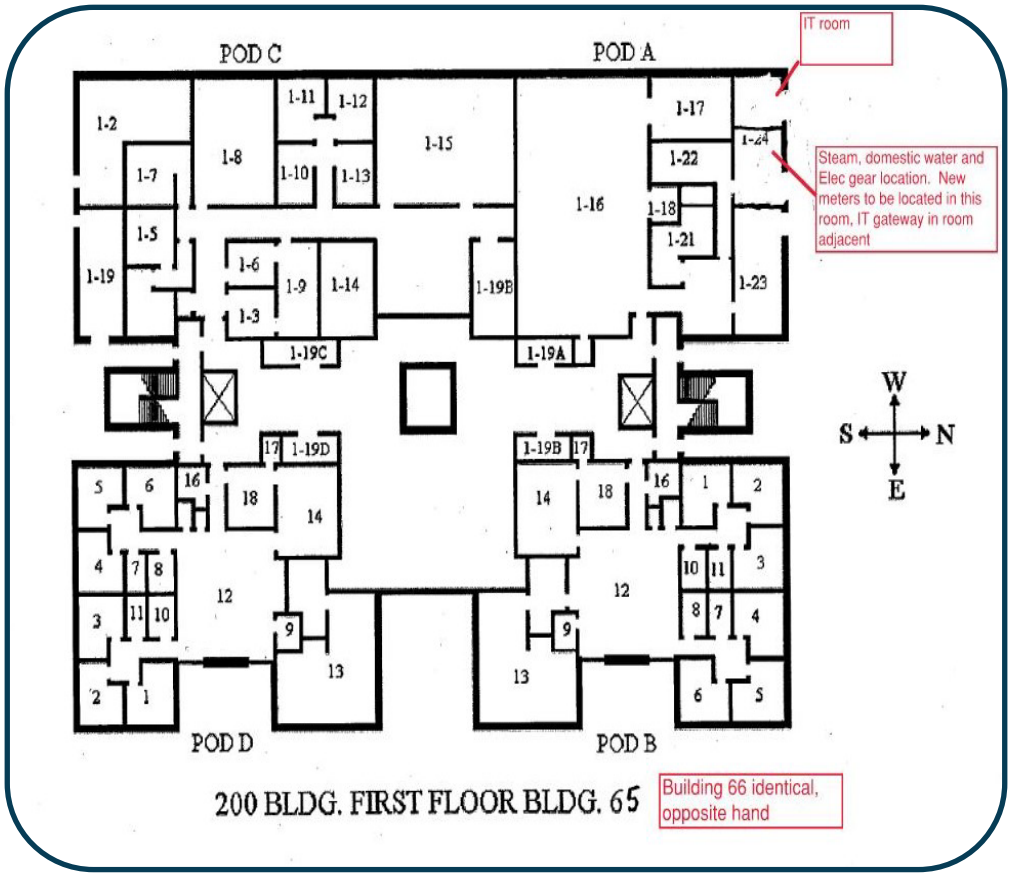

Mechanical/Electrical Room


Mechanical/Electrical Room

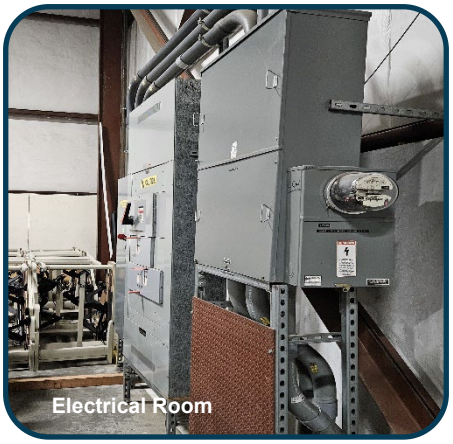
Buildings 65 and 66 are mirrored twins of each other and are both 34,915 square feet. Both buildings have electric, water, and steam energy sources. The service entrances are all co-located; on the NW side of the building for Building 65 and on the SW side of the building for Building 66. There is an IT closet directly adjacent to the service entrances on both buildings. There are currently no meters on either the steam or the electric at either building.

The domestic water service entrances for these buildings are located in the same room as the steam and electric service entrances, and neither is metered.

New steam and electric meters will have to be provided and installed, then hardwired to a network gateway located in the adjacent IT closet. Each gateway would then be connected to the internet via ethernet cable to the nearest network drop.



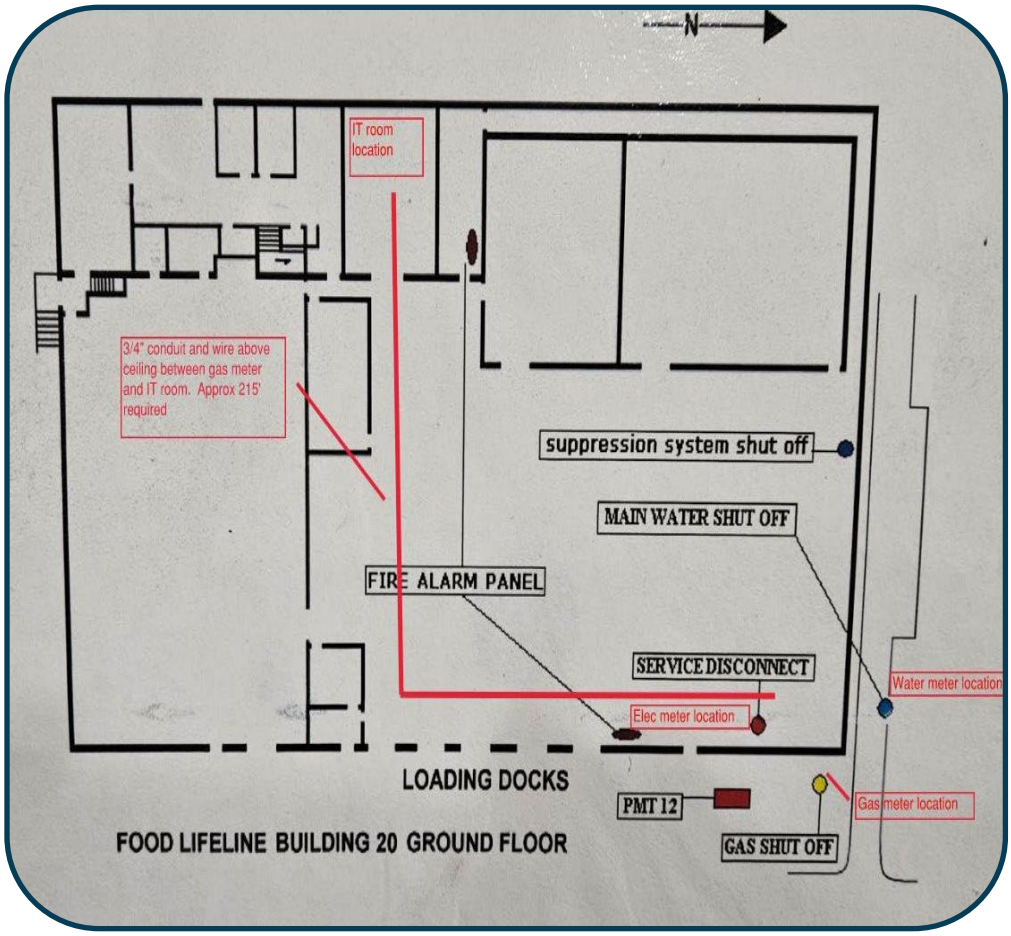
Bldg 4A20 – Food Lifeline Warehouse



Building 20 is a 25,200 square foot warehouse with secured storage. There are gas and electric energy sources for this building, and both are currently metered. The electric meter is interior to the building and the gas meter is exterior, both near the NW corner of the building.

The domestic water service entrance is located near the NW corner of the building and there is an existing UG meter.

The gas and electric meters will be hardwired to a network gateway located in the nearest IT closet, approximately 200' away located near the center of the east exterior wall. Each gateway will be connected to the internet via ethernet cable to the nearest network drop.



Bldg 4A39 – Kitchen and Dining


Near Walk-in Freezer

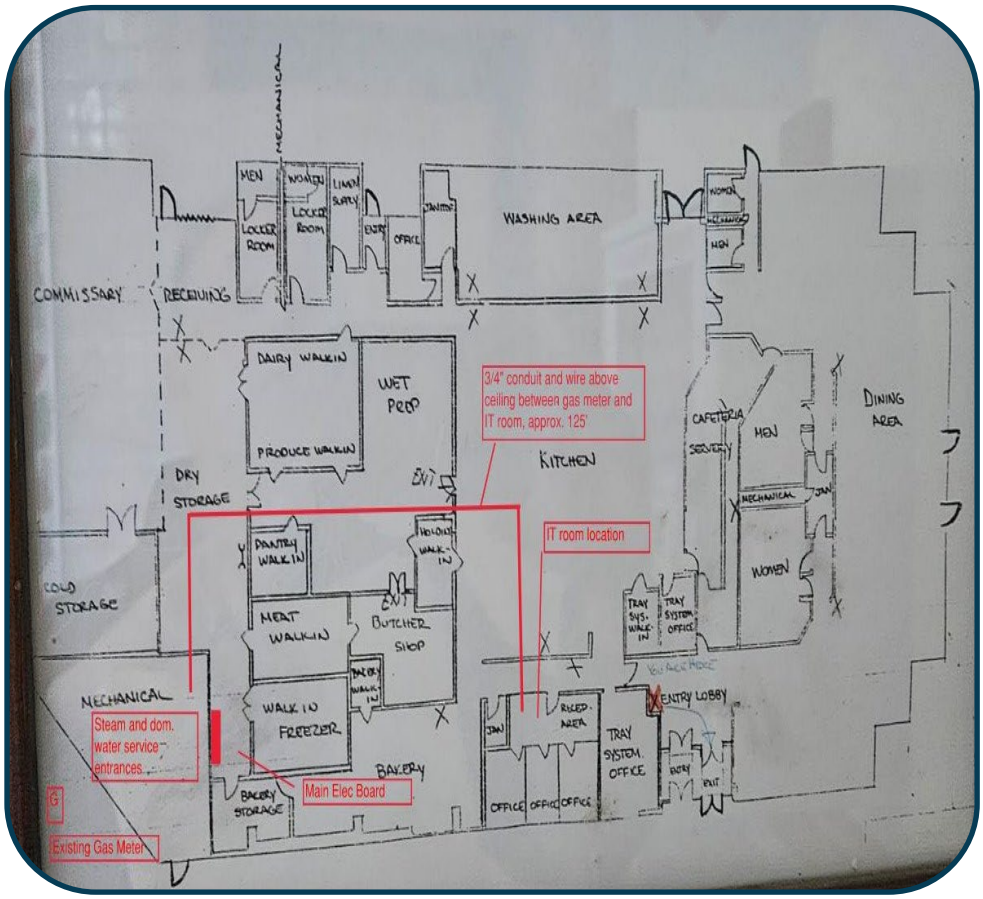

Northwest Exterior


Mechanical Room


Mechanical Room

This is a 21,940 square foot combination kitchen and dining services building. There are three energy sources for this building: gas, steam and electric. The gas is currently metered with an existing meter exterior to the NW corner of the building. The steam and water services enter the building in a mechanical room on the NW corner of the building and are not currently metered. The main electric service is non-metered and located in an interior corridor adjacent to the mechanical room and the nearest IT closet is central to the building, approximately 100' away from the meter locations.

New steam and electric meters will have to be provided and installed. These meters and the existing gas meter would be hardwired to a network gateway located in the nearest IT closet. Each gateway would then be connected to the internet via ethernet cable to the nearest network drop.



Section 4

Transitional Care Center of Seattle

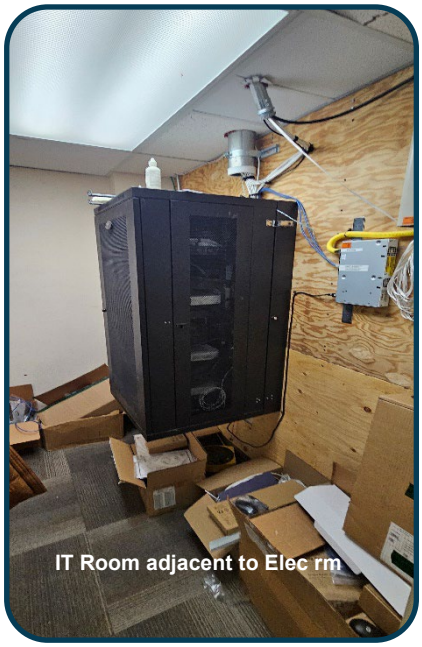
The Transitional Care Center of Seattle (TCCS) is composed of a single three-story building. The energy sources documented within the building's assessment are limited to electricity and gas. Facilities at this campus assessment include:

- Bldg 5A01 – Transitional Care Center of Seattle

Bldg 5A01 – Transitional Care Center of Seattle


South Exterior – Elec Meter

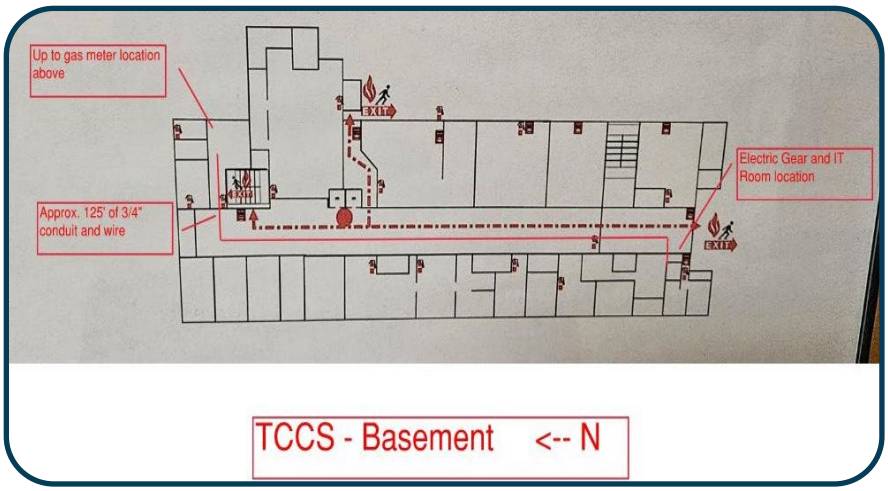

East Exterior – gas meter

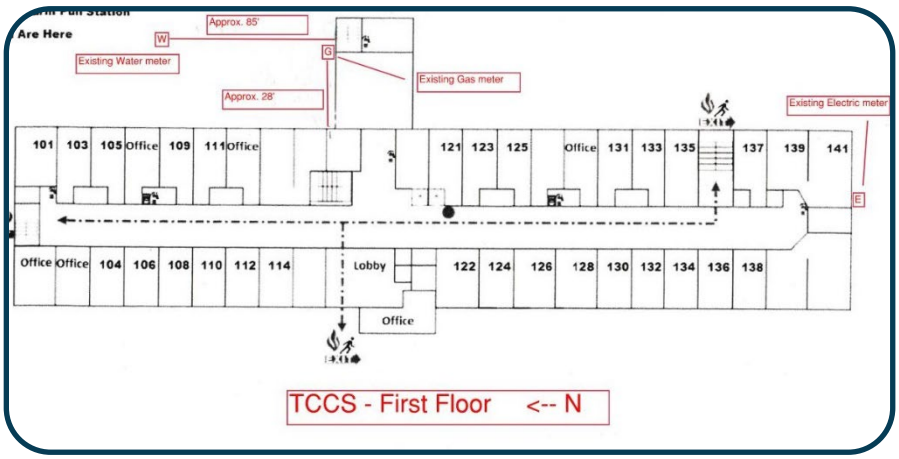

IT Room adjacent to Elec rm

This is a 66,402 square foot, 165 bed, skilled nursing facility. There are two energy sources for this building: gas and electric. The gas is currently metered with an existing exterior meter on the east side of the building. The main electric service is located in a basement electric room on the south end of the building. It is metered with a main meter on the exterior south wall of the building in a locked enclosure.

The domestic water is currently metered in an underground pit located in the grassy courtyard on the east side of the building. Both the gas and domestic water enter the building in a basement mechanical room centrally located on the east side.

The gas and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in the basement electric room, then each gateway connected to the internet via ethernet cable to the nearest network drop.





Section 5

Maple Lane Campus

The Maple Lane Campus is composed of 37 different buildings. Only 3 of those buildings are over 20,000 square feet and covered in this report. Many of the buildings on this campus are served by an older steam powered heating central plant or a newer heating water central plant. The energy sources documented within the buildings assessed are limited to electricity, heating water, and steam. Facilities at the Maple Lane Campus assessment include:

- Bldg 3C10 – Administration
- Bldg 3C11A,C,D – Kitchen-Dining, Health-Dental Clinic, and Vocational Workshops
- Bldg 3C15A,B,C – Gym, School, and Pool

Bldg 3C10 – Administration

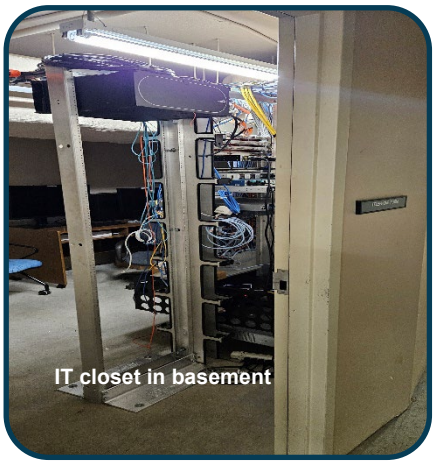

Electrical Gear in basement

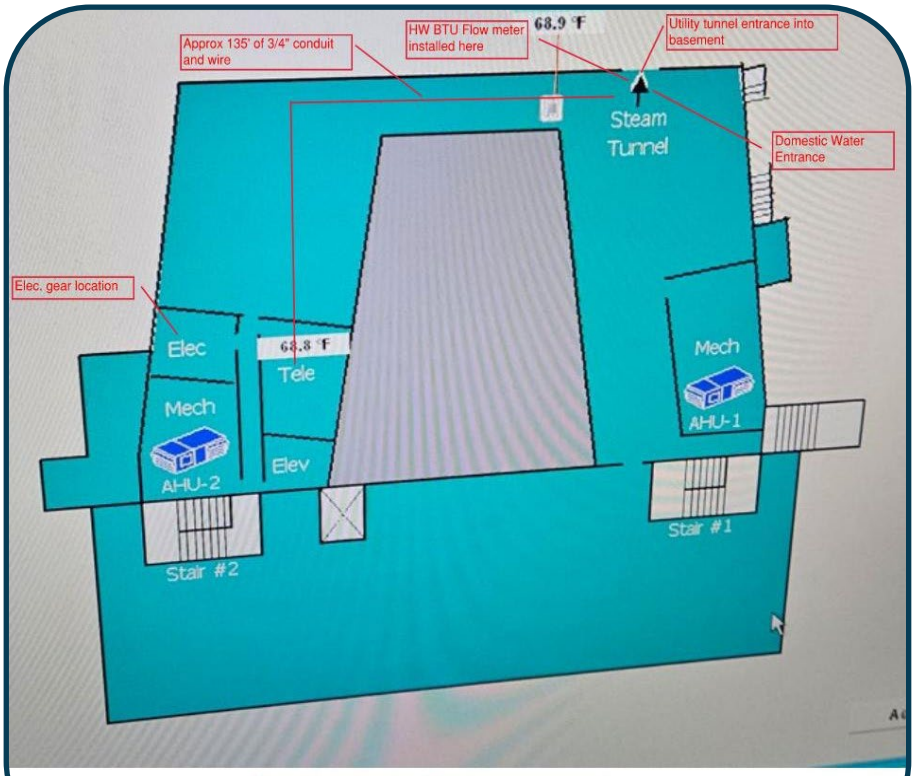
This is a 22,922 square foot Administration building with offices and support areas. There are two energy sources for this building: heating water and electric. The heating water comes through a utility tunnel from an adjacent basement service area. The main electric service is located in the same adjacent service area and feeds through the same utility tunnel which enters through the SW wall into the basement of the building and into an electric room. Neither of these services are currently submetered.

The domestic water service entrance is in the basement and comes through the same utility tunnel described above and it is not metered.

A new BTU flow meter will be installed in the basement where the heating water piping enters the building. A new electric meter will be installed in the main elec. gear located in the basement electric room across the hall from the IT room. These meters will be hardwired to a network gateway located in the nearest IT closet, which is located in the basement approximately 135' away from the utility tunnel entrance, then each gateway connected to the internet via ethernet cable to the nearest network drop.


Utility Tunnel Entrance into Building 10 basement


IT closet in basement

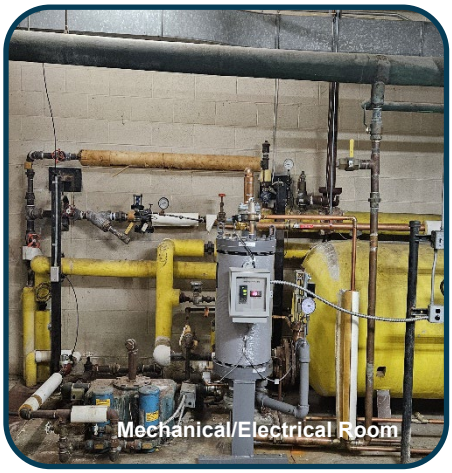


Building 10 Basement

Bldg 3C11A,C,D – Kitchen-Dining, Health-Dental Clinic, and Vocational Workshops


Mechanical/Electrical Room

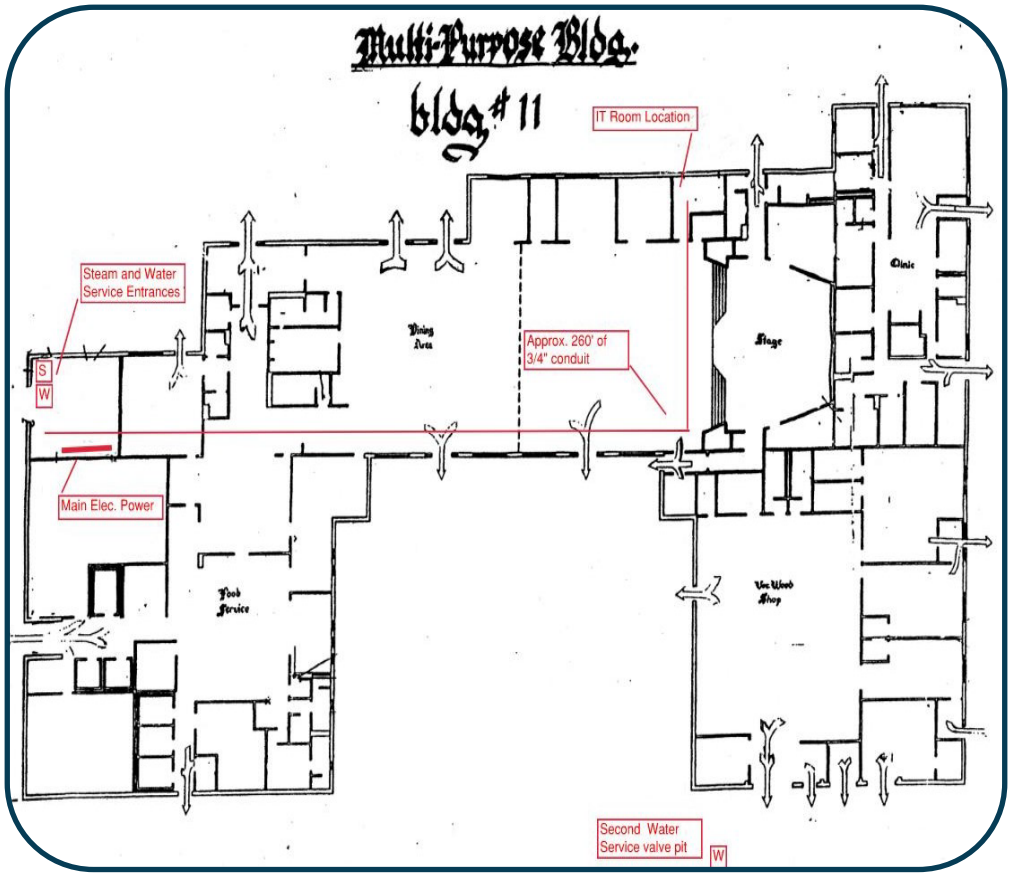

Mechanical/Electrical Room


Mechanical/Electrical Room

This is a 28,950 square foot multipurpose building containing classrooms, a kitchen, and a clinic. The building has electric and steam energy sources. The service entrance for the steam and the main electrical gear are both located in a mechanical room on the NW corner of the building. Neither of these utilities is currently submetered.

The first domestic water service entrance for this building is also located in the mechanical room on the NW corner of the building and is not metered. There is also a second water service pit located near the SE face of the building.

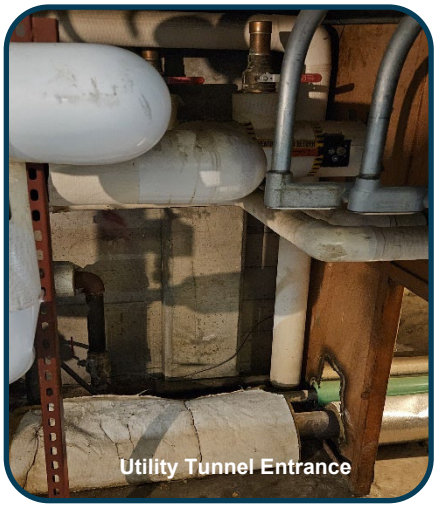
New steam and electric meters will have to be provided and installed, then hardwired to a network gateway located in the nearest IT closet which is approximately 260' away. Each gateway would then be connected to the internet via ethernet cable to the nearest network drop.



Bldg 3C15A,B,C – Gym, School, and Pool


East Electrical Room


West Electrical Room

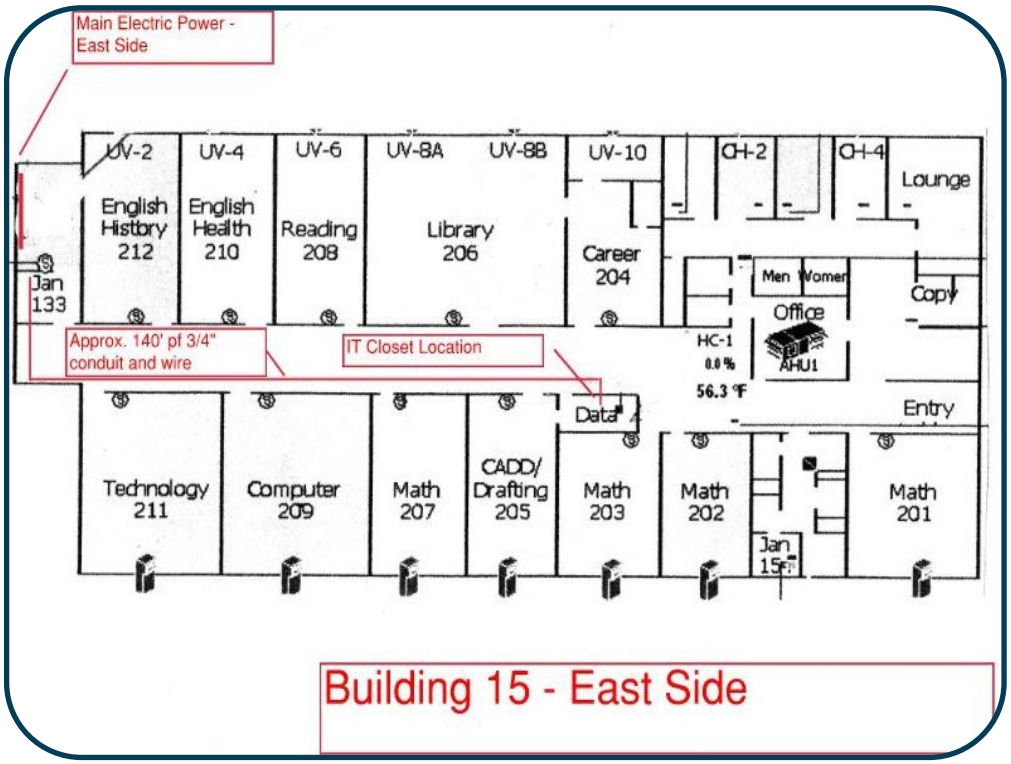

Utility Tunnel Entrance

*Additional Schematic in Appendix

Building 15 is a 34,049 square foot building containing classrooms, a gym, and a pool. The building has two electric sources and a steam energy source. The service entrance for the steam is through a utility tunnel that passes under the main lobby on the west side of the building. It enters into a basement mechanical space under the lobby and adjacent to the gym where it is converted into heating water. The electric service enters into the west side of the building in a gear room on the far SW corner of the building. The service for the east side enters into a main gear room centrally located on the north side of the building. Neither the steam nor electric is currently metered.

There are three domestic water service entrances for this building, all located on the north side of the building, and none are currently metered. It should be noted that this campus has its own wells that produce domestic water.

A new steam meter and two electric meters will be provided and installed, then hardwired to a network gateway located in the nearest IT closet. The closest IT closet to the proposed steam meter location is approximately 80’ away. The closest IT closet to the west side electric room is approximately 170’ away. The closest IT closet to the east side electric room is approximately 140’ away. Each gateway would then be connected to the internet via ethernet cable to the nearest network drop.



Section 6

Rainier School Campus

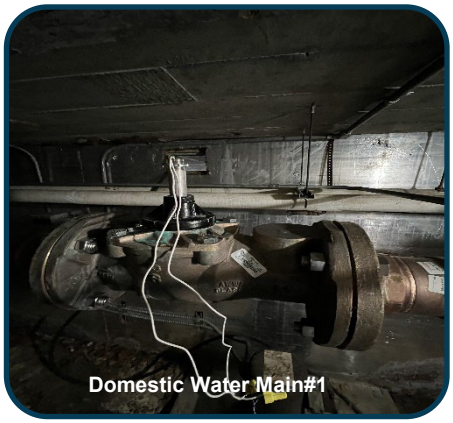
The Rainier Campus is composed of 78 different buildings. Only 8 of those buildings are over 20,000 square feet and covered in this report. Many of the buildings on this campus are served by a steam powered central heating plant. The energy sources documented within the buildings assessed are limited to electricity and steam. Facilities at the Rainier School Campus assessment include:

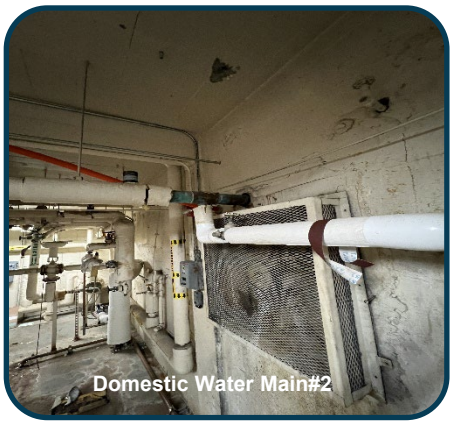
- Bldg 4C02 – RHC
- Bldg 4C07 – Instructional Services Building (ISB)
- Bldg 4C19 – Olsen
- Bldg 4C31 – Laundry & Sewing Room
- Bldg 4C36 – Central Kitchen
- Bldg 4C40 – 2021 4th Avenue
- Bldg 4C50A & 4C50B – Spruce and Hemlock
- Bldg 4C51A & 4C51B – Fir and Pine

Bldg 4C02 - RHC


Main Electrical Room MDP


Steam Main Doghouse

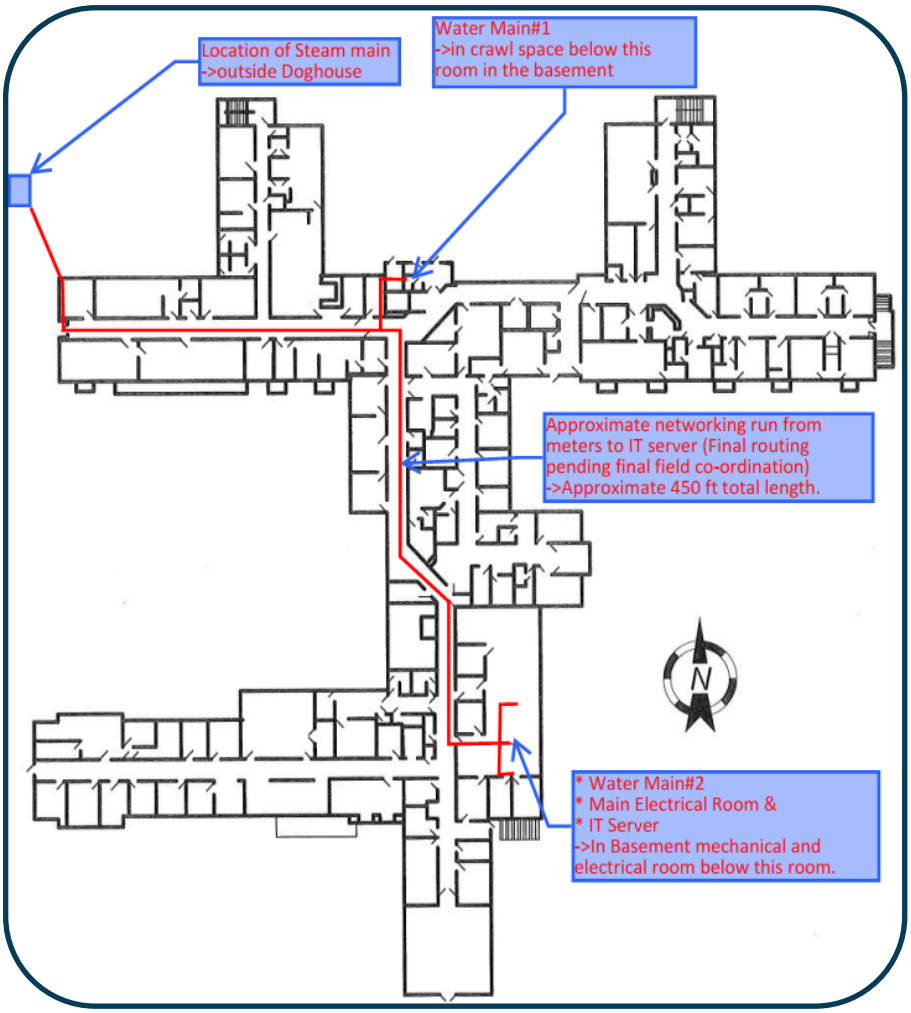

Domestic Water Main#1


Domestic Water Main#2

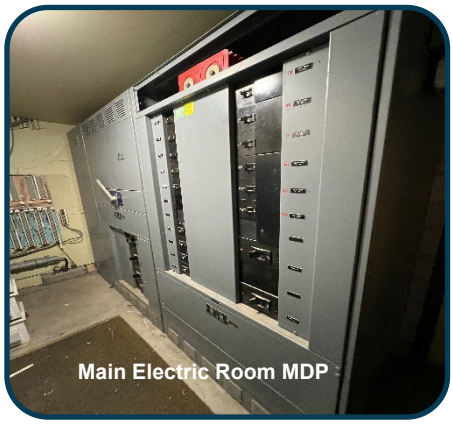
This is a 29,000 square foot multipurpose Office building. There are two energy sources for this building: steam and electric. Neither the steam nor electric at these building is sub metered currently. The main steam line for the building comes from the campus central steam plant and the service entrance is in a “doghouse” outside the building. The main electric service MDP is in the basement electrical room #073.

The building has two domestic water service entrances located in the basement and is also currently not metered. Main#1 has a meter base installed but does not have a meter installed.

The steam, electric and domestic water meters will be hardwired to a network gateway located in the nearest IT closet, which is located right outside the electrical room, then each gateway connected to the internet via ethernet cable to the nearest network drop.



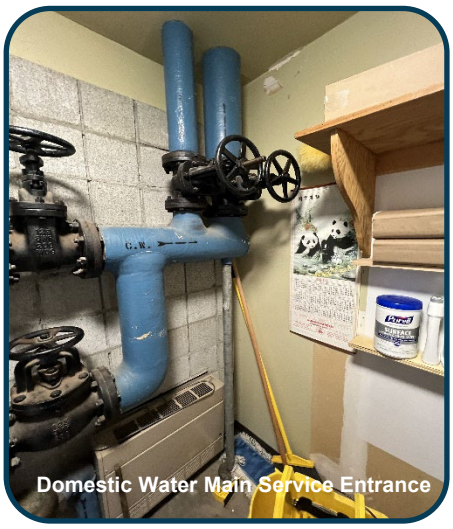
Bldg 4C07 – Instructional Services Building (ISB)


Main Electric Room MDP

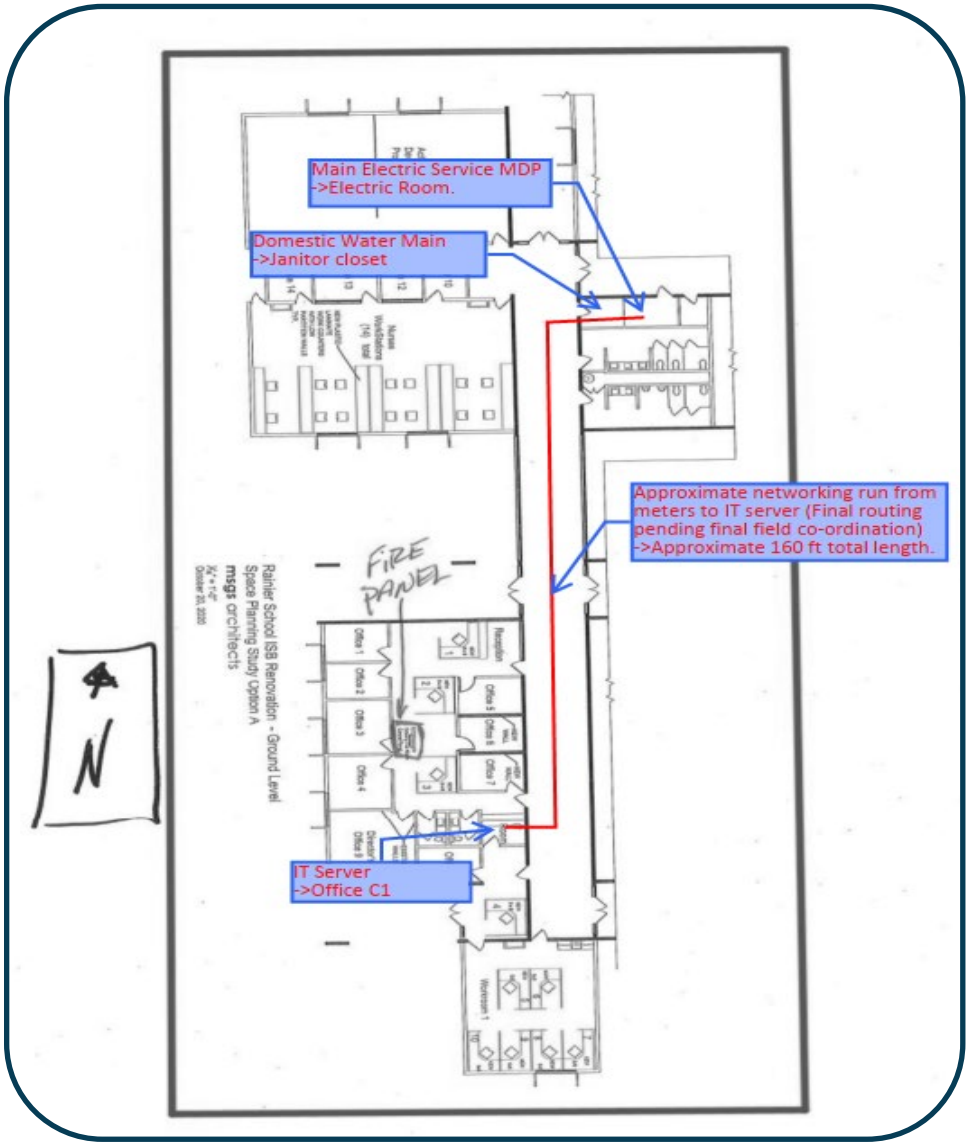
This is a 31,826 square foot multipurpose Office building. There is only one energy source for this building (electric) which is not sub metered currently. The main electric service MDP is in the 1st floor electrical room.

The building has one domestic water service entrance located on 1st floor and is also currently not metered.

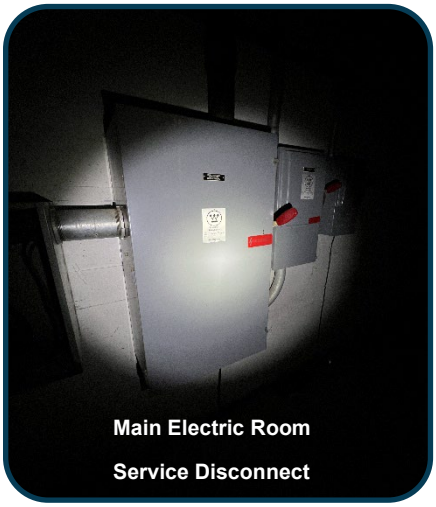
The electric and domestic water meters will be hardwired to a network gateway located in the nearest IT closet, which is located on the 1st floor, then each gateway connected to the internet via ethernet cable to the nearest network drop.


Domestic Water Main Service Entrance


IT Server in office C1



Bldg 4C19 – Olsen



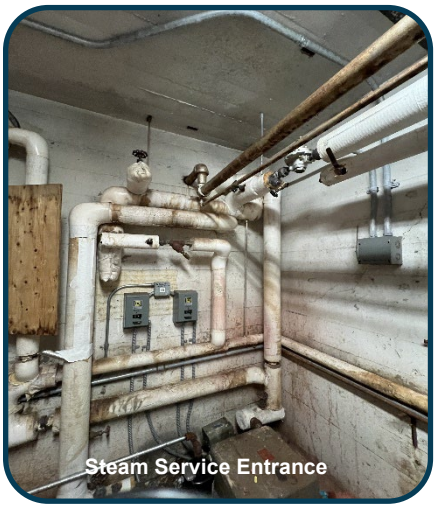
Main Electric Room

Service Disconnect

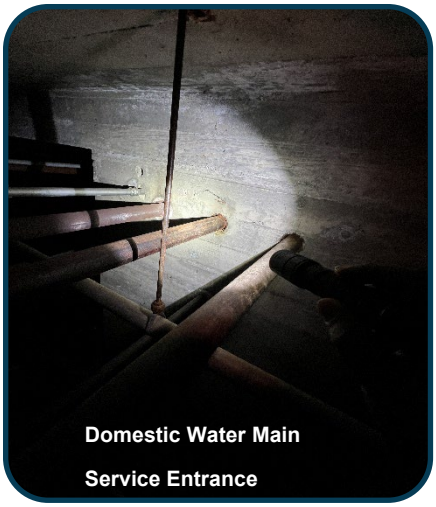
This is a 20,676 square foot multipurpose Office building. There are two energy sources for this building: steam and electric. Neither steam nor electric at these building is sub metered currently. The main steam line for the building comes from the campus central steam plant and service entrance is in the basement mechanical room. The main electric service MDP is in the basement electrical room next to the mechanical room.

The building has one domestic water service entrance located in basement and is also currently not metered.

The steam, electric and domestic water meters will be hardwired to a network gateway located in the nearest IT closet, which is located on the 1st floor, then each gateway connected to the internet via ethernet cable to the nearest network drop.

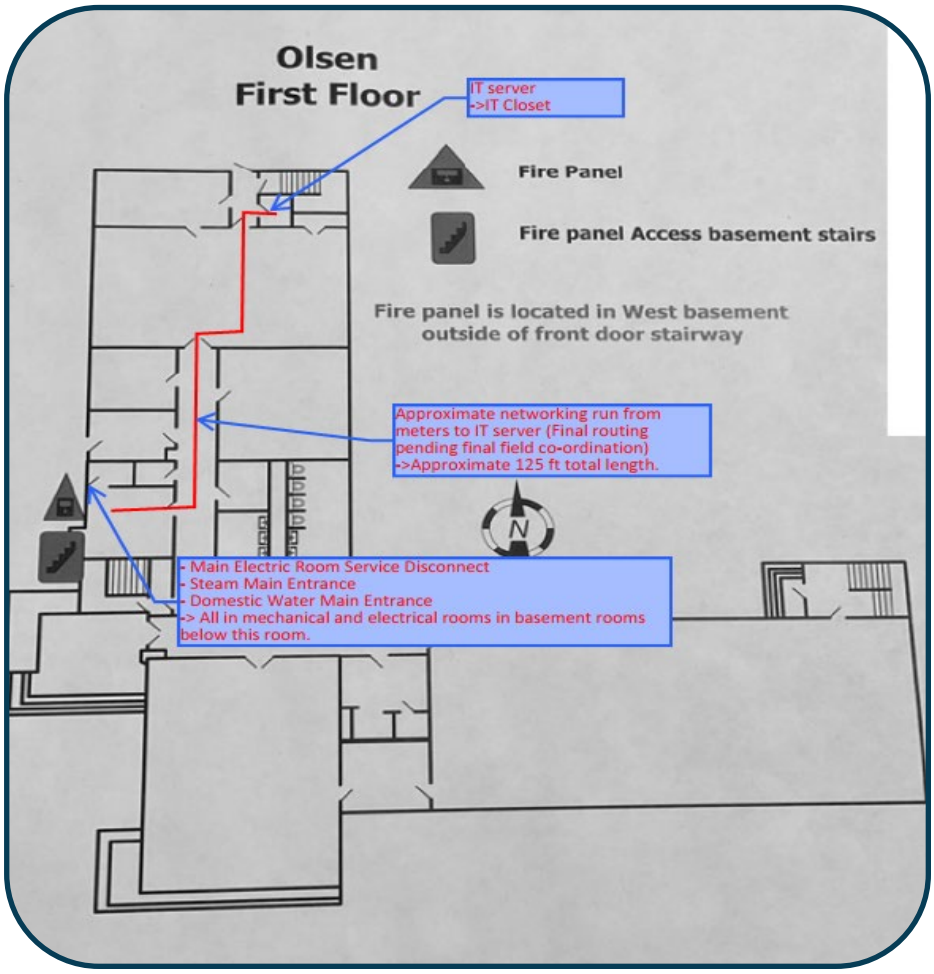


Steam Service Entrance



Domestic Water Main

Service Entrance

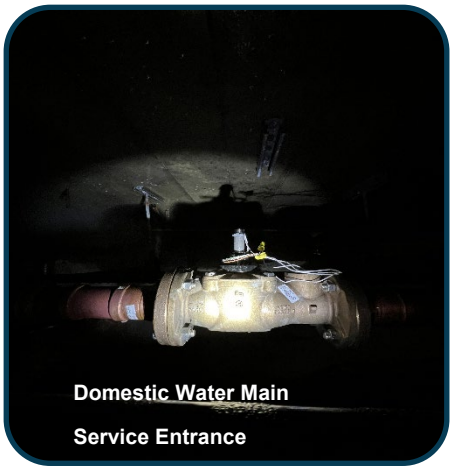


Bldg 4C31 – Laundry & Sewing

Main Electric Room

Service MLO MDP

Steam Service Entrance



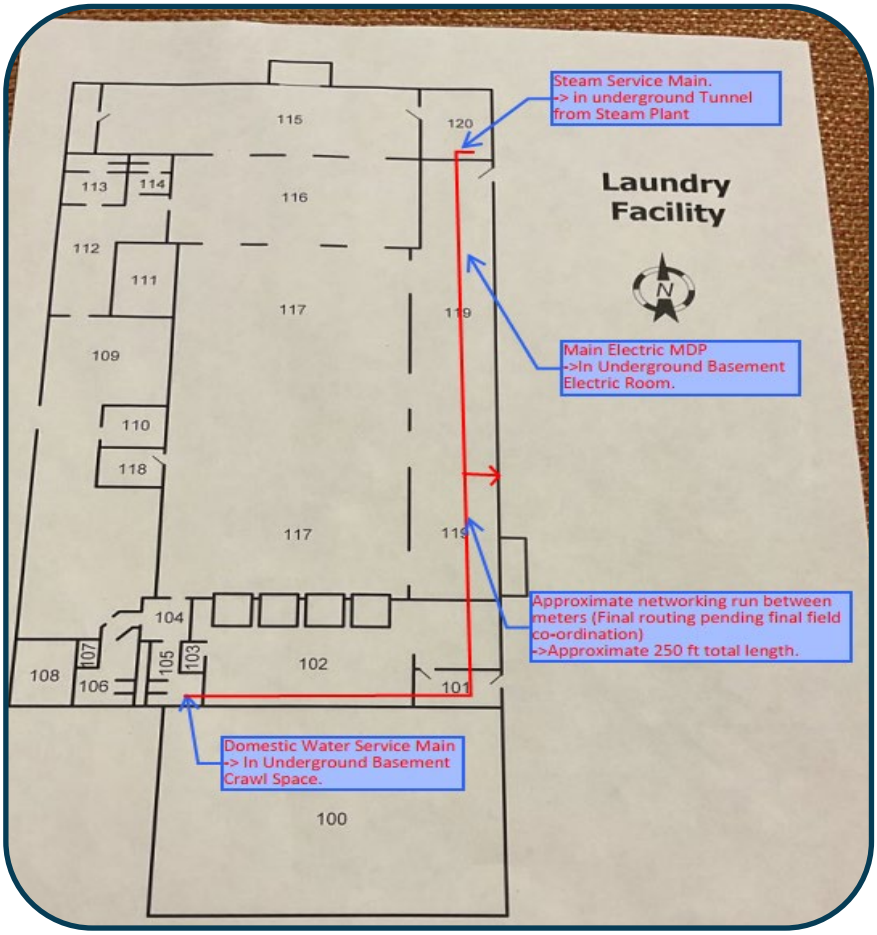
Domestic Water Main

Service Entrance

This is a 23,423 square foot Laundry & Sewing building. There are two energy sources for this building: steam and electric. Neither steam nor electric at these building is sub metered currently. The main steam line for the building comes from the campus central steam plant and service entrance is in the basement tunnel that needs to be accessed through the central plant tunnel. The main electric service MDP is in the underground basement electrical room which needs to be accessed through an access grill located on the east side of the building.

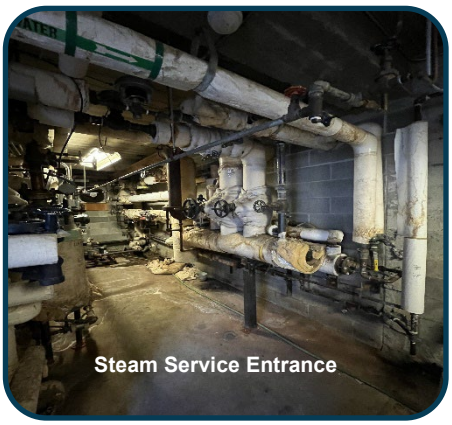
The building has one domestic water service entrance located in underground basement and is also currently not metered. This space needs to be accessed through an access grill located in the laundry room.

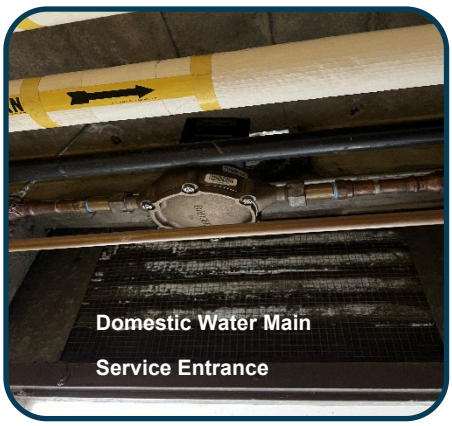
Currently there is no IT server connectivity to the building. The steam, electric and domestic water meters will need to hardwire to a network gateway located in an adjacent building. Then each gateway connected to the internet via ethernet cable to the nearest network drop.



Bldg 4C36 – Central Kitchen


Main Electric Room Service MDP


Steam Service Entrance


Domestic Water Main

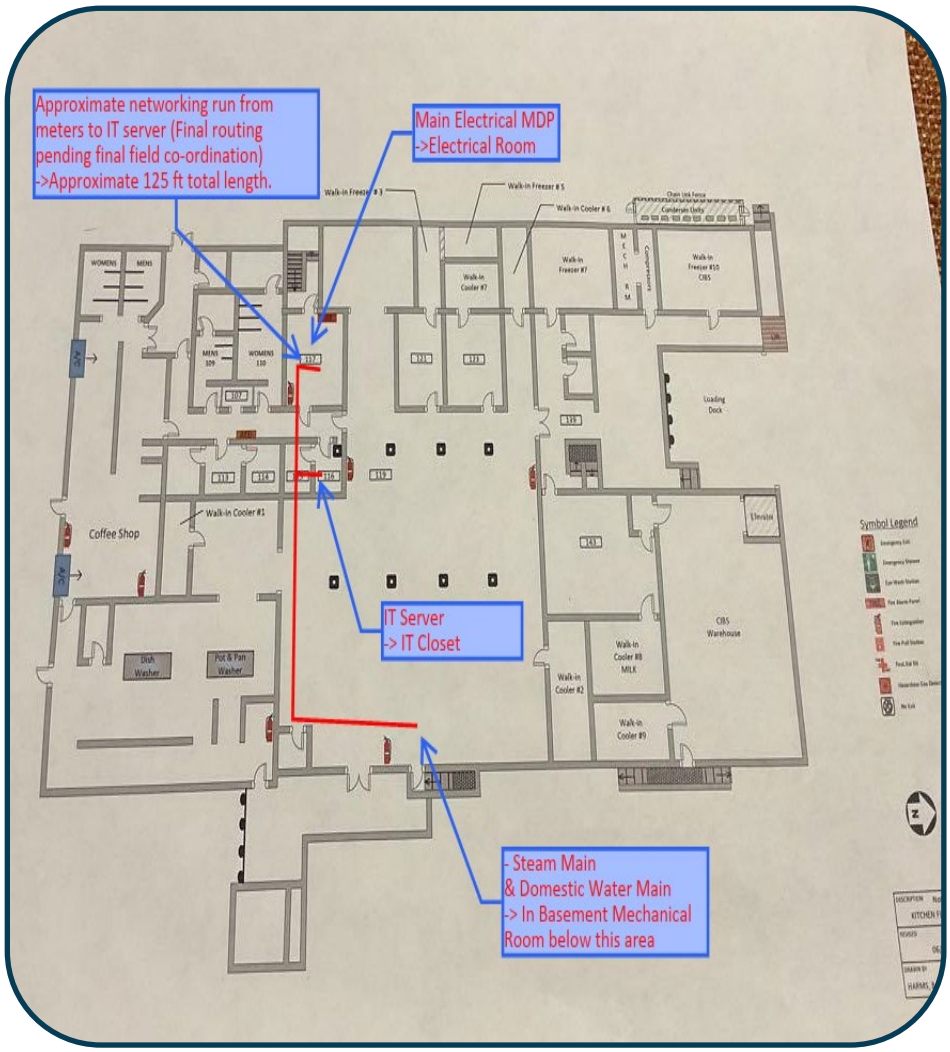
Service Entrance


Network IT Closet

This is a 23,803 square foot multipurpose cafeteria/kitchen and office building. There are two energy sources for this building: steam and electric. Neither steam nor electric at these building is sub metered currently. The main steam line for the building comes from the campus central steam plant and service entrance is in the basement mechanical room. The main electric service MDP is in the 1st floor electrical room.

The building has one domestic water service entrance located in basement mechanical room and is also currently not metered.

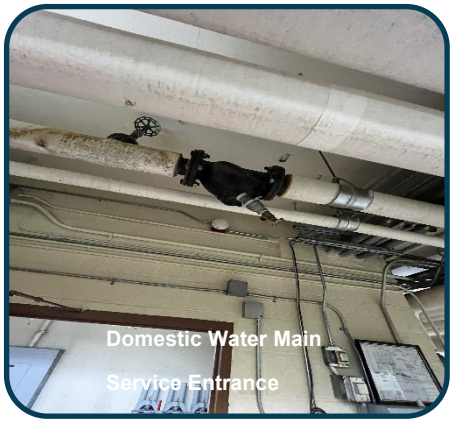
The steam, electric and domestic water meters will be hardwired to a network gateway located in the nearest IT closet, which is located on the 1st floor, then each gateway connected to the internet via ethernet cable to the nearest network drop.



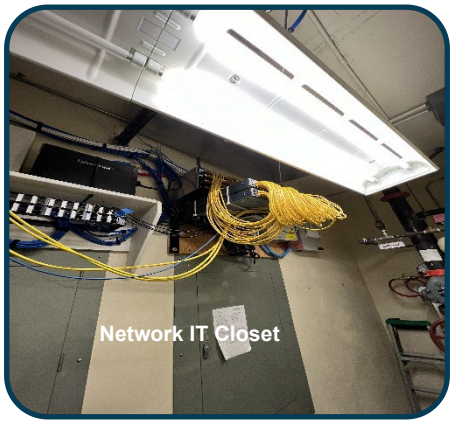
Bldg 4C40 – 2010 4th Avenue


Main Electric Room Service MDP


Steam Service Entrance


Domestic Water Main

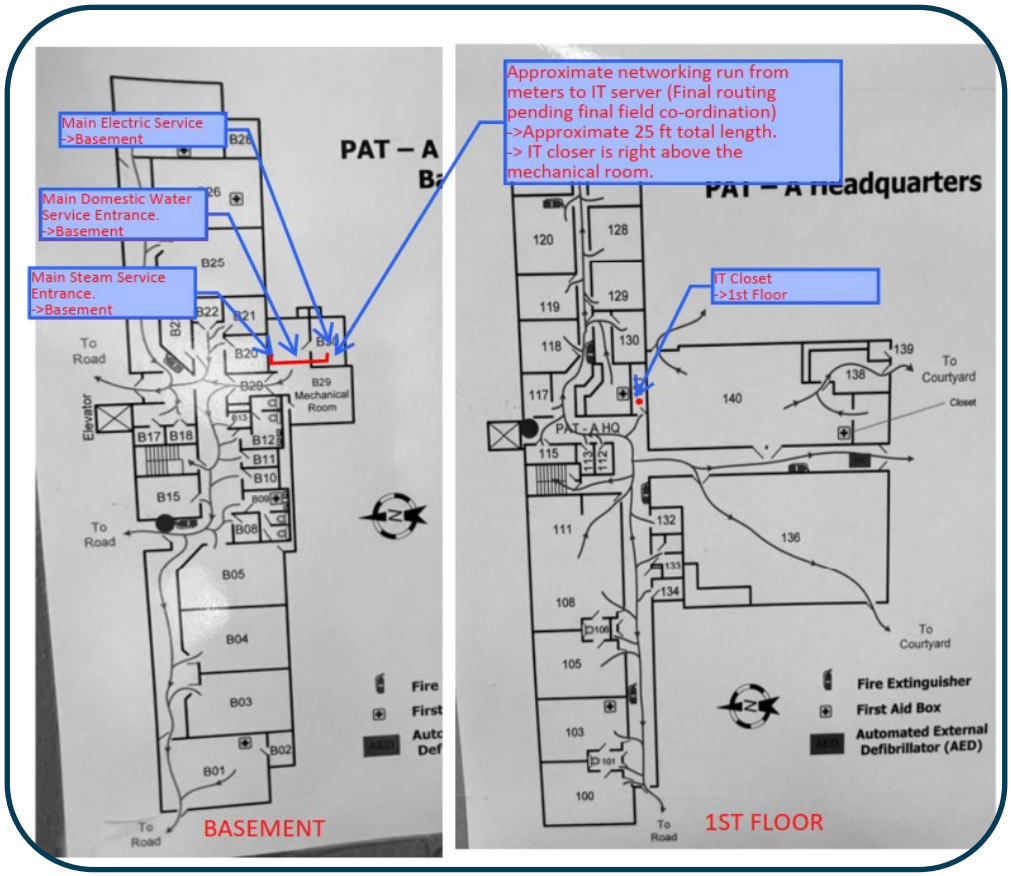
Service Entrance


Network IT Closet

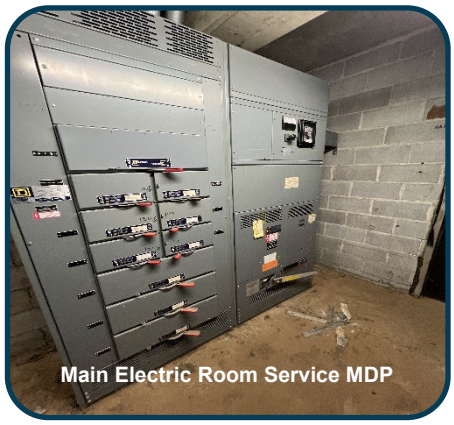
This is a 40,407 square foot multipurpose office building. There are two energy sources for this building: steam and electric. Neither steam nor electric at these building is sub metered currently. The main steam line for the building comes from the campus central steam plant and service entrance is in the basement mechanical room. The main electric service MDP is in the Basement electrical room.

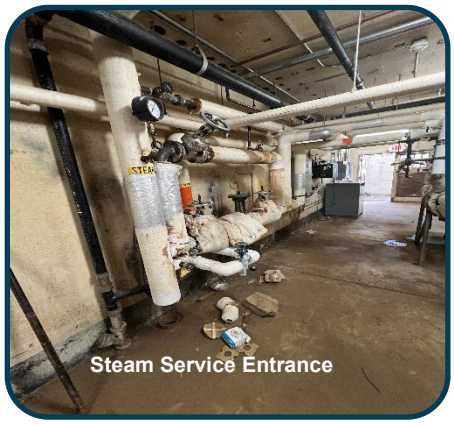
The building has one domestic water service entrance located in basement mechanical room and is also currently not metered.

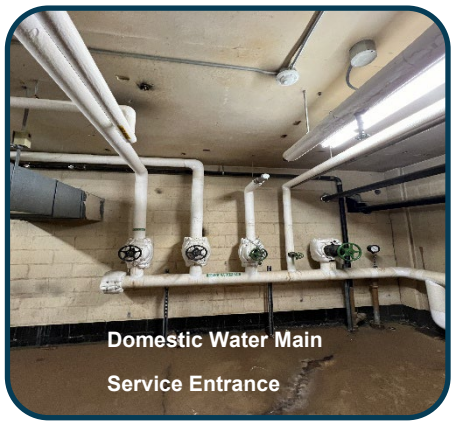
The steam, electric and domestic water meters will be hardwired to a network gateway located in the nearest IT closet, which is located on the 1st floor, then each gateway connected to the internet via ethernet cable to the nearest network drop.



Bldg 4C50A,B – Spruce & Hemlock


Main Electric Room Service MDP


Steam Service Entrance


Domestic Water Main

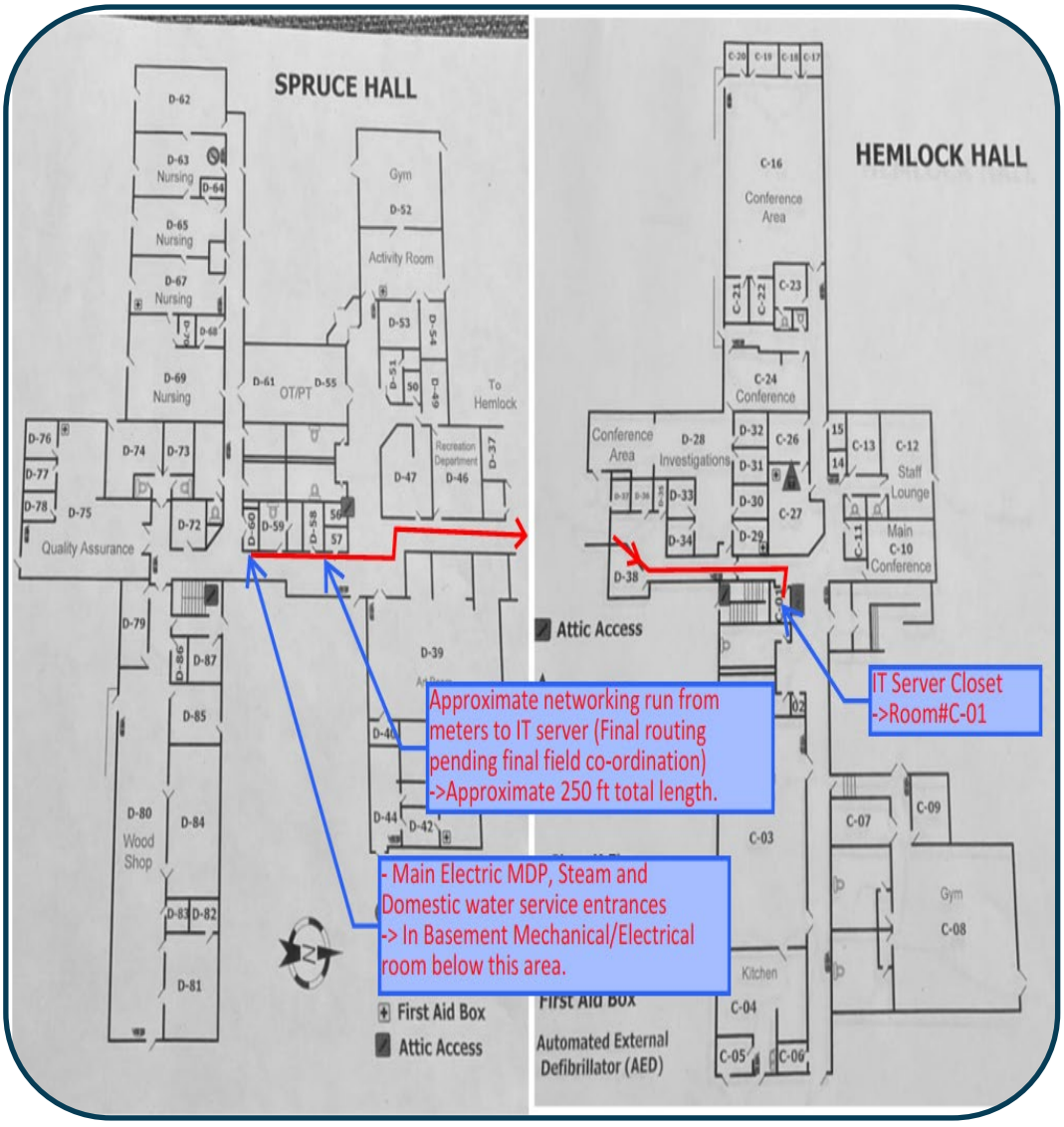
Service Entrance


Network IT Closet

Spruce and Hemlock building are connected and add up to 44,448 square foot multipurpose office and storage building. There are two energy sources for this building: steam and electric. Neither steam nor electric at these building is sub metered currently. The main steam line for the building comes from the campus central steam plant and service entrance is in the basement mechanical room. The main electric service MDP is in the Basement electrical room.

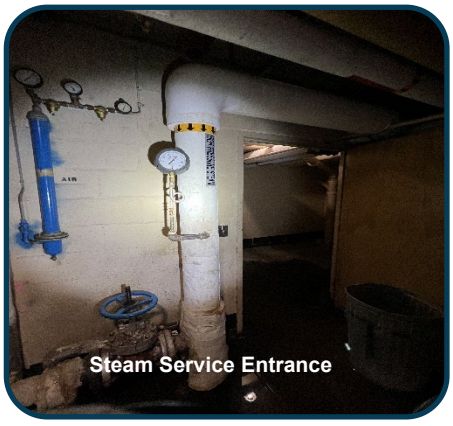
The building has one domestic water service entrance located in basement mechanical room and is also currently not metered.

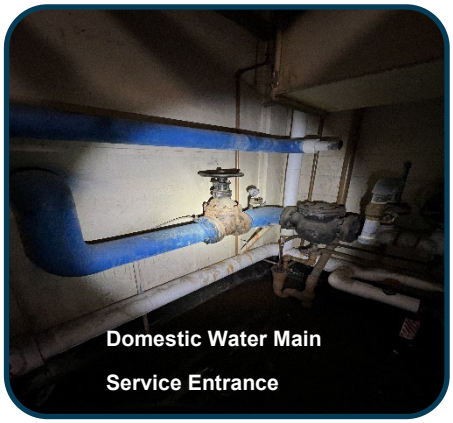
The steam, electric and domestic water meters will be hardwired to a network gateway located in the nearest IT closet, which is located on the 1st floor on the hemlock side, then each gateway connected to the internet via ethernet cable to the nearest network drop.



Bldg 4C51A,B – Fir & Pine


Main Electric Room Service MDP


Steam Service Entrance

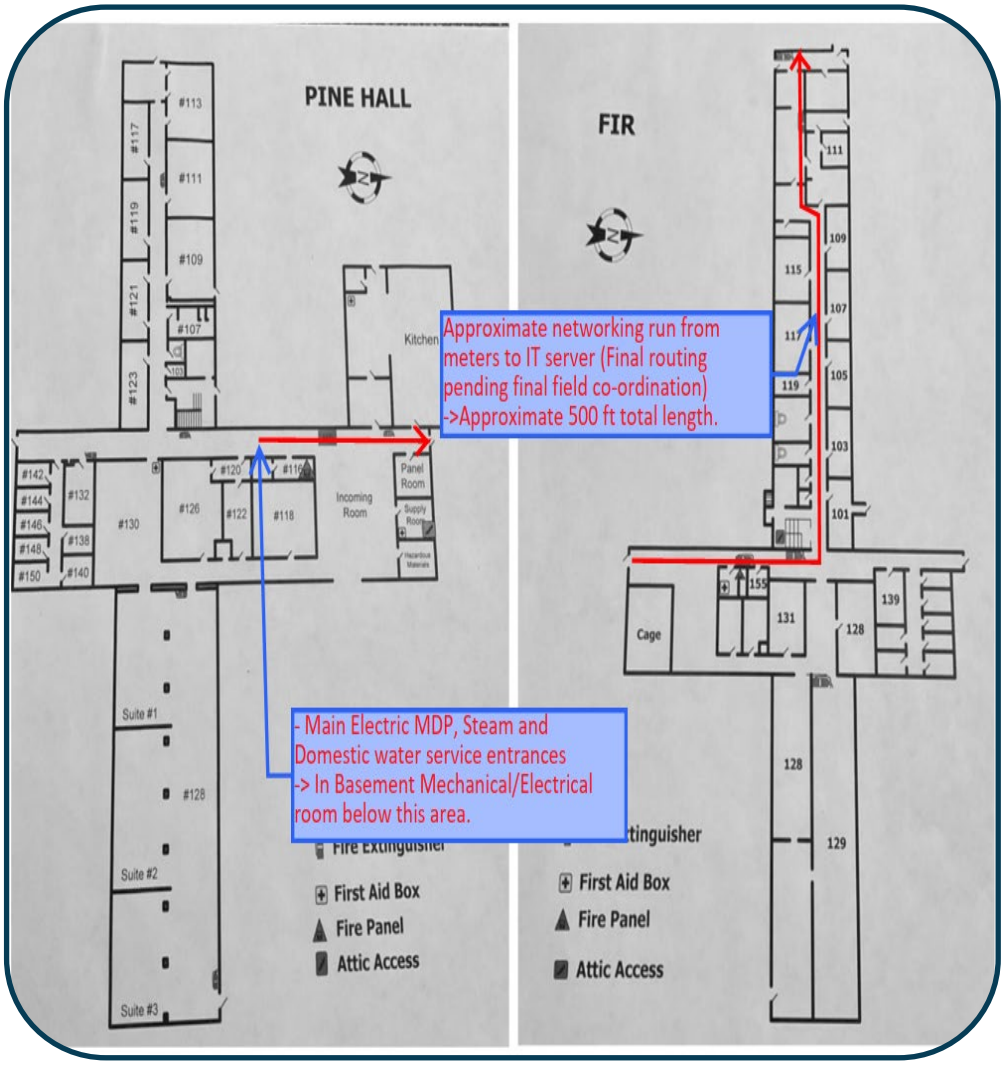

Domestic Water Main Service Entrance


Network IT Closet

Fir and Pine building are connected and add up to 36,978 square foot multipurpose office and storage building. There are two energy sources for this building: steam and electric. Neither steam nor electric at these building is sub metered currently. The main steam line for the building comes from the campus central steam plant and service entrance is in the basement mechanical room. The main electric service MDP is in the Basement electrical room.

The building has one domestic water service entrance located in basement mechanical room and is also currently not metered.

The steam, electric and domestic water meters will be hardwired to a network gateway located in the nearest IT closet, which is located on the 1st floor on the Hemlock side (Neither Fir nor Pine have an IT closet) then each gateway connected to the internet via ethernet cable to the nearest network drop.



Section 7

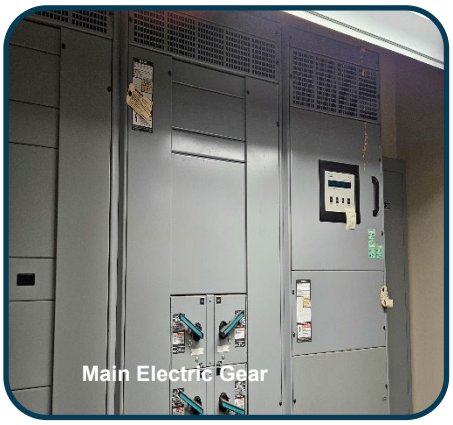
Eastern State Hospital Campus

- The Eastern State Hospital Campus is composed of 47 different buildings. Only 3 of those buildings are over 20,000 square feet and covered in this report (the main hospital has been previously completed). Many of the buildings on this campus are served by a steam powered central heating plant. The energy sources documented within the buildings assessed include electricity, gas, heating water and steam. Facilities at the Eastern State Campus assessment include:

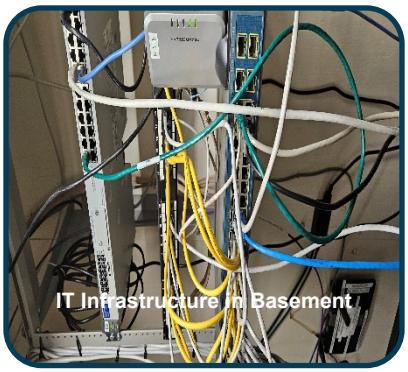
- Bldg 3A21 – Martin Hall
- Bldg 3A27 – Westlake Hospital
- Bldg 3A20A,B, – Office, Library-Craft-Shop-Café, and Gym

Bldg 3A21 – Martin Hall


Existing Gas Meter


Main Electric Gear

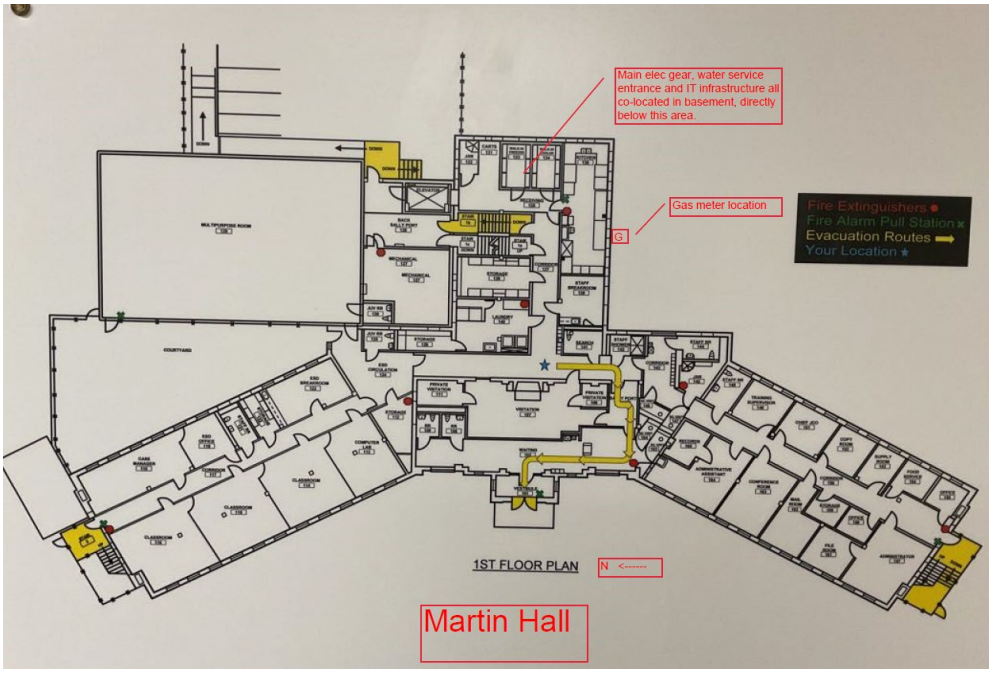

Existing Water Meter


IT Infrastructure in Basement

Martin Hall is a 25,850 square foot, secured, juvenile detention facility. There are two energy sources for this building: gas and electric. The gas is currently metered with an existing meter on the south wall, exterior to the building. The main electric service is located in a basement mechanical room and has a non-networked Siemens meter.

The domestic water service entrance is also located in the mechanical room adjacent to the main electric gear and is currently metered.

The gas and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located adjacent to these services in the basement, then each gateway connected to the internet via ethernet cable to the nearest network drop.



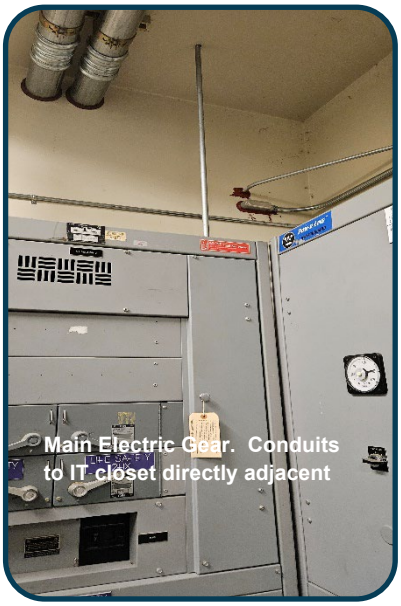
Bldg 3A27 – Westlake Hospital

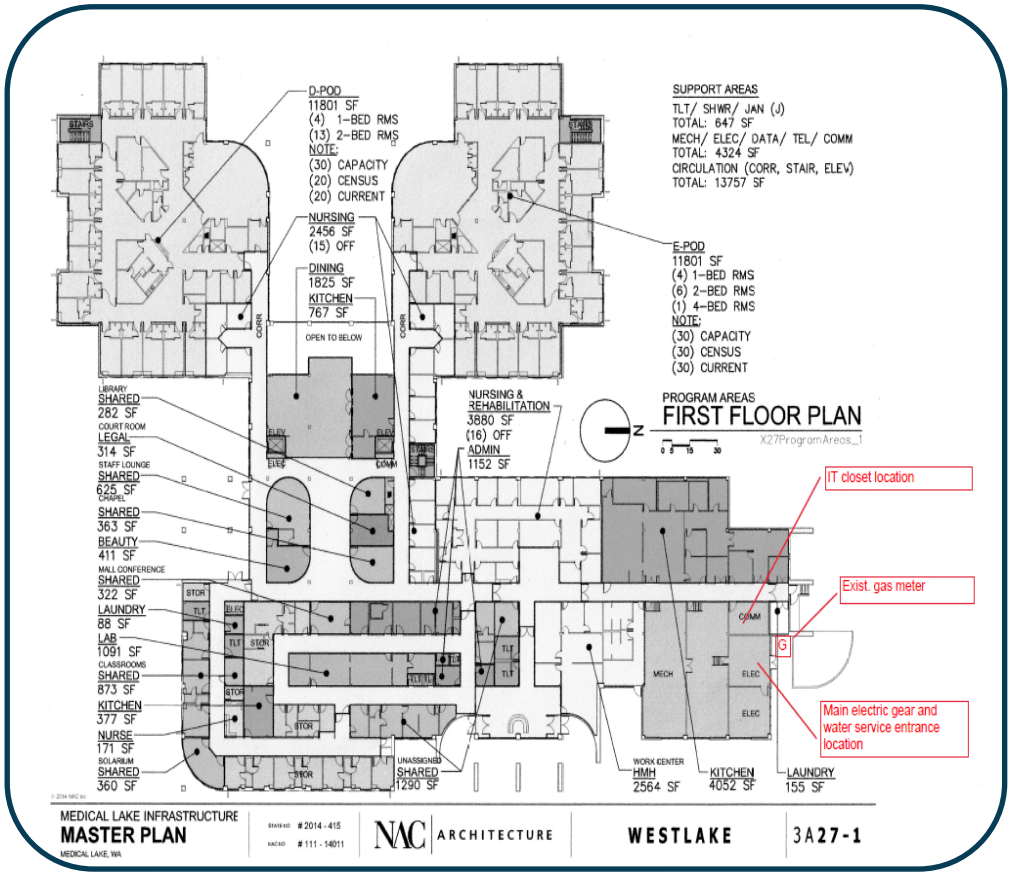

Exist. Gas Meter

Westlake is a 107,328 square foot psychiatric hospital. There is only electric and gas service to the building. The electric and gas main services are both located in the NE corner of the first floor. There is an existing gas meter right outside the main mechanical and elec. rooms. The There is an IT closet directly adjacent to the west of the main mechanical and electric rooms. There are currently no meters on the electric.

The domestic water service entrance for the building is also located on the NE corner of the building. There is an existing UG water meter in a pit approx. 500 feet to the north of the building. It is recommended to install a new networkable meter inside the building at the water service entrance.

New gas and electric meters will have to be provided and installed, then hardwired to a network gateway located in the adjacent IT closet. Each gateway would then be connected to the internet via ethernet cable to the nearest network drop.


Main Electric Gear. Conduits to IT closet directly adjacent



Bldg 3A20A,B,C – Office, Library-Craft-Shop-Café, and Gym

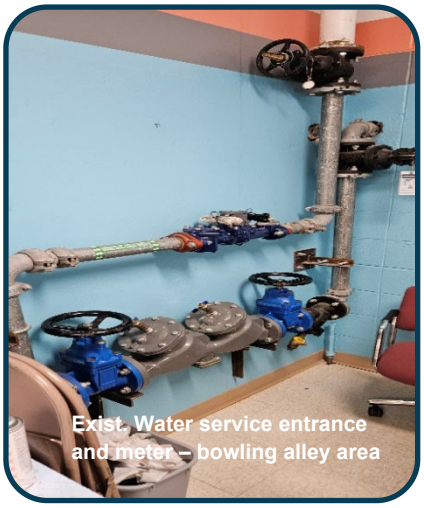

Heating water mains entering building on west side

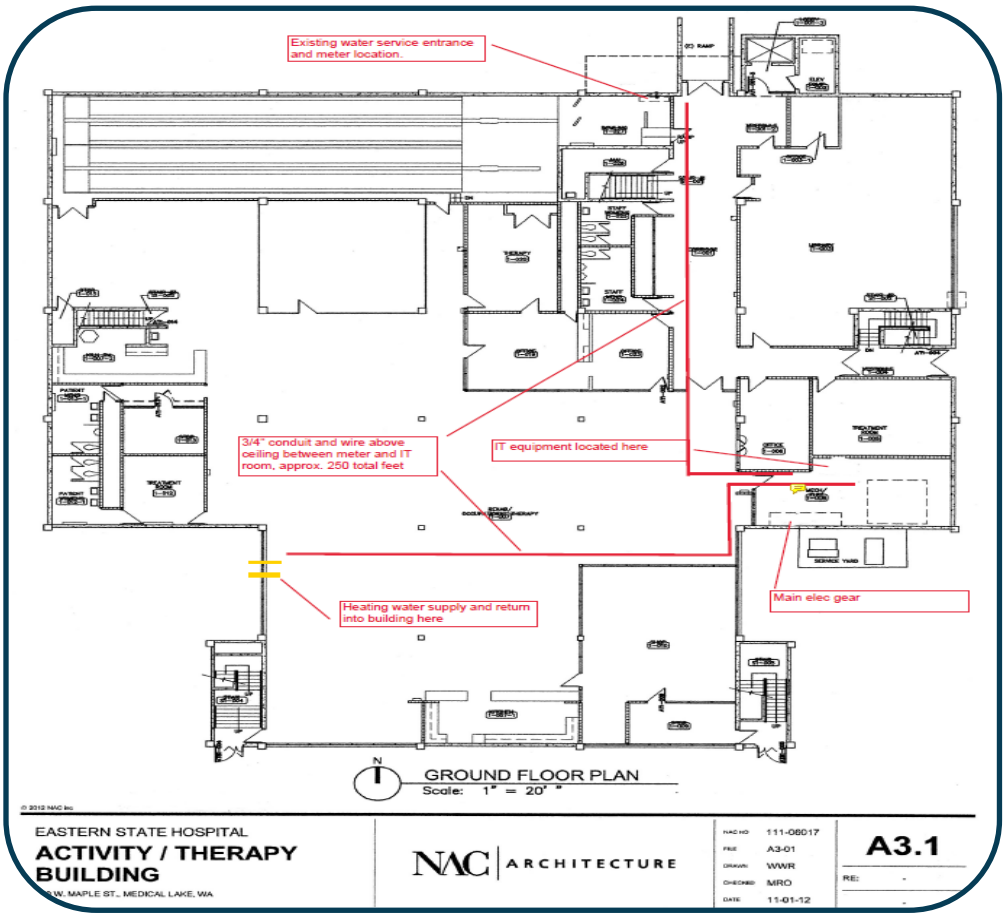
Building 3A20A,B,C is a single thermal envelope, 53,462 square foot building containing offices, a library, therapy areas, even a bowling alley. The building has electric and heating water (supplied from an adjacent building) energy sources. There is IT equipment located in the existing main electric gear room. There is currently no meter on the heating water supplied to the building. There is an existing non-networked electric meter on the main switchgear.

The domestic water service entrance for this building is located in the bowling alley area and is metered with a non-networked meter.

New power and BTU meters for the electric and heating water respectively, will have to be provided and installed, then hardwired to a network gateway located in the adjacent IT closet. Each gateway would then be connected to the internet via ethernet cable to the nearest network drop.


Main Electric Gear. IT also located in this room


Exist. Water service entrance and meter – bowling alley area



Section 8

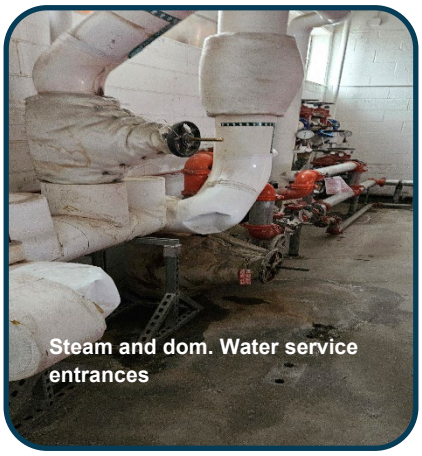
Lakeland Village Campus

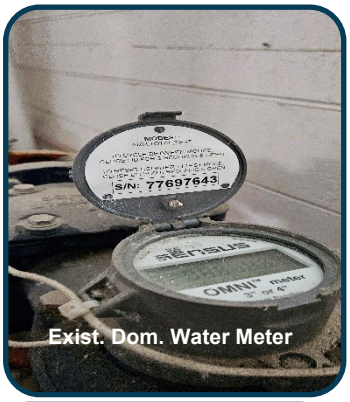
The Lakeland Village Campus is composed of 54 different buildings. Only 3 of those buildings are over 20,000 square feet and covered in this report. Many of the buildings on this campus are served by a steam powered central heating plant. The energy sources documented within the buildings assessed include electricity, steam, chilled water, and heating water – no natural gas inputs at any of these buildings. Facilities at the Lakeland Village Campus assessment include:

- Bldg 4D30 – Laundry
- Bldg 4D03 – School
- Bldg 4D05 – Habilitation Center

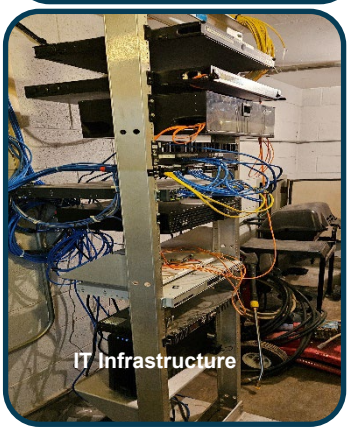
Bldg 4D30 - Laundry


Main Elec. Gear


Steam and dom. Water service entrances



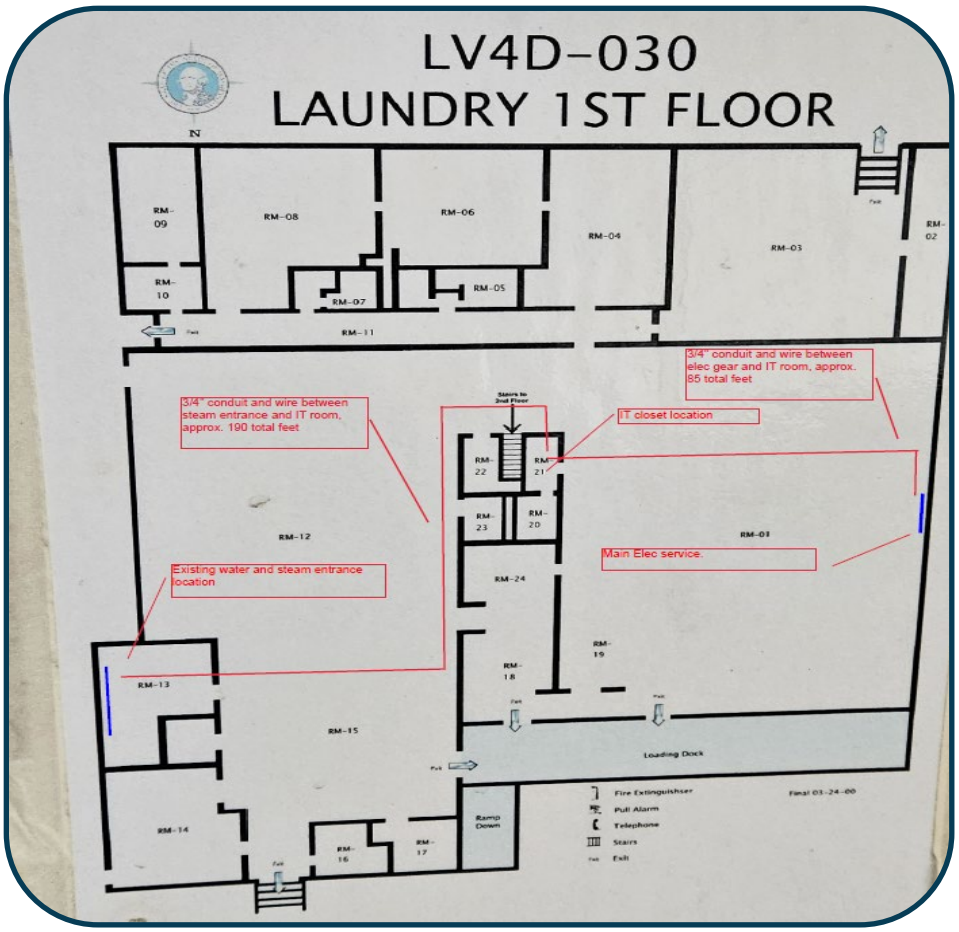
Exist. Dom. Water Meter


IT Infrastructure

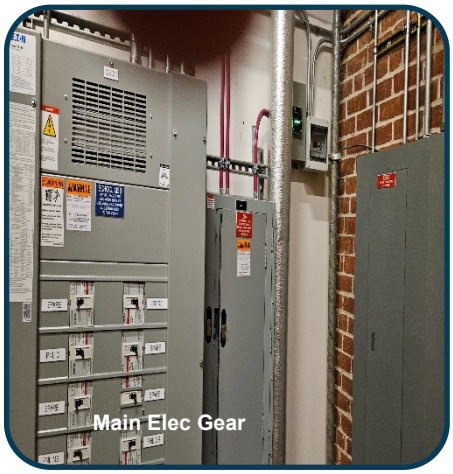
This is a 27,035 square foot building that houses a commercial laundry operation serving the rest of the campus. There are two energy sources for this building: steam and electric. The steam and water service both enter the building on the south side. The main electric service is located along the west exterior wall.

The steam and electric are not currently metered. The domestic water has an existing Sensus meter.

New steam and electric meters must be installed and hardwired to a network gateway located in the nearest IT closet, which is located in the center part of the building on the first floor, then each gateway connected to the internet via ethernet cable to the nearest network drop.



Bldg 4D03 – School

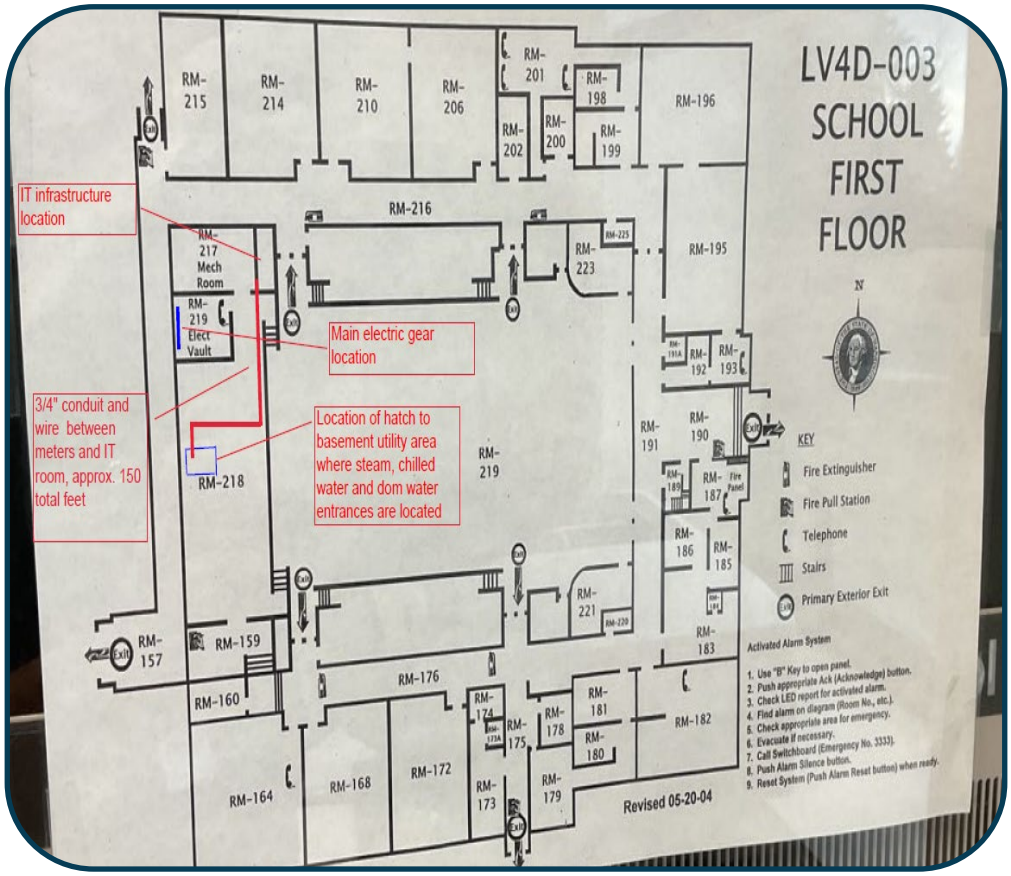

Main Elec Gear

This is a 25,531 square foot building that contains classrooms and other educational spaces. There are three energy sources for this building: electric, steam, and chilled water. The chilled water, steam and domestic water all come into a basement utility area accessed from a hatch in room 218. The main electric service is located directly adjacent to this room in room 219.

The steam and chilled water are not currently metered. The domestic water has an existing Sensus meter and the electric has an existing Veris meter.

New networkable steam, electric and chilled water meters must be installed and hardwired to a network gateway located in the nearest IT closet, which is located immediately adjacent on the first floor, then each gateway connected to the internet via ethernet cable to the nearest network drop.


Chilled water and steam entrance into basement utility area from tunnel




Exist. Water meter

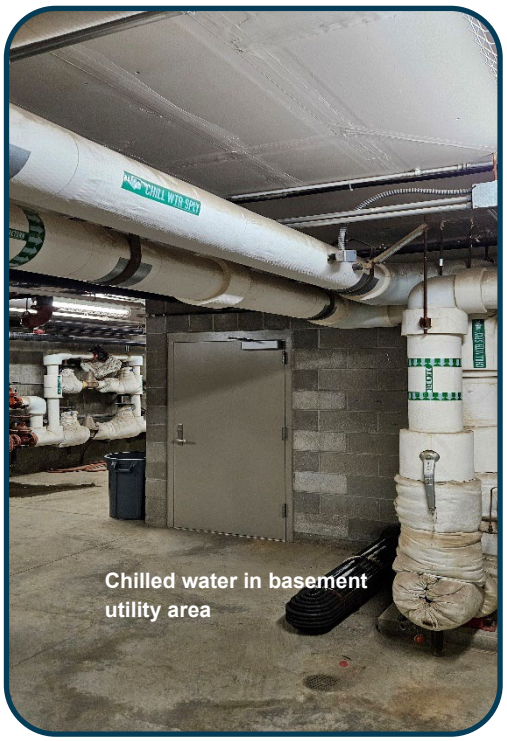
Bldg 4D05 – Habilitation Center

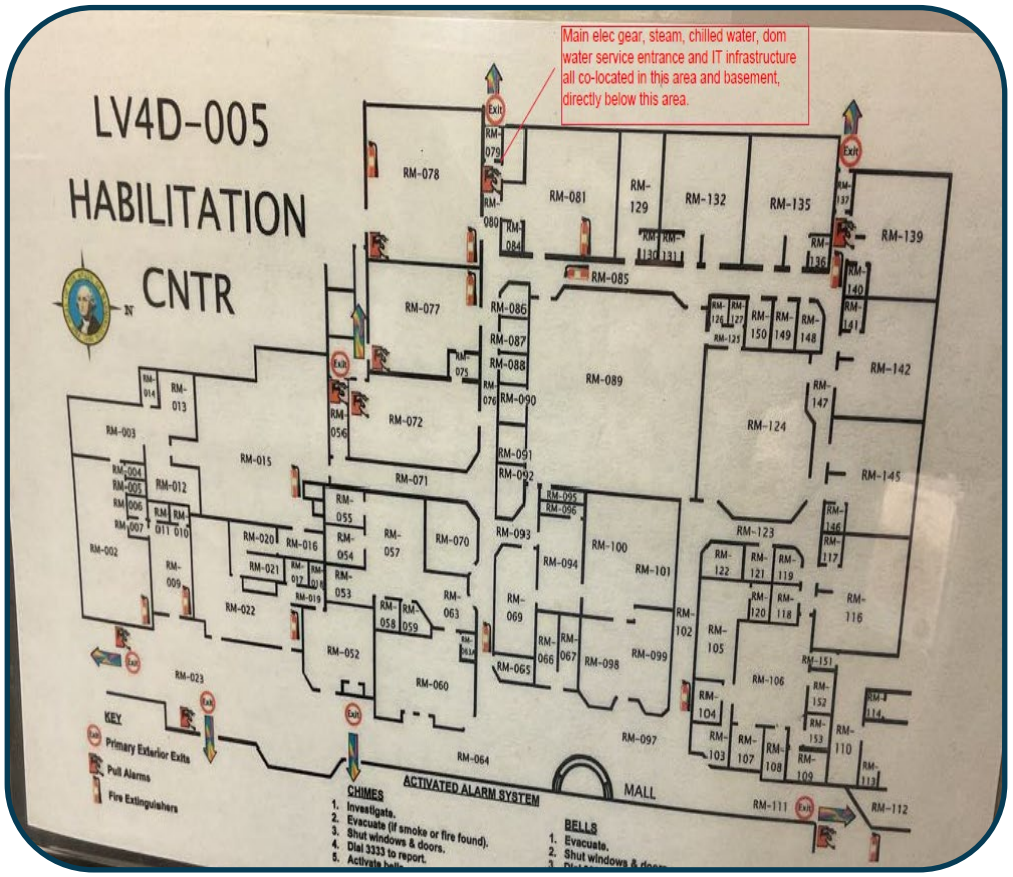

Steam entrance into basement utility area

This is a 55,936 square foot building housing support services for adults with developmental and intellectual disabilities. There are three energy sources for this building: electric, steam, and chilled water. The chilled water, steam, domestic water entrance and main electric gear are all co-located in a basement mechanical room area located under the west-central part of the building.

The steam and chilled water are not currently metered. The domestic water has an existing non networked meter, and the electric has an existing Eaton non networked meter.

New networkable steam, electric and chilled water meters must be installed and hardwired to a network gateway located in the nearest IT closet, which is located immediately adjacent in the basement, then each gateway connected to the internet via ethernet cable to the nearest network drop.


Chilled water in basement utility area



Section 9

Pine Lodge Campus

The Pine Lodge Campus is composed of 16 different buildings. Only 1 of those buildings is over 20,000 square feet and covered in this report. The energy sources documented within the building are limited to electricity, and gas. Facilities at the Pine Lodge Campus assessment include:

- Bldg 7A02 – Service Center - E

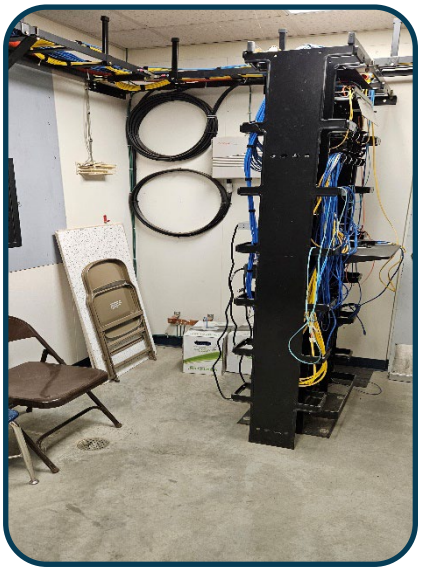
Bldg 7A02 – Service Center - E

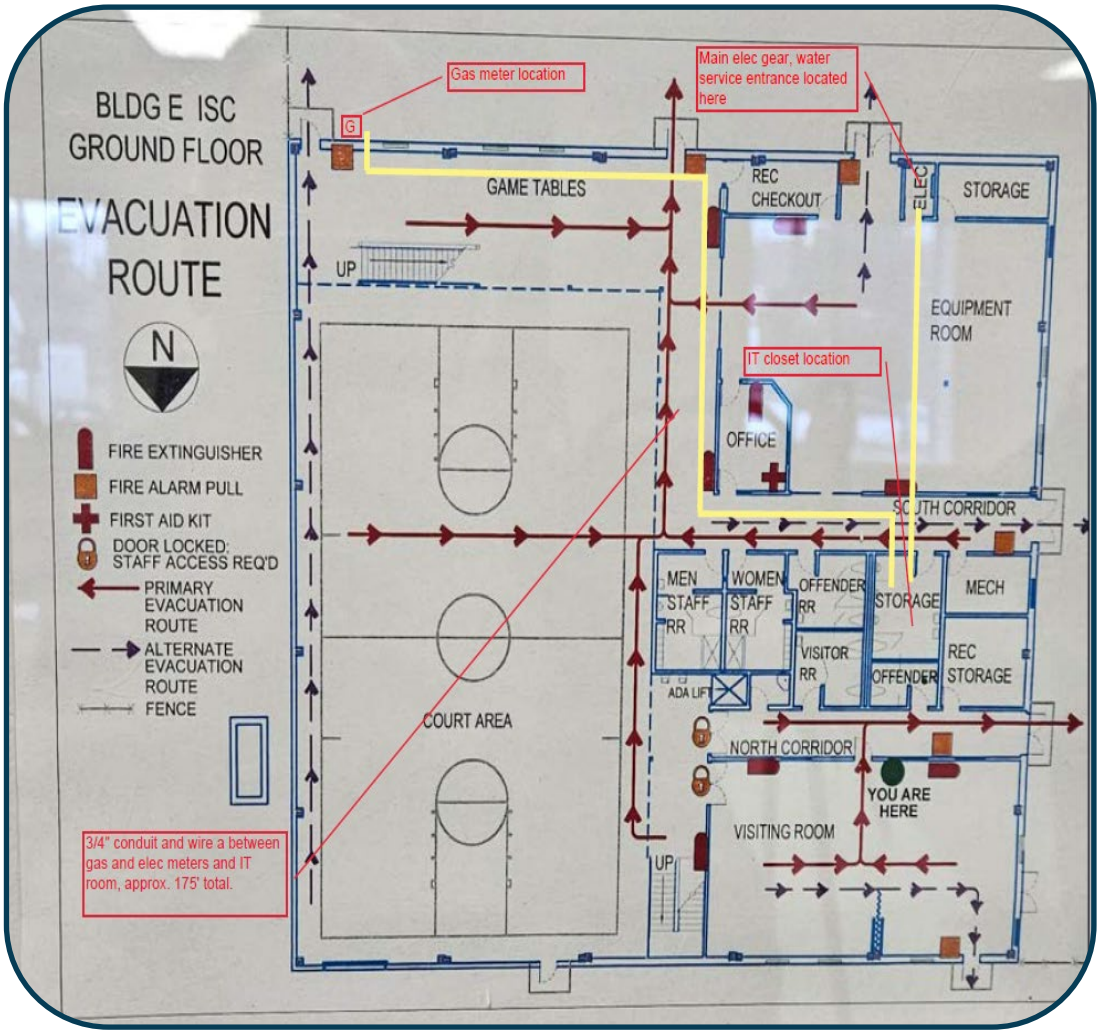
This is a 21,974 square foot, single story building containing a gym, some gaming areas and service storage areas. There are two energy sources for this building: gas and electric. The gas is currently metered with an existing meter exterior to the building. The main electric service is located in an electric room in the SW interior of the building and is not metered.

The domestic water service entrance is also located in the SW interior of the building and is currently metered.

The gas and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in the center of the building, then each gateway connected to the internet via ethernet cable to the nearest network drop.

Existing Gas Meter





Section 10

Yakima Valley School Campus

The Yakima Valley School Campus is composed of 12 different buildings. Only 1 of those buildings is over 20,000 square feet and covered in this report. The energy sources documented within the buildings assessed are limited to electricity and gas. Facilities at the Yakima Valley School Campus assessment included only this building:

- Bldg 4E01A,B,C – Office, Kitchen, Nursing Facility, & Clinic

Bldg 4E01A,B,C – Office, Kitchen, and Nursing Facility & Clinic

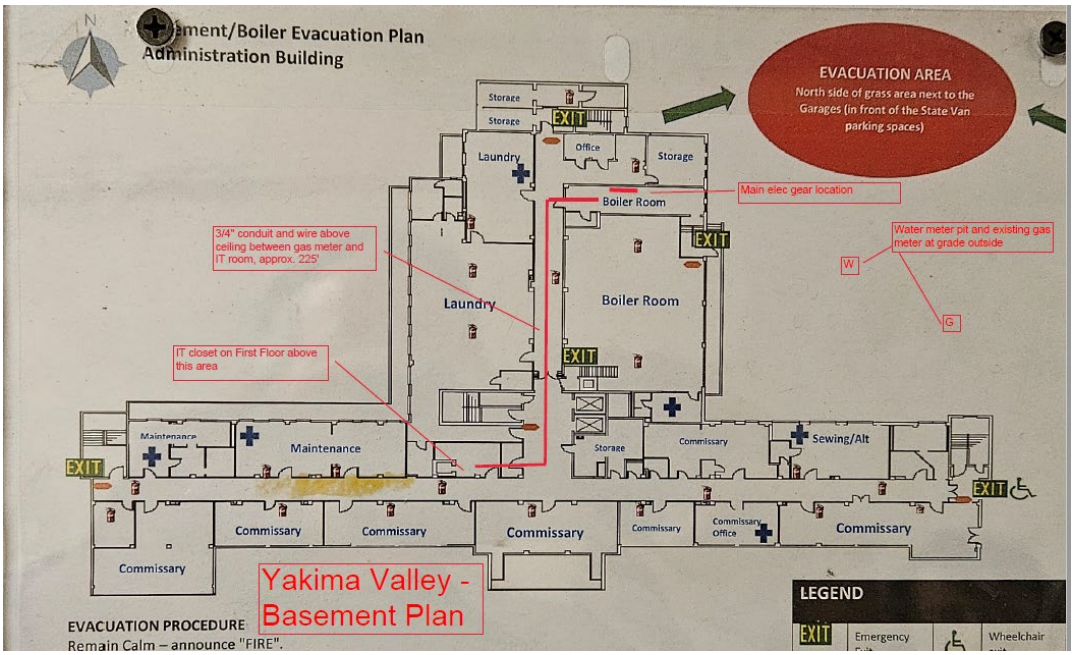

Existing Gas Meter


Main Electric Gear

This is a 76,994 square foot certified nursing facility. There are two energy sources for the building: gas and electric. The gas is currently metered with an existing meter exterior to the building. The main electric service is located in a basement mechanical room in the interior of the building and is also currently metered with a non-networkable meter.

The domestic water service is also currently metered with a non-networkable underground meter, in a pit, exterior to the northeast portion of the building.

New gas and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in the hallway adjoining the electric room and is close by. Each gateway will then be connected to the internet via ethernet cable to the nearest network drop.



Section 11

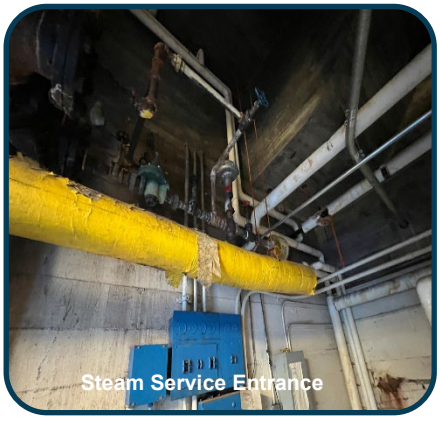
Western State Hospital Campus

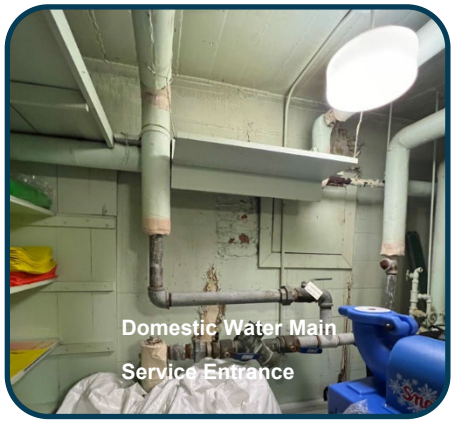
The Western State Hospital Campus is composed of 43 different buildings. Only 10 of those buildings are over 20,000 square feet and covered in this report. Many of the buildings on this campus are served by a steam powered central heating plant. The energy sources documented within the buildings assessed are limited to electricity, gas, and steam. Facilities at the Western State Hospital Campus assessment include:

- Bldg 3B06 – Auditorium
- Bldg 3B08 – Research, Security & Library
- Bldg 3B09 – Office
- Bldg 3B17 – Central Campus Wards C-7, 8, & 9
- Bldg 3B18 – Administration
- Bldg 3B19 – Central Campus Wards, C-4, 5, & 6
- Bldg 3B20 – Central Campus Wards, C-1, 2, & 3
- Bldg 3B27 – HMH & FSCRP
- Bldg 3B28 – Center for Forensic Services
- Bldg 3B29 – East Campus, Wards E1- Thru E-8

Bldg. 3B06 – Auditorium


Main Electric Room
Service Disconnect


Steam Service Entrance

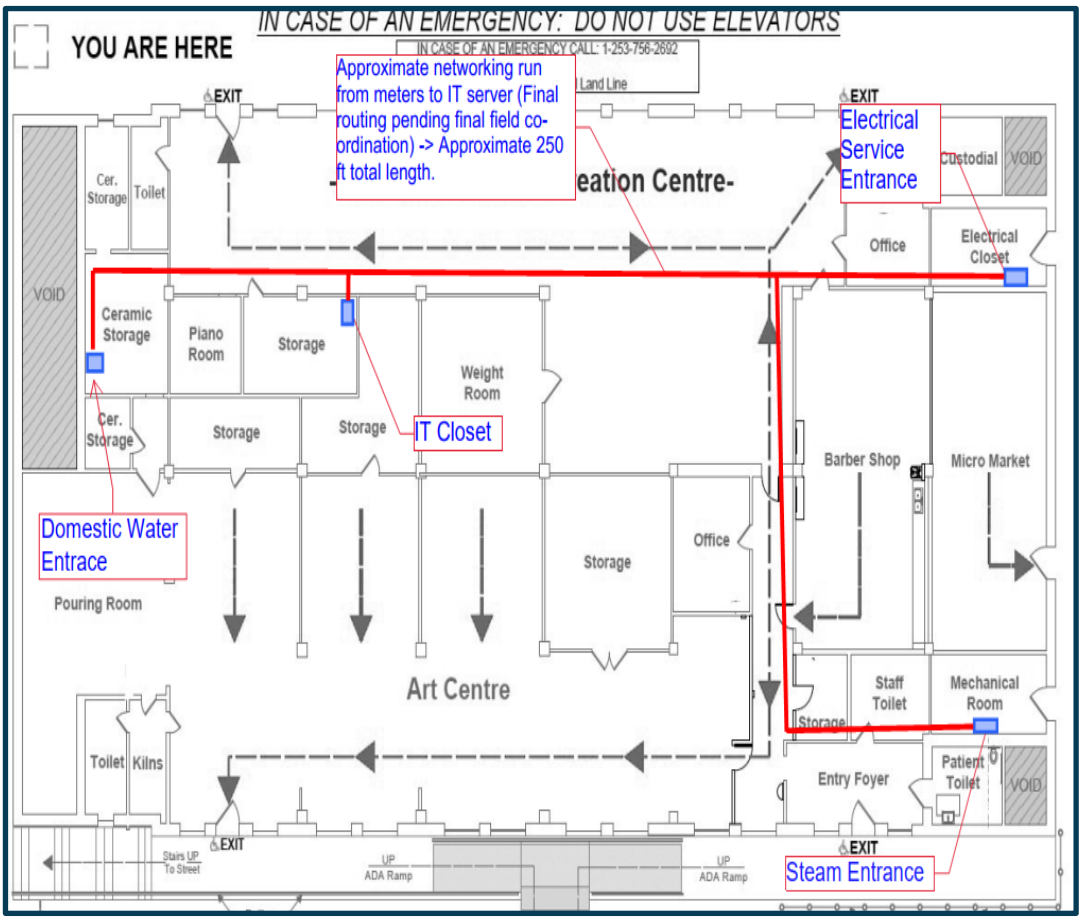

Domestic Water Main
Service Entrance


Network IT Closet

This is a 21,518 square foot multi-use Activities building that includes a recreation center, an art room, a day program area and an auditorium. There are two energy sources for this building: steam and electric. Neither electric nor steam is currently sub metered. The main electric service is in an electrical closet in the interior of the building. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the mechanical room on the ground floor.

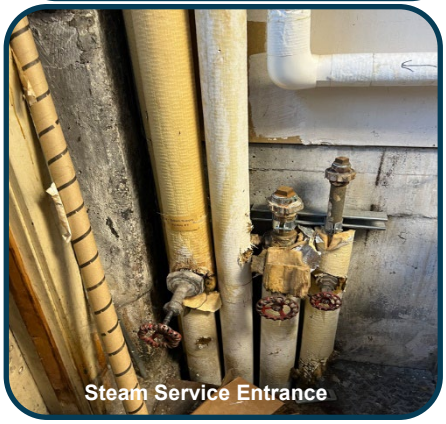
The building has one domestic water service entrance located on the ground floor ceramic storage room and is also currently not metered.

The steam, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in a storage room on the ground floor, then each gateway connected to the internet via ethernet cable to the nearest network drop.

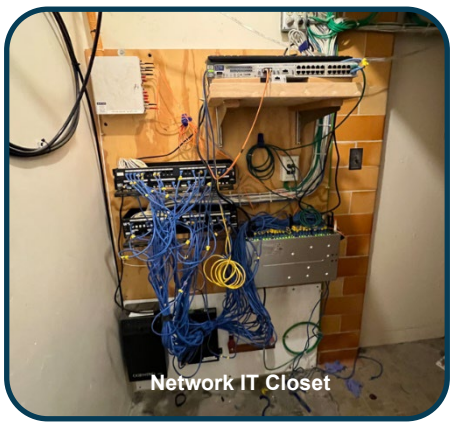


Bldg 3B08. – Research, Security & Library


Main Electric Room
Service Disconnect


Steam Service Entrance

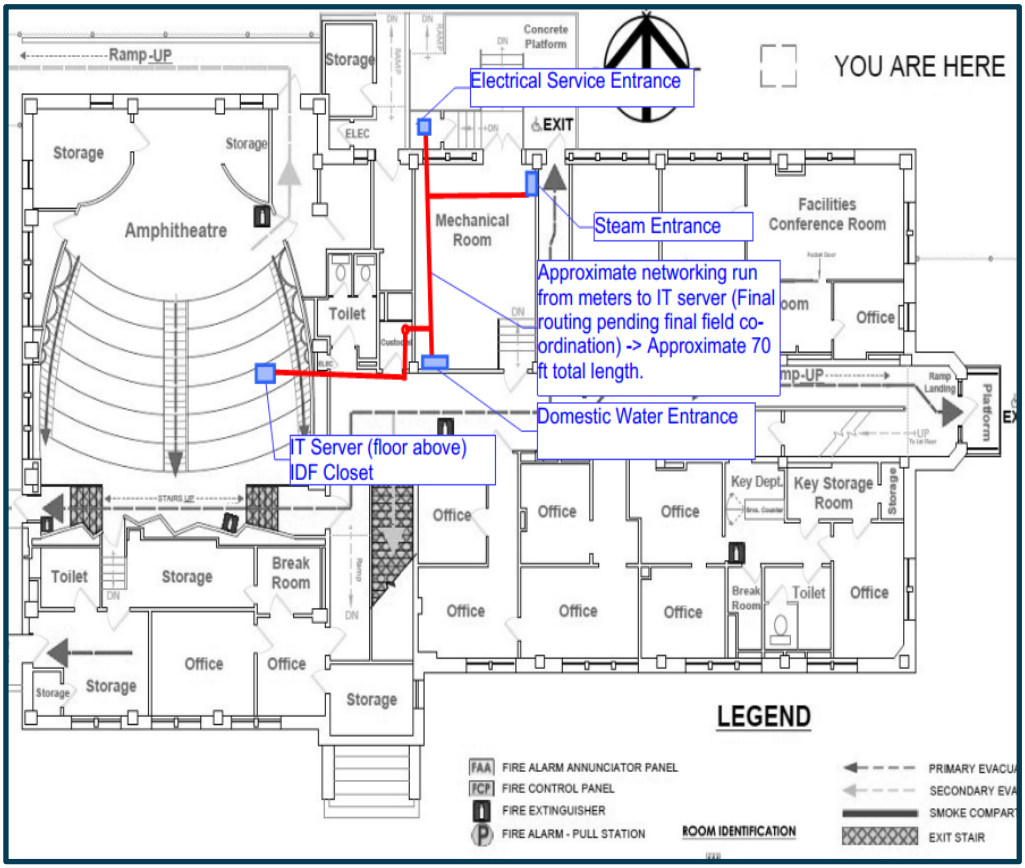

Domestic Water Main
Service Entrance


Network IT Closet

This is a 22,247 square foot multi-use Activities building that includes a library, offices and an amphitheater. There are two energy sources for this building: steam and electric. Neither electric nor steam is currently sub metered. The main electric service is in an electrical closet in the interior of the building. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the mechanical room on the ground floor.

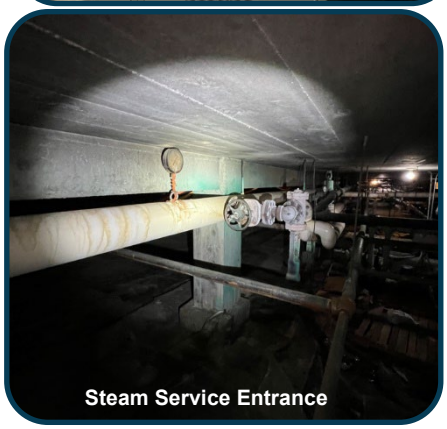
The building has one domestic water service entrance located on the ground floor mechanical room and is also currently not metered.

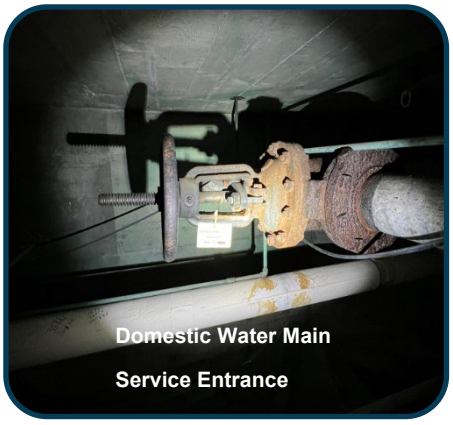
The steam, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in a storage room on the 2nd floor, then each gateway connected to the internet via ethernet cable to the nearest network drop.



Bldg. 3B09 – Office


Main Electric Room
Service Disconnect


Steam Service Entrance

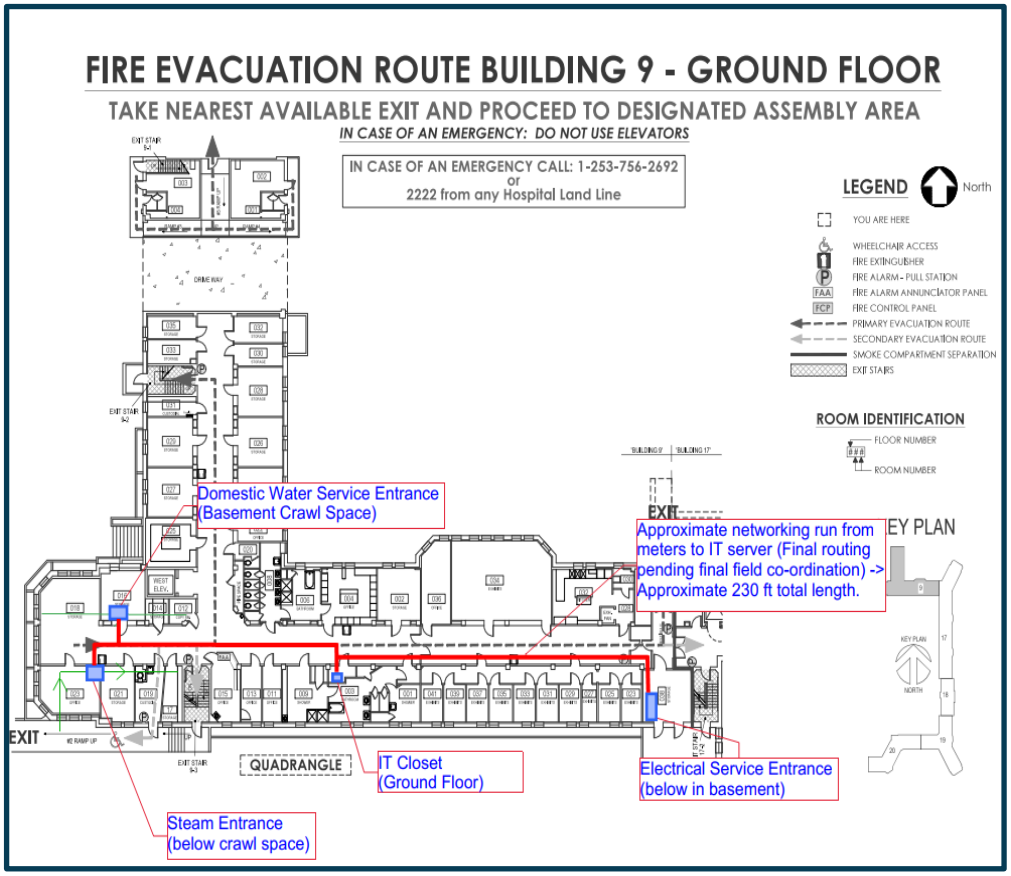

Domestic Water Main
Service Entrance


Network IT Closet

This is a 96,121 square foot office building. There are two energy sources for this building: steam and electric. Neither electric nor steam is currently sub metered. The main electric service is in a basement electric room. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the basement crawl space.

The building has one domestic water service entrance located in the basement crawl space close to the steam service entrance and is also currently not metered.

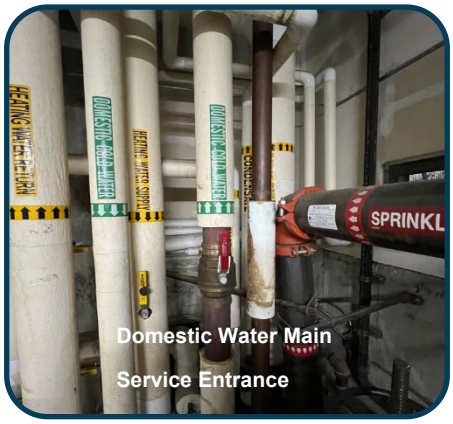
The steam, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet on the ground floor, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



Bldg. 3B17 – Central Campus Wards C-7, 8, & 9


Main Electric Room
Service Disconnect

Steam Service Entrance



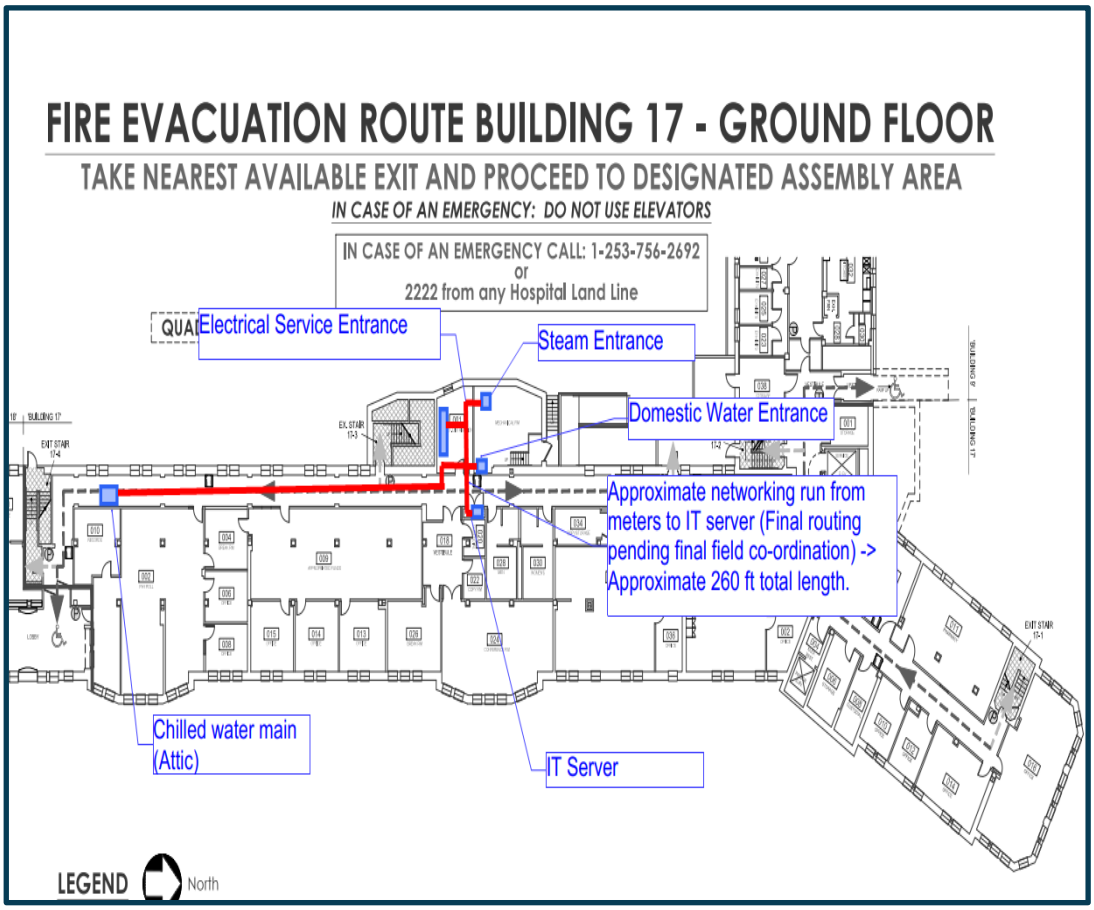
Domestic Water Main
Service Entrance


Chilled Water Main- In attic.

This is a 44,091 square foot office building. There are three energy sources for this building: steam, electric and chilled water. Neither electric, steam or chilled water are currently sub metered. The main electric service is in an electric room on the ground floor. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the mechanical room on the ground floor. The main chilled water line for the building comes from the campus central chiller plant through the tunnels and goes up in the attic space where the main chilled water service entrance for the building is located.

The building has one domestic water service entrance located in the mechanical room close to the steam service entrance and is also currently not metered.

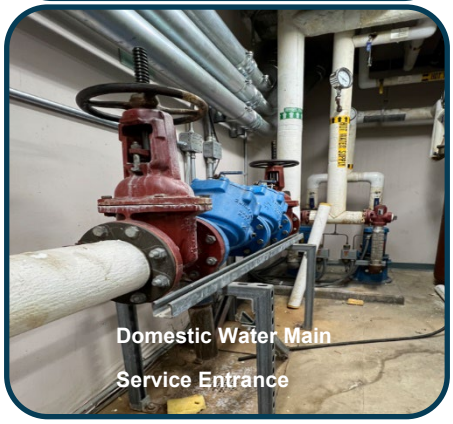
The steam, chilled water, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet on the ground floor, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



Bldg. 3B18 – Administration


Main Electric Room Service Disconnect

Steam Service Entrance

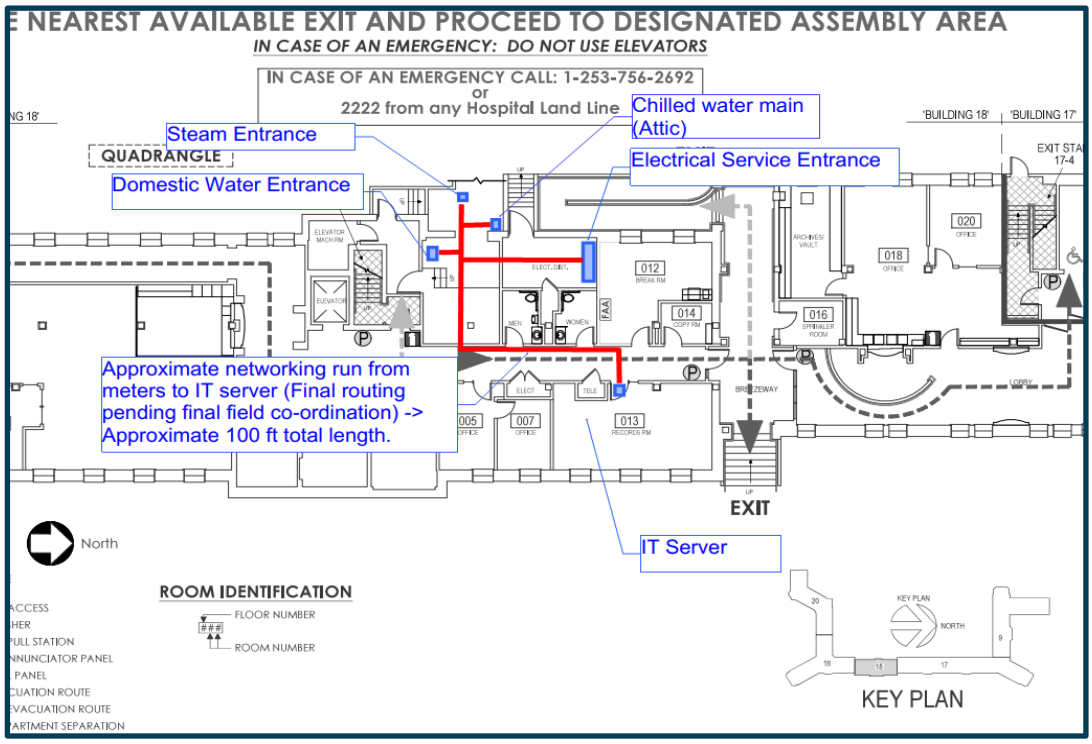

Domestic Water Main Service Entrance


Chilled Water Main in attic.

This is a 36,662 square foot office building. There are three energy sources for this building: steam, electric and chilled water. Neither electric, steam or chilled water are currently sub metered. The main electric service is in an electric room on the ground floor. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the mechanical room on the ground floor. The main chilled water line for the building comes from the campus central chiller plant through the tunnels and goes up in the attic space where the main chilled water service entrance for the building is located. The chilled water for this building is shared with building 19.

The building has one domestic water service entrance located in the mechanical room close to the steam service entrance and is also currently not metered.

The steam, chilled water, domestic water, and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet on the ground floor, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



Bldg. 3B19 – Central Campus Wards, C-4, 5, & 6


Main Electric Room
@ Building 20
Service MDP


Steam Service Entrance
@ Building 20


Domestic Water Main
Service Entrance
@ Building 20

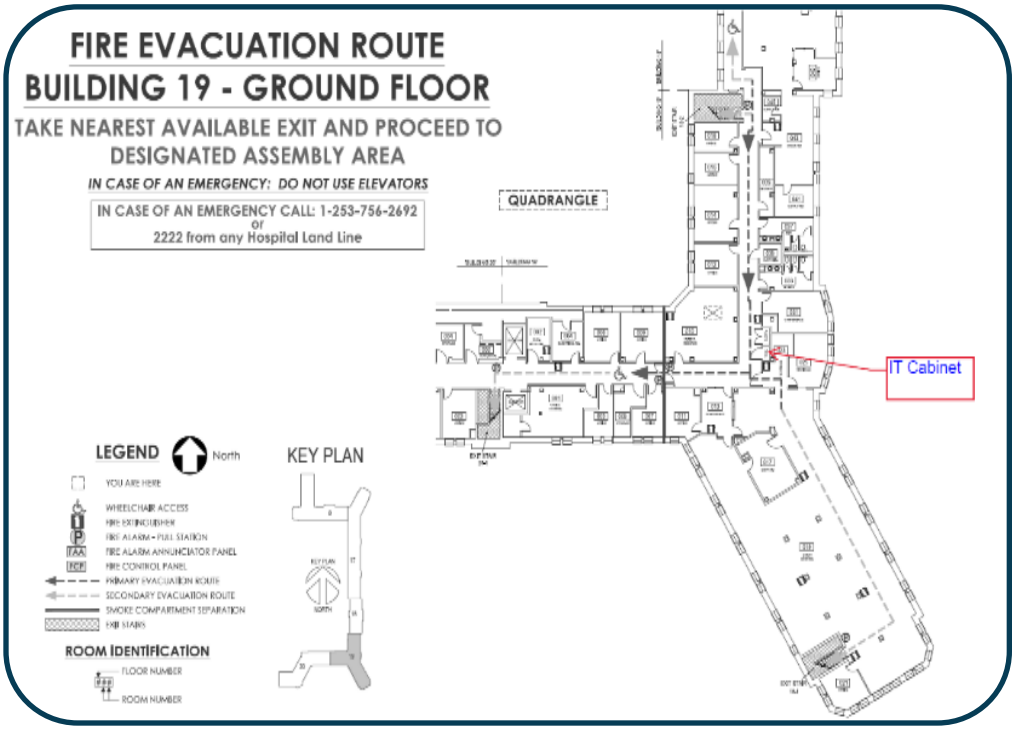

Chilled Water Main- In attic of Building 18

This is a 46,633 square foot office building. There are three energy sources for this building: steam, electric and chilled water. Neither electric, steam or chilled water are currently sub metered. Building 19 shared all the utilities either with building 20 or 18. The Electric, steam and domestic water for this building is shared with building 20 and chilled water is shared with building 18.

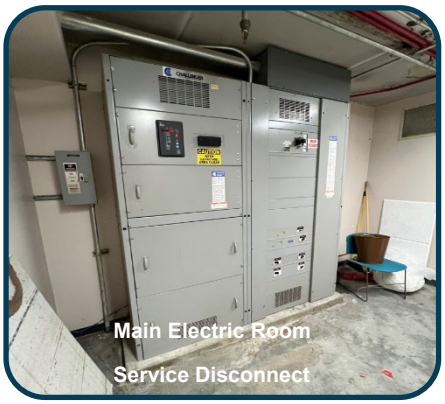
The main electric service is in an electric room on the ground floor of building 20. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the mechanical room on the ground floor of building 20. The main chilled water line for the building comes from the campus central chiller plant through the tunnels and goes up in the attic space where the main chilled water service entrance for the building is located.

The building has one domestic water service entrance located in the mechanical room of building 20 close to the steam service entrance and is also currently not metered.

The steam, chilled water, domestic water, and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet on the ground floors, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



Bldg. 3B20 – Central Campus Wards, C-1, 2, & 3


Main Electric Room
Service Disconnect


Steam Service Entrance

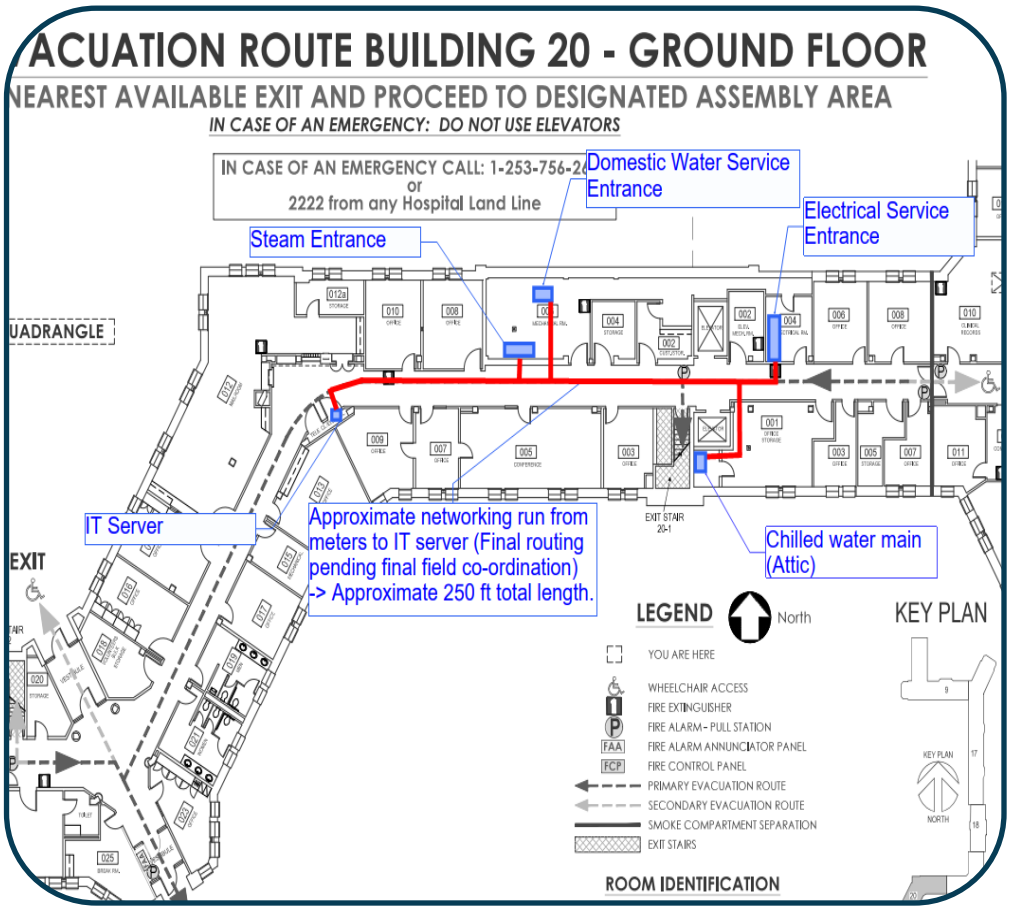

Domestic Water Main
Service Entrance


Chilled Water Main in Attic

This is a 44,328 square foot office building. There are three energy sources for this building: steam, electric and chilled water. Neither electric, steam or chilled water are currently sub metered. The main electric service is in an electric room on the ground floor. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the mechanical room on the ground floor. The main chilled water line for the building comes from the campus central chiller plant through the tunnels and goes up in the attic space where the main chilled water service entrance for the building is located.

The building has one domestic water service entrance located in the mechanical room close to the steam service entrance and is also currently not metered.

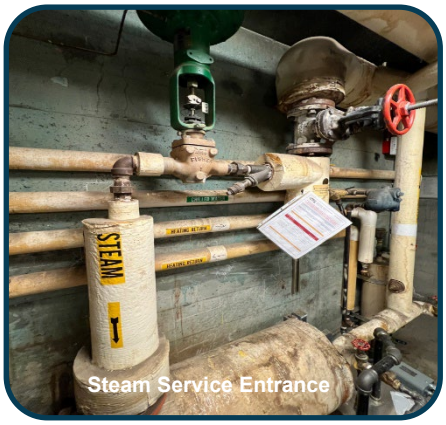
The steam, chilled water, domestic water, and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet on the ground floor, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



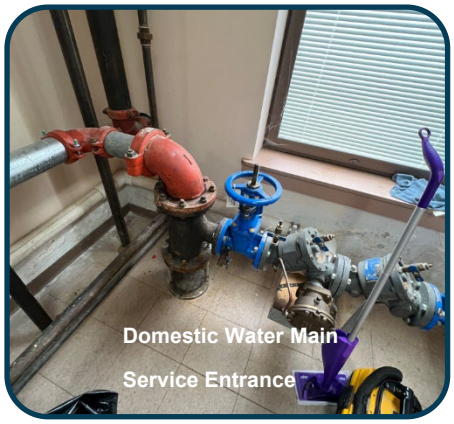
Bldg. 3B27 – HMH & FSCRP


Main Electric Room

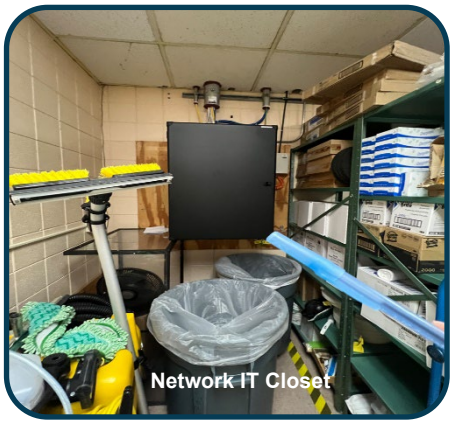
Service Disconnect



Steam Service Entrance


Domestic Water Main

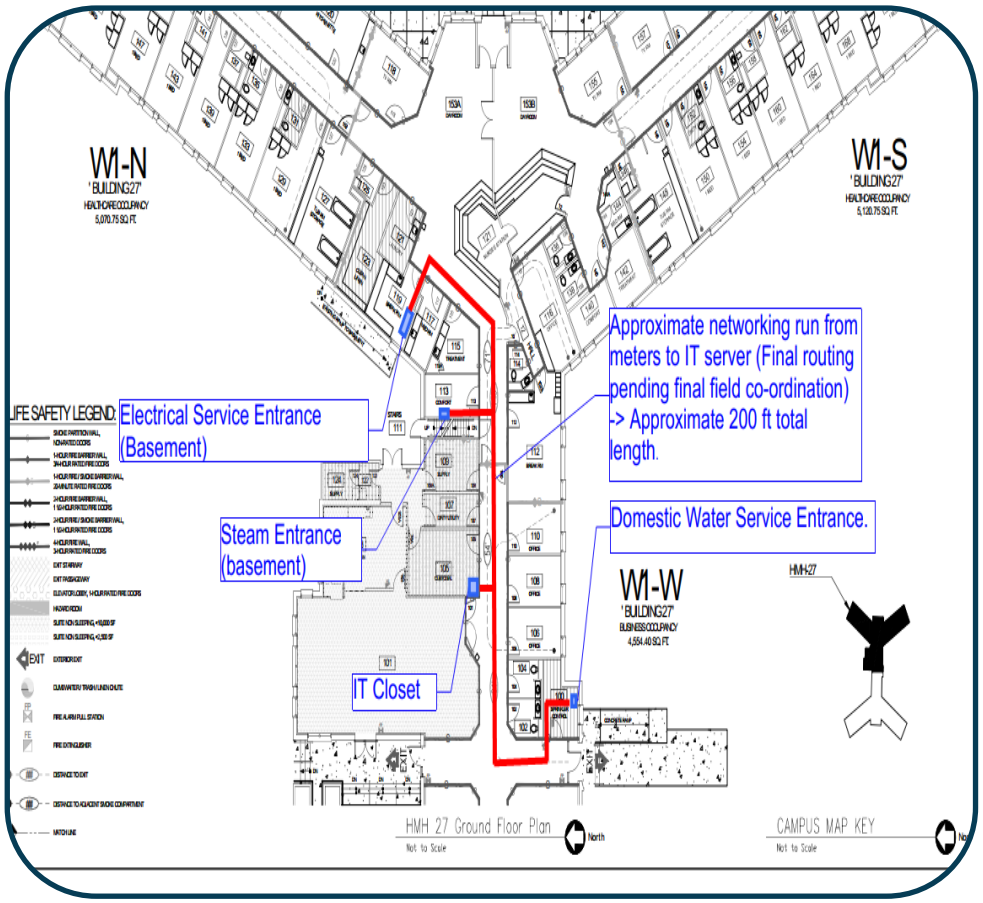
Service Entrance


Network IT Closet

This is a 41,144 square foot office building. There are two energy sources for this building: steam and electric. Neither electric nor steam is currently sub metered. The main electric service is in a basement electric room. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the basement mechanical room.

The building has one domestic water service entrance located in the sprinkler control room on the 1st floor and is also currently not metered.

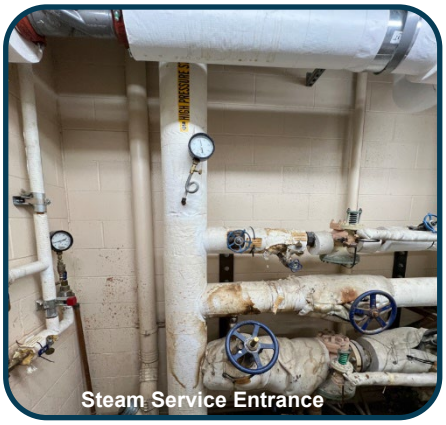
The steam, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet on the 1st floor, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



Bldg. 3B28 – Center for Forensic Services

Main Electric Room

Service Disconnect


Steam Service Entrance


Domestic Water Main

Service Entrance#1

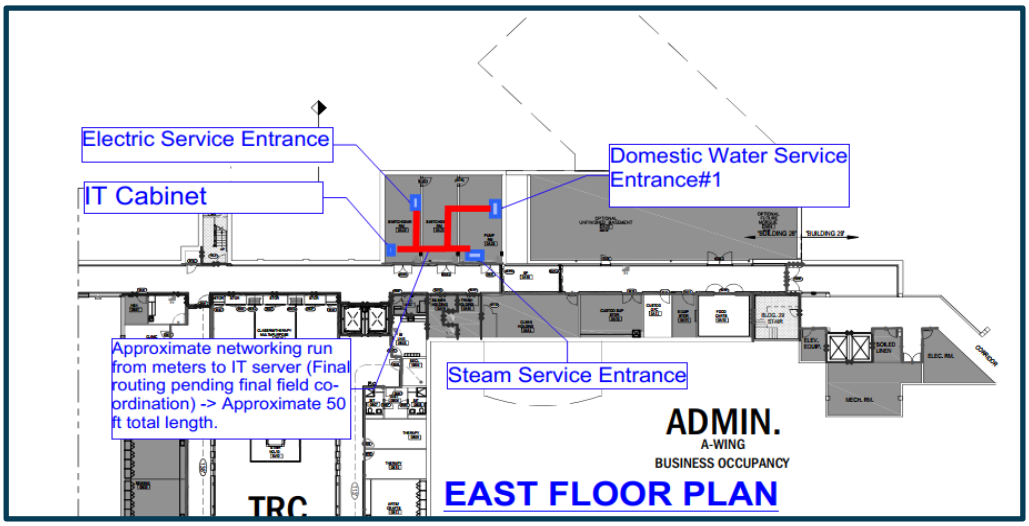

Domestic Water Main

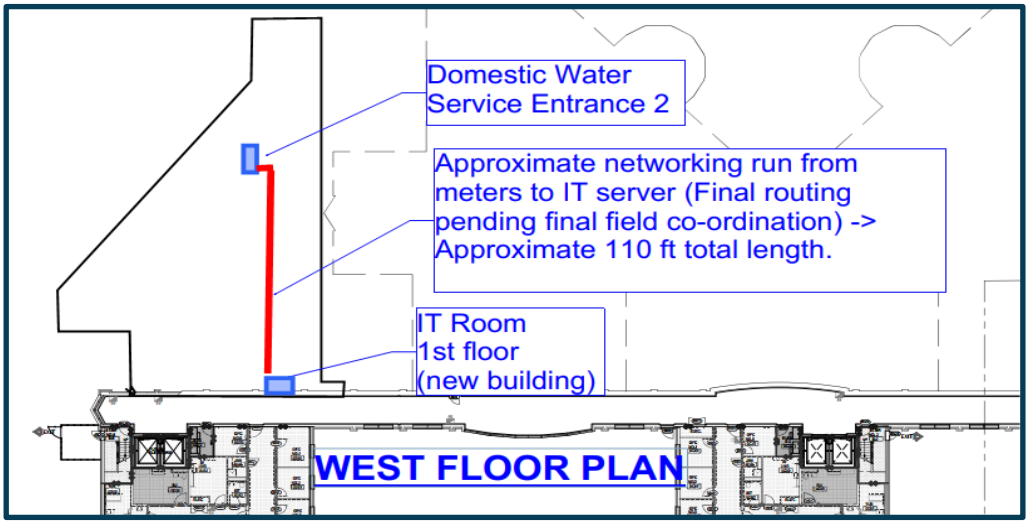
Service Entrance#2

This is a 202,160 square foot office and hospital patient/client building. There are two energy sources for this building: steam and electric. Neither electric nor steam is currently sub metered. The main electric service is in the ground floor electric room. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the ground floor mechanical room.

The building has two domestic water service entrance located in the east and west mechanical rooms on the ground floor and is also currently not metered.

The steam, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT server in the ground floor electric room, then each gateway is connected to the internet via ethernet cable to the nearest network



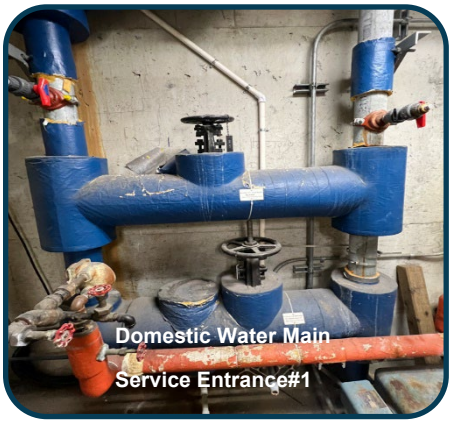


Bldg 3B29 – East Campus, Wards E-1 Thru E-8

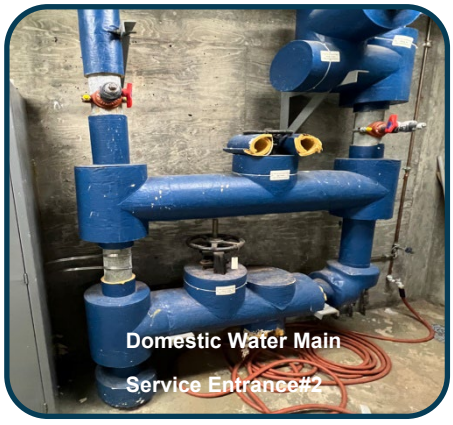

Main Electric Room

Service Disconnect


Steam Service Entrance


Domestic Water Main

Service Entrance#1

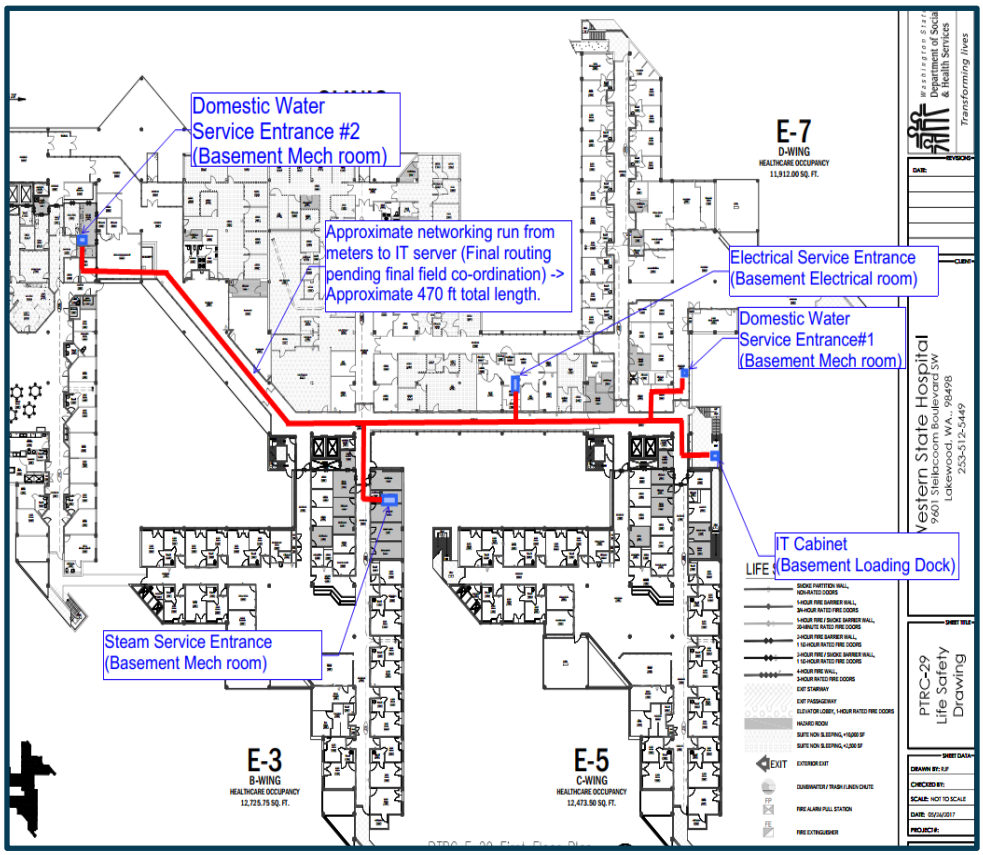

Domestic Water Main

Service Entrance#2

This is a 186,628 square foot office and hospital patient/client building. There are two energy sources for this building: steam and electric. Neither electric nor steam is currently sub metered. The main electric service is in a basement electric room. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the basement mechanical room.

The building has two domestic water service entrance located in the east and west mechanical rooms in the basement and is also currently not metered.

The steam, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet in the basement loading dock, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



Section 12

Child Study and Treatment Center Campus

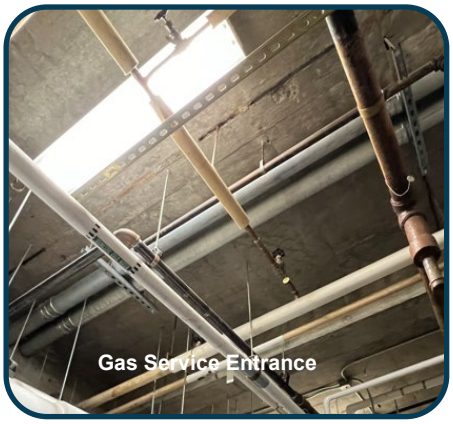
The Child Study and Treatment (CSTC) Campus is composed of 8 different buildings. Only 1 of those buildings is over 20,000 square feet and covered in this report. The energy sources documented within the buildings assessed are limited to electricity and gas. Facilities at the CSTC Campus assessment include:

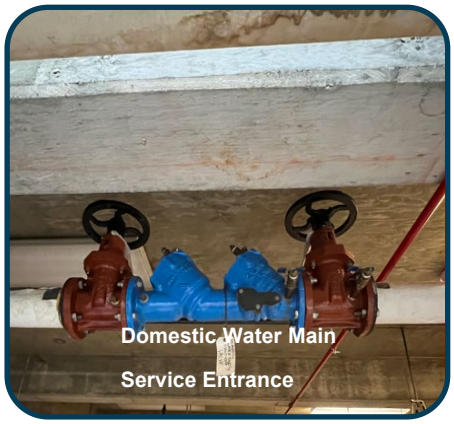
- Bldg 3E01 – Administrative Building

Bldg 3E01 – Administrative Building.


Main Electric Room

Service Disconnect


Gas Service Entrance


Domestic Water Main

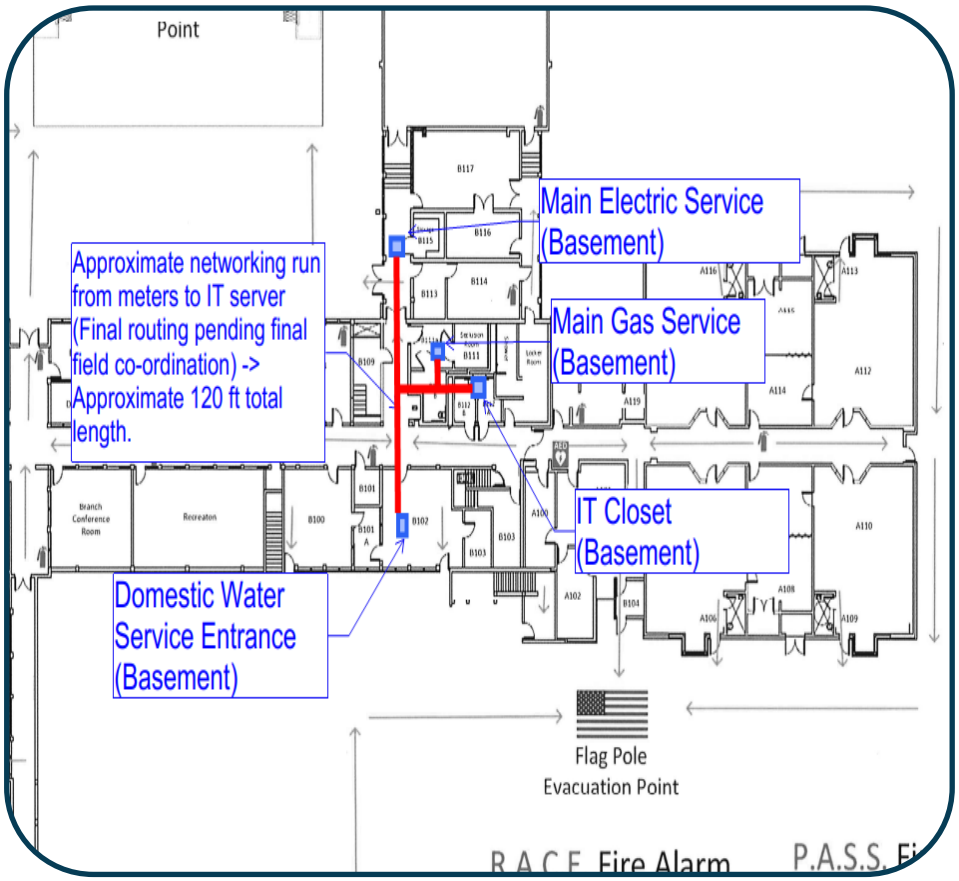
Service Entrance


Network IT Closet

This is a 27,397 square foot office and hospital patient/client building. There are two energy sources for this building: gas and electric. Neither electric nor gas is currently sub metered. The main electric service is in a basement boiler room. The gas service entrance is in the basement boiler room as well.

The building has one domestic water service entrance located in storage room in the basement and is also currently not metered.

The gas, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet in the basement storage room, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



Section 13

McNeil Island Campus

The McNeil Island Campus is composed of 26 different buildings. Only 2 of those buildings are over 20,000 square feet and covered in this report. Many of the buildings on this campus are served by a steam powered central heating plant. The energy sources documented within the buildings assessed are limited to electricity and steam. Facilities at the McNeil Island Campus assessment include:

- Bldg 6J02 – VoTech Building
- Bldg 6J04,5,6 – Health Services, North Housing, and South Housing

Bldg 6J02 – VoTech Building


Main Electric Room Service Disconnect


Steam Service Entrance

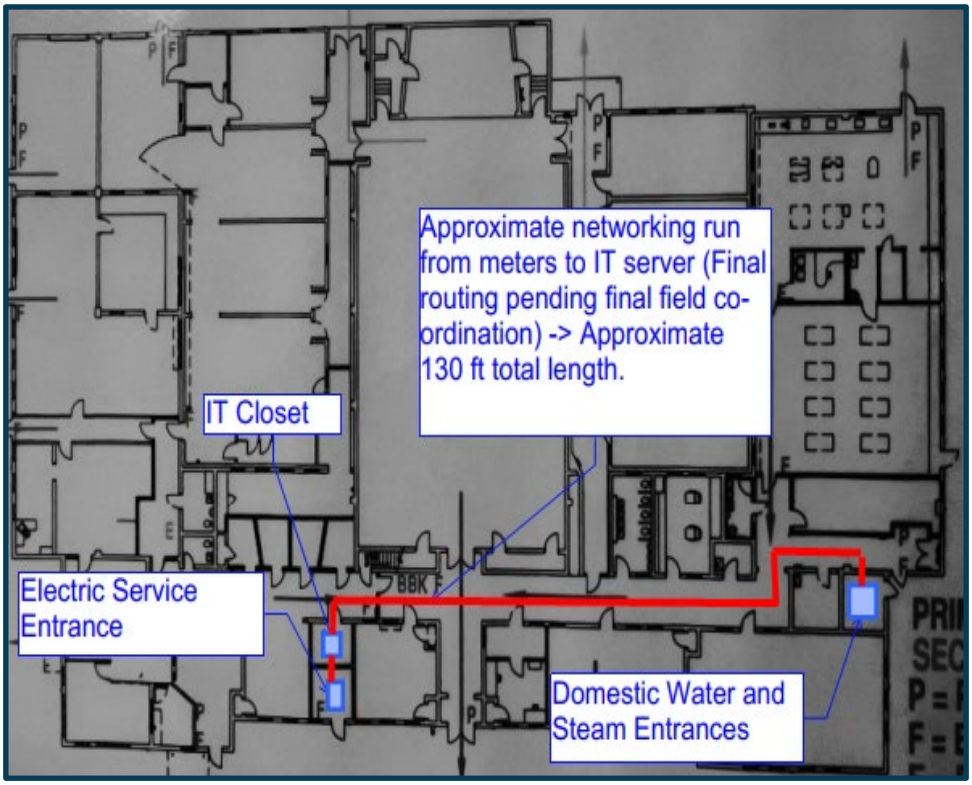

Domestic Water Main Service Entrance


Network IT Closet

This is a 28,025 square foot office and vocational training building. There are two energy sources for this building: steam and electric. Neither electric nor steam is currently sub metered. The main electric service is in the first-floor electric room. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the first mechanical room.

The building has one domestic water service entrance located in the first-floor mechanical room and is also currently not metered.

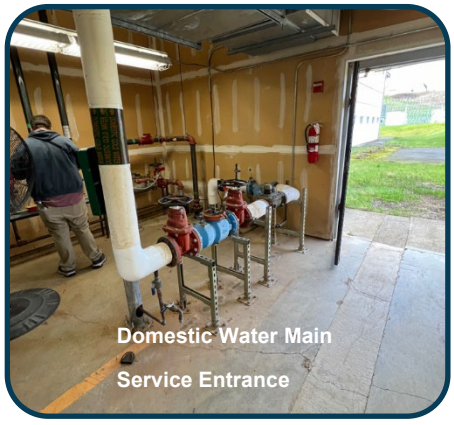
The steam, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet on the 1st floor, then each gateway is connected to the internet via ethernet cable to the nearest network drop.



Bldg 6J04,5,6 – Health Services, North Housing and South Housing


Main Electric Room
Service Disconnect

Steam Service Entrance

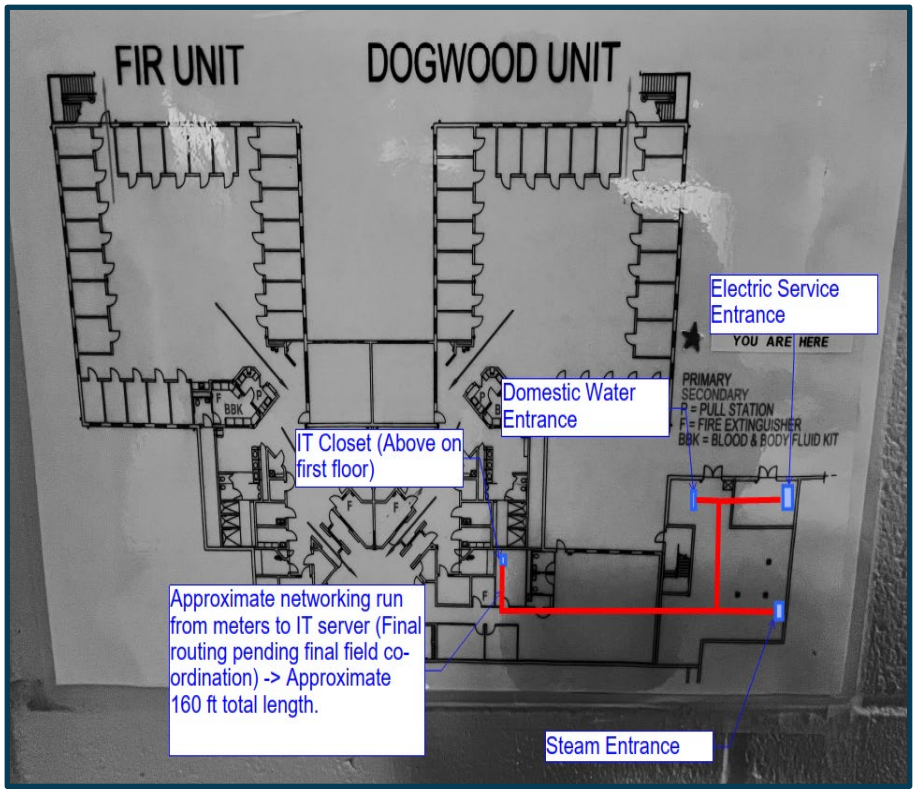

Domestic Water Main
Service Entrance

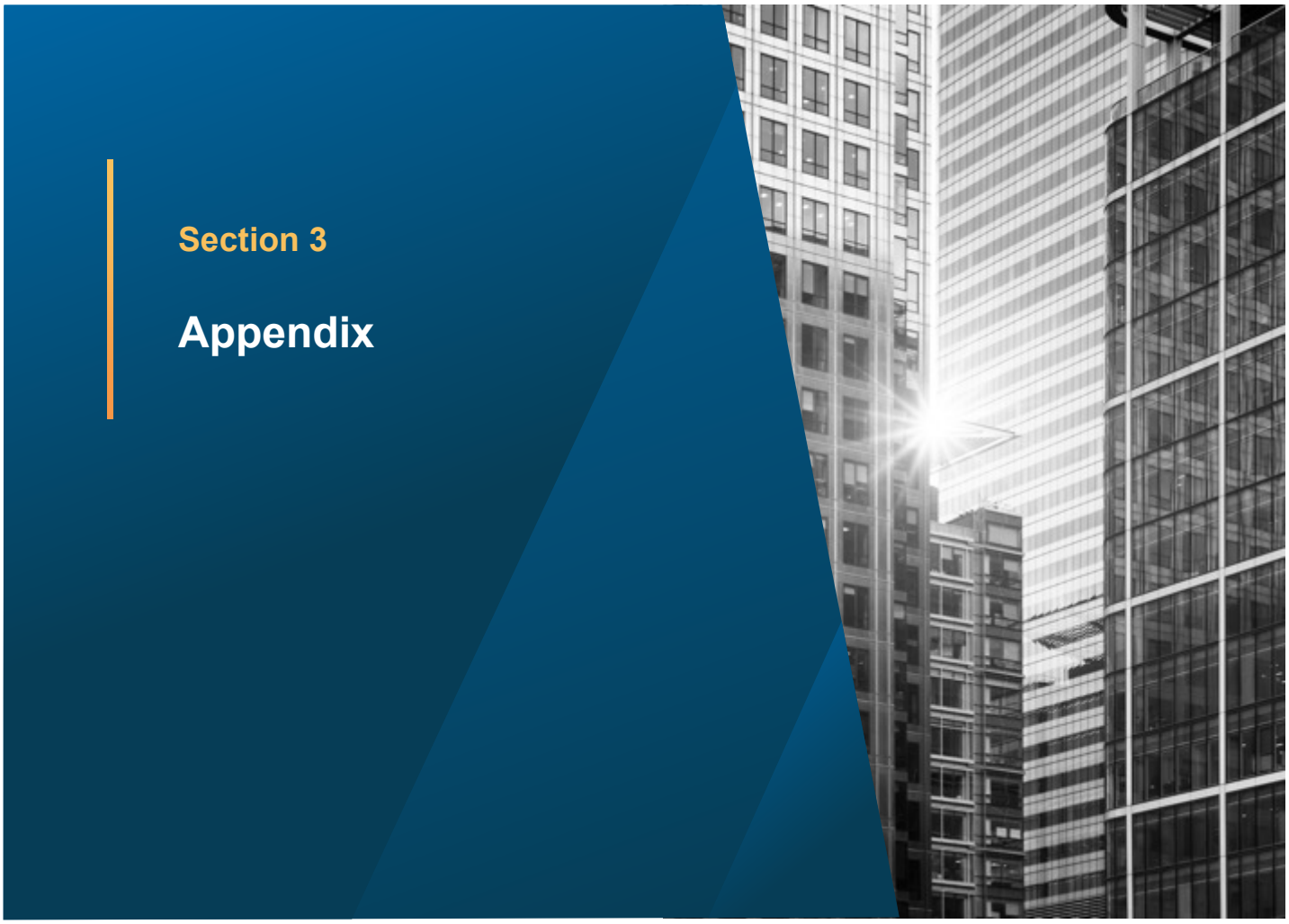

Network IT Closet

This is a 65,229 square foot health services and client housing building. There are two energy sources for this building: steam and electric. Neither electric nor steam is currently sub metered. The main electric service is in the basement electric room. The main steam line for the building comes from the campus central steam plant and the steam service entrance is in the basement mechanical room.

The building has one domestic water service entrance located in the basement mechanical room and is also currently not metered.

The steam, domestic water and electric meters will be hardwired to a network gateway located in the nearest IT closet, which is located in an IT closet on the 1st floor, then each gateway is connected to the internet via ethernet cable to the nearest network drop.





Section 3

Appendix

Meter Locations and Networking Schematics

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111 Speen Street

Framingham, MA 01701

T: 508.661.2200 F: 508.661.2201

Smart Business Solutions

123 Main

Columbus, OH

T: