

DC Water Headquarters

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SITE

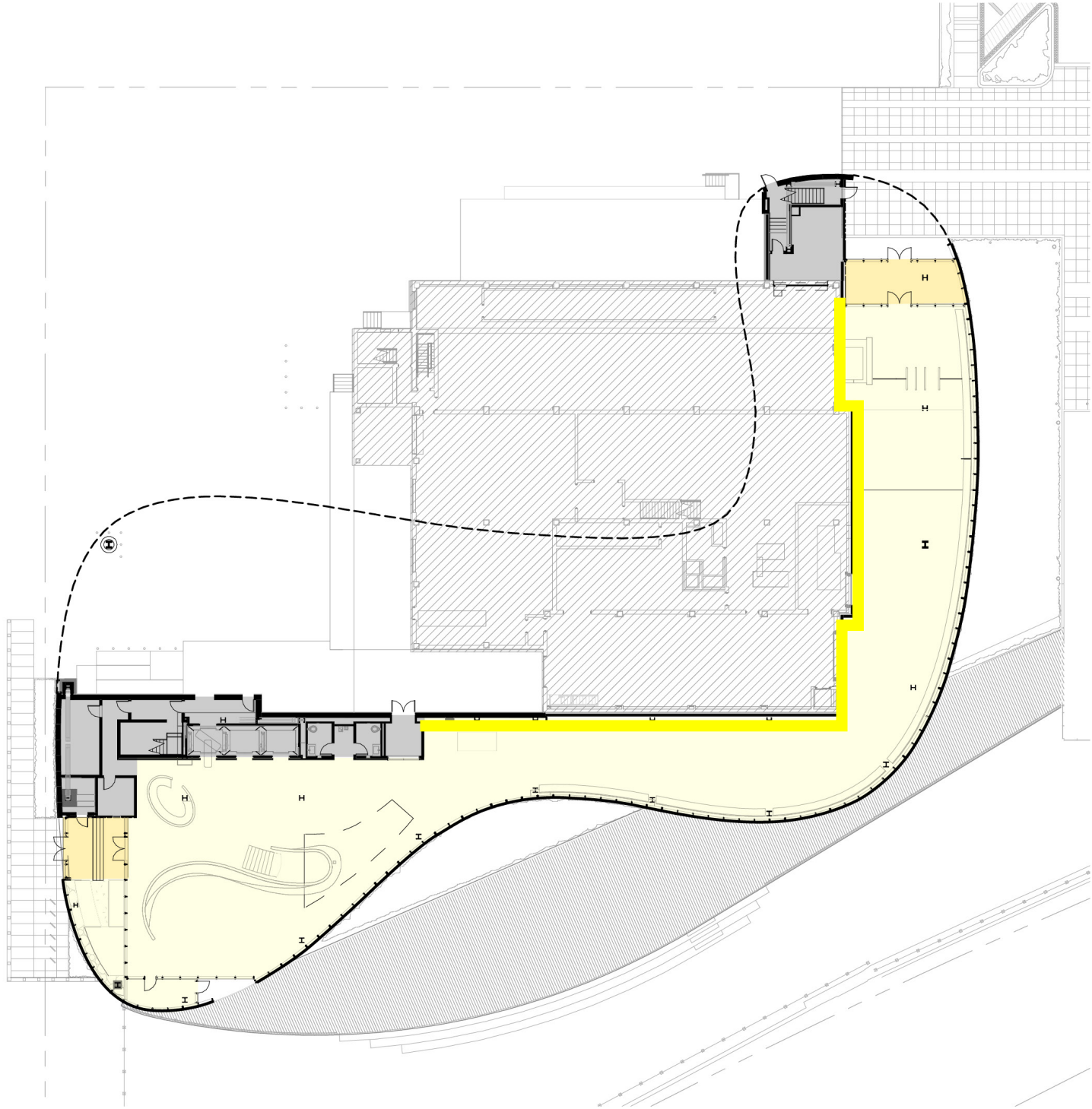




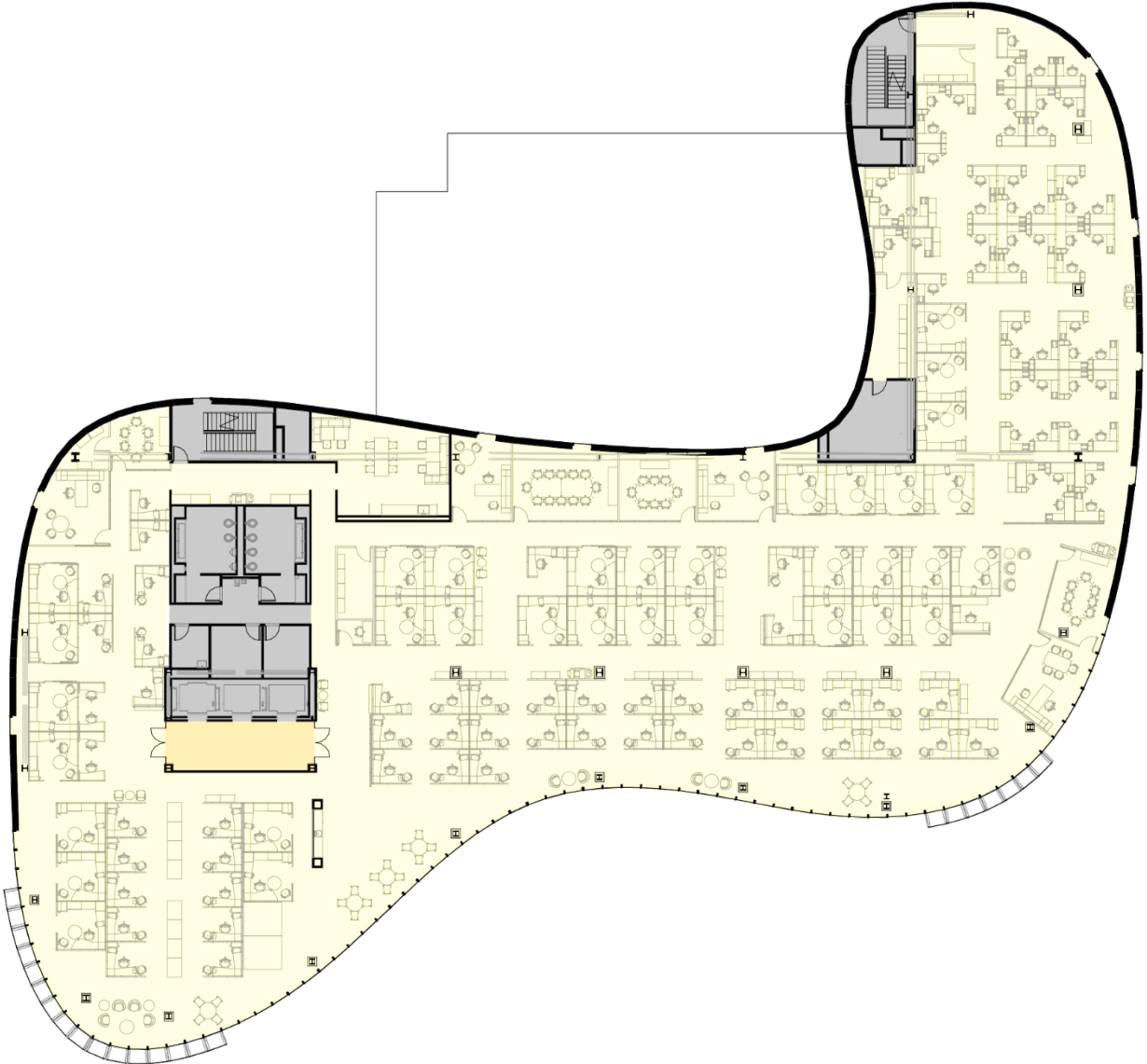


FORM

GROUND FLOOR PLAN



TYPICAL FLOOR PLAN



Legend

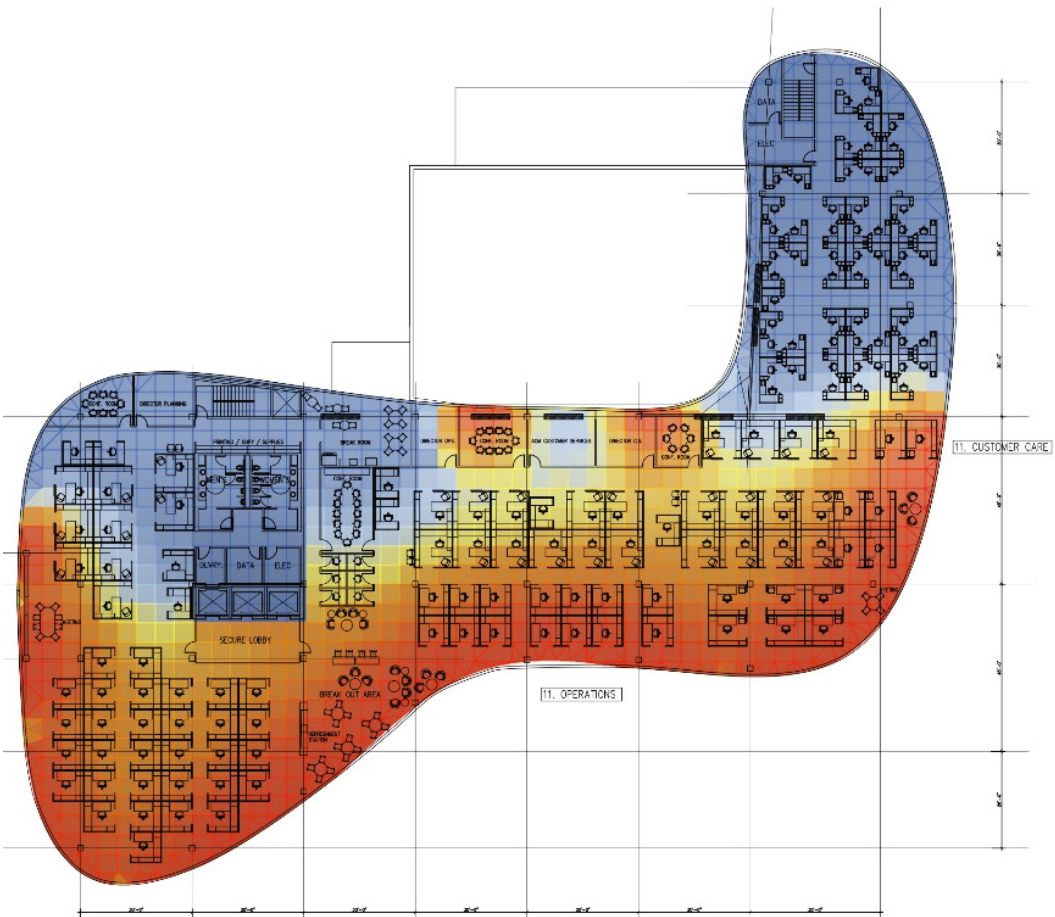
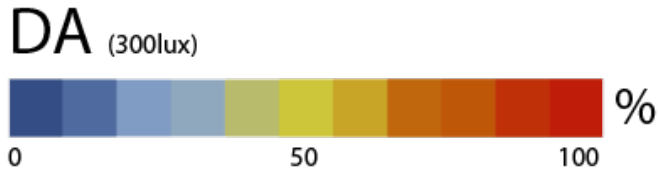
- Lobby
- Office
- Circulation / BOH
- Building below



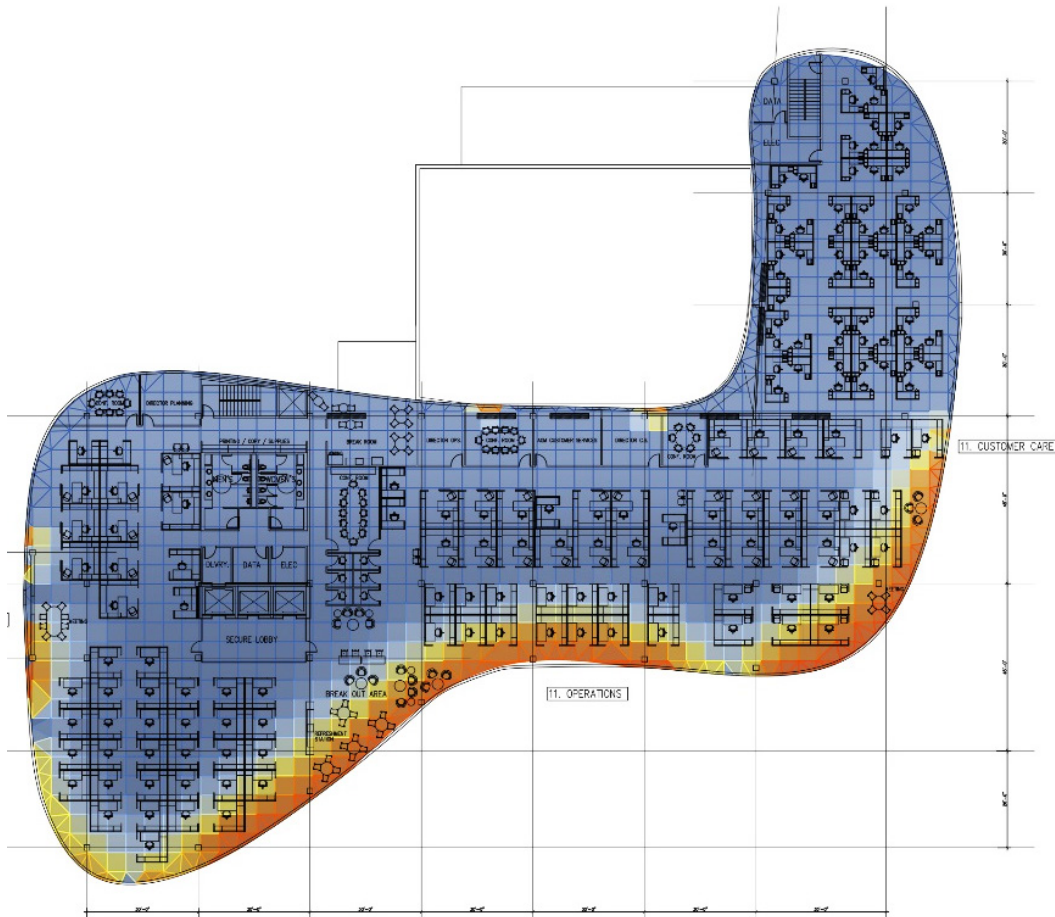
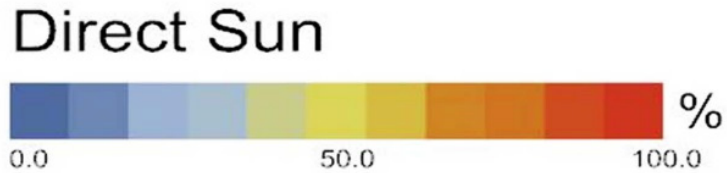
THIRD FLOOR PLAN

DAYLIGHTING ANALYSIS

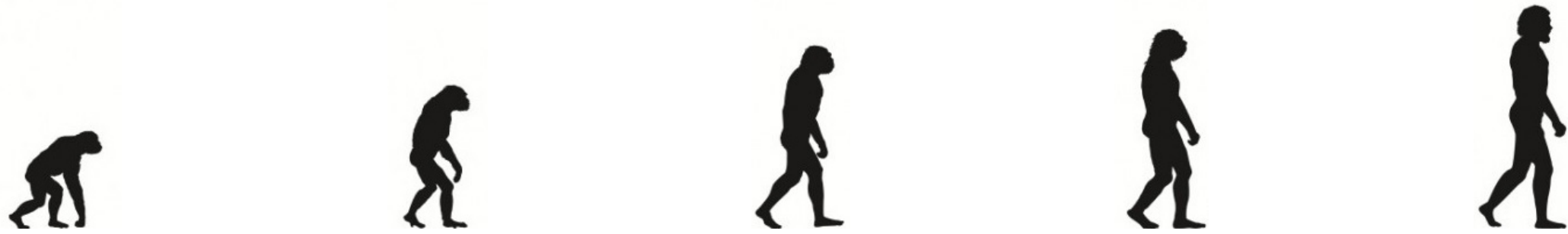
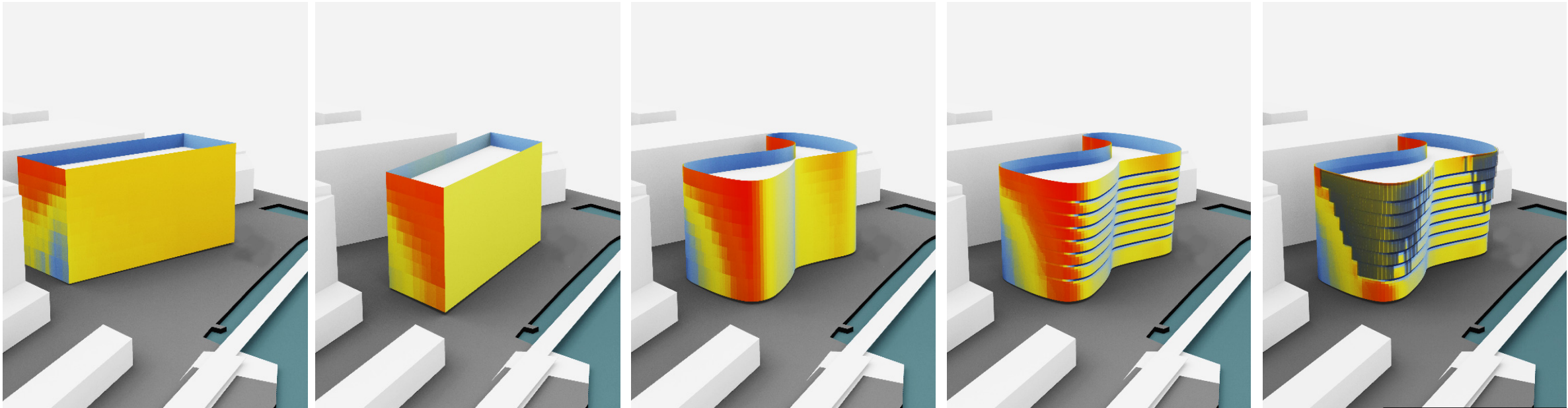
Daylight Harvesting



Glare Analysis



OPTIMIZING THE BUILDING SKIN

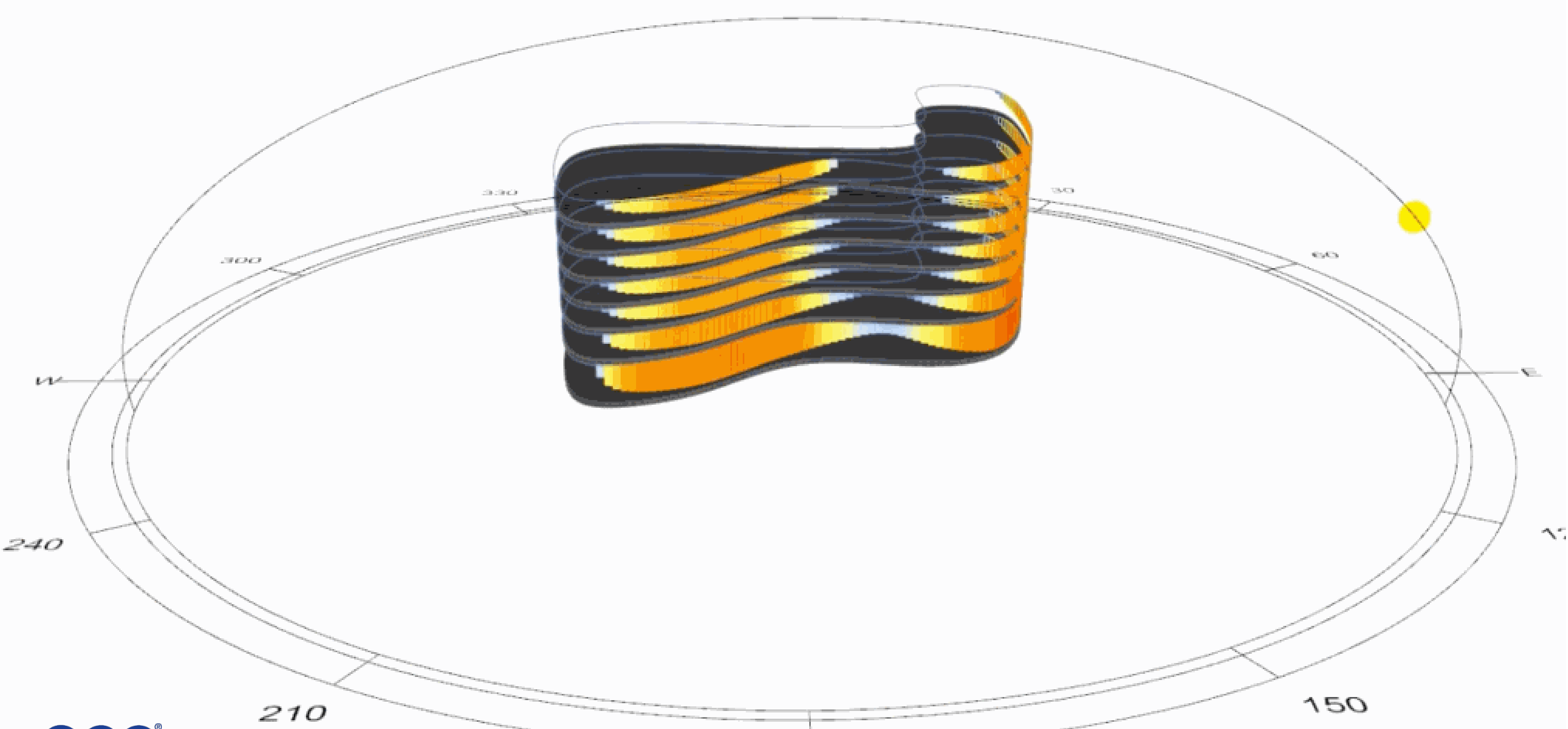






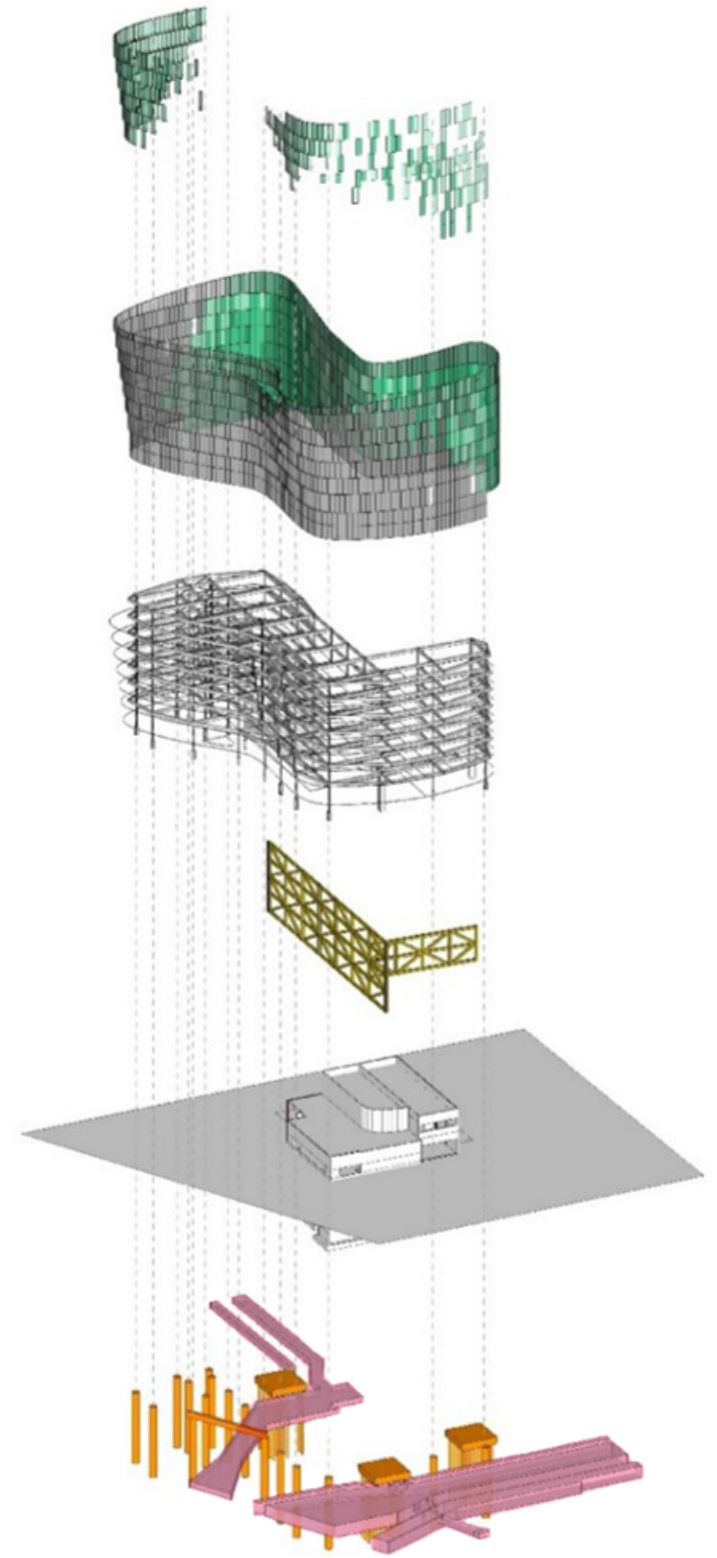
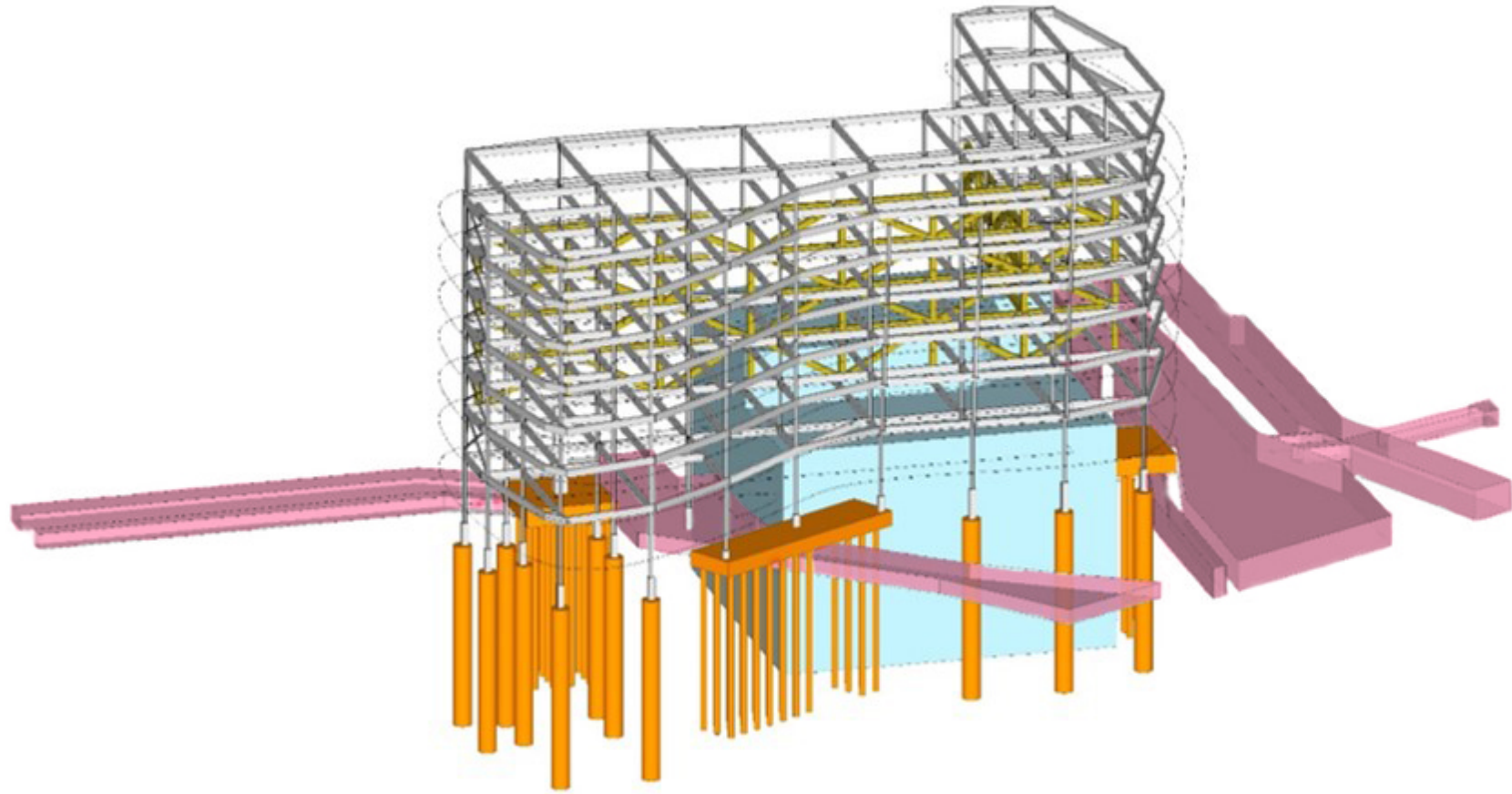


GLARE CONTROL

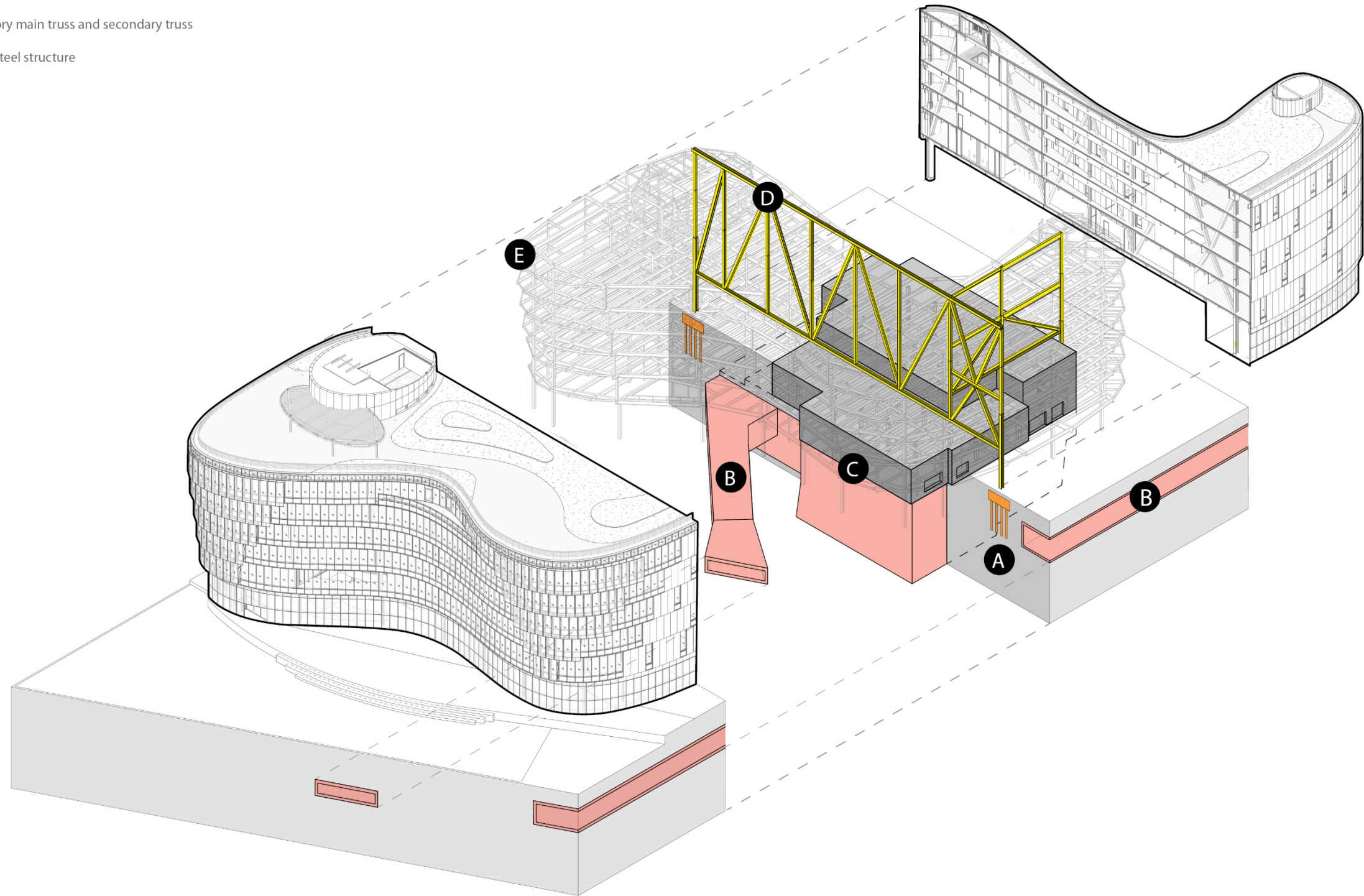




STRUCTURE



- A** Below grade structure, auger cast piles
- B** Below grade wastewater tunnels
- C** Existing O Street Sewer Pumping Station
- D** 200'-long, 5 story main truss and secondary truss
- E** Conventional steel structure





LANDSCAPE



- ▶ Loading
- ▶ Pedestrian
- ▶ Vehicular



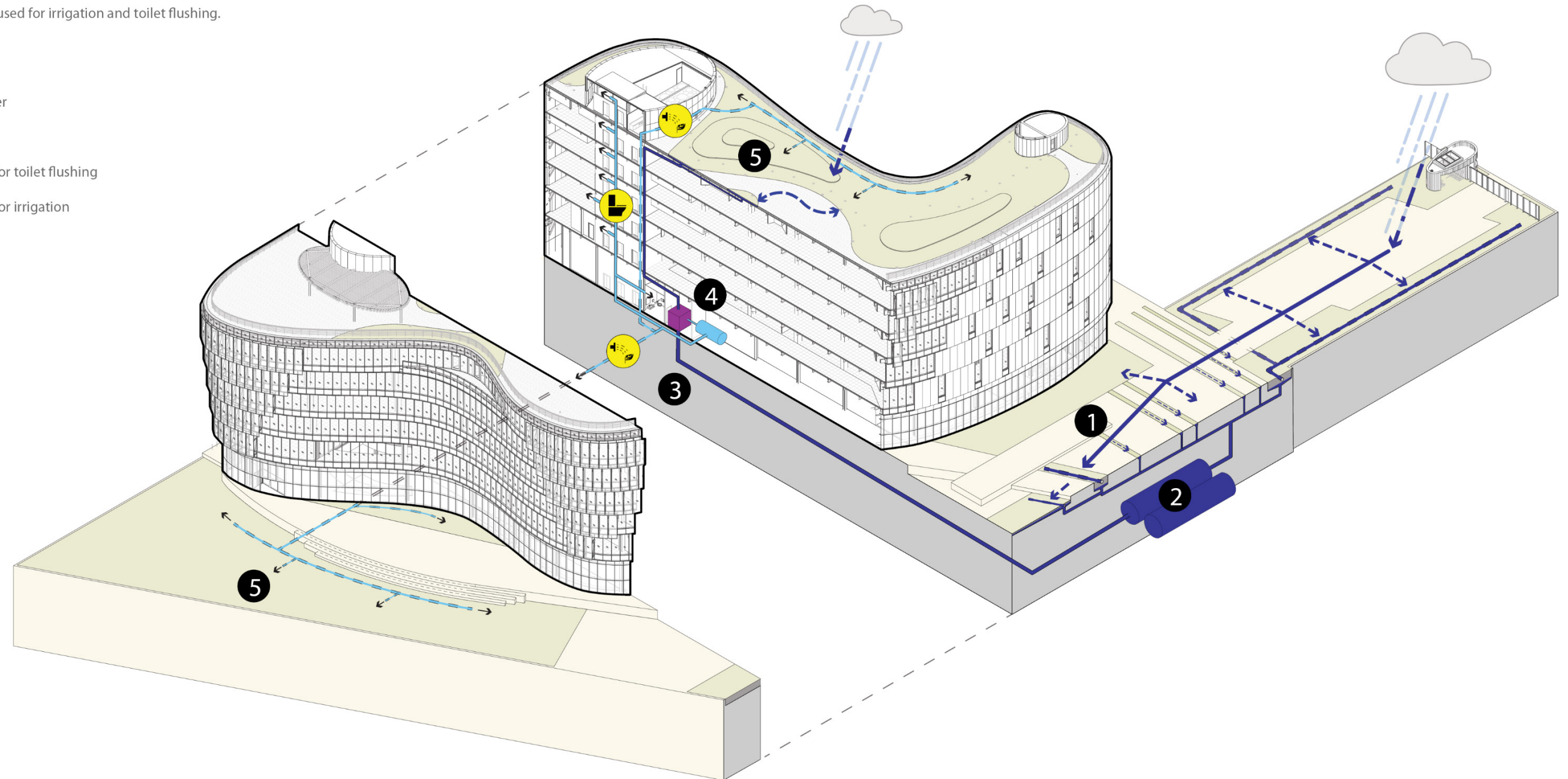


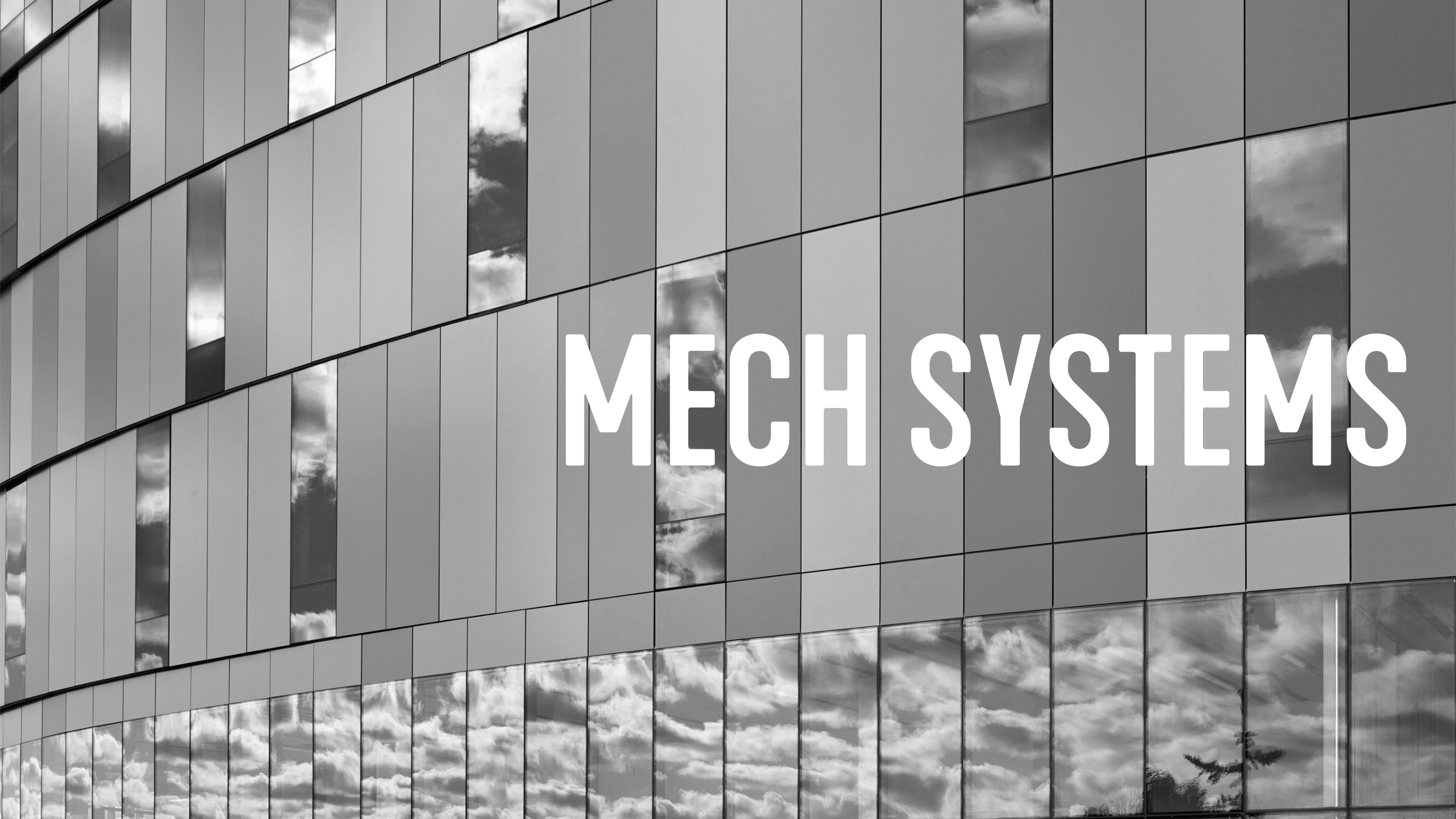
72% less potable water than a typical building

- 1 Rainwater not absorbed by plants is collected through runnels in the low impact development (LID) planters.
- 2 Rainwater is routed to a 40,000 gallon cistern underground.
- 3 Rainwater is sent to the filtration pump room to be filtered and treated to remove impurities.
- 4 Treated rainwater is stored in the 1,700 gallon day tank in the lobby.
- 5 Reclaimed water is used for irrigation and toilet flushing.

Legend:

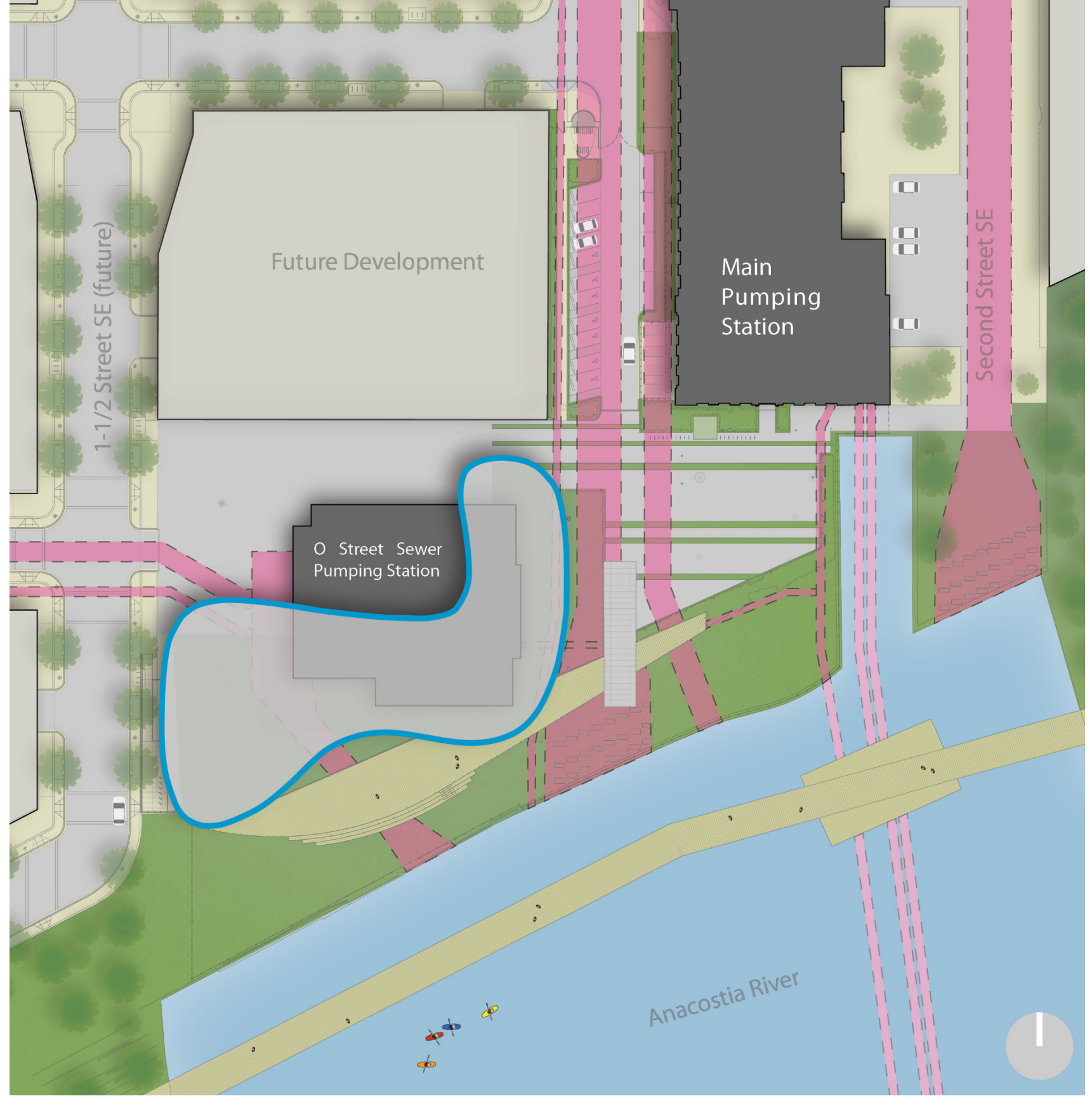
- Untreated rainwater
- Filter pump
- Treated rainwater for toilet flushing
- Treated rainwater for irrigation





MECH SYSTEMS

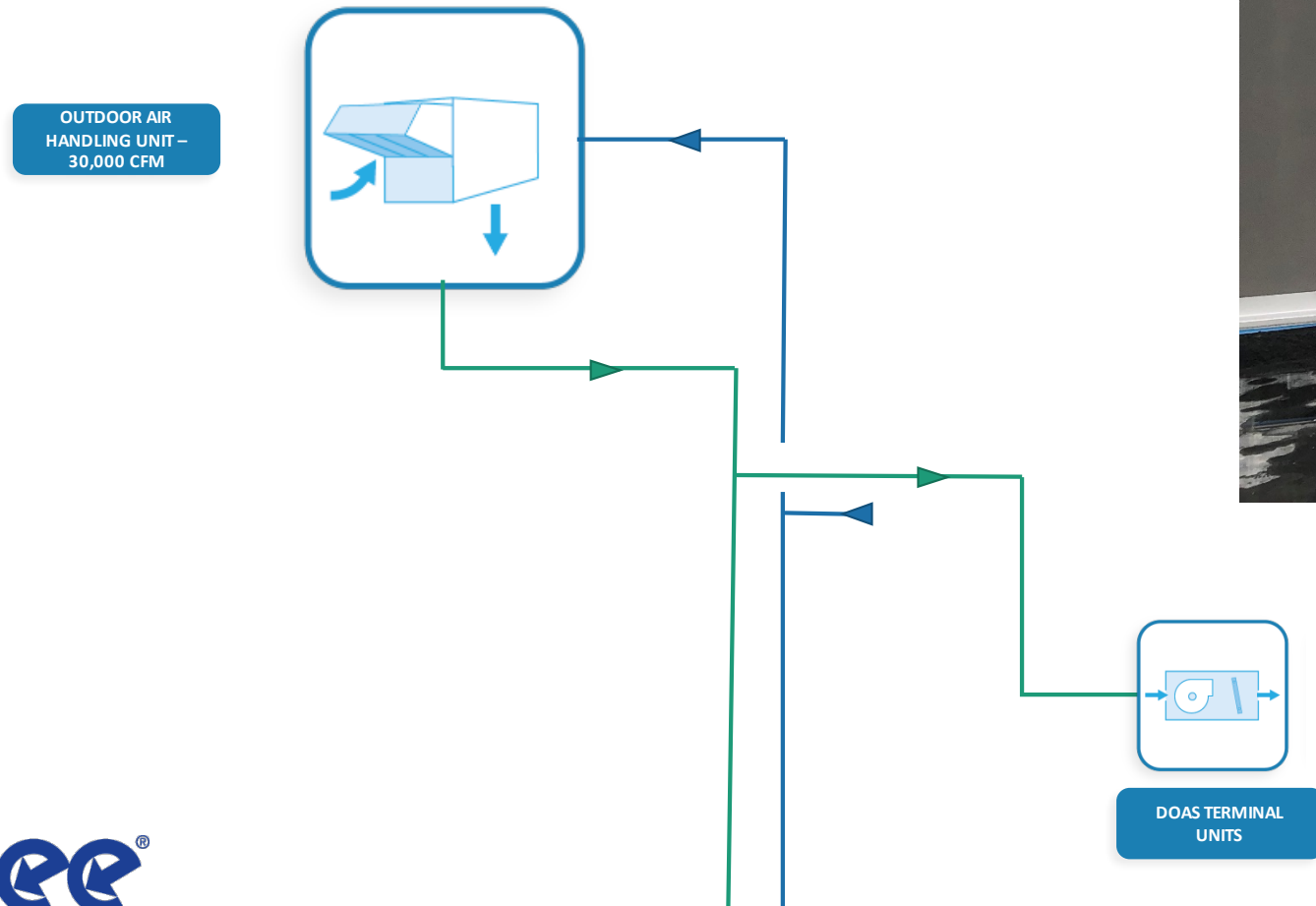
BELOW GRADE ENERGY ASSETS



MECHANICAL SYSTEM OVERVIEW

Dedicated Outdoor Air System (DOAS)

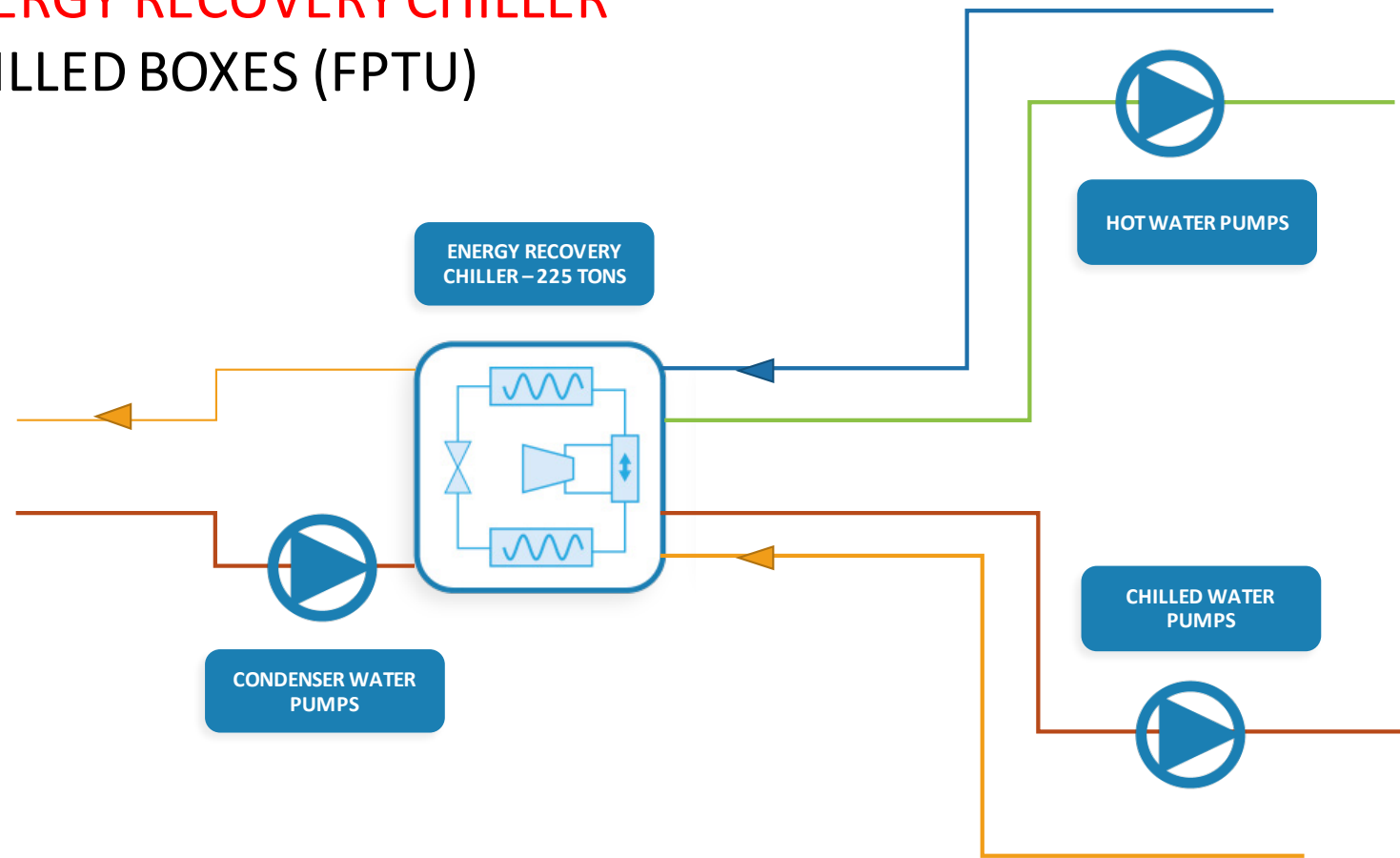
- OAHU
- ENERGY RECOVERY CHILLER
- CHILLED BOXES (FPTU)



MECHANICAL SYSTEM OVERVIEW

Dedicated Outdoor Air System (DOAS)

- OAHU
- **ENERGY RECOVERY CHILLER**
- CHILLED BOXES (FPTU)

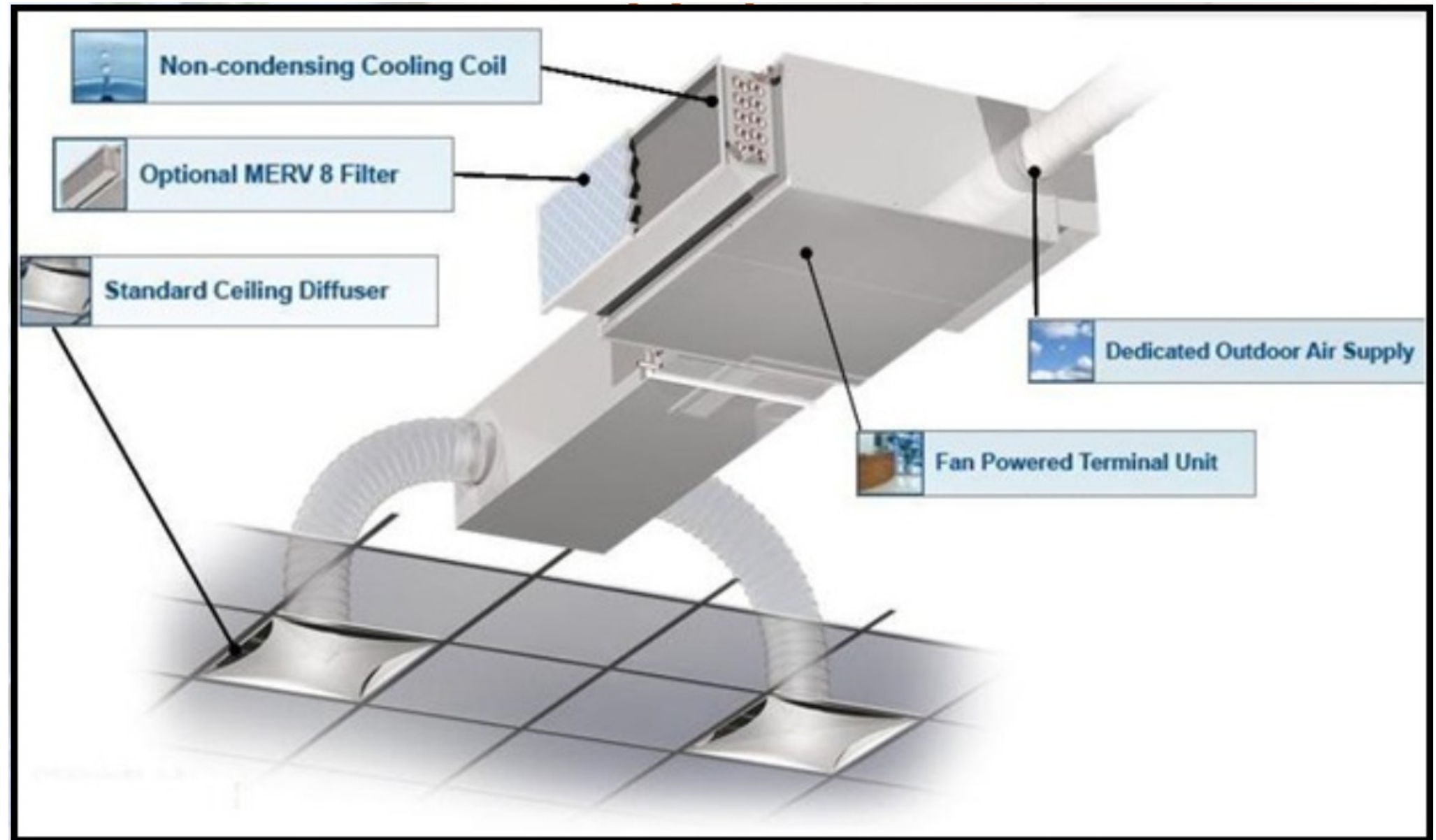


Energy Recovery Chiller can provide simultaneous **Heating** and **Cooling**

MECHANICAL SYSTEM OVERVIEW

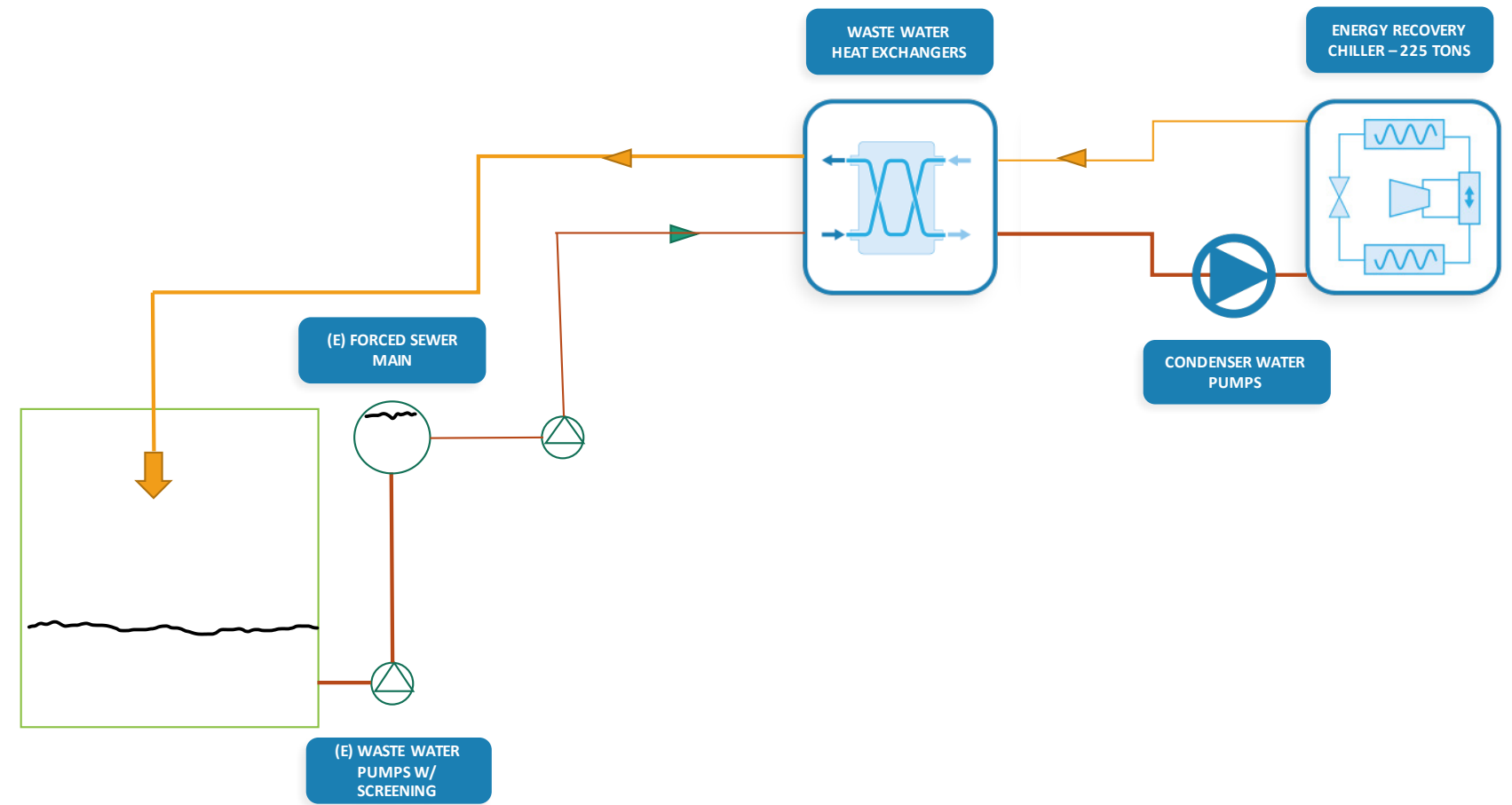
Dedicated Outdoor Air System (DOAS)

- OAHU
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- **CHILLED BOXES (FPTU)**



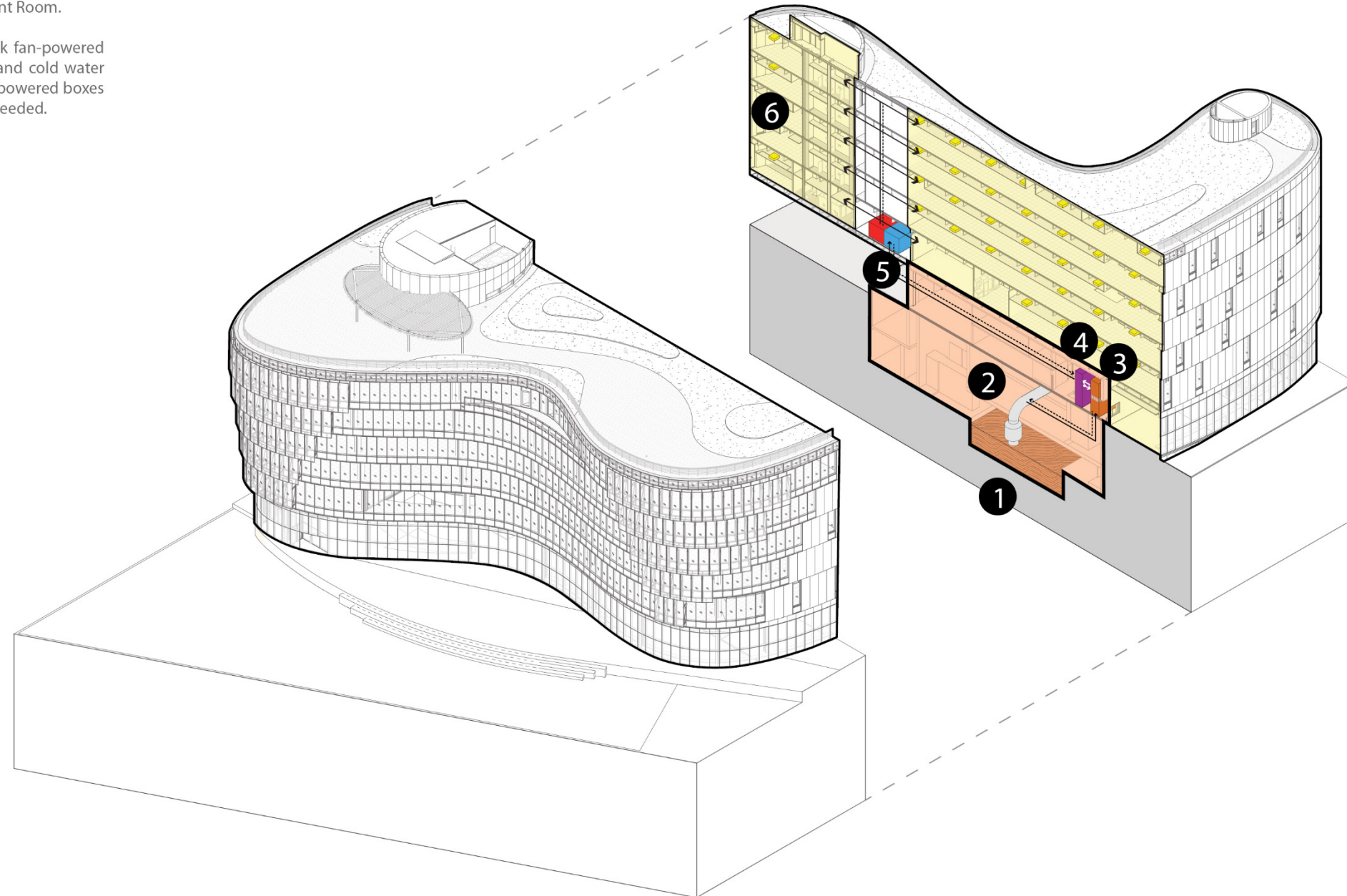
AKA
Fan Powered Terminal Units
DOAS Terminal units

SEWAGE WASTEWATER ENERGY EXCHANGE (SWEE)



48% less energy than a typical building

- 1 A Wet Well holds wastewater before it is pumped to Blue Plains for treatment.
- 2 Wastewater is pumped from the Wet Well to the SHARC system.
- 3 The SHARC system filters and separates wastewater and solids.
- 4 The Heat Exchanger transfers heat energy to and from filtered wastewater and clean water. This keeps dirty and clean water completely separate. In the summer, heat is transferred to the wastewater, and in the winter, heat is taken from the wastewater.
- 5 Clean conditioned water is sent to the Chiller Plant Room.
- 6 Clean heated water is pumped to heat network fan-powered boxes on every floor. The chiller produces hot and cold water that is distributed throughout the building. Fan-powered boxes provide warm or cool air to the office spaces as needed.



SEWAGE
WASTEWATER
ENERGY
EXCHANGE
(SWEE)



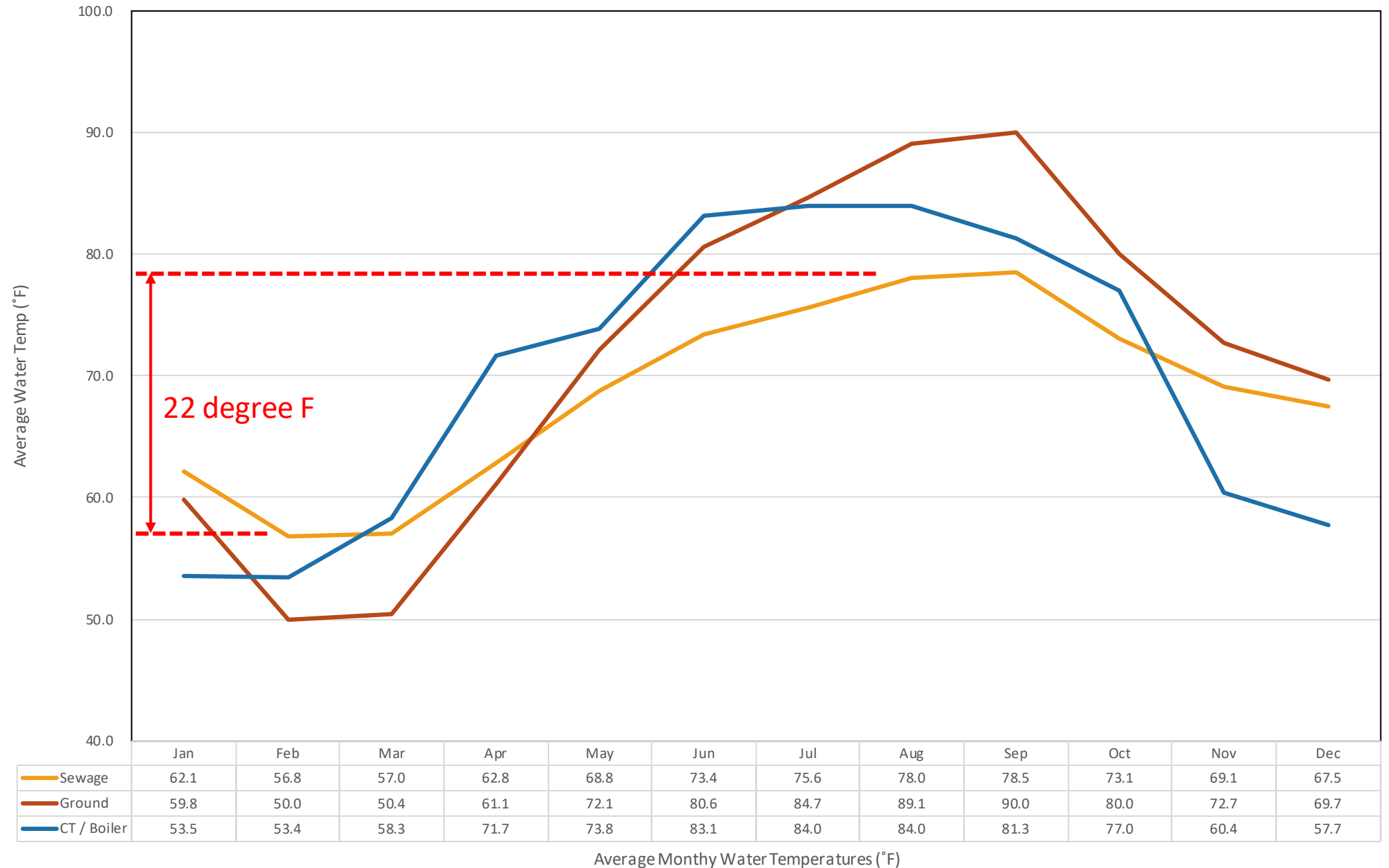


SEWAGE
WASTEWATER
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SEWAGE WASTEWATER ENERGY EXCHANGE (SWEE)

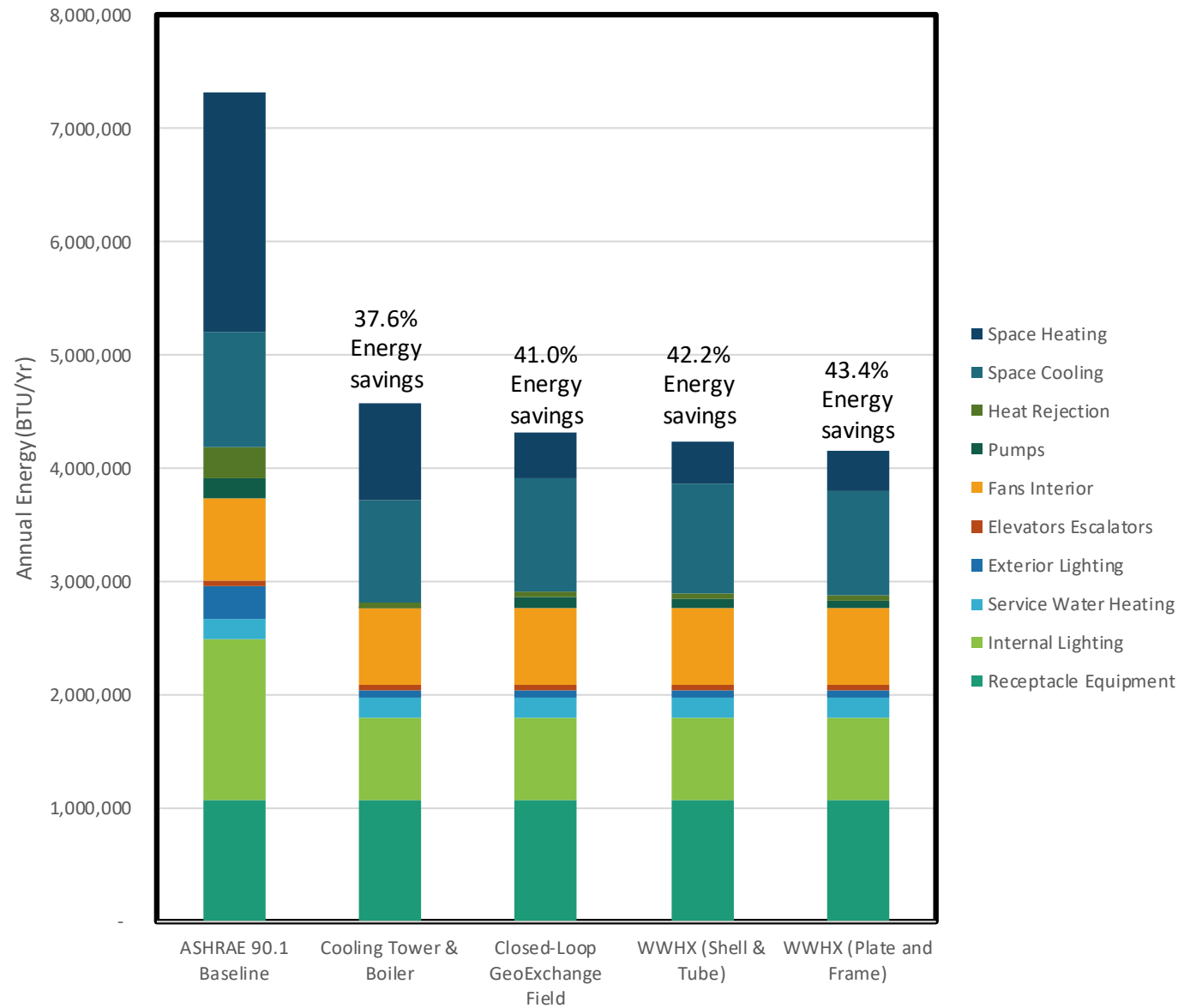
Waste water can have a temperature range similar to that of a geothermal field and a heat pump loop with a cooling tower and boiler.

Water Temperatures For Heat Sink

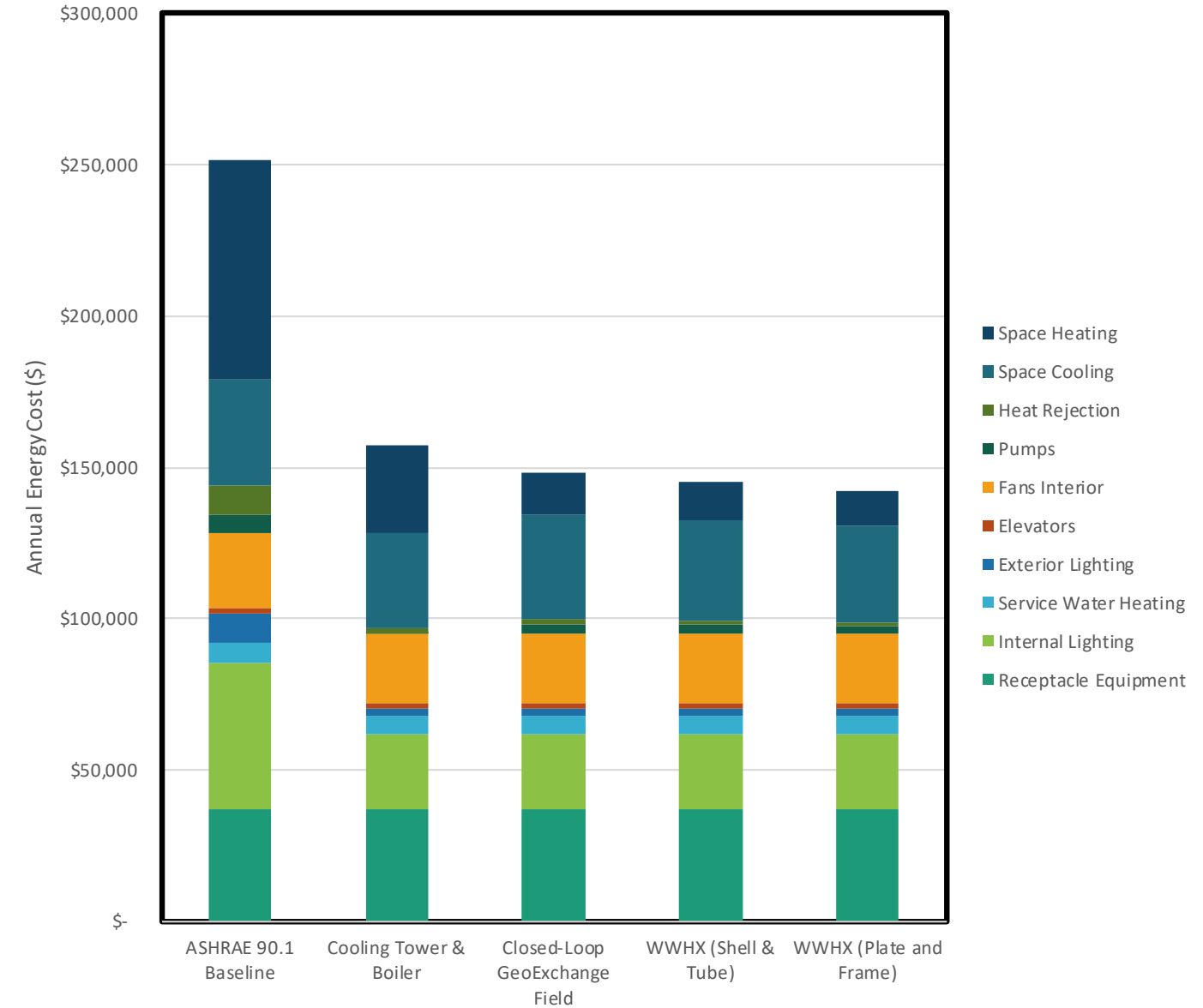


SEWAGE WASTEWATER ENERGY EXCHANGE (SWEE)

Heat Sink Options



Heat Sink Options – Energy Cost



Thank You!

