

Environmental Analysis

Water Demand

The proposed project will contain approximately 7,430 square feet of gross floor area and an additional 23,281 square feet of program space below grade. A four (4) inch domestic water service will be extended from 8 inch water main in G-Street. The water meter will be located outside in public space. The system design pressure will provide 35 psi residual pressure at the highest, most remote flush valve and a maximum pressure of 80 psi to any plumbing fixture. The piping system will be sized to maintain a velocity of 4-6 feet per second within the piping system. System sizing will include the projected fixture unit load and mechanical make-up demands for Phase 2. Domestic water distribution for Phase 1 will be on street pressure. A future cold water connection will be provided in the lower level mechanical room to feed a domestic water booster pump system to serve Phase 2. An eight (8) inch fire suppression service will be utilized for this project and will be extended from 8 inch water main in G-Street. The proposed connection for the fire and domestic service will be made within the existing distribution system and will be coordinated with the D.C. Fire Marshal and D.C. Water.

Sanitary Sewer Demand

A sanitary waste and vent system will be sized based upon the total connected drainage fixture units found in the Plumbing Code. Sanitary waste pipe sizing will include the projected drainage fixture unit load and any continuous discharge flows for Phase 2. The drainage systems for Phase 1 will all be below the depth of the sewer system in the street. Therefore, all fixtures in Phase 1 will drain by gravity to a sewage ejector placed at the lowest parking level. The sewage ejector will pump sanitary waste up to the lower level to the combined gravity sewer/storm outfalls. Approximate sewage ejector capacity is 150 gpm at 70 feet of discharge head for each ejector. All sewage ejectors will be on emergency/standby power. The proposed connection for the sanitary sewer line will be at the existing 15" and 18" combined sewer along G-Street, NW and will be coordinated with the D.C. Water.

Stormwater Management

The configuration of Phase 1 is entirely below grade with the exception of some incidental projections above grade for entry and egress stairwells, mechanical vent shafts and an entry pavilion. The roofs of these projecting structures will be drained via gutters and downspouts discharging to grade level or where appropriate, to piped storm receptors that will drain below grade to a stormceptor for quality and storm water collection system or cistern for quantity. The project exceeded the quantity volume requirements by the District Department of Environment Watershed Protection Division.

Solid Waste Services

Solid waste and recycling materials generated by the project will be collected by a private trash collection contractor.

Electrical Services

Electricity will be provided by the Potomac Electric Power Company (PEPCO) in accordance with its usual terms and conditions of service. All electrical systems will be designed to comply with the D.C. Energy Code. The transformer and bus underground vault will be installed in the public alley at the rear in accordance with PEPCO's design guidelines and approval by the District Department of Transportation.

Energy Conservation

The project will be constructed in full compliance with Article 24 (Energy Conservation) of the D.C. Building Code. Conformance to code standards will minimize the amounts of energy needed for the heat, ventilation, hot water, electrical distribution, and lighting systems contained in the structure.

Erosion Control

Sediment and erosion control will be implemented during excavation and during construction per the District Department of Environment standards and specifications.