

5/4/2020

Below are the supplementary materials to the application, self-evaluation and checklist for the University of Pittsburgh's submission on 4/30/2020 of the New Chilled Water Plant project for your review and consideration.

Project Narrative

The project is depicted in the presentation submitted with the attachments on 4/30/2020 and further described in the DRP Project Summary, Additional Information.

The building is to be sited along the hillside adjacent the Robinson Street Extension as it approaches the Cost Sports Center. The roughly triangular exterior space bounded by the Chilled Water Plant, the Sports Dome, and the Cost Center will be infilled with a future Campus Recreation athletic field. The existing site consists partially of concrete pavement which borders the existing practice field, and partially of the sloped landscaping buffer between Robinson St. and the field. A freestanding screen wall or fence is proposed to dedicate a paved exterior utility yard for the Plant, and to separate it from the adjacent athletic fields and facilities. Several parking spaces are anticipated for utility vehicles and employee personal transportation. Green space is to be maximized, with the existing planted landscaping buffer being preserved to the greatest extent possible. All concrete paving, curbs, and steps are to be 4,500 PSI. Site concrete below grade or otherwise hidden from view may be 3,500 PSI. Pedestrian walks and vehicular drives are to be a minimum of 5" thick wire mesh reinforced concrete with light broom finish to match surrounding walks, on minimum 6" compacted 2A aggregate base, or more stringent requirements as may be required by the University. Concrete curbs are to be 8" wide x 24" deep. Any bituminous paving required will be 1 ½" wearing course on 2 ½" binder course, and 6" compacted aggregate with geotextile stabilization fabric. Exterior building identification signage, if desired, is to be provided by others. The Owner is to provide requirements for power and mounting of signs. Any new tree and shrub plantings are to receive topsoil to the depth of the root ball; 12" of topsoil shall be considered the minimum in these areas. All landscaped areas are to be a combination of low maintenance plantings, including shrubs and ground cover, to meet University standards as a minimum. During construction, a combination of silt fencing and inlet protection is to be employed to meet all applicable regulations governing soil erosion and sedimentation control. Demolition of all existing site features, foundations, utilities and paving on the site are included in this contract. Excavation is to be specified as Unclassified, and is to include all existing foundations, obstructions and removal of abandoned underground utilities within the property line, capped to meet all code requirements.

In keeping with the University's intent for an "Industrial High Tech" architectural style, the building will have numerous glazed openings and screens to facilitate exterior views of the machinery within and to screen the cooling towers. Those walls that are not glazed are typically to be 8" CMU serving to back-up various exterior finish materials. The perimeter CMU, coated with appropriately specified interior finish systems, will provide a durable and utilitarian interior wall surface. Typical assemblies affixed to the exterior side of the CMU will consist of a fluid applied air barrier, polyisocyanurate board insulation, and exterior cladding that may include masonry veneer, a composite metal panel rain screen system, insulated metal sandwich-type wall panels, and corrugated metal wall panels.

Foundation walls below the slab on grade elevation are anticipated to be cast in place. Due to the slope of the site, some of these walls may retain fill under the slab, with the outside face being exposed above grade. Such conditions may be concealed with extensions of the above-mentioned cladding assemblies. Foundation walls having occupied space below grade are to be waterproofed with a sheet membrane waterproofing system, insulating protection board, and drainage panel. At the base of waterproofed walls, a foundation drainage system will convey redirected groundwater to the building's storm drainage system. Exterior wall assemblies are to be fire rated where required by code, meet NFPA 285 testing, and have a maximum assembly u-value of 0.090 as mandated by current energy code. Low exterior walls will generally be capped with precast coping, and copings out of pedestrian reach range will typically be premanufactured aluminum units. The cooling towers are to be screened from view utilizing a vision barrier system of horizontal or vertical aluminum louvers or airfoil-shaped fins affixed to a hot dip galvanized structural steel frame. Due to the highly specialized requirements for this project, this system is anticipated to be custom fabricated, utilizing products from a manufacturer of specialty vision barrier assemblies, and will include delegated design requirements. All exposed exterior metal copings, trims, vision barriers, curtain walls, storefronts, louvers, vents, flashings, and metal panels are to have high-performance 3-coat 70% PVDF finish in custom metallic color. All are to be specified to have finishes by the same manufacturer to ensure matching between all exterior metal items.

Due to the span sizes currently anticipated, the exterior system is to be a glazed aluminum curtain wall assembly, typically 2 1/2" x 7 1/2", front glazed and thermally broken. For aesthetic effect, a variety of depths and profiles of extruded aluminum curtain wall snap-on mullion covers are anticipated, as well as flush sealant glazed mullions in some locations. Finish will be a high-performance 3-coat 70% PVDF finish in custom metallic color. Glass will be non-reflective, low-e coated 1" insulated units. Glass is to be selected to maximize shading coefficients and minimize solar heat gain, but the notable glazed façade area applied in this project should facilitate significant natural daylighting. Any other exterior windows are to be aluminum units with insulated low-e glass with frame finish to be high-performance 3-coat 70% PVDF finish in custom metallic color. Interior window stools will be solid surface material.