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October 4, 2016

Mr. John Gordon Hill
Mercer Island Center for the Arts
P.O. Box 1702
Mercer Island, WA 98040

Subject: Geotechnical Engineering Services
SEPA Review
Mercer Island Center for the Arts Building
Mercer Island, Washington
Perrone Consulting Project #16144

Dear Mr. Hill:

This report summarizes the results of our geotechnical engineering SEPA review for the proposed Mercer Island Center for the Arts (MICA) building. The building will be located adjacent to Mercerdale Park at the intersection of SE 32nd St and 77th Ave SE on Mercer Island, Washington. These services were provided in accordance with our September 23, 2016 proposal which you authorized on September 23, 2016.

The purpose of our services was to review the geotechnical engineering design report and evaluate whether the "Earth" and "Subsurface Water" elements of the SEPA Environmental Checklist has been appropriately addressed. Our services included a site visit to observe site conditions and reviewing the geotechnical design report (Hart Crowser 2016) and the Environmental Checklist submittal (Framework Cultural Placemaking, 2016).

PROJECT AND SITE DESCRIPTION

The site consists of a relatively level area on the southeast portion of the property adjacent to the roadway and the existing park. An existing building and paved parking areas occupy this portion of the property. The existing building was cut about 6 feet deep into the toe of the hillside which slopes up to the west, continuing to 74th Ave SE for an elevation gain of about 280 feet. The lower slopes were generally inclined at about 5 to 20 percent and the upper slopes to the west were inclined at about 20 to 40 percent gradient.

The City's landslide hazard maps (Troost & Wisher 2009) indicate that the site is a landslide hazard area due to geology and slope steepness. The westerly portion of the site was also mapped as a known recent landslide.

The proposed two story building will have a footprint of about 28,000 square feet and will occupy the relatively flat area at the bottom of the slope with the westerly portion extending into the hillside. The first floor elevation of the eastern portion of the building will be within a few feet of existing site grades whereas the west wall of the building may be cut into the toe of the hillside to depths on the order of 12 to 18 feet.

GEOLOGIC AND SUBSURFACE CONDITIONS

Geotechnical borings were drilled at the site to evaluate subsurface conditions (Hart Crower, 2016). The interpreted subsurface conditions generally consisted of fill and/or colluvium overlying fine grained recessional outwash over fine grained glacial outwash.

No groundwater monitoring instruments were installed during the most recent geotechnical explorations. Groundwater levels were evaluated based on groundwater observations made at the time the recent borings were drilled and from groundwater data obtained from observations wells installed during previous investigations at this site (Shannon & Wilson, 1985) and at the adjacent property to the east (Hart Crowser 1980). The data generally indicate perched groundwater levels within a few feet of the ground surface. The regional groundwater table was interpreted to be deeper than the borings which extended to a maximum depth of about 50 feet.

ENVIRONMENTAL CHECKLIST REVIEW

In our opinion the subsurface site conditions have been adequately explored and provide sufficient information to characterize the potential earth and groundwater environmental impacts. In general, we are in agreement with the information provided in the "Earth" and "Subsurface Water" sections of the Environmental checklist submittal (Framework Cultural Placemaking 2016). Based on the conditions revealed at the site, the potential environmental impacts of particular significance are the stability of the hillside, soil erosion, and possible site dewatering.

Hillside Stability and Landsliding (Checklist Item B.1.d)

We agree that the proposed long term impact of the proposed construction will not increase or decrease the long term stability of the slope. Compliance with the geotechnical engineer's recommendations for temporary shoring and excavation slopes is essential during construction to avoid the risk of temporarily increasing the landslide risk during construction.

Soil Erosion (Checklist Item B.1.f)

The on-site soils are highly erodible but erosion can be adequately controlled by using best management practices.

Site Dewatering (Checklist Item B.3.b.1)

It is expected that construction dewatering could be managed using sumps and trenches to control perched groundwater flowing onto the site. However, the geotechnical design engineer also notes that active temporary construction dewatering may be required for any deep excavations below the finished floor elevation, such as elevator pits. Based on the currently proposed construction, it is our opinion that an active dewatering system would not affect the regional groundwater table which is reportedly located much deeper than what would be required for an active dewatering system. If deep excavations are required, the geotechnical design engineer should evaluate the potential impacts on the groundwater table.

CLOSURE

The geotechnical design engineer should review the final building plans for compliance with the intent of the geotechnical design report and to modify or provide additional recommendations as necessary.

We trust that this information suits your current needs. If you have questions or need more information, please contact us.

Very Truly Yours,
PERRONE CONSULTING, INC., P.S.

10/4/16

Vincent J. Perrone, Ph.D., P.E.
Principal Engineer

References

Framework Cultural Placemaking, 2016. "City of Mercer Island, Development Services Group, Environmental Checklist (WAC 197-11-960)," July 26, 2016.

Hart Crowser , Inc. 2016. "Geotechnical Engineering Design Report, Proposed Mercer Island Center for the Arts Building, Mercer Island, Washington," Prepared for Mercer Island Center for the Arts, July 26, 2016.

---------- 1980. "Design Phase Subsurface Explorations and Geotechncial Engineering Study, Proposed Office Building and Parking Structure for Farmers New World Life Insurance Company, Mercer Island, Washington." January 4, 1980.

Shannon & Wilson 1985. "Preliminary Geotechnical Report, Mercer Island Civic Center, Mercer Island, Washington." August 1985.

Troost, K.G., & Wisher, A.P. 2009. "Mercer Island Landslide Hazard Assessment," April 2009.