



re: Geotechnical Response to City Comments
Proposed Building Addition
1250 and 1252 Wellington Street West – Ottawa, Ontario

to: Domicile Developments Inc – Mr. Rick Morris – rick@domicile.ca

date: September 12, 2022

file: PG5972-MEMO.01

Further to your request, Paterson Group (Paterson) prepared the current memorandum to address the geotechnical related review comments provided by the City of Ottawa. The following memorandum should be read in conjunction with the current Geotechnical Investigation Report (Paterson Group Report PG5972-1 Revision 1 dated March 15, 2022).

Geotechnical Investigation

Comment 2.4: *As per Tree Planting in Sensitive Marine Clay Soils – 2017 Guidelines, in areas of clay soils, the followings tests are required, please ensure the following tests are performed*

- *Atterberg Limits test and one water content test*
- *A grain size test for every four boreholes*
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- *Shrinkage test (These tests were not included silty clay present).*

Response: Based on our review of the landscape plan prepared by GJA Inc., it is understood the proposed landscaping will consist of a new shrub and retaining two existing Hackberry trees. The existing and proposed founding depth for the existing and proposed portions of the structures are understood to be located a minimum of 2.1 m below ground surface, and as required by the City of Ottawa's *Tree Planting in Sensitive Marin Clay Soils (2017 Guidelines)*. Further, the bearing surface was observed to be and is anticipated to consist of a layer of silty sand and gravel for the existing and proposed portions of the structure, respectively. The silty sand deposit is not considered susceptible to settlement associated with moisture depletion by tree roots and is expected to act as a barrier to root growth from extending into the underlying deposit of silty clay.

Since the proposed shrubs are not anticipated to have a similar water demand as street trees, setbacks based on the aforementioned guidelines are not considered applicable for the proposed development. It is expected the mature height of the proposed shrubs will be less than the setback provided between their footprint and the buildings foundation.





Based on this, the proposed shrubs are considered acceptable to be planted in their proposed location without impacting the proposed building from a geotechnical perspective. It is recommended seasonal pruning and maintenance of the existing Hackberry trees be considered to limit their long-term water demand.

Comment 2.5: *Please provide discussion on the measured groundwater level readings in relation to the proposed underside of footing for the proposed buildings.*

Response: Groundwater levels were measured at a depth of 2.9 m below ground surface at BH 1-21 on September 22, 2021, within the installed piezometers. However, all other piezometers and test pits extended below this depth were observed to be dry at the time of the investigation.

Based on the findings of the field investigation program, the long-term groundwater table at the subject site is anticipated at approximate depths of 3 to 4 m below ground surface. Based on our review, the proposed structure will be founded upon an undisturbed, compact silty sand bearing surface above the long-term groundwater table. Given this, the recommendations provided in Section 5.3 – *Foundation Design* and Section 6.1 – *Foundation Design and Backfill* of the current Geotechnical Investigation Report are considered suitable for the proposed development with respect to the long-term groundwater table depth.

Comment 2.6: *Please submit a letter stating that the latest Grading and Servicing Plan has been reviewed and that it complies with the recommendations and statements of the latest Geotechnical Investigations*

Response: Reference should be made to Paterson Group Memo PG5972-MEMO.02, dated September 12, 2022, which documents our review of the latest site servicing and grading plans for the subject site provided by LRL Associates Ltd. In summary, the proposed grading at the subject site has been reviewed and is considered acceptable from a geotechnical perspective. In addition, the site servicing plans have incorporated the relevant geotechnical recommendations as part of the design. Therefore, the latest grading and site servicing plans are considered acceptable from a geotechnical perspective.

Comment 2.7: *Under section 5.4, please elaborate on “The soils underlying the proposed shallow foundations are not susceptible to liquefaction”.*

Response: Based on the results of the investigation, type of soils encountered, observed moisture levels, depth to the long-term groundwater table and in-situ stiffness/compactness, the soils are not considered susceptible to liquefaction from a geotechnical perspective.

Comment 2.8: *Any excavation utilizing hoe ramming and/or sheet piling for shoring or foundation support will require a Pre-Construction Survey for existing dwellings within 75 meters of site with notice of planned work to dwellings within 150 metres of site.*



Response: It should be noted that a Pre-Construction Survey and Vibration Monitoring will be completed where applicable in the near future as part of the construction program for the proposed development.

Comment 2.9: *Site dewatering during construction may be subject to volume restrictions thus is recommended that you reach out to the City of Ottawa Sewer Use Program in advance to discuss discharge details. Provide correspondence in appendix.*

Response: As indicated in the aforementioned geotechnical report, the groundwater level is anticipated to be located below the proposed building excavation depth. As such, temporary dewatering during construction is anticipated to be limited to surficial water runoff, rainfall, and snowmelt events. However, short-term dewatering volumes and associated permits will be handled by the excavation and dewatering contractor at the time of construction. Long-term dewatering is not expected to occur at this site.

Comment 2.10: *Section 5.3 of the Geotechnical Investigation Report states that once the proposed buildings are finalized, it is recommended that details of the underpinning program be prepared in conjunction with the projects structural engineer as well as a geotechnical engineer consulted at the time of design. As the Geotechnical Investigation Report was prepared prior to the plans of the proposed development please provide details of the underpinning program for review.*

Response: The design and implementation of the temporary shoring system will be the responsibility of the excavation and/or shoring contractor and their engineer. It is expected Paterson will provide a review of the proposed plans once the building excavation plans are complete. Reference should be made to Section 4.2 – *Subsurface Profile*, Section 5.3 – *Foundation Design* and Section 6.3 – *Excavation Side Slopes* of the current Geotechnical Report for additional information pertaining to the design of the proposed temporary support systems from a geotechnical perspective.

We trust that this information is satisfactory for your immediate requirements.

Best Regards,

Paterson Group Inc.

Drew Petahtegoose, B.Eng.



David J. Gilbert, P.Eng.

