



September 10, 2020

Boston Groundwater Trust
229 Berkeley Street
Boston, MA 02116

Attention: Mr. Christian Simonelli

Reference: 7 Beaver Place; Boston, Massachusetts
Boston Groundwater Trust (BGwT) – Boston Zoning Code Article 32

Ladies and Gentlemen:

In accordance with the provisions of Article 32, we have prepared this letter regarding the proposed below-grade construction at 7 Beaver Place in the Beacon Hill flats Neighborhood of Boston, Massachusetts.

Article 32 entitled "Groundwater Conservation Overlay District" of the Boston Zoning Code requires that the proposed construction will not adversely affect groundwater levels on-site or on adjoining lots below the BGwT established level of Elevation +7. Elevations referenced herein are in feet and refer to the Boston City Base Datum.

Fronting onto Beaver Place to the south, the approximate 820 square-foot site is bounded by 122 Chestnut Street (the Park School) to the east and north and 11 Beaver Place to the west. Currently, the site is unoccupied and consists of four perimeter basement level (foundation) walls with approximately two-thirds (2/3) of the existing basement level slab remaining. The remaining portion of the basement level slab consist of a new concrete floor slab located at approximately Elevation +7.

The proposed building renovation will include the demolition of the existing basement floor slab and construction of a new basement level floor slab located at about Elevation +8. A vehicle lift/elevator is also proposed at the southeast corner of the building and will require the installation of new foundations. A single car garage door entrance will permit access into the building from Beaver Place at the existing ground surface level and onto the proposed vehicle lift/elevator. The vehicle lift/elevator will lower the vehicle into the basement level, thereby allowing a second car to be supported/parked above it.

New foundations will also be installed for support of the proposed building renovations. Based on the relatively small building footprint and the subsurface soil conditions, the foundation system will consist of an approximate 34-inch thick pile-supported waterproofed mat slab foundation. The surface of the new mat slab foundation is currently planned to be located at Elevation +8. The portion of the mat slab located below the proposed elevator (the elevator pit) will be recessed approximate 2 feet below the main basement slab, corresponding to approximately Elevation +6. Excavation for the waterproofed mat slab foundation is anticipated to extend down to about Elevation +4.5.



Groundwater levels in this neighborhood of Boston are periodically monitored by the Boston Groundwater Trust (BGWT). The groundwater levels are typically obtained on a monthly basis and are documented on their on-line data base.

At BGWT Well ID: 24J-1979, which is located about 70 to the east of the site at the corner of Beaver Place and Brimmer Street and in front of The Park School, groundwater levels from September 2005 through August 2020 were reported to range from about Elevation +7.9 to about Elevation +2.8. Recent groundwater levels from March 2019 through August 2020 ranged from about Elevation +5.1 to Elevation +4.2.

At BGWT Well ID: 24J-2536, which located about 120 feet to the west of the site at the intersection of Beaver Place and Beaver Street, and with the exception of the groundwater level reading reported on January 2016, groundwater levels from July 2006 through August 2020 ranged from about Elevation +4.9 to Elevation +7.4. The groundwater level reading on January 2020 was reported at approximately Elevation +9.7.

In August 2015, McPhail Associates, LLC performed a subsurface exploration program within the basement level of the project site consisting of two (2) test pit explorations and one (1) boring. At the time the explorations were performed, groundwater was observed at approximately Elevation +4 within the test pit and boring explorations.

Based on the observed groundwater levels documented above, excavation for construction of the proposed lowest mat slab foundation will temporarily extend below the BGWT established level of Elevation +7. It is anticipated that the dewatering method will include the use of sumps located within the basement level which will temporarily lower the groundwater level at the site to about Elevation +4. It is noted that installation of the piles for support of the mat slab will be done from at least Elevation +7 such that dewatering will not be required during installation of the piles and that only during the excavation, construction and waterproofing of the mat slab will dewatering be performed.

The provisions of Article 32 of the Boston Zoning Code require that construction dewatering performed for the proposed construction not adversely affect groundwater levels on-site or on adjoining lots below the BGWT established level of Elevation +7. However, based the relatively small 820 square-foot site area, on-site recharge of groundwater within the site limits is not considered feasible. Therefore, temporary off-site discharge of groundwater will be required during the construction of the waterproofed mat slab foundation and when groundwater levels rise above Elevation +4.0.

All off-site dewatering will be discharge into the combined sewer/storm drain system located in Beaver Street. Discharge into the combined system will be perform in accordance with the MWRA permit that will be obtained for this project. Upon approval of the dewatering permit from the MWRA, a copy of the permit will be provided to BGWT.



During the temporary off-site discharge of groundwater, we request authorization to monitor the groundwater levels within the BGWT observations wells referenced above, as well as BGWT Well IDs: 24J-1972, 24J-1972B, 24J-1974, 24J-1974 and 24J-2651B which surround the project site on a weekly basis .

Based on the relatively small site area, the limited period of time during which off-site discharge of groundwater is anticipated, and the proposed scope of construction, the proposed temporary dewatering methods described herein are not expected to adversely affect the groundwater levels surrounding the project site. However, if the proposed monitoring program indicates that the off-site dewatering activities appear to be adversely affecting groundwater levels within the BGWT wells referenced above, dewatering will be suspended and the BGWT will be notified. Subsequent dewatering measures will be modified and coordinated with the site Owner and the BGWT.

Based on the above, the construction of a waterproofed mat slab foundation is not anticipated to have a negative impact on groundwater levels within the lot in question or adjacent lots following construction.

We trust that the above is sufficient for your present requirements. Should you have any questions, please call us.

Very truly yours,

McPHAIL ASSOCIATES, LLC


Harry J. Berlis



Chris M. Erikson, P.E.

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HJB/cme

C: Mr. David Trust
Payne Bouchier Fine Builders (Mr. Stephen Payne)