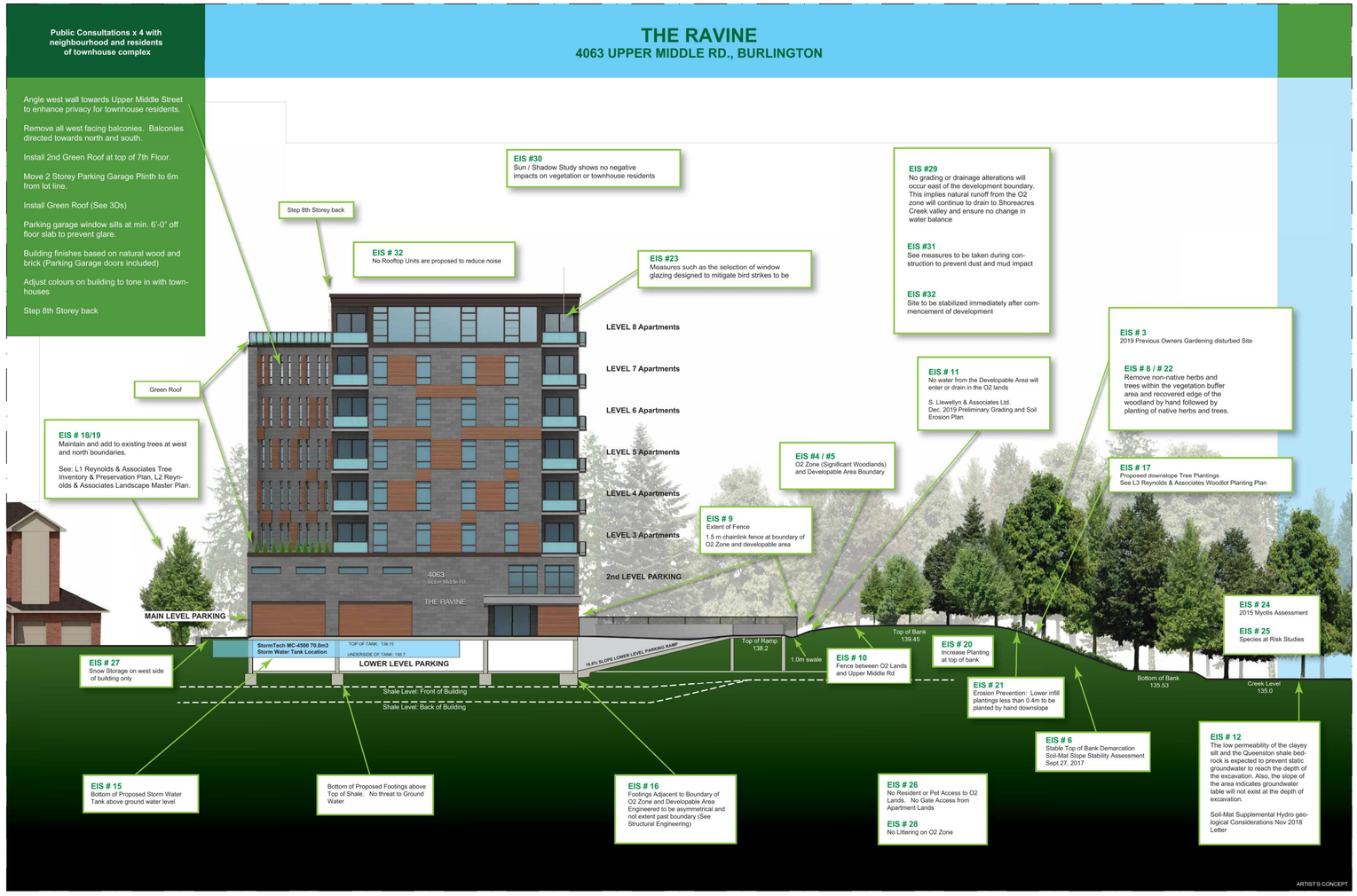
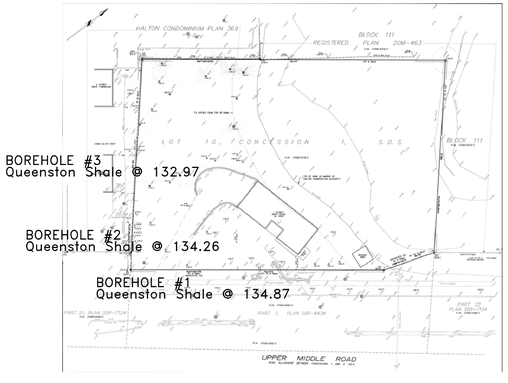
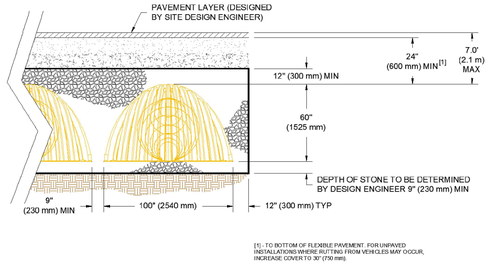


BUILDING & SLOPE SECTION (1:200 Scaled Version Available Upon Request)





SEE FUNCTIONAL SERVICING AND STORMWATER REPORT

SOILMAT GEOTECHINICAL INVESTIGATION

PROJECT No.: SM 135055-G

A total of four [4] sampled boreholes were advanced at the locations illustrated in the attached Drawing No. 1, Borehole Location Plan. The borings were advanced using solid stem continuous flight auger equipment on May 13, 2013 under the direction and supervision of personnel from Soil-Mat Engineers & Consultants Ltd. The boreholes were advanced using a track mounted drill rig to termination at depths of between about 3.3 and 6.2 metres below the existing surface, to practical auger and/or sampling spoon refusal on the underlying Queenston Shale. Upon completion of drilling, all of the boreholes were backfilled in general accordance with Ontario Regulation 903. Representative samples of the subsoils were recovered from the borehole locations at selected depth intervals. After undergoing a general field examination, the soil samples were preserved and transported to the Soil-Mat laboratory for visual, tactile, and olfactory classifications. Routine moisture content tests were performed on all soil samples recovered from the boreholes.
All boreholes were located in the field by a representative of Soil-Mat Engineers & Consultants Ltd. The ground surface elevations were referenced to a site-specific benchmark described as the top of the top of the manhole grate located on the southern edge of the lot, immediately north of the sidewalk, in front of the existing house. This manhole grate was noted to have Elevation 138.31 metres, as seen on the survey plan provided to our office prepared by Ashenhurst Nouwens Limited dated January 24, 2013 [File No. 13006 TOPO+BLS].

Seismic Design Considerations
The structure shall be designed according to Section 4.1.8 of the Ontario Building Code, Ontario Regulation 350/06. Based on the subsurface soil conditions encountered in this investigation, the applicable Site Classification for the seismic design is recommended as Site Class B – Rock

The seismic data, from Supplementary Standard SB-1 of the Ontario Building Code, for Burlington are as follows:
$S_a(0.2)$ $S_a(0.5)$ $S_a(1.0)$ $S_a(2.0)$ PGA
0.36 0.180 0.063 0.020 0.270

The soil conditions encountered in the boreholes are such that the proposed building may be supported on conventional spread footings founded in the native very stiff to hard clayey silt or Queenston Shale bedrock. Spread footings founded in the very stiff to hard clayey silt may be designed using a factored Ultimate Limit State [ULS] bearing capacity of 450 kPa [~9,000 psf]. The allowable bearing stress at Serviceability Limit State [SLS] should be limited to 300 kPa [~6,000 psf]. Where footings founded on the weathered Queenston Shale, within the upper one metre they may be designed on the basis of a factored ULS and SLS of 750 kPa [15,000 psf]. Where the footings extend into the more sound Queenston Shale, a minimum of one metre into the Queenston Shale bedrock, they may be designed using a factored Ultimate Limit State [ULS] bearing capacity 1,500 kPa [~30,000 psf]. The allowable bearing stress at Serviceability Limit State [SLS] will be controlled by the structure, as the bedrock would have to fail before the Service Limit deformations, typical for the type of building envisioned, would be realised. It is noted that higher bearing values may be available in the less weathered Queenston Shale at increased depth, however such increased values would require review and approval by this office, and possibly additional field investigations and coring of the bedrock.

7. Lateral Earth Pressures
The lateral earth pressure on the partial basement walls can be estimated on the basis of an 'at rest' condition, assuming a triangular load of 60 pcf. For the 'at rest' condition of lateral earth pressure may be taken as $K_o = 0.50$ if small lateral deformations are acceptable [active condition], or $K_o = 0.5$ m fill against rigid walls [at rest condition]. Any additional pressured due to surcharge loading, such as parked vehicles, floor slab loading, etc., must be included in the design.

CONTRACTOR IS TO CHECK AND VERIFY ALL DIMENSIONS ON THE JOB SITE AND NOTIFY DESIGNERS OF ALL DISCREPANCIES BEFORE INITIATING WORK.
ALL DRAWINGS ARE THE PROPERTY OF THINKGIRAFFE
DRAWINGS ARE NOT TO BE REPRODUCED WITHOUT WRITTEN PERMISSION FROM DESIGNERS.
PRINTS ARE NOT TO BE SCALED.

August 1, 2019 Revision

REMARKS	DATE	NO.
REVISIONS		

thinkGiraffe
ENVIRONMENTAL DESIGN
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905 304 1496
thinkgiraffe@bellnet.ca

PROJECT
Proposed 8 Storey Apartment Building
4063 Upper Middle Rd
Burlington

SHEET TITLE
BUILDING & SLOPE SECTION

FOLDER	DRAWN BY MF / MS
FILE	SCALE 1: 200
DATE	NUMBER

A5