New Westminster

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Single Family Residential Guide for Queensborough

The purpose of this guideline is to assist the applicant, contractor, designer, engineers and architects through the New Single Detached Dwelling building permit process for Queensborough. The Queensborough area has unusual soil conditions which make it difficult to build on. The soil conditions and high water table dictate special permit requirements, including drainage plans, site drainage plans, fill requirements, pile foundations, geotechnical reports, and details dealing with soil gases (methane gas) etc. At any time during the course of the process please feel free to call staff for assistance or clarification.

Prior to making Building Permit Application:

It is the responsibility of the owner, contractor, designer, architect and engineer to ensure that they have done all the necessary groundwork prior to making a submission for a building permit. Some of the additional issues for Queensborough that need to be addressed are:

- Are the professionals involved licensed to practice in British Columbia?
- Are all the required plans and documents completed as per the City's requirements?
- Have all the City's concerns been addressed in the Geotechnical Report?
- Has a separate fill permit been applied for as required by Soil Bylaw 7012?
- Has the existing Ministry of Environment covenant been reviewed? Does the proposed crawl space meet the requirements of the covenant?

Note: This is not necessarily a complete list of items to be addressed, during the plan review other items, requirements or documents may need to be provided prior to permit issuance. Note: All other regular permit requirements are also required for Queensborough. Refer to the other Single Family Residential Guides for information.

Required Plans and Documents for Building Permit Submission:

- three sets of building plans drawn to scale and signed and sealed by a Professional Engineer along with a Schedule B from the engineer, this must include the design of all on site retaining walls
- three sets of site drainage plan prepared by the Geotechnical Engineer, signed and sealed complete with a Schedule B with item 4.2 "site and foundation drainage system" initialled by the engineer
- two sets of a lot grading plan, signed and sealed, complete with a Schedule B; this plan is prepared by the Geotechnical Engineer or a Civil Engineer.
- two Methane Gas Barrier or Methane Gas Ventilation System drawings prepared by a Geotechnical Engineer
- if required by the geotechnical engineer; two sets of a Settlement Gauge Plan needs to be prepared by the Geotechnical Engineer, the site plan shall show all adjacent homes and city services
- it is recommended that a Borehole Log be generated for each lot. In any event, the Engineers is responsible for ensuring location of the Borehole is adequate for them to properly design the foundation
- three copies of the Geotechnical Report and 1 page summary ("Schedule A") of the Geotechnical Report are required. "Schedule A" will be attached as part of the subsidence covenant
- a contractors liability insurance of $3 million dollars is needed for small projects such as single detached dwellings, any multi family, commercial, industrial or institutional projects will require $5 million dollar liability
- disclosure of whether or not there are any right-of-ways, water courses, easements or other covenants on title; location and size of right-of –way and easements to be shown on the site plan;
- Schedules B from the Structural Engineer signing off all structural items, including seismic anchorage of foundation to piles

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- Schedules B from the Geotechnical Engineer signing off on all geotechnical items, including Architectural 1.8 site grading Plumbing 4.2 site and foundation drainage, and a separate sealed letter taking responsibility for design and inspection of methane gas barrier or ventilation system. This will include the responsibility of the site perimeter drainage and lot grading plan
- Schedule A (Coordinating Registered Professional) is required if more than 1 professional is involved in the project.

Perimeter Lot Drainage Plan: (prepared by the geotechnical or civil engineer, signed and sealed)

- the retaining wall can be installed on the property line, the drainage is installed inside the retaining wall below the level of the adjacent properties final grade, see the attached sample drawing, note this drawing is not to be used for building permit submission
- the retaining wall needs to be designed and inspected by a professional engineer, if a fence is to be built, the fence posts need to be incorporated into the engineered design of the wall
- the perimeter lot drainage system needs to be designed and inspected by a professional engineer, the engineer must confirm in writing that the water surcharge from the fill placement will not affect or create ponding on the neighbouring properties
- site plan detailing direction of flow, invert elevations and dimensioned location of pvc pipe, ditches and catch basins
- provide cross section drawing indicating drainage pipe, setback from property line and retaining walls

Lot Grading Plan: (prepared by the geotechnical engineer or a civil engineer, signed and sealed)

- show location and cross section of all swales;
- show direction of surface water and how it will not affect neighbouring properties;
- show all existing and finish grade elevations and main floor slab elevation
- two cross sections through property at right angles to each other

Methane Gas Barrier or Methane Gas Ventilation System: (prepared by an engineer, signed and sealed)

- the current BC Building Code states that if soil gases are present, either a gas barrier or gas ventilation system is required, the engineer needs to specify which system he will use, note if a pile foundation is used a methane gas ventilation system needs to be specified.
- if a methane gas barrier is chosen, the engineer shall detail the barrier on the building plans, the engineer will then be responsible for the installation and inspection of the barrier and needs to provide a written confirmation that it has been installed as per his design;
- if a methane gas ventilation system is chosen, detailed sealed drawings need to be provided, signed and sealed prior to permit issuance; the engineer will need to inspect the system and provide written confirmation that the system is installed in accordance with his design

Foundation, Pile Location and Floor plans: (prepared by structural engineer, signed and sealed)

- show foundations with the dimensions of the principle building and addition; indicate foundation wall thickness, size of footings including pad footings
- show location of all piles
- Schedule B needs to include seismic anchorage of pile to grade beams or slab
- show all partitions and bearing walls. Indicate finished / unfinished areas;
- room use and sizes, as well as adjacent rooms to the addition / alteration;

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- windows/doors, including sizes and door swings;
- stairs showing direction of travel and dimensions;
- plumbing fixtures, appliances, hot water tank, fireplaces, and heating system;
- direction and sizes of all floor, ceiling and roof structural components, including beams and lintels;
- basement FSR calculation

Required Professional Engineer's Field Reviews;

- written confirmation that fill that is placed on property is free of contamination, the engineer needs to provide a memo or letter, signed and sealed, stating where the soil came from and that it is free of contamination, if the engineer cannot provide written confirmation the applicant needs to provide a soil analysis showing that the fill is clean
- if the engineer requires settlement gauges to be installed, a field review is required confirming that all settlement gauges have been installed
- field review is required confirming that methane gas barrier or ventilation system has been installed as per their requirements
- field review confirming that the foundation design is as per the engineers design **prior to pouring concrete**
- field review of the perimeter lot drainage system is required
- field review of the retaining wall is required
- field review is required at the time of frame inspection
- field review that the proposed lot grading has been completed and will not affect neighboring properties

No fill placement, excavation, shoring, erection, alteration, enlargement, repair, removal, move or demolition of any building or structure, part thereof, shall be commenced or undertaken without a permit being first obtained from the Building Department