



## **Re: Soils and Foundation Design**

Soils in Richmond are a unique mixture of alluvial and organic deposits of viable stability. The natural soils are frequently overlaid with foreign fill material placed either randomly or by design. The uncertain structure of the soil has implications for foundation design and building construction particularly in new subdivisions where the placement of additional fill material may be required to achieve effective drainage or floodproofing standards.

At the subdivision stage, the City is concerned mainly with the proper installation of roads and services in public road allowances or rights-of-way. Where soil conditions are suspect, the City will require the developer to engage a competent professional soils engineer to advise him on remedial measures that may be required. If the developer proposes to sell lots suitable for development without extensive soil testing or preparation, he will have his consultant investigate and advise on this aspect also.

Where the Director of Permits and Licences is not satisfied that soil conditions are suitable for construction at the time of application for a building permit, he is empowered by Section 734 of the Municipal Act to require the owner of land to provide him with a report certified by a professional engineer with experience in geotechnical engineering that the land may be used safely for the use intended. If such a certificate has not been provided by the developer's consultant for all of the lots in a subdivision, individual property owners wishing to build in the subdivision may have to provide the necessary certification.

### **Developers Should:**

1. Engage a geotechnical engineering consultant to advise them concerning soil conditions wherever unstable soils are present or placement of fill material is required.
2. Require the consultant to provide a Letter of Assurance – Soils that suitable measures have been taken in establishing a 95% proctor and an allowable bearing pressure of 1,000 psf for residential construction building loads, and to inform the developer if professional structural input is required on building design.

### **Lot Purchasers and Builders Should:**

1. Enquire as to whether a geotechnical engineering consultant has participated in the design of the development in which the lots are situated.
2. Require that the developer provide a professional engineer's Letter of Assurance – Soils that the site-specific bearing capacity and proctor of the soil is adequate for the proposed development.