



*Client Focused*  
*Worldwide Experience*  
*Innovative, Value Added*  
*Practical Solutions*

## Westgate High-Rises, for Intergulf Development Group, Calgary & Vancouver



The Westgate Development along Bow Trail in SW Calgary was the largest residential development project in Alberta in 2005. The project comprised a 20, a 25 and a 30-storey high rise together with amenity buildings and townhouses. GES provided geotechnical borehole investigation, in-situ (pressuremeter) testing, detailed design and construction review services from May 2004 to April 2006. There are two levels of underground parkade across the entire 200 m by 150 m footprint of the site. Subsurface conditions included dense sands & gravels and weak bedrock (mudstone, siltstone and sandstone) of the Paskapoo formation. Conventional laboratory tests indicated lower than anticipated strengths for the bedrock, thus GES recommended pressuremeter testing to obtain the in-situ properties. This resulted in significantly higher values of rock strength and stiffness which led to use of shallow (versus piled) foundations for the entire project, thus achieving significant cost savings. Detailed design also included review of excavation shoring system, and the drainage system for control of groundwater, including a clay barrier. “Sustainability in development” was achieved by re-use of concrete as crushed recycled backfill. GES was also responsible for footing subgrade review and review of drainage measures and shoring piles.

### **GEOTECHNICAL SERVICES**

#### **WHERE WE ADDED VALUE**

- Applied pressuremeter testing to characterise bedrock properties in-situ.
- Designed drainage blanket that took advantage of natural terrain and stratigraphy.
- Geotechnical Investigation & Recommendations
- Pressuremeter Testing
- Detailed Design of Shallow Foundations
- Drainage Design, including Clay Barrier
- Construction Supervision ( including Shoring System & Subgrade Review)

