



## Key Achievements

- This was the deepest Cutter Soil Mixing (CSM) depth achieved by Keller in Canada.
- Keller completed wall construction ahead of the client's aggressive schedule.

### The project

The Paramount is a new luxury development in downtown Richmond with 540 studio and three-bedroom homes, and retail space. Keltic Canada Development enlisted Keller to provide excavation support in the form of a structural cut-off wall for this lush residential and commercial structure.

### The challenge

The site is located near the Canada Line elevated transit and required construction in tight work spaces with limited access for equipment. The client provided an aggressive schedule for completion of the retaining wall in order to start the construction and occupancy of the bordering office.

### The solution

To safely complete the tight access work, Keller utilized the Cutter Soil Mixing (CSM) process to construct the temporary earth retention and cut-off structure, which was cantilevered to support a maximum excavation depth of 8 m. The retaining wall was comprised of almost 200 panels with a thickness of 640 mm. The panels were drilled to a depth of 32 m below existing grade and reinforced with steel beams to a depth of 18 m. Safety protocols, production sequencing, and site logistics were thoroughly planned to ensure work was completed safely and on schedule. Equipment maintenance and material delivery was coordinated with construction progress to improve production rates and meet the client's schedule.

"I was impressed with your team's adherence to proper safe-work processes and practices. I sure appreciate your team's efforts in maintaining a high degree of safety on site."

**Doug Smart, Regional HSE Manager, Graham Construction and Engineering Inc.**

### Application

Earth Retention & Shoring

### Technique

Wet Soil Mixing – CSM

### Market sector

Residential  
Commercial

### Owner

Keltic Canada Development

### Main contractor

Graham Construction and Engineering Inc.

### Engineer

GeoPacific Consultants Ltd.

### Keller business unit (s)

Keller Foundations Ltd.