



## NationWide Self Storage & AutoWash

Vancouver, British Columbia, Canada

Keller installs deep foundations and shoring solutions for new net-zero facility.



### The project

NationWide constructed a three-story self-storage facility with a 24-hour automatic carwash on the ground floor to match growing population density and two high-yielding businesses. The building was designed with a full-net zero approach, using rainwater to clear cars and solar panels to heat the building. Ground conditions consisted of soft soils extending to 40 ft (12 m) below existing grade. A deep foundations solution was needed to support the facility and reduce settlement in a seismic event.

## The challenge

An aggressive construction schedule was in place by the owner. In addition, a restricted working area required heightened safety awareness for all parties.

## The solution

The geotechnical engineer recommended driven piles and tension anchors due to the various loads throughout the footprint of the building. Keller installed 12 in. ID (305 mm) and 20 in. ID (508 mm) vertical driven pipe piles up to 40 ft (12 m). In addition, 20-in ID battered piles were also driven to depths up to 50 ft (15 m).

Before installation of the tie down anchors, Keller installed a soldier pile and lagging wall to excavate to anchor installation depth (approximately 9 ft (2.7 m)). Ground anchors were installed up to 60 ft (18 m) deep to prevent uplift and excessive movement if a seismic event occurred. To reduce schedule duration, Keller used two anchor crews on the site.

## Project facts

### Owner(s)

NationWide Self Storage

### Keller business unit(s)

Keller

### Main contractor(s)

Maple Reinders Constructors Ltd.

### Engineer(s)

GeoPacific Consultants

### Solutions

Deep foundations  
Support of excavation

### Markets

Commercial

### Techniques

Driven piles  
Soldier piles and lagging  
Anchors

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