

Central Nanaimo Urgent and Primary Care Centre

Client: Tectonica Management Inc.

End Owner: Island Health

Location: Nanaimo, BC

Industry Segment: Civil — Water Service Upgrade

Timeline: April 2024 – September 2024

Budget: ~\$100K for civil works

Key Team Members

Kailen Elander

Newcastle Engineering was engaged by Tectonica Management Inc. to complete a water service upgrade for the Central Nanaimo Urgent and Primary Care Centre in Nanaimo, BC. The 3-storey, approximately 16,000 sq ft building was being renovated to support healthcare delivery for Island Health, with Newcastle's scope focused on the civil servicing required for the building's fire suppression system.

The site presented two key servicing constraints. Limited available area ruled out separate domestic and fire water services, requiring a combined service sized to meet fire flow requirements. The water meter chamber also could not drain by gravity, as no nearby storm sewer was deep enough to provide a suitable connection.

To resolve the drainage constraint, Newcastle specified a sump jet assembly: a water-powered system that uses pressure from the service line to drain the chamber without electrical power. The service entrance was coordinated with the architect and mechanical consultant to route through the underground parkade without affecting parking stalls. The project was delivered within a six-month timeline and received both Island Health Waterworks Construction Permit and City of Nanaimo municipal approval.

Challenges:

- Limited site area ruled out separate domestic and fire water services, requiring a combined service approach.
- No storm sewer in the area was deep enough to provide gravity drainage to the water meter chamber.
- The water service entered through an underground parkade,

Solutions:

- Designed a combined domestic and fire water service sized to meet required fire flows.
- Specified a sump jet assembly to drain the water meter chamber without a storm sewer connection or electrical supply.
- Coordinated with the architect and mechanical consultant to confirm the parkade entry location and service sizing.

Deliverables:

- Water service upgrade to support fire suppression system installation within a 3-storey, ~16,000 sq ft healthcare building.
- Combined domestic and fire water service sized to convey required fire flows.
- Sump jet assembly for water meter chamber drainage.
- Mechanical and architectural coordination for service sizing and parkade entry location.
- Island Health Waterworks Construction Permit and City of Nanaimo municipal approval.

