



GEOFABRICS CASE STUDY



ACCELERATING GROUND SETTLEMENT WITH ALIDRAIN VERTICAL DRAINAGE

PRODUCTS USED

SOLMAX ALIDRAIN® PREFABRICATED VERTICAL DRAINS (PVD)

- A permeable drainage core wrapped with durable filter fabric that is used to accelerate the consolidation of soft soil
- Significantly reduces consolidation times and increases foundation shear strength of soft clay soils
- Provides a shorter and easier drainage path for the pore water to drain
- Conforms to international PVD specifications, meeting different drainage requirements and installation conditions
- Increases the undrained shear strength of the soft clay foundation deposits to provide ground stability improvements
- Available in a wide range of filter geotextiles and cores to suit various soil conditions and engineering practices



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PROJECT DESCRIPTION

The project involved upgrading Highway 1 (SH1) Loop Road intersection in Northland to enhance road safety for communities, visitors and freight travelling along this route. This included the construction of a southbound taper lane and southbound bridge over the Otaika Stream, designed to provide a safe merging distance from the recently completed dual-lane roundabout.

The existing ground onsite was soft and saturated, rendering it unsuitable for construction. To stabilise the foundation and prepare it for road upgrades by Waka Kotahi NZ Transport Agency, the contractor, BDX reached out to Geofabrics for a solution.

OUR SOLUTION

Solmax Alidrain prefabricated vertical drains were selected as the most suitable solution due to the ability to accelerate the settlement process of soft soils. Installing Alidrain was required to enhance the foundations shear strength by supporting the additional load of the new structure and managing issues associated with the settlement, such as excess pore pressure removed from soft foundation soils. Alidrain is designed to allow the free flow of water in all directions, ensuring the integrity of the drainage system.

Alidrain AD230 was installed, covering a total 40,000 linear metres of land, with wick depths ranging from 1 to 16m deep. Alidrain vertical drain was conveniently installed onsite with the assistance of the operator's wicking machine.

By utilising Alidrain instead of waiting for natural settlement to occur, the site was ready for construction in just a matter of months. The Civil Operations Manager from BDX, Sam Newson expressed satisfaction with the results, commenting, "[We are] very happy with the AD230. With unexpected, varied ground conditions, the product was never an issue that needed to be thought about".

GEOFABRICS®



40,000
linear metres of
Alidrain installed



Enhances
shear
strength
of foundation



Photos courtesy of NZ Transport Agency Waka Kotahi

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