

Lessons learned from one of New Zealand's most challenging civil engineering projects: rebuilding the earthquake damaged pipes, roads, bridges and retaining walls in the city of Christchurch 2011 - 2016.

## Environmental Initiative: bentonite splash fence

**Story:** Bridge of Remembrance and Memorial Arch

**Theme:** Construction

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A document describing Downer's approach to containing bentonite when drilling micro piles for the new Arch foundations.

This document has been provided as an example of a tool that might be useful for other organisations undertaking complex disaster recovery or infrastructure rebuild programmes.

For more information about this document, visit [www.scirtlearninglegacy.org.nz](http://www.scirtlearninglegacy.org.nz)



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# ENVIRONMENTAL INITIATIVE



## Bentonite Splash Fence



Black Plastic attached to Site Fencing

### What is the initiative?

Micro Piles are being drilled for new foundations at the Triumphal Arch. This piling technique uses bentonite drilling mud to lubricate the drilling head, help bring the cuttings to the surface and assist with holding the drilled hole open. As an environmental protection measure, black plastic has been secured to the site perimeter fence to help contain any splashes or spills of this fluid in the area around the holding tanks. This avoids the potential of the general public walking past the site coming in contact with the benonite. The bentonite can be easily cleaned off the black plastic, disposed of correctly and the plastic can be replaced if required. All items used were already onsite and was easy to put up using a couple of crew members.

### How was it identified?

Bentonite drilling mud is an environmentally sensitive material that has the potential to cause serious environmental damage. The black plastic helps to keep any spills contained within the site and prevents any fluid from soaking into the ground. It also creates a physical barrier between the work site and the general public in the busy RE-START Mall area. This project is heavily in the public eye and every measure must be taken to avoid a potential environmental incident.

### Benefits and future plans

- Contains the Bentonite drilling mud within the site.
- Bentonite easily cleaned up using Wet-Vac if spilt.
- Protects public walking past from potential Bentonite splashes.
- Easy to install on site fencing using heavy duty Zip-Ties and sand bags.

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Discuss at next available pre-start meeting / post on notice boards (valid for 3 months)