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Mackenzie District Council

# Twizel Machinery Display



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# 1 Introduction

At the entrance to Twizel off Wairepo Road is a display of large earthmoving machinery that reflects the history of the Waitaki power projects and origin of the township. The earthmoving equipment includes a bulldozer and dump truck and an international scraper. It is assumed this display sits on council owned land under the jurisdiction of the Twizel Community Board.

The Heritage Machinery Group that has developed and managed the display for a number of years has approached the Twizel Community Board to add two further machinery pieces, being a grader and dragline.



## 1.1 Project Brief

Xyst was engaged as part of a wider audit of Mackenzie's community facilities and open spaces to provide an assessment of this display. This included a review of how other such displays are managed across the country and how this should best be managed to reduce health and safety risk.

## 1.2 Current status

The Heritage Machinery Group is a small group of enthusiasts who aim to improve the machinery display and expand the public's knowledge of how these were used in the Waitaki power projects.

The current pieces are displayed with a gravel/cobble surround and have their doorways welded or bolted shut to discourage access. However, it is understood these are still climbed over and people are able to sit in the cabins and play with the steering wheels and various movable levers. A website 'Weekend Notes' promotes the display as the Twizel Bulldozer Park as a place where you are free to climb all over the machines and play with their various movable parts.

The Heritage Machinery Group has suggested the two additional machinery pieces would increase the diversity and rarity of the earthmoving machinery. These would have purpose-built stairways with safety rails developed to enable people to access the cabs and play with the machines' levers. The dragline has a 22m jib that would have a barrier placed near the cab to prevent climbing.



## 2 How does NZ manage these types of displays?

These types of displays are not all that uncommon in NZ. But greater attention has been given to them recently with changes to the Playground Standards. Other legislation that applies to this display is the Occupiers' Liability Act, and the Health and Safety at Work Act (only when the machines are being worked on). A number of the displays researched were well-maintained, repainted regularly and/or fenced.

### 2.1 Playground Standards

As noted above, while the machines are not part of a formal playground they are being utilised like play equipment, and it is recommended that if they continue to be promoted as accessible they be assessed against the playground standards.

In 2017, NZS 5828:2015 was set as the New Zealand standard for playground equipment and surfacing. For all playgrounds outside the education sector this standard is recognised as the industry 'best practice'. The council needs to consider their legal requirement and responsibility to demonstrate that the structures, equipment and surfacing are safe and meet the relevant criteria.

The machinery display presents a number of risks. The playground standards require that where there is a risk of falling, from a height of 600mm or more, that safety surfacing is provided, usually pea gravel, bark or rubber matting and possibly have barriers installed. In particular, the proposal to add the dragline to the display, with its 22m jib, presents a climbing challenge. While the Heritage Machinery Group has suggested this would have a barrier to prevent climbing, there is a need to consider the reasonable, foreseeable misuse of the equipment that would potentially need a fall safety surface the entire length of the jib.

Entrapment in levers needs to be addressed potentially by rubber buffers to reduce the ability of limbs or fingers being crushed. Consideration also needs to be given to sharp edges that can be created by rust. Sharp objects should be covered or smoothed over. In addition, structural integrity, loading and slip resistance are examples of other factors covered by the standards.

### 2.2 Occupiers Liability Act

The Occupiers' Liability Act 1962 imposes a duty on occupiers of land or buildings (or those that control premises) to take such care in all circumstances as are reasonable to ensure that visitors are reasonably safe in using the premises for the purpose for which they are invited or permitted by the occupier to be there. In this case the council has permitted the machines to be displayed on land and should be clear about their intended use.

### 2.3 Health and Safety at Work Act

The Health and Safety Act at Work Act 2015 shifted the focus from hazard identification and control to proactively identifying and managing risks. Council as a PCBU (a person conducting a business or undertaking) has a 'duty of care' to ensure the safety of those working on the machines as part of the display and addressing any risks associated with excluding others from the site during the work.

### 2.4 Other NZ examples

#### **National Army Museum, Waiouru**

The museum has three large tanks on display outside of the museum. These have all had their engines removed, their hatches and barrels secured, and any holes have been blocked. The playground standards have been applied and these sit on safety matting.

There are also signs placed next to the tanks advising of the health and safety risks of climbing on them. The tanks have all been painted with enamel paint and are regularly water-blasted to keep them clean. The museum also has onsite security and cameras watching the external displays.



### Maungauika / North Head Scenic Reserve, Auckland

This reserve, which is administered by the Tāmaki Collective, recently has been audited for health and safety risks. This identified risks associated with the gun emplacement and barriers have been installed to stop people being able to climb up on the gun.



### Waihi

Hauraki District Council has responsibility for a digger on display below the Waihi mine pit rim. The machine has history boards associated with it and is fully fenced indicating it is not accessible to climb over. Another large dump truck is on display on private land near the Oceania Gold training centre, this is also fully fenced, indicating it is not accessible.



### Masterton

Two pieces of old farm-based equipment, a tractor and bulldozer, sit within Masterton's Kids Own Playground. They made the media recently when there were concerns raised about the health and safety risks of these in a report to the council following an audit by a playground specialist. The council has been advised to make some modifications to ensure the vintage machinery complied with the playground standards. It was initially suggested they could be removed but due to community backlash the council has now requested staff look at the options to retain these.



## Omokoroa

An old tractor that was part of the Omokoroa foreshore playground has recently been removed from the playground with recognition it no longer met the health and safety regulations.



## Taumarunui's Railway Museum

Outside the museum are a steam tractor and steam train. These both have high security fences so clearly for viewing only.



## 3 Options for the Twizel display

There are a number of options the council may consider when responding to the identification that the current display presents some risks that need to be considered in light of both the Playground Standards and the Occupiers Liability Act.

### 3.1 Option 1 - Status Quo

This option is not recommended as would put council in the position of liability if an accident was to happen as a result of people accessing the machines. The Heritage Machinery Group which has effectively partnered with council to install and manage these machines on the site may also be seen to hold some liability. This option could include not adding to the current display.

### 3.2 Option 2 - Removal

This option may not see favour with either the council or community given the strong links to the township's history the machines represent.

### 3.3 Option 3 - Display only

The equipment could remain as a display only, acknowledging it is not intended to be accessed for any form of play. Purpose-built fences could be constructed around those machines that present a fall risk to discourage access. While the existing machines have their doors welded shut, people are clearly still entering the cabs, and providing further barriers may need to be considered. In addition the movable parts, such as levers, that present entrapment hazards could be immobilised.

The display only message could be reinforced with signs. Either adding a health and safety warning, including the supervision of children, to the existing interpretive signs or putting 'do not enter' signs on the fences.

This option could include not adding to the current display.

### **3.4 Option 4 - Modify**

This option would require an audit of the machines by a fully qualified playground assessor to determine what modifications should be undertaken to improve the risks presented by people having access into and on to the machines. It may not be possible to modify the machinery to fully comply with the playground standards. However, all medium to high risks should be removed/mitigated and then the council or local board could choose to accept the liability for any remaining risks. These would need to be low risk around the likelihood of an incident and the severity of the consequence.

It is anticipated the most significant cost would involve providing a safety surface under the machines rather than the current larger gravel/cobble stones. Pea gravel that meets the NZS5828 requirement is probably the best for this site. This would be in keeping with the display and a lower cost option than rubber matting. This would need to be provided at a minimum depth of 200mm or if the fall was more than 2m the requirement increases to a minimum depth of 300mm.

Including signage around the requirement to supervise children would also be prudent.

### **3.5 Recommendation**

If the council is seeking to retain the display and support the expansion of this by the Heritage Machinery Group, it is recommended that they pursue option 3 to reinforce that this is a display only through signage and fencing-off the larger equipment. This will require specific budget be dedicated to deliver on these requirements.

If the council confirms this as the favoured option the Heritage Machinery Group should be advised, as the intent of their proposal to add to the display was that the two new machines would be accessible to the public. A decision could then be made on whether or not the expansion of the display proceeds.