

Heritage Item 4

Pipe Shed



Location

Address:	South Belt, Methven
Co-ordinates:	Northing 5729235 , Easting 2400713
Legal Description:	Pt Lot 2 DP 48204
Owner:	Ashburton District Council

Purpose

Current Use:	Vacant Shed
Original/Past Uses:	Pipe; Explosive store

Heritage Significance and Category

Heritage Significance:	Physical; Historic; Cultural		
Heritage NZ:	Historic Place Category 1	List # 7593	Date Listed: 14 April 2005
Ashburton DC:	Category A		

Site Assessment

Assessed by:	Arlene Baird, Davie Lovell-Smith Ltd.
Date Assessed:	30 November 2014

Detail	
<p>Description:</p>	<p>The extent of Heritage New Zealand's list entry includes: <i>Part of the land in Certificate of Title CB 31F/1192 and the building, fittings and fixtures thereon. The registration applies to the Pipe Shed and a five metre curtilage.</i></p> <p>The Pipe Shed consists of one of the giant concrete pipes which were created for the Rangitata Diversion Race (RDR) irrigation and hydro power scheme (1937-1945). The pipe measures 3.65m in diameter and is constructed of a cylindrical concrete shape with concrete ends, a timber floor and timber door for access. The pipe is set on a base to ensure stability and there are a set of concrete steps leading up to the door.</p> <p>The shed was built in 1940 on the site of the Public Works Department's headquarters and the workers' accommodation camp at Methven. It sits as an excellent example of the New Zealand 'can-do' approach by making use of what was available: a place to securely store explosives was needed in Methven and so one of the concrete pipes was used. The pipe was placed on a concrete foundation slab that was a pre-cast control gate for the water race and timber wedges were added to keep the cylindrical structure stable. Concrete ends were added to enclose the space and a timber internal floor inserted, thus creating a secure storage area.</p>
<p>History:</p>	<p><i>Irrigation</i></p> <p>Irrigation was a prime concern on the Canterbury Plains where farm production was restricted because of the lack of water. After years of experimentation on small scale systems a huge project was unveiled in 1936. Across the inland reaches of the plains from the Rangitata River to the Rakaia, the proposed RDR was an innovative irrigation system within which water was to be transported in an open race so that it could be drawn off for the irrigation of a third of Mid Canterbury's farmland. At Highgate on the Rakaia River the flow was used to generate Hydro Electric power.</p> <p>The RDR system was a milestone in this country's agricultural history and the prototype for large-scale irrigation schemes in New Zealand. It was the largest engineering project and also the largest Public Works Scheme at the time. During the 1930s depression the RDR scheme was part of government's action for New Zealand's economic development and it also provided work for the unemployed.</p> <p>The technological aspects of the RDR and the Pipe Shed are of very special significance. The RDR was designed by Thomas Beck, the Public Works Department's engineer, who had the challenge of overcoming the difficulties posed by intervening rivers and unstable hillsides. The construction methods using specially imported machinery were an innovation for the time. The concrete pipes were an equally outstanding feature because of their large dimensions, method of casting and construction from reinforced concrete.</p> <p><i>The Pipes</i></p> <p>These pipes were constructed to siphon the water around the Canterbury foothills and under the intervening waterways and were outstanding due to their construction and vast size, being the largest made in the Southern Hemisphere at the time.</p> <p>It was necessary for the RDR to cross seven rivers as well as areas of unstable land. Large siphons were created to carry the water underground. The siphons were made from huge concrete pipes constructed at an outdoor factory and workshop established at The Birches, near the Surrey Hills in 1940.</p>

Detail	
	<p>Two sizes of round pre-cast, reinforced concrete pipes were made. For the Ashburton River crossings the pipes were 3.65m in diameter, 9 inches thick and weighed 18 tons. In unstable land around Surrey Hills the pipes were 10 inches thick and weighed 28 tons. They were strengthened and joined by steel cylinders, made in Temuka, which were welded to the steel reinforcing in the concrete. It took one man eight hours to weld a single joint. Special machinery had to be imported and erected to be able to move the pipes. Newspaper reports made much of the fact that these were the largest pipes to be constructed in New Zealand and some of the largest in the world. Larger pipes had only been used in the United States, as part of the Colorado River scheme and the Boston water supply.</p> <p>The pipes were constructed by concrete being poured into moulds and left to set for two days. They were then steam-cured and lifted and placed on a bed of sand where they stayed for another fortnight being sprayed with water to finish the curing process. At this time there were 24 pouring bases established at the outdoor factory at Surrey Hills. Cranes were used to lift the pipe moulds and the steel reinforcing cages while specially constructed gantries moved the 28 ton pipes themselves. Eight of the giant pipes were made at the factory each day, each using 90 bags of cement and huge reinforcing cages.</p> <p>The first pipe of the Surrey Hills siphon was laid on Saturday 19 October 1940 and was an occasion for great celebration. Around 400 people turned up to the ceremony, and Bob Semple, the Minister of Works, posed with his Wolseley car inside a pipe to demonstrate its huge size.</p> <p>General</p> <p>The Pipe Shed is the sole remnant of the construction years of the RDR scheme and can be seen as a memorial to this pioneering work and to the people who designed and built it. The pipe from which the shed is formed is an example of the largest concrete pipes made in the southern hemisphere at the time and also some of the earliest pre-cast structures. The Pipe Shed illustrates the technological accomplishment of the entire RDR scheme.</p> <p>The Pipe Shed is also a very rare and unusual structure. Cylindrical buildings are unusual, as are buildings made from pre-cast concrete in 1940. This is a structure which could not be replicated as there are no other surviving original pipes.</p> <p>The Pipe Shed is also an unusual example of adaptive reuse; no other buildings constructed of pipes are known of within New Zealand.</p>
Notable Features:	<p>The concrete pipe including all its associated features: base formed from a pre-cast control gate, internal wooden floor, steps up to the entrance door. Location is also of high importance.</p>
Condition:	<p>The Pipe Shed is currently in very good condition. The pipe itself is solid and virtually free from visible damage or wear, apart from one crack running above the vent. There is a small amount of graffiti on one site and on the front, which probably occurred some time ago as it appears quite worn. The pre-cast control gate that the pipe sits on is cracked with small sections missing – however it still appears completely solid.</p>
Setting:	<p>The setting of this heritage item is of high importance. The Pipe Shed is located on what was once a bustling area of town with a large number of buildings associated with the RDR scheme. Due to the fact that the 800 pipes used in the diversion race are not visible, the Pipe Shed is an indication of the vast scale and engineering accomplishment of this project.</p>



