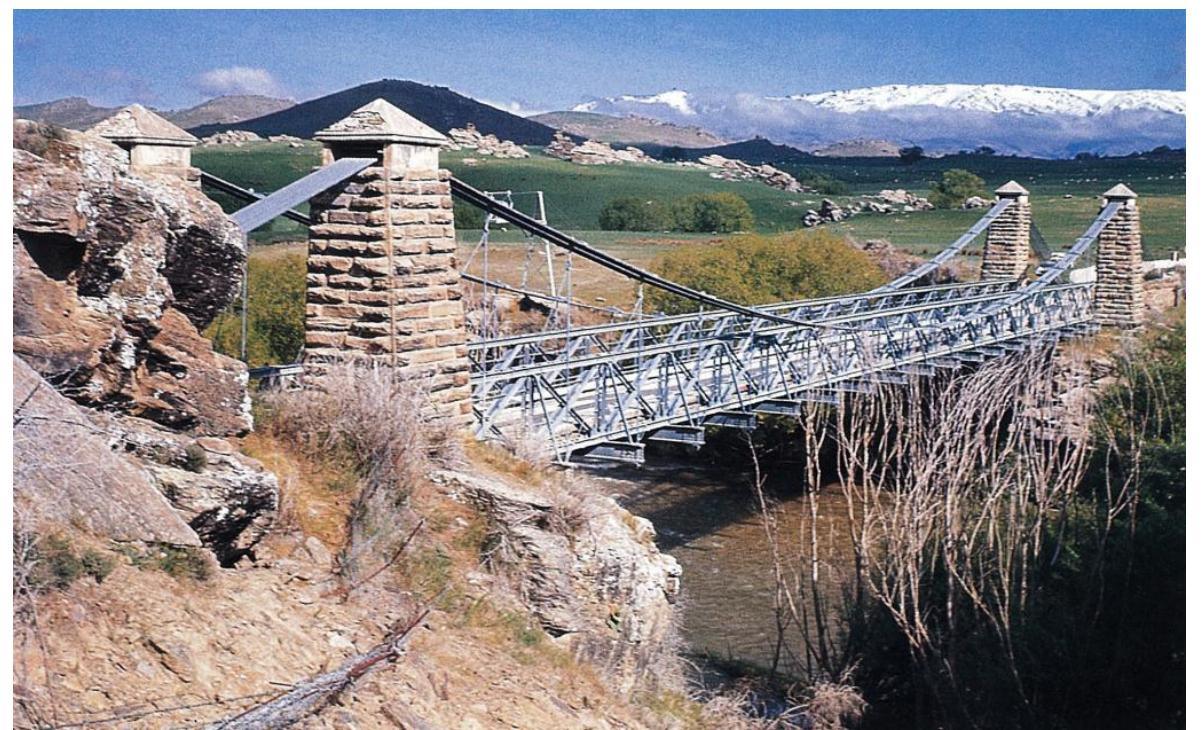


## IPENZ Engineering Heritage Record Report

### Daniel O'Connell Bridge

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Last amended 7 June 2011



Daniel O'Connell Bridge, Manuherikia River, Ophir. G. Thornton, *Bridging the Gap: Early Bridges in New Zealand, 1830-1939*, Auckland, 2001, colour plate p.10

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## A. General information

**Name:** Daniel O'Connell Bridge

**Alternative names:** Blacks Bridge; Manuherikia River Suspension Bridge; O'Connell Bridge; Old Red; Ophir Bridge

**Location:**

Ophir Bridge Road

Ophir

Otago

**Geo-reference:** Latitude: -45.110. Longitude: 169.590

**Legal description:** Legal road; Sec 26 Blk II Tiger Hill SD (Bridge Reserve, NZ Gazette 1881, p.673)

**Access information:** This bridge is part of Ophir Bridge Road, west of Ophir township, and as such is generally open to traffic at all times. Ophir Bridge Road intersects with State Highway 85/Leask Street southwest of Omakau. There are small roadside verges either side of the structure.

**City/District Council:** Central Otago District Council

**IPENZ category:** Engineering Work

**IPENZ subcategory:** Infrastructure – Bridge

**IPENZ Engineering Heritage number:** 2274

**Date registered:**

**IPENZ recognition:** N/A

**Other heritage recognition:**

- *New Zealand Historic Places Trust:*
  - Daniel O'Connell Bridge, Category I historic place (Record. no.338)
  - Ophir Historic Area (Record no.7268)
- *Local Authority District Plan:* Central Otago District Plan. Schedule 19.4: Register of Heritage Buildings, Places, Sites & Objects and Notable Trees (1 April 2008), reference no.121
- *Other:* N/A

## B. Description

### Summary

Crossing the Manuherikia River west of Ophir, the Daniel O'Connell Bridge is a single lane road bridge providing access to that Central Otago town. Constructed between 1879 and 1880, this attractive structure is a characteristic example of Central Otago suspension bridge with schist masonry towers.

As was the case elsewhere in the region, gold was the reason many people originally came to Ophir, a town initially called Blacks. Even when the gold industry began declining in the 1870s there was a relatively sizeable population in the Ophir district, and it was a key commercial and communication centre. As such, local people campaigned hard for a bridge to be built over the potentially hazardous Manuherikia River from the time the Vincent County Council was established.

The result was that in 1878 the Vincent County Engineer, Leslie Duncan Macgeorge (1854-1939), designed the 65.5 metre bridge, which was constructed by J. S. Derby and R. Edgar of Timaru. The cost of the bridge was approximately £7,000. At the opening of this structure in May 1880, the bridge was named after Irish hero, Daniel O'Connell (1775-1847). This was an appropriate and seemingly popular choice, because the bridge was located in an area heavily populated by Irish Catholic immigrants.

Like many of its contemporaries, by the early twentieth century the bridge's timber transoms and stiffening truss had degraded. They were replaced with steel equivalents in 1905 by Watson Rhodes and Company. There has been little further alteration to the structure since, aside from several replacements of the timber deck. The Daniel O'Connell Bridge is a well-maintained structure which is still in use.

The Daniel O'Connell Bridge is a handsome and popular local landmark. It has some engineering importance as it is an example of the vernacular form of late nineteenth century Central Otago bridge that notable engineer Macgeorge excelled in designing.

## Historical narrative

Prior to the 1860s there was little European settlement in Central Otago. The Otago gold rush changed this, however. Prospectors were drawn to the area from elsewhere in New Zealand, from Australia and other countries, such as China. This influx of people gave rise to new towns, one of which was Blacks. Said to have initially been named after a local runholder, in 1875 Blacks was renamed after the biblical Ophir, a major port town rich in luxury goods from where gold tributes for King Solomon departed. This name was obviously chosen because Ophir was synonymous with gold. By 1870s the population in and around Ophir was over 600, which led to the establishment of facilities, such as a school, in 1868.<sup>1</sup>

Much of the gold in the region was alluvial, but while the rivers were a major drawcard in this respect, they also acted as a hazardous barrier at times. Therefore, when the Vincent County Council was formed in 1877 the Ophir representative, John Pitches, along with other councillors began to advocate for a bridge to be constructed over the Manuherikia River at Ophir.<sup>2</sup> At this time Ophir, along with Clyde, Cromwell, and Alexandra, was considered one of the county's communications and social centres. It is therefore not surprising that the campaign for a bridge gained support, because it would ensure safe and efficient access in and out of the town.<sup>3</sup>

A key activity of the County Council was the establishment of better road infrastructure in the region. Indeed, in the late nineteenth century it was noted that Vincent County "was peculiarly situated in having the largest river in New Zealand by the Molyneux [Clutha] and its tributaries the Kawarau and Manuherikia flowing through it, necessitating the erection of expensive bridges."<sup>4</sup> Occasionally the costly nature of the bridges drew criticism.<sup>5</sup> However, these voices seem to have been drowned out amidst general approval for the structures and the social and economic benefits they facilitated.

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<sup>1</sup> K. Leask, *Ophir Memories*, Alexandra, 1995, pp.34-35; some of the numerous references to Ophir in the Bible include: 1 Kings 9:28, 2 Chronicles 8:18, Book of Job 28:16, Psalms 45:9

<sup>2</sup> J. H. Angus, *One Hundred Years of Vincent County, 1877-1977*, Dunedin, 1977, p.15

<sup>3</sup> Ibid., p.20

<sup>4</sup> Angus, p.95

<sup>5</sup> One of these rare instances of dissent was written by a Bannockburn resident lamenting the number of costly bridges, within an apparently reasonable distance from one another, constructed by, or in the process of being built, in 1880. *Tuapeka Times*, 22 December 1880, p.5

As such, in the early period Vincent County Engineer, Leslie Duncan Macgeorge (1854-1939), seems to have been incredibly busy. Among other projects he designed the Daniel O'Connell Bridge in 1878, with the structure being opened in 1880.<sup>6</sup> Aside from this and another Manuherikia River bridge, the Shaky Suspension Bridge (1879) at Alexandra, Macgeorge's experience and expertise in bridge design was demonstrated with the Alexandra Bridge (1879-82) over the Clutha River.<sup>7</sup> These are remaining examples of a once regionally popular form of bridge characterised by schist masonry towers.

The decision regarding an appropriate site for the Daniel O'Connell Bridge apparently took some time. It seems there was a divergence between where Pitches and other local people preferred the bridge to be located, and the most suitable in terms of geology and the river's course. However, in the end Macgeorge and common sense won out and the bridge was positioned slightly further down river than locals wished, in a location less prone to flood effects.<sup>8</sup> The contract for the bridge was let in 1879 to J. S. Derby and R. Edgar of Timaru for a cost of just under £5,000, although the completion price was said to have been more like £7,000.<sup>9</sup> A local landowner, Edward Booth, is said to have been responsible for the towers' stone masonry.<sup>10</sup>

There are conflicting reports regarding who named the structure. Two newspaper reports from the time cite both Vincent County Council Chairman, Vincent Pyke (1824-1894), and John Pitches, as the individual who conferred the name Daniel O'Connell Bridge at the opening in May 1880. It seems more likely however that it was Pyke.<sup>11</sup> Daniel O'Connell (1775-1847) was an Irish politician who was nicknamed "The Liberator" because he "achieved the first and most important step towards Irish freedom,"<sup>12</sup> and was noteworthy as the first Catholic Member of Parliament in Britain since the Reformation.<sup>13</sup> Daniel O'Connell is much celebrated in Ireland and there are numerous memorials and tributes to him: examples include the main street in Dublin being called O'Connell Street, and the bridge that it crosses being renamed as the O'Connell Bridge in 1882 when a statue of Daniel O'Connell was unveiled on the

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<sup>6</sup> *Tuapeka Times*, 1 January 1879, p.2; *Tuapeka Times*, 1 May 1880, p.3

<sup>7</sup> Shaky Suspension Bridge, IPENZ Engineering Heritage Record (EH no.2339), URL: <http://www.ipenz.org.nz/heritage/itemdetail.cfm?itemid=2339> (accessed 10 May 2011); Alexandra Bridge Piers and Towers, IPENZ Engineering Heritage Register (EH no. 2272), URL: <http://www.ipenz.org.nz/heritage/itemdetail.cfm?itemid=2272> (accessed 10 May 2011)

<sup>8</sup> Angus, p.54

<sup>9</sup> Ibid.; *Tuapeka Times*, 22 December 1880, p.5; Angus, p.54

<sup>10</sup> Leask, p.11

<sup>11</sup> *Otago Witness*, 15 May 1880, p.10; 'Opening of Blacks Bridge,' *Tuapeka Times*, 19 May 1880, p.3

<sup>12</sup> C. C. Trench, *The Great Dan: A biography of Daniel O'Connell*, London, 1984, p.xvii

<sup>13</sup> Ibid., p.170

structure.<sup>14</sup> Daniel O'Connell became an Irish symbol in the mid to late nineteenth century, and naming the main local bridge at Ophir after him was an act of reverence for the "great man."<sup>15</sup> The name of the structure seemed particularly relevant given that the population of the Ophir area at the time was dominated by Irish Catholic immigrant miners. Indeed, when the name was announced it was said to have been a popular choice, met with great applause and cheering.<sup>16</sup>

Described as "a splendid, lofty, romantic-looking suspension bridge,"<sup>17</sup> the Daniel O'Connell Bridge immediately became an indispensable road asset in the region. However, by the turn of the twentieth century the bridge was becoming run-down. For example, in 1903 the deck had degraded which led to compensation being awarded for injury to a horse whose leg had gone through a hole in it.<sup>18</sup> By this time many bridges of similar age to the Daniel O'Connell had needed to have their timber components replaced because the material had degraded. The necessity of doing this on the Daniel O'Connell Bridge was identified in 1899. However, it was not until 1905 that the contractor, Watson Rhodes and Company, completed the task of replacing aspects of the timber superstructure with steel.<sup>19</sup> Steel was preferred because of its relative longevity. However, a large quantity of the timber which was removed was found to be in good condition. As such, it was recycled in a new footbridge constructed over the Manuherikia River between the towns of Ophir and Omakau.<sup>20</sup>

For a further three decades the Daniel O'Connell Bridge was the highway crossing in the vicinity. The nature and quantity of traffic changed during this time, from mainly horse drawn to motorised vehicles. Indeed, in 1918 there were 200 cars registered in the local district.<sup>21</sup> By 1937 the capacity of the Daniel O'Connell Bridge, which had been designed for horse-drawn vehicles and pedestrian traffic, was not meeting modern highway requirements and a new bridge was constructed. As anticipated, this new bridge diverted a lot of traffic away from the 1880 structure.<sup>22</sup> Despite being replaced as a highway asset, the Daniel O'Connell Bridge remains open to single

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<sup>14</sup> '1880 – O'Connell Bridge, Dublin,' Archiseek, URL: <http://archiseek.com/2010/1880-oconnell-bridge-dublin/> (accessed 10 May 2011)

<sup>15</sup> *Otago Witness*, 15 May 1880, p.10

<sup>16</sup> 'Opening of Blacks Bridge'; Angus, p.54

<sup>17</sup> 'Ophir,' *Otago Witness*, 14 September 1888, p.17

<sup>18</sup> *Otago Witness*, 10 June 1903, p.49

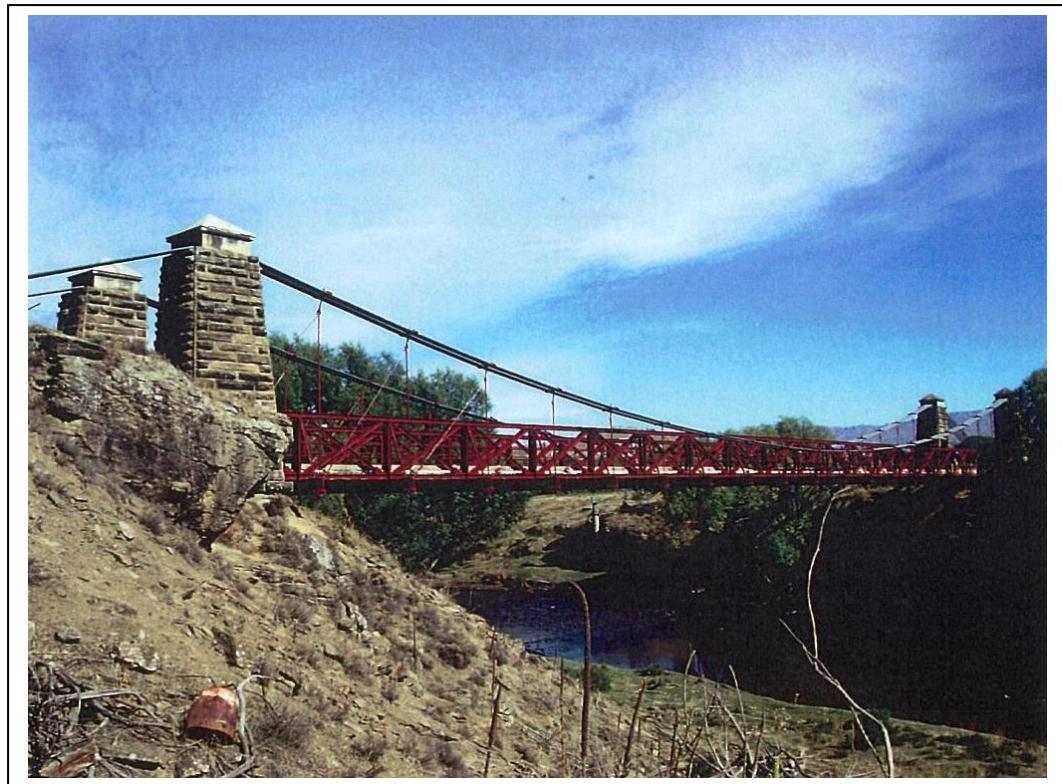
<sup>19</sup> Angus, p.77; *Otago Witness*, 16 August 1905, p.39

<sup>20</sup> Angus, p.99

<sup>21</sup> Leask, p.68

<sup>22</sup> Ibid., p.28

lane traffic, unlike most of its contemporaries, including the Alexandra, Shaky Suspension, and the Kawarau Gorge Suspension Bridges.



**Figure 1:** Daniel O'Connell Bridge, date unknown. G. Thornton, 'Daniel O'Connell Bridge,' IPENZ National Heritage Committee Report, 2007

## Social narrative

From the earliest periods of European settlement, communities around New Zealand desired to have bridges constructed, as they were the most effective means of mitigating the high drowning death toll and ensure consistent communications and commerce. The rivers in Central Otago, including the Manuherikia and Clutha, were particularly renowned as hazardous. Therefore, once Ophir was well-established residents believed a bridge across the Manuherikia River was necessary on the basis that:

Any who have crossed the Manuherikia River know that it is very awkward and dangerous to ford, and the construction of a substantial traffic bridge over it is a work of great importance.<sup>23</sup>

When high or in flood, rivers such as the Manuherikia River, were especially perilous for people, horses and stock. As such, bridges were prized because they eliminated the need to ford, or use ferry services across.<sup>24</sup>

The social importance of the structure to the area was demonstrated by the Vincent County Council being petitioned for it almost from the time of the council's foundation. Therefore, the opening of the bridge was a significant local occasion. Pitches had been keen for the county to fund the opening celebrations and proposed "a motion that £50 be voted from the County funds to pay the grog score...which found no seconder."<sup>25</sup> The opening celebrations do seem to have ended up being a grand affair with a large attendance from all over the County:

...by two o'clock our little town was never seen so full at any time...Alexandra supplying more than her share, although the Clydites turned out well and the County officials being all present.

In the absence of County Council funding, the occasion was funded through subscriptions from local people who were keen to celebrate the important new local structure.<sup>26</sup>

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<sup>23</sup> 'Public Works,' *Otago Daily Times*, 7 November 1879, p.2

<sup>24</sup> Thornton, p.15

<sup>25</sup> *Tuapeka Times*, 1 May 1880, p.3

<sup>26</sup> *Ibid.*; *Otago Witness*, 15 May 1880, p.10

Over its life Daniel O'Connell Bridge has not only become valued for its on-going functional purpose, but also because it is a point of interest and a landmark in the district. As such, despite being a road bridge, the structure is promoted as a place for visitors to the Otago Central Rail Trail to see.<sup>27</sup> The bridge has also been recognised as a historic place by the New Zealand Historic Places Trust, as well as being part of the Ophir Historic Area.<sup>28</sup>

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<sup>27</sup> 'Ophir,' Otago Central Rail Trail, URL: [www.otagocentral railtrail.co.nz/ophir](http://www.otagocentral railtrail.co.nz/ophir) (accessed 15 March 2011)

<sup>28</sup> Daniel O'Connell Bridge, Category I historic place (Record no.338); Ophir Historic Area (Record no.7268)

## Physical narrative

The Daniel O'Connell Bridge is a typical Central Otago bridge from the late nineteenth century, being a suspension bridge with schist masonry towers. This form of structure seems to have been preferred, especially in Vincent County where Macgeorge designed several similar structures, because suspension bridges did not require piers that could be undermined by the fast flowing rivers. As a local stone, schist was a natural and relatively economical choice for the towers.

Being only four metres wide, the Daniel O'Connell Bridge is only suitable for single lane traffic. The structure's span is 65.5 metres long across the Manuherikia River.

The bridge has 10 suspension cables on each side, which are fed over the top of the pairs of towers on either end. The iron catenary appears to have been manufactured in Dunedin in 1879.<sup>29</sup> The northern approach to the structure is through a narrow cutting into rock, and the cables are anchored into this. At the opposite end the cables are anchored into masonry which is visible above ground level.



**Figure 2:** Daniel O'Connell Bridge, date unknown. Thornton (2001), p.184

<sup>29</sup> *Otago Daily Times*, 7 November 1879, p.2. It is unclear to what extent the suspension wires were 'manufactured' in Dunedin – they may have been produced from scratch, or merely prepared for the bridge by cutting to length from imported cables.

The superstructure was originally constructed in timber. However in 1905 the transoms and stiffening truss of the Daniel O'Connell Bridge were replaced with steel equivalents. At this time, and on several subsequent occasions, the timber decking has been replaced.<sup>30</sup>

*Key physical dates*

1879	Construction begins
1880	Construction complete
1905	Original timber superstructure replaced with steel equivalent. Timber deck replaced
circa 1930s	Deck replaced
1948	Deck replaced

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<sup>30</sup> G. Thornton, 'Daniel O'Connell Bridge,' IPENZ National Heritage Committee Report, 2007

## C. Assessment of significance

The Daniel O'Connell Bridge has some engineering significance as one of a group of surviving suspension bridges designed by notable Vincent County Engineer, Leslie Duncan Macgeorge. These, and other similar local bridges, became a vernacular type in Central Otago in the late nineteenth century, being suspension bridges with characteristic schist masonry towers. The longevity of this structure is a testament to Macgeorge's technical knowledge and skill, as well as that of the contractors. This structure also has local social significance as a key means of traversing the potentially dangerous Manuherikia River, and because the community has continued to value the Daniel O'Connell Bridge it has been well maintained.

Therefore, the Daniel O'Connell Bridge is of sufficient engineering heritage significance to merit inclusion on the IPENZ Engineering Heritage Record.

## D. Supporting information

### List of supporting information

'Ophir,' Otago Central Rail Trail, URL: <http://www.otagocentralrailtrail.co.nz/ophir.html> (accessed 15 March 2011)

#### IPENZ Engineering Heritage Record and Register items:

Alexandra Bridge Piers and Towers, URL:

<http://www.ipenz.org.nz/heritage/itemdetail.cfm?itemid=2272>

Kawarau Gorge Suspension Bridge, URL:

<http://www.ipenz.org.nz/heritage/itemdetail.cfm?itemid=56>

Shaky Suspension Bridge, URL:

<http://www.ipenz.org.nz/heritage/itemdetail.cfm?itemid=2339>

#### NZHPT registration information available at:

Daniel O'Connell Bridge, Category I historic place (Record no.338), URL:

<http://www.historic.org.nz/TheRegister/RegisterSearch/RegisterResults.aspx?RID=338>

Ophir Historic Area (Record no.7268), URL:

<http://www.historic.org.nz/TheRegister/RegisterSearch/RegisterResults.aspx?RID=7268>

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Available from Papers Past, <http://paperspast.natlib.govt.nz/cgi-bin/paperspast>:

*Otago Daily Times*, 7 November 1879

*Otago Witness*, 15 May 1880, 14 September 1888, 10 June 1903, 16 August 1905

*Tuapeka Times*, 1 January 1879, 1 May 1880, 19 May 1880, 22 December 1880