

**DRAFT**

# **THE WOODEN BRIDGE**

**(ERF 20315 MILNERTON)**

## **HERITAGE STATEMENT & CONSERVATION MANAGEMENT PLAN**

**PREPARED IN COMPLIANCE WITH SECTION 27 OF THE NATIONAL HERITAGE  
RESOURCES ACT (NHRA)**

**June 2008**



Milnerton Wooden Bridge c.1903 (Ravenscroft Collection)

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Prepared by:  
Andre Pentz B.Arch.MCPUD Pr.Arch TRP SA UDISA AHAP  
Urban Design Services cc  
PO Box 30595  
TOKAI  
7966

E-mail: [urbands@iafrica.com](mailto:urbands@iafrica.com)

Tel: 021 7121861 Fax: 021 7128014



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ARCHITECTS ~ PLANNERS  
HERITAGE CONSULTANTS

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## 1.0 Executive Summary

Urban Design Services cc (Architects, Planners and Heritage Management Consultants) have been appointed by the City of Cape Town to prepare a Conservation Management Plan for the Wooden Bridge in Milnerton.

As the bridge is a Provincial Heritage Site (PHS) application must be made to the provincial heritage authority, Heritage Western Cape (HWC) in compliance with Section 27(18) of the National Heritage Resources Act (No 25 of 1999) (NHRA). It is intended that this report be submitted to Heritage Western Cape for comment.

The Wooden Bridge is located in Milnerton between Otto du Plessis Drive and Woodbridge Island, just north of the intersection of Loxton Road and Otto du Plessis Drive. The bridge is part of Erf 20315 Milnerton forming land designated as public open space, and in ownership of the City of Cape Town.

The Wooden Bridge was reportedly built in 1901 by the Fortress Company of the Royal Engineers, during the South African War, for military access to the island. The bridge was closed in 1990 and re-opened to pedestrian traffic after repairs completed in 1995. It was again closed in 2007, as it had become unsafe due to its deteriorating condition.

An illustrated timeline of the bridge prepared by S. Titlestad is included as Annexure 1. The bridge was originally built of jarrah wood. Jarrah was widely used in South Africa for railway sleepers. It is now no longer commercially available and is considered a rare wood. The deck of the bridge is now covered in premix (tar).

The present condition indicates that further deterioration has taken place. Of great concern is the condition of the deck, which is collapsing in parts.

Milnerton's Wooden Bridge is a unique heritage asset, not only important to the local area, but also in terms of the Cape's military history and the history of Milnerton. It is the only surviving structure of its kind in South Africa. Notwithstanding a series of repairs, and its current closure, due to its deterioration, it retains a strong sense of history and authenticity. The conservation and re-opening of the bridge for pedestrian traffic would enable the bridge to contribute to the social, recreational and economic well-being of Milnerton, including the local and international tourist industry – it being a landmark on a scenic route at an important public access point to the beachfront. Its status as a Grade 2 Provincial Heritage Site should be upheld.

It is critically important that the bridge be put to use, and to arrest further deteriorating. Moreover the local authority has legal obligations in terms of Section 27 of the NHRA to conserve the bridge and may even be compelled by HWC in terms of Section 45 of the NHRA to repair it.

ICOMOS (The International Charter for the Conservation and Restoration of Monuments) adopted in 1999 several principles for the preservation of historic timber structures (see Annexure 3). It is recommended that these principles be adopted with regard to any conservation work to be carried out on the bridge.

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The bridge has the potential for enormous public interest and appreciation, which needs to be realised. The history of the bridge is linked to the history of the area and also encompasses other fields of interest such as transport, military, photography etc. Permanent display panels illustrating the time line of the bridge should be erected on or near the bridge as part of the Conservation Plan.

Regular cyclical maintenance is important to arrest the deterioration of the bridge and effect necessary repairs. Further research into historical military records kept by the Royal Engineers in the United Kingdom may reveal more about the people who built the bridge.

General structural repairs are required to re-instate the integrity of the underlying wooden structure, including the replacement of broken timber bracing and missing connecting bolts. It is considered necessary that the premix (tarmac) covering to the deck be stripped off. This is important not only to reveal the original structure of the bridge, but also because it is contributing to the rotting of the decking, which also needs to be repaired. Timber handrails and supporting struts are to be conserved. It is also proposed that these be painted white as indicated in earlier photographs.

A total expenditure of R 3,3 million has been budgeted for and a project implementation schedule has been prepared by the City of Cape Town, as per Annexure 2. Several implementation options and alternatives could be considered.

The first, and most desirable option, would arise from a successful application for Lotto funds (or other sources), which the City has applied for. A “privatisation” option could be considered if the necessary funds and resources are not provided soon enough and in order to prevent further deterioration or possible collapse of the bridge. The ‘privatisation’ of the bridge hinges on the concept that the private sector may be better equipped to “fast-track” the conservation of the bridge, in return for certain rights to generate revenue from its use.

Two important conditions would need to be imposed by the local authority. The first is that the bridge would need to be conserved to a level that would satisfy the requirements of the Conservation Management Plan. The second condition would be for public access to be maintained.

An activity that could suit these conditions would be a weekly open air market event that would utilise the bridge as a platform for market stalls, linking the areas on either side of the bridge together, and providing a unique pedestrian ‘bridge over the river’ experience. Shade and shelter for the market stalls along the bridge could also be created by means of tent-like structures erected on top of the deck of the bridge, but would have to be carefully designed so as to not detract from the heritage qualities of the bridge.

The conservation plan requires periodic review in terms of changing circumstances. This report has been prepared as a draft. It is the intention to seek comment from the public so this can be included in the final report. In this regard, copies of the report are to be forwarded to the local public library, the Milnerton Ratepayers’ Association, and the Milnerton Canoe and Golf clubs.

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## 2.0 Introduction and Background

Urban Design Services cc (Architects, Planners and Heritage Management Consultants) have been appointed by the City of Cape Town to prepare a Conservation Management Plan for the Wooden Bridge in Milnerton. The Scope of Work as directed by the City's Heritage Resources Department requires a Condition Report and Conservation Management Plan to guide future conservation, interventions, maintenance and use of the historic bridge in Milnerton.

The Conservation Management Plan should include:

- 1/ A comprehensive assessment of the significance of the bridge;
- 2/ An assessment of management issues facing the bridge- including vulnerability and threats- and recommendations as to how these should be addressed.
- 3/ Options and recommendations for interventions to ensure the long term sustainability of the bridge, (for example, possible use of alternative materials), and an assessment of their likely impact on its significance;
- 4/ Recommendations for immediate interventions and maintenance, and guidelines for future maintenance;
- 5/ Recommendations for possible future uses of the bridge;
- 6/ Any other issues that may be identified.

It should be noted that as the bridge is a Provincial Heritage Site (PHS) application must be made to the provincial heritage authority, Heritage Western Cape (HWC) in compliance with Section 27(18) of the National Heritage Resources Act (No 25 of 1999) (NHRA).<sup>1</sup> It is intended that this report be submitted to Heritage Western Cape for comment.

The methodology used in the preparation of this report has included site inspections, archival and internet research, and desktop analysis and reporting. In order to try and better understand the origins, historical development and role of the bridge over time, a separate specialist study has also been commissioned from a historical researcher, which is included as Annexure 1: "Illustrated Timeline of the Milnerton Bridge".

Urban Design Services cc is an independent consultancy, and is not financially connected with nor involved in any executive decision-making function of the commissioning authority.

## 3.0 Locality and Setting

The Wooden Bridge is located in Milnerton<sup>2</sup> between Otto du Plessis Drive and Woodbridge Island, just north of the intersection of Loxton Road and Otto du Plessis Drive. The bridge spans the Diep Rivier lagoon which forms part of the Rietvlei Nature Area. The Wooden Bridge is one of two bridges crossing the river;

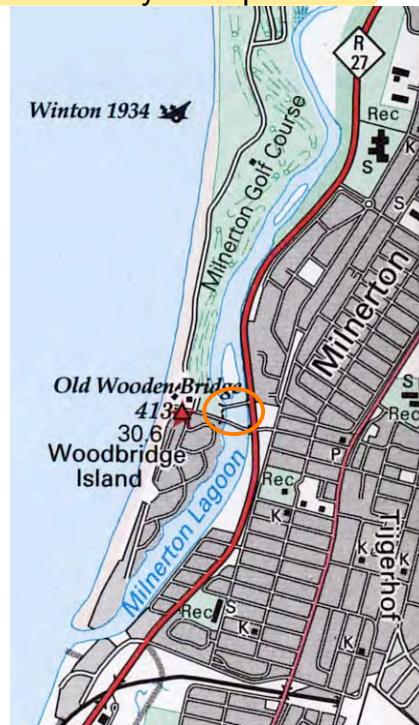
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<sup>1</sup> Section 27 (18) of the NHRA states that; *no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide, or change the planning status of any heritage site without a permit being issued by the heritage authority responsible for the protection of such site.*

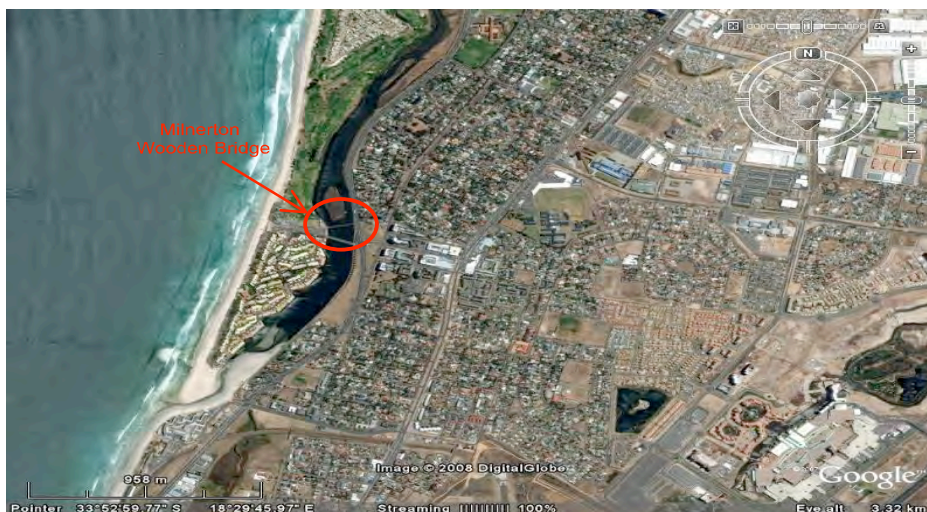
<sup>2</sup> Named after Sir Alfred Milner (1854-1925), later Lord Milner, Governor of the Cape from 1897-1901

immediately to the south of it is a modern concrete bridge, which is the current access for pedestrians and vehicles to the island as an extension of Loxton Road. North of Loxton Road on the island side is the canoe club and parking area and the Milnerton golf course. South of Loxton Road is the Woodbridge island residential area. Loxton Road terminates at the beach end with a roundabout, parking, tourist facilities and the lighthouse. This precinct is an important public access point to the beachfront. East of Otto du Plessis Drive is Milnerton itself, with Loxton Road leading east to the commercial strip along Koeberg Road and Milnerton Centre.

The bridge is part of Erf 20315 Milnerton forming land designated as public open space, and in ownership of the City of Cape Town.



**Fig 1: Locality Plan**  
(Source 1:50 000 series, RSA)

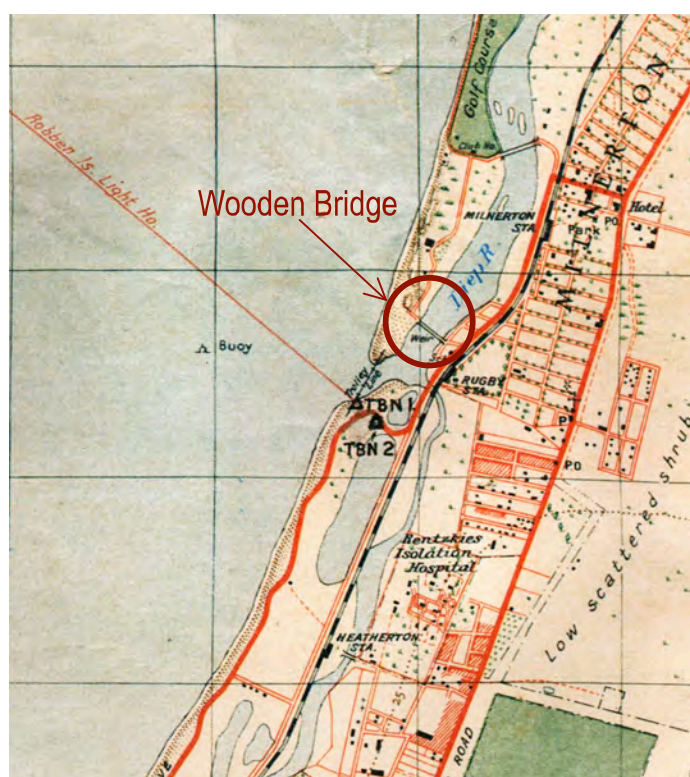


**Fig 2: Context Plan**  
(Source: Google Earth)

## 4.0 Historical Background

Millnerton was established in 1897 by Milnerton Estates Limited, a company who acquired the two farms known as “Paarden Eiland” and “Jan Biesjes Kraal”. They intended “to layout the estate as a township, to be known as Milnerton and also to open up railway communications from Cape Town to the centre of the property”.<sup>3</sup>

The railway was opened in 1903 and was operated as a private concern from 1904 until its closure in 1956. The underlying town layout of present-day Milnerton can be seen in the 1932 survey. This also indicates the railway line, the former alignment of the Marine Drive, the Wooden Bridge, and the old weir across the lagoon



**Fig 3: Extract from the 1932, 1:25,000 Map Series (Mowbray RSA).**

The Wooden Bridge was reportedly built in 1901 by the Fortress Company of the Royal Engineers, during the South African War, for military access to the island and “to provide entrance to a cannon trench”.<sup>4</sup> It is one of two former proclaimed National Monuments<sup>5</sup> in Milnerton (the other being the old municipal hall in Jansen Street), and the only wooden structure of its kind surviving in South Africa. The Wooden Bridge provided the sole access to the island, both for pedestrians and vehicles, until a new bridge was built in 1984. After 1984 the Wooden Bridge was closed to vehicular traffic, but still used intermittently by pedestrians and for fishing

<sup>3</sup> A History of Milnerton by Eric Rosenthal. Milnerton Municipality June 1980

<sup>4</sup> Deidre Richardson: Historic Sites of South Africa: Struik 2001.

<sup>5</sup> The Bridge was proclaimed a National Monument in 1987. The National Monuments Act was replaced by the National Heritage Resources Act in 1999.

(the bridge was closed in 1990 and re-opened to pedestrian traffic after repairs completed in 1995). It was again closed in 2007, as it had become unsafe due to its deteriorating condition.

An illustrated timeline of the bridge prepared by S. Titlestad is included as Annexure 1.

## 5.0 Heritage Resource Audit / Assessment of current situation

### 5.1 Description

The bridge was built of jarrah wood (*Eucalyptus Marginata*) a hardwood from Western Australia, also known as Australian Mahogany. “It is reddish or purplish brown, darkening with age. Hard, heavy, very strong and durable, fire and insect resisting. Very large sizes and, probably the most useful Australian wood. Usually straight grain. Interlocked and wavy grain is valued for decorative work, as are the butts. Even texture, moderately coarse. Subject to gum veins. Requires care in seasoning. Not difficult to work and polishes well. Used for all purposes: structural, piling, carriages and wagon work, cabinet work, superior joinery, flooring, paving, turnery, etc”<sup>6</sup>

Jarrah was widely used in South Africa for railways sleepers. It is now no longer commercially available and is considered a rare wood.

A description of the original construction is set out below:

“The bridge comprises 21 pile bents<sup>7</sup> with 4 piles per bent. Each pile group is arranged in a row across the width of the bridge and is braced against transverse forces with horizontal and diagonal members. In the longitudinal direction the pile groups are braced with diagonal members against the bridge deck. These longitudinal brace members also assist in propping the main deck beams and thereby transferring some of the vertical loads to the piles. The deck beams support transverse bearers which in turn support the roadway and footway decking”<sup>8</sup>

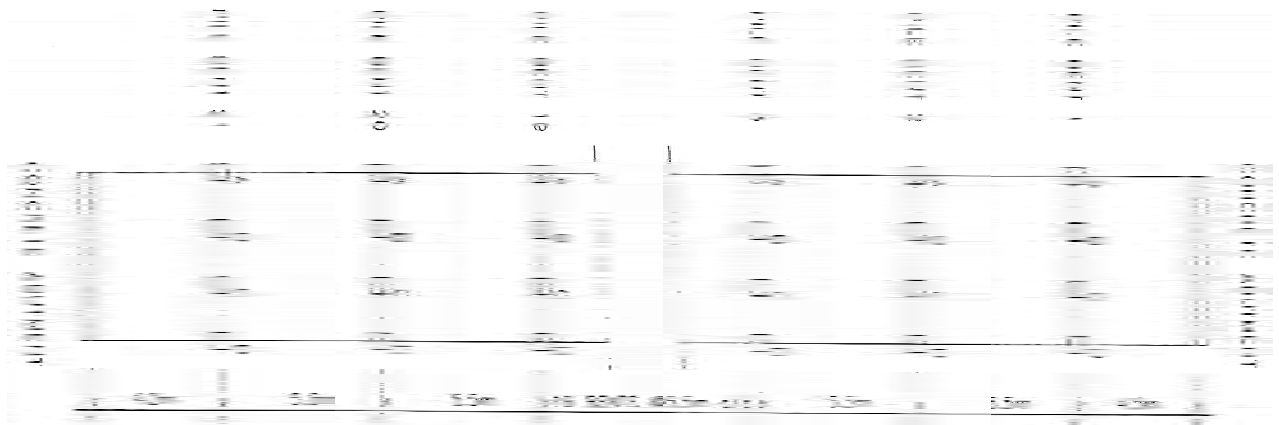


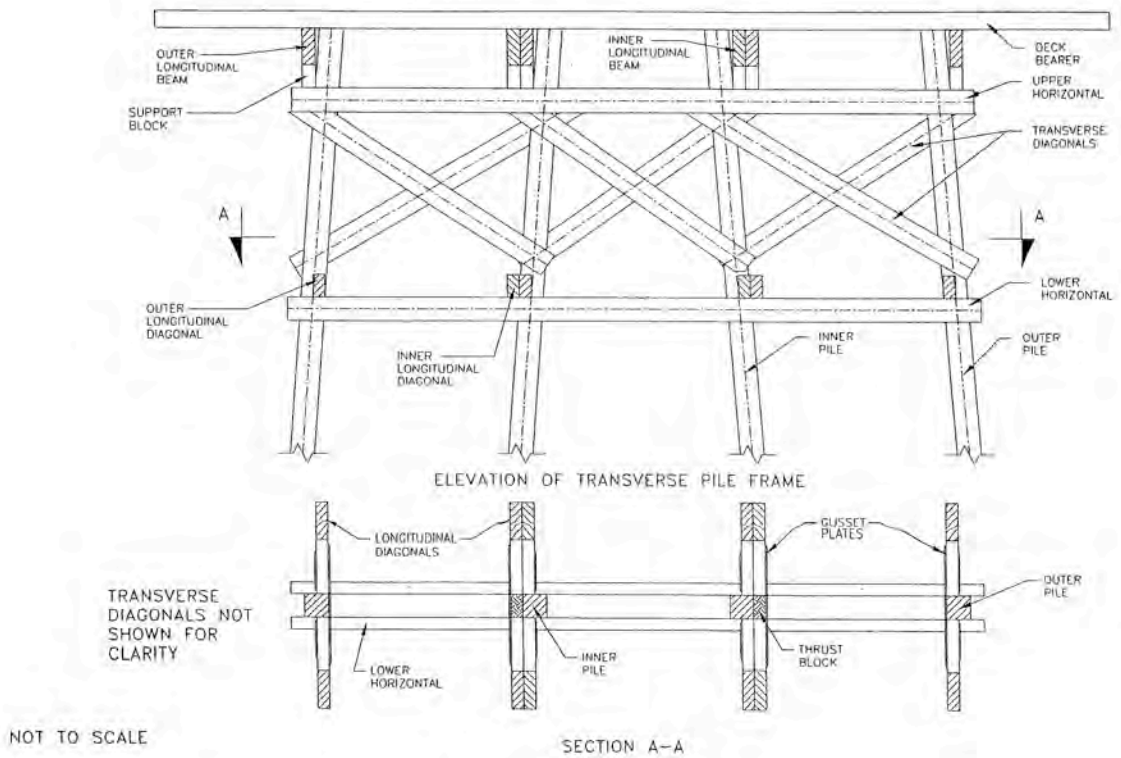
Fig 4: Detail of Bridge Frame (Plan)  
(Source: Watermeyer Prestedge Retief 1994)

<sup>6</sup> The Complete Dictionary of Wood. Thomas Corkhill. Stobart & Sons 1979

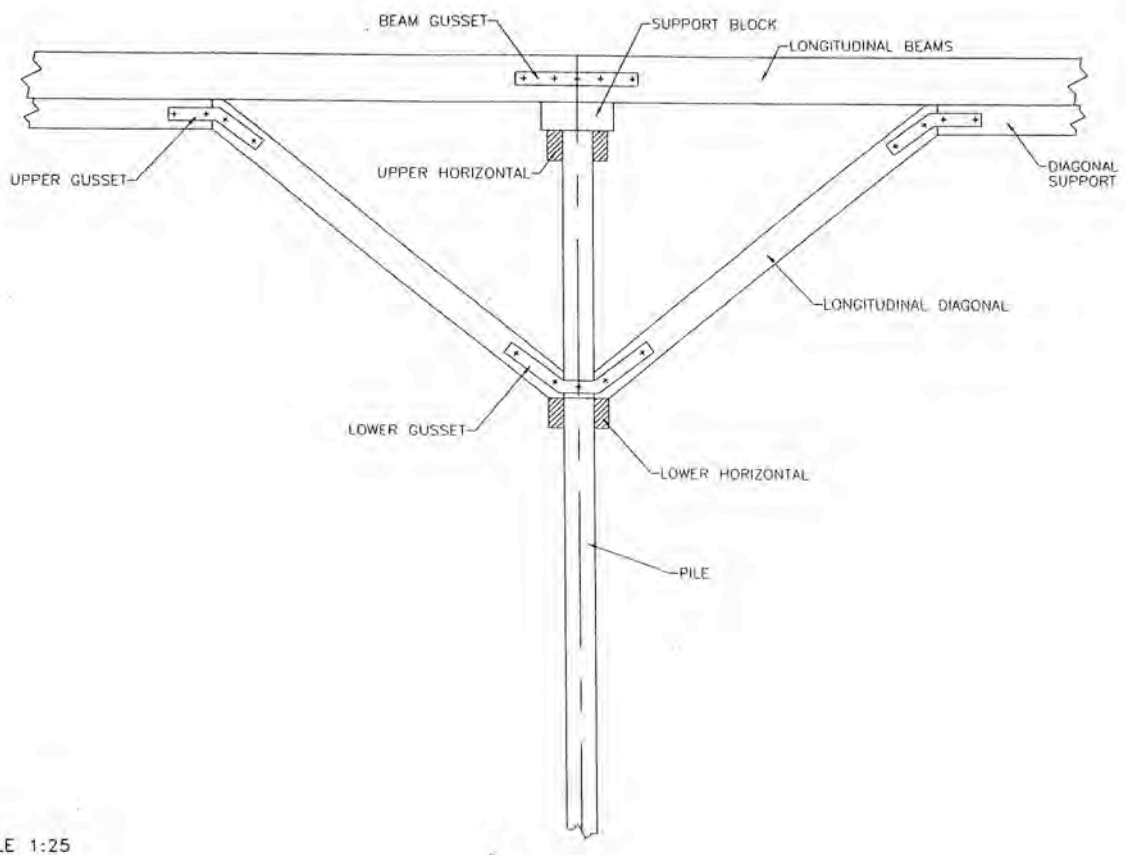
<sup>7</sup> Ibid 5 “A bent is two or more posts or piles braced together to form a support in heavy timber construction”.

<sup>8</sup> Source: Report on the Wooden Bridge, Municipality. September 1994. Watermeyer Prestedge Retief





**Fig 5: Detail of Pile Bent**  
 (Source: Watermeyer Prestedge Retief 1994)



**Fig 6: Detail of Longitudinal Frame**  
 (Source: Watermeyer Prestedge Retief 1994)

The pile bents are set out in bays of 5,5m centres with a 4,2m to 4,5m bay at either end of the bridge terminating in a concrete abutment. This makes a bridge length of 118,7m. The bridge width is 4,8m between balustrades with a 3 m wide carriageway and 900mm wide pedestrian walkways either side, raised above the central carriageway. The handrail to the balustrade timber is at 900mm above the walkway, fixed to uprights at 900mm – 1.8mm alternating centres, with diagonal struts connecting to the projecting deck bearers. Wire stringing midway between the deck and handrail was indicated. The original deck to the carriageway consisted of a double layer of 38mm jarrah decking. The walkway either side consisted of a single layer of jarrah decking on transverse bearers. The deck of the bridge is now covered in premix (tar). An earlier photograph shows the balustrading painted white.

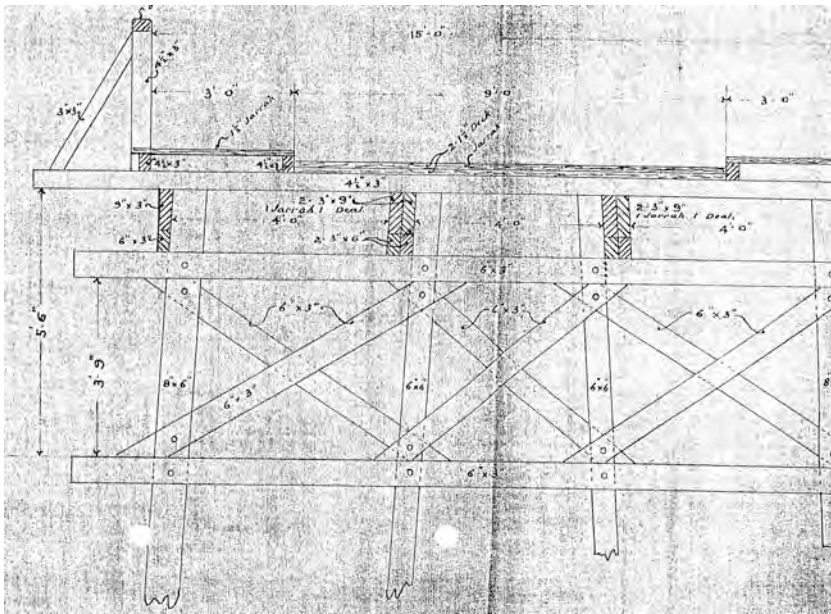


Fig 7: Extract from 1921 survey  
(Source: Milnerton Municipality)

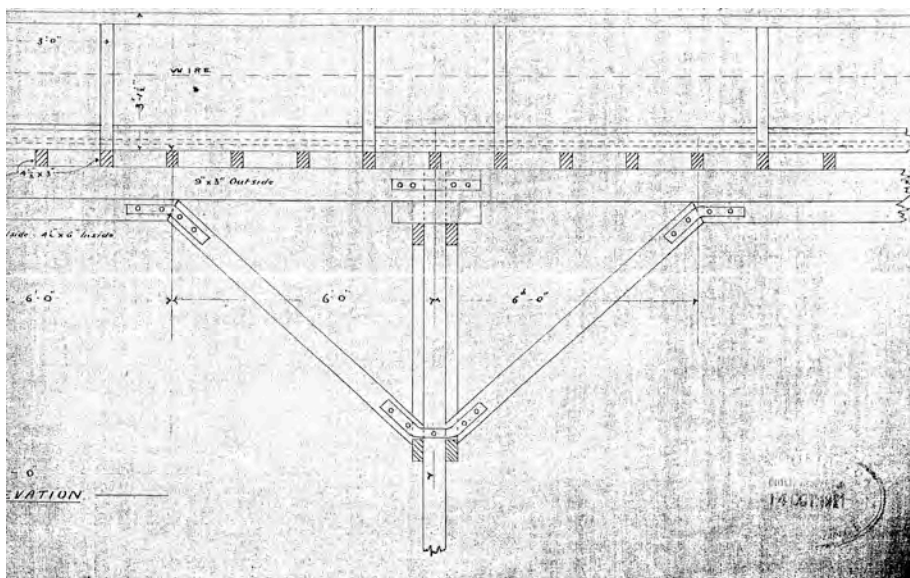


Fig 8: Extract from 1921 survey  
(Source: Milnerton Municipality)

Interestingly, the piling and design of the supporting structure follows ancient patterns for timber bridges of the type. Similarities in the setting out of the piles and cross bracing can be seen for example in the design of the Ponte Coperto bridge by Palladio in the 16th Century, at Bassano in Italy. This bridge, which still stands, “followed the form of its predecessor”<sup>9</sup>, which had been destroyed by floods. From this example it can be deduced that the Italians are clearly able to preserve timber structures over a very long period. As can be seen from the chronology of repairs outlined in Section 5.2 below, local government has invested considerable energy in the preservation of the bridge over its lifetime and should continue to do so. It is worth noting that a number of similar bridges were constructed by the Royal Engineers in Australia and that the National Trust of Australia has developed guidelines for their conservation.

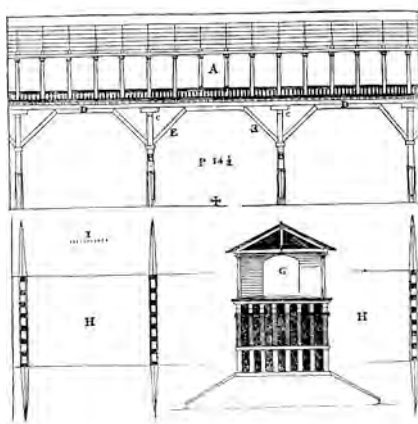


Fig 9: Detail of Ponte Coperto bridge  
(Andrea Palladio, 1568)

## 5.2 Chronology of Repairs / Alterations Undertaken

### 1942

A Milnerton Council meeting<sup>10</sup> refers to the “fairly extensive repair undertaken to the deck of the bridge, but these were not undertaken in conformity with the original construction”.

### 1949

Council records refer to the “reconstruction” that had taken place during 1949.<sup>11</sup> It is not known what this reconstruction consisted of.

### 1972

Structural repairs were undertaken to the bridge piles and supports which were found to be extensively eroded (sic). These repairs were carried out by shipwrights

<sup>9</sup> The Palladio Guide by Caroline Constant. Princeton Architectural Press, 1993.

<sup>10</sup> Council meeting 21/08/1985. Proposed Declaration as National Monument: The Wooden Bridge, Milnerton Lagoon, Milnerton

<sup>11</sup> Milnerton Council meeting 20/01/94. Report on corroded piles: Old Wooden Bridge

on a piecemeal basis since it was not possible to obtain tenders for this work. Stainless steel was used in place of wrought iron at the time of these repairs”.<sup>12</sup>

### 1995

In 1994-5 remedial work was undertaken on the bridge following recommendations by Watermeyer Prestedge and Retief, consulting Coastal, Ocean and Environmental Engineers. This work included:

- The strengthening of existing piles by means of splicing on additional timber.
- Replacement of missing or damaged members.
- Replacement of gusset plates, bolts etc.
- Timber coating.

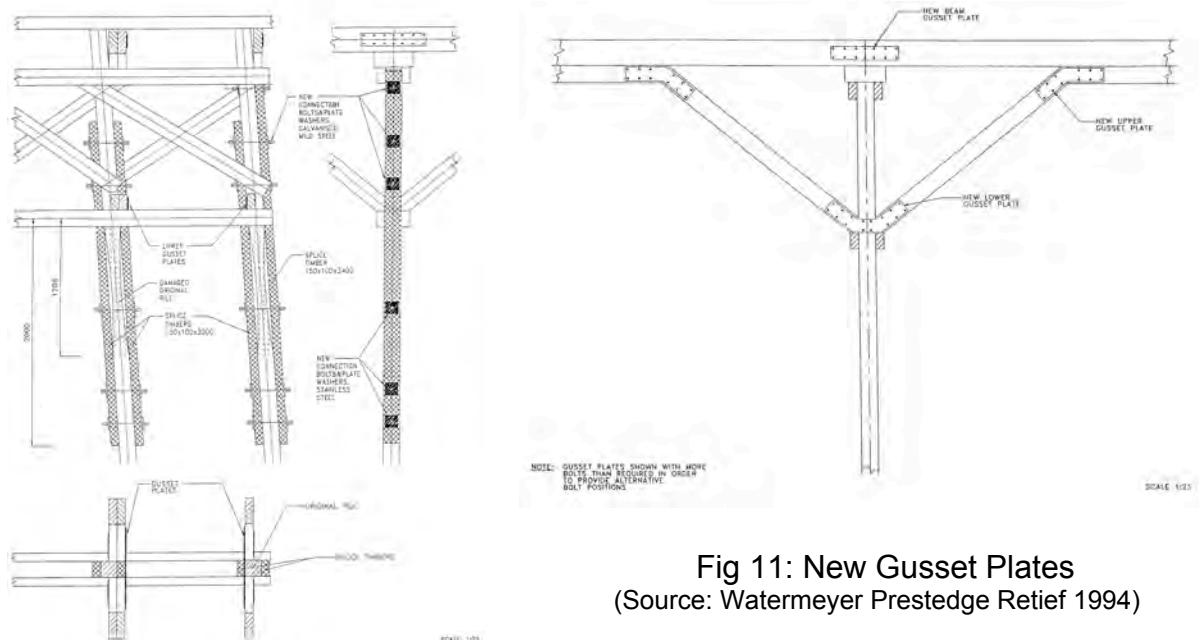


FIG 10: New Pile Splicing

(Source: Watermeyer Prestedge Retief 1994)

Fig 11: New Gusset Plates  
(Source: Watermeyer Prestedge Retief 1994)

## 5.3 Condition

The Roads Branch of the City of Cape Town commissioned an inspection of the bridge in 1999.<sup>13</sup> The report that followed this inspection found that the bridge was in a poor condition, including:

- Erosion damage to both embankments requiring repair.
- Damaged handrail – unsafe for pedestrians.
- Badly defective deck members on spans 6,9,19,20.
- Missing / damaged pier bracing of piers 5,10,13 and 20.
- General defects including loose / missing / corroding nuts, bolts and plate washers, rotting timber and poor connections between numerous structural members.

ibid 7

<sup>13</sup> Bridge Inspection, Diep River Footbridge. City of Cape Town Roads Branch. Liebenberg and Stander 1999

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A further inspection carried out in 2003 by council officials<sup>14</sup> indicated that substantial deterioration had taken place since the remedial work of 1994/5, including:

- Missing stringer wire to balustrade.
- Missing / rotten balustrade struts.
- Incomplete balustrading to bollards on bank.
- Balustrade too low.
- Missing / rotten walkway planks.
- Rotting of planks under premix tar.
- Deterioration to new splicing to piles; cracked timbers and missing bolts.
- Rotten and sagging main beams(s).

The bridge was closed in 2007 due to the deterioration and for safety reasons. The present condition (inspection carried out by ourselves, June 2008) indicates that further deterioration has taken place (see accompanying photographs), including:

- Collapse of decking in parts with new holes to surface.
- Further deterioration to balustrading including missing sections.
- Waterlogged and rotting decking, compounded by low points to tarmac surfacing, allowing water to penetrate to decking, facilitating moss and mould growth and the entrapment of moisture below tarmac.
- Missing bolts, washers and nuts to structure of supporting timber members.
- Missing and rotten bracing.
- Rotting timber, particularly at exposed ends and where exposed bolt holes have aggravated further rot and deterioration.
- Split and sagging structural members and beams.

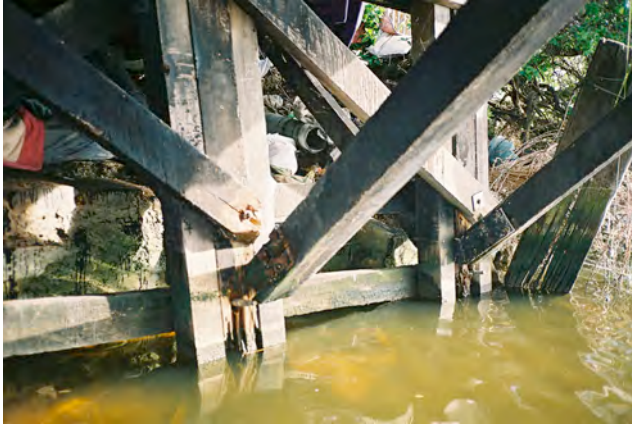
An in-situ inspection including observations made by ourselves (June 2000) from an inflatable dingy reveal that the bridge is still structurally intact, despite the deteriorating condition. The spliced-on piles remain in position and are all functional, as are the reinforcing steel gusset plates, although there appears to be some areas of settlement and deflection which could probably be arrested or rectified with the remedial repairs that are required. These repairs to the undercarrige include the replacement of some broken or split timbers and replacement of missing bolts, nuts and washers.

There also appears to be greater damage at either end of the bridge, and to structural members, possibly caused by greater extremes in environmental conditions along the shore-line, and by the activities of the resident vagrants or homeless people, camped under the bridge at its western edge. For example, there are also more missing connecting bolts in these sections. Of greater concern however is the condition of the deck, which is collapsing in parts.

Set out below are photographs of the existing condition of the bridge.

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<sup>14</sup> Report dated 2003. Email from Steve Roux to Faried Allie 17/02/2003



West end span. Note general deterioration



Sagging bracing



Loose bolt



Split rail. (Split is relatively new)



Split end to cross-bracing



Piles still structurally in place



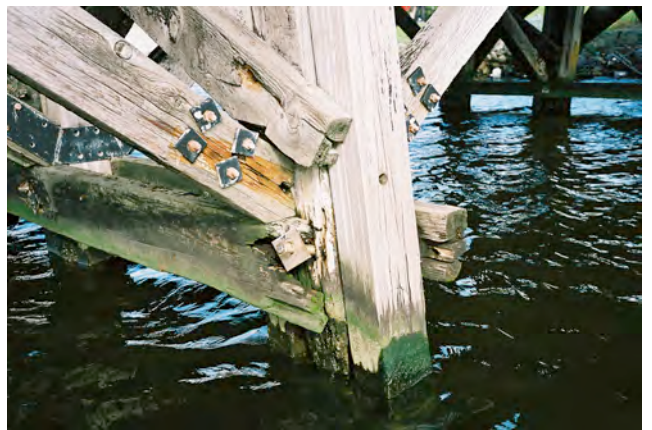
Defunct service pipe along bridge



General view of bridge span



General view of lower gusset plates



General deterioration



Split and sagging members



Collapsing decking



Loose Bolt



General view looking north west  
Note slight visible deflection



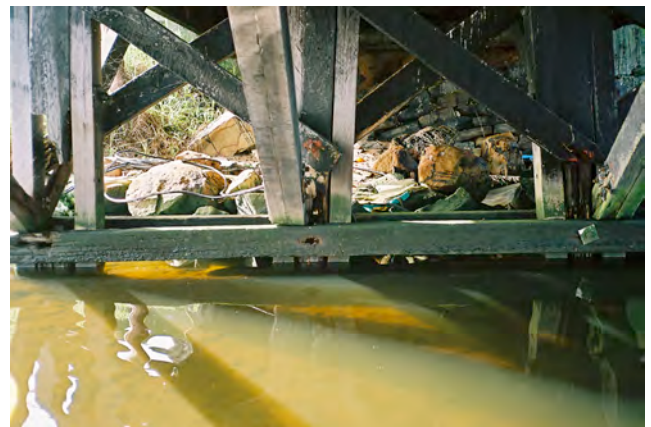
General view looking north east



View to undercarriage.  
Note mould growth, collapsing decking



View of decking.  
Note packing repairs



View of east end. Note missing bolts





Note split beam



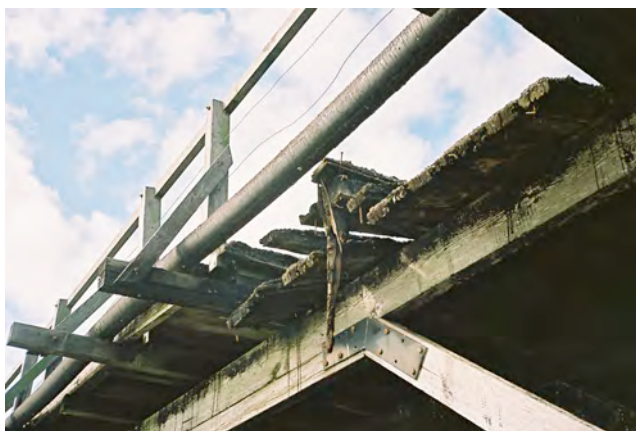
Deteriorating horizontal supports to handrail



Deteriorating ends to structural member



Note missing nut and washer to bolt



Deteriorating deck



Hole to decking



Mould / moss growth



Hole in decking



East end closure



Collapsed decking



Holes to decking at east end



Broken handrail



Sagging and collapsed decking to west end



Graffiti to bridge deck



Closure at west end



Ponding to surface



View of deck looking east



View of deck looking west

## 5.4 Statutory and Policy Framework

### NHRA (National Heritage Resources Act, 1999)

In 1987 the bridge was declared to be a National Monument in terms of the War Graves and National Monuments Act (Act 28 of 1969). In 2000, the National Heritage Resources Act (Act No.25 of 1999) (NHRA) replaced the National Monuments Act. In terms of this legislation all former National Monuments became Grade 2 or Provincial Heritage Sites falling under the jurisdiction of the provincial heritage authority, Heritage Western Cape (HWC).

### Draft Blaauwberg Spatial Development Framework (2002)

The BSDF has identified the Milnerton Lighthouse precinct as an unique asset, and requires coastal related recreational facilities and opportunities to be created. The bridge has been identified as an ideal structure for bird-watching and to appreciate the fauna and flora of the Rietvlei Lagoon with minimal disturbance to wildlife.

### Scenic Drive Network Management Plan (2002)

This plan was drawn up to ensure that existing natural and built environment qualities of scenic drives are enhanced. Marine / Otto du Plessis Drive has been identified as a scenic drive and therefore is appropriate that the bridge, being a cultural resource, is maintained. The bridge is also identified as a landmark on several websites devoted to tourism in Cape Town.

### Urban Design Framework for Milnerton Golf Course Site and Environs (2000)

This report identified the lighthouse precinct as one of the most important “gateway” sites in Metropolitan Cape Town, and recommends greater emphasis be made on the upgrading of the pedestrian environment, improving the quality of the lagoon banks, and providing for recreational activities such as fishing. In this regard the bridge could play an important role in revitalising these aspects.

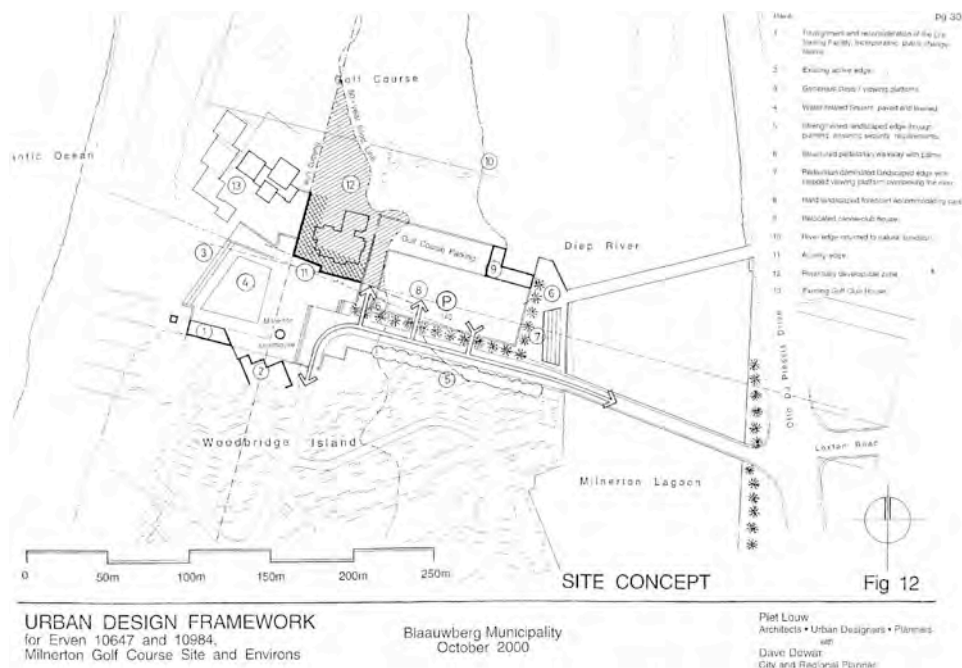


Figure 12: Urban Design Framework for Milnerton Golf Course Site and Environs  
Louw and Dewar (2000)

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### Urban Design Framework for Loxton Road (2002)

This plan also makes provision for the upgrading of the lagoon banks and the restoration of the bridge could contribute to these goals.

## **6.0 Significance**

HWC has devised a guide to satisfy Section 7 of the National Heritage Resources Act, 1999 (Act 25 of 1999) and Regulation 43 published in the *Government Gazette* No 6820 dated 30 May 2003, Notice No 694 dated 30 May 2003.<sup>15</sup> Its primary function is to assist local authorities and conservation bodies who are engaged in drawing up inventories in order to satisfy Section 30(5) of the Act. It is also used by heritage practitioners in assessments required in terms of the various sections of the NHRA. The guide has been used in the assessment of the bridge.

In terms of the guide it is put forward that the bridge should retain its listing as a Grade II site because of the following factors relating to its cultural significance:

- its importance in the community or pattern of the history of the Western Cape;
- the uncommon, rare or endangered aspects that it possesses reflecting the Western Cape's cultural heritage;
- the potential that the site may yield information that will contribute to an understanding of the Western Cape's cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of the Western Cape's cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group in the Western Cape; and
- its importance in demonstrating a high degree of creative achievement at a particular period in the development or history of the Western Cape.

### Statement of Significance

Milnerton's Wooden Bridge is a unique heritage asset, not only important to the local area, but also in terms of the Cape's military history and the history of Milnerton. It is the only surviving structure of its kind in South Africa.

Notwithstanding a series of repairs, and its current closure, due to its deterioration, it retains a strong sense of history and authenticity. The conservation and re-opening of the bridge for pedestrian traffic would enable the bridge to contribute to the social, recreational and economic well-being of Milnerton, including the local and international tourist industry – it being a landmark on a scenic route at an important public access point to the beachfront. Its status as a Grade 2 Provincial Heritage Site should be upheld.

## **7.0 Issues and Vulnerability**

The purpose of this section is to understand in what ways the significance of the bridge is vulnerable to various factors and issues, and which have the potential to influence conservation policy. This approach borrows from the "Sheffield Template" developed by English Heritage for conservation planning, adding another step

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<sup>15</sup> A Short Guide to Grading (Version 5). 2007. Heritage Western Cape.

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between significance and policy, and introducing some of the principles developed in the debate over sustainable development.<sup>16</sup>

### **7.1 Condition and Use**

The deteriorating condition is an important issue, for the longer the bridge is left unattended and remains closed, the greater the chance of further vandalism or structural collapse, with the bridge being condemned as a danger to life or property, or being considered an unwanted eyesore. Public and community expectations for conservation will also diminish over time. It is therefore critically important that the bridge be put to use. Moreover the local authority has legal obligations in terms of Section 27 of the NHRA to conserve the bridge and may even be compelled by HWC in terms of Section 45 of the NHRA to repair it.

### **7.2 Funding and Management Issues**

The local authority, the City of Cape Town, is obliged to maintain the bridge. The bridge falls under the management of the Roads and Stormwater Department. The bridge is not apparently seen by that Department as a high priority as no provision has been made in Departmental budgets for its conservation. Other possible sources of funding such as the National Lotto could be approached for assistance. (See Annexure 2: Proposal for the refurbishment of the Historic Wooden Bridge in Milnerton.) Without funds the bridge cannot be conserved and its significance realised. The “privatisation” or lease of the bridge (in exchange for preservation) could be an option worth considering provided public access is maintained.

By implication there are a number of Council Departments who have an interest in the effective management of the bridge. Overlapping areas of concern include safety, traffic, law enforcement, property management, roads and stormwater, planning and environment (including heritage), and parks.

### **7.3 Sustainable Development**

Issues of sustainable development need to be looked at in terms of the allocation of scarce and renewable resources, income generation, skills development, and job creation. The conservation of the bridge could have the following positive outcomes for sustainable development. These include:

The conservation of the bridge could be undertaken with a suitable replacement for the original Jarrah timber used. Jarrah is now a rare and endangered species which should not be used unless a source of used Jarrah is made available. This is unlikely as the only Jarrah timber which could be made available would probably be old railway sleepers which are too short for the purpose, being only 2100mm in length. There are suitable eucalypt species such as Eucalyptus Diversicolour or Eucalyptus Microcorys which would offer a good alternative to Jarrah, are locally grown, and being an exotic species, are not protected in this country.

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<sup>16</sup> K.Clark. Conservation Plans: A guide for the perplexed. Context 57. March 1998

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The conservation work would by nature require skilled carpenters and manual labour for the project. This sort of work could also be undertaken by a small to medium sized contractor and could potentially also satisfy the necessary job creation, skills development and empowerment criteria favoured by the local authority.

Potential income-generating opportunities presented by the conservation of the bridge include direct and indirect sources. Direct sources could include the hiring out of the bridge for film shoots and events and for weekly or monthly produce or arts and crafts market activities.<sup>17</sup>



**Porter Estate (Tokai) Open Air Market**

Indirect sources would be through tourism and recreational activities relating to the bridge. Specialist tourist niche markets also encompass eco-tourism (bird watching) and military history tourism. The Cape is well represented with sites of historical military interest, and the wooden bridge (which was built for military purposes) is a well-located landmark and stop-over point.

## **8.0 Conservation Policy**

### **8.1. Vision**

The Urban Design Frameworks for the Lighthouse and Loxton Road precincts outline an overall vision for the upgrading of the pedestrian environment. It is clear that the restoration of the bridge could contribute to these proposed upgrades by accommodating additional opportunities for pedestrian movement and other activities such as fishing and bird-watching.

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<sup>17</sup> The open air market held at the Porter Estate in Tokai every Saturday morning might serve as a model for the type of facility that could take place at the Wooden Bridge site. The Porter Estate Market attracts in the order of 700 cars/event. (Pers. comm.. Steven Coetzee of the Porter Estate Market)

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### **8.2.1 Treatment of Fabric**

The following key areas are based on the guidelines from the Burra Charter<sup>18</sup>, which have been formulated to govern the treatment of historic fabric. Beyond the site's physical remains, the aesthetics, ambience, and views should also be conserved. Upgrading of the area could also be a catalyst for more intense use, such as for market activities.

### **8.2.2 Care for Significant Fabric**

Changes to heritage places should not distort the physical evidence, or other evidence it provides. Change should not diminish, destroy or conceal significant fabric (the elements, components and physical material that makes up a place). Care for significant fabric requires a cautious approach of changing as much as necessary but as little as possible.

Only changes where necessary should be considered, and only where they reveal site significance in order to aid interpretation or enhance uniqueness.

### **8.2.3 Reversibility**

If alterations to old fabric are permitted they should preferably be reversible. i.e. the demarcation between original work and additional work should be clearly defined.

### **8.2.4 Distinguishing New from Old**

Changes to buildings, areas and heritage places that falsify the evidence of their history should be avoided. Buildings and structures should not nostalgically create a false impression or interpretation of an age or a style. Decorative detail or additions to heritage places should clearly show that they are new elements to the heritage place. To avoid any confusion, the distinction between old and new fabric should be distinguishable. While being sympathetic and respecting original fabric, the detail of new work should, on close observation or through additional interpretation, be identifiable from the old fabric.

### **8.2.4 Sympathetic Changes**

Generally, new work in a heritage place should be sympathetic to the features of importance in terms of character and context. Matters such as siting, size, height, setback, materials, form, and colours are all important considerations when undertaking new work in heritage areas.

That is, proposed work should not detract, obscure or dominate the site but reveal its heritage as fully as possible. Copying original features is not always considered desirable as it causes confusion in discerning new from old. A spatial separation between old and new features should be observed to maintain the distinction.

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<sup>18</sup> The Burra Charter, International Charter for the Conservation and Restoration of Monuments (ICOMOS), 1999.  
Milnerton Wooden Bridge \* Heritage Statement & Conservation Management Plan \* Urban Design Services cc \* May 2008



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### **8.2.5 Respecting Earlier Changes**

Changes to a heritage place over time offer evidence of its historical development and may have acquired their own significance. Emphasis should not be placed on one period of a place's development at the expense of others unless that period is much more significant.

### **8.2.6 Appropriate Development**

This has to do once again with the site's significance which has to be fully understood based on its physical and material remains. Understanding this will ensure that its conservation (and even enhancement) is carried out. Two further clauses of the Burra Charter will help determine if proposed developments will help or harm this cause.

### **8.2.7 Retaining Context**

The context or setting of a place is often an important part of its significance. Changes to the visual setting and other relationships of a place should be sympathetic to its character and appearance.

### **8.2.8 Compatible Uses**

A historic place should preferably continue to be used for the purposes for which it was designed or for a use with which it has had a long association. Otherwise a compatible use should be found which requires minimal alteration to the fabric of the place.

## **8.3 Principles for the Preservation of Historic Timber Structures**

ICOMOS (The International Charter for the Conservation and Restoration of Monuments) adopted in 1999 several principles for the Preservation of Historic Timber Structures (see Annexure 3). A series of 15 important principles are outlined in the document under the following headings:

- Inspection, Recording and Documentation
- Monitoring and Maintenance
- Interventions
- Repair and Replacement
- Historic Forest Reserves
- Contemporary Materials and Technologies
- Education and Training

It is recommended that these principles be adopted with regard to any conservation work to be carried out on the bridge.

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## **8.4 Enhancement of Public Appreciation**

The bridge has the potential for enormous public interest and appreciation, which needs to be realised. The history of the bridge is linked to the history of the area and also encompasses other fields of interest such as transport, military, photography etc. Permanent display panels illustrating the time line of the bridge should be erected on or near the bridge as part of the conservation plan. Public lighting and vandal-proofing of display panels or structures is an important consideration.

## **8.5 Maintenance and Management**

Regular cyclical maintenance is important to arrest the deterioration of the bridge and effect necessary repairs. Maintenance should include the following:

A visual inspection of the bridge should be conducted once a year. The inspection should include the walkway and supporting timbers underneath. A record should be made of all defects so that any changes can be compared to the previous inspections. Where possible, structural repairs should be carried out directly after having been identified.

A comprehensive going-over of the condition and structural integrity of the bridge should be conducted by a professional engineer (with experience in coastal/marine conditions), every 5 years, and who should report on any necessary repairs. The bridge should also have any necessary protective coatings applied to the decking and exposed timbers every 5 years, including the painting and maintenance of the handrail and stringing. It is recommended that the Heritage Section of the Council commission the necessary reporting. Structural repairs should be undertaken by shipwrights or carpenters skilled in this type of construction and conversant with marine conditions. The work should be supervised by a suitable qualified professional engineer and approved by a heritage specialist. It is an important principle that no timber should be removed until an assessment has been made of the implications of the proposed action, and that the heritage specialist involved has approved any proposals for replacement. Any work involving a change to the existing timbers must also be recorded and documented. The above conditions should also apply in the case of any lease agreements or arrangements that may be entered into with the private sector involving conservation.

## **8.6 Presentation, Interpretation and Education**

The process of interpreting and displaying the changing use, condition, social attitudes etc., that have impacted on the structural and material changes to the bridge over time, is equally important to the task of documenting history. It is an important heritage principle that this process be presented in such a way that the general public obtains an insight into how the conservation process unfolds.

It is therefore recommended that the display panels to be erected at the bridge and depicting the history of the bridge also include photographs and information pertaining to the cycle of conservation including any changes over time.

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## **8.7 Visitors Management**

The site is an “open air” environment where the public has generally unfettered access, and the principal concerns should relate to the management of the site as a whole. Issues such as parking, security, traffic control (including pedestrian access), facilities for the disabled, public toilets, seating, lighting, litter collection and waste management will need to be addressed if large numbers of visitors need to be accommodated. Such conditions may arise in the case of events which attract many visitors, such as open air markets, concerts etc.

## **8.8 Future Research**

Further research into historical military records kept by the Royal Engineers in the United Kingdom may reveal more about the people who built the bridge (ie. one of the Fortress Companies of the Royal Engineers), and their *modus operandi*. Information of this kind can provide important contextual and background material.

## **9.0 Assessment of Conservation Needs**

(refer also to Annexure 2 regarding further details and costing).

## **9.1 General structural repairs to supporting structure**

General structural repairs are required to re-instate the integrity of the underlying wooden structure, including the replacement of broken timber bracing and missing connecting bolts.

The distinction between old and new fabric is already apparent in the previous repairs that have taken place ie. splicing on of new timbers, steel gusset plates etc. Remedial work should continue in the same vein without trying to disguise it as new or replacement work.

## **9.2 Conservation of Embankments**

This requires the rehabilitation of the gabions at either end of the bridge.

## **9.3 Conservation of Decking**

It is considered necessary that the premix (tarmac) covering to the deck be stripped off. This is important not only to reveal the original structure of the bridge, but also because it is contributing to the rotting of the decking. Stripping-off the tarmac would improve the tactile qualities of the bridge and enhance the experience of pedestrians walking along it, bringing the user in closer contact with the human-scale qualities of the timber structure, and water below. Decking to be replaced must be in timber.

## **9.4 Conservation of Balustrading**

Timber handrails and supporting struts are to be conserved. It is also proposed that these be painted white as indicated in earlier photographs. This will also have practical advantages in making the handrail more visible, revealing dirt, facilitating

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cleaning, and preventing splinters. Horizontal wire stringing (rust-proof) should be replaced, and augmented where necessary to secure pedestrian safety.

The defunct (Telkom) service pipelines should be removed from the bridge.

## **9.5 Landscape Furniture and Surrounds**

Provision should be made for appropriate landscape furniture, information panels and signage, and general upgrading of the pedestrian environment.

## **9.6 Timber Alternatives**

An alternative to exotic hardwoods would be treated SA pine or gum, which, if treated in a pressurised chamber with the appropriate preservative, will probably outlast any hardwood (25-50 years), require little or no maintenance, and weather to a dull grey colour. Different specifications have been approved by SANS (South African National Standards), including applications for marine conditions.

## **9.7 Compatible Uses**

Compatible uses are those which facilitate public (pedestrian and cycle) access, and contribute to the enhancement of the area as a public space and pedestrian environment. These would include fishing, bird-watching, specialist produce and arts and crafts markets, concerts, film shoots and other public events.

## **9.8 Overall Costing**

A total expenditure of R 3,3 million has been budgeted for as per Annexure 2.

## **10.0 Implementation and Review**

### **10.1 Project Implementation Schedule**

A Project Implementation Schedule has prepared as per Annexure 2.

### **10.2 Implementation Alternatives and Options**

Several options and alternatives could be considered:

#### Option 1: City Based Initiative

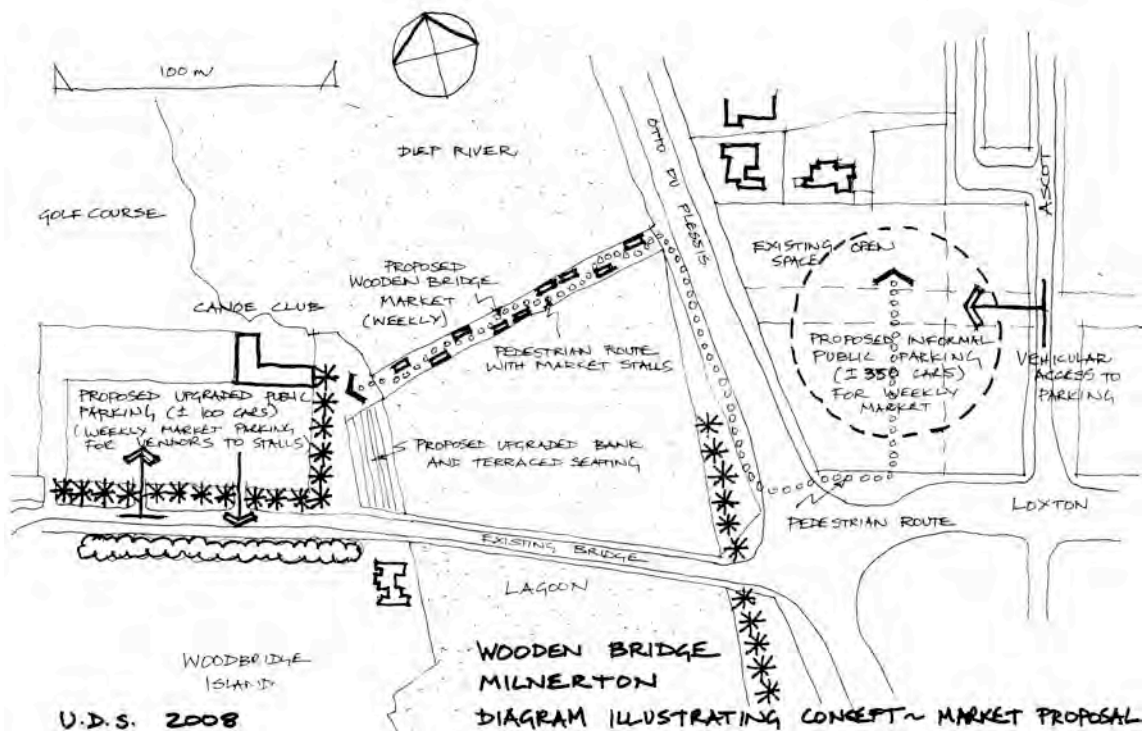
The first, and most desirable option, would arise from a successful application for Lotto funds (or other sources) to conserve the bridge, as outlined in Annexure 2. The City would then put out a tender for the conservation and appoint a professional team to oversee its implementation. Once the work is complete and the bridge handed back to the City, an inter-departmental task team preferably using existing area management systems and procedures, should be set up to oversee aspects such as routine maintenance, law enforcement, property management (including possible leasing of the facility for events and markets) etc. There are upgrading re-development proposals for the overall area and ideally these should take place in tandem with the conservation of the bridge.

## Option 2: Private Sector Initiative

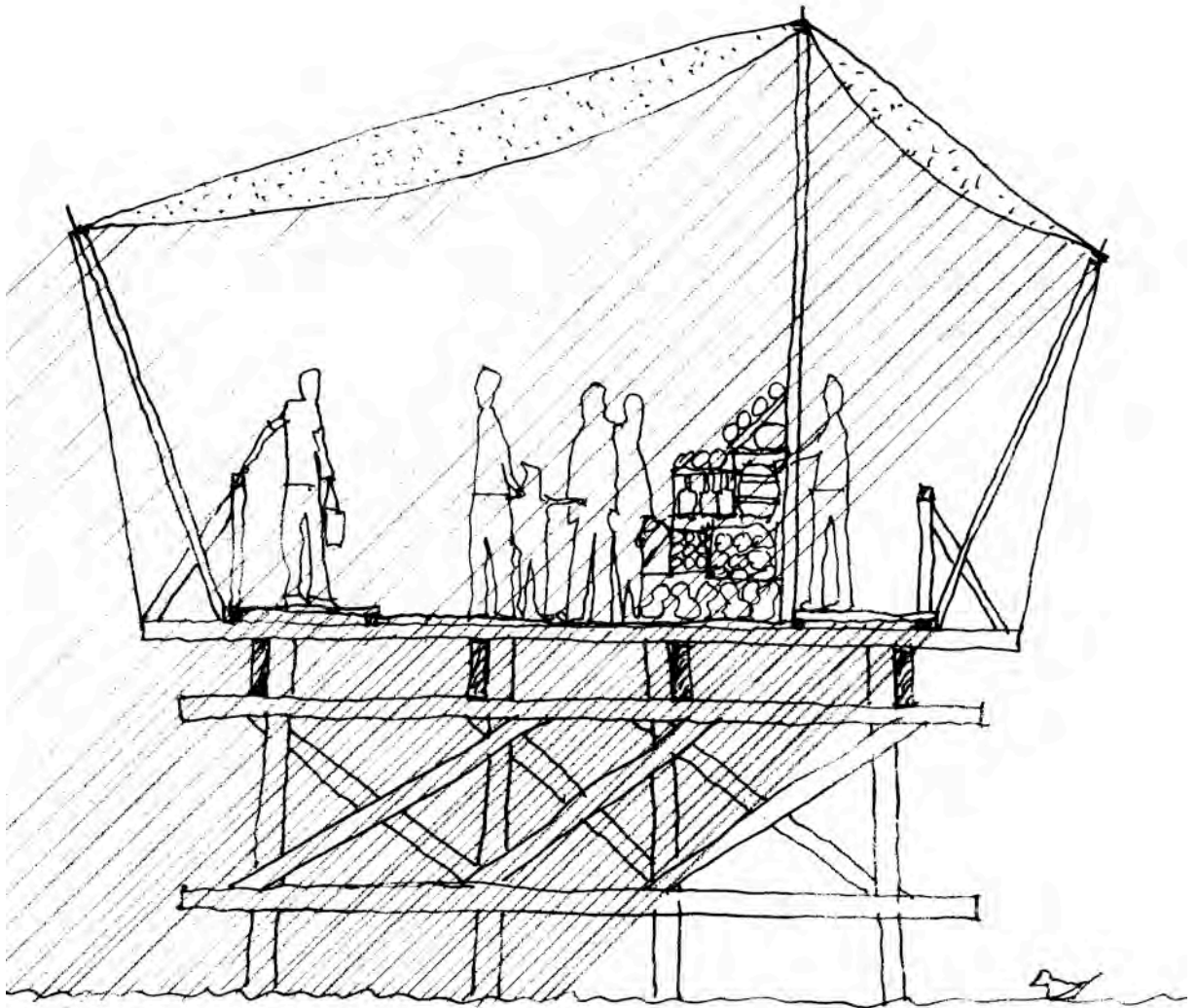
Notwithstanding the legal obligation that the City has to conserve the heritage resource, this option could be considered if the necessary funds and resources are not made soon enough in order to prevent further deterioration or possible collapse of the bridge. The 'privatisation' of the bridge hinges on the concept that the private sector may be better equipped to "fast-track" the conservation of the bridge, in return for certain rights to generate revenue from its use.

Two important conditions would need to be imposed by the local authority. The first is that the bridge would need to be conserved to a level that would satisfy the requirements of the Conservation Management Plan. The second condition would be for public access to be maintained.

An activity that could suit these conditions would be a weekly open air market event that would utilise the bridge as a platform for market stalls, linking the areas on either side of the bridge together, and providing a unique pedestrian 'bridge over the river' experience. In order to accommodate the necessary temporary parking facilities that would be required for visitors to the market, it would be necessary to secure the open space on the corner of Loxton Road and Otto Du Plessis Drive for that purpose. Pedestrians would then cross at the controlled intersection, and make their way along the banks of the lagoon to the wooden bridge. Shade and shelter for the market stalls along the bridge could be created with tent-like structures erected on top of the deck of the bridge, but these would have to be carefully designed so as to not detract from the heritage qualities of the bridge. The existing public parking area on the island side could be utilized for loading and stall-holders and this area should also be upgraded in terms of the urban design proposals that have been prepared. The diagrams below illustrate the overall concept.



**Fig. 13: Possible Market Concept Plan**



**Fig. 14: Possible use of bridge for market stalls**

### **10.3 Review**

The conservation plan requires periodic review in terms of ongoing implementation programmes and changing circumstances.

### **11.0 Public Participation**

This report has been prepared as a draft. It is the intention to seek comment from the public so this can be included in the final report. In this regard, copies of the report are to be forwarded to the local public library, the Milnerton Ratepayers' Association, and the Milnerton Canoe and Golf clubs.

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**Annexure 1: Illustrated Timeline of the Milnerton Wooden Bridge  
(prepared by S. Titlestad)**

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**Annexure 2: Proposal for the Refurbishment of the Historic Wooden Bridge in  
Milnerton (City of Cape Town 2007)**



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**Annexure 3: Principles for the Preservation of Historic Timber Structures  
(ICOMOS 1999)**