Intermodal Logistics Centre at Enfield

APPENDIX H

European Heritage
Indigenous Heritage

PREFACE

The technical working papers for the proposed ILC at Enfield were prepared during the first half of 2005. These were prepared in response to the requirements for the preparation of an Environmental Impact Statement (EIS) under Part 4 of the Environmental Planning & Assessment Act, 1979 (EP&A Act). Specific requirements for the EIS were issued on 1 March 2005 by the (then) Director- General of Infrastructure, Planning and Natural Resources.

The EP& A Act was amended on 1 August 2005 by the creation of Part 3A of the Act, and the Department of Infrastructure, Planning and Natural Resources was dissolved on 26 August 2005 and replaced by the Department of Planning and the Department of Natural Resources.

The proposed ILC at Enfield has since been declared a major project, pursuant to SEPP (Major Projects) 2005 and Sydney Ports has subsequently lodged an application under Part 3A of the Act.

Editorial changes to the technical working papers to reflect the changes in legislation or changes in Government departments have not been made.

The following should be considered when reading the technical papers:

- The Director-General's requirements issued under Part 4 are now deemed to have been issued under Part 3A, and any reference to the Director-General's requirements should be read as a reference to Director-General's requirements issued under Part 3A;

- Any reference to an EIS under Part 4 of the Act should be read as a reference to an Environmental Assessment under Part 3A of the Act;

- Any reference to the Department of Infrastructure, Planning and Natural Resources should be read as a reference to either the Department of Planning or the Department of Natural Resources, as appropriate.

June 2005

ASSESSMENT OF HERITAGE IMPACT

Former Enfield Marshalling Yard, mid 20th century. State Records Office

Sydney Ports Corporation

PROPOSED INTERMODAL LOGISTICS CENTRE AT ENFIELD
EUROPEAN HERITAGE ASSESSMENT

GRAHAM BROOKS AND ASSOCIATES ARCHITECTS AND HERITAGE CONSULTANTS

Contents

EXECUTIVE SUMMARY

Synopsis

The former Enfield Marshalling Yard contains eight elements including the former Enfield Marshalling Yard industrial landscape that have been assessed for heritage significance. These include:

1) Former Enfield Marshalling Yard landscape
2) Yard Master's office (traffic office)
3) Transhipment shed and wagon repair workshop and associated gantry crane
4) Pedestrian footbridge (workmen's footbridge)
5) Pillar water tank
6) Administration building
7) Tarpaulin factory
8) DELEC Service Centre

A Heritage Study commissioned by Strathfield Council lists two items that are no longer on the site. These are Strathfield North Signal Box and Strathfield South Signal Box. These items were removed from the site prior to Sydney Ports Corporation (SPC) purchasing the site in 2001.

A summary of the assessments of significance is shown in the table *Summary of Heritage Assessments.* This table provides details of statutory heritage lists and the heritage significance of each item as assessed by Graham Brooks and Associates. The operational DELEC Service Centre, the Administration Building and the former Enfield Marshalling Yard landscape were assessed as having no heritage significance.

Summary of Heritage Assessments

Items	Heritage Policies and/or Heritage Registers that apply to items/structures on site									Summary
	Site Heritage Register	Strathfield Planning Scheme Ordinance Heritage Schedule	Draft Strathfield Local Environmental Plan 2003	Strathfield Council Heritage Study	State Rail S170 Register	Register of National Trust	Register of National Estate	Hyder's Engineering Assessment	Assessment of Significance by GBA	Recommendation by Graham Brooks and Associates (GBA)
Strathfield North Signal Box	No	No	No	Yes	No	No	No	No	Demolished ca. 1998	Disregard recommendation for inclusion from Strathfield Council Heritage Study
Strathfield South Signal Box	No	No	No	Yes	No	No	No	No	Demolished ca. 1998	Disregard recommendation for inclusion from Strathfield Council Heritage Study
Yard Master's Office	No	No	No	Yes	No	No	No	Yes	Local Significance due to fabric losses	Record and demolish
Transhipment shed and wagon repair workshop and associated gantry crane	No	No	No	Yes. As an element within the industrial landscape	No	No	No	Yes	Local Significance	Relocate to rail heritage site, If no interest to rail heritage organisations, record building and demolish

"The former Enfield Marshalling Yard is a deferred matter under the Strathfield Council Draft LEP 2003".

Summary of Heritage Assessments, continued

Items	Heritage Policies and/or Heritage Registers that apply to items/structures on site									Summary
Pedestrian footbridge	No	No	No	Yes	No	No	No	Yes	Local Significance	Disassemble, retain an element on site if possible, relocate remainder to rail heritage site
Pillar water tank	No	No	No	Yes. As an element within the industrial landscape	No	No	No	Yes	State Significance	Disassemble, stabilise, retain and relocate on site
Adminis-tration Building	No	No	No	Yes	No	No	No	No	No significance	Record and demolish
Tarpaulin factory and Waxing Room Annex	No	No	No	Yes	No. Items deleted on ownership transfer	No	No	No	State Significance	Retain on site and adaptively re-use, if feasible. As a second option, the building could be relocated to a rail heritage site.
DELEC Service Centre	No	No	No	No	No	No	No	No	No significance	No heritage implications
Enfield Marshalling Yard Landscape	No	No	No	Yes	No. Item deleted on ownership transfer	No	No	No	No significance	No heritage implications

For each item, the options for relocation, re-use or removal were assessed. The details of the conclusions reached and the preferred options are described below.

The relocation of heritage items

Generally, the relocation of heritage items is considered to have Heritage Impact on their significance. The NSW Heritage Office criteria has been used to make heritage impact assessments for the relocation of selected items in the former Enfield Marshalling Yards.

Three items are proposed for re-location:

- Pedestrian footbridge
- Pillar water tank
- Transhipment shed and wagon repair workshop and its gantry crane

Although it is not the preferred option in the Graham Brooks and Associates (GBA) assessment, the tarpaulin factory also has the potential to be relocated and therefore has been assessed accordingly for heritage impact on its significance if relocated.

Hyder Consulting, an engineering firm, was commissioned by Sydney Ports Corporation to investigate the potential re-siting of the above items as summarised in the following Table.

Engineering Issues associated with relocation.[1]

ITEM	GBA ASSESSMENT	HYDER ENGINEERING ISSUES
1) Pedestrian footbridge (Workmen's footbridge)	Local Significance. Recommend recording and re-siting to rail heritage organisation. Retain an element on-site if possible	Concrete walkway and stair tread not reclaimable. Timber handrails lost. Remainder of structure can be disassembled. Remedial work required for re-use.
2) Pillar water tank	State Significance. Recommend removing, stabilising, and re-siting to location within Intermodal Logistics Centre	Technical flaws in construction led to extensive spalling of concrete. Lifting points for tank are lost. Cradle or support structure would be required for lifting and transport.
3) Transhipment shed and wagon repair workshop	Local Significance. Recommend recording and re-siting of sound fabric to rail heritage organisation, if not wanted, recycle into amenities within Intermodal Logistics Centre. If not required, record and demolish.	A significant number of timber columns are damaged by terrestrial termites. Unstable.[2]

[1] ibid. Tables adapted from Hyder Consulting study,
[2] Hyder Consulting. *Assessment of Nominated Structures,* 2004, p.13.

The adaptive re-use of heritage items

It is the recommendation of GBA, working in consultation with SPC, that there are items on the site suitable for adaptation and re-use. They include:

- Tarpaulin factory
- Pillar water tank (re-sited but not restored to operational use)

Removal of items

The administration building has been assessed as having no heritage significance and it is recommended that the structure be recorded and demolished. The Yard Master's Office has lost much of its heritage significance through the removal of significant elements and has been recommended for demolition. The DELEC Service Centre has also been assessed as having no heritage significance and it has been recommended for demolition.

Conclusion

It is the view of Graham Brooks and Associates that the deterioration of the railway landscape associated with the former Enfield Marshalling Yard has irrevocably damaged the ability of these railway heritage items to communicate their heritage significance in their current setting.

The recommendations developed in consultation with SPC seek to:

1) Stabilise and adapt two of the most significant items on the site: the Tarpaulin factory and Pillar water tank.
2) Relocate three moveable items to sites and/or rail heritage locations where they can regain their visibility and communicate their importance to a wider rail heritage audience: Pedestrian footbridge, Pillar water tank and Transhipment shed and wagon repair workshop and its associated gantry crane.
3) Remove the Yard Master's Office, the Administration building and the DELEC Service Centre if their presence is incompatible with the proposed site use. The Transhipment shed and wagon repair workshop could also be removed from the site if there is no interest from railway heritage organisations to relocate the item.

1.0 Introduction

1.1 Description of the Proposal

Sydney Ports proposes to construct an Intermodal Logistics Centre (ILC) at the former Enfield Marshalling Yards. The ILC would be used for the transfer and storage of container freight to and from Port Botany, packing and unpacking of containers within the proposed warehouses at the site and storage of empty containers for later re-use or for return to the Port.

The site covers an area of about 60 hectares. It extends from the intersection of the Hume Highway and Roberts Road in the north, through to the intersection of Punchbowl Road and Cosgrove Road in the south. It is just over 2 km in length and 0.5 km wide.

The primary objectives of the ILC are to:

- Contribute to the NSW Government's strategy of achieving 40 per cent rail mode share for container transport, through the delivery of additional intermodal capacity within close proximity to a significant freight catchment area within the Sydney Metropolitan area;
- Create an integrated Logistics Centre that will accommodate related freight operations that complement each other; and
- Contribute to an existing and future intermodal network that maximises the movement of freight by rail in an efficient and reliable manner.

The ILC is designed to handle 300,000 TEU/annum. It is anticipated that the site would have a first year throughput of 100,000 TEU and that it would reach its capacity within 10 years of operation, with a throughput of approximately 150,000 TEU inbound from the Port and approximately 150,000 TEUs outbound to the Port. The proposed ILC at Enfield would comprise the following:

- Intermodal Terminal - for the loading and unloading of containers between road and rail and short term storage of containers;
- Warehousing - for the packing and unpacking of containers and short-term storage of cargo;
- Empty Container Storage Facilities – for the storage of empty containers for later packing or transfer by rail;
- Light Industrial / Commercial Area - for light industrial / commercial use, preferably complementary to operations at the Intermodal Logistics Centre and may include ancillary convenience and retail. The area would also act as an interface to adjacent uses along Cosgrove Road;
- Ecological / Community Area - would provide the opportunity to incorporate ecological enhancement and community opportunities. The area would also serve as a buffer between operations on the site and residences to the south of the site; and
- Off site works - including construction of a road bridge over the existing new Enfield Marshalling Yards and dedicated freight rail line, for access to Roberts Road via Wentworth Street.

1.1.1 Scope of the Study

This Heritage Assessment (Part A) and Heritage Impact Assessment (Part B) has been prepared at the request of Sydney Ports Corporation to assess items present on the site of the proposed Intermodal Logistics Centre in Enfield.

A number of elements remain within the former Enfield Marshalling Yard. These include:

1) Former Enfield Marshalling Yard landscape
2) Yard Master's office (traffic office)
3) Transhipment shed and wagon repair workshop with associated gantry crane
4) Pedestrian footbridge (workmen's footbridge)
5) Pillar water tank
6) Administration building
7) Tarpaulin factory
8) DELEC Service Centre

Their locations are shown in figure 1 apart from the former Enfield Marshalling Yard landscape which is illustrated in Part A of this report.

1.1.2 Review of Heritage Registers

The following sections investigate the relevant heritage listings and/or agencies where items in the former Enfield Marshalling Yard may be recorded.

1.1.3 Items on the State Rail Section 170 Register

The former Enfield Marshalling Yards were under the total control of the State Rail Authority of NSW until 1996 when some parcels were transferred to Rail Estate and Rail Infrastructure Corporation with the balance remaining with State Rail Authority of NSW. The State Rail Authority of NSW, S170 Register contained the following items. They should no longer appear on the S170 Register or the State Heritage Register. In 1996, the Register included:

- Tarpaulin Factory, (SRA 886). Heritage Assessment, David Sheedy.
- Former Enfield Marshalling Yards (SRA111). No internal assessment noted.

1.1.4 Items on the Sydney Ports Corporation Section 170 Register

Sydney Ports Corporation is currently developing a S170 Register.

1.1.5 Register of the National Trust Of Australia (NSW)

A February 2005 search of the National Trust of Australia (NSW) Register shows no listings within the former Enfield Marshalling Yards.[3]

[3] Commissioned search and verbal report from Paul Fletcher, Classification Officer, National Trust of Australia (NSW), Report 8 February 2005, 4.30 pm.

1.1.6 Register of the National Estate of the Australian Heritage Commission

There are no listings for the former Enfield Marshalling Yards in the Register of the National Estate.

1.1.7 NSW State Heritage Register

No elements on the former Enfield Marshalling Yard have been assigned State Heritage Significance.

1.1.8 NSW State Heritage Inventory

The State Heritage Inventory is held by the NSW Heritage Office and provides a combined list of items on all statutory heritage registers and schedules. It provides the first port of call for individuals researching the heritage significance of an item.

The Tarpaulin Factory and the former Enfield Marshalling Yards both appear on the State Heritage Inventory due to the inclusion of these items on State Rail Authority's S170 Register. RailCorp, the successor organisation to State Rail, no longer owns the former Enfield Marshalling Yard site and as such these two items have since been removed from their S170 Register (see Section 1.1.3).

It should be noted that although these items still appear on the NSW Heritage Office State Heritage Inventory, they will be removed once RailCorp provides their updated S170 Register to the Heritage Office. This updated list is in preparation.

1.1.9 Heritage Study by Tropman & Tropman

A 1999 Heritage Study by Tropman & Tropman commissioned by Strathfield Council identified and recommended a number of items as having heritage significance within the former Enfield Marshalling Yard. These included:

1) The former Enfield Marshalling Yard includes the following elements
    - Signal boxes
    - Offices (1915) [Yard Master's cottage]
    - Offices (1930-40) [administration building]
    - Steps [pedestrian footbridge]
    - Landscape yard area [as industrial landscape precinct]
2) The Tarpaulin Factory (former), Enfield, Punchbowl and Cosgrove Roads

The transhipment shed and wagon repair workshop with associated gantry crane; pillar water tank and the DELEC Service Centre are not specifically listed in the Tropman & Tropman 1999 Heritage Study.

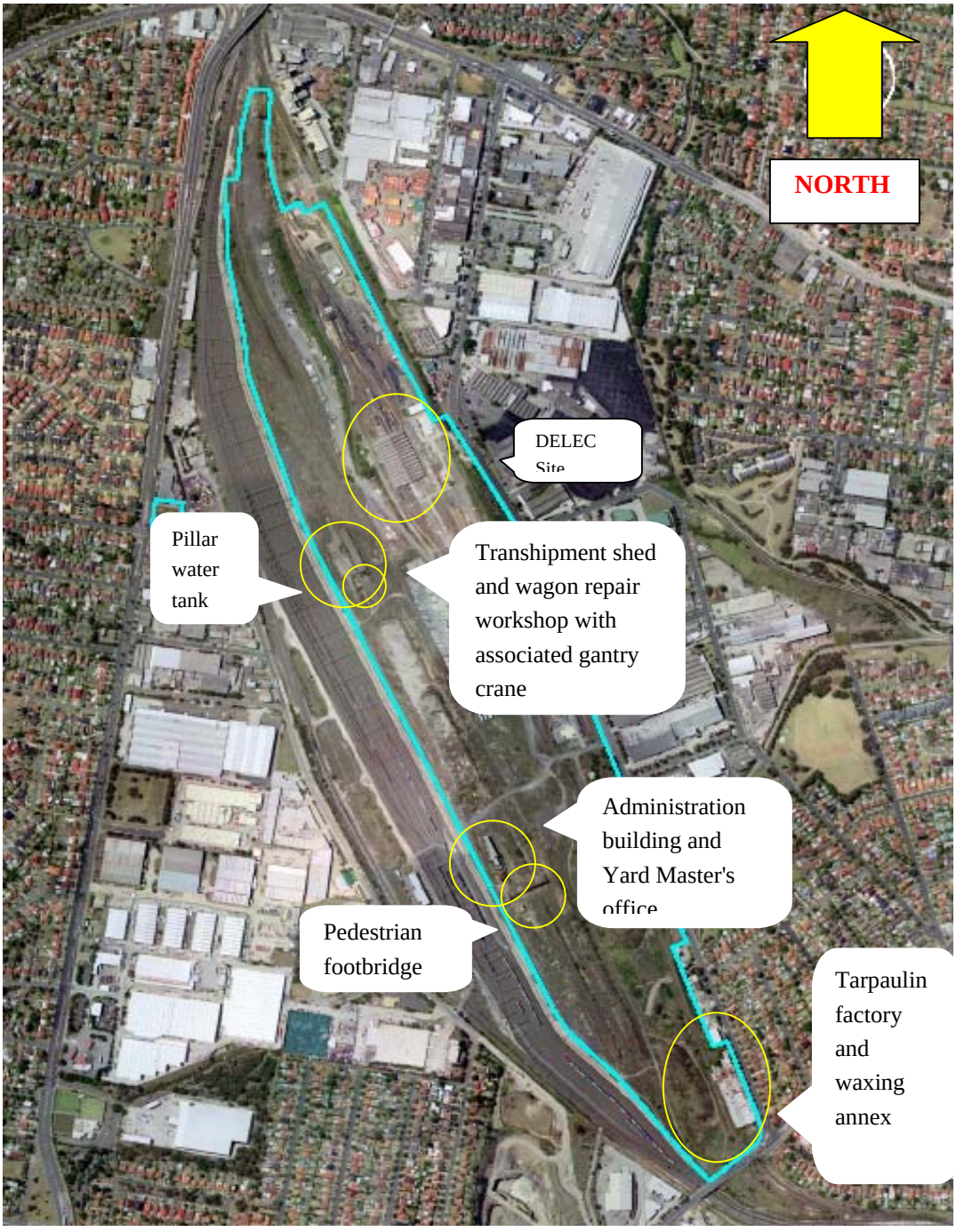

Figure 1. Enfield Boundary site and locations of items within the former Enfield Yard. Orthophoto Map, SPC Property, July 2003. Sydney Ports Corporation.

1.2 State Significant Development

This proposal is classed as "State Significant Development", therefore the Minister for Infrastructure, Planning and Natural Resources is the Consent Authority. As such, Council consent is not required, however, the Department of Planning and Natural Resources (DIPNR) will take on board Council's requirements as part of the assessment process.

1.3 Items on the Strathfield Council's Heritage Schedules

There are currently no gazetted listings within Strathfield Council's heritage schedules in the *Strathfield Planning Scheme Ordinance 1969* or the *Draft Strathfield Local Environmental Plan (LEP) 2003.*

The listing of former Enfield Marshalling Yard items on Strathfield Council's Heritage Schedule is a deferred matter under the *Draft Strathfield LEP 2003.*

1.4 Heritage in the Draft Strathfield Local Environmental Plan 2003

Although the *Draft Strathfield LEP 2003* is not applicable to this site, the heritage objectives are "Best Practice", therefore, the heritage sections of the *Draft Strathfield LEP 2003* have been used in this assessment report rather those provisions of the *Strathfield Planning Scheme Ordinance 1969*.

The relevant sections of the *Draft Strathfield LEP 2003* that are applicable apply to the Intermodal Logistics Centre proposal are listed below.[4] The heritage sections of this draft document duplicate and expand the heritage provisions of the *Strathfield Planning Scheme Ordinance 1*969.[5] Therefore, the criteria from the *Draft Strathfield LEP 2003* have been used in this assessment.

Sec. 66. Objectives

1) The provisions of this division relate to those heritage items listed in Schedule 6 and Heritage Conservation Areas listed in Schedule 7.
2) The objectives of this plan in relation to heritage are:
    a) to conserve the environmental heritage of the Strathfield Local Government Area
    b) to conserve the heritage significance of existing significant fabrics, relics, settings and views associated with the heritage significance of heritage items and heritage conservation areas, and

    [...]

    c) to allow for the protection of places which have the potential to have heritage significance but are not listed as heritage items, [...]

[4] "Division 2. Conservation of Heritage," *Strathfield Local Environmental Plan 2003*. pps.48-51.
[5] *Strathfield Planning Scheme Ordinance,* 1969. Strathfield Council, pps. 40-44.

Sec. 67. Protection of Heritage Items and Heritage Conservation Areas

1) When is consent required? The following development may be carried out only with development consent:

   a) demolishing or moving a heritage item or building, work, relic, tree or place within a heritage conservation area,

   b) altering a heritage item of building, work, relic, tree or place within a heritage conservation area,

   c) altering a heritage item by making structural changes to its interior,

   d) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

   e) moving the whole or a part of a heritage item,

   f) erecting a building on, or subdividing, the land on which a heritage item is located or which is within a heritage conservation area.

Sec. 68. Advertised development

The following development is identified as advertised development:

   a) the demolition of a heritage item or a building, work, tree or place in a heritage conservation area, and

   b) the carrying out of any development allowed by Sec.67.

Sec. 69. Notice of demolition to the Heritage Council

Before granting consent for the demolition of a heritage item identified in Schedule 6 as being of State Significance, the consent authority must notify the Heritage Council about the application and take into consideration any comments received in response within 28 days after the notice is sent.

Sec. 70. Development in the vicinity of a heritage item

(1) Before granting consent to development in the vicinity of a heritage item, the consent authority must assess the impact of the proposed development on the heritage significance of the heritage item and of any heritage conservation area within which it is situated.

1.5 Documentary and Photographic Sources

The primary documentary sources utilised in the formulation of the historical background and understanding of the significance of the former Enfield Marshalling Yard and its immediate environment have been obtained from research at the State Library of New South Wales, the Office of Property Information NSW, The Australian Railway Historical Society (NSW), State Rail, Sydney Ports, earlier heritage reports on the site by David Sheedy, Otto Cserhalmi and Partners, Godden Mackay Logan as well as Strathfield Council documents that are described in the list of references.

All contemporary photographs of the site were taken in January and June 2005 by Graham Brooks and Associates staff for the preparation of the report.

1.6 Authorship

Michael Bogle, Heritage Consultant with Graham Brooks and Associates, has prepared the report. Graham Brooks, Director of Graham Brooks and Associates reviewed this edition of the report in June 2005.

1.7 Site Identification

The subject site described as the former "Enfield Marshalling Yard" is located in the suburb known as Strathfield South shown in figure 2. The site borders include Wentworth Street, Roberts Road, Cosgrove Road, Punchbowl Road and the Liverpool/Hume Highway. The proposed site area includes approximately 60 hectares.

1.8 Methodology

This Heritage Assessment of the site and the structures within it has been prepared in accordance with guidelines outlined in the Australia International Council on Monuments and Sites (ICOMOS) *Charter for the Conservation of Places of Cultural Significance,* known as *The Burra Charter,* and the Heritage Office & DIPNR *NSW Heritage Manual: Assessing Heritage Significance* and *Heritage Curtilages.* The assessment criteria are applied to the objects and elements in the individual chapters that follow.

These NSW heritage assessment criteria are informed by the Burra Charter document developed by Australian ICOMOS for the conservation of places of cultural significance. The development of the Burra Charter was initiated in 1988 and the refinement of this ICOMOS document continues to the present.

The NSW Heritage Office booklet, *Assessing Heritage Significance,* defines the process and precisely establishes the criteria for an assessment of significance.

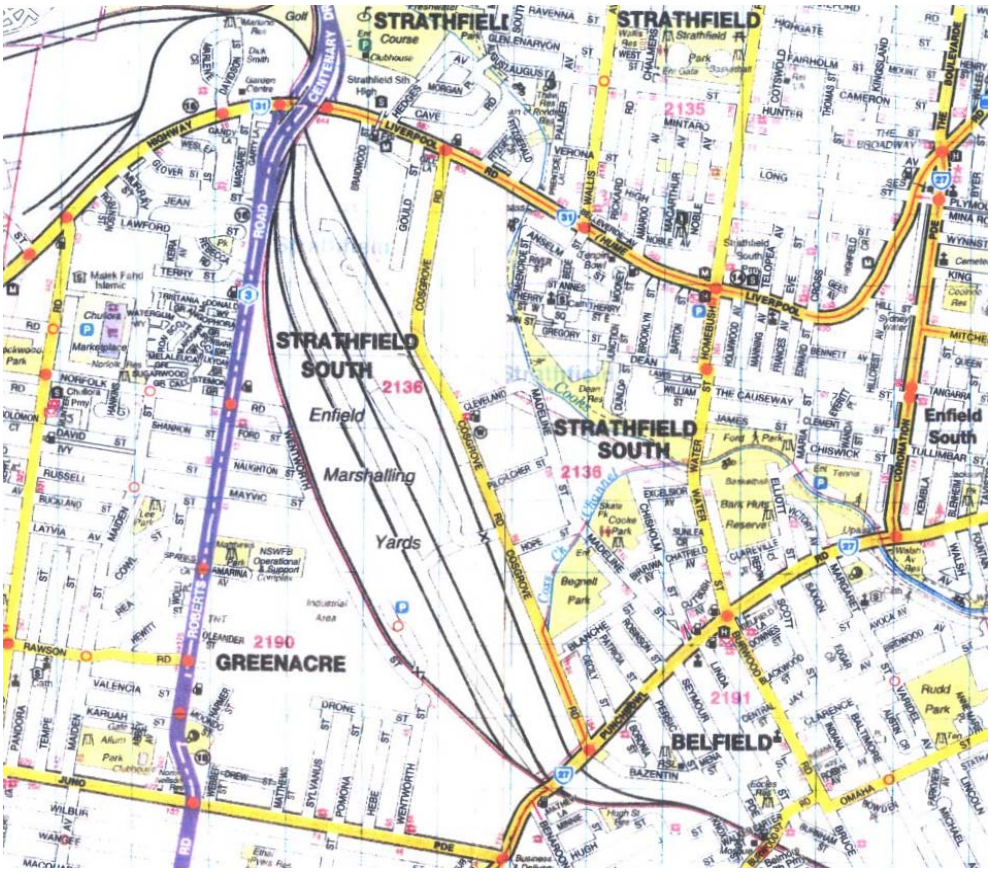

Figure 2. The former Enfield Marshalling Yards, UBD, Sydney, 2003, 39th ed.

"The main aim in assessing significance is to produce a succinct statement of significance which summarises an item's heritage values. The statement is the basis for policies and management structures that will affect the item's future."[6]

To establish significance, the initial section of this report provides a historical outline of the European heritage significance of the site based on documentary evidence and develops an understanding of the history of the site, ownership and the curtilage.

From this combined analysis of the documentary and physical evidence, an assessment of the total significance of the site and its curtilage has been prepared, with a view to establishing the nature and degree of the cultural significance of the surroundings and structures present on the site.

The final section of the report presents the proposed development and draws conclusions regarding the development's impact on the site. This conclusion is used to make recommendations for the structures present on the site.

[6] NSW Heritage Office. *Assessing Heritage Significance*. 2001, p.4.

As a number of recommendations suggest the relocation of structures, the NSW Heritage Office guidelines for the relocation of buildings are used to test each recommendation for relocation within this report.

1.8.1 Assessment Criteria

Graham Brooks and Associates (GBA) approach to assessing the heritage significance of the former Enfield Marshalling Yard landscape and individual items were based on three factors: grading of the significant elements, assessment of the significance and a statement of the significance as mentioned above.

1.8.2 Grading of Significant Elements

The grading of elements requires an examination of the components of a building and/or place to assess their relative importance to the total significance of the building and/or place. For example, an element of high significance could be the "core" of a 19th century building that has been much modified through continual use. An element of medium significance could be represented by a set of timber shutters added to the building some years after it was built. An element of low significance could be a set of new timber veneer doors added in the late 20th century while an intrusive element could be a steel carport attached to the front of the building.

Questions of condition are considered in the grading of significant elements when deterioration is extreme. Technological significance arises in the use of technically unique materials, processes or methods of construction.

The assessment has identified four levels of significance, being *High, Medium or Low Significance or Intrusive*.

These levels of significance and their meaning are:

Items of High Significance
These make a vital contribution to the overall significance of the place, and include extant original fabric.
Items of Medium Significance
These may not be the highest significance, but contribute to the completeness and overall significance of the place, including fabric, which has been modified.
Items of Low Significance
Items in this category make little contribution to the overall significance of the place, when compared to other elements or aspects.

Intrusive
These detract from the significance of the place, and the preferred options are removal or conversion to a compatible form or replacement in a way, which helps recover the significance of the important elements of the place

1.8.3 Assessment of Significance

The Australia ICOMOS charter for the conservation of places of cultural significance (the Burra Charter) was formulated in 1979 and most recently revived in 1999. It is the standard adopted by most heritage practitioners in Australia. The Charter divided significance into various groups or categories for the purpose of assessment. They are Aesthetic, Historical, Scientific, Social and Other.

The Burra Charter provides definitions for these categories.[7] These are reproduced in the categories below.

Aesthetic Value.

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour and material of the fabric."

Historic Value.

Historic value encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section.

Scientific.

The scientific or research value of a place will depend on the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information.

Social Value.

Social value embraces the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or a minority group.

[7] Australian ICOMOS. *The Burra Charter.* 1999.

Other.

The categorisation into aesthetic, historic, scientific and social values is one approach to understanding the concept of cultural significance. However, more precise categories may be developed as understanding of a particular place increases.[8]

In addition, the State Heritage Register, which was established by the amendments of the NSW Heritage Act in 1998, has a separate set of significance assessment criteria. These criteria were gazetted in April 1999 and supersede the State Heritage Inventory criteria formerly used (DUAP/Heritage Office, 1996c).[9] An item and/or place will be considered to be of state (or local) heritage significance if it meets one or more of the following criteria:

Criterion (a)

an item is important in the course, or pattern, of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

An item "shows evidence of a significant human activity, has associations with a significant activity or historical phase or maintains or shows the continuity of a historic process of activity."[10]

Criterion (b)

an item has strong or special association with the life or works of a person, or group of persons, of importance in New South Wales' cultural or natural history (or the cultural or natural history of the local area)

An item " Shows evidence of a significant human occupation, [or] has associations with a significant event, person or group of persons."[11]

Criterion (c)

an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in New South Wales (or the local area)

An item "shows or is associated with, creative or technical innovation or achievement, is the inspiration for a creative or technical innovation or achievement, is aesthetically distinctive, has landmark qualities [and] exemplifies a particular taste, style or technology."[12]

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[8] ibid, p.12.
[9] NSW Heritage Office. *Assessing Heritage Significance*. 2001.
[10] ibid, p.12
[11] ibid, p.14
[12] ibid, p.16

Criterion (d)

an item has strong or special association with a particular community or cultural group in New South Wales (or the local area), cultural or spiritual reasons

An item "is important for its associations with an identifiable group [or] is important to a community's sense of place."[13]

Criterion (e)

an item has potential to yield information that will contribute to an understanding of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

An item "has the potential to yield new or further substantial scientific and/or archaeological information, is an important benchmark or reference site, and provides evidence of past human cultures that is unavailable elsewhere."[14]

Criterion (f)

an item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

An item "provides evidence of a defunct custom, way of life or process, demonstrates a process, custom or other human activity that is in danger of being lost, [...] is the only example of its type."[15]

Criterion (g)

An item "is *an item is important in demonstrating the principal characteristics of a class of New South Wales' (or the local area's) cultural or natural places, or cultural or natural environments*

An fine example of its type, has the principal characteristics of an important class or group of items, has attributes typical of a particular way of life, philosophy, custom, significant process, design, technique or activity, [...] is outstanding because of its setting, condition or size."[16]

1.8.4 Statement of Significance

"The main aim in assessing significance is to produce a succinct statement of significance which summarises an items heritage values. The statement is the basis for policies and management structures that will affect the item's future. [...] In most cases, a short paragraph will suffice. An item of particular importance to the heritage of the State may require a statement that takes up a page or more."[17]

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[13] ibid, p.18
[14] ibid, p.20
[15] ibid, p.22
[16] ibid, p.24.
[16] ibid, p.4
[17] NSW Heritage Office. *Statements of Heritage Impact.* 2001, p.2

1.8.5 Statement of Heritage Impact for Items Recommended for Relocation

"A statement of heritage impact needs to explain how the heritage value of an item is to be conserved, or preferably enhanced by the proposed development. This could involve stabilisation and repair work, restoration, reconstruction or redevelopment for a new use." [...]

"Where the effect of the proposed work is likely to be detrimental to the heritage significance of the item or area, the statement of heritage impact needs to argue why such an action is the only viable solution and why alternatives are not."[18]

[18] ibid, p.2

PART A: HERITAGE ASSESSMENT

2.0 History of the Site

2.1 European Heritage Summary

This land entered commerce when land grants were made to William Roberts, Harriet Carr (1810) and James Morris (1810) in the early decades of the 19th century.

At this time, the area constituted the headwaters of the Coxs Creek and the Cooks River. This meant that the land was reasonably watered in average rainfall years. This drew a modest agricultural practice to the area until the creation of a rail link to Parramatta in 1855 allowed for social and economic expansion along the rail line. Ashfield was the closest railway station to the area when the Parramatta line opened.

Much of this area was known as Druitt Town until the municipalities of Strathfield (1885) and Enfield (1889) were formed. Regional historian Cathy Jones reports that the 1877 Grenville Postal Guide recorded 148 householders in Enfield, including:

- farmers
- market gardeners
- tanners
- woodcutters
- dairymen
- potters
- fencers
- carpenters
- labourers. [19]

The range of trades identified by Jones clarifies the marginal social and economic setting of the region. The presence of woodcutters and tanners suggests that a healthy portion of the land must have been covered by timber. Tanners recovered the bark from timber and scrub for use in the tanning process. The presence of farmers, dairymen and market gardeners suggests a well-watered region while the listing of potters suggests fuel, streams, and their deposits of clay and silt. A high clay content on the site has been confirmed by soil sampling during previous geotechnical investigations.

An archaeological survey of the site also found that the area had been used for brickworks, the Enfield Brick Company, from 1903-05.[20] This further underscores the importance of the clay laid down by the former flood plain of the Cooks River system.

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[19] Cathy Jones. "Enfield Municipal Council [1889-1949]", 2004.
[20] Navin Officer. *Archaeological Assessment of the Enfield Marshalling Yards Site.* Sydney Ports Corporation, 2001.

The population of Enfield reached 1,500 by the nation's centennial and "local residents submitted a petition to the NSW Governor requesting the formation of a municipality. Enfield Municipal Council was incorporated on January 22 1889 and elections were held on March 23 1889." [21] This Council survived until the 1947 "Greater Sydney Plan", which reduced 67 shires and local governments to 39 new political entities. Enfield Council was abolished in 1949 and its functions resumed by Strathfield.

While the Enfield Council was active, they set aside a large part of the former Enfield Marshalling Yards as "Enfield Park". The land was resumed by the NSW Government in 1916 and redeveloped as the "Enfield Marshalling Yards."[22]

2.2 Marshalling Yards

A marshalling yard describes a large set of sidings that are used to put together wagons going to the same destination in one train. Usually, marshalling yards have an "UP" side and a "DOWN" side. In Sydney, a yard's UP side is that direction leading to Central while the DOWN side leads away from Central.

Before entering the wagon sorting area, there are often "Reception Sidings" where arriving trains are held until the shunters are available to split new arrivals and combine them with other wagons to form a new train. See Figure 3 for an aerial view of a marshalling yard.

Marshalling Yards have traditionally been graded to provide a gentle slope falling from one end of the yard to the other. This fall allows wagons to be shifted with minimum effort by using the forces of gravity. The former Enfield Marshalling Yard sloped from the north-west (Roberts Road area alignment) to the southeast with a fall of approximately 1:100.

[21] Cathy Jones. op cit.

[22] Cathy Jones. "Early Land Grants." www.strathfieldhistory.org.au/ Early%20Landgrants.htm.14 February 2005.

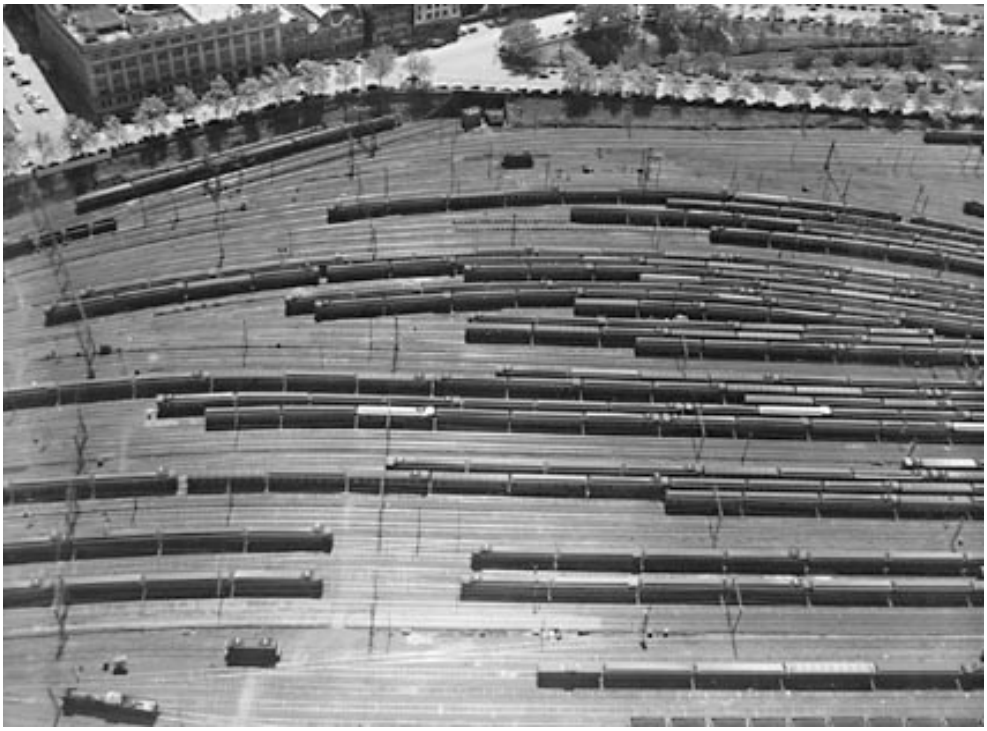

Figure 3. Aerial view. Wagons in a marshalling yard. Flinders Street, Melbourne. 1945. National Archives of Australia, 1945. (Image No.A1200, L3966)

Figure 4. Former Enfield Marshalling Yard from the southeast when it was in operation. No date. State Records NSW. (Image no.12932-aO12)

2.3 Former Enfield Marshalling Yard

The former Enfield Marshalling Yard was first developed in 1916 following the NSW State Government's resumption of the Enfield Council' proposed "Enfield Park". See Figure 4 for an undated (but probably mid-20th century) photograph of the former Enfield Marshalling Yard.

The creation of this new marshalling yard is the result of a wartime expansion of railway building that began in 1914. After the outbreak of the 1914-18 War, the NSW Government announced "...three principal works on hand, that is, the completion of the North Coast railway, the construction of a mass of other railways entered in pursuance of our announced policy of railway building, and the completion of the duplication of the very large supplementary works which are necessary to the adequate working of the railways. Those three great bodies of work have involved us in the employment of over 18,000 men...".[23]

The former Enfield Marshalling Yard was the location of the sixth of a series of Locomotive Depots (1-38 Locomotive Depots) that began with Sydney Yard (approximate location of Central Station). These yards included:

Yard no.1: Sydney Loco Depot: Haymarket (1855)

Yard no.2: Broadmeadow Loco Depot

Yard no.3: Goulburn Loco Depot

Yard no.4: Bathurst Loco Depot

Yard no.5: Junee Loco Depot

Yard no.6: Enfield Yard: Strathfield (1916)

2.3.1 The Infrastructure of Former Enfield Marshalling Yard

To move freight in the former Enfield Marshalling Yard, railway infrastructure was required. Table 1 summarises the past and present contents of the former Enfield Marshalling Yard. The development of the yard appears to advance in three phases: (1) establishment, (2) the expansion following the 1920 and 1924 Royal Commission into the NSW railways, and (3) the introduction of the diesel/electric service and changes in goods train composition.

[23] W.A. Holman, Premier. Public address, 12 November 1914. Cited in John Gunn. *Along Parallel Lines*. *A History of the Railways of NSW 1850-1986,* Melbourne University Press, 1989, p.276-277.

Table 1. Phases in the creation of Infrastructure in the Former Enfield Marshalling Yard

INFRASTRUCTURE	DATE	PRESENT STATUS
FIRST PHASE		
Yard signal boxes (Enfield North signal box and Enfield South signal box)	1916	Demolished
Roundhouses (No.1, 2, 3.) to turn steam locomotives	1916	Demolished
Yard Master's Office	1916	Surviving
Pedestrian footbridge 1	ca.1920	Demolished
SECOND PHASE		
Turntable (1)	Undated.	Demolished
Tarpaulin Factory and annexes	1924	Surviving
Wagon repair shop	ca.1927	Demolished
Transhipment shed [Carriage and wagon repair workshop]	ca.1920	Administration area comprising an associated brick building is partially demolished, shed surviving
20 Tonne gantry crane associated with the Transhipment Shed	1949	Surviving
Concrete pillar water tank	Before 1951	Surviving
Administration Building	1946	Surviving
Pedestrian footbridge 2	1937	Surviving
THIRD PHASE		
Roundhouse for Garratt heavy locomotives	1952	Demolished
DELEC (diesel and electric locomotive) Service	1957 and later additions	Operational

2.4 The Rail Transport Museum at Enfield

As steam locomotives were replaced with diesel and electric locomotives, much of the NSW Government Railways (NSWGR) maintenance infrastructure of the former Enfield Marshalling Yards was made redundant. While the locomotive depot closed in 1971, some of the sidings and one of the roundhouses were adapted for use as the NSW Rail Transport Museum with funding from the NSWGR. The museum at Enfield opened in 1972 and remained there until 1975 when it moved to its current depot at Thirlmere.

2.5 Containerised Freight at the Former Enfield Marshalling Yards

When the composition of trains began to shift with the growing use of containers and the disappearance of bulk freight, the NSW Public Transport Commission began a contraction of freight services in the 1970s.

John Gunn's study of the NSW Government Railway states, "In freight transport for country regions the Commission was providing freight to nearly one thousand country stations and to almost as many private sidings. A high percentage of these stations received less than ten parcels a day and a truckload of freight per week on average."[24]

In 1974, the Public Transport Commission responsible for the NSWGR operations entertained a proposal for developing a container terminal at the Enfield Marshalling Yards but the plan was abandoned.

In 1996 the Yard was divided between State Rail, FreightCorp, Rail Estate, Rail Access Corporation and Rail Services Australia. The latter two organisations were joined in 2000 to form the Rail Infrastructure Corporation (RIC), which was transformed to a new entity in January 2004 of Rail Corporation New South Wales (FreightCorp) when it was merged with NSW State Rail Authority.

The western proportion of the site was redeveloped after 1996. This area, now owned by RailCorp, remains operational under a lease to Pacific National.

The remainder of the site has remained substantially vacant since 1996 with the exception of redevelopments on the western fringe of the site as a new marshalling yard. The DELEC Service Centre site and its wheel lathe area on the eastern fringe of the project site and the Toll lease area in the centre of the site continue to operate and are leased to Pacific National and Toll Freight respectively. These lands are owned by SPC.

[24] John Gunn. *Along Parallel Lines*. *A History of the Railways of NSW 1850-1986,* Melbourne University Press, 1989, p.485.

3.0 The Former Enfield Marshalling Yard Landscape

As discussed in the chronology established in sections 2.3.1 to 2.5, much of the former Enfield Marshalling Yard has remained vacant since the 1970s.

Major portions of the site have been used for the depositing of substantial mounds of fill from the clearance of the former Enfield Marshalling Yard and other sources in the mid-1990s. The northern sections of the site have also been used for trailer parking and tipping of construction fill.

This use means that the topography of the former Enfield Marshalling Yard has been heavily disrupted and the remaining buildings remain isolated amongst large mounds of fill and tipping of construction debris.

Figure 5. Aerial view of the former Enfield Marshalling Yard, Sydney Ports Corporation, 2001.

For the purposes of this heritage assessment, the former Enfield Marshalling Yard has been divided into four sections: North (adjacent to Roberts Road) (3.1), North Centre (3.2), South Centre (3.3) and South (3.4) sections.

3.1 North Section

In 1927, the northern section of the former Enfield Marshalling Yard was occupied by a range of items including the (A) Enfield North Signal Box A, (B) large coal stacking site, (C) the examiner's cabin, (D) and the weighbridge road. These elements are shown in Figure 6 on a detail of a NSW Rail Yard diagram dated ca.1927.

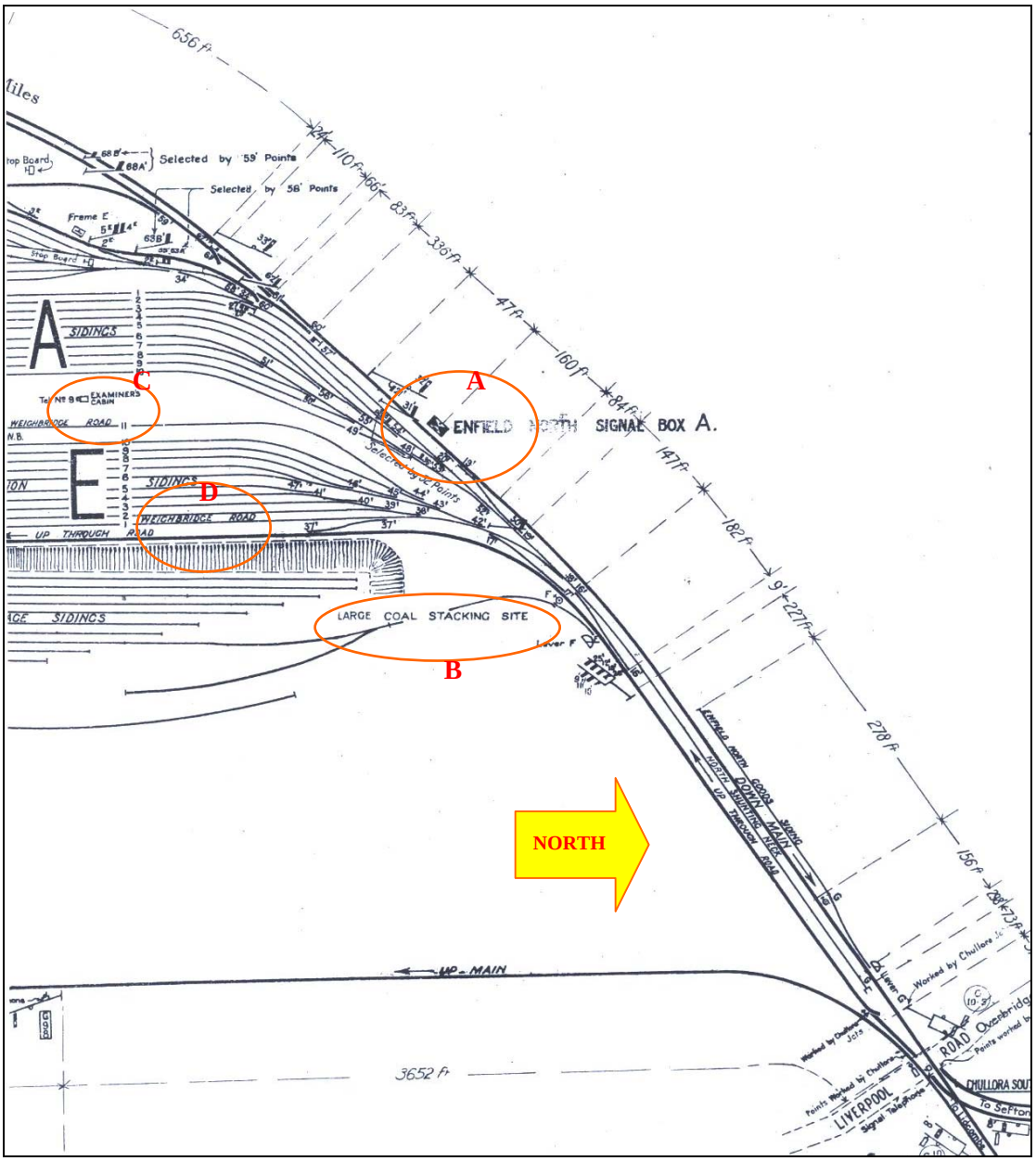

Figure 6. Yard Diagram (ca.1927). North section of the former Enfield Marshalling Yard. NSW Railway Historical Society Resource Centre.

In June 2005, a photographic survey of the site was undertaken and no elements of these structures or operations have survived. With the exception of the operative western sidings and the "UP" and "DOWN" lines, the sidings and points have been removed along with rails and sleepers. Some remnants of rail can be found amongst the grass and shrubbery in the tall grass and fill that covers the northern section of the site near Roberts Road.

	Figure 7. The view to the south toward the former location of the removed Enfield North Signal Box A (circled).
	Figure 8. View to the south showing the former location of the large coal stacking site and the marshalling sidings. This bitumen area, formally used for truck freight, is now some 3 to 5 metres above the original elevation of the former yards.
	Figure 9. View to the south showing the former UP Main Line. The steps show the build-up of fill in this area. When the yard was active, this area had a level elevation.
	Figure 10. Recently constructed timber and fibrous cement derelict shed in approximate location of former examiner's cabin.

3.2 North Centre Section

In the first quarter of the 20th century, the North Centre section contained a range of items including (A) pillar water tank, (B) transhipment shed, (C) minor wagon repair siding, (D) two 30 tonne weighbridges, (E) the No.3 roundhouse, (F) conventional water tank and jib, (G) engine dispatcher's cabin, (H) the Hope Street Platform and (I) water column.

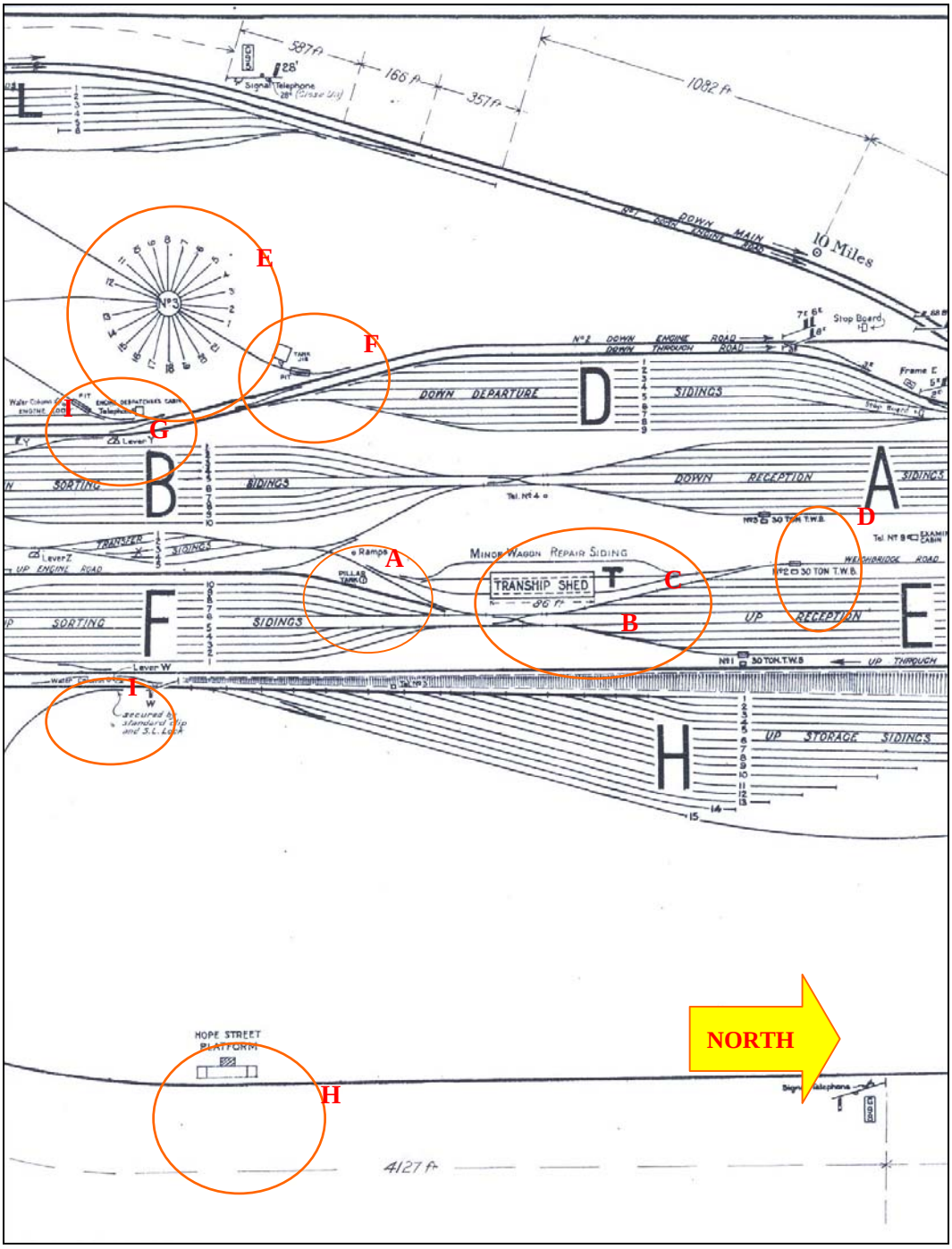

Figure 11. Yard Diagram. (ca.1927). North Centre section of the former Enfield Marshalling Yard. NSW Railway Historical Society Resource Centre.

A photographic survey of the site shows that the only elements surviving from this section are (1) the transhipment shed, (2) the Hope Street Platform (outside the SPC boundaries for this study) and (3) the pillar water tank. With few exceptions, the sidings, signals rails, sleepers and points servicing these surviving items have been removed.

Figure 12. The southern view toward the location of the former UP reception sidings and the weighbridges. The transhipment shed (circled) in the distance.

Figure 13. The transhipment shed and wagon repair workshop (circled) viewed from the approximate location of the demolished No.2 weighbridge to the north.

Figure 14. One of the few fragments of rail siding left on the site. These rails are to the northwest of the transhipment shed and wagon repair workshop.

Figure 15. View to the south from the top of the Transhipment Shed and Wagon Repair Workshop showing mounds of earth. The pillar water tank (circled) is in the middle ground.

3.3 South Centre Section

This section of the former Enfield Marshalling Yard once contained prominent structures and operations such as the (A) No.1 and No.2 roundhouses, the Yard Master's Office (not illustrated), the Administration Building (not illustrated), (B) Wagon Repair Shops, (C) Locomotive Repair Shop, (D) de-ashing pits, (E) the sleeper-adzing depot, (F) the first pedestrian bridge on the site, (G) the Enfield South Platform and (H) the Enfield Loco Platform. These elements are shown in Figure 16.

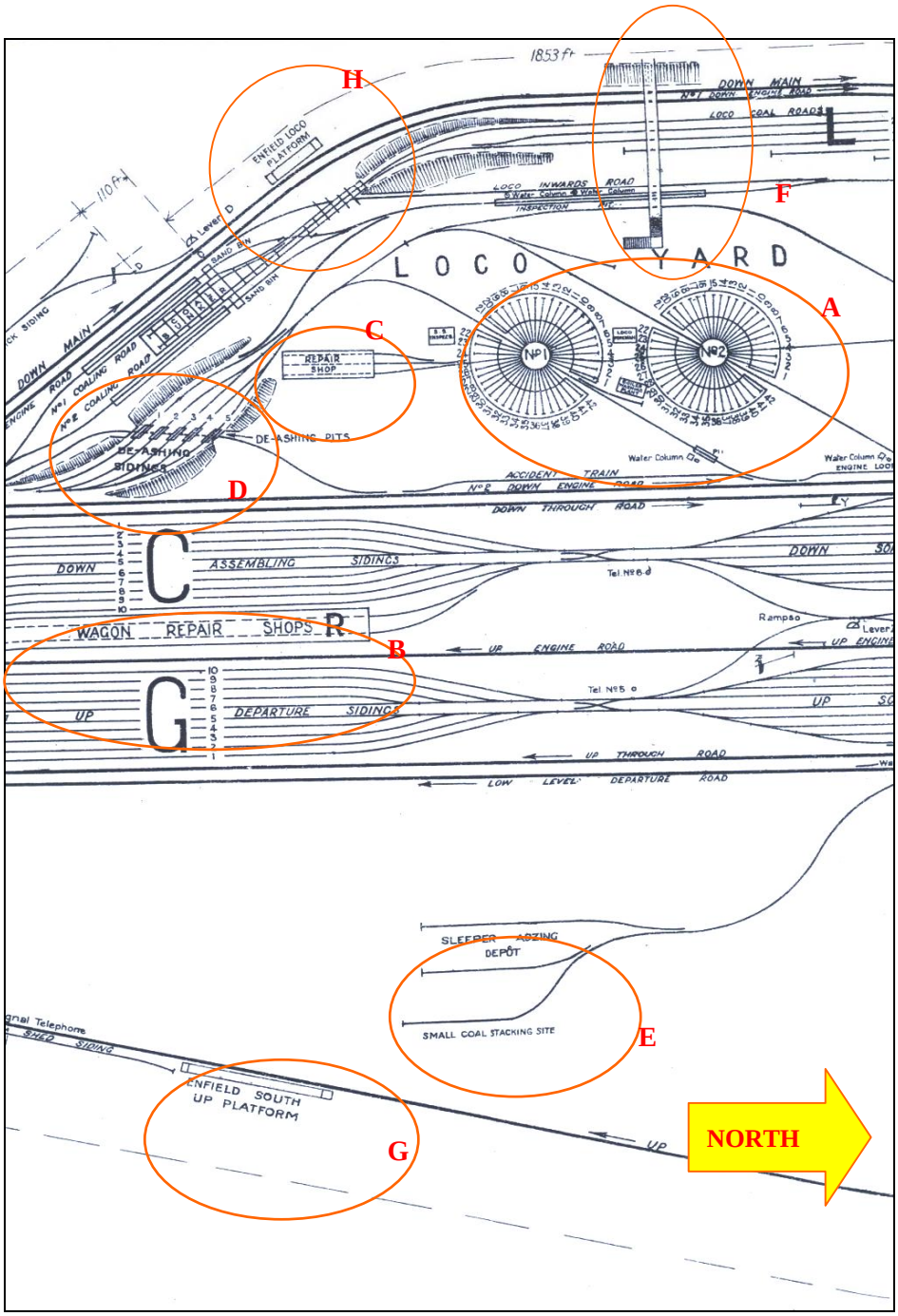

Figure 16. Yard Diagram (ca.1927). South Centre section of the former Enfield Marshalling Yard. NSW Railway Historical Society Resource Centre.

A June 2005 photographic survey of the site shows that the only surviving elements from this section include (1) the administration building and (2) the Yard Master's Office. The second-generation pedestrian bridge also survives near the Yard Master's Office. A small section of track, one set of points and a single signal stanchion (partly demolished) also survive in this sector.

	Figure 17. The administration building and the Yard Master's Office (hipped roof) from atop one of the mounds of earth to the northeast.
	Figure 18. View to the south centre section of the former marshalling yard showing the pillar water tank and the severe disruption of the topography.
	Figure 19. The only surviving signal stanchion in the southeast sector of the former marshalling yard. Semaphore and signalling mechanism has been removed.
	Figure 20. The approximate location of the former Enfield Marshalling Yard's Wagon Repair Shops, now demolished.

Figure 21. Approximate location of Roundhouses No.1 and No.2 (circled). These items have been demolished.

Figure 22. The second-generation pedestrian bridge on the site. An earlier pedestrian bridge near the former Roundhouses No. 2 and No.3 has been demolished.

3.4 South Section

This section of the former Enfield Marshalling Yard adjacent to the Punchbowl Road bridge contained (A) the Tarpaulin Shed (later known as the Tarpaulin Factory), (B) the Enfield South Signal Box A and (C) the Enfield South DOWN Platform. Following a recent re-alignment of Punchbowl Road, an earlier motor vehicle bridge was demolished and major changes in the terrain were undertaken.

The only surviving element in the south section of the former Enfield Marshalling Yard is the Tarpaulin Shed.

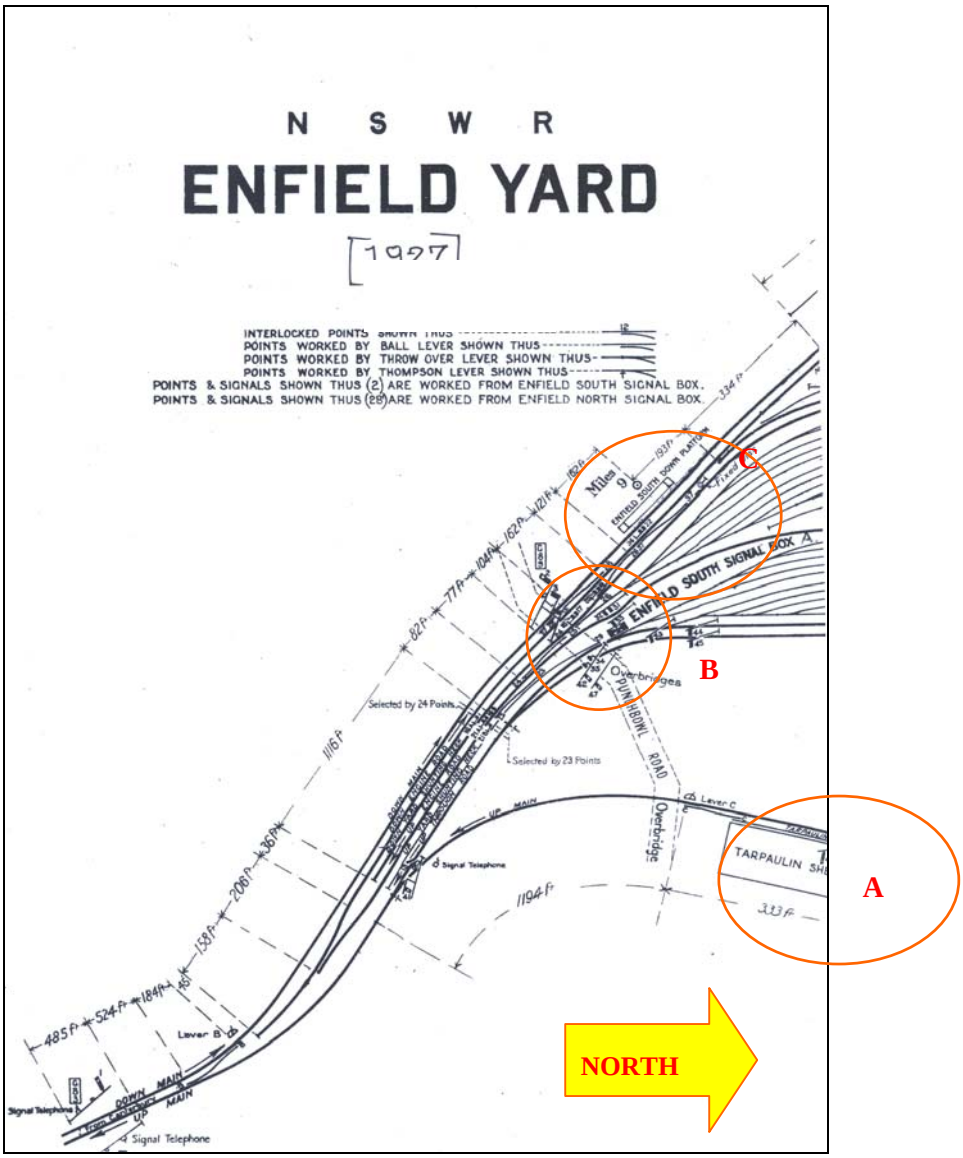

Figure 23. Yard Diagram. (ca.1927) South Centre section of the former Enfield Marshalling Yard. NSW Railway Historical Society Resource Centre.

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Figure 24. Approximate location of the Enfield South Signal Box and the Enfield South DOWN Platform (circled). Both items have been removed.

Figure 25. View to the north toward the Yard Master's Office (circled but not visible) from the large mound of earth adjacent to the tarpaulin factory.

Figure 26. The Tarpaulin Factory sits along a sidling leading to the operative DELEC Service Centre.

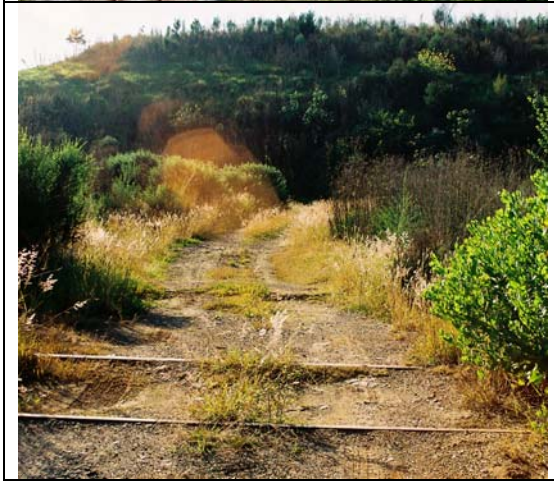


Figure 27. A remnant of a siding to the immediate northwest of the tarpaulin factory.

These photographs show a "before and after" comparison of the transformation of the former Enfield Marshalling Yard to a derelict landscape that no longer has any resemblance to its former use.

Figure 28. Former Enfield Marshalling Yard from the southeast when it was in operation. No date. (Mid-20th century) State Records NSW. (Image no.12932-aO12)

Figure 29. Former Enfield Marshalling Yard from the southeast. June 2005.

3.5 Grading of Significant Landscape Elements

Taken individually, the industrial landscape elements of the former Enfield Marshalling Yard such as signals, sidings and sheds would have been minor elements. Taken together, however, they would have created the ambience of the site. They are identified on the New South Wales Railway Enfield Yard diagram ca.1927 and their status is noted in Table 2.

The various elements of the former Enfield Marshalling Yard have been assessed as to their contribution to the overall significance of the site. The process examines a number of factors, including condition and technological importance.

Table 2. Grading of Significant Landscape Elements

INFRASTRUCTURE	SIGNIFICANCE	PRESENT STATUS
Signals	High Significance. 1916 and updates	Early semaphore signals phased out and removed. One derelict signal stanchion survives
Assembling sidings	High Significance. 1916 and updates	Demolished
Departure sidings	High Significance.	Western sections upgraded for the new Enfield

INFRASTRUCTURE	SIGNIFICANCE	PRESENT STATUS
	1916 and updates	Marshalling Yard owned by RailCorp (outside site boundary)
Sorting sidings	High Significance. 1916 and updates	Demolished. One small section survives in UP sorting sidings
Reception siding	High Significance. 1916 and updates	Demolished. One fragment survives in DOWN reception sidings (outside site boundary)

INFRASTRUCTURE	SIGNIFICANCE	PRESENT STATUS
Storage sidings	High Significance. 1916 and updates	Demolished
Main line (UP)	High Significance. 1916 and updates	Now used by DELEC Service Centre and Weston Milling
Main line (DOWN)	High Significance. 1916 and updates	Operational line (outside site boundary)
De-Ashing sidings	Medium Significance. 1916 and updates	Removed. Loco Depot closed in 1971
Loco Coal Roads	Medium Significance. 1916 and updates	Removed. Loco Depot closed in 1971
Sand bin	Medium Significance. 1916 and updates	Removed. Loco Depot closed in 1971
Coal stacking site	Medium Significance. 1916 and updates	Removed. Loco Depot closed in 1971
Shunter's sheds	Medium Significance. 1916 and updates	Some remnants surviving
Examiner's shed	Medium Significance. 1916 and updates	Demolished
Telephones	Medium Significance. 1916 and updates	Removed.
Watering points	Medium Significance. 1916 and updates	Pillar tank survives near Transhipment Shed. All others removed.

3.6 Assessment of Significance

3.6.1 Assessment Criteria for the Former Enfield Marshalling Yard Landscape.

An item will be considered to be of state (or local) heritage significance if it meets one or more of the following criteria.

Criterion (a)

an item is important in the course, or pattern, of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The former Enfield Marshalling Yard was a significant site until the 1970s when the introduction of diesel power made steam power obsolete. This meant that the steam power infrastructure became redundant and the site was then adapted for modern uses such as containers and truck such as the Toll lease operation.

Criterion (b)

an item has strong or special association with the life or works of a person, or group of persons, of importance in New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no direct associations with any known Yard Master, or Assistant or worker in the former Enfield Marshalling Yard.

Criterion (c)

an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in New South Wales (or the local area)

The former Enfield Marshalling Yard site possessed traditional railway marshalling yard features that could be found in any other marshalling yard throughout the state.

Criterion (d)

an item has strong or special association with a particular community or cultural group in New South Wales (or the local area), cultural or spiritual reasons

No significance under this criterion.

Criterion (e)

an item has potential to yield information that will contribute to an understanding of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The former Enfield Marshalling Yard has no significance under this criterion as a result of demolitions, topographical disturbance and the introduction of new railway technology.

Criterion (f)

an item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no associations with uncommon, rare or endangered aspects of natural history.

Criterion (g)

an item is important in demonstrating the principal characteristics of a class of New South Wales' (or the local area's) cultural or natural places, or cultural or natural environments

The former Enfield Marshalling Yard was once a major marshalling centre but demolitions and changes to the topography of the site have destroyed the heritage significance of the former Enfield Marshalling Yard.

3.7 Statement of Significance

3.7.1 Significance of the Former Enfield Marshalling Yard Landscape

The scale and extent of demolitions at the former Enfield Marshalling Yard site have removed the essential elements that characterise the qualities of a railway marshalling yard. Although there are a small number of isolated buildings and structures surviving in this disrupted landscape, they no longer have a contextual setting. This assessment concludes that, viewed holistically, the landscape of the former Enfield Marshalling Yard can no longer communicate any degree of railway heritage significance.

PART B: HERITAGE ASSESSMENT AND HERITAGE IMPACT ASSESSMENT OF INDIVIDUAL ITEMS

4.0 The Former Enfield Marshalling Yard Contents

4.1 Signals at Enfield North and Enfield South

Although these signals are recorded as heritage items in the NSW Heritage Office's State Heritage Inventory listing for Strathfield's former Enfield Marshalling Yards, they were removed at some time prior to 1998. However, the Strathfield Statement of Significance for the signal boxes states:

Figure 30. Interior of a signal box. State Library of Victoria. Image no.PA005 418.

"The signal boxes and offices are some of the last remnants of one of the major railway facilities in the Sydney area. While the track formation is still in existence many buildings, engine facilities, etc. have been removed and only the signal boxes remain. They are excellent examples of their types and styles of the period and indicate the size and complexity of the yard. Of particular interest is the 'north' box part of which was formerly in use at Abattoir junction (Flemington) from 1910, and was extended for use on this site."[1]

4.1.1 Enfield North Signal Box (Demolished)[2]

This 1910 Enfield North signal box was formed from timber recycled from the Abattoir Junction signal box.[3]

[1] NSW Heritage Office. State Heritage Inventory. Database No.4440111.
[2] ibid.
[3] ibid.

4.1.2 Enfield South Signal Box (Demolished)[4]

The 1916 Enfield South signal box was formed of pre-stressed concrete panels and constructed at the time of the initial development of the former Enfield Marshalling Yard.[5]

[4] ibid.
[5] ibid.

4.2 Yard Master's Office (Traffic Branch Office)

In a marshalling yard, the Yard Master and his employees inspect wagons to see that they are sealed properly and track the wagons and their respective numbers. They observe yard traffic and verify the destination of freight.

Figure 31. The Yard Master's Office. Graham Brooks and Associates, January 2005.

The Yard Master also supervises the shunters who add and remove cars from the train in the yard. Yard Masters also tell engineers where to move the formed trains. It is a highly responsible position within the railway and a good Yard Master would be a respected member of the former Enfield Marshalling Yards team. This suggests that a Yard Master's office would be a substantial building appropriate to the prestige of the position.

The Yard Master's Office was constructed in 1916 as a two-storey brick building with a hipped fibrous cement tile roof.[6] The plans describe the building as "Offices for Traffic Branch" rather than Yard Master's Office. [7] The interiors are formed as a double pile plan with a fireplace in each room. The original plan has been altered since its construction.

The illustration in the figure 32 and 33 show that while the building is called the Yard Master's Office, it is, in fact, a series of eight rooms providing shelter for shunters, the timekeeper, the yard foreman, guards, clerks, communications and on the top level, north-eastern office, the Yard Master and his assistant.

Figure 32. Ground level. Yard Master's Office, Sydney Plan (drawn from June 1916 Plans, RIC Plan Room).

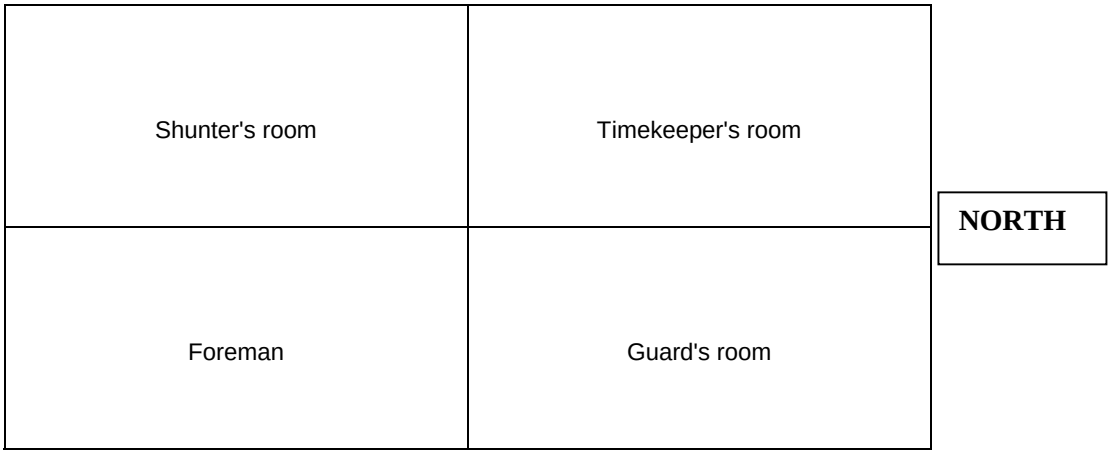
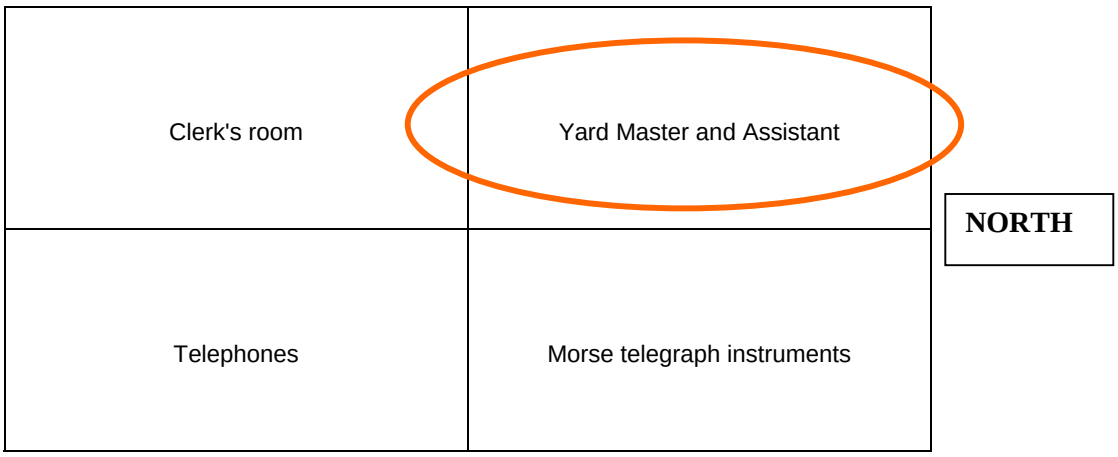


Figure 33. First Level. Yard Master's Office, Sydney Plan (drawn from June 1916 Plans, RIC Plan Room).



[6] Drawings dated June 1916, cited in Otto Cserhalmi and Partners. Part of the Former Enfield Yard, Heritage Assessment, Sydney Ports Corporation, 2002 , p.18.
[7] Otto Cserhalmi and Partners. Part of the Former Enfield Yard, Heritage Assessment, Sydney Ports Corporation, 2002, p.18

Figure 34. The Yard Master's Office from the pedestrian bridge, 1964. Photo by Alex Grunbach from John Oakes, Sydney's Forgotten Goods Railways, Australian Rail Historical Society, 2001.

The original structure was fitted with a rooftop observation platform that was reached via a surviving internal timber stair. This observation platform, a later clock (see Figure 34) and the two original chimneys have been removed and a late 20th century re-roofing with tiles has radically altered the roof plan.

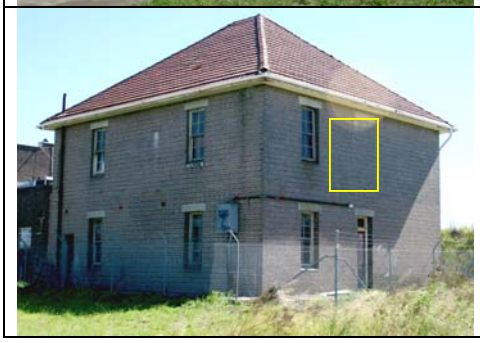
The Yard Master's Office was also surrounded by a partially enclosed verandah and balcony to each elevation. Each elevation, except the southern side that contains a stairwell, was lighted with two to three windows on each level for a total of four to five weighted sash windows on each side of the building.

The interior walls are rendered in hard cement and horizontal dado mouldings exist in the offices. Some of these mouldings have been removed. Early 20th century timber mouldings around doors and windows survive in some rooms along with timber skirtings. Some hearths have been bricked up and mantelpieces removed. Plumbing has been introduced to the building and a toilet has been installed.

4.2.1 Yard Masters Offices

Large marshalling yards were located in Broadmeadow, Newcastle, Albury, Goulburn, Junee and many others where the yards operated on a 24-hour shift, seven days per week. Each yard would have been supplied with a Yard Master's Office of some description. A 2005 study by Ray Love commissioned for this Assessment concluded that the Enfield Marshalling Yard was the largest in the state and therefore, the Yard Master would have been the most senior Yard Master in the railway network.[8] Love's study suggests that this is the sole surviving Yard Master's building in railway system. This has not been independently verified.

Figure 35 Details of Yard Master's Office.

	North side. Upper balcony/ verandah missing, window bricked in on upper level. Chimneys have been removed.
	East elevation. Upper balcony/ verandah missing. Original window placement intact. Note that there is no window to ground level stairwell but a window is provided on level one.
	South-western corner. Door onto balcony missing, Note that there is no window to the level one stairwell on this elevation.

[8] Ray Love. "Enfield Marshalling Yards. Extant Structures." Graham Brooks and Associates, 2005.

	Interior of southeast office, level one. Internal doors were fitted with transoms. The fireplace surround has been removed and the hearth filled in. Skirting boards have been removed.
	Internal stairwell in north-eastern corner from the ground floor level.
	Internal stair landing, level one, showing window.

	Internal stair to attic. Former approach to observation area and clock, now demolished.
	Timber skirtings and door mouldings pattern ground floor hallway.

4.2.2 Modifications of the Yard Master's Office

There have been a number of modifications at the Yard Master's Offices since its construction in 1916-1917. As originally constructed, the office had encircling verandahs at the ground and first floor levels with an approximately two metre enclosed lookout. There were two chimneys to service the fireplaces in the offices.

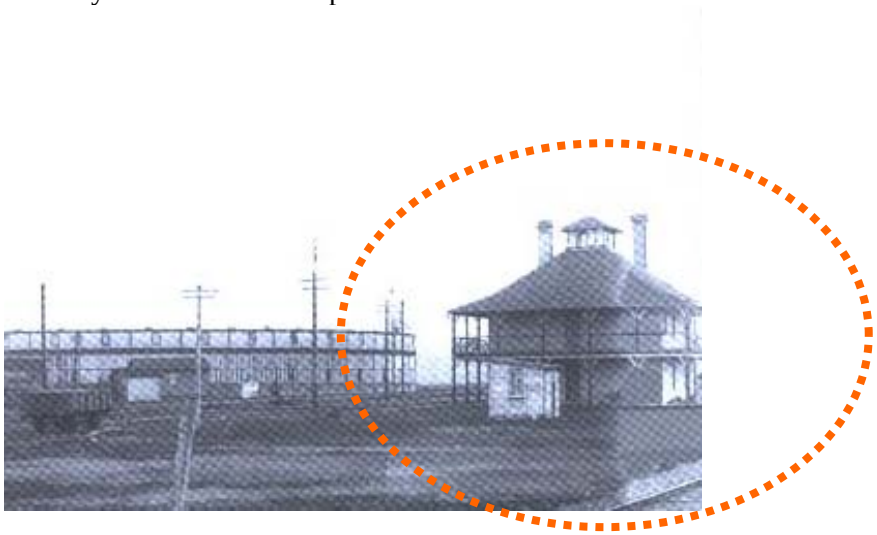


Figure 36. The Yard Master's Office, ca.1920. Australian Rail Historical Society in John Oakes, Sydney's Forgotten Goods Railways, 2001.

Figure 37. Yard Master's Office, 1964. Alex Grunbach, Australian Rail Historical Society in John Oakes. Sydney's Forgotten Goods Railways, Australian Rail Historical Society, 2001.

Some time before 1967, a substantial tower (est. 7 metres) appeared with the lookout (now enclosed) and topped by a clock. As shown in Figure 37, the roof of the Yard Master's Office appears to be tiled with a break in the fall of the roof where it meets the verandah section. In the 1967 image in Figure 37, substantial sections of the verandah are enclosed with fibrous cement sheet. A site visit in 2005 revealed that all elements of the verandah, tower and clocks have been removed.

There are also significant modifications within the eight offices of the Yard Master's Office interior including the removal of chimneypieces, mantels and surrounds. In some cases, the fireplaces have been filled in, windows and verandah doors bricked in and new doorways fashioned in the interiors.

4.2.3 Grading of Significant Elements

The various elements of the Yard Master's Office have been assessed as to their contribution to the overall significance of the property. This process examines a number of factors, including condition and technological importance.

Table 3. Table of Significant Elements in the Yard Master's Office

Significant elements found in Yard Master's office	Significance
Structural walls	high significance
window and door openings	high significance
Hearths	low significance (altered)
Chimney	low significance (removed)
roofing plan	low significance (altered)
roofing material	low significance (altered)

Table 4. Intrusive/Damaging Alterations to Yard Master's Office

removal of verandahs	high impact on significance
removal of chimneys	high impact on significance
removal of observation platform	high impact on significance
removal of clocks	high impact on significance
bricking up windows	medium impact on significance
bricking up door to verandah	medium impact on significance
removal of chimney furniture and enclosures	medium impact on significance

4.2.4 Assessment of Significance

4.2.4.1 Assessment Criteria for Yard Master's Office (The Traffic Office)

An item will be considered to be of state (or local) heritage significance if it meets one or more of the following criteria.

Criterion (a)

an item is important in the course, or pattern, of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The building was the centre of the former Enfield Marshalling Yard operations until the 1940s and represents the traffic operation on the NSW Government Railway system and once possessed significance in this regard.

Criterion (b)

an item has strong or special association with the life or works of a person, or group of persons, of importance in New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no direct associations with any known Yard Master, or Assistant or a worker in the former Enfield Marshalling Yard.

Criterion (c)

an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in New South Wales (or the local area)

The building has been degraded by demolitions and possesses no significance under this criterion.

Criterion (d)

an item has strong or special association with a particular community or cultural group in New South Wales (or the local area), cultural or spiritual reasons

No significance under this criterion.

Criterion (e)

an item has potential to yield information that will contribute to an understanding of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The office has no significance under this criterion as a result of earlier demolitions.

Criterion (f)

an item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no associations with uncommon, rare or endangered aspects of natural history.

Criterion (g)

an item is important in demonstrating the principal characteristics of a class of New South Wales' (or the local area's) cultural or natural places, or cultural or natural environments

The Traffic Office once characterised the operational centre of a marshalling yard of this magnitude but demolitions have destroyed the significance of the site.

4.2.5 Statement of Significance

4.2.5.1 Significance of the Yard Master's Office

A survey of the NSW Heritage Office's State Heritage Register and the State Heritage Inventory suggests that this is the only surviving Yard Master's Office in the former rail network. There are no other Yard Master's Offices listed on the electronic database.

While there are over 34 railway station and yard groupings on the State Heritage Register (February 2005) research commissioned from Ray Love by Graham Brooks and Associates states that the Enfield Yard Master's Cottage is the only Yard Master's Office remaining in the former railway network.[9] It is important to note that the building was the operations centre and provided space for shunters, timekeepers and other railway employees as well as the Yard Master.

The significance of the building is largely historical as extensive alterations have erased operational elements such as the observation area, clock, communication devices (telephone and telegraph) and encircling verandahs that could give the building its links with railway heritage significance. As a consequence of the continued alterations to the building and the deterioration of its rail yard setting, this assessment concludes that the building's ability to communicate its importance has been severely reduced through losses of significant role-defining heritage fabric. Accordingly, the Yard Master's Office has only LOCAL SIGNIFICANCE for the former Enfield Marshalling Yard.

4.2.6 Discussion

There are three options for this structure. They include (1) re-use, (2) relocation and (3) removal.

Re-use

The re-use of the Yard Master's Office would require an upgrading of services such as plumbing, electrical services and IT cabling. An upgrade is possible with some minor disturbance of fabric. Minor structural renovations would be required for the interior. Flooring may also need repair. The application of Building Code of Australia (BCA) requirements may find that stair handrails and balustrades, as well as the entrances would require upgrades.

The re-use of the Yard Master's Office within the proposed Intermodal Logistics Centre would also require that a 16 metre protective perimeter be established around the building. This would protect the building from potential damage in the event of a tip-over of a six-container stack.

[9] Ray Love, ibid.

Relocation

The craft skills, design and planning for a disassembly and re-siting of this building are available. The costs, however, would be considerable and the operational interior of the building and the heritage elements belonging to the Yard Master's Office era, as it now stands, are so degraded that relocation would be of questionable rail heritage value.

Removal

A case could be made for demolition, considering the degradation of the building and its loss of its original setting within the former Enfield Marshalling Yard. If the building remained on site, audience access to the Yard Master's Office would be extremely limited and the visual curtilage would consist of shipping containers. The value of demolition would be dependent on the usefulness of the building site to the operation of the Intermodal Logistics Centre.

4.2.7 Recommendations

It is the view of Graham Brooks and Associates that selective demolitions have removed many of the significant heritage elements of the Yard Master's Office (Traffic Office) such as the communications equipment, office set-out, chimneys, verandahs, clocks and roof-top observation area. The railway landscape has also been lost. Through attrition, the building has lost much of its ability to communicate its former significance in a state-wide setting and in its current setting. The location of the Yard Master's Office within the Intermodal Logistics Centre would further degrade the building's context.

The building, however, is considered by an independent consultant's report to be the only Yard Master's office surviving amongst the rail yards currently listed in the State Heritage Inventory.

Although it is thought to be the sole survivor of a large group of Yard Master's offices in the NSW Government Railway system, Graham Brooks and Associates acknowledges that the building's rail heritage elements, its former Enfield Marshalling Yard setting and its potential to communicate its significance is severely diminished. As a consequence, if the building cannot be accommodated within the Intermodal Logistics Centre, the Yard Master's Office could be measured, recorded and demolished. Copies of this recording should be deposited with the Australian Rail Historical Society library and the NSW State Records Office.

Due to its masonry construction, it is not a candidate for relocation on or off the site. The disassembly and re-siting of the building would further reduce its heritage significance.

4.3 Transhipment Shed and Wagon Repair Workshop with Associated Gantry Crane

Earlier reports on the former Enfield Marshalling Yard identify the wagon repair workshop as a building of the 1920s. However, the structure is clearly identified on an Australian Railway Historical Society Resource Centre yard diagram of 1927 as an 86-feet long (26 metres) original "Transhipment Shed". It is the view of Graham Brooks and Associates that the current building is the Transhipment shed, later extended and/or adapted for a workshop. The shed now measures approximately 90 metres in length.

Figure 38. Former Transhipment Shed & Wagon Repair Workshop. Northern elevation. January 2005.

4.3.1 Transhipment Shed

A Transhipment shed is a structure that provides shelter for goods to be transferred by hand (transhippers) or by gantry cranes from one train to another. Goods wagons are shunted into parallel positions beside linking platforms, the goods transferred, then the wagons are shunted into the marshalling yard to form a train. When the Transhipment shed was identified on 1927 plans, a "repair siding" was located to the west of the building and this may account for earlier errors in identification.

Coincidentally, the Transhipment shed's concrete floors show no sign of earlier inspection pits that are often a feature of railway workshops. This "Transhipment shed" identification also helps to explain the open side to the eastern elevation, as two goods trains parallel would provide shelter for the open side.

4.3.2 Wagon Repair Workshop

Following its use as a Transhipment shed, it appears that the building was extended as a workshop. A wagon repair workshop undertakes repairs on goods wagons. At this location, this could include carpentry, painting, metalwork and "bogie work" on NSW Government Railway wagons.

A *bogie* is a British railway term for a wheeled truck or frame under a carriage or engine that moves to allow a wagon to travel around curved track. These bogies require repair and replacement at regular intervals. The mid-20th century gantry crane placed at the southern end of the surviving wagon repair workshop provided potential lifting capacity for the service of wagon bogies.

The Transhipment shed & Wagon repair workshop is a braced frame construction using a heavy braced frame of horizontal timbers bolted to hardwood posts that extend the full height of the frame. Many of these hardwood posts are set into concrete aggregate plinths. These concrete plinths may have been poured around the timber posts when the posts were set into the ground. This unfortunate practice has allowed terrestrial termites to gain access to these timber supports.

One side of the building is open to the east, while the west side is enclosed against the weather. The gable ends are enclosed with palings set at intervals and the roof is enclosed with fibrous cement corrugated sheeting.

Figure 39. The internal structure of the Transhipment shed & wagon repair workshop showing the palings enclosing the gable ends and the bolted braced frame construction.

A grouping of brick buildings, now in ruins, lies to the southwest of the workshop and may have supplied administrative support and specialised trades for the later workshop activities. These support buildings are not identified on plans from the 1920s that show the transhipment shed. These supportive buildings occupy the approximate position of the "repair siding" to the west of the transhipment shed.

Figure 40. The ruins of the administration buildings associated with the later wagon workshop. January 2005.

Figure 41. Mid-20th century electric-powered gantry crane outside of the Transhipment shed & wagon repair workshop. January 2005

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Figure 42. Details of the Transhipment shed and wagon repair workshop.

	While the timber posts of the shed have been placed in concrete, termites have gained access through the base of the posts.
	Iron bolts support the braced frame construction (east side).
	The western side of the Transhipment shed was enclosed ca. 1946 with contemporary materials including transparent fibreglass corrugated sheeting.[10]
	Internal view of the Transhipment shed to the north showing open and closed sides and probable position of dual tracks into shed. The width of the track placement would allow the use of a platform for transhipping.

[10] Otto Cserhalmi and Partners. *Part of the Former Enfield Yard. Draft Heritage Assessment*, 2002, p.26.

4.3.3 The Activities of a Wagon Repair Siding or Transhipping Shed

Ray Love observes that a "wagon repair siding is usually formed from one or two sidings. These sidings are occasionally covered or in the open. Equipment for wagon repair work includes lifting gantries, service pits, welding equipment, jacks and tools."[11]

"Most wagon repair sidings, "Love observes," were fitted with equipment suitable for lifting one end of a vehicle thus allowing bogies to be removed. The lifting equipment provided [at Enfield] [...] appears to be of a type commonly used at Transhipping centres where heavy [...] goods or containers are moved from one rail vehicle to another."[12] The crane appears to have been adapted for wagon repair work.

4.3.4 Building Condition

Sydney Port Corporation commissioned a pest inspection from Eagle Pest Control in October 2001. On the west, Eagle Pest noted termite activity and damage in 15 columns; on the eastern side, the contractor noted termite activity and damage in 10 columns. There are 31 columns along each of these elevations. Termite activity was also noted in the wall plates along each of these elevations.

While a full assessment of the damage from termites cannot be known without further testing, it is clear that there is loss of structural strength in many of the 62 timber columns.

4.3.5 Grading of Significant Elements

The various elements of the timber shed have been assessed as to their contribution to the overall significance of the property. This process examines a number of factors, including condition and technological importance.

Table 5. Significant Elements in the timber shed

Significant elements found in the timber shed	Significance
timber columns	high significance
timber wall plates	high significance
Secondary wall beams	high significance
paling gable enclosure	high significance
western wall enclosure	medium significance (altered by addition of fibreglass and corrugated panelling after 1946).

Table 6. Intrusive/Damaging Alterations to timber shed

gantry crane update	low impact on significance
cladding of western wall with fibreglass	low impact on significance
enclosure of timber columns in concrete	high impact on significance

[11] Ray Love. *Enfield Marshalling Yards. Extant Structures.* Graham Brooks and Associates, February 2005, p.2.
[12] ibid, p.3.

4.3.6 Assessment of Significance for Timber Shed (Transhipment Shed & Wagon Repair Workshop)

An item will be considered to be of state (or local) heritage significance if it meets one or more of the following criteria:

Criterion (a)

an item is important in the course, or pattern, of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The timber shed has some importance as a residual structure in the former Enfield Marshalling Yards that was devoted to transhipment of rail goods, and later as a wagon repair structure. The annex structures associated with the shed belong to the mid-20th century and are in a derelict condition.

Criterion (b)

an item has strong or special association with the life or works of a person, or group of persons, of importance in New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no associations in this regard.

Criterion (c)

an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in New South Wales (or the local area)

The timber shed and its post-and-beam structure is a typical form of timber construction of this era. Its use has been superseded by more advanced materials in timber and steel. There are many post-and-beam structures of this type in wharfage, woolsheds, barns and warehousing.

Criterion (d)

an item has strong or special association with a particular community or cultural group in New South Wales (or the local area), cultural or spiritual reasons

There are no associations with community or cultural groups.

Criterion (e)

an item has potential to yield information that will contribute to an understanding of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There is no significance associated with this structure under this criterion

Criterion (f)

an item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no associations with uncommon, rare or endangered aspects of natural history.

Criterion (g)

an item is important in demonstrating the principal characteristics of a class of New South Wales' (or the local area's) cultural or natural places, or cultural or natural environments

This class of timber building has some significance as a timber structure of some span and length. As a class of building, it can be compared to the timber wharf structures surviving on the Sydney Harbour foreshores, woolsheds, barns and timber warehousing.

4.3.7 Statement of Significance

4.3.7.1 Significance of the Timber Shed

The timber shed, once used for transhipping, later adapted for wagon maintenance is a large timber building of considerable span and length. It is not a technically innovative building, based on traditional timber construction techniques. Its adaptation for a number of uses such as transhipment and wagon repair has damaged its clarity for heritage appreciation once the tools and devices used within the building were removed.

In its current setting, the ability to communicate its significance is diminished due to limited access to the site, condition, loss of associated tools and equipment and its original context. As a consequence, the heritage significance of the structure, in and of itself, is considered to be of marginal LOCAL SIGNIFICANCE.

The external gantry crane, a mid-20th century addition to the building, is a commonplace sight on supply yards, coastal wharves and transhipment points (ships, trucks, railways) throughout the Sydney region. It is considered to have low heritage significance as an independent object and has only marginal LOCAL SIGNIFICANCE though its use as a Transhipment Shed and Wagon Repair Workshop at the former Enfield Marshalling Yard.

4.3.8 Discussion

There are three options available for this building and gantry crane. They include re-use, relocation and removal.

Re-use

While the building is in poor structural condition as a result of termite attack, there is an option to recycle elements of the building into the proposed Intermodal Logistics Centre site to create amenities such as picnic benches, shade structures or other functional elements.

The gantry crane has no re-use potential on this site. If the shed is recycled into site amenities, the crane ceases to have any heritage significance.

Relocation

Iron bolts fix the timber posts and beams. This means that the basic structure could be disassembled and re-erected at an external rail heritage location. Although a pest inspection and a survey by Hyder Engineering have identified that termites have damaged some of the columns, perhaps two-thirds of the building could be recovered. The degree of damage cannot be accurately assessed without disassembly.

The gantry crane associated with the building is also adaptable for re-use in another railway setting. In the event of a relocation opportunity, the gantry crane could be assigned to one rail heritage site and the building relocated to another heritage site without significant heritage loss to the building.

Removal

If the building cannot be re-used or re-sited in an accessible setting where it can be appreciated by railway heritage enthusiasts, Graham Brooks and Associates recommend that the shed be recorded by sketch plans and photographs and the shed be demolished.

The gantry crane has heritage value only in its association with the shed. If the building is demolished, the crane can be scrapped.

4.3.9 Recommendations

In its current and proposed Intermodal Logistics Centre setting, the building's ability to communicate its significance is diminished due to limited access to the site, condition, loss of tools and equipment and its original context.

Graham Brooks and Associates consider this building to be readily adaptable in part for continued use by the numerous railway heritage organisations in NSW. If it were not required by these organisations, Graham Brooks and Associates would support demolition.

4.3.10 NSW Heritage Office Statement of Heritage Impact Criteria

Following a recommendation to disassemble the building for re-erection at a rail heritage site, the following assessment of heritage impact has been prepared to test the recommendation against the criteria established by the NSW Heritage Office, and contained in "Statements of Heritage Impact" documents in the NSW Heritage Manual. The proposal has been assessed against only those criteria deemed as relevant.

Demolition of a building

Have all options for retention and adaptive re-use been explored?

The site is to be adapted and re-used for an Intermodal Logistics Centre. The termite damage in the building, the durability of its materials and its physical dimensions are not compatible with the transhipment of containerised freight and the machinery associated with this operation. It cannot be adapted for use at the proposed Intermodal Logistics Centre.

Can all of the significant elements of the heritage item be kept [...] and located elsewhere on the site?

The timber materials of the shed could be re-used/recycled for amenities such as shade shelters within the Intermodal Logistics Centre.

Change of use

Does the existing use contribute to the significance of the item?

The building has not been used for some time. It is abandoned and damaged by termites and weather. Changes in the former Enfield Marshalling Yard such as removal of tracks and grading, have isolated the building. Its use is no longer apparent.

Change of use (through relocation)

What changes to the site [or building] are required as a result of the change of use?

The building could be disassembled, examined for soundness and re-sited to a railway heritage site with few structural modifications. Due to termite damage, some losses of structural fabric are likely. Re-roofing and re-cladding of walls may be required if the building were relocated to a rail heritage site.

The relocation of the building could provide a greater opportunity for the building's appreciation as well as practical use for rail heritage.

4.3.11 Conclusion

The relocation of the stable elements of the shed to an external rail heritage operation would be the most desirable outcome as it provides access and interpretation for the heritage audience. If the building cannot be relocated to a rail heritage site, it should be recorded and demolished. The commonplace gantry crane has no heritage significance except in its association with the shed. It could be relocated or scrapped without impact on the relocation on the timber shed.

4.4 Pedestrian Footbridge (Workmen's Footbridge)

The pedestrian bridge is a steel Warren Truss structure with a reinforced concrete deck resting on two sets of braced pylons. Based on a drawing reproduced by R.E. Best, the pedestrian footbridge was constructed in 1937.[13] This is consistent with the findings of engineering historian Don Fraser in his *Survey of Railway Footbridges* of 1996 that found footbridges of this type constructed in 1929 and 1944.[14]

Figure 43. East (right) and west (left) terminations of the pedestrian bridge, January 2005.

Fraser notes, "An important feature of the Enfield F/B [footbridge] is its height, tall enough to have cross-bracing above the deck. Pedestrians walk through a "spatial tunnel" and such bridges, road, rail or other use, are called "through" bridges**."**[15]

The condition of the bridge is considered fair to poor with corrosion particularly evident at the joins and spalling of the concrete resulting from the corrosion expansion of the steel reinforcing mesh within the decking.

An earlier heritage report also suggests that the span was once approximately 120 metres long but has been reduced to a length of 80 metres,[16]

[13] R.E. Best. *Enfield Marshalling Yard. Status Report on Redundant Infrastructure.* Sydney Ports Corporation, 2001.pps.2-3 illustrating drawing dated 18 Feb. 1937and Otto Cserhalmi and Partners. *Part of the Former Enfield Yard. Heritage Assessment*, draft, 2002, p.51-52.
[14] Don Fraser. *Survey of Railway Footbridges*. State Rail, 1996. and personal communication, 15 February 2005.
[15] ibid.
[16] Otto Cserhalmi and Partners. *Part of the Former Enfield Yard. Heritage Assessment*, draft, 2002, p.51.

Figure 44. Details of the pedestrian bridge. January 2005.

	Reinforced concrete decking on pedestrian bridge. This view illustrates the "through" bridge quality of this structure.
	Detail of rivets and bolt fasteners for the truss.
	Underside of the pedestrian bridge showing the bracing supporting the concrete deck. Spalling (yellow) is evident from the corrosion expansion of reinforcing rods.
	Detail of supporting steel for concrete decking.

	The vertical pylons of the bridge are set into concrete footings.

This surviving bridge is the last bridge remaining of the two bridges that have been located on this site. A photograph of the southernmost roundhouse ca. 1920 (Figure 45) shows an early elevated bridge in the approximate location of the surviving bridge. The location of this bridge is suggested in the 1927 Yard diagrams shown in Section 3 of this report.

This earlier bridge is also documented in drawings, "Workmen's Footbridge, 10 January 1920" in the Rail Infrastructure Plan Room. This bridge was replaced ca.1937 with the surviving bridge and continued a path of access to the Traffic Offices and the Yard Master.

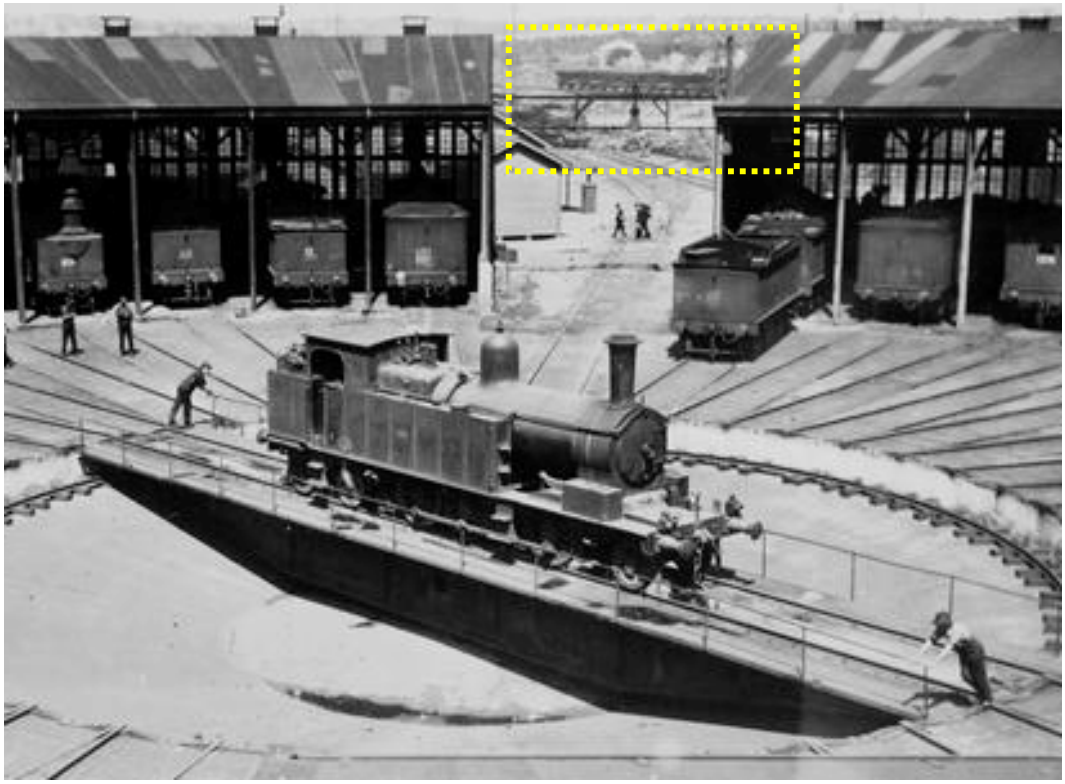


Figure. 45. One of the Enfield Roundhouses (southern) showing the earlier footbridge (yellow) ca. 1920. National Library of Australia. Image no.23252180.

4.4.1 Railway Footbridges

Don Fraser's 2-volume *Survey of Railway Footbridges*, State Rail, January 1996 did not record the former Enfield Yard footbridge but Fraser notes that the Enfield Bridge is a Warren Truss as discussed previously. Fraser considers that an important feature of the Enfield footbridge is its height as it is tall enough to have cross-bracing above the deck. Fraser's survey found an identical footbridge at Wilson Street, Albury across the wide 2-track transhipment yard built in 1944 and one other "through" truss footbridge, the1929 Warren Truss at Rosehill Station.

He notes that while there are 248 footbridges in the railway network, only three are "through" Warren Truss types, which, in Fraser's view, takes the Enfield footbridge into one of a rare group.

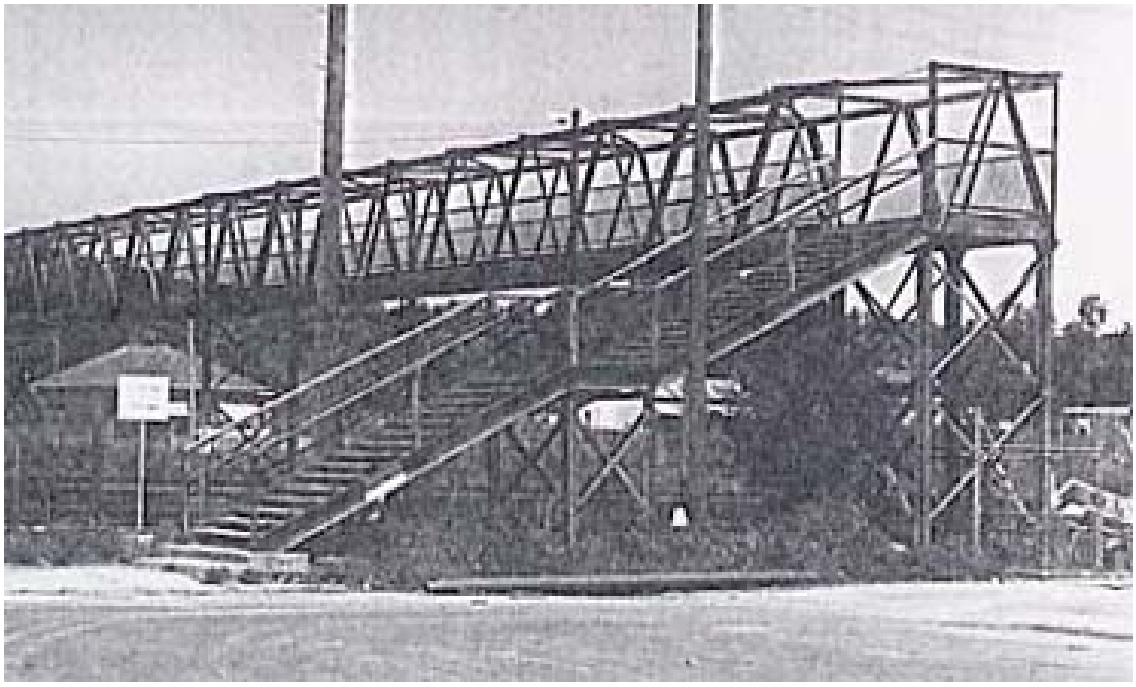


Figure 46. Footbridge, Albury NSW, 1944. Don Fraser. Survey of Railway Footbridges, 1996.

Fraser states that it is important to note that while there are 30 additional Warren truss footbridges in the rail network, these are "half-through" bridges. [17]. This "half through" type appeared around 1910 for sites where track arrangements required a wider bridge-span. This type does not possess the overhead cross-bracing over the bridge deck.

[17] Ibid

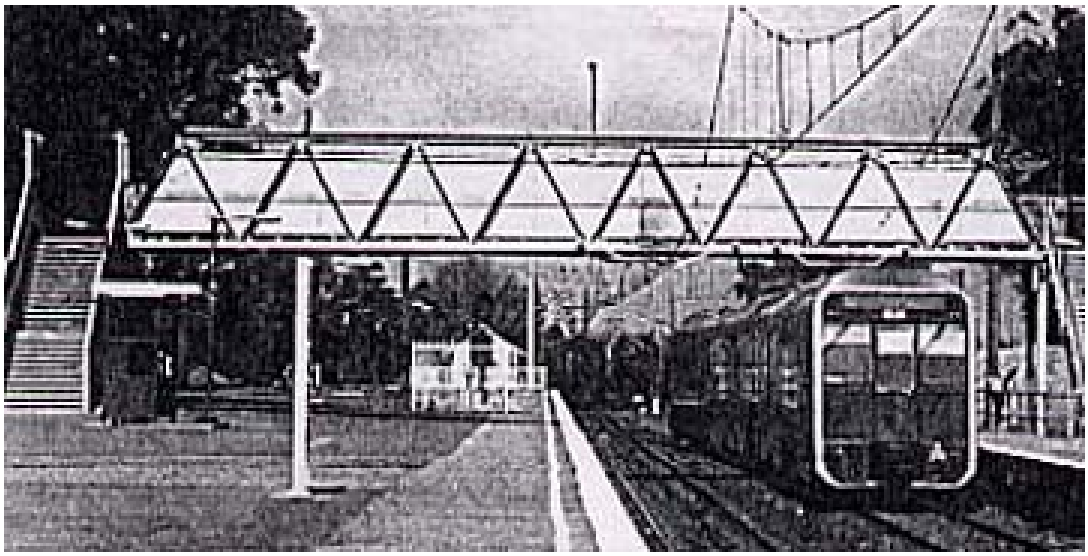


Figure 47. Rose Hill footbridge, 1929. Don Fraser. Survey of Railway Footbridges, 1996.

4.4.2 Grading of Significant Elements

The various elements of the footbridge have been assessed as to their contribution to the overall significance of the item. This process examines a number of factors, including condition and technological importance.

The assessment has identified four levels of significance, being *High, Medium or Low Significance or Intrusive*.

Table 7. Significant Elements in the footbridge

Significant elements found in foot-bridge	Significance
steel span	high significance
vertical steel support beams	high significance
stair treads, risers, handrails	high significance
Concrete walkway	medium significance (spalling)
Concrete footings	low significance

Table 8. Intrusive/Damaging Alterations to footbridge

Reduction of length, date unknown	medium significance

4.4.3 Assessment of Significance

An item will be considered to be of state (or local) heritage significance if it meets one or more of the following criteria:

Criterion (a)

an item is important in the course, or pattern, of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

This footbridge is one of three surviving Warren Truss bridges surviving in the NSW Railway system. It reflects engineering significance and the deft handling of metal trusses. The bridge has local significance under this category.

Criterion (b)

an item has strong or special association with the life or works of a person, or group of persons, of importance in New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The footbridge does not have an association in this category.

Criterion (c)

an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in New South Wales (or the local area)

The bridge, although a simple Warren Truss, illustrates the confident handling of steel spans by railway engineers and builders.

Criterion (d)

an item has strong or special association with a particular community or cultural group in New South Wales (or the local area), cultural or spiritual reasons

No associations under this criterion.

Criterion (e)

an item has potential to yield information that will contribute to an understanding of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

No significance under this criterion. The bridge is well documented in drawings and other examples.

Criterion (f)

an item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no associations with uncommon, rare or endangered aspects of natural history.

Criterion (g)

an item is important in demonstrating the principal characteristics of a class of New South Wales' (or the local area's) cultural or natural places, or cultural or natural environments

The bridge illustrates a class of pedestrian footbridges associated with the 20th century railways. Only three examples of this type of bridge appear to survive in the railway network at Enfield, Rose Hill and Albury. The Enfield example possesses local significance.

4.4.4 Statement of Significance

4.4.4.1 Significance of the Pedestrian Footbridge

The Warren Truss bridge, developed in the mid-19th (ca.1838) century was a bridge technology approximately 100 years old by 1937. This simple form of bridge was well-refined, simple to design and easy to erect. As a consequence, this type of truss bridge was produced in great quantities. There are over 230 footbridges listed on the NSW Heritage Inventory and 30 of these bridges are of the Warren Truss type. However, of these surviving Warren Truss types, there are only three "Through" Warren Truss types:
the former Enfield Marshalling Yard, Albury and Rose Hill footbridges. As one of three surviving examples, it is considered to be of LOCAL SIGNIFICANCE. However, isolated in the former Enfield Marshalling Yard, now stripped of its sidings and ancillary buildings, the footbridge cannot communicate its significance in its setting or to a potential audience.

4.4.5 Discussion

There are three options available for the pedestrian bridge. They include re-use, relocation and removal.

Re-use

The re-use of the pedestrian bridge within the context of the former marshalling yard is incompatible with the proposed operation of the Intermodal Logistics Centre. Considering the scale of vehicles and containers, there is also an element of potential damage to the structure. It could be re-used, however, at another heritage site.

Relocation

The re-siting of the pedestrian bridge at a rail heritage operation would ensure the on-going protection and use of the bridge by the wider public than it presently enjoys. In a rail heritage operation, its engineering values could be interpreted for an appreciative audience.

There is an option for a selected section of the pedestrian bridge to be retained on site and interpreted in a secure and safe location.

Removal

Although there are two other bridges of this type in the rail network, the recording and demolition of the bridge would result in the loss of its material heritage values. It is likely that rail heritage operators would avidly seek an item of this scale.

4.4.6 Recommendations

In its current diminished setting and proposed setting in the Intermodal Logistics Centre, the ability of the bridge structure to communicate its significance is diminished due to limited access to the site and the loss of the original marshalling yard context.

It is recommended that the "Workmen's Foot-bridge" be dismantled and relocated to a railway heritage organisation site where it can continue to communicate its significance to an audience appreciative of its heritage values. Its current location and use are incompatible with the operations of the proposed Intermodal Logistics Centre.

As the footbridge can be disassembled, there is an option for a portion of the bridge to remain on site for interpretation while larger elements could be relocated to an appropriate railway heritage site.

4.4.7 NSW Heritage Office Statement of Heritage Impact Criteria

Following a proposal to disassemble the building for re-erection at a rail heritage site, the following assessment of heritage impact has been prepared to test the recommendation against the criteria established by the NSW Heritage Office, and contained in “Statements of Heritage Impact” documents in the NSW Heritage Manual. The proposal has been assessed against only those criteria deemed as relevant.

Demolition of a building

Have all options for retention and adaptive re-use been explored?

There is an option to retain an element of the bridge on-site in a low activity area.

Can all of the significant elements of the heritage item be kept [...] and located elsewhere on the site?

The span of the bridge precludes its re-siting in the proposed Intermodal Logistics Centre. It would be inappropriate to relocate the structure in operational zones where there are dangers from machinery and container movements.

Change of use

Does the existing use contribute to the significance of the item?

At present, the structure is considered unsafe and not suitable for pedestrian use. Its original purpose, crossing railway sidings, is no longer valid following earlier removal of tracks.

What changes to the fabric are required as a result of the change of use?

The bridge, already partly disassembled and reduced by 40 metres at an earlier date, can be disassembled with the removal of rivets and bolts, pylons, steps and sections and re-erected at another site. Other than the replacement of fasteners, installation of new concrete treads, installation of new pylon footings and repair of areas weakened by weathering, no fabric changes would appear to be required.

Change of use (through relocation)

What changes to the site are required as a result of the change of use?

A new site for the bridge could use the original pylons and supply new concrete footings that match the original footings on the site. The old site of the bridge would be redeveloped for the Intermodal Logistics Centre.

4.4.8 Conclusion

Relocation of the pedestrian bridge to another site is an appropriate option for the item. It could provide access and an opportunity for interpretation for railway heritage organisation audiences.

4.5 Pillar Water Tank

Generally, in railway parlance, a water tank is described as a "water column". A water column is commonly a cylindrical structure with a round water tank mounted above it. The tank feeds only the column located beneath it. Water tanks are known from the earliest years of steam powered locomotives.

The tank shown below is cast in reinforced concrete, and then set on a cast reinforced concrete column. This tank form is known as a "Pillar Tank". The tank has been previously identified as a "Parachute Tank", but in railway terms, a "Parachute Tank" is a round steel or iron tank resting on a steel or cast iron column. [18] The shape resembles a deployed parachute.

In the case of the pillar tank at the former Enfield Marshall Yard, the water is fed through the column and is extracted via "the bag", a canvas tube fixed to the tank to carry the water to the locomotive. The bag is now missing.

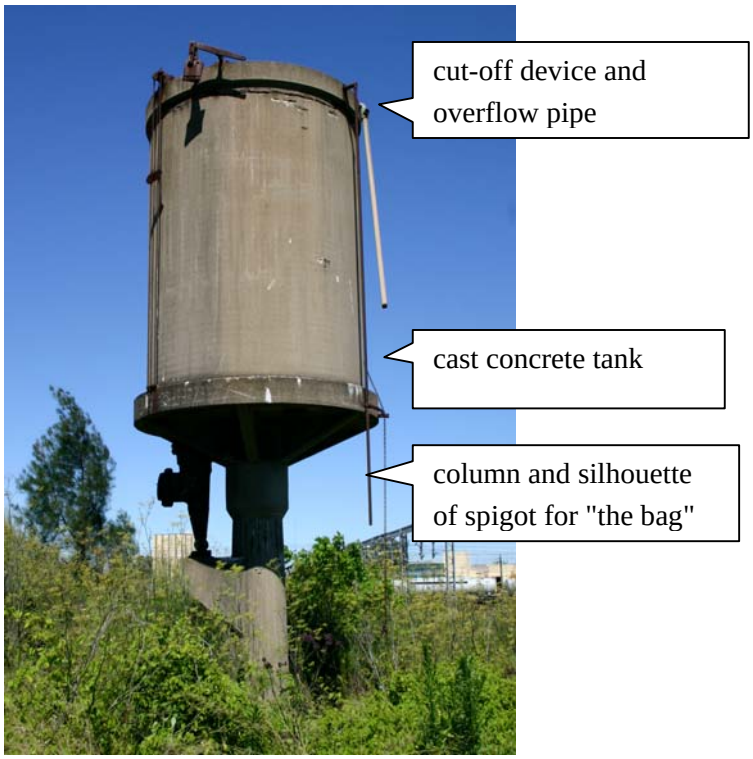


Figure 48. The Water Tank from the east, showing the silhouette for the fixing for "the bag". January 2005.

[18] Ray Love. Enfield Marshalling yards. Extant Structures. Graham Brooks and Associates, 2005, p.3-4.

In the Enfield Marshalling Yard drawing of 1927 (see appendix), there are five watering points, three water columns, a tank jib and a pillar tank position shown. With the exception of those watering points near the roundhouses, most of these watering points are positioned by the main departure or inward-bound roads. These tanks became redundant after 1973 when steam powered locomotives were withdrawn from the railway system. They have now been lost.

This pillar tank position is the exception as it sits near the former Transhipment Shed, later adapted as the Wagon Repair Workshop. It is labelled as a pillar tank position in 1927. The three concrete elements are cast in a single piece and show no typical signs of forming boards.

Ray Love, a railway heritage consultant engaged by Graham Brooks and Associates identifies the Pillar Water Tank 's first appearance to 1918 when "... a drawing was prepared and issued illustrating the details of a new design of elevated tank, constructed in reinforced concrete. The arrangement, comprised of a cylindrical concrete tank, various concrete mouldings, mounted on top of a reinforced concrete pillar. A swivelling jib completed the assembly."[19] Their dimensions were typically nine feet in diameter at a height of 28 feet and holding 4000 gallons of water.[20]

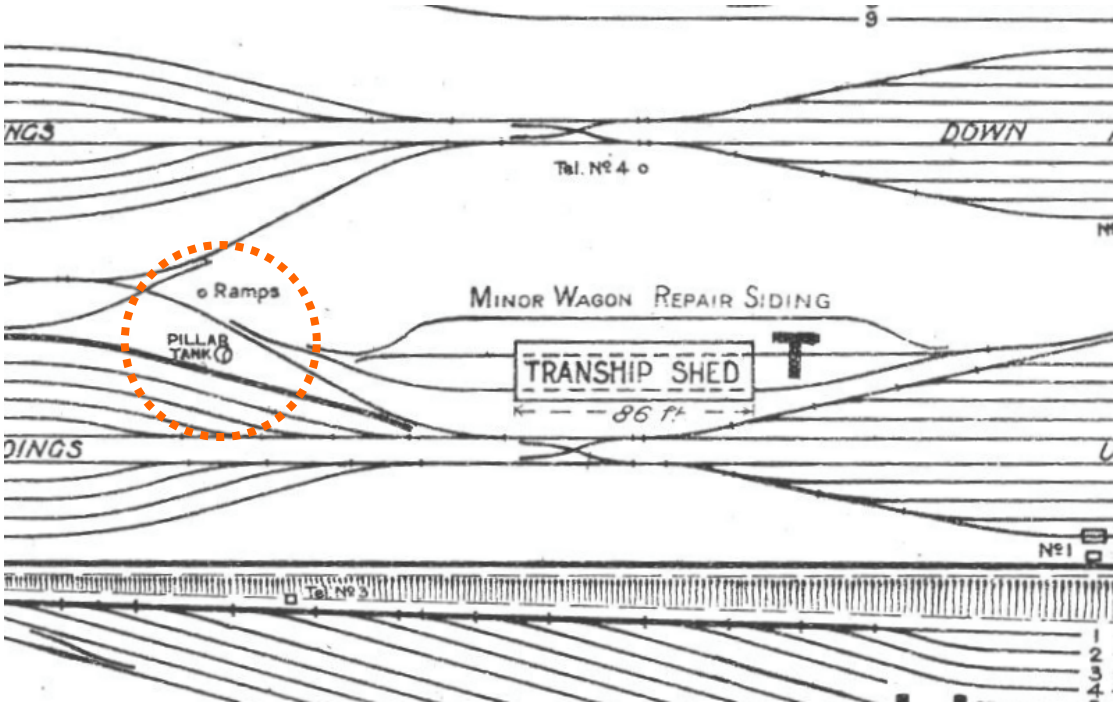


Figure 49. The pillar tank location adjacent to the Transhipment Shed. Detail of The Enfield Marshalling Yard, 1927. Australian Railway Historical Society Library.

[19] Ray Love. *Enfield Marshalling yards. Extant Structures*. Graham Brooks and Associates, 2005, p.2-3.
[20] ibid.

Love's investigation of concrete pillar tanks suggests that this type of tank was not well received and as a consequence, the concrete tank's use was never widespread. The degree of spalling, the result of shallow and substandard placement of steel reinforcing rods in the mould, perhaps accounts for the lack of interest in this type of tank in contemporary rail yards. Love has identified former concrete pillar tank locations at:

- Goulburn locomotive depot
- Farley (near Maitland)
- Meeks Road (near Sydenham)
- Former Enfield Marshalling Yard.[21]

His research suggests that the other water tanks listed above no longer exist and the former Enfield Marshalling Yard Pillar Water Tank was the only surviving concrete pillar tank of the NSW Government Railway system.

The tank, once sited near a ramp adjacent to the Transhipment Shed, is currently surrounded by hillocks of spoil from the regrading of the site following demolition of sidings for a redevelopment of the western portion of the site in 1996.

Based on the PVC overflow device attached to the tank, it continued to be used after the 1973 disappearance of steam power from the network. Its use is unknown but it could have supplied water for the sheds and amenities near the Transhipment shed.

Figure 50. Details of the Water Tank. January 2005.

	Ribbing on the base of the tank and the spigot for "the bag". It is thought that the column and the tank are separately cast and joined on site.
	These wheels allow "the bag" to pivot.

[21] ibid, p.3-5.

	The column and the tank suffer from spalling due to reinforcing steel corrosion.
	The base of the column is flared and fixed to an aggregate concrete base with steel bolts and washers. Spalling is also evident on the column.

4.5.1 Grading of Significant Elements

The various elements of the pillar water tank have been assessed as to their contribution to the overall significance of the property. This process examines a number of factors, including condition and technological importance.

Table 9. Significant Elements in the pillar tank

Significant elements found in the pillar tank	Significance
Tank	high significance
spigot and jib	high significance
Column	high significance
base/footing for column	medium significance
Overflow	low significance

Table 10. Intrusive/Damaging Alterations to the pillar tank

PVC piping	low impact on significance

4.5.2 Assessment of Significance

An item will be considered to be of state (or local) heritage significance if it meets one or more of the following criteria:

Criterion (a)

an item is important in the course, or pattern, of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The pillar tank is a form of moulded concrete water tank that was introduced on the NSW Government railway system ca.1918. It was not a widely used tank.

Criterion (b)

an item has strong or special association with the life or works of a person, or group of persons, of importance in New South Wales' cultural or natural history (or the cultural or natural history of the local area)

No associations under this criterion.

Criterion (c)

an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in New South Wales (or the local area)

The pillar tank has technical achievement as a large scale moulded concrete item at a time in Australia's history when moulded concrete products on this scale were unique.

Criterion (d)

an item has strong or special association with a particular community or cultural group in New South Wales (or the local area), cultural or spiritual reasons

No significant associations under this criterion.

Criterion (e)

an item has potential to yield information that will contribute to an understanding of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The designer and manufacturer of the moulded concrete pillar tank are unknown and this pillar tank is suggested to be the sole survivor of this class of tank.

Criterion (f)

an item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no associations with uncommon, rare or endangered aspects of natural history.

Criterion (g)

an item is important in demonstrating the principal characteristics of a class of New South Wales' (or the local area's) cultural or natural places, or cultural or natural environments

The tank was thought to be the only unit of its type surviving in the NSW Government railway system.

4.5.3 Statement of Significance

4.5.3.1 Significance of the Pillar Tank

This moulded concrete water tank was designed and produced ca.1918 as a watering station for steam-driven locomotives. It possesses a sophisticated ribbed construction and was cast as three distinct elements, the column, the jib base and the tank. Very little is known of the design and origin of this form of tank within the railway system and this tank was thought to be the last surviving pillar tank of the NSW Government railway system. It displays particular significance as an item of engineering significance as a ca.1918 design using moulds, steel reinforcing mesh and a modular design assembled on site. As a sole representative of a unique concrete form, the tank has STATE SIGNIFICANCE.

4.5.4 Discussion

There are three options available for the pillar tank. They include re-use, relocation and removal.

Re-use

There is no option for the operational use of a water tank within the Intermodal Logistics Centre. Until disassembly and examination, it would be difficult to determine if the water tank could be made operational.

Relocation

The pillar tank could be relocated on the Intermodal Logistics Centre site as a prominent interpretive element. This would require disassembly, stabilisation and repair and re-siting. The item could also be relocated to a railway heritage site if it were found inappropriate to re-site at the proposed Intermodal Logistics Centre.

Removal

As a sole surviving item of high significance, the pillar tank is not a candidate for demolition. If it proved necessary to demolish the item, it is recommended that a rail heritage group recover the object.

4.5.5 Recommendations

An appreciation of the pillar water tank's significance in its current setting is difficult. Access is limited and the setting is severely degraded following demolition of the sidings during a Freightcorp redevelopment of the site in 1996. The reinforced concrete tank, weakened by spalling, requires stabilisation. Its current location within the proposed Intermodal Logistics Centre also places it in some danger during the construction and operation phases.

Graham Brooks and Associates recommends that the pillar water tank be disassembled with the necessary engineering safeguards and stored on site pending treatment for concrete spalling. Once the spalling is stabilised, it is recommended that the pillar tank be reassembled and re-sited in an appropriate location within the Intermodal Logistics Centre complex and an interpretive plaque provided.

If an appropriate and safe location within the site cannot be identified, the pillar water tank could be re-located to an appropriate New South Wales railway heritage site.

4.5.6 NSW Heritage Office Statement of Heritage Impact Criteria

Following a proposal to disassemble the item for re-erection at a rail heritage site, the following assessment of heritage impact has been prepared to test the recommendation against the criteria established by the NSW Heritage Office, and contained in “Statements of Heritage Impact” documents in the NSW Heritage Manual. The proposal has been assessed against only those criteria deemed as relevant.

Demolition of a building [object]

Have all options for retention and adaptive re-use been explored?

There are no options for the operational use or adaptive re-use of a water tank in the setting of an Intermodal Logistics Centre.

Can all of the significant elements of the heritage item be kept [...] and located elsewhere on the site?

The first priority for the water tank is safe re-siting within the proposed Intermodal Logistics Centre. This is to protect the item during the proposed redevelopment of the site. Following stabilisation, it is proposed to re-position the item on the site in a location that provides an opportunity for interpretation.

The second option could be the relocation of the pillar water tank with a railway heritage organisation. Adaptive re-use in the present location is not appropriate.

Change of use

Does the existing use contribute to the significance of the item?

The pillar water tank has been out of operational use for steam locomotives for several decades. There is no longer an applicable use for the tank. Given its distinct appearance, this loss of function has a small effect on its overall significance.

What changes to the fabric are required as a result of the change of use?

Although repairs will be required to the metal reinforcing material and the fasteners, no major fabric changes are required to the tank. New footings would however be required.

Change of use (through relocation)

What changes to the site are required as a result of the change of use?

The site is proposed to be redeveloped as an Intermodal Logistics Centre and as such, the pillar water tank would need to be relocated. The re-siting of the pillar water tank on a new site would require new concrete footings and compatible fasteners to re-erect the tank.

4.5.7 Conclusion

The stabilisation and resiting of the pillar water tank on the site of the Intermodal Logistics Centre is the better option, while the relocation of the pillar water tank to a rail heritage site is a second option.

As a sole surviving item of high significance, the pillar water tank is not a candidate for demolition. If it proved necessary to demolish the item, it is recommended that a rail heritage group recover the object.

4.6 Administration Building

This brick structure was designed in the last year of the 1939-45 War and presumably was constructed soon afterward.[22] It was designed to provide offices for railway administration and consists of two levels of office accommodation, toilets, staff canteen area and a panoramic office to the northern end of the building on the upper level. The building is formed of multicoloured brick with metal casement windows with an impressive entrance and glazed two-storey lobby.

Figure 51. Administration Building at former Enfield Marshalling Yards, Northern elevation. January 2005.

Figure 52. Administration Building. Southern elevation, January 2005

[22] Proposed Staff and Office Accommodation. (Including Control Room). Drawing no.1033-35, 293. Rail Infrastructure Corporation Plan Room.

It is an ambitious building for this period in Australian history (post 1939-45 war) when building materials were scarce after six years of rationing strategic materials. For example, coal shortages and strikes in 1945-1948 produced major cuts in passenger services and freight transportation.[23] The NSW Government Railways would have had exemptions for restrictions on materials even though many building materials remained in short supply.

The building is designed with asymmetrical massing with a prominent and impressive entrance tower. The building's incongruous siting in the centre of the former Enfield Marshalling Yards left this formal entrance facing no more than a fan of sorting sidings filled with goods wagons.

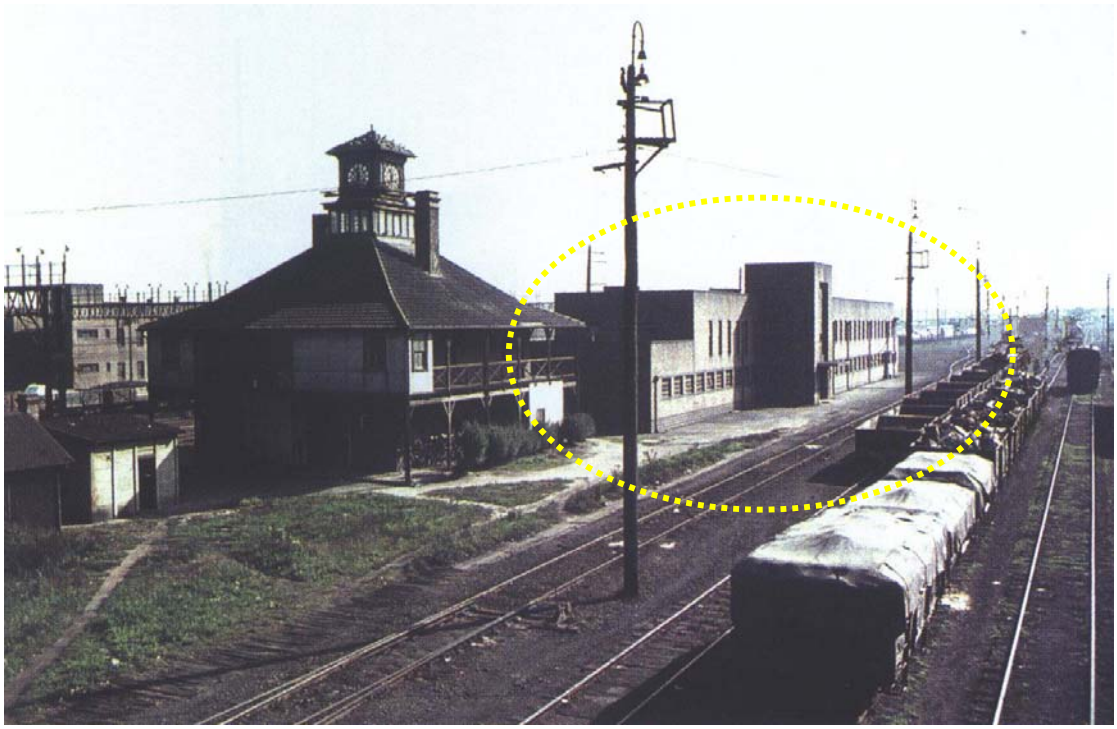


Figure 53. The Administration Building and the Yard Master's Office. 1964. Photo by Alex Grunbach, Australian Railway Historical Society, in John Oakes, Sydney's Forgotten Goods Railways, ARHS, 2001.

The building is constructed in dark red and brown brick and the concrete-capped cornice conceals a traditional gabled roof that exhausts run-off into a series of box gutters. On the top of the building behind the entrance pylon, there is a glazed skylight that allows natural light into the entrance well and staircase.

[23] John Gunn. *Along Parallel Lines. A History of the Railways of NSW 1850-1986.* Melbourne University Press, 1989, p.376

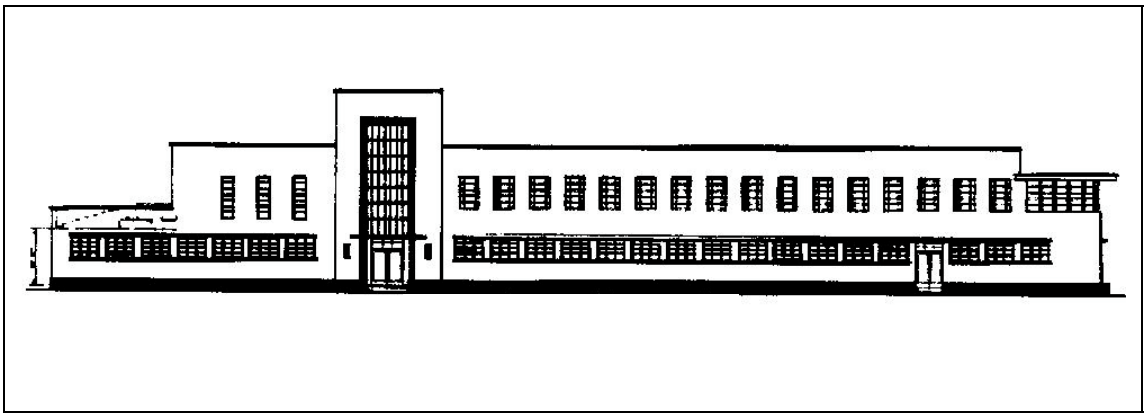


Figure 54. Eastern elevation. Administration Building. Both levels of the Northern wing consists of offices, the southern wing may have been the location of a canteen or open plan office.

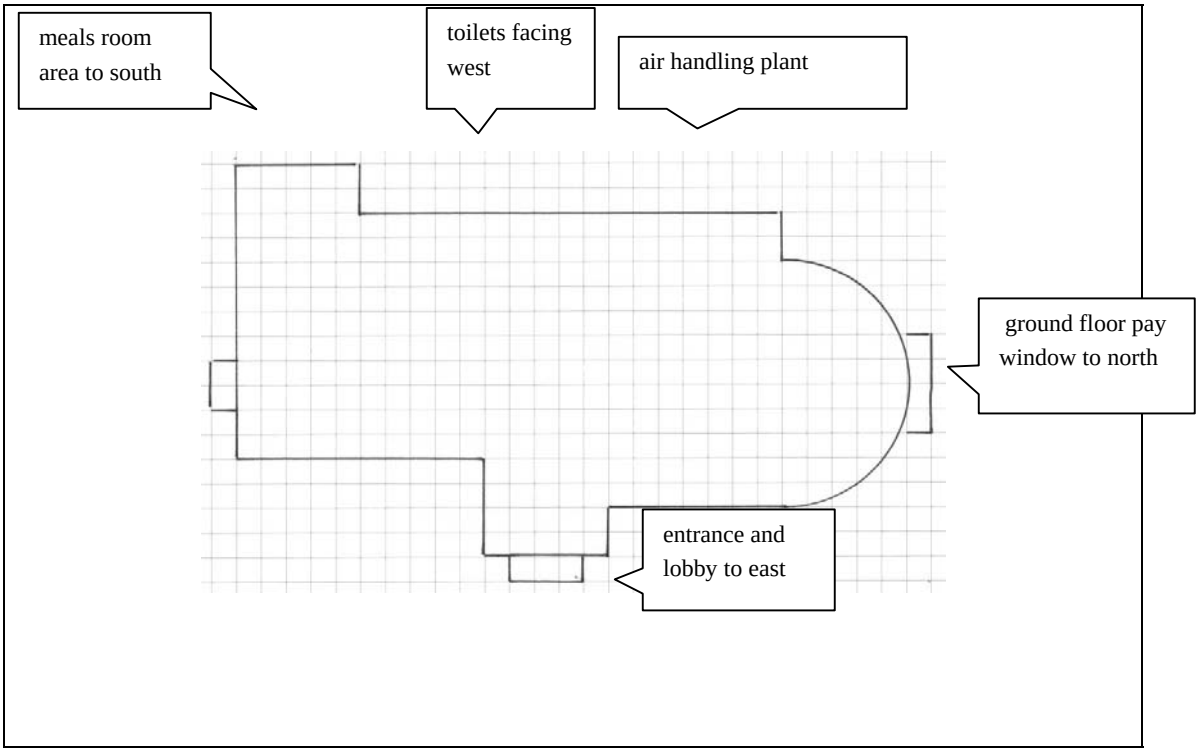


Figure 55. Outline Plan of Administration Building with functions noted.

An earlier report cites an undocumented interview with Mr Ray Morris, a former Enfield Marshalling Yard Employee who suggested that the Administration Building replaced the Yard Master's Office as the centre for the former Enfield Marshalling Yard.[24] According to this interview, the building provided:

- Yard Master's Office accommodation
- Shunter's Locker Room
- Meals Room.

Following a site inspection, the following functions can be added:

- paymaster's office
- paymaster's window
- air-conditioning plant
- toilets and wash room
- control room
- time-keeping (electric clocks fixed to the east and west elevations).

The administration building provides a panoramic office accommodation on level one with views to the north. The office is now divided in two by a north/south running wall. This room, which has been described in an earlier report, as the Control Room, has only views to the north, leaving the Yard Master with a blind side to all of the activities to the south.

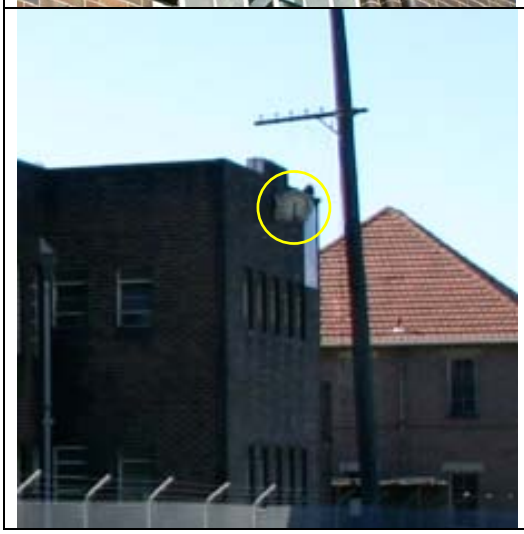
If the building were constructed in the late 1940s when radio control was something of a novelty, the Yard Master would have to control the operations of the yard with trackside telephones. This system of telephones still survives on the operating network. It is assumed, for the purposes of this study, that the Administration Building is the second location of the former Enfield Marshalling Yard Master's Office.

Figure 56. Details from the Administration Building, January 2005.

	Interior of the north-eastern section of the level 1 panoramic office.

[24] Otto Cserhalmi and Partners. *Part of the Former Enfield Yard. Heritage Assessment*. [Draft Sydney Ports Corporation. 2002, p.38

	Ornamental brickwork on western elevation. This multicoloured ornamental brickwork surrounds the building to form a visual plinth.
	Pay window on the northern elevation of the administration building.
	A cantilevered reinforced concrete beam forms a roof over each original entrance. This is the main entrance to the western elevation.
	Bakelite three-gang electric light switch. This type of material is available in the late 1940s.

	Western lobby with light well above.
	Southern-most ground level room in the administration building thought to have been a cafeteria or lunch room.
	Clock on eastern side above main entrance.
	Clock on the western side of administration building.

4.6.1 Style

The Administration Building, the only building in the former Enfield Marshalling Yard to be expressed in a 20th century idiom, is designed in a 20th century modernist style considered to have its origins in interwar Dutch brick-based architecture. The work of Willem Dudok (1884-1974) is considered to be influential. In 1927 Dudok was the City Architect for Hilversum, near Amsterdam. He designed the principal public buildings and Hilversum has become virtual museum of Dudok architecture in the Netherlands.

This interwar Dutch style was popular in Australia and has been extensively studied by architectural historians. While it is a style that lends itself to residential architecture, it was freely adapted for civic projects and factory design.

The style's characteristics can include:

1) Construction of buildings in cavity wall brick
2) Concrete cantilevered beams functioning as entrance porches and steps
3) The absence of historically-derived ornament
4) The use of multicoloured and/or shaped brick at entrances, windows, building plinths and corner
5) A symmetrical massing of building proportions
6) Wide variation in height
7) Concrete or terrazzo flooring
8) Impressive entrances with monumental glazing extending over two levels
9) Eccentric window treatments.

All of these elements are found in the former Enfield Marshalling Yard's Administration Building. There were many Australian practitioners of this Dudok- inspired style, amongst them,

- E H (Harry) Rembert, NSW Government Architects Office.[25]
  Sydney Technical College, Ultimo,
  Newcastle Technical College.
- C.W.T. Fulton, Brisbane[26]
  Townsville, Kingaroy and Roma Hospitals.
- Geoffrey Mewton, Mewton and Grounds, Melbourne[27]
  Woy Woy House.
- Best Overend, Taylor Soilleux and Overend [28]
  Cairo flats, 98 Nicholson Street, Fitzroy (1935-36) .

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[25] www.tzg.com.au/white_papers/stateofficeblock.pdf 22 Feb 2005
[26] Thom Blake. "*Efficient and modern - CWT Fulton and the development of the modern hospital in Australia."* http://www.sahanz.net/papers/webpages/modernity/abs.html.24 Feb 2005
[27] http://www.skhs.org.au/SKHSbuildings/42.htm. 24 Feb 2005.
[28] ibid.

- John R Brogan[29]
  ACI Flats, Kensington (1950-51
  Hurstville Cinema.

- Stephenson and Turner, Melbourne and Sydney[30]
  Dental Hospital, Sydney
  ACI Building, William St, Sydney
  Concord Repatriation Hospital.

The style proved popular for a variety of reasons: associated with interest in the modernist style, restrictions on steel supplies, the availability of brick, the access to skills and those Australian conditions that favour masonry construction such as terrestrial termites, climate and weathering.[31] Some samples of popular buildings in this style are shown on Figure 57.

[29] Anna Brogan. *J.R. Brogan. A Career in Practice*. Bachelor of Architecture, Dissertation, UNSW, 1994.
[30] Philip Goad, et al. *Australian Modern. Architecture of Stephenson and Turner,* 2004.
[31] Carole Hardwick. *The Dissemination and influence of Willem M. Dudok's work in the Climate of Modernism in Architecture in Australia. 1930-1955*. PhD Dissertation, University of Sydney, 1998.

Figure 57. Australian examples of Dutch or Dudok-inspired civic buildings. ca. 1938-1949.

<table>
<tr>
<td> 
Administration Building, ca.1946, former Enfield Marshalling Yards, 1964.</td>
<td> 
Hilversum Town Hall, 1928-30, Netherlands. W. Dudok.</td>
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<tr>
<td> 
King George Hospital.1940. Stephenson and Turner.</td>
<td> 
Rose plywood factory, Botany, ca.1947. Unidentified architect.</td>
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<td> 
Factory, Waterloo. 1940, SLNSW Unidentified architect.</td>
<td> 
Factory, Waterloo. 1940, SLNSW Unidentified architect.</td>
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<td> 
Newcastle Technical College. ca.1939. E. H. (Harry) Rembert.</td>
<td> 
Royal Alexandria Hospital. ca.1940. E.H.</td>
</tr>
</table>

	(Harry) Rembert
	
Unidentified Architect. Energy Australia. McEvoy Road, Alexandria	Hotel Hollywood, Surry Hills. 1940. J.M. Hellyer,

Drawing from the ten examples shown above, the asymmetrical composition of these building elevations is a commonplace architectural device. A tall brick pylon usually designates the entrance. The brick facades are unornamented with frameless window punctuations. There is a near-total absence of ornament throughout the interior and exterior although curved corners and corner windows and light-coloured cornices provide some external relief.

4.6.2 The Administration Building and the Dutch Style

The examples above illustrate that the Administration Building in the former Enfield Marshalling Yard is a characteristic brick building in the Dutch-inspired Dudok style of the middle decades of the 20th century. There are also four nearby State Rail buildings designed and constructed in this style on the Western Line to Parramatta. They include the Auburn Signal Box, the Clyde Station, Clyde Signal Box and the Granville Station. The Administration Building's uniqueness derives more from the prosaic setting in the marshalling yard than design qualities.

4.6.3 Grading of Significant Elements

The various elements of the administration building have been assessed as to their contribution to the overall significance of the property. This process examines a number of factors, including condition and technological importance.

Table 11. Significant Elements in the Administration Building

Significant elements found in the administration building	Significance
brick fabric and brick shape and colour	high significance
window and door openings	high significance
cantilevered beams over entrances	high significance
terrazzo flooring	high significance
galvanised roofing material	low significance

Table 12. Intrusive/Damaging Alterations to the Administration Building

retrofitting of air-handling equipment	high impact on significant fabric to west
retrofitting of air conditioning	high impact on significant fabric to west.
Abandonment	high impact on significant fabric from vandalism

4.6.4 Assessment of Significance

4.6.4.1 Assessment Criteria for the Administration Building

An item will be considered to be of state (or local) heritage significance if it meets one or more of the following criteria:

Criterion (a)

an item is important in the course, or pattern, of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The administration building is constructed in a Dutch-inspired architectural style that is commonplace in NSW civic buildings. Low significance.

Criterion (b)

an item has strong or special association with the life or works of a person, or group of persons, of importance in New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The administration building became the Traffic Office and the Yard Master's Office and has low significance associations with the administration of the former Enfield Marshalling Yard.

Criterion (c)

an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in New South Wales (or the local area)

The administration building is a well-designed structure, especially within the context of the NSW Government Railway's architecture of the mid-20th century. Within the state-wide context of buildings of this style, however, it is a commonplace and low significance item.

Criterion (d)

an item has strong or special association with a particular community or cultural group in New South Wales (or the local area), cultural or spiritual reasons

No significance noted.

Criterion (e)

an item has potential to yield information that will contribute to an understanding of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

No significance under this criterion.

Criterion (f)

an item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are no associations with uncommon, rare or endangered aspects of natural history.

Criterion (g)

an item is important in demonstrating the principal characteristics of a class of New South Wales' (or the local area's) cultural or natural places, or cultural or natural environments

The administration building, while unique within the former Enfield Marshalling Yard, has no significance as a class of cultural places.

4.6.5 Statement of Significance

4.6.5.1 Significance of the Administration Building

The administration building is the sole item in the former Enfield Marshalling Yard designed in a 20th century modernist style. It is a handsome building with good proportions and represents an example of a typical Dutch-inspired civic building of the mid-20th century. While its setting in the abandoned former Enfield Marshalling Yard gives the building immediate prestige, it is not considered to be a structure possessing important architectural significance when it is compared to similar buildings in that style. Due to the popularity of the style, there are many similar buildings in NSW. Graham Brooks and Associates consider that the Administration Building has no Local or State Significance.

4.6.6 Discussion

There are three options available for the administration building. They include re-use, relocation and removal.

Re-use

There are no viable options for re-use of this building on the Intermodal Logistics Centre site.

Relocation

The relocation of a brick building on this scale is almost unprecedented. The skills required and the costs associated with this process would present great obstacles to relocation.

Removal

The lack of possibilities for re-use and the prohibitive nature of relocating a building of this scale would require its demolition.

4.6.7 Recommendations

As a masonry building, the administration building does not lend itself to disassembly and relocation. The site is required for the operation of the proposed Intermodal Logistics Centre. Consequently, Graham Brooks and Associates recommend recording the building including a brief history, sketch plans, measurements and photographs, followed by demolition. The recording report for the administration building should be lodged with the Local Studies Collection of the Strathfield Public Library.

4.7 Tarpaulin Factory ["Tarpaulin Shed"]

The Enfield " tarpaulin shed" or Tarpaulin Factory located at the corner of Punchbowl and Cosgrove Roads is considered to be an assemblage of two 19th century prefabricated cast and wrought iron single bay buildings that were once in Sydney Yard (now Central Station).[32] The original two buildings located along the north-eastern border of the Sydney Yard were:

1) The Hay Shed (late 19th century);
2) The Transhipping Shed (late 19th century).[33]

Figure 58. Sydney Yard looking north from approximate position of Cleveland Street. 1920. A building resembling the transhipping shed (see point 2 above) is shown at right (yellow) State Library of NSW, Image no. 51984.

The "factory" was reassembled as two bays of a single building as shown in Figure 35. A large box gutter flowing into internal drains that exhaust through the cast iron columns that support the structure closes the inner roof slopes.

[32] David Sheedy. "Heritage Assessment of the Structure of the Former Enfield Tarpaulin Shed, NSW." NSW Rail Estate, 1995, p. 1. The 1991 Godden Mackay study, *Enfield Tarpaulin Factory History. Operations and Building Fabric.* State Rail Authority, 1991, arrives at the same conclusion.
[33] ibid, p.1-2.

The spans are formed from Howe-type truss and rest on a wall of cast iron columns bridged by wrought iron latticed beams. The east side of the shed is below grade and massive concrete supports have been poured over and around many of the cast iron beams on this side. On the western side, these cast iron columns rest on (not in) concrete footings.

Figure 59. The southern elevation of the Tarpaulin Shed. A tank stand is in the foreground. The tank was removed after 1991. January 2005.

The columns are identified in cast lettering as Pope Maher & German, Darlington Ironworks. The Darlington Ironworks, Sydney could have cast these columns or they could have been sourced from London manufacturers. London orders for iron of this quality and quantity were commonplace in the late 19th century. The roof and walls are clad with corrugated steel although an earlier form of cladding such as fibrous cement was originally used.

Figure 60. Building details. January 2005.

	Cast iron columns on the centre and western wall rest on concrete footings. They carry rainwater to subterranean drainage.

	Most cast iron columns on the eastern wall are encased in massive concrete footings.
	"Safety First" banner. Northern wall of Bay 2.
	Detail of cast iron column and lattice truss beam assembly.
	Detail of lattice truss beam. Cast iron columns are used throughout the building.

	Paired columns in the centre of the building. The box gutter closed the roof gap and rainwater was carried through the gutter to the cast iron column downpipes.

Figure 61. Interior of bay 2 of the Tarpaulin Factory, Columns are arrayed along each wall section. A toilet and shower complex (yellow) is set into the centre of the building. January 2005

The inner spans of the Tarpaulin Factory are of considerable width and would have allowed the workers to lay out the cloth for cutting, sewing, and insertion of grommets and the attaching of ropes. Many of these operations are illustrated in the Godden Mackay 1991 report.

Figure 62. A 20th century goods wagon lashed with a railways tarpaulin. State Library of Victoria.

Tarpaulins made at this shed were used for a variety of railway uses, but generally, they were fabricated to protect loads from weather or contamination from dust or from the by-products of coal-burning locomotives. Steam locomotives were used in the NSW Government Railways until 1973.

At various times, the factory also made tool covers, flags, leggings, tool bags, manchester items, ticket satchels and other railway-related items. During the 1939-45 War, canvas war material was fabricated including tents, stretchers, canvas water bags, anklets and many other items.[34]

Generally the process of forming a railway tarpaulin would be the following:

1) The weaving of an exceptionally broad width of cloth at another location
2) Cutting the cloth
3) Reinforcing the edges of the tarpaulin
4) Attaching grommets and ropes
5) Waxing the tarpaulin to keep out the weather.

Some tarpaulins also had a rot-proofing treatment added using copper salts or other compounds. It is not known if this operation was carried out for NSW Government Railway materials.

The Tarpaulin Factory also includes a combination of structures to the north of the iron building that have been described as a waxing annex. The waxing operation calls for the wax to be melted for application to the cloth and this operation would be a hazardous one and very

[34] Frank Johnson. "A short history of the Tarpaulin Factory at Enfield." *ARHS Bulletin,* September 1999.

susceptible to fire. This may account for the separation of the annexes from the main building, but only one of these four annexes, however, seems fire-resistant. This steel-framed annex is verified by the Godden Mackay study that identifies this structure as the wax dressing room.[35]

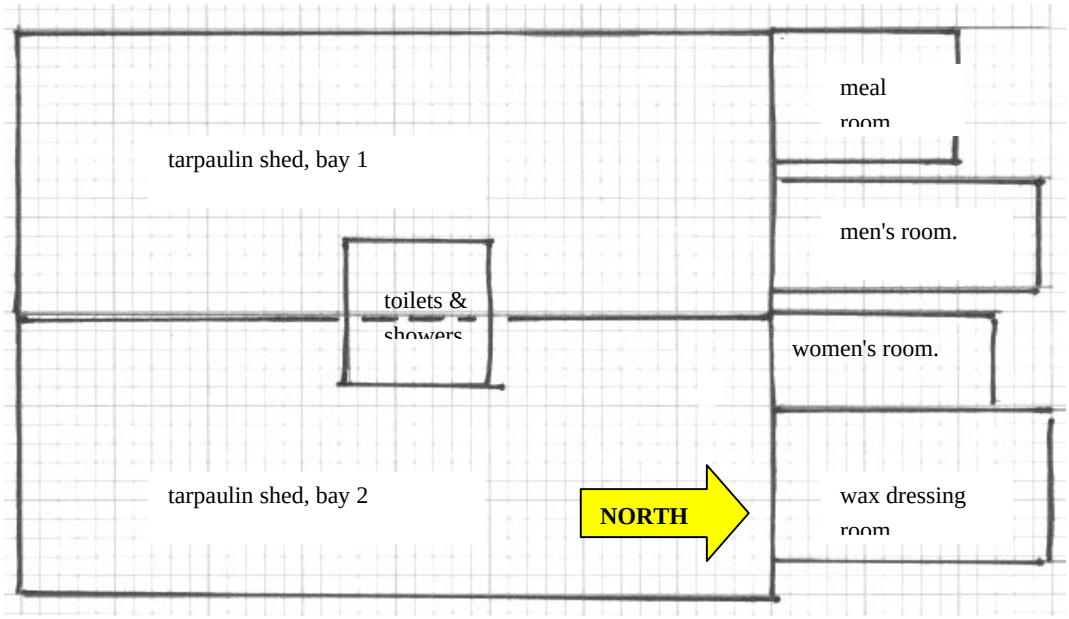


Figure 63. An outline plan of the Tarpaulin Factory and its annexes. January 2005.

The wax dressing room, also known as the "Tank Room" or "Tarpaulin Dressing Room" was also disassembled at Sydney Yard where it was known as the "Fireproof Tarpaulin Store" and reassembled at Enfield.[36] The Tarpaulin Factory continued to operate as a factory until April 1991 when the staff had dwindled to 15 from the wartime high of 81 employees.[37]

[35] Godden Mackay. *Enfield Tarpaulin Factory History. Operations and Building Fabric.* State Rail Authority, 1991.
[36] Sheedy, op. cit. p.3.
[37] Frank Johnson, op. cit.

Figure 64. Details of the Tarpaulin Factory

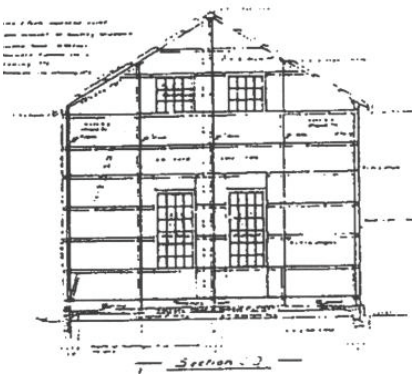
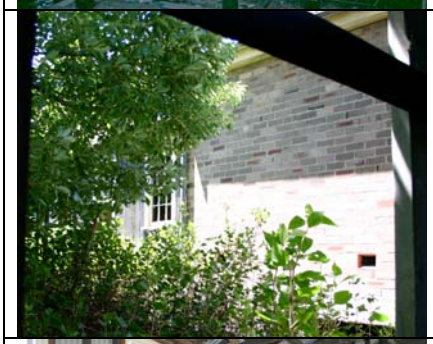
 Waxing Room, former Enfield Marshalling Yards	 Fireproof Tarpaulin Store, 1920, Sydney Yard
	Detail of women's room
	Detail of Men's room, locker and showers
	Detail of meal room

Table 13. The buildings associated with the Tarpaulin Factory.

Item	Origin	Condition	Original Date
Shed bay 1, cast iron columns, wrought iron girders, steel trusses, roofed and clad with corrugated steel. Flooring removed	Sydney Yard in 19th century, reconstructed at Enfield ca.1925	Fair to good	19th century
Shed bay 2, cast iron columns, wrought iron girders, steel trusses, roofed and clad with corrugated steel. Flooring removed	Sydney Yard in 19th century, reconstructed at Enfield ca.1925	Poor to fair, columns along eastern alignment have been encased in concrete	19th century
Waxing room, steel trusses, clad with corrugated steel, concrete flooring. Includes additional recent gantry crane	Constructed as the "Tank Room" for waxing operations, moved from unknown location	Good	1920 at Sydney Yard, then former Enfield Marshalling Yard after 1928
Women's amenities, flooring removed	Amenities, toilet, shower	Derelict	1941[38]
Men's amenities, flooring removed	Lockers and shower	Derelict	est. mid 20th c.
Meal room, flooring removed	Meals	Derelict	ca.1943[39]

4.7.1 Grading of Significant Elements

The various elements of the Tarpaulin Factory have been assessed as to their contribution to the overall significance of the structure. This process examines a number of factors, including condition and technological importance.

The assessment has identified four levels of significance, being *High, Medium or Low Significance or Intrusive*.

[38] Godden Mackay, op.cit, p.12-13
[39] ibid.

Table 14. Significant Elements in Tarpaulin Factory

Significant elements found in the Tarpaulin Factory	Significance
Cast iron columns	high significance
Lattice truss beam	high significance
Howe truss roof span	high significance as element of original building
Waxing room annex	medium significance, remains in original construction configuration
Windows	medium significance (original on west, 3 replacements on east), all original to new location or on the application of new cladding)
"Safety First Banner" (north wall)	medium significance (derelict condition)
Gantry crane	recent addition of gantry crane is of low significance
Roofing	low significance (altered)
Exterior cladding	low significance (altered)
Doors	low significance, replaced and/or altered
Internal toilets and amenities	low significance (recent upgrades)
Tank stand	low significance (tank removed after 1991)
Lighting fixtures	low significance, upgraded

Table 15. Intrusive/Damaging Alterations to Tarpaulin Factory

Meal room addition	high impact on significance. New openings forced
Men's amenities	high impact on significance. New openings forced
Women's amenities	high impact on significance. New openings forced
Concrete plinths poured around eastern cast iron columns	the removal of plinths could be difficult and could result in damage to cast iron columns
Loss of timber floor	radical alteration in appearance and ambience
Loss or internal divisions for factory work flow	shed is reduced to an empty shell
Insertion of toilet and shower amenities in the centre of building	some disruption of original span and length of structure

4.7.2 Assessment of Significance

4.7.2.1 Assessment Criteria for Tarpaulin Factory and Annexes

An item will be considered to be of state (or local) heritage significance if it meets one or more of the following criteria:

Criterion (a)

an item is important in the course, or pattern, of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The Tarpaulin Factory was an element of the 19th century Sydney Yard in the approximate location of current Central Station eastern approaches. At this location, it originally functioned as part of a 19th century Sydney Yard transhipment shed and hay shed. As an intact survivor of this historic yard, this structure's basic structural elements, columns, lattice beams and roof trusses have STATE SIGNIFICANCE.

The ca. 1920 waxing room annex was built as a "Fireproof Tarpaulin Store" at the former Enfield Marshalling Yard. While it also comes from Sydney Yard, it is a utilitarian storage structure that has no unique qualities within a state context but possesses significance in its association with the Tarpaulin Factory.

Criterion (b)

an item has strong or special association with the life or works of a person, or group of persons, of importance in New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The factory setting of the Tarpaulin Factory and the waxing room annex gives it an association with a group of NSW Government Railways employees. The 1991 Godden Mackay study which included an interview, noted that the employees came to Enfield from all parts of the city and few lived locally. Therefore, it has diminished LOCAL SIGNIFICANCE under this criterion.

Criterion (c)

an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in New South Wales (or the local area)

This class of building has unique qualities in providing an example of a cast iron column and lattice truss beam support system for a Howe roof truss. This form of construction is rare with limited examples surviving in the Sydney Mint coining factory, Macquarie Street and other industrial sites. The structural system has STATE SIGNIFICANCE.

The waxing room annex, although it survives in much of its 1920 configuration, does not contain physical structure that displays a high level of technical achievement.

Criterion (d)

an item has strong or special association with a particular community or cultural group in New South Wales (or the local area), cultural or spiritual reasons

There are no significant associations for this site.

Criterion (e)

an item has potential to yield information that will contribute to an understanding of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

The Tarpaulin Factory and its annexes have no significance under this criterion.

Criterion (f)

an item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (or the cultural or natural history of the local area)

There are very few 19th century buildings surviving that feature this form of construction of cast iron columns carrying a lattice truss beam system in the NSW railway setting.

There are many examples, however, of hollow cast iron beam columns that are used to carry rainwater in the buildings associated with the former 19th century Eveleigh carriage works.

The Howe Truss (patented in ca.1840) found in the Tarpaulin Factory is used, and continues to be used in building and elementary bridge construction. Examples can be found in many factory buildings and storage sheds. The iron column and lattice truss beam system has STATE SIGNIFICANCE. The Howe roof truss has STATE SIGNIFICANCE only in its association with the original building, but low significance solely as a construction element.

The waxing room annex is a commonplace steel structure that features conventional construction details that remain in use throughout NSW.

Criterion (g)

an item is important in demonstrating the principal characteristics of a class of New South Wales' (or the local area's) cultural or natural places, or cultural or natural environments

The former Enfield Tarpaulin Factory was operated by the NSW Government Railways from 1925 to 1991. It is the only surviving example of its kind and therefore, is of STATE SIGNIFICANCE.

The waxing room annex has STATE SIGNIFICANCE only in its association with the Tarpaulin Factory.

4.7.3 Statement of Significance

4.7.3.1 Significance of the Tarpaulin Factory

The Tarpaulin Factory is assembled from the columns, beams and trusses of the transhipment shed and hay shed at the former Sydney Yards. This yard area is now the approximate location of Central Station. These sheds date from the expansion of the NSW Government Railways at the end of the 19th century. They were fabricated from cast iron columns supplied by Pope, Maher & German, Darlington Ironworks. Darlington Ironworks was an important supplier of iron products in 19th century Sydney.

The Tarpaulin Factory operated as a tarpaulin factory from 1925 to 1991. Although most elements of the operation have been lost such as timber flooring, equipment and tarpaulins, the site has been well documented in a study by Godden Mackay in 1991. This study preserves factory methods of working, images, canvas patterns and an interview with a life-long employee of the factory. The tarpaulin factory was a unique operation amongst the NSW Government Railways infrastructure.

An annex to the tarpaulin factory, called the waxing room, was also moved from Sydney Yard where in 1920, it served as a "Fireproof Tarpaulin Store".

The waxing room annex has significance in its association with the unique factory building but it has low significance without this association. The adjacent amenities annexes to the factory building are intrusive.

As an uncommon building with unusual construction elements and as the remainder of a factory building housing the manufacture of tarpaulins for the NSW Government Railways, the two bays of the Tarpaulin Factory should be assigned STATE SIGNIFICANCE.

The former "Fireproof Tarpaulin Store" of 1920 has no unique features other than its association with the factory but must be considered to be of STATE SIGNIFICANCE because of its association with the factory. The additional amenity annexes to the two bays of the Tarpaulin Factory are derelict structures that detract from the importance of the building.

4.7.4 Discussion

There is a range of options available for the Tarpaulin Factory. They include re-use, relocation and removal. The options are summarised in tables 15 and 16. Input on these Tarpaulin Factory options should be sought from the NSW Heritage Office and through community consultation.

Re-use of the current building with minor improvements to structure

This option would call for the retention of the building in its current form to provide options for leasing to commercial or community groups.

Re-use of the building with minor demolition of structure

This would require minor selective demolition of the building to provide sunlight (partial roof removal), provision of vehicle access for loading dock or interior parking (removal of selective bays of structure).

Reuse of the building with major demolition of structure

This option would call for major selective demolition of the building to provide space for the insertion of large scale new construction for future uses.

Disassemble and Relocation

The relocation of the building to a railway heritage site would provide greater exposure for the building to a more receptive audience. The building has a history of disassembly and relocation. There would be an effect on the building's significance due to loss of context within the former Enfield Marshalling Yard.

Removal

Demolition of a building of this level of significance could not be supported.

Table 16 Benefits associated with the four options

Preservation of the factory building its current structural form	Minor selective demolition of the building	Major selective demolition of the building	Disassemble and relocate to railway heritage site
Local community heritage benefit	Local community heritage benefit	Local community heritage benefit	Site is cleared for possible future development
Lessee could be found to entire site	Revenue from sale or leases finances preservation and ongoing maintenance	Revenue from sale or leases finances preservation and ongoing maintenance	Heritage audience for building is increased at new site (dependent on institution)
Major community benefit if building is adapted for public or commercial use	Improved public access compared to present status	Some improved public access compared to present status	Open space created. Direct views of ecological area from Cosgrove Rd, residents
Cooperation from heritage regulatory bodies	History of cooperation from heritage regulatory bodies for adaptive re-use	Cooperation highly dependent on design quality of adaptive re-use	Preservation and ongoing maintenance costs are eliminated
Building survives intact leaving potential for future development	Much of building survives for active use	Some of building survives for active use	Site would be used for alternative ecological community site
Historic context of factory survives	Historic context of factory survives	Some of the historic context of factory survives	
Opportunity for interpretation	Opportunity for interpretation	Opportunity for interpretation	

Table 17 Disadvantages associated with the four options

Preservation of the factory building in its current structural form	Minor selective demolition of the building	Major selective demolition of the building	Disassemble and relocate to railway heritage site
Ongoing preservation and maintenance costs for owner or lessee	Perception of diminished heritage benefit	Perception of diminished heritage benefit	Loss of LGA community heritage benefit to another location
Security Issues	Somewhat reduced cooperation from regulatory agency. Imposition of conditions	Reduced cooperation from regulatory agency. Imposition of major conditions	Lack of cooperation from regulatory agency due to heritage impact from "loss of context"
Building code requirements	Project management variables	Project management variables	Opportunity for interpretation is diminished
Traffic generation and parking issues if building is used for community/ commercial purposes ▪ Lease for storage facility ▪ Lease for bus and truck museum ▪ Lease for indoor soccer facility ▪ Council basketball facility ▪ Garden supply outlet ▪ Council depot	Traffic generation and parking issues if building is used for community/ commercial purposes	Traffic generation and parking issues if building is used for community/ commercial purposes	Minimal traffic generation compared to the other options
Potential for increased noise and disturbance from visitors to the facility	Potential for increased noise and disturbance from visitors to the facility	Potential for increased noise and disturbance from visitors to the facility	Minimal additional disturbance from visitors to the ecological area

4.7.5 Recommendations

Within the proposed Intermodal Logistics Centre boundaries, the site of the Tarpaulin Factory is designated as a "Community and Ecological Area". This site for the "Community and Ecological Area" presently offers no constraints for the proposed Intermodal Logistics Centre.

The Tarpaulin Factory and its steel Waxing Room annex has strong associations with its setting. This suggests that unless the Tarpaulin Factory site is required for the Intermodal Logistics Centre operations, proposals for disassembly and relocation of the Tarpaulin Factory building and the waxing annex would be a less preferable option when compared to adaptive re-use of the building.

As a building possessing STATE SIGNIFICANCE, a proposal to relocate the Tarpaulin Factory would require NSW Heritage Council approval. Generally, contextual settings for heritage items of STATE SIGNIFICANCE are held in high regard.

Therefore, it is recommended that as a first option, the building be retained on site and adaptively re-used. The development of options for the adaptive re-use of the building should note tables 13 and 14 in the Grading of Significant Elements (Sec.9.1).

As a second option, the building could be relocated to a heritage rail site.

The viability of these options would require further investigation and development. The NSW Heritage Office and the Enfield community would need to be involved in this investigation to determine the preferred option.

4.7.6 NSW Heritage Office Statement of Heritage Impact Criteria

Following the potential for an option to disassemble the Tarpaulin Factory for re-erection at a rail heritage site, the following assessment of heritage impact has been prepared to test the option against the criteria established by the NSW Heritage Office, and contained in “Statements of Heritage Impact” documents in the NSW Heritage Manual. The option has been assessed against only those criteria deemed as relevant.

Change of use

Does the existing use contribute to the significance of the item?

The building has been abandoned since the closure of the factory in 1991. The flooring and many of the interior fittings have been removed.

Change of use (through relocation)

What changes to the site [or building] are required as a result of the change of use?

This building could be disassembled and re-sited to a railway heritage site with few structural modifications. Some of the columns have been encased in concrete and these columns may not be recoverable. This means that the building may lose some of its length if these columns cannot be removed from the concrete encasement without damage.

The relocation of the building could provide a greater opportunity for the building's railway heritage appreciation as well as the practical use for storage and display of rolling stock or railway artefacts.

4.8 Delec Service Centre

The DELEC Service Centre established in 1957 is an abbreviation of "diesel electric locomotive depot", an operational centre currently managed by Pacific National for the servicing of diesel and electric locomotives. The DELEC Service Centre includes the following elements.

1) Training centre
2) Two stores sites
3) Train crew amenities
4) Locomotive maintenance shed (workshop)
5) Administration building
6) Re-fuelling and re-sanding points (sand provides enhanced traction)
7) Fuel storage
8) Wheel lathe building
9) Turntable

Figure 65. The DELEC Service Centre Workshop from the southern aspect.

The DELEC Service Centre contains a contemporary wheel lathe in the wheel lathe building that is used to re-surface the steel wheels of railway rolling stock without requiring their removal from the vehicle. Advances in wheel lathe rail maintenance have continued since the Centre opened.

The original wheel lathe at DELEC Service Centre was installed in 1961 and was a major innovation in rail maintenance.[40] This 1961 lathe has been removed and the lathe process upgraded.

The wheel lathe operation is as follows:

Wheel-sets are machined on an underfloor lathe (at DELEC in Enfield) when flanges reach a pre-determined wear limit or the wheels display other faults which need rectification. In order to restore a full thickness flange, wheels may have up to 15 mm machined from their diameter. The geometry of the XPT wheels generally allows each wheel-set two full turns to restore a full flange before the wheel diameter-condemning limit is reached. Wheel-sets are changed once the wheels have reached their condemning limit on diameter and flange wear. Once any wheel on either bogie on a carriage has reached this point, the carriage is lifted and both bogies are changed as a pair.[41]

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[40] Otto Cserhalmi & Partners. *Part of the Former Enfield Yard. Heritage Assessment* (Draft) Sydney Ports Corporation. 2002. p.44.

[41] Rail Investigation Report. Derailment of passenger train 8622, Sydney – Melbourne daylight, XPT service, Australian Transport Safety Bureau.2001, p.29

4.8.1 Assessment

As an operational yard providing maintenance for diesel locomotives and electric car sets, the DELEC Service Centre provides "Best Practice" maintenance for rail operations. This means that as tools and equipment become obsolete, they are discarded and replaced.

Figure 66. The DELEC Workshop (left) and the wheel lathe building (right, circled). Otto Cserhalmi and Partners, Part of the Former Enfield Yard. Heritage Assessment, 2002.

The wheel lathe device, for example, has been replaced and updated throughout its lifespan. The original 1961 wheel lathe has been discarded.

The buildings housing these operations are conventional mid-20th century industrial buildings found throughout the NSW railway network and other industrial sites.

Table 18. DELEC Items and Assessment

Item	Graham Brooks and Associates Assessment
Training centre	Operational and conventional. No significance
Two stores sites	Operational and conventional. No significance

Item	Graham Brooks and Associates Assessment
Train crew amenities	Operational and conventional. No significance
Locomotive maintenance shed (workshop)	Operational. Conventional 1957 shop building. Low significance
Administration building	Operational and conventional. No significance
Re-fuelling and re-sanding points	Operational. No significance
Fuel storage	Operational. No significance
Wheel lathe and wheel lathe building	Operational. Upgrades have replaced the original 1961 lathe. 1961 lathe may have had significance but has been removed. Low significance
Turntable	Operational. No significance

4.8.2 Conclusion

It is the view of Graham Brooks and Associates that the operational requirements of the rail maintenance centre on this scale requires constant upgrades for the most efficient technology. This means that since the creation of the DELEC Service Centre, the technology and processes associated with its operations have undergone continuous change.

As a consequence, we conclude that the operational DELEC Service Centre and its maintenance role in the rail network have no heritage implications for the former Enfield Marshalling Yard proposal.

5.0 Council Requirements

5.1 Strathfield Planning Scheme Ordinance Heritage Schedule[42]

The former Enfield Marshalling Yard is not listed in the Strathfield Planning Ordinance Heritage Schedule.

5.2 The Draft Strathfield Local Environmental Plan 2003 Heritage Schedule[43]

The former Enfield Marshalling Yard and its contents are not listed in the Draft Strathfield Local Environmental Plan (LEP) 2003. The listing of the former Enfield Marshalling Yard site is a deferred matter under the Draft Strathfield LEP 2003.

5.3 Strathfield Council Heritage Study

A Strathfield Council assessment report carried out by Tropman & Tropman in 1999 identified the following as heritage items.[44]

1) The former Enfield Marshalling Yard

- Signal boxes
- Offices (1915) [Yard Master's Office]
- Offices (1930-40) [administration building]
- Steps [pedestrian bridge]
- Landscape yard area [as industrial landscape precinct]

2) The Tarpaulin Factory (former), Enfield, Punchbowl and Cosgrove Roads

5.4 Unlisted Items in the Former Enfield Marshalling Yard

The following items in the former Enfield Marshalling Yard have been assessed in this document although they are not described in the previous heritage study by Tropman & Tropman.

- Transhipment shed and wagon repair workshop with associated gantry crane
- Pillar water tank
- DELEC Service Centre

[44] Tropman & Tropman Architects. "Enfield Marshalling Yards, Strathfield." Memorandum, 1999 (3 pps).

5.5 Heritage in the Draft Strathfield Local Environmental Plan 2003

Although the Draft Strathfield LEP 2003 is not applicable to this site, the heritage objectives are "Best Practice", therefore, the heritage sections of the Draft LEP 2003 have been used in this assessment report rather those the provisions of the Strathfield Planning Scheme Ordinance.

The relevant sections of the *Local Environmental Plan 2003* that would apply to the Intermodal Logistics Centre proposal are as follows.[45]

Sec. 66. Objectives

(1) The provisions of this division relate to those heritage items listed in Schedule 6 and Heritage Conservation Areas listed in Schedule 7.

(2) The objectives of this plan in relation to heritage are:

> *(a) to conserve the environmental heritage of the Strathfield Local Government Area*
>
> *(b) to conserve the heritage significance of existing significant fabrics, relics, settings and views associated with the heritage significance of heritage items and heritage conservation areas, and*
>
> [...]
>
> *(d) to allow for the protection of places which have the potential to have heritage significance but are not listed as heritage items, [...]*

Sec. 67. Protection of Heritage Items and Heritage Conservation Areas

(1) When is consent required? The following development may be carried out only with development consent:

> *(a) demolishing or moving a heritage item or building, work, relic, tree or place within a heritage conservation area,*
>
> *(b) altering a heritage item of building, work, relic, tree or place within a heritage conservation area,*
>
> *(c) altering a heritage item by making structural changes to its interior,*
>
> *(d) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,*

[45] "Division 2. Conservation of Heritage," *Strathfield Draft Local Environmental Plan 2003*. pps.48-51.

(e) moving the whole or a part of a heritage item,

(f) erecting a building on, or subdividing, the land on which a heritage item is located or which is within a heritage conservation area.

Sec. 68. Advertised development

The following development is identified as advertised development:

(a) the demolition of a heritage item or a building, work, tree or place in a heritage conservation area, and

(b) the carrying out of any development allowed by Sec.67.

Sec. 69. Notice of demolition to the Heritage Council

Before granting consent for the demolition of a heritage item identified in Schedule 6 as being of State Significance, the consent authority must notify the Heritage Council about the application and take into consideration any comments received in response within 28 days after the notice is sent.

Sec. 70. Development in the vicinity of a heritage item

(1) Before granting consent to development in the vicinity of a heritage item, the consent authority must assess the impact of the proposed development on the heritage significance of the heritage item and of any heritage conservation area within which it is situated.

An assessment of the proposed Intermodal Logistics Centre against these criteria is provided below.

5.6 Discussion of the Former Enfield Marshalling Yard Items

It is the view of Graham Brooks and Associates that three items identified in the 1999 Tropman & Tropman heritage study should be deleted from any proposed listing.

These items include the

1) Strathfield North Signal Box,
2) Strathfield South Signal Box and the
3) "Landscape Area" of the former Enfield Marshalling Yard.

The signal boxes have been removed from the site and this study finds that the landscape of the former Enfield Marshalling Yard has been so radically altered that it has lost its heritage significance.

This leaves the following items for consideration against Strathfield Council's heritage criteria.

1) Yard Master's Office
2) Administration building,
3) [pedestrian footbridge] "Steps"
4) Tarpaulin Factory
5) Pillar water tank
6) Transhipment shed and wagon repair workshop with associated gantry crane
7) DELEC Service Centre

Yard Master's Office

The applicable clauses of the *Draft Strathfield Local Environmental Plan 2003* which would be relevant to this item are:

s. 67.1.(a) demolishing or moving a heritage item or building, work, relic, tree or place within a heritage conservation area

s.68. (a) the demolition of a heritage item or a building, work, tree or place in a heritage conservation area

In order to address the relevant criteria established by the applicable clauses, this report finds that the significant internal and external elements of the building have been lost and therefore this report recommends the recording and demolition of the Yard Master's Office in accordance with clause 67.1.(a) and 68 (a).

Administration Building

The applicable clauses of the *Draft Strathfield Local Environmental Plan 2003* which would be relevant to this item are:

s.67.1.(a) demolishing or moving a heritage item or building, work, relic, tree or place within a heritage conservation area,

s.68. (a) the demolition of a heritage item or a building, work, tree or place in a heritage conservation area

In order to address the relevant criteria established by the applicable clauses, this report finds that there are many NSW buildings in the style and materials of the administration building and therefore this report recommends the recording and demolition of this structure in accordance with clause s.67.1.(a) and s.68.(a).

Pedestrian footbridge

The applicable clause of the *Draft Strathfield Local Environmental Plan 2003* which would be relevant to this item are:

s.67.1.(e) moving the whole or a part of a heritage item

In order to address the relevant criteria established by the applicable clause this report finds that within its current setting and the proposed development the pedestrian footbridge will not be able to be appreciated for its heritage significance and therefore this report recommends relocation of the pedestrian footbridge in accordance with clause s.67.1. (e).

Tarpaulin Factory

The applicable clauses of the *Draft Strathfield Local Environmental Plan 2003* which would be relevant to this item are:

s.67.1. (b) altering a heritage item of building, work, relic, tree or place within a heritage conservation area,

s.67.1. (c) altering a heritage item by making structural changes to its interior.

s.67.1. (e) moving the whole or a part of a heritage item

In order to address the relevant criteria established by the applicable clause this report finds that adaptive re-use of this structure at the current site is the preferred option and therefore this report recommends an adaptive re-use of the building in accordance with *s.67.1 (b) and s.67.1 (c).*

The report also finds that relocation is a second option in accordance with s.67.1. (e).

Pillar Water Tank

The applicable clauses of the *Draft Strathfield Local Environmental Plan 2003* which would be relevant to this item are:

s.67. (1). (e) moving the whole or a part of a heritage item

In order to address the relevant criteria established by the applicable clause this report finds that the setting of the structure within the proposed development would not allow an appreciation of the significance of this structure and therefore this report recommends relocation of the pillar water tank in accordance with clause s.67.1. (e). Due to the deterioration of the concrete structure of the pillar water tank, the stabilisation of this item would be a benefit for the item.

Transhipment Shed and gantry crane

The applicable clauses of the *Draft Strathfield Local Environmental Plan 2003* which would be relevant to this item are:

s.67.1. (a) demolishing or moving a heritage item or building, work, relic, tree or place within a heritage conservation area

s.67.1. (e) moving the whole or a part of a heritage item

In order to address the relevant criteria established by the applicable clause this report finds that the setting of the structure within the proposed development would not allow an appreciation of the significance of this structure and therefore this report recommends relocation and that the building be offered to relevant organisations in accordance with clause s.67.1. (e).

The report finds that if there are no opportunities for relocation, it is recommended that the building be recorded and demolished in accordance with clause s.67.1. (a).

DELEC Service Centre

This is an operational rail service centre that has undergone continual upgrades for rail maintenance operations. The heritage assessment finds no significant heritage elements present. The requirements of Strathfield Council's *Draft Local Environmental Plan 2003* are not applicable to this site.

PART C: SUMMARY

6.0 Summary of Recommendations

The former Enfield Marshalling Yard contains eight elements/structures that were assessed for heritage significance. These include:

1) Landscape of the former Enfield Marshalling Yard
2) Yard Master's office (traffic office)
3) Transhipment shed and wagon repair workshop with associated gantry crane
4) Pedestrian footbridge (workmen's footbridge)
5) Pillar water tank
6) Administration building
7) Tarpaulin factory
8) DELEC Service Centre (operational)

The 1999 Tropman & Tropman heritage study lists two items that are no longer on the site. These include Strathfield North Signal Box and Strathfield South Signal Box. These items were removed from the site prior to Sydney Ports Corporation purchasing the site in 2001.

The results of the assessment of significance for these items are summarised in table 19.

Table 19. Summary of Heritage Registration, Assessment and Recommendations

Items	Heritage Policies and/or Heritage Registers that apply to items/structures on site									Summary
	Site Heritage Register	Strathfield Planning Scheme Ordinance Heritage Schedule	Draft Strathfield Local Environmental Plan 2003	Strathfield Council Heritage Study	State Rail S170 Register	Register of National Trust	Register of National Estate	Hyder's Engineering Assessment	Assessment of Significance by GBA	Recommendation by Graham Brooks and Associates (GBA)
Strathfield North Signal Box	No	No	No	Yes	No	No	No	No	Demolished ca. 1998	Disregard recommendation for inclusion from Strathfield Council Heritage Study
Strathfield South Signal Box	No	No	No	Yes	No	No	No	No	Demolished ca. 1998	Disregard recommendation for inclusion from Strathfield Council Heritage Study
Yard Master's Office	No	No	No	Yes	No	No	No	Yes	Local Significance due to fabric losses	Record and demolish
Transhipment shed and wagon repair workshop and associated gantry crane	No	No	No	Yes. As an element within the industrial landscape	No	No	No	Yes	Local Significance	Relocate to rail heritage site, If no interest to rail heritage organisations, record building and demolish

Table 19. Summary of Heritage Registration, Assessment and Recommendations, continued

Items	Heritage Policies and/or Heritage Registers that apply to items/structures on site									Summary
Pedestrian footbridge	No	No	No	Yes	No	No	No	Yes	Local Significance	Disassemble, retain an element on site if possible, relocate remainder to rail heritage site
Pillar water tank	No	No	No	Yes. As an element within the industrial landscape	No	No	No	Yes	State Significance	Disassemble, stabilise, retain and relocate on site
Adminis-tration Building	No	No	No	Yes	No	No	No	No	No significance	Record and demolish
Tarpaulin factory and Waxing Room Annex	No	No	No	Yes	No. Items deleted on ownership transfer	No	No	No	State Significance	Retain on site and adaptively re-use, if feasible. As a second option, the building could be relocated to a rail heritage site.
DELEC Service Centre	No	No	No	No	No	No	No	No	No significance	No heritage implications
Enfield Marshalling Yard Landscape	No	No	No	Yes	No. Item deleted on ownership transfer	No	No	No	No significance	No heritage implications

6.1 The Relocation of Heritage Items

Generally, the relocation of heritage items is considered to have significant Heritage Impact. The relevant criteria published by the NSW Heritage Office have been used to make assessments for the recommended re-siting of selected items in the former Enfield Marshalling Yards.

Three items are proposed for relocation:

1) Pedestrian footbridge
2) Pillar water tank
3) Transhipment shed and wagon repair workshop with associated gantry crane

This report notes that the Tarpaulin Factory could also be relocated as a second option to retaining it on site for adaptive reuse. The potential removal of three of four items that are proposed for re-siting has also been examined in a study by an engineering firm, Hyder Consulting, in a SPC study commissioned in 2005.[46] The results of this study are summarised in table 20. While the relocation of the Tarpaulin Factory is a possible but less-preferred option, it has been included in Table 20 for the public consultation process.

Table 20. Engineering Issues associated with Relocation.[47]

Item	GBA Assessments	Hyder Engineering Issues for Re-siting
1) Tarpaulin factory	State Significance. Re-siting to rail heritage organisation is an option	Not assessed by Hyder Consulting. Prefabricated structure intended for disassembly. Approximately 20% of cast iron columns set into large concrete footings
2) Pedestrian footbridge	Local Significance. Recommend recording and re-siting to rail heritage organisation. An element could be retained on site	Concrete walkway and stair tread not reclaimable. Timber handrails lost. Remainder of structure can be disassembled. Remedial work required for re-use
3) Pillar water tank	State Significance. Recommend removal, stabilisation and resiting in Intermodal Logistics Centre area	Technical flaws in construction led to extensive spalling of concrete. Lifting points for tank are lost. Cradle or support structure would be required for lifting and transport

[46] Hyder Consulting. Enfield Marshalling Yard. Assessment of Nominated Structures. Sydney Ports, 2005.
[47] ibid. Table adapted from the Hyder Consulting study

Item	GBA Assessments	Hyder Engineering Issues for Re-siting
4) Transhipment shed and wagon repair workshop	Local Significance. Recommend re-siting of sound fabric to rail heritage organisation, options for incorporation of material into on-site amenities. If re-siting, or re-use of elements on site is not possible, record and demolish	A significant number of the timber columns are damaged by terrestrial termites. The other elements of the structure may remain salvageable

6.2 Adaptive Re-Use

It is the recommendation of GBA, working in consultation with SPC, that there are items on the site suitable for adaptation and re-use. They include:

- Tarpaulin factory
- Pillar water tank (stabilised, re-sited but not restored to operational use)

6.3 Removal of Items

The administration building has been assessed as having low heritage significance and it is recommended that the structure be recorded and demolished. The Yard Master's Office has lost much of its heritage significance through the removal of significant elements and has been recommended for demolition also. The DELEC Service Centre has also been assessed as having no heritage significance and it could be removed if required.

6.4 Conclusion

It is the view of Graham Brooks and Associates that the deterioration of the railway landscape associated with the former Enfield Marshalling Yard has irrevocably damaged the ability of these railway heritage items to communicate their heritage significance in their current setting.

The recommendations developed in consultation with SPC seek to:

1) Stabilise and adapt two of the most significant items on the site: the Tarpaulin factory and Pillar water tank.
2) Relocate three moveable items to sites and/or rail heritage locations where they can regain their visibility and communicate their importance to a wider rail heritage audience: Pedestrian footbridge, Pillar water tank and Transhipment shed and wagon repair workshop with its associated gantry crane.
3) Remove the Transhipment shed and wagon repair workshop with its associated gantry crane, the Yard Master's Office, the Administration building and the DELEC Service Centre if their presence is incompatible with the proposed site use.

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