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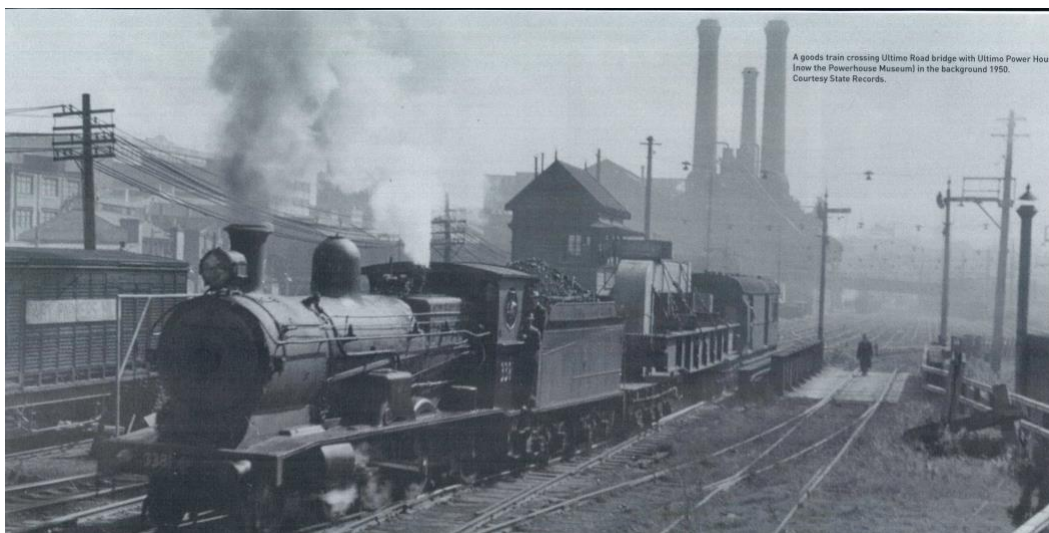
**INQUIRY INTO GOVERNMENT'S MANAGEMENT OF
POWERHOUSE MUSEUM AND OTHER MUSEUMS AND
CULTURAL PROJECTS IN NEW SOUTH WALES**

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THE DARLING HARBOUR RAIL CORRIDOR

A report on its history and potential



A goods train crosses Ultimo Road railway bridge climbing out of Darling Harbour goods yard, 1950 (State Records Office)

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A report on its history and potential

INTRODUCTION AND EXECUTIVE SUMMARY

This report provides information about the development of the Darling Harbour rail corridor and the goods yard it serviced for well over a century. The information includes some of the historical and industrial background of the suburbs of Ultimo and Pyrmont through which the corridor still passes. The report makes a case for the significance of the railway history of the precinct and suggests the potential this offers to any imaginative approach to its interpretation.

Lastly, the report includes references to publications and images that could be used in the development of an interpretive narrative. This narrative could enrich the experience of future visitors to the site and evoke the now little known past of railway operations that was once a key element of the day-to-day functioning of the emerging industrial city of Sydney.

The Darling Harbour rail corridor was established in 1853 with the purchase by the Sydney Railway Company of a strip of land that linked Sydney railway yard with a proposed goods terminus on the waterfront at Darling Harbour.

This corridor holds primary significance in terms of railway heritage. Within a 300 metre length, it follows the oldest railway alignment in New South Wales and contains

- the oldest railway structure in the state (a sandstone arched tunnel under Railway Square)
- a unique feature of rail construction (the “gauntlet track”) and
- the oldest wrought iron triple girder railway bridge in the state

All these features and others are visually or physically accessible to the public who would generally be unaware and unsuspecting of the fascinating history of this important aspect of Sydney’s industrial past.

The secondary significance of the corridor lies in its importance to the economic and industrial history of Sydney and New South Wales, in serving the largest goods yard in Australia (Darling Harbour) through which passed countless millions of tonnes of agricultural produce and manufactured goods, both exported and imported.

Just as the suburbs of Ultimo and Pyrmont show evidence today of enduring several eras of boom and bust as they variously found purpose in rural, industrial, residential and more recently recreational and cultural activity, so too the rail corridor has witnessed these changes to survive – but only just – perhaps to be considered for a more imaginative and assured future in cultural tourism.

Historical significance

The Darling Harbour Rail Corridor is of immense importance to the history of the NSW railways. When the first train operated to Parramatta on September 26th, 1855, a branch line had already been constructed to Darling Harbour.

According to the State Heritage Register, the Darling Harbour Rail Corridor has “a high degree of significance as a place”, and the location of the corridor has been a major influence in shaping the development of Ultimo and Pyrmont.

The Ultimo Estate

In 1803 surgeon John Harris was granted by the then Governor King 34 acres (14 hectares) of land which now forms much of the suburb of Ultimo. Harris was later granted more land and, by 1818, combined with his additional land purchases, he owned 233 acres (94 hectares) of what is now Ultimo, Pyrmont and part of Haymarket. This land was bounded by Cockle Bay (Darling Harbour from 1826) on the north-easternside and Blackwattle Bay to the south-west. The naming of Cockle Bay has significance in reflecting the accumulation of aboriginal shell middens found on its shores when the area was first explored after European settlement.

The name “Ultimo” was given to the house Harris built on the estate to celebrate the dismissal of a charge that otherwise would have brought him to court by politically motivated rivals. The charge incorrectly cited the incident as having taken place during the previous month (“ultimo”) rather than the present month (“instant”) and, seizing on this error, Harris’s counsel had the charge dropped.

John Harris’s vision was to create a country estate on the land that could be surveyed from the high ground where Ultimo House was situated. This was never realised, partly because the estate’s poultry, sheep and deer were poached by convicts and soldiers billeted near the local brickworks. Meanwhile, on the other side of Parramatta Street (later Road), polluting industries such as abattoirs and boiling down works began to spring up around the waters of Blackwattle Creek that flowed into Blackwattle Bay on the swampy south-western boundary of the estate.

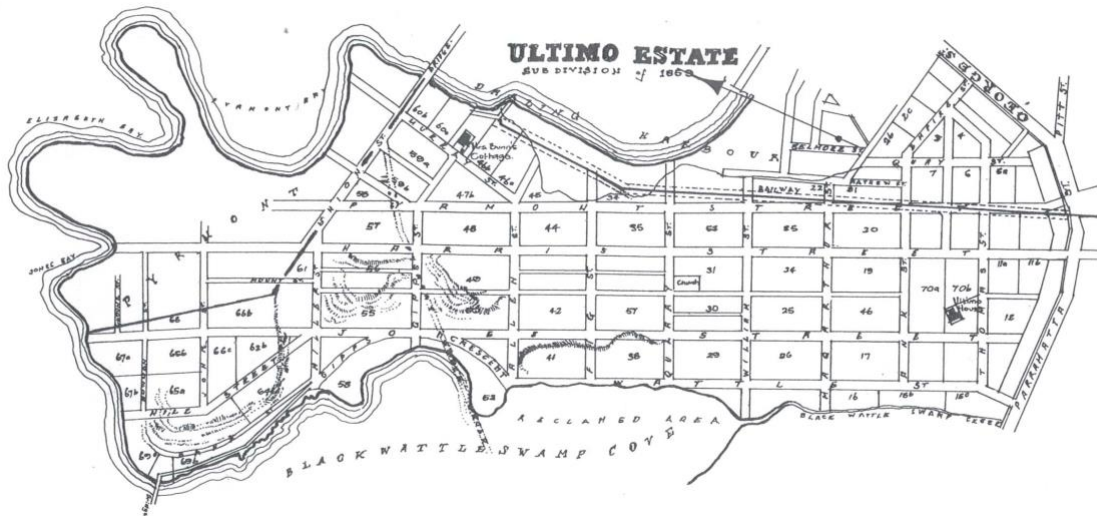
The mud flats bordering the Ultimo Estate and adjoining Pyrmont were a continuing source of problems in the development of the peninsula. The most immediate problem related to difficulty of access by water, partly alleviated when the first bridge linking the city directly with Pyrmont was opened in 1858. Another problem was the threat to public health caused by poor drainage of polluted water.

A little disillusioned with his unrealised vision for the estate, Dr Harris moved out in 1821 to find more agreeable property and Ultimo House was leased to other holders of high office. By 1831, that part of the estate facing Parramatta Street was sold off for commercial development, mostly for a string of public houses.

Harris died in 1838 and, after very protracted legal arguments about the division of his estate to his family, parts of the land around Ultimo House were eventually sold off. During this period, the resulting legal arguments about the division of the estate to his family delayed resolution until 1859 of how Ultimo would be subdivided. In contrast the subdivision of neighbouring Pyrmont into small holdings

began as early as 1840. Almost all the road traffic between the two localities passed along Harris Street which followed a centre line linking the two communities.

From 1853, the future of the Harris family's Ultimo Estate and of the Ultimo-Pyrmont peninsula became entwined with the development of the Darling Harbour railway.



Subdivision of the Ultimo Estate, 1859, showing original alignment of Darling Harbour goods line (Source: Matthews, 1982)

The railway to Darling Harbour

In 1853 the Sydney Railway Company acquired a strip of seven acres (three hectares) of land from the Ultimo Estate to build a line to a terminus and in due course goods yard on the land adjacent to Darling Harbour. Works were undertaken to complete the line via a tunnel under Parramatta Street (now Railway Square) and running parallel to Harris Street until it diverted towards the shoreline of Darling Harbour.

Built under the supervision of engineer William Randle in 1853-4, the original sandstone arch of this tunnel remains intact today and is the oldest surviving railway engineering structure in New South Wales. The path of the railway through the tunnel and along the rail corridor to Ultimo is also historically significant as the oldest unchanged alignment in the state. In addition, the 1 in 37 grade of the line at this point is among the steepest in the network.

Inherited by the Department of Railways when the Sydney Railway Company folded, the Darling Harbour line proved to be ill-conceived as a branch line to a goods terminus. The need to reclaim land from the swampy tidal conditions in Darling Harbour delayed wharf development and the existing terminus at Redfern proved adequate until the early 1870s.

The railway embankment forming the alignment of the Darling Harbour line was not well served by drainage culverts, which blocked up and trapped waters behind the embankment. This converted parts of the adjacent land on the southern side to a boggy and unusable state. Eventually, a government enquiry was held in 1864 resulting in compensation to the Harris family.

In its initial period of operation, the Darling Harbour line was only used by the Railways Department for transporting coal and ballast from a small jetty built on Darling Harbour to the railway yard at Redfern.

Reclamation of the mud flats of Darling Harbour during the 1870s finally provided favourable conditions for wharf construction, coinciding with an increase in freight traffic that outstripped the capacity of the goods yard at Redfern. A major wharf was built at Darling Harbour in 1876, more land was acquired by the Railways and goods traffic to and from Darling Harbour steadily increased. Wool stores, engineering works and other industrial buildings increasingly typified the Darling Harbour landscape.

Companies dependent on the railway to transport their goods to and from Darling Harbour used dedicated sidings adjacent to their works. Notable among these were businesses producing perishable produce, such as meat and dairy products. Sydney Cold Stores and Dairy Farmers had sidings and platforms bordering the line to the south of Ultimo Road. In 1879, the first refrigerated meat left Darling Harbour for export to England.

By the early 1890s, a yard of tracks had been constructed on reclaimed land adjacent to the wharves to handle the delivery of coal for export. By 1900, the yard extended along the entire shoreline of Darling Harbour which by now was handling shale, metal, timber, wheat and wool for export.

Another important historical aspect of the Darling Harbour rail corridor is its close relationship to Sydney's tramway network. In 1897, the site for the Ultimo Power House was strategically located next to the Darling Harbour branch line, and by 1899 the completed facility began generating power for Sydney's fledgling electric tramway system. The boilers that provided the steam to generate the electricity relied on a constant supply of fuel, assuring a steady traffic in coal trains on the line for this purpose alone over the next 50 years.

In time, Darling Harbour was to become the largest railway yard in Australia, covering 35 acres (14 hectares). From 1915, a system of goods lines (the Metropolitan goods line) was constructed to allow rail traffic to arrive and depart from the Pyrmont end of the yard.

The Darling Harbour yard remained in high demand for goods train traffic until the 1950s but by 1960, plans were underway to develop a new seaport facility for handling bulk produce at Port Botany. Increased use of road transport, the declining use of Port Jackson (Sydney Harbour) for shipping and from the 1970s, widespread adoption of containerisation in the transport industry hastened a general scaling down of rail traffic along the goods line to Darling Harbour. The last train to be loaded at Darling Harbour left the freight yards in October 1984, concluding 130 years of railway activity on the Darling Harbour line.

In the early 1990s, construction work on the conversion of a portion of the former Metropolitan Goods Line commenced between Ultimo and Pyrmont for its use by a proposed new light rail line. The track was re-laid (curiously, to freight rail standards) and in 1997, the light rail system began operation. This constituted the first regular rail passenger traffic on the Darling Harbour corridor.

In 1979, the NSW Public Works Department prepared a proposal to the State Government to relocate the Museum of Applied Arts and Sciences to the now disused Ultimo Power House. Included in the proposal were sketches providing impressions of the completed Museum. One showed a steam hauled passenger train located at a proposed new railway platform at the new Museum.

The closure of the Darling Harbour line to freight traffic in 1984 provided the first opportunity to develop this idea but it was not until 1992 that it became a practical reality. In that year, the then State Rail Authority re-laid the track running directly past the Powerhouse to create a dedicated siding into the Museum's premises. The Museum used the siding facility periodically for the operation and display of heritage trains until the Ultimo Road bridge was booked out of service in 2004 pending repair work being carried out. These special train operations were a reminder of the historical significance of the Darling Harbour line and of the access that it still provides to a formerly derelict, gradually recovering urban precinct. The Museum has since organised several special train displays on the rail corridor for Ultimo Science Week but only on the southern side of the Ultimo Road bridge.

Apart from the Powerhouse Museum's continued use of what remains of the Darling Harbour line for railway exhibits and special trains, there is other potential for the use of the line, inviting further investigation. This includes the extension of the light rail system to provide a shuttle service between Ultimo and Redfern/Eveleigh and the use of the track for cultural tourism either on foot or by specially modified railway tricycles operating in convoy.

Features of the Broadway-Powerhouse Museum section

Sadly, the redevelopment of the former Darling Harbour Goods yards in 1984-88 saw the destruction and loss of almost all the physical evidence of railway and shipping activity in the area. Despite the significance of the rail corridor, its physical features and its related structures have suffered badly through a lack of realisation of their significance or their heritage or tourism potential, leading to their complete loss in some cases or at least their neglect. However, by chance rather than by intent, there is still evidence of several highly significant structures in the first section of the Darling Harbour line that could be used to enhance a present day visitor's experience and understanding of the rail corridor and its remarkable industrial history.

The sandstone arch tunnel under Parramatta Street (now Railway Square) constructed by William Randle in 1853-4 remains intact and now lies at the centre of the tunnel (strictly speaking an "overbridge") that was extended at each end to accommodate the widening of the roadway above it. As the oldest railway engineering structure in the state, it is of very high significance in heritage terms. In the mid 1990s, the then Rail Services Australia constructed a steel truss

framework inside the tunnel to bear some of the load borne by the arch which is still clearly visible.

From the mid-1950s, the electrification of the Western line required certain freight traffic hauled by 46 class electric locomotives to travel on the Darling Harbour line and this in turn created the need to install overhead wires through the Railway Square tunnel. As the stone arch did not provide enough head room above the double tracks, the tracks were rebuilt inside the tunnel in a unique overlapping configuration which allowed enough vertical space to install the wires at the highest point of the tunnel. This so-called “gauntlet track” was then and remains today a unique engineering feature of the NSW railway network.

When trains approached the Broadway tunnel in the last decades of operation of the Darling Harbour yard, drivers would be required to come to a halt at an electric acceptance signal for Sydney Yard until the signal gave the driver clearance to proceed. The acceptance signal, code numbered “SY80” (Sydney yard signal box, No 80) is still mounted in its original position high on the wall near the tunnel entrance facing towards Ultimo Road.

Thirty metres north of the acceptance signal at ground level is the remaining brick platform facing and stone coping that would have been originally built to service one of the railway sidings that once existed at that point. Most of the former sidings on this portion of the line were built to facilitate loading or unloading of refrigerated goods for companies such as Sydney Cold Stores and Dairy Farmers. This platform may have been used for this purpose.

Crossing Ultimo Road is a wrought iron, triple plate-web girder railway underbridge with brick and stone abutments that was completed in 1879 with a 66 foot (21.64m) span. The bridge replaced an original timber beam bridge that carried a single line over the roadway. Even though this iron bridge is a second generation structure in the history of the Darling Harbour line, it is the oldest of its type extant in NSW and is very significant in engineering terms. The bridge’s load capacity was increased in 1900 by the addition of cast iron columns supplied by the Sydney iron merchants Pope and Maher that shortened the span to 50 feet (15.25m). In 1907, an additional span was added to carry two more tracks but this was removed in the 1970s. The bridge remains intact but is seriously at risk because of prolonged structural decay.

Just to the northern side of the bridge is the brick foundation of the former Ultimo Street (sic) signal box. With the increase in goods traffic during the 1880s, it became necessary to install a signal box at the head of the Darling Harbour yard at Ultimo Road. The original box was opened in July 1890 but replaced by an improved design in June 1908 with the advent of power interlocking in the railway network. This signal box remained basically unchanged through its life until the yard closed for freight traffic in 1984. It lay dormant until 1996 awaiting funds for its preservation. In March of that year, it was deliberately burnt to the ground in bizarre circumstances involving a drug dealer who had imprisoned a criminal associate in the box with the intention of murdering him in the conflagration. The intended victim reportedly survived but, sadly, the box did not. Remnant metal features of the box have been retained by the Powerhouse Museum and the original framed sign from the side of the box reading “ULTIMO STREET SIGNAL BOX” was fortuitously removed in the mid 1980s and acquired by the Museum.

About thirty metres beyond the bridge on the Harris Street side of the line is the original site of a sandstone and brick arch culvert that was unearthed in 2003 during excavations for a new Transgrid building, later constructed next to the former signal box site. Research by a consultant archaeologist indicated that this almost certainly dated from about 1853 when the embankment for the Darling Harbour line was built. Culverts enabled drainage of water that otherwise would accumulate against embankments and other physical barriers. This one was built to permit the flow of water from a local creek to continue under the embankment and eventually into Cockle Bay. Detailed records were made of the culvert and both the brick and sandstone arches were preserved by the Sydney Harbour Foreshore Authority. The stones were numbered, disassembled and stored, with the intention of re-erection and interpretation near their original site (that site having been built over) at some future date.

Approaching the Powerhouse Museum's Harwood Building from the Ultimo Road bridge, a cast iron plate water tank and steel support framework lies, awaiting an uncertain future. The tank was rescued by the Museum in the mid-1990s from a redevelopment site at Sydney (Central) Station where it had been used for watering the steam locomotives that served the goods terminal to the west of the station (West Shed). The Museum's original intention was to re-erect the water tank and use it for continued steam locomotive operations to and from the Powerhouse but this was not realised. Despite its lack of direct relationship to the Darling Harbour line, the tank is similar to others long ago demolished that were used in the precinct. The structural integrity of the water tank has suffered badly with many years of exposure and this may prevent any practical outcome.

The Harwood Building and the Powerhouse Museum are highly significant industrial structures that, in their original form as Ultimo Tram Depot (or car shed) and Ultimo Power House respectively, had a close association with the Darling Harbour line in the first half of the 20th century. The Power House was located adjacent to the Darling Harbour line for the convenient delivery of coal by rail and was completed in 1899. The neighbouring Depot was designed to accommodate 108 tramcars, the first of which departed for service on the Pyrmont-George Street line on 8 December 1899. Over the next fifty years, many changes and extensions were made to both the Power House and the Tram Depot to improve their capacity or efficiency, all of these changes being evident from the adjacent rail corridor. However, the most dramatic change in the appearance of these buildings came with their redevelopment in the 1980s as the two most important elements of the Powerhouse Museum project.

References and resources

Publications

Fitzgerald, S, and Golder, H, *Pymont & Ultimo: Under Siege*, Halstead Press, Sydney, 2009

Gunn, J., *Along Parallel Lines*, Melbourne University Press, Melbourne, 1989

Johnson, W and Parris, R, *A History of Sydney's Darling Harbour*, Sydney Harbour Foreshore Authority, Sydney, 2008

Matthews, M.R, *Pymont & Ultimo: a History*, Pymont Ultimo History Project, Sydney 1982

Power House Tram Depot Ultimo, Department of Public Works, Sydney, 1982

Preston, R.G. *125 Years of the Sydney to Parramatta Railway*, NSW Rail Transport Museum, Sydney, 1980(?)

Sydney City Council, *Ultimo Pymont Ecology Study*

Taaffe, R.T, *The Development of Railway and Tramway Signal Boxes in New South Wales 1855-1912*, Master of Building Science thesis, University of Sydney , 1985

Web links

Darling Harbour railway yard:

http://en.wikipedia.org/wiki/Metropolitan_Goods_railway_line

Ultimo Road underbridge:

http://www.heritage.nsw.gov.au/07_subnav_01_2.cfm?itemid=4801501

History of Ultimo and Pymont:

http://www.powerhousemuseum.com/exhibitions/paradise_early_pymont.php

<http://www.dictionaryofsydney.org/entry/ultimo>

Historical maps of Sydney:

<http://www.photosau.com.au/CoSMaps/scripts/home.asp>

Contacts

History of Darling Harbour

Dr Wayne Johnson, Sydney Harbour Foreshore Authority,
Brick and stone culvert near Mary Ann Street

Dr Susan McIntyre Tamwoy, archaeologist,

Images

Images relating to the history and development of the Darling Harbour rail corridor may be found in several public collections including the Powerhouse Museum, State Library of NSW, State Records Authority and the City of Sydney Archives.

Following are some links to examples of images in publicly accessible libraries:

State Records

<http://investigator.records.nsw.gov.au/asp/photosearch/photo.asp?12932-a012-a012X2443000056>

Powerhouse Museum

<http://www.powerhousemuseum.com/collection/database/?irn=65967&search=darling+harbour&images=&c=&s=>

City of Sydney Archives

<http://www.photosau.com.au/cos/scripts/ExtSearch.asp?SearchTerm=044513>

State Library of NSW

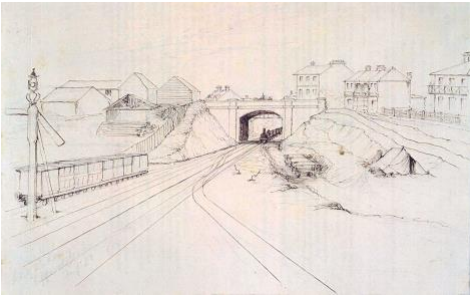
<http://acms.sl.nsw.gov.au/item/itemDetailPaged.aspx?itemID=421573>

National Library of Australia

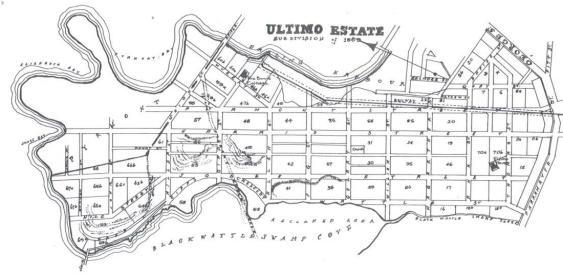
http://nla.gov.au/nla_map-nk6485

A selection of other images relevant to the text of this report is presented below in thumbnail form.

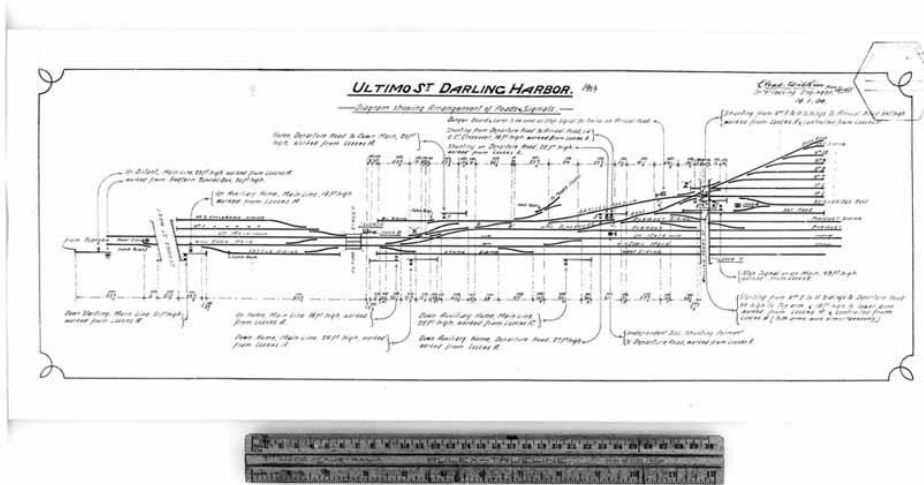
Note: Some of the images shown in this report have incomplete attributions, so for copyright reasons the report is not intended for general distribution.



Cleveland Street tunnel with Darling Harbour dive in foreground, 1856 (SLNSW a1572029h)



Subdivision of the Ultimo Estate, 1859 (Matthews,1982)



Ultimo Street signal box diagram 1904 (State Records Office - SRO)



Ultimo Power House c1920 (SRO)



Ultimo Tram car Shed c1910 (SRO)



Tunnel under Railway Square



Acceptance signal



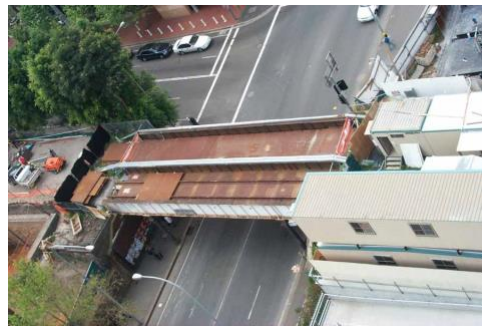
Brick and stone goods platform



Ultimo Road wrought iron bridge



Ultimo signal box c 1984



Ultimo Road underbridge 2002



Brick foundation for Ultimo Street signal box



Goods train, Ultimo Road bridge 1950 (SRO)



Cast iron columns, Ultimo Road bridge



Water tank, ex-West Shed, Sydney station



Interior of Ultimo signal box c1984



Heritage diesel train on PHM siding 2002



Excavating stone & brick culvert, 2003



Display of diesel rail cars 2006



Loading trucks with wool bales opposite tram depot, 1950s
(Frank Hurley – National Library of Australia FH 9591)