

2.2.4 The Powerhouse Museum (1981 to Present)

Brief History of Museum of Applied Arts and Sciences

The Museum of Applied Arts and Sciences (MAAS) has undergone many changes during its 140 year history. Founded in 1880 following government acquisition of exhibits from the 1879 Sydney International Exhibition, and known initially as the Technological, Industrial and Sanitary Museum of NSW, the museum suffered an early loss with the devastating fire that destroyed its first residence in the Garden Palace in Sydney's Royal Botanic Gardens in 1882. With the majority of the collections lost, the museum was re-established in the Agricultural Hall in the Outer Domain in 1883, under the curatorship of Joseph Henry Maiden. The conditions of the former Agricultural Hall proved to be woefully inadequate to house and maintain the museum's collection, and in 1893, the Technological Museum finally moved into its own purpose-built home on Harris Street, Ultimo, within the Technical College, where it remained until 1988.

The Powerhouse Museum has a history spanning 120 years. Conceived in an era when technology, industry and sanitation were thought to be the keys to a better society, the new institution, based on the latest developments in London, set about collecting 'typical collections of all materials of economic value belonging to the animal, vegetable and mineral kingdoms, from the raw material through the various stages of manufacture to the final product or finished article ready for use'.⁷⁶

Establishment of the Powerhouse Museum in Ultimo

From the closure of the Ultimo Power House in 1963 until the late 1970s, a wide range of options of what to do with the now defunct Power House site were explored, with potential options ranging from total demolition of the site, through to full reconstruction and intervention. This period of contemplation of the Power House's fate coincided with a period during which the Museum of Applied Arts and Sciences were investigating options for relocation from their now-unsuitable location nearby within Sydney Technical College. Both the options for the future of the Power House, as well as the relocation of the Museum of Applied Arts and Sciences, were also influenced by the ongoing process of de-industrialisation of Pyrmont and Ultimo that had been occurring since the 1950s.

Suggestions for use of the Powerhouse site for a museum were made as early as 1964, when plans were made to convert the former Ultimo Tram Depot (Harwood Building) to a Transport Museum—although these plans were initially abandoned when it appeared there was a conflict with the route of the 1965 Western Distributor.⁷⁷ However, when the freeway plans were finally curtailed in 1977 avoiding the Power House site, the possible use of the site as a Museum re-emerged.

On the 13th of August 1979, NSW Premier Neville Wran announced the Ultimo Power Station and Tram Depot was to become the new home of the Museum of Applied Arts and Sciences. Dr Lindsay Sharp was appointed as the Director to oversee the transition of the site to the new museum space, and the plan commenced with the resumption of the William Henry to Macarthur St block by the Public Works Department in 1980. The 1980s design of the Powerhouse Museum was coordinated by the NSW Public Works Department in close association with the Powerhouse Museum in-house design team.

A heritage report prepared in the early 1980s (Godden et al, 1984) reported upon the condition of the former Power House buildings at the time, (although the adaptation of the former Ultimo Tram Shed was undertaken prior to this assessment, without detailed heritage assessment and recommendations prepared prior to development impacts).

Many of the features of the Power House extant in July 1982 have already been removed. Included in the features removed are the massive concrete engine pads on which the 20,000 kW Parson's turbines were mounted, the tiled walkways which surround them, the switchboard gallery on the western wall of the engine room, the bus-bar cabinets in the switch house and the hoppers and columns at the north end of the boiler house⁷⁸

While the 1984 report made a number of recommendations for retention of the Power House industrial equipment and machinery in its adaptive re-use and interpretation, the majority of these recommendations were overridden in the design process for budgetary and time reasons.

...the Overview Group listed a number of exhibitions that had to be 'stand alone' from the thematic organisation because of their spatial requirements'. This included orientation (with a notional space of 500 sq metres), history of the museum (50 sq. metres), history of the powerhouse (50 sq. metres), a discovery room, an information centre and models in the north annexe. On this basis the 'history of the powerhouse' was allocated 50 metres out of 11,200 metres of allocated space. The history and meaning of the powerstation and the tramway system did not loom large in the mindset of the curators, the directorate, designers, consultants, or anyone else associated with this start-up phase when both the museum and as many exhibitions as possible had to be opened to a political and financial deadline.⁷⁹

Works undertaken to the former Power House buildings in the adaptive reuse of the site as the Powerhouse Museum mostly resulted in the industrial buildings remaining as shells only, with most original equipment, plant, machinery, and finishes removed, refit with modern exhibits, amenities, and services as required for the modern museum. The substantial bulk of the alterations and additions to the Powerhouse site were focused along the Harris Street frontage, including construction of the new Wran Building.⁸⁰ The water conduit (Water Cooling System and Manifold) connecting the Power House and Darling Harbour was repurposed to serve as part of the museum's air conditioning system (and continues to do so to this day). According to project architect Lionel Glendenning, the design of the Wran Building responded to the 'the golden mean proportion' of the Turbine Hall, with Vault 1 making architectural reference to the Museum of Applied Arts and Sciences' first home in the Garden Palace, and Vault 2 referring to the arches of the Boiler House.⁸¹

The existing buildings, which include the former turbine, switch and boiler houses, have been stripped back to the bare essential structure. Exhibits, including airplanes, motor vehicles and helicopters, are hung in space. The new work was largely confined to the Wran Wing, a barrel-vaulted room, partially glazed with an external colonnade along Harris Street. From the entry, ramps, escalators and lifts lead the visitor to the various parts of the museum and the interactive displays.⁸²



Figure 2.22 Engine Hall at Ultimo Power House being redeveloped as part of Powerhouse Museum Stage 2, c. 1986 (Source: Powerhouse Photo Library 00239730.jpg)



Figure 2.23 Turbine Hall c. 1986 (Source: Powerhouse Photo Library 00215888.jpg)

Stage One of the Powerhouse Museum at Ultimo was opened by NSW Premier Neville Wran on 4 September 1981, and consisted of the adaptive re-use of the former Ultimo Tram Depot as a temporary public gallery, conservation and fabrication area and storage space (Figure 2.24). A commemorative time capsule was buried in the Mary Ann Street carpark at the 1981 opening, with items including a 1981 bottle of Penfold's Grange red wine, a Space Invaders Game, newspapers, a UBD street directory, Sydney telephone books, and photographs of the museum trustees and staff⁸³ (Figure 2.26 and Figure 2.28). In 1984 the Ultimo Tram Depot was formally renamed the Harwood Building, in honour of Norm Harwood, a former curator of the Museum of Applied Arts and Sciences.

Stage Two of the Powerhouse Museum at the Ultimo site opened on 10 March 1988, constituting the adaptive re-use of the former Power House buildings along with the newly constructed Wran Building (Figure 2.30). The new museum was well received and was awarded the Sulman Award for architectural merit for that year. With the opening of Stage Two of the Powerhouse Museum, the exhibits temporarily located in the Stage One development (i.e. the Harwood Building), were relocated across to the Power House buildings and the Harwood building was converted into conservation labs, collection storage and office space. While the construction of the Wran building was innovative for its adaptive reuse of the site at the time, it also impacted the visibility and readability of the existing heritage buildings within the site, including the former Power House buildings, and the Ultimo Post Office.

The re-design of the power house into a museum won numerous awards including the Sir John Sulman Medal in 1988, the Australian Institute of Architects (AIA) National President's Award for Recycled Buildings, the NSW AIA Chapter Belle Interiors Award for Interior Design and was a finalist for the National Sir Zelman Cowen Award. The Powerhouse Museum re-purposing of a former industrial complex influenced other adaptation projects in NSW, Australia and internationally. (e.g. Casula Powerhouse, Carriageworks in NSW; Brisbane Powerhouse, Longreach Powerhouse & Historical Museum. in Queensland; Spotswood Pumping Station conversion into Scienceworks, the Malthouse Theatre in Victoria; and adaptive reuse of Blackhawk Generating Station into Beloit College Powerhouse, Wisconsin USA.)⁸⁴

The opening of the Sydney Monorail in July 1988 provided access to the new Powerhouse Museum from Darling Harbour, and included construction of a nearby station (named Powerhouse Museum Station in 2002⁸⁵) and a covered walkway from the station to the Powerhouse Museum. The monorail line was raised and ran past the Boiler Hall aside the light rail line.



Figure 2.24 Harwood Building southern exterior and forecourt, 1987 (Source: Powerhouse Photo Library ST1-SMN-65-37A.jpg)



Figure 2.26 Greg Piper, Powerhouse Museum Stage 1 time capsule in situ, 4 September 1981 (Source: Powerhouse Photo Library 00238313.jpg)



Figure 2.25 Premier Neville Wran announcing the Powerhouse Museum Project, 1979 (Source: Powerhouse Photo Library 00224476.jpg)

“How do you get 54 tonnes of locomotive, tender and railway carriage inside a new museum? Easy-you build 120 metres of railway track over the floor and push it in”

Figure 2.27 “Hidden treasures” go on show’ (Source: The Australian Women's Weekly, Wed 9 Sep 1981, p. 22)



Figure 2.28 Greg Piper, elevated view during opening ceremony of Powerhouse Museum Stage 1 on 4 September 1981 with time capsule being lowered in the background (Source: Powerhouse Photo Library 00238338.jpg)



Figure 2.29 Wran Building under construction c. 1986 (Source: Powerhouse Photo Library 00220995.jpg)

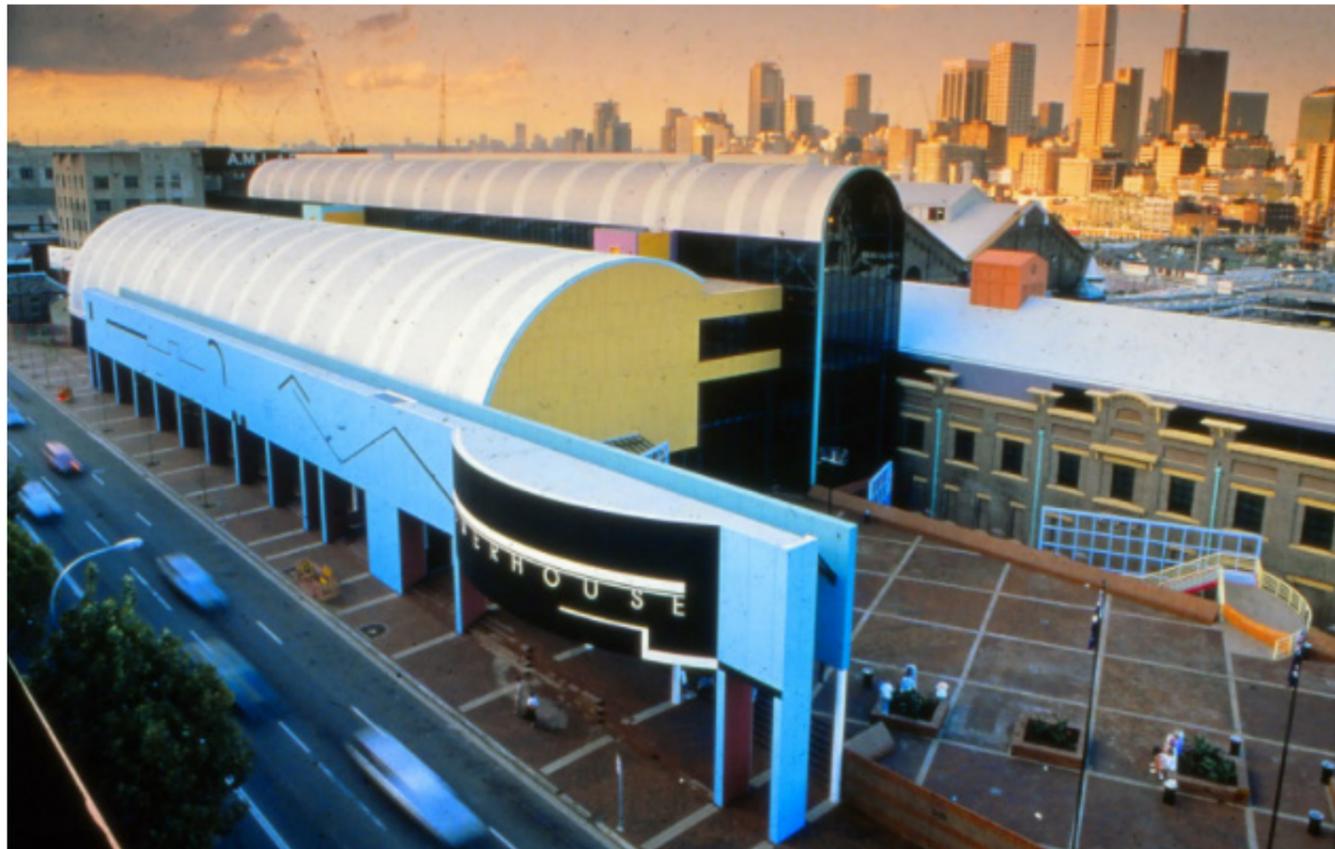


Figure 2.30 Andrew Frolows, Elevated view of Powerhouse Museum Stage 2 exterior in April 1988 shortly after opening showing Harris Street and the Sydney skyline in the background. (Source: Powerhouse Photo Library 00221593.jpg)



Figure 2.31 Lionel Glendenning, architectural drawing of south elevation of Stage 2 Powerhouse Museum, 1987 (Source: MAAS 2008/88/1-5)

The Powerhouse Museum at Ultimo has been subject to a number of alterations and systematic changes since its establishment in the 1980s, the most relevant and extensive of which have been summarised below.

1995

A new mezzanine floor and office were constructed in the Harwood Building.⁸⁶

1996–1997

The Grace Bros Courtyard was redeveloped and kiosk opened.⁸⁷

1997–1998

Café Loco opened.⁸⁸

1998–1999

Construction began on new briefing rooms and a group entrance lobby.⁸⁹

2000–2001

An earthquake damage prevention project was undertaken, focussing on the Boiler Hall's outer wall.⁹⁰

2005–2006

Launch of the Museum's 'Refresh Program', consisting of a series of projects developed to enhance and renew the Powerhouse Museum in recognition of a need for refurbishment and rejuvenation of the Museum. As part of the 2005-2006 works, the Wran building's Harris Street facade exterior was repainted white, and the former yellow logo replaced, with updated visual identity to complement the new lan Thorpe Aquatic Centre that was set to open nearby.⁹¹

2006–2007

Extensive changes to Museum's way-finding across both the exterior and interior of the site were undertaken, including upgrades to the Level 1 courtyard café, and establishment of the 'Cog's Playground' in the Level 1 courtyard.⁹²

2007–2008

Former Ultimo Post Office (which had functioned since 1985 as a Museum of Applied Arts and Sciences run childcare centre) underwent additional restoration and refurbishment, opening on 10 March 2008 as the new volunteer centre for the Powerhouse Museum, coinciding with the 20 year anniversary of the Museum at the Ultimo site.⁹³ Construction of a covered walk way between the newly restored Post Office (Museum of Applied Arts and Sciences Volunteers Centre) and the Wran Building in 2009.

2009–2013 Restoration Stonework Project

Funding from the NSW Treasury and Department of Public Works for three years at a total cost of \$6 million, undertaking maintenance works to the original facades and fabric of the Boiler Hall, North Annex and Turbine Hall of the original Ultimo Power Station.⁹⁴

2011–2013 Revitalisation Project

The first significant renewal to occur to the buildings since the 1988 opening, focusing on the Harris Street entrance and courtyard, including café and shop, as well as revisions to the interior spaces of the buildings and exhibitions. Works as part of the 2011-2013 program at the Powerhouse site included:

Externally:

- Demolishing the brick parapets
- Partially demolishing the colonnade
- Removing the stairway and railing that connected the forecourt to the level 2 courtyard
- Construction of new steps and handrails with LED lighting which were installed along Harris and Macarthur Streets
- The new main entrance was completed
- Linking the Switch house with the forecourt
- Opening the front courtyard to the street

Internally:

- Dismantling a large cube structure in the Turbine Hall
- Removing the glass lift from what is now the entry to the Wran Building allowing a better view of the vaulted ceiling
- Relocating the glass lift to the Turbine Hall
- Demolishing two pairs of escalators (level 1-2) and (level 2-3)
- Moving the exit to the Switch House
- The former entrance was transformed to be the 1,800m2 Level 3 temporary gallery
- Replacement of the Turbine Hall escalators with new eco-friendly models.⁹⁵

The new Museum shop opened in the Switch House in 2012, while the new café in the Switch House with seating in the Harris Street forecourt opened in 2013. The Powerhouse Museum celebrated 25 years at the Ultimo site in March 2013.

Other relevant works that have occurred over the past decade at the Powerhouse site include:

- Closure of the Sydney Monorail in June 2013, and subsequent dismantling of the line and Powerhouse Station, including the covered walkway connecting Haymarket to the Powerhouse Museum (completed by April 2014).⁹⁶
- Rebranding of the Powerhouse to its statutory name MAAS (Museum of Applied Arts and Sciences) across all museum sites (Ultimo, the Sydney Observatory and the Castle Hill Discovery Centre) in 2013.⁹⁷
- Redevelopment of the Darling Harbour Goods Line by Sydney Harbour Foreshore Authority into a public park and thoroughfare (completed in 2017), connecting Central Railway and Darling Harbour, including the Museum granting landowners consent to allow the Goods Line to connect to Macarthur Street, and provided an 'at-grade connection' to Darling Harbour, thus avoiding construction of a pedestrian overbridge to span the museum car park.⁹⁸
- In 2018 a high-tech collaborative theatre classroom for the University of Technology, Sydney opened at the Powerhouse.⁹⁹
- Launch of the Creative Industries Residency program at the Powerhouse in 2019,¹⁰⁰ with the Powerhouse Museum announcing the 11 recipients of its Creative Industries Residency Program in October.¹⁰¹ In 2022, there are 21 Creative Residents.

Over the course of the recent few years, the museum has seen immense changes occur at a legislative, corporate and social level. The Powerhouse Museum has been maintained as per the charter of the Museum of Applied Arts and Sciences to keep buildings to its best standards, and since the Revitalisation Program of 2011-2013, there have been no major developments to the site.

In 2014, the NSW Government completed a Business Case to consider options to address constraints caused by infrastructure on the Powerhouse's capacity to uplift the service level and achieve operational sustainability at the Powerhouse Museum, Ultimo. The Ultimo site was determined to be no longer fit-for-purpose, with significant investment required to fulfil functions outlined in the Museum of Applied Arts and Sciences Act.

In February 2015, the then NSW Premier, Mike Baird released the *Create in NSW: NSW Arts and Cultural Policy Framework* and announced the Government's decision to relocate the Powerhouse to Parramatta. Following that announcement, Create Infrastructure initiated and led the development of the planning framework, this included site selection assessment which concluded that the Riverbank site in Parramatta was the preferred site for the new museum. The Riverbank site was acquired by the NSW Government from the City of Parramatta in early-2019 to facilitate the delivery of the project.

In August 2019, the NSW Government endorsed a vision for Powerhouse Parramatta and on 17 December 2019, announced that the architectural partnership of Moreau Kusunoki and Genton had been selected to design the new Powerhouse following an international design competition.

In response to community support to retain the museum's Ultimo location on 4 July 2020, Treasurer Dominic Perrotet and Arts Minister Don Harwin announced Sydney's Powerhouse Museum at Ultimo would continue to welcome visitors to its world renowned exhibits, with the NSW Government announcing it will remain open and operate alongside the new state-of-the-art flagship museum planned for Western Sydney, Powerhouse Parramatta. The decision meant the Museum of Applied Arts and Sciences (MAAS) would have a four-site future, including the flagship Powerhouse Parramatta, Powerhouse Ultimo, Sydney Observatory and Powerhouse Castle Hill.

On the 16th June 2021, Minister for the Arts Don Harwin announced the NSW Government will put design and fashion at the forefront of Powerhouse Ultimo's future with a transformative \$480-500 million investment into the renewal of the Ultimo site.



Figure 2.32 Front courtyard during works (Museum of Applied Arts and Sciences Annual Report 2011-12 p. 8)



Figure 2.33 Upgraded front courtyard (Museum of Applied Arts and Sciences Annual Report 2011-12 p. 8)



Figure 2.34 Level 3 former entrance (Museum of Applied Arts and Sciences Annual Report 2011-12 p. 8)



Figure 2.35 Level 3 temporary exhibition hall (Museum of Applied Arts and Sciences Annual Report 2011-12 p. 8)



Figure 2.36 The Turbine Hall prior to Stage 1 of the Revitalisation Project (Source: Museum of Applied Arts and Sciences 2011-12 Annual Report p.10)



Figure 2.37 The Turbine Hall in 2012 following Stage 1 of the Revitalisation Project (Source: Museum of Applied Arts and Sciences 2011-12 Annual Report p.10)



Figure 2.38 2014 Site Image showing the Pedestrian Railway Bridge prior to demolition (Source: HMUP, Statement of Environmental Impacts for proposed demolition of Existing Pedestrian Bridge Macarthur St Ultimo, 2014 p. 1)



Figure 2.39 Site Image showing the Pedestrian Railway Bridge prior to demolition (Source: HMUP, Statement of Environmental Impacts for proposed demolition of Existing Pedestrian Bridge Macarthur St Ultimo, 2014 p. 1)



Figure 2.40 Ultimo Tram Depot with additions on the East façade, the Goods Line, Pedestrian walkway (Source: JBA 2014 SEE letter to City of Sydney Council)

2.2.5 The Evolution of the Power House Site

This section is informed by research conducted by Design 5.

The following provides an overview of the changes to the Powerhouse site from 1901 to 2022. Detailed evolution maps for the separate buildings have been attached as Appendix D.

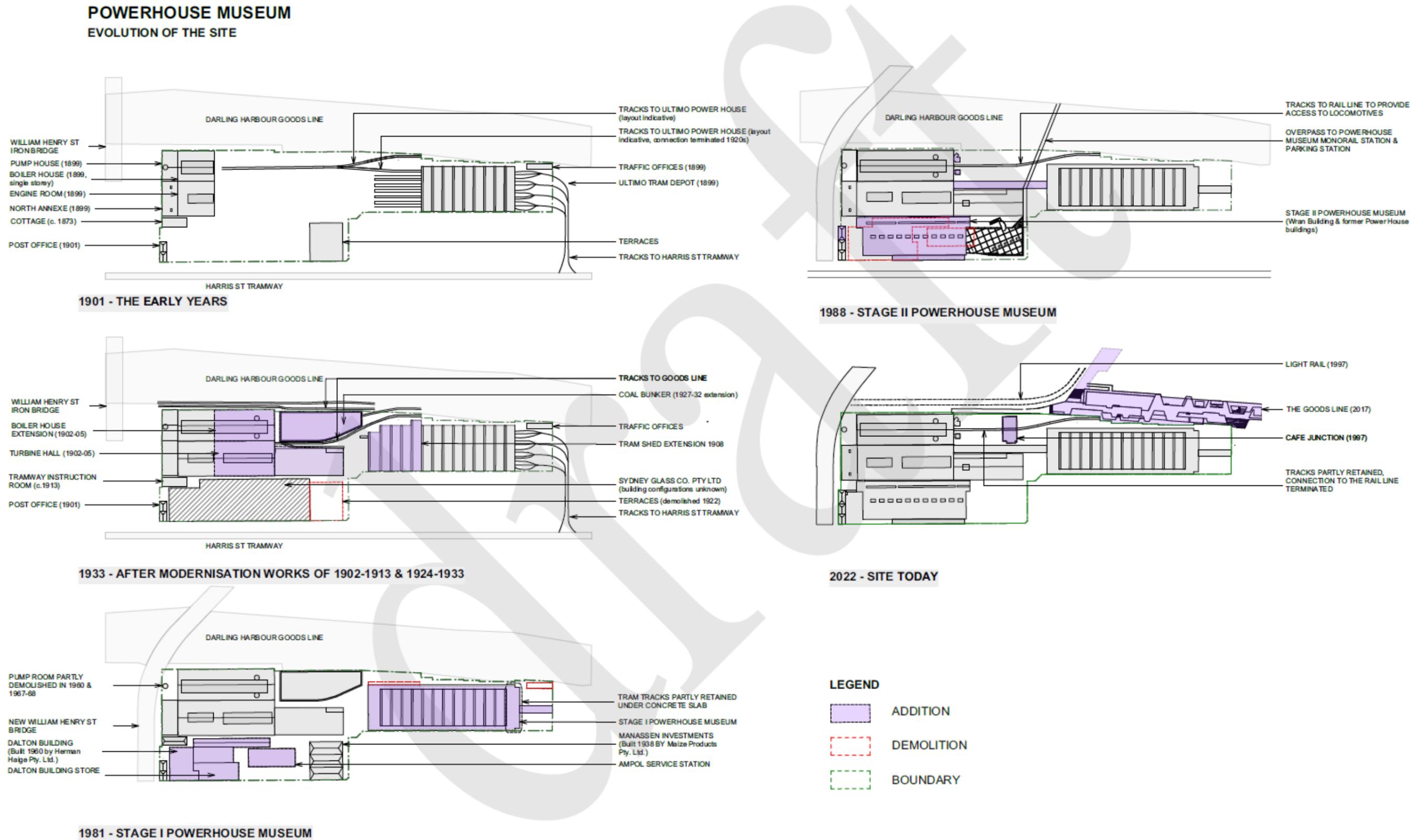


Figure 2.41 Evolution maps (Source: Design 5)

2.3 HISTORICAL THEMATIC FRAMEWORK

The Australian Heritage Commission (AHC) national framework of historical themes provides a consistent framework for determining appropriate historical themes for a place of cultural significance. Thirty-six NSW State themes have been in turn derived from these national themes.¹⁰² The National and State historic themes (summarised in Table 2.1) provide the overarching framework for a sub-set of local themes which are generally relevant to Local Government Area boundaries and smaller subgroups that have social or local community boundaries.

Table 2.1 National and State Historic Themes

RELEVANT AUSTRALIAN THEME	RELEVANT NSW THEME
1. Tracing the natural evolution of Australia	Environment- naturally evolved
2. Peopling Australia	Aboriginal cultures and interaction with other cultures; Convict; Ethnic Influences; Migration
3. Developing local, regional and national economies	Agriculture; Commerce; Communication; Environment-cultural landscape; Events; Exploration; Fishing; Forestry; Health; Industry; Mining pastoralism; Science; Technology; Transport
4. Building settlements, towns and cities	Towns; Suburbs and villages; Land tenure; Utilities; Accommodation
5. Working	Labour
6. Educating	Education
7. Governing	Defence; Government and administration; Law and order; Welfare
8. Developing Australia's cultural life	Domestic life; Creative endeavour; Leisure; Religion; Social Institutions; Sport
9. Marking the phases of life	Birth and Death; Persons

2.3.1 Historical Themes for the Powerhouse Site

Table 2.2 summarises the key historic themes that apply to the Powerhouse site, identifying the relevant National, State, and local historical themes that are relevant to the site itself, as well as within its wider historical setting and associated significance. The table presents explanatory notes for the themes according to the NSW Heritage Council guidelines and indicates the relationship between those themes and the history of the Powerhouse site.

Themes that apply to Aboriginal cultural heritage significance of the site will continually be developed through community engagement.

Table 2.2 Key Historic Themes for Ultimo Powerhouse

AUSTRALIAN THEME	NSW THEME	LOCAL THEME	RELATIONSHIP TO POWERHOUSE SITE
1. Tracing the natural evolution of Australia	Environment- naturally evolved	Coastal features	The Ultimo-Cockle Bay area was distinguished by a creek that ran through marshy ground that drained into the bay.
		Changing the environment	This side of Darling Harbour developed slowly due to the extensive mudflats which required reclamation prior to development. Potential site of a quarry Changing face of the harbour
2. Peopling Australia	Aboriginal cultures and interaction with other cultures	Use of landscape for travelling and access to resources	Prior to displacement by European Settlers, the subject site was an area that was occupied by the Wangal and Gadigal people. This area of the Harbour was a place where the Wangal and Gadigal would have fished and gathered shellfish
	Convict	Employment of convicts (Ultimo Estate)	The study area was part of the Ultimo estate which employed convict labour.
3. Developing local, regional and national economies	Environment	Sydney landmark	The Ultimo Power House has been a Sydney landmark since 1899.
		Landscapes of institutions - productive and ornamental	The Ultimo Power House was part of the industrial landscape of the Ultimo Pyrmont Peninsular.
		Industrial landscape	The Powerhouse Museum has been a Sydney landmark since 1988.
	Events	Developing local landmarks	The Powerhouse Museum has been a venue for events of local and national significance.
		Providing a venue for significant events	
	Agriculture	Ultimo Estate	Prior to the construction of the tram sheds and Power House the site was semi-rural with stables.
	Communication	Transfer of Information (Post)	The Ultimo Post Office was a central area for the conveyance of information for over eighty years.
	Industry	Energy supply industry	The Ultimo Power House was the main supplier of Electricity for the tram system.
	Transport	Sydney Omnibus Stables	Powerhouse Museum collects objects and tells stories of transport histories and innovation.
		Tram Sheds	The Goods Line
Goods Line		The Omnibus Company stables The Ultimo Tram Sheds The Ultimo Power House supplied electricity for the Sydney tram System	
Technology and Science	Technological advancement	The Ultimo Power House was a place where significant technological advancements were trialled. Water Cooling System Ash Pipes Powerhouse Museum collects objects and tells stories of Australian and international technological and science advancement.	

AUSTRALIAN THEME	NSW THEME	LOCAL THEME	RELATIONSHIP TO POWERHOUSE SITE
4. Building settlements, towns and cities	Accommodation	Building settlements, towns and cities Adapted heritage building or structure	Houses present on site in 19th Century A section of the North Annex was originally used as accommodation for workers. Harwood accommodations.
	Land tenure	1820s-1850s land grants Changing land uses - from rural to suburban Changing land uses - from suburban to urban Early farming (Cattle grazing) Sub-division of large estates Resuming private lands for public purposes	Land Grants Cattle Grazing The subdivision of the Harris Estate. Resumption and development of the Railway Corridor, Tram Shed, Power House, Post Office.
4. Building settlements, towns and cities	Towns, suburbs and villages	Early Sydney Street	Harris Street
		Subdivision of urban estates	The subdivision of the Harris Estate
		19th century suburban developments	Resumption of land
		19th Century Infrastructure	Development of the Darling Harbour Rail Corridor
		20th Century infrastructure	Development of the Ultimo Tram Yards
		Creating landmark structures and places in suburban settings	Ultimo Power House Powerhouse Museum
		Suburban Consolidation	
		Shaping coastal settlement	
		Impacts of railways on urban form	
		Developing suburbia	
5. Working	Labour	Working at enforced labour Working complex machinery and technologies Working on public infrastructure projects	At the time of the Ultimo Estate, convict labour was enforced in the vicinity. The Ultimo Tram Sheds and the Ultimo Power House were major employers.
6. Educating	Education	Community education - adults, school excursions	The Powerhouse Museum has been a site of school tours, education and learning programs, and research.
		Maintaining libraries and museums for educational purposes	The Powerhouse Museum Library and Archive. The Museum is a site of public education and learning. Creative Industries

AUSTRALIAN THEME	NSW THEME	LOCAL THEME	RELATIONSHIP TO POWERHOUSE SITE
7. Governing	Government and Administration	<p>Developing roles for government: providing electricity</p> <p>Developing roles for government: conserving cultural and natural heritage</p> <p>Developing roles for government: providing museums</p> <p>Developing roles for government: administration of land</p> <p>Developing roles for government: building and operating public infrastructure</p>	<p>The Government resumed land for the Ultimo Power House to supply electricity.</p> <p>The Government resumed land for the Ultimo Post Office.</p> <p>The Government resumed land for the Darling Harbour Railway Corridor (Goods Line).</p> <p>The Government resumed land for the Ultimo Tram Depot (Harwood Building).</p> <p>The Government's adaptive reuse of the site for a Museum.</p>
8. Developing Australia's cultural life	Social institutions	<p>Community volunteering</p> <p>Developing and maintaining a local museum</p>	<p>The Powerhouse Museum has a long history with community volunteers and affiliated societies.</p> <p>From the first stage opening, the Powerhouse Museum has operated on this site since 1981.</p>

2.3.2 Powerhouse Museum Design Principles Summary

This section is informed by research conducted by Design 5.

The following section has been drawn from “Powerhouse Museum Design Principles: Lionel Glendenning & Richard Johnson,” prepared by Design 5, and has been summarised and interpreted by Curio Projects. The complete “Powerhouse Museum Design Principles: Lionel Glendenning & Richard Johnson” document had been included as Appendix E.

Key Design Priorities

In a 1988 interview with Colin Wood, Lionel Glendenning summarised the following influences and design intentions for the design of the Powerhouse Museum Stage II Ultimo:

- “The great exhibition and railway buildings of the 19th Century including Garden Palaces, Sydney; Melbourne Exhibition Building; Central Railway Station, Sydney.
- A contextual awareness and historic reference.
- Creating old and new linkages with the architecture of Ultimo and the Powerhouse.
- Architecture within Architecture. House within a house.
- Adaption and reuse of existing fragments of the city.
- Separation, layering, transparency, screen, density, diversity, intervention.”¹⁰³

The mid-twentieth Century marked a major design revolution in museum architecture following the construction of landmark buildings such as the Centre Pompidou (1971-1977) and Musee d’Orsay (adapted in 1986) in Paris and Solomon R. Guggenheim Museum in New York (1956-59). The Powerhouse Museum, and particularly the Wran Building, acted as a direct, yet innovative, responses to these cultural centres, and were heavily intertwined with emerging attitudes towards retention and re-use of historical industrial buildings.

Development of the Powerhouse Museum in Ultimo was first considered in 1978 following a visit to the newly completed Centre Pompidou by NSW’s then Premier Neville Wran.¹⁰⁴ In the same year, the NSW Government commissioned a Feasibility Study which was prepared by Jack Ferguson, Lindsay Sharp and Lionel Glendenning, an architect employed at the NSW Government Architects Office.¹⁰⁵ Glendenning was subsequently chosen as the project’s lead architect and went on to design the Claymore Primary School and now demolished Imax Theatre in Darling Harbour.

In his 1978 report, Glendenning made particular mention of the Tramway Depot and Ultimo Power Station site in Ultimo, which offered a historically appropriate, economically effective and scale specific opportunity for the proposed museum.¹⁰⁶

An architectural brief for the museum was developed in 1979 by Powerhouse Curator Norman Harwood and Director Dr Lindsay Sharp, along with Jack Ferguson (Deputy Premier) and Neville Wran (Premier). The team’s primary design objectives focused on the creation of a centre that would ‘embrace the challenges of the new age’,¹⁰⁷ rather than adopt traditional museum and exhibition design philosophies. They envisioned a building that ‘[bridged] the gap between the traditional style and the more radical, experimental, hands on experience, interactive type, of museum of today and the future.’¹⁰⁸ Glendenning responded by incorporating key elements of the site’s history, primarily its connections to the Industrial Revolution, rail technology and electricity generation, with influences from Baroque architecture and landmark nineteenth Century Australian exhibition spaces such as Sydney’s Garden Palace and Melbourne Exhibition Building, into his design.¹⁰⁹

Retention and adaptive re-use of the site’s original buildings, primarily the Ultimo Power House and Tram Sheds, was also a key component of the museum’s design development. Glendenning later described his overall intention as one that involved sustainability, resource management and the environment, where existing resources were retained and buildings re-used.¹¹⁰ To house the museum’s collection, and address the Government’s vision for the museum, he incorporated the Wran Building into the design. The building, a two vaulted post-modernist structure as Glendenning recalled, he intended to compliment and contradict the site’s existing character, history and objects. Glendenning also recalled he intended to accentuate the old and new, ensuring each was separated from the other, with no new elements touching old elements and vice versa.¹¹¹ The grand and imposing vaults of the building took their cues from Sydney’s Garden Palace with its ghost-like transparency¹¹² and the Normanton Railway Station’s archway:

A key to the architecture was the sense of ‘beginning a journey,’ hence the railway station metaphor, the space-capturing arch of Normanton railway station, Queensland.¹¹³

The overall size and form of the Wran Building was also designed to create an ongoing connection between Sydney’s past and future through ‘cultural memory’.¹¹⁴ Glendenning saw it as a structure that would act as a landmark that could be replicated across the cityscape, and eventually form part of the city’s psyche.

Together with exhibition designer Richard Johnson, primary intentions for the internal museum spaces themselves were to create diverse galleries that were flexible, surprising and adaptable to the desires and tastes of exhibition goers. According to Glendenning, each room was designed to respect the original function of retained buildings, including their fabric and form.¹¹⁵ Both designers wanted to create a strong contrast within the museum’s internal spaces by incorporating large and small rooms into the buildings that could create a ‘sense of purpose and focus’.¹¹⁶ These influences can be seen in the Turbine and Boiler Halls which were used to house the museum’s larger collections such as aircrafts, steam engines and locomotives, while also housing small, self-contained exhibition spaces and even structures.

The Museum was designed to be embedded in its location, the way Jørn Utzon’s Sydney Opera House, which had been completed a decade earlier, embodied its surrounding environment by mimicking elements synonymous with Sydney Harbour like boats, birds, clouds and shells. The Wran Building was similarly developed to respond to its immediate and broader environment by incorporating industrial forms and materials into its design and scale. He was equally inspired by Utzon’s distinct interior design which while minimal, was characterised by decorative ceilings and colourful draped curtains.¹¹⁷ This is evident in Glendenning’s use of contrasting colours throughout the museum, for example, black handrails, green columns, red steam vents, Italian nougat tiles and a painted sky mural.

2.4 ENDNOTES

- 1 NPWS Bioregional Assessment 2003 <<https://www.environment.nsw.gov.au/bioregions/bioregions.htm>>; Kelleher Nightingale Consulting, *Pyrmont Peninsula Place Strategy: Indigenous Cultural Heritage Report*, prepared for Department of Planning, Industry and Environment, 2020, p. 14
- 2 NPWS Bioregional Assessment 2003
- 3 KNC 2020, pp. 18-19.
- 4 Artefact, The Bays Market Precinct Rezoning, 2017, p. 16.
- 5 Irish, P. 2017, Hidden in Plain View, p. 13; Attenbrow, V. 2010, Sydney's Aboriginal Past, pp. 18-21.
- 6 Coast History & Heritage, 2022, *Aboriginal History Overview – Powerhouse Ultimo*, Final Draft, April 2022, p.4
- 7 *ibid.*
- 8 *ibid.*
- 9 KNC 2020, p. 18.
- 10 Coast History & Heritage, 2022, p.6
- 11 Attenbrow, 2010, p. 17; Irish 2017, p. 19.
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3 PHYSICAL ANALYSIS

3.1 SITE AND SETTING

The Powerhouse site is located in the suburb of Ultimo, within the City of Sydney LGA. The site is bounded by William Henry Street to the north, Harris Street to the west, Mary Anne Street to the south and the Goods Line to the east. The topography of the site has some significant variance in elevation, with almost nine metres difference in level between Harris St to the west and the Goods Line to the east.¹

The Ultimo-Pyrmont area is characterised by its peninsula location and proximity to Darling Harbour. The Ultimo-Pyrmont Peninsula was first developed as an industrial centre ‘often enveloped in dirty air and surrounded by polluted water’² then it weathered the process of de-industrialisation growing into a contemporary residential and creative neighbourhood. While the Pyrmont Bridge provides access from the western shoreline of Darling Harbour to the Sydney CBD, the physical division created by the former Darling Harbour Goods Line and Goods Yard between the study area and the harbour, means the Powerhouse site is relatively isolated from the Sydney CBD. The Powerhouse site consists of an amalgamation of several earlier sites with varying historical significance and built elements.

Since the preparation of the 2003 CMP, a significant volume of new development and public domain has been constructed around the Powerhouse site, resulting in a substantial change to the existing built context and setting of the site as a whole. New development works have been concentrated to the east and northeast of the site (Haymarket and Darling Harbour respectively), including construction of numerous high density multi-storey commercial and residential (student housing) buildings along the Goods Line (Figure 3.1 and Figure 3.2). The taller of these new eastern developments are very visually apparent to the east of the site, rising above the Power House buildings forming the background built urban context of the site, even when viewed from Harris Street (Figure 3.3 and Figure 3.4). The northern elevation of the site is dominated by the overbridge and road approaches along and above William Henry Road (Figure 3.5), while the site’s western boundary along Harris Street has an elevation to the lower density urban environment of Ultimo (Figure 3.6).



Figure 3.1 Existing context of the eastern side of the site, view north along Goods Line public park, Harwood Building in left. Context of recent high density commercial and residential (Urbannest- student housing) immediately east of the site (Curio 2020)



Figure 3.2 View south along the Goods Line park, Harwood Building in right. Existing surrounding built context including UTS Chau Chak building in background. (Curio 2020)



Figure 3.3 Existing surrounding built context of site, recent student housing multi-storey development visible behind Power House buildings to east. View from Harris Street, Wran Building in back left. (Curio 2020)



Figure 3.4 Existing surrounding built context of site. View southeast across Harris Street forecourt, UTS Chau Chak Building visible in background right, new development east of site visible behind Power House buildings (Curio 2020)



Figure 3.5 View west along William Henry Street bridge, northern elevation context/setting of Powerhouse site. Boiler House visible in left of image with Goods Line in front. (Curio 2020)



Figure 3.6 View north along Harris Street. Wran Building in right, Ultimo Post Office visible on corner of Harris and William Henry Streets in background (Curio 2020)

3.2. BUILT ELEMENTS

This section is informed by research conducted by Design 5.

The primary built elements of the Powerhouse site include the former Power House Buildings (North Annex, Engine House, Turbine Hall, Pump House (remains), Boiler House, and Switch House), former Ultimo Post Office, the Harwood Building (former Ultimo Tram Shed), and the Wran Building. A section of the Goods Line (former Darling Harbour Rail Corridor) borders and enters the site along the eastern boundary, and the Water Cooling System and Manifold is located within the site as a subterranean element, accessible via the basement of the former Turbine Hall.

The development of the Powerhouse site over time is evident in its built form as an amalgamation of several earlier sites and a number of buildings. The rails of the 1853 Goods Line extend along the east of the site alongside the 1899 Harwood Building with its industrial heavy brick walls and sawtooth roof. The single storey brick Ultimo Post Office (1901) on the corner of Harris and William Henry Streets was designed by Government Architect Walter Liberty Vernon in the Queen Anne architectural style and provides a stark visual contrast to the industrial architecture of the former Power House buildings (1899–1902) and the modern 1980s museum additions (Wran Building) that rise behind it. The former Power House structures themselves are strong, substantial warehouses, characteristic of the Federation era, constructed of solid brick with rendered brick detailing on the cornices and window sills, complemented by the later (1927) Switch House to the south that features a highly decorative façade.

When it was completed, the 1988 Wran Building provided a contemporary response to both the history of the Museum and the extant Power House buildings. It was heavily influenced by Baroque architecture with its emphasis on curves and space, yet also took cues from Sydney’s Garden Palace, Melbourne’s Exhibition Building, the Normanton railway station in Queensland and Central Station in Sydney.³ These governed its overall form and almost transparent, fragile appearance. Interior spaces were developed with an aim of creating contrasting scales within modern and old exhibition spaces. This is demonstrated by its cavernous, vaulted galleries which lead into and are surrounded by smaller exhibition spaces (see Section 2.3.2 for discussion of design intent of Wran Building).⁴

A detailed history and physical description of each of the key built elements of the Powerhouse site has been included within the relevant sections of Part C of this CMP, and are summarised in Table 3.1.

3.2.1 Water Cooling System and Manifold

The “Water Cooling System and Manifold” is a significant, s170 heritage register listed, sub-surface structure that runs beneath the site towards Murray Street and into Darling Harbour” (Figure 3.7). It is an historically important operating element associated with the day to day operations of the former Ultimo Power House. The Water Cooling System and Manifold was not identified in the 2003 CMP, nor the 2018 Archaeological Assessment. The Water Cooling System and Manifold is also specifically included within the SHR listing of the Ultimo Power House (SHR 02045), as an ‘integral component of the power station’.

As the item has structural integrity (i.e. underground tunnel structure) and is incorporated into the built fabric of the former Power House (and the SHR listing), it is not technically defined as an archaeological ‘relic’ in accordance with the relics provisions of the NSW Heritage Act, but as a ‘work’. Nevertheless, its subterranean location and listing on the Property NSW S170 Register indicates that this subterranean feature requires in situ retention, and therefore acknowledgement in the context of this CMP and future management of the Powerhouse site.

Given that any proposed deep excavation in this area would have the potential to disturb the conduits, it is recommended that this significant, subterranean asset requires protection and management as part of any over-arching archaeological management strategy for the site. It is recommended that this asset should be accurately located and identified on any sub-surface plans. Further information about the history and management recommendations for this heritage item are considered in the individual section in Part C.

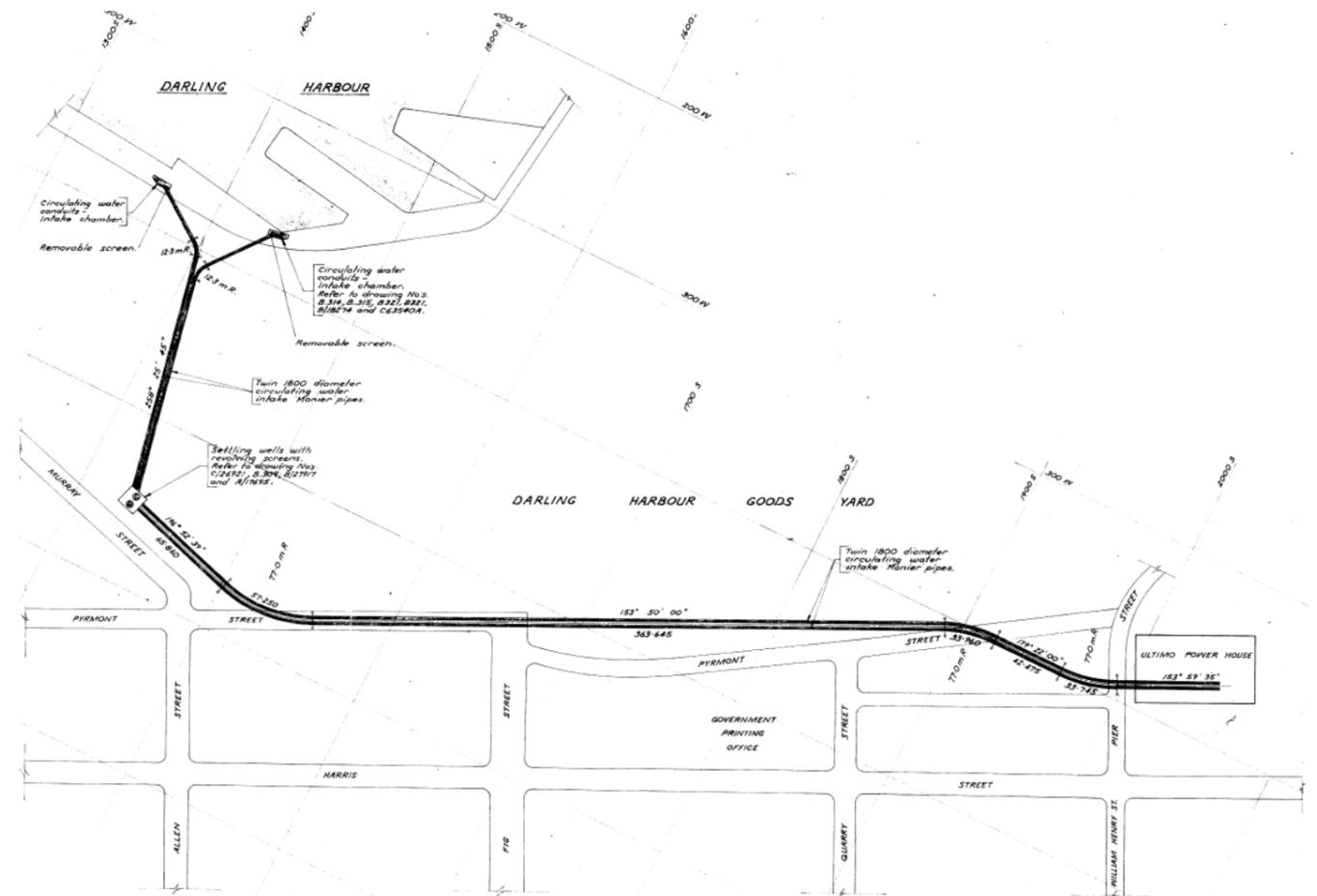


Figure 3.7 Plan of Powerhouse Seawater Conduits, November 1982 (Source: Government Architect NSW C82-079G/SC-001)

Table 3.1 Summary of Key Built Elements



THE GOODS LINE
 Constructed: 1853–1911
 Physical Analysis: Part C—Section 17.2



WATER COOLING SYSTEM AND MANIFOLD
 Constructed: 1898–1901
 Physical Analysis: Part C—Section 16.2



HARWOOD BUILDING
 Constructed: 1899
 Physical Analysis: Part C—Section 7.2



NORTH ANNEX
 Constructed: 1899
 Physical Analysis: Part C—Section 8.2



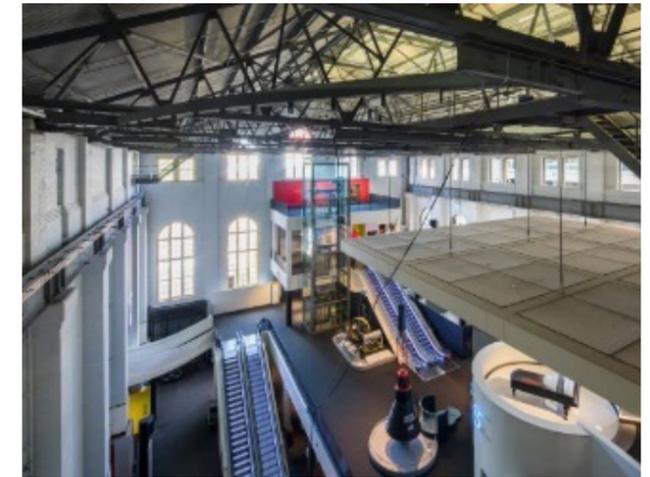
PUMP HOUSE (FORMER)
 Constructed: 1899
 Physical Analysis: Part C—Section 9.2



ENGINE HOUSE
 Constructed: 1899
 Physical Analysis: Part C—Section 10.2



ULTIMO POST OFFICE
 Constructed: 1901
 Physical Analysis: Part C—Section 14.2



TURBINE HALL
 Constructed: 1902
 Physical Analysis: Part C—Section 11.2



BOILER HOUSE
 Constructed: 1902–1905
 Physical Analysis: Part C—Section 12.2



SWITCH HOUSE
 Constructed: 1927
 Physical Analysis: Part C—Section 13.2



WRAN BUILDING
 Constructed: 1988
 Physical Analysis: Part C—Section 15.2

3.3 SURROUNDING HERITAGE LISTINGS

The Powerhouse site is located adjacent to, and within close vicinity to the Harris Street Conservation Area (C67), which also includes a number of individually listed items. In addition to further heritage items close to the site. The SHR listed Sewerage Pumping Station No. 1 (SHR Item #01336), and Ultimo Road Railway Underbridge (SHR Item #01062) are also in close proximity to the site (Figure 3.8 and Figure 3.9).

Table 3.2 Heritage Items in the vicinity of the Powerhouse site

ITEM	REGISTER	NAME	ADDRESS
01062	State	Ultimo Road Railway Underbridge	Ultimo Road, Ultimo
01336	State	Sewerage Pumping Station No. 1	William Henry Street, Utimo
I2032	Local	Glasgow Arms Hotel including interior	527–529 Harris Street
I2028	Local	Terrace group including interiors	11–63 Hackett Street
I2024	Local	Terrace group including interiors	342 Bulwara Road and 68–80 Macarthur Street
I2023	Local	Terrace group including interiors	286–340 Bulwara Road
I2067	Local	Terrace group including interiors	91–97 William Henry Street
I2068	Local	House including interior and fence	103–103a William Henry Street
I2044	Local	Terrace group including interiors (C67)	77–79 Macarthur Street
I2033	Local	Terrace group including interiors (C67)	578–606 Harris Street
I2034	Local	Terrace group including interiors (C67)	597–607 Harris Street
I2035	Local	Former “Millinery House” including interior (C67)	608–614 Harris Street
I2037	Local	Terrace group including interiors (C67)	629–637 Harris Street
I2025	Local	Terrace group including interiors (C67)	348 Bulwara Road and 68–80 Mary Ann Street

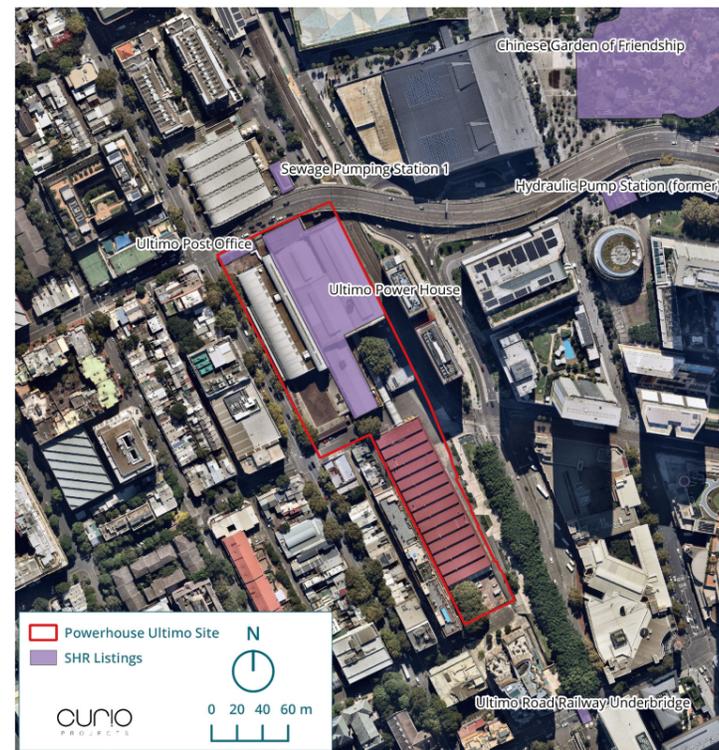


Figure 3.8 State Heritage Listings including Powerhouse site and surrounds (Source: Curio 2021 from HNSW Shapefile, over Nearmap aerial 2021)

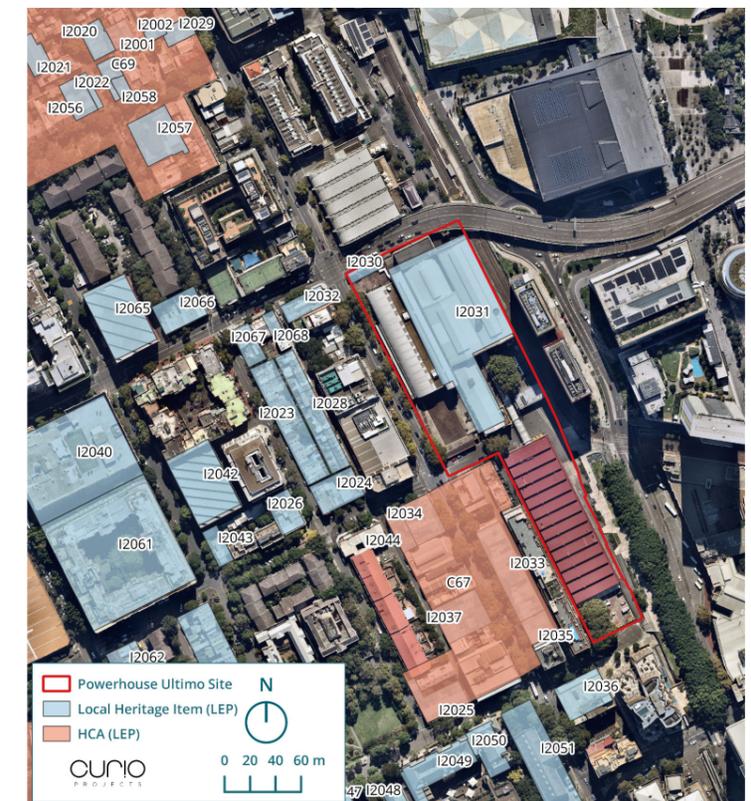


Figure 3.9 Local Heritage Items and HCA including Powerhouse site and surrounds (Source: Curio 2021 from HNSW Shapefile, over Nearmap aerial 2021)

3.4 ARCHAEOLOGY

3.4.1 Aboriginal Archaeology

The following summary of Aboriginal archaeological context and potential of the Powerhouse site has been summarised from the Aboriginal Due Diligence Heritage Assessment Report prepared for the site (Curio 2020). The full Due Diligence report is also provided for information as an appendix in Part D of this CMP.

Environmental and Archaeological Context

Darling Harbour is located in the central area of the Sydney basin, which is generally characterised by contrasting sandstone escarpments, and gently undulating shale hills. The Powerhouse site is located 500m southwest of Darling Harbour and on the eastern edge of the Ultimo-Pyrmont Peninsula, which itself is oriented approximately north west/south-east. Mainly due to sandstone mining, major changes to the topography of the peninsula were undertaken prior to detailed mapping of the area. However, it is generally understood that the Pyrmont peninsula prior to 1788 generally consisted of sandstone rises and outcrops, grading down towards the water on all sides. The study area is located on the sandstone topography of the Ultimo-Pyrmont Peninsula in close proximity to the original shoreline of Cockle Bay. The approximate location of the study area is highlighted in red in Figure 3.10 below. The location of the site in relation to the original topography and landform of the peninsula is shown in Figure 3.11.

The Darling Harbour area would have constituted a rich resource zone (both marine and land based), including a variety of vegetation, which would have in turn provided a diverse habitat for varied fauna, to be utilised by Aboriginal people inhabiting the area prior to European arrival.

Land reclamation along the southern end of Darling Harbour took place in 1874 (with the exception of Darling Island, which was connected to the mainland of the peninsula earlier). Further land of reclamation within the head of Cockle Bay was undertaken in 1918. The subject site is located in close proximity to the eastern boundary between what would have been the original shoreline of the southern end of Darling Harbour (pre-1788), and land reclamation works undertaken in the late 19th century (Figure 3.12). Although the impacts from land reclamation occurred adjacent to the site, it is likely the Powerhouse site is located enough on the fringes of those land modifications to not have too much of an impact on the natural soils within.

There are currently no registered Aboriginal archaeological sites directly within the study area, however three registered Aboriginal archaeological sites are located in close proximity, which include:

- AHIMS #45-6-2652, 'Ultimo PAD 1', a PAD site located 50m north
- AHIMS #45-5-2979, 'UTS PAD 1, 14-28 Ultimo Rd Syd', a PAD site located 60m south
- AHIMS #45-6-3217, 'Darling Central Midden', is a shell midden, artefact and Aboriginal Ceremony and Dreaming site 200m north east

The relatively even dispersal of sites suggests that Aboriginal archaeological sites may exist across the entire Sydney CBD and Pyrmont Peninsula area, wherever conditions allow them to survive (i.e. incomplete levels of ground disturbance, along the edge of the original sandstone outcrops and geology, along water sources, and where natural soil profiles are still present.

Numerous archaeological assessments and Aboriginal archaeological excavations in the Sydney CBD and Darling Harbour area have demonstrated the potential for Aboriginal archaeological deposits to remain in situ, particularly along the original shoreline of Darling Harbour, dependent of the level of historical disturbance that the area has been subject to. The presence of existing buildings or development at a location, cannot be generally used as a factor to confirm that any soils with the potential to retain intact Aboriginal archaeological deposits have been highly disturbed or removed. In fact, numerous Aboriginal archaeological excavations have demonstrated the ability for in situ Aboriginal archaeological deposits to be present and relatively undisturbed beneath existing buildings (e.g. Wynyard Walk, SICEEP excavations beneath the Convention Centre).

Summary of Aboriginal Archaeological Potential

The Powerhouse site is located in close proximity to the original foreshore of Darling Harbour. While the area was not developed extensively until the late 1800s, early historical accounts provide evidence that extensive use was made of the shell middens that lined the bay to provide mortar in lime kilns for civic development programs for the early colony.

The Ultimo- Pyrmont Peninsula and Darling Harbour would have been a focus for Aboriginal occupation and habitation prior to 1788, likely including the subject site. While the subject site has been historically subject to industrial uses associated with the Ultimo Power Station and Ultimo Tram Line, this does not mean that all natural soil profiles (i.e. the soil profiles capable of retaining an Aboriginal archaeological signature) have been removed. Environmentally, the study area is considered to have potential to retain an Aboriginal archaeological signature, supported with the geotechnical investigation of the study area and the alluvial/residual soils confirmed to be present.

Conclusions and recommendations with respect to Aboriginal archaeological potential and its management for the Powerhouse site are summarised as follows:

- There is **moderate to high potential** for natural intact soil profiles to be retained within the Powerhouse site.
- Aboriginal archaeological deposits, should they be present within or in the vicinity of the Powerhouse site, would be most likely to consist of stone artefact sites, shell midden sites, or a combination of both.
- Any future ground-disturbing activities that have potential to impact to a depth of the natural soil profiles across the site, will have potential to impact Aboriginal archaeology, and therefore will require management and mitigation in accordance with relevant legislation and statutory guidelines.
- Any substantial excavation works proposed for the Powerhouse site are likely to require Aboriginal archaeological test excavation to further investigate and confirm the nature of Aboriginal archaeological potential within the Powerhouse Ultimo study area.

Possible management requirements for future development works within the Powerhouse site that have potential to impact Aboriginal archaeology may include:

- Preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR), prepared in accordance with relevant Heritage NSW statutory guidelines; and
- Further Aboriginal archaeological assessment and archaeological test excavation under a Section 90 AHIP under the NPW Act.

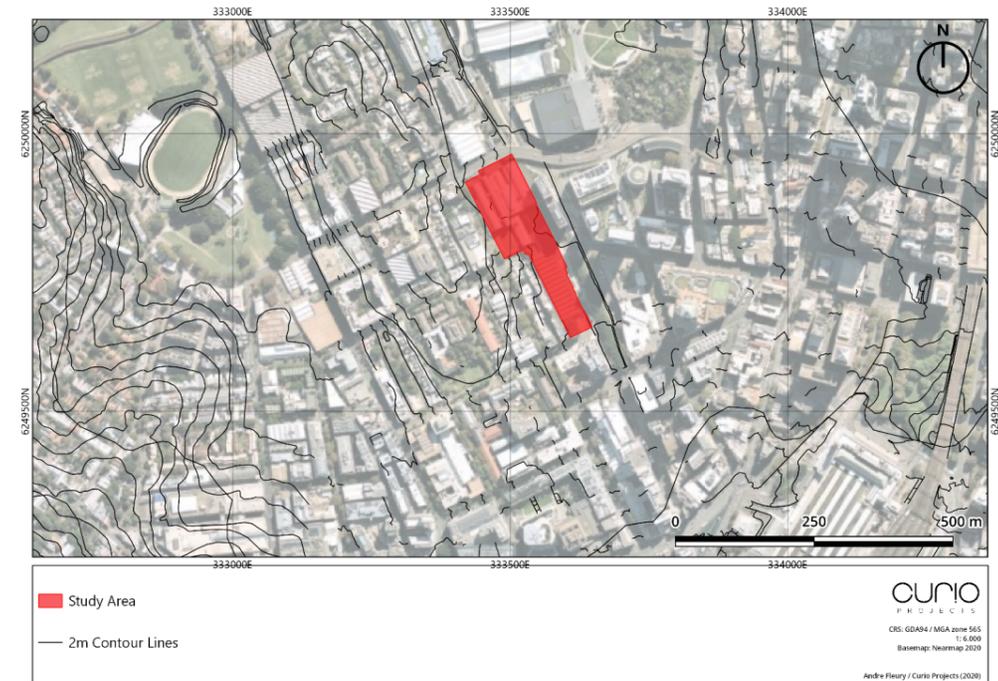


Figure 3.10 Land Contours of Powerhouse site and surrounds (Source: Curio 2020)

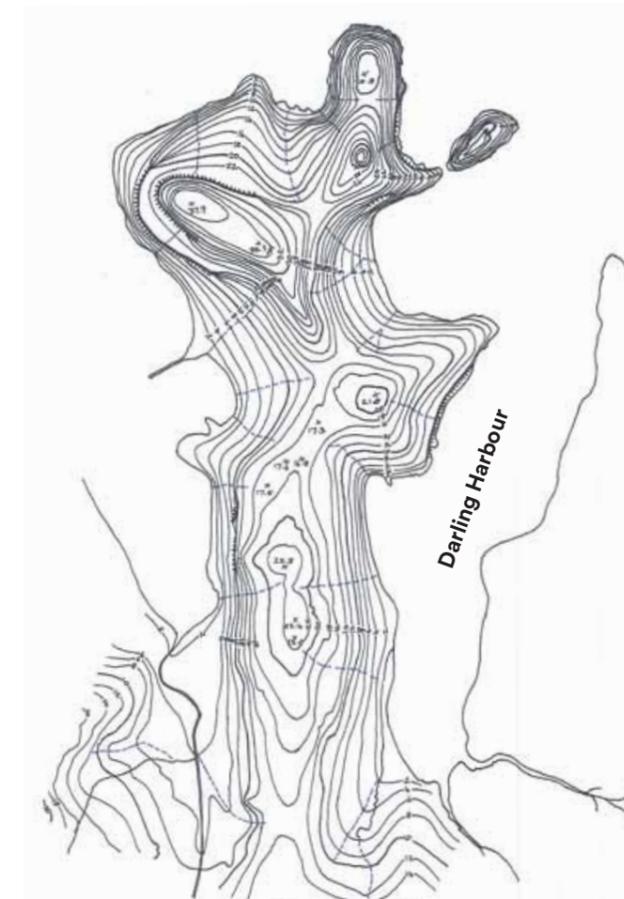


Figure 3.11 Topography and drainage of the Pyrmont peninsula in 1788. Orange arrow indicating general location of site (Source: Broadbent 2010, p. 54)

3.4.2 Historical Archaeology

Preamble

A historical archaeological assessment was undertaken of the Powerhouse site in 2018 (AMBS 2018, attached as an Appendix to this CMP). The 2018 archaeological assessment concluded that the survival and integrity of the historical archaeological resources across the Powerhouse site are likely to be variable, and that the construction of the Ultimo Power House and replacement of the Sydney Tramway and Omnibus Company (STOC) stables by the Tram Depot for stabling electric trams in 1899 would have altered the local landform, with a significant impact on the underlying archaeological resource. In particular, the 2018 AMBS assessment noted that:

The basements and machine beds associated with the Ultimo Power Station, particularly in the Engine Hall, Boiler House, Turbine Hall, Office Building (and to a lesser extent, the Wran Building), will have impacted the archaeological resources of the site. The Engine Hall basements range from approximately 3.5m to 6.7m deep, the Boiler House basements range from approx. 3.3m to 6m deep, those in the Turbine Hall are approx. 3m deep, the Office Building basement is approx. 4m, and the Wran Building basement is approx. 4.5m deep.⁵

Curio note however, that at similar industrial site types such as the former Honeysuckle Railway Yards in Newcastle and at the former Eveleigh Railway Workshops (former ATP, now South Eveleigh) in Eveleigh, that quite often there is an inaccurate assumption that such industrial development works would have had an extensive impact on earlier cultural landscapes or archaeological resources. Archaeological investigations have often revealed that substantial remains still exist below the ground. Such resources either have a direct association with the workings of the site itself (sub-surface infrastructure) or survive surprisingly intact, from earlier occupations of the site.

For example, the neighbouring site at Bullecourt Place, when excavated in May -June 2002, revealed an extremely intact historical archaeological resource to be present beneath existing modern development,⁶ as have numerous other nearby sites in and around Darling Harbour. As part of the 1980s development works of the Powerhouse Museum at the site, the prediction that the site would have highly disturbed archaeological resources turned out to be incorrect, resulting in a construction delay of several months in 1988.

Previous investigations such as those noted above demonstrate that intact historical archaeological resources have been regularly found at nearby comparative sites and at industrial sites of similar types, and indicate the potential for a similar historical archaeological resource to be present within the Powerhouse site. Therefore, despite the thoroughness of the AMBS assessment, it is considered likely that the subject site has a slightly higher potential for intact historical archaeological resources, or evidence of earlier landscapes, to survive at the Powerhouse site than previously assessed.

Further to this point, results of the 2019 geotechnical investigations undertaken within the site have confirmed the presence of buried intact natural soil profiles across much of the site, as well as some presence of terracotta, brick and ceramic fragments at depth (between 2-3.1m below ground level) to the south of the Harwood Building (e.g. BH104 and BH202). This geotechnical information confirms the ability for archaeological resources to remain at the site regardless of historical impact and development, with the southern boreholes being possibly representative of an historical archaeological resource in this location.

It is also noted that neither the 2018 Archaeological Assessment (nor the 2003 CMP) identified the subterranean s170 heritage asset "Water Cooling System and Manifold". This heritage asset is not technically defined as an archaeological 'relic' in accordance with the relics provisions of the NSW Heritage Act, but rather as a 'work' as part of the working structure and built fabric of the former Power House. Nevertheless, the location of this significant heritage asset within the Powerhouse site, its listing on the Property NSW S170 Heritage Register, and inclusion within the SHR Ultimo Power House listing, means that this subterranean feature requires acknowledgement, additional assessment and consideration in the context of the historical archaeological potential of the site.

Introduction

The 2018 (AMBS) assessment was used as a baseline for the following summary of historical archaeological potential for the Powerhouse site, supplemented by additional primary research and assessment undertaken by Curio Projects, specific to the historical occupation and use of former structures on the site prior to the construction of the Ultimo Tram Shed and Power House, in order to further clarify the historical archaeological potential of the Powerhouse site.

As described in Section 2.2 (Historical Evidence) of this CMP, the historical occupation and use of the Powerhouse site has been summarised into five main phases, of which, historical features, structures and uses during *Phase 2 (1803-1894)* and *Phase 3 (1895-1940s)* have been identified as requiring further research and assessment with respect to the potential for historical archaeological resources from this phase to survive at the site, and the likely archaeological significance should such a resource be present.

Phase 2—Ultimo-Pyrmont Peninsula and 19th Century Occupation (1803–1894)

The earliest records of historical structures built across the Harris Estate are from the mid-1840s, with the 1845 Phillip Ward Rate Assessment Book recording that several huts of mud, brick, wood or wattle with bark roofs been constructed across the land. Other historical features within the site in the first half of the 19th Century included sandstone quarrying (Figure 3.13 and Figure 3.14).

The earliest detailed historical plans available of the structures present in the northern block of the Powerhouse site (i.e. bounded by William Street, Pyrmont Street, Macarthur Street, and Harris Street—Block 23 of the Ultimo Estate Subdivision, land inherited by Miss Margaret Harris) depict seven buildings (Figure 3.15), referred to in the following assessment as the following street addresses:

- 137 William Henry Street (c.1873–1913)
- 517-523 Pyrmont Street (c.1870s–1898)
- 554-556 Harris Street (c.1870s–1922)

Development on the southern block of the Powerhouse site (i.e. bounded by Macarthur Street, Pyrmont Street, Mary Ann Street, and Harris Street—Block 20 of the Ultimo Estate Subdivision, inherited by Mr John Harris) by the 1870s included construction of a stables for the Sydney Omnibus Company (1871), stables for the City Carrying Company at the southern end of the block by 1883, and feed cutting works located between the two stables (Figure 3.16).

By the turn of the century, the majority of the northern block between William Henry Street and Macarthur Street had been resumed for the construction of the Ultimo Power House, resulting in the demolition of the houses at 517-523 Pyrmont Street, while the houses at 137 William Henry Street and 554-556 Harris Street were retained until the 1920s. Details of the occupants and history of each of the former structures at the three addresses are provided in the following subsections.

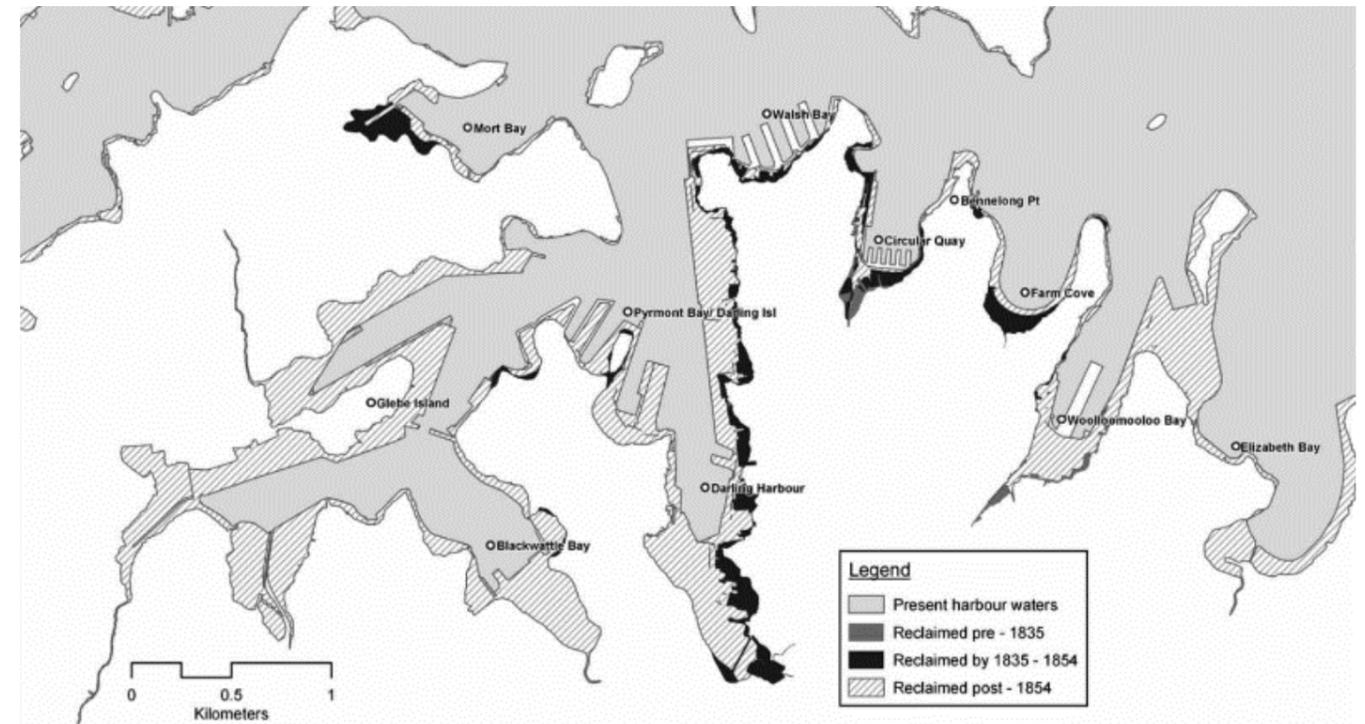


Figure 3.12 Land reclamation in Sydney (Source: Birch et al 2009)



Figure 3.13 Detail from plan of the Darling Harbour Branch of the Sydney Railway, 1853, in Surveyor General sketch book folio 28-71 showing early structures across the Harris Estate. Area resumed for Darling Harbour Goods Line in orange [Powerhouse site outlined with quarry indicated by arrow]. (Source: Source: State Archives and Records Authority of New South Wales NRS-13886-1-[X764]-Volume 6 Part 2-14)

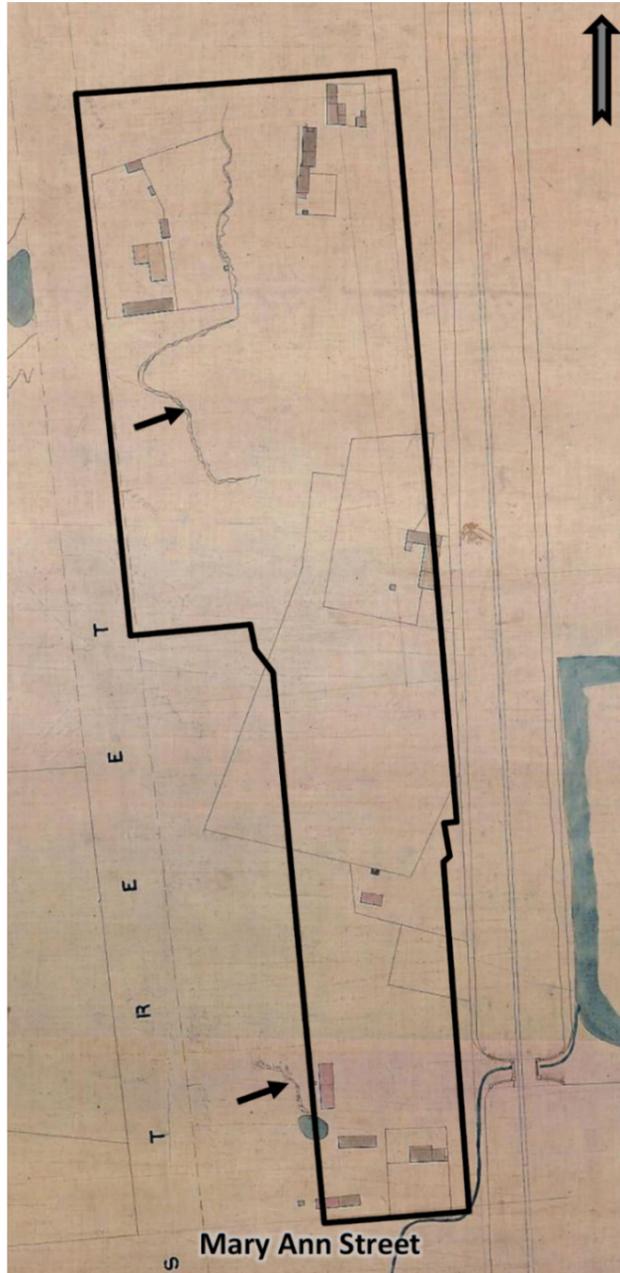


Figure 3.14 Detail from Trig Survey of Sydney 1855-1865, showing early structures across the Harris Estate. Powerhouse site outlined. Areas of sandstone quarrying indicated by arrows. (Source: City of Sydney Archives CN-0080)

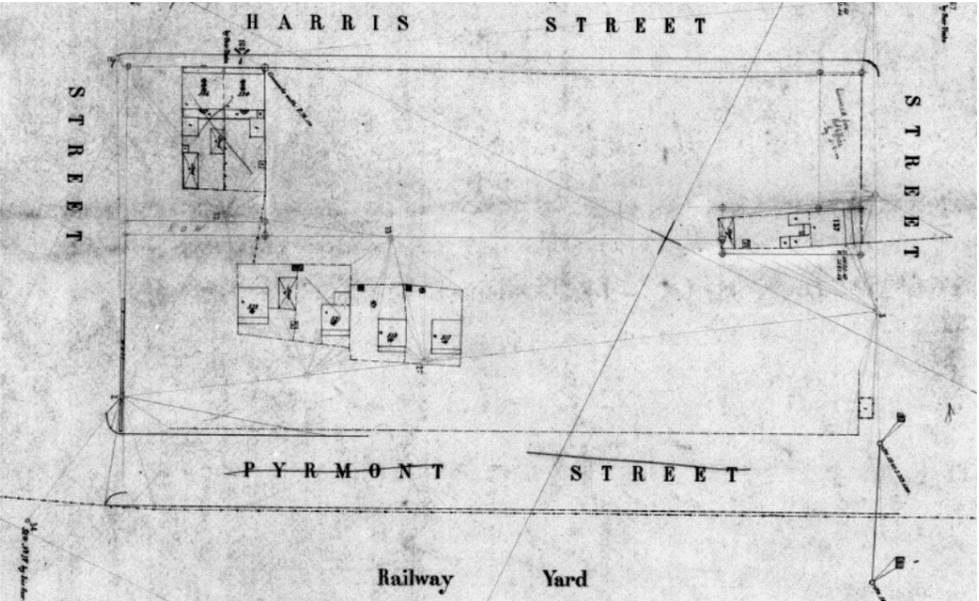


Figure 3.15 1886 plan of northern block (William Henry St to Macarthur St) of current Powerhouse Museum site, depicting houses at 137 William Henry Street, 517-523 Pyrmont Street, and 554-556 Harris Street. (Source: Sydney Water PWDS 1544-S206)

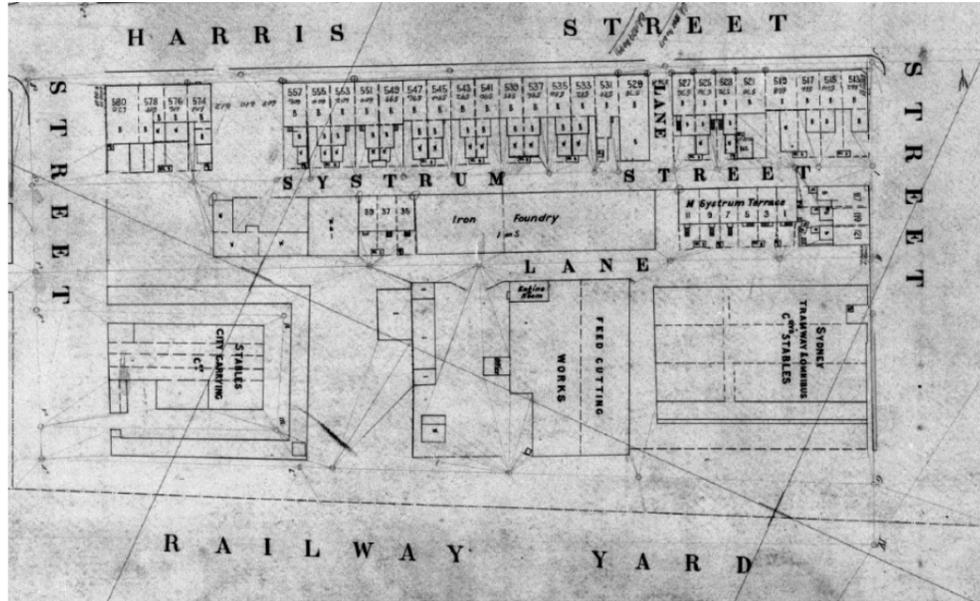


Figure 3.16 c.1886 Plan of Southern Block (Macarthur St to Mary Ann St) of current Powerhouse Museum site. (Source: Sydney Water PWDS 1544-S209)

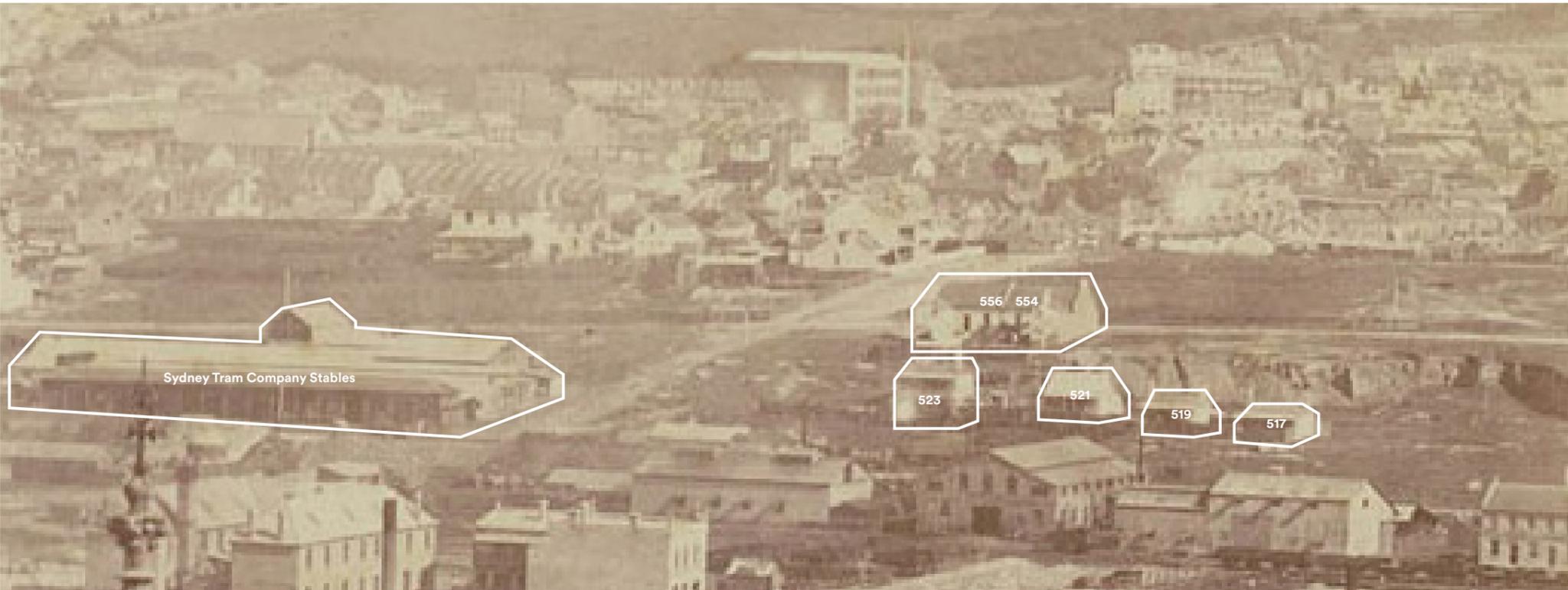


Figure 3.17 N J Caire, Anglo-Australasian Photo Company, detail from 1878 photo taken from Sydney Town Hall including the current Powerhouse Museum site, depicting the Sydney Tram Company Stables (left), as well as the houses at 517-523 Pyrmont Street, and 554-556 Harris St (Source: State Library NSW SPF/994)

137 William Henry Street

By 1873, a house was located at 137 William Henry Street, Ultimo, shown in a 1886 map (Figure 3.18), and depicted in a 1903 photograph (Figure 3.19), as being located between the Ultimo Post Office and the North Annex (Offices) building. The building at 137 William Henry Street was recorded as a two storey house, possibly rebuilt at some time during its history, with the structure variably referred to in historical accounts as being constructed of brick, stone, and wood.

The 1876 Sands Directory records the house at 137 William Henry Street as leased from the Harris family by Thomas Bladen, an iron manufacturer/moulder/smelter. Bladen is recorded in the 1877 Council Rates Assessment Book as living in a 'two storey, brick and stone house with a shingled roof'. Bladen remained in occupation at 137 William Henry Street until around 1881-1882, at which point the house was then leased by butcher William Carroll from 1882 to 1889.⁷ In 1882 the building at 137 William Henry Street is recorded as being a 2 storey, 7 room wooden house with a shingled roof, rented by Carroll from Miss Margaret Harris.⁸ The 1886 Sydney Water plan of the site depicts 137 William Henry Street as having an outside toilet (W.C) and shed at the rear of the property (Figure 3.18). The house was occupied from 1890 to 1896 by drayman William McCaffrey, with a stables recorded as present on the land in 1896.⁹ The Sands Directory records the house at 137 William Henry Street as occupied from 1897-1899 by butcher James O'Grady and Mrs Henrietta Meikle, and by Thomas Love in 1900-1901.¹⁰ It is possible that these three tenants had sublet the land from William McCaffrey, who is again recorded at the address in the 1901 Council Rates Assessment Book. The Sands Directory records George Taylor as occupier in 1904-1905 followed by Charles Lacey from 1906 until 1913.¹¹

The house at 137 William Henry Street was demolished to make way for the construction of the Ultimo Tram Instruction Room Building in 1913-14.¹² While it is likely that the main house and greater part of the backyard would have been disturbed by the construction of the Tramway Instruction Room (since demolished), and the subsequent construction of the Wran Building in 1987, there remains however:

...potential for some archaeology associated with the house, including foundations and underfloor deposits, to be extant in the empty space between the Office Building and the post office. There may also be some remains within the backyard, including yard surfaces, outbuildings, cesspits and rubbish pits beneath the Wran Building foundations to the south.¹³

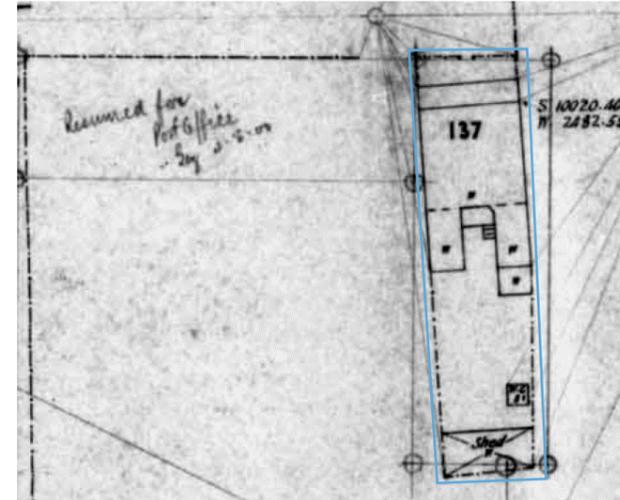


Figure 3.18 Detail from 1886 plan of northern block (William Henry St to Macarthur St) of current Powerhouse Museum site, depicting the house at 137 William Henry Street. (Source: Sydney Water PWDS 1544-S206)



Figure 3.19 Detail from figure 2.14 showing house at 137 William Henry Street c. 1901 (Source: State Archives and Records Authority of New South Wales, NRS-4481-2-[4/8610]-559)

517–523 Pyrmont Street

The 1877 Council Rates Assessment Book records several single storey houses owned by the Harris family as located ‘off Harris Street’ at Pyrmont Street towards William Henry Street, including houses occupied by William Pierce and Robert Riley. An 1878 photograph depicts four houses located along what appears to be Pyrmont Street (Figure 3.17), which are recorded in the 1882 Council Rates Assessment Books as being one storey, four room, wooden houses with shingled roofs located on Pyrmont Street ‘240 feet from William Henry Street’, all leased by Miss Margaret Harris for £26.

The houses at 517-523 Pyrmont Street were renumbered over time, first numbered as 1-4 Pyrmont Street, and renumbered by 1882 as 501-507 Pyrmont Street (Figure 3.20). The occupants of the Pyrmont Street houses are noted in 1882 (Council Rates Assessment Book) as being: William Pierce at 501 (517); Robert Riley at 506 (519); Michael Leo at 505 (521); and Michael Brown at 507 (523)—with the southern most structure (523 Pyrmont St) recorded as being located 40 feet from Macarthur Street.¹⁴ The 1891 Council Assessment Book records P. O’Hallaran at 517 Pyrmont Street (one storey, four roomed wooden building with shingled roof), T. McCarthy at 519 Pyrmont Street (one storey, four roomed wooden building with shingled roof), I. Davey at 521 Pyrmont Street (one storey, five roomed wooden building with iron roof), and M. Brown off 523 Pyrmont St (one storey, four roomed wooden building with iron roof). In the 1896 Council Rate Assessment book, P. O’Hallaran, Thomas McCarthy and Michael Brown are still recorded as the occupants at 517, 519 and 523 Pyrmont Street (respectively), while the occupant of 521 Pyrmont Street is recorded as Luke Darby.

The land and structures of the Pyrmont Street houses would have been included in the 1898 sale of Margaret Harris’ land to the Department of Public Works for the construction of the Power House, with the houses demolished in the late 1890s as part of the preparation works for construction of the Ultimo Power House.¹⁵

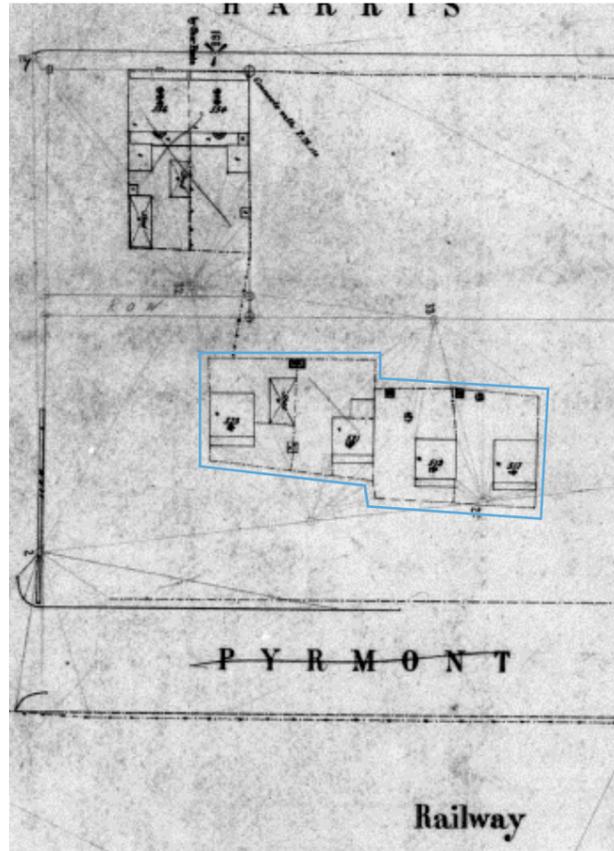


Figure 3.20 Detail from 1886 plan showing houses at 517–523 Pyrmont Street (Source: Sydney Water PWDS 1544-S206)



Figure 3.21 N J Caire, Anglo-Australasian Photo Company, detail from 1878 photo taken from Sydney Town Hall depicting houses at 517–523 Pyrmont Street (Source: State Library NSW SPF/994)

554–556 Harris Street

By 1871, a pair of semi-detached, single storey six-roomed brick houses with shingled roofs were recorded as being present at 554-556 Harris Street (Figure 3.22 and Figure 3.23). The Sands Directory records two houses as being located on Harris Street between William Henry and Macarthur Streets by 1871, initially numbered as 472 and 474 Harris Street, renumbered from 1879 to 518 and 520 Harris Street, and finally renumbered by 1886 (as shown on a Sydney Water plan- Figure 3.22), as 554 and 556 Harris Street, which appear to be the later numbered 518 and 520 Harris Street as John Lowe is recorded there from 1879.¹⁶

John Lowe, a cabman, is recorded in the Sands Directory as the occupant of the house at 556 Harris Street from 1879. The 1883 Sands Directory records the Harris Street houses as occupied by John Grant, a contractor, at 518 (554) Harris, and John Lowe at 520 (556) Harris Street. By 1886 the house at 556 Harris Street is depicted as having two sheds constructed in the rear yard (Figure 3.22 and Figure 3.24). The 1896 Council Rates Assessment book records 554 Harris Street as a brick house and stable, leased by Margaret Harris to Mrs Mary Black. The brick house and stable at 556 Harris St continued to be leased by John Lowe until c. 1909, replaced by relative Miss L Lowe from 1910.¹⁷ Council Rates Assessment books record Agnes Dooley at 554 Harris St and John Connolly at 556 Harris St from 1911-1914. By 1918, Mrs Agnes Dooley remained at 554 Harris Street while Mrs Annie Houston was recorded as the occupant at 556 Harris Street in the 1918 Sands Directory. Both Harris Street houses were demolished in 1922.

Sydney Tramway and Omnibus Company's Stables

The 1877 Council Rate Assessment book records Thomas Hales as occupant of a brick and wood house and stables for 'S.U.O Company. Stalls for 200 Horses', facing Macarthur Street and depicted in a 1878 photograph (Figure 3.17). The 1880 Rates records the United Omnibus Co. Stalls, Chaff Store, Old forge and New Forge located on the land, in addition to John Wood's house, John Woods & Co Stores and Stables.¹⁸ The 1882 Assessment books show that John Woods and Co had wooden stables with an iron roof on Mary Ann Street between Harris Street and the Railway fence.¹⁹

The 1886 Sydney Water Plan depicts the Macarthur to Mary Ann Street block as occupied by the Sydney Tramway and Omnibus Company from the central lane (present Omnibus Lane) east to the Railway Yard (Goods Line) with stables located at the northern Macarthur Street end of the block, bordered to the south by a feed cutting works which also contained an office and an engine room while the Mary Ann Street frontage of the block is occupied by Stables for the City Carrying Company (Figure 3.16). Parallel to the "Feed and Cutting Works" area indicated on the 1886 plan (between what is now Omnibus Lane and Systrum Street), an Iron Foundry is depicted, likely associated with the stables. The 1896 Council Rates Assessment book records John Wood of the Sydney Tramway and Omnibus Company's Stables and Stores as occupying a two storey, four-roomed wooden building with an iron roof. The southern block (between Mary Ann Street Macarthur Street) was resumed in 1897 for the construction of the Ultimo Car House, including demolition of the former Stables and associated structures.²⁰

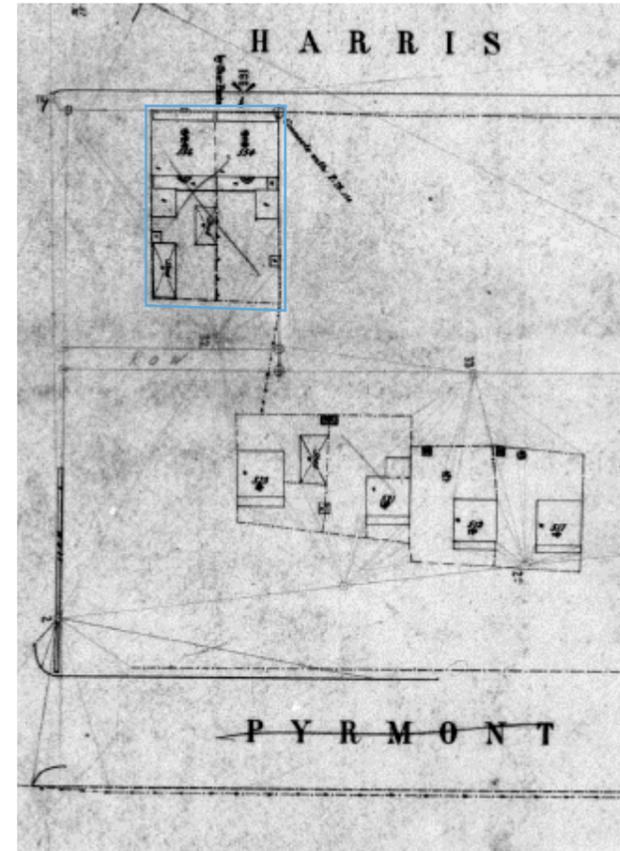


Figure 3.22 Detail from 1886 plan showing houses at 554–556 Pyrmont Street (Source: Sydney Water PWDS 1544-S206)

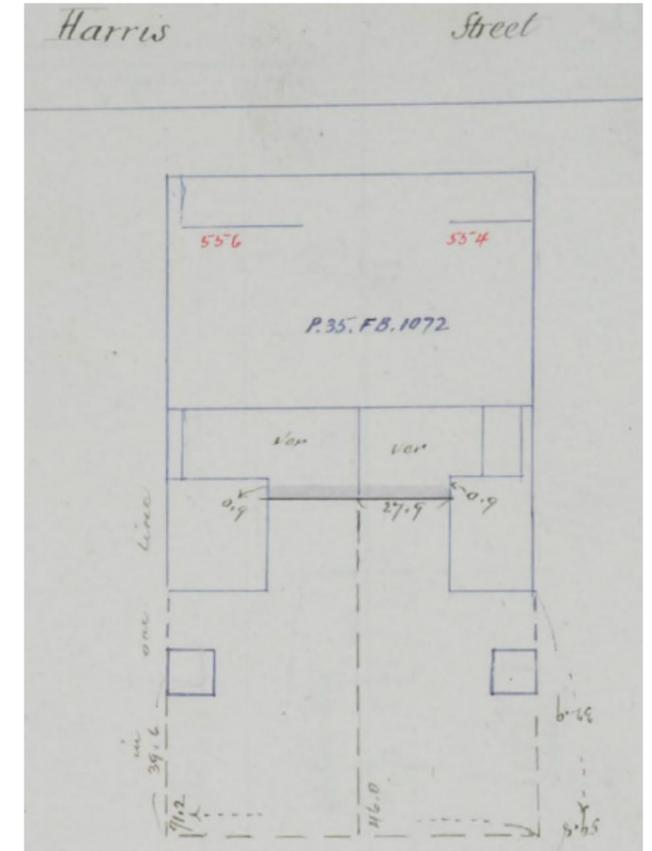


Figure 3.24 1893 updated field survey notes of 554-556 Harris Street (Source: Sydney Water PWDF B2412)



Figure 3.23 Semi-detached brick house pair at 554-556 Harris Street prior to demolition in 1922, with Ultimo Power House behind (Source: City of Sydney Archives NSCA CRS 51/992).

Phase 3—Ultimo Power House, Tram Shed and Post Office (1895-1946)

Historical development at the Powerhouse site in Phase 3 focused mainly on construction of the extant buildings of the Ultimo Power House (1898), Tram Shed (1898), and Post Office (1901). However, several other structures along William Henry and Harris Streets were also constructed at the site during this phase, including:

- Ultimo Tramway Instruction Room (William Henry Street—c.1913-1984)
- Sydney Glass Co et al (496-504, 506-542 Harris Street, 1902-1954)
- Railway Commissioners Workshop (552-560 Harris Street—corner Harris and Macarthur Street) (1914-1938)
- Maize Products Pty Ltd Warehouse/Manassen Building (552-560 Harris Street—corner Harris and Macarthur Street) (1938-1984)
- Ampol Service Station (1957-1984)
- Dalton Building (1960-1984)

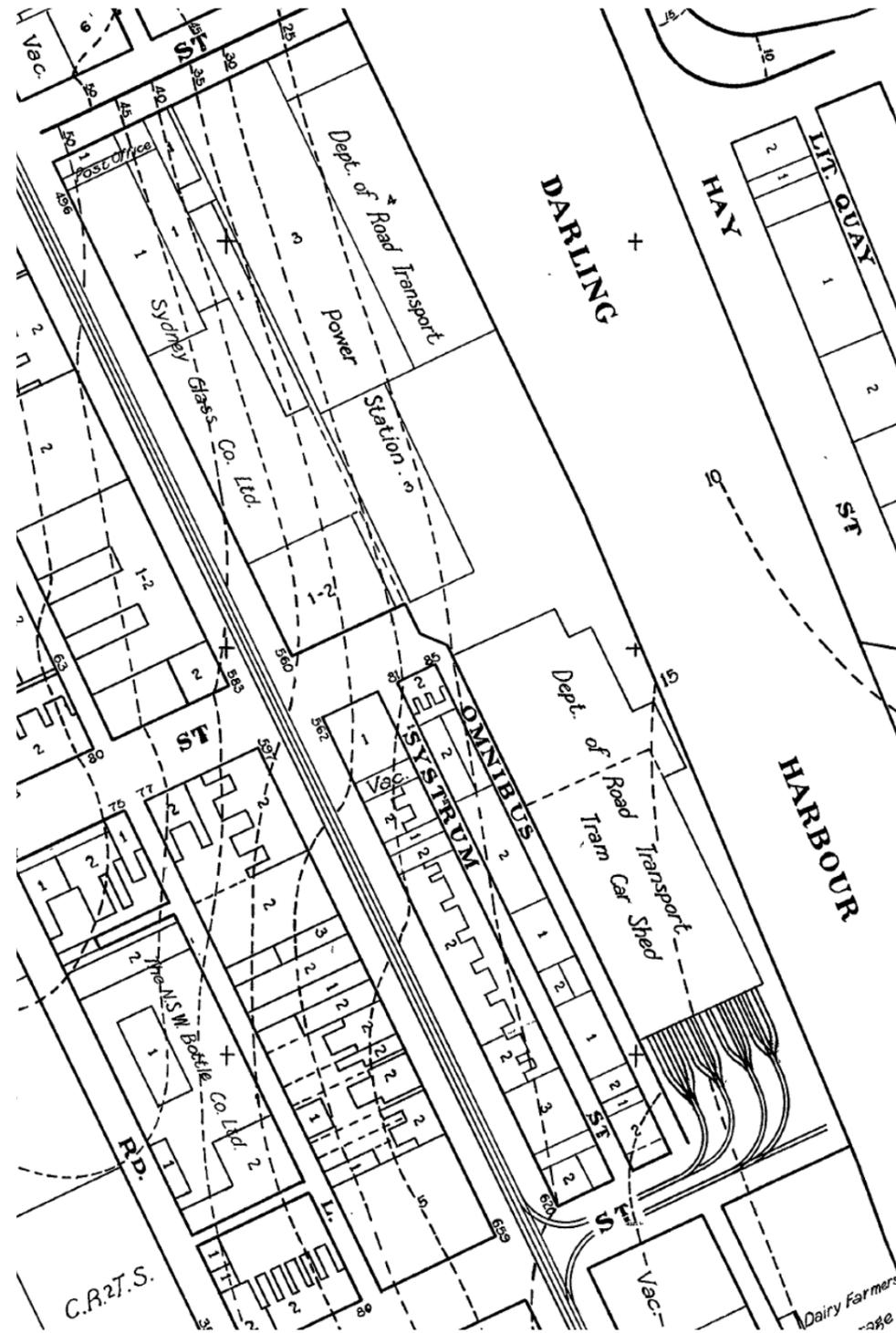


Figure 3.25 Detail from 1938-1950 Civic Survey Map. Sydney Glass Co Ltd fronting Harris Street (Source: City of Sydney Archives Map 22 - Ultimo, Haymarket)

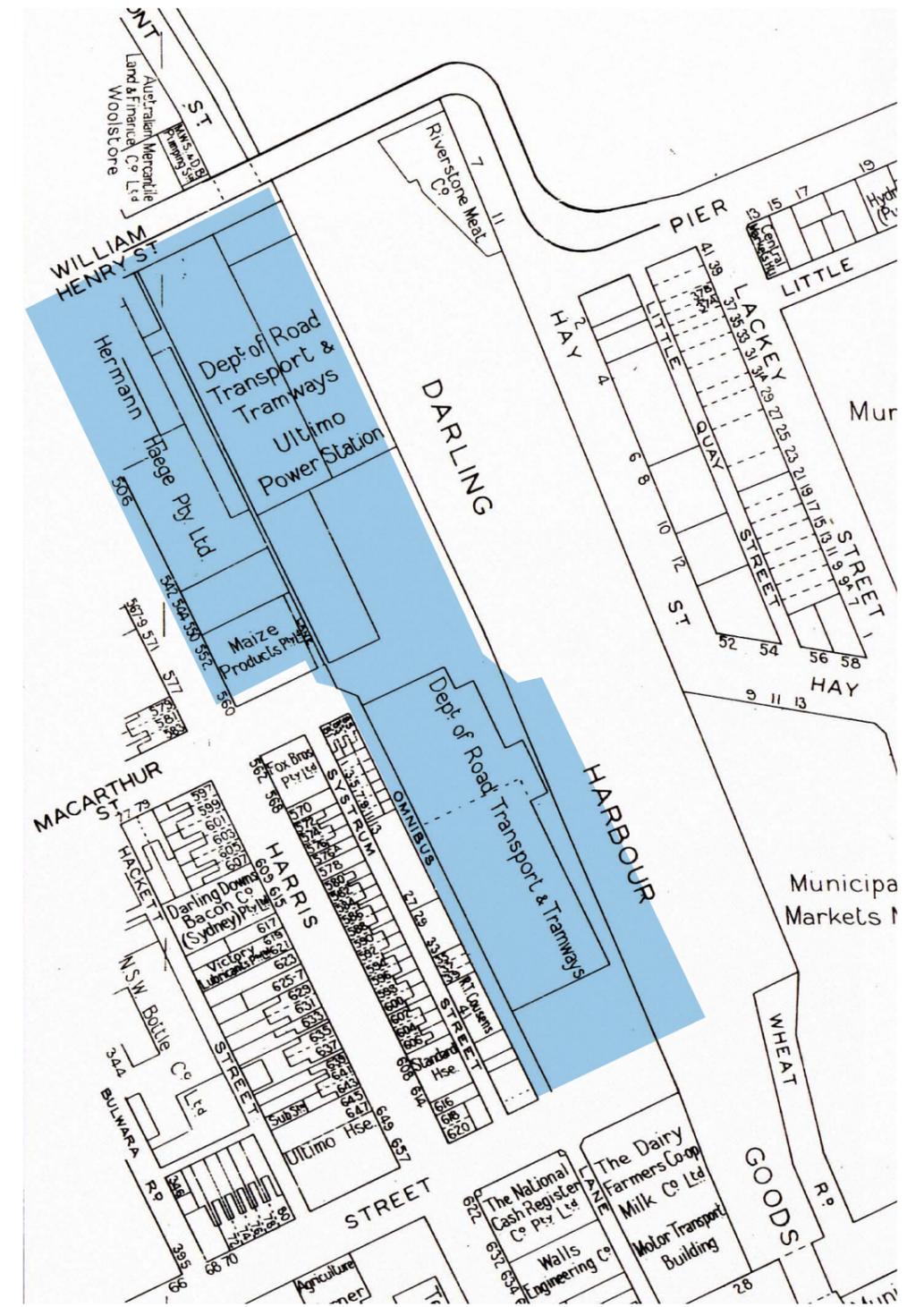


Figure 3.26 Detail from 1949-1972 Building Surveyor's Detail Sheet depicting later buildings along Harris Street. (Source: City of Sydney Archives Sheet 10 - Central with Curio overlay)

Tramway Instruction Room

The Tramway Instruction Room was built between 1913-14 (recorded in both the Sands and the Council Rates Assessment Books by 1914), and was a sizable one storey, one room brick building with an asbestos shingle roof, extending along William Henry Street between the Ultimo Post Office and the Power House Office (North Annex) (Figure 3.28 and Figure 3.29). The building contained significant tram car equipment which was used in training for the electric tram drivers.²¹ The final accessible Council Rates Assessment book (1948), records the Tramway Instruction Room located adjacent to the Ultimo Power House along William Henry Street, Ultimo. The Tram Instruction Room building was vacated in 1953 when a new training school opened in Randwick, and by 1954 it was being used as a storeroom for the Electrical Commission of NSW.²² The building appears on the 1963 Sydney Water Plan of the site and remained within the site until its demolition in the mid 1980s as part of Stage Two development of the Powerhouse Museum (recorded as being present by Godden et al in the 1984 heritage report²³ (Figure 3.32).

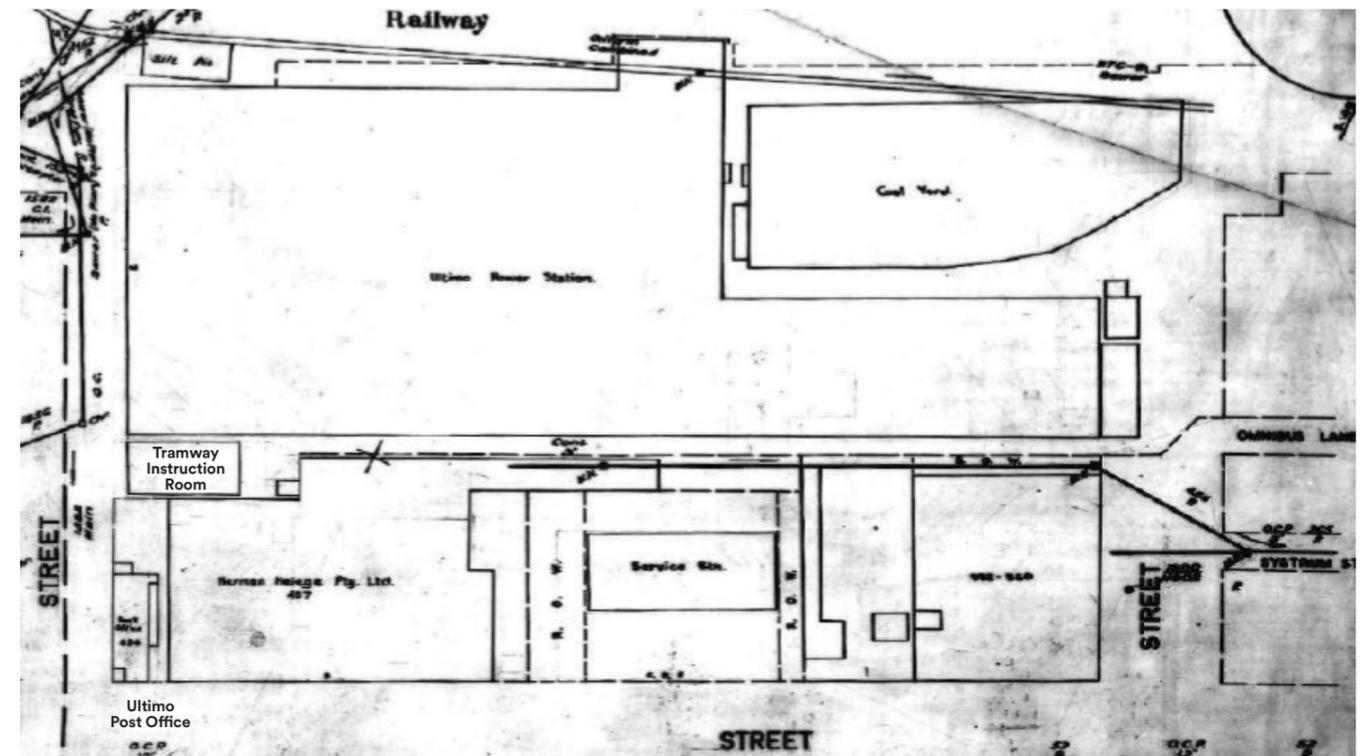


Figure 3.27 1963 plan of structures fronting Harris Street and Tramway Instruction Room along William Henry St (Source: Sydney Water DS3725 (2))



Figure 3.28 Tramway Induction Room (arrowed) between Ultimo Power House Administrative Offices and Ultimo Post Office, 1947 (Source: National Archives of Australia C4078, N3009)



Figure 3.29 North Annex (L) and Former Tramways Instruction Room (R), 1965 (Source: City of Sydney Archives NSCA CRS 48/4603)

**Harris Street (William Henry Street to Macarthur Street)
(496-500, 506-542, and 552-560 Harris Street)**

From December 1901, until at least the final Council Rates Assessment Book in 1948, the Sands Directories and Council Rates Assessment Books identify the Sydney Glass and Tile Company (also known variably as the Sydney Glass Co. Ltd./Pty Ltd) as lessees and occupiers of an area of 1 acre, 13 ½ perches at 496-504 Harris Street—adjacent to the south of the Ultimo Post Office on the corner of Harris and William Henry Streets. The Sydney Glass Company constructed a building fronting Harris Street, identified in 1911 as a double storey, two room stone workshop and offices, on land leased from Margaret Harris. The 1911 Council Rates Assessment book records Wright Sheards sub-leasing a wood and coal yard consisting of a single one-storey, one-room timber wood and coal yard with an iron roof, from the Sydney Glass and Tile Co on Harris Street, recorded in by 1918 in the Sands Directory as being leased by Harry Chapman as the fuel merchant on this land.

The Sydney Glass and Tile Co purchased their initial site from Margaret Harris in September 1922 for £10,000,²⁴ and by 1927 the Sydney Glass Co Ltd owned all the land along Harris Street between their factory at 496-504 Harris Street (next to the Post Office) along Harris Street to the intersection with Macarthur Street. The 1927 Council Rates Assessment book records Harry Chapman as remaining at 552 Harris Street, leasing the land from the Sydney Glass Co Ltd for a wood and Coal Yard which included a brick shed and weighbridge. In 1948 the Council Rates books describes the Sydney Glass Co building as a two storey brick three and five roomed factory and offices with a basement and iron roof, although this is the only recorded mention of the building having a basement in the entire history of the company's occupation of the site, so this reference to a basement may be inaccurate.²⁵

The 1914 Council Rates Assessment book records a Railway Commissioners workshop located on the corner of Harris street before Macarthur St (i.e. 552-560 Harris Street). In July 1923 Margaret Harris sold the block on the northern corner of Harris and Macarthur Streets to Maurice Newstead who mortgaged it to the E.S.& A. Bank who took possession of it after his 1938 death, selling it to Maize Products Pty Ltd who constructed a single storey warehouse on the property. The Maize Products warehouse at 552-560 Harris Street abutting Macarthur St is described in the 1948 Council Rates Assessment book as a single storey brick warehouse with an iron roof. The Maize Products warehouse building at 552-556 Harris St is depicted in the c.1963 Sydney Water map (Figure 3.31). By 1980, this warehouse building is referred to as the Manassen Building (Figure 3.32).

In 1948 the block of land at 550 Harris Street was purchased by the NSW Government Railways allowing a Harris Street frontage to the Power House. In January 1954 the Sydney Glass Co sold their land to the paper merchants Herman Haege Ltd, after which time a section of the land was leased to Ampol for use as a petrol station from December 1957.²⁶ In 1960 the 'Dalton Building' and store was constructed on Harris Street on the site of the former Sydney Glass Co Building.²⁷ The 1963 Sydney Water map shows the Post Office on the corner of William Henry Street followed by Herman Haege Pty Ltd, a right of way, and a service station (Figure 3.31).

In 1980-81, as part of the redevelopment of the former Power House site and surrounds for the Powerhouse Museum, the Minister for Public Works resumed and demolished all buildings along the entire Harris Street block, including The Dalton Building, a Store, and Ampol Service station, the NSW Government Railway land, and the Manassen Building at the corner of Harris and Macarthur Streets²⁸ (Figure 3.32).

In 2022, the land formerly occupied by the Harris Street structures is occupied by the Wran Building and Harris Street forecourt, completed in 1988.

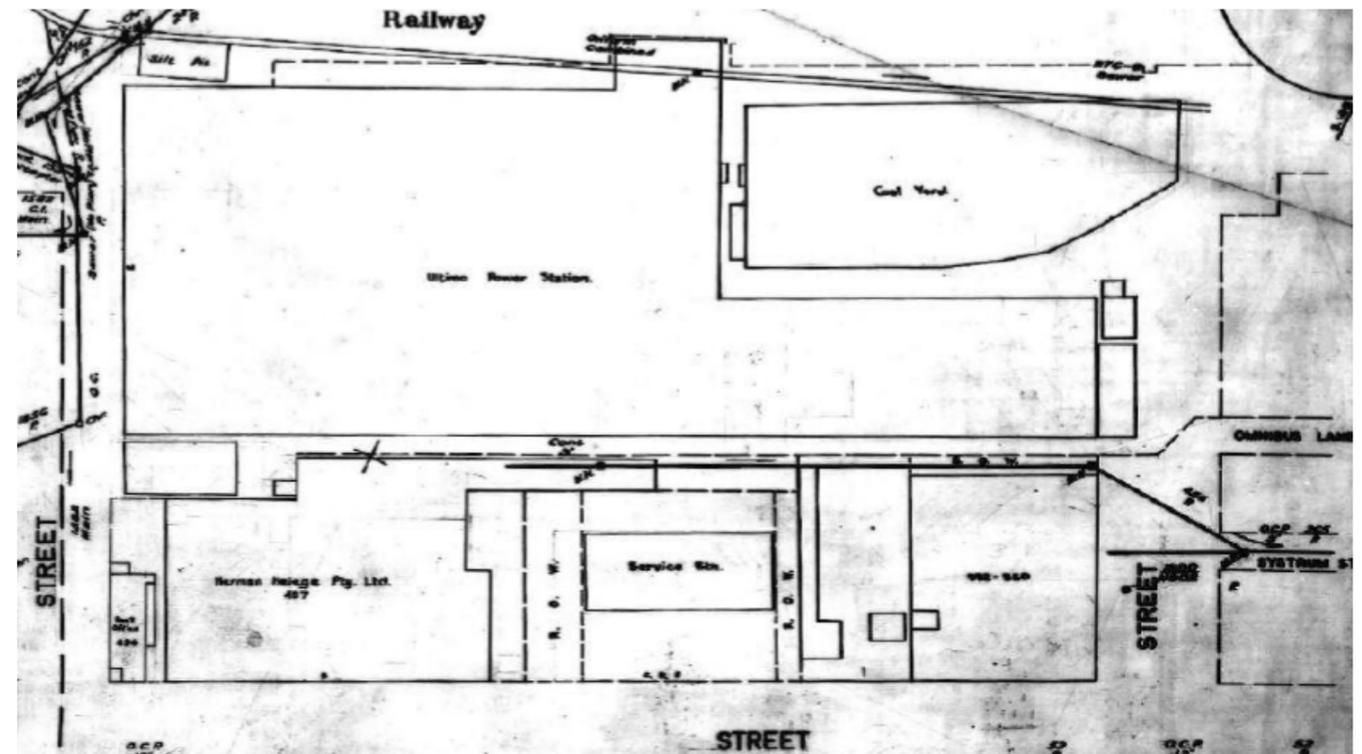


Figure 3.31 1963 plan indicating building at 552-556 Harris Street, corner of Macarthur Street (Source: Sydney Water archive plan DS3725 (2))



Figure 3.30 1964 Image showing the Ultimo Post Office on the corner of Harris and William Henry Streets with the Herman Haege Building and service station behind with frontages to Harris Street (Source: City of Sydney Archives).

(Fig. 2.2)

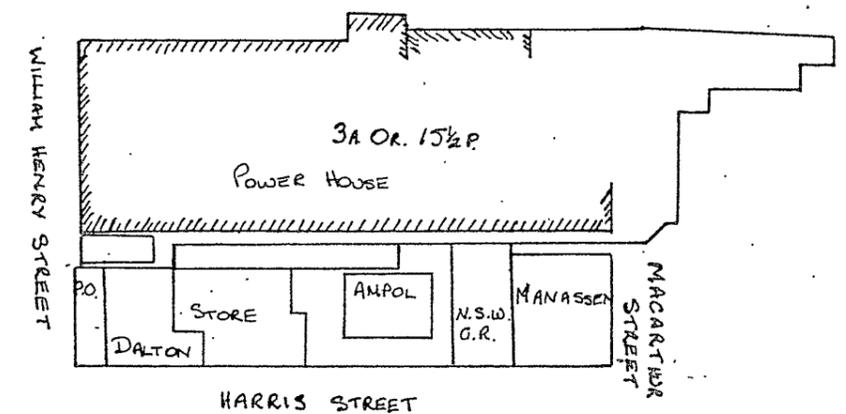


Fig. 2.2 Plan showing Block 23 at the time of its resumption by P.W.D.

Figure 3.32 Block 23 at time of resumption by the Public Works Dept c.1980, note the buildings fronting Harris Street (Source: Godden et al 1984 p. 30)

Summary of Historical Archaeological Potential and Significance

While each successive phase of occupation and historical use of the Powerhouse site may have impacted evidence of earlier land use activity across the site, previous archaeological work in the surrounding area and at similar industrial sites has demonstrated that levels of more recent ground disturbance are not sufficient to have removed/completely disturbed remains associated with earlier phases of site use. Many historical archaeological sites in the surrounding area that were initially assessed by archaeologists as likely to be highly disturbed, have been demonstrated during construction works to have extremely rich archaeological profiles which yielded significant cultural and environmental information.

While the construction of the basements of former Ultimo Power House Engine Hall/Turbine Hall and Boiler House would have significantly impacted and likely removed the majority of historical archaeological resources from the basement footprints, the Powerhouse site retains potential for historical archaeological resources to be present outside of these basement footprint areas.

The key historical activities/features with potential for associated historical archaeological resources to remain within the Powerhouse site are summarised in Table 3.3, with main areas with potential for archaeology of State significance shown in Figure 3.33.

Table 3.3 Summary of Key Historical Activities and Historical Archaeological Potential

HISTORICAL PHASE	DESCRIPTION OF ACTIVITY/HISTORICAL FEATURE	POTENTIAL ARCHAEOLOGICAL RESOURCES	SUMMARY OF ARCHAEOLOGICAL	POTENTIAL SIGNIFICANCE
Phase 2 (1803-1894) Ultimo-Pyrmont Peninsula and 19th Century Occupation	Natural landscape features and Early Sandstone Quarrying	<ul style="list-style-type: none"> – Evidence of early swamp landscape and reclamation such as palaeobotanical evidence (pollen etc) – Evidence of sandstone quarrying 	Although land reclamation around Darling Harbour was undertaken from the 1820s until the 1860s, the Harris Estate remained relative undeveloped and modified through the 1800s. There is potential for surviving evidence of reclamation of the swamp to be present and also of evidence of the underlying swamp landscape, which may have been modified prior to erection of houses, particularly along the south eastern part of the site.	Local/State
	Early 1840s and 1850s (undocumented) dwellings	<ul style="list-style-type: none"> – Building foundations, underfloor deposits, yard surfaces, gardens, outbuildings etc. – Artefact deposits – Post holes – Rear rubbish pits, wells, cesspits, cisterns etc. – Palaeobotanical evidence of early land reclamation and modification works 	Despite impacts from subsequent development, it is possible that archaeological remains of some of the earlier houses on the Harris Estate remain outside of the footprint of the Power House buildings basements.	Local/State
	137 William Henry Street (c.1873-1913)	<ul style="list-style-type: none"> – Building foundations, underfloor deposits, yard surfaces, gardens, outbuildings etc. – Artefact deposits – Post holes – Rear rubbish pits, wells, cesspits, cisterns etc. 	The main house and greater part of the backyard would have been disturbed by construction of the former Tramway Instruction Room Building and then the later construction of the Wran Building in 1987. However, there is potential for some archaeology associated with the house to be extant in the empty space between the North Annex and the Post Office, as well as beneath the Wran building foundations further to the south.	Local/State
	517-523 Pyrmont Street (c.1877-1898)	<ul style="list-style-type: none"> – Building foundations, underfloor deposits, yard surfaces, gardens, outbuildings etc. – Artefact deposits – Post holes – Rear rubbish pits, wells, cesspits, cisterns etc. 	<p>The house at 517 Pyrmont Street would have been located within the footprint of the Boiler House and Turbine Hall, and therefore it is unlikely that there will be any surviving physical evidence of this house, with construction of the basements for these extant buildings likely to have removed all evidence.</p> <p>The sites of these houses are located mostly within the footprint of the Level 1 cafe courtyard, while a small part of the 521 and 523 Pyrmont Street properties extending to beneath the location of the Switch House. The depth of the Switch House foundations and the presence of a basement cannot be ascertained from the plan of the Northern part of the Switch House. It is possible that some part of these properties may be extant but likely in a disturbed state. Archaeology beneath the café courtyard may be assumed to be relatively undisturbed with good integrity.</p>	Local/State
	554-556 Harris Street (c.1870s-1922)	<ul style="list-style-type: none"> – Building foundations, underfloor deposits, yard surfaces, gardens, outbuildings etc. – Artefact deposits – Post holes – Rear rubbish pits, wells, cesspits, cisterns etc. 	The two houses at 554 and 556 Harris Street would have been located approximately within the footprint of the Harris Street forecourt. An historical archaeological resource with good integrity associated with 554-556 Harris Street is likely to exist within the footprint of the Harris Street forecourt.	Local/State
	Sydney Tramway and Omnibus Company (STOC) (c.1871) and City Carrying Co. stables (c.1883)	<ul style="list-style-type: none"> – Stone pavers over floors – Post holes demarcating stables and walls – Artefact deposits 	The Ultimo Tram Depot which overlies the earlier stables associated with the Sydney Tramway and Omnibus and City Carrying Companies. While there may be some disturbance from the construction of the tramlines traversing the Tram Shed southern forecourt, there is potential for physical evidence associated with the City Carrying Company Stables and the earlier houses appearing on the Trigonometric Survey map to survive.	Local

Recommendations

The Powerhouse site has potential for local historical archaeological resources to be present. If present with good integrity, some of these potential archaeological resources may meet the criteria for State significance, and as such, the historical archaeological potential of the Powerhouse site will require management in accordance with the relevant requirements of the NSW Heritage Act 1977. The key areas of the Powerhouse site that have highest potential for substantial historical archaeological deposits and resources of State significance to be present are presented in Figure 3.33.

If planned for, archaeological risks can be minimised and managed as part of most redevelopment programs. The key, however, is that any proposed impact to potential archaeology should be investigated and considered early and upfront in any future development process, as well as in discussion with relevant statutory authorities where appropriate (i.e. NSW Heritage Council, City of Sydney, NSW DPIE etc), to ensure that there are mutually agreed protocols in place for the management, investigation and/or removal of local or State significant relics, if required.

The following key recommendations are made for the Powerhouse site with respect to historical archaeological potential and resources:

- The management of historical archaeological resources should be considered early in any the planning of any future proposed works for the site, to allow the archaeology to be proactively managed early in the process, rather than as an 'unexpected archaeological find' during any subsequent onsite construction programs
- Future development works that will impact the ground surface will have potential to impact the potential historical archaeological resources within the site.
- Any proposed future works that will disturb the ground surface within the site will require the preparation of a detailed historical archaeological impact assessment, with respect to specified development impacts and location, in order to determine the requirement for, or extent of, historical archaeological potential and associated mitigation that may be required.
- Work should be undertaken to more clearly identify the accurate location, breadth and depth of the Water Cooling System and Manifold within the Powerhouse site, to ensure that it is protected and conserved in situ without physical impact. Works to investigate or manage the Water Cooling System and Manifold should include consultation with Property NSW as the owner of this heritage asset.



Figure 3.33 Areas of the Powerhouse site with greatest potential to retain State significant historical archaeology. N.B. Archaeological potential is not contained to these locations only. (Source: AMBS 2018 Figure 5.1)

3.5 ENDNOTES

- 1 AMBS Ecology & Heritage, 2018, p. 1.
- 2 Fitzgerald & Golder, 1994, p. 11.
- 3 Design 5, 2021, pp. 42, 43, 59.
- 4 *ibid.*
- 5 AMBS Ecology & Heritage, 2018, p. 32.
- 6 Godden Mackay Logan, Bullecourt Place, Ultimo: archaeological excavation report, prepared for Australand Holdings Ltd, 2004.
- 7 Bladen is recorded as the tenant at 137 William Henry St in 1880 (*Sands Directory 1880*) whilst Carroll is recorded there by 1882 (*Assessment Books Denison Ward, 1882, p. 86*), until 1889 (*Sands Directory, 1883-1889*)
- 8 City of Sydney Archives, *Assessment Books Denison Ward, 1882, p. 86.*
- 9 *Sands Directory 1890, 1892; 1893; 1894; 1895; Assessment Books Denison Ward, 1896, p. 93.*
- 10 City of Sydney Archives, *Sands Directory 1897, 1900, 1901.*
- 11 *Sands Directory 1904-1905, 1906-1913.*
- 12 *Sands Directory, 1914; Assessment Books Denison Ward, 1914, p. 30.*
- 13 AMBS Ecology & Heritage 2018, p. 32
- 14 *Assessment Books Denison Ward, 1882, p. 122.*
- 15 Godden et al, 1984 p. 29
- 16 *Sands Directory, 1879*
- 17 *Sands Directory, 1910*
- 18 *Assessment Books Denison Ward, 1880.*
- 19 *ibid.*
- 20 NSW Department of Public Works, Report of the Department of Public Works for the Year ended 30th June 1897, 1898, pp. 26-27.
- 21 The Institution of Engineers Australia, 1994, p. 18
- 22 *ibid*
- 23 Godden et al 1984 p. 1
- 24 Godden et al 1984 p. 30
- 25 AMBS 2018 p.14
- 26 AMBS 2018 p. 15; Godden et al. 1984 p. 31
- 27 Godden et al. 1984 p. 30.
- 28 *ibid*

4 ASSESSMENT OF HERITAGE SIGNIFICANCE

4.1 PREVIOUS ASSESSMENTS

4.1.1 Ultimo Power House (SHR 02045/LEP)

The SHR listing for the Ultimo Power House (SHR #02045) includes the Office Building, Engine Room, Turbine Hall, Switch House, Boiler House, Water Cooling System and Manifold, and has the following Statement of Significance:

The Ultimo Power House is of state significance historically for being the first large state-owned electricity generating station in NSW and the original generating station for the supply of electricity to power the electric tramway network throughout Sydney. It was one of the largest and most important generating stations in NSW for many years. It was the site where most major technological advancements in electrical generation, including steam turbines and large-scale, alternating-current generation, were trialled by NSW electricity authorities. The station also played a major part in the development of the Ultimo/Pyrmont area.

This Federation power station has associations with the electrification of the suburban tramway and railway systems and with the general reticulation of electrical power in Sydney. The power house also supplied power to and has close association with Pyrmont Bridge (SHR No. 1618), Glebe Island Bridge (SHR No. 1914), Sewage Pumping Station No.1 (SHR No. 1336) at Ultimo (and 15 other low level sewage pumping stations in Sydney).

The power house is of state heritage significance for its major part in the 20th Century development of the Ultimo/Pyrmont area and in the wider heritage conservation movement in NSW. The transition of a major industrial location to a cultural, educational and tourism precinct was part of the Darling Harbour Bicentennial citywide adaptation project.

The historical purpose and function of the former power station is readable today through the building fabric, structure, in-situ engineering structures, gantry cranes and chimney bases.

These power station buildings are of state significance as a landmark group of buildings which relate closely to the visual and architectural industrial context of the area. It is of museological and architectural significance as a landmark early example of the adaptive reuse of a large-scale industrial heritage site, which was then a radical and exhilarating new approach to museum making for NSW. The transformation of the Power House through conservation and adaptation was recognised with several awards and was influential in the urban design of the later buildings in the precinct. Its fabric, form and uses is held in demonstrable public esteem by engineers, architects, museum associates and the wider public.¹

The Statement of Significance for the Local Heritage Listing of the Powerhouse Museum's former Warehouse buildings is as follows:

The former Ultimo Power House, dating from 1899, is historically significant for being the original generating station for the supply of electricity to power the tramway network throughout Sydney. It was also one of the largest and most important generating stations in NSW for many years and has associations with the electrification of the suburban railway system and with the general reticulation of electrical power. It was the first place where turbine driven alternators were tried in Australia, in 1905. It was amongst the largest of any generating stations operating in Australia with Ultimo and the White Bay Power being purpose built for the Railway and Tramways Department generating stations. The abandoned status of the power station and tramway system provided a potential to reveal a past transport system which ceased in favour of motor buses, which was underway from the 1950s.

The building dates from one of the key period of layers for the development of Ultimo as a direct result of subdivision of the Harris and Macarthur Estates and industrial redevelopment of the area at the turn of the Century.

It represents a good example of a Federation industrial building which makes a positive contribution to the streetscape. The subsequent alterations undertaken for the building's conversion to the Powerhouse Museum is significant both for its successful re-use of the buildings and as a modern design, awarded the Sulman medal.²

4.1.2 Ultimo Post Office (SHR 00502/LEP I2030)

The SHR listing for the Ultimo Post Office (SHR #00502) does not provide a statement of significance, however the following Statement of Significance is provided under the LEP listing for the Post Office:

The building dates from one of the key period of layers for the development of Ultimo/Pyrmont as a direct result of subdivision of the Harris and Macarthur Estates. It is a good example of a Federation Post Office on a prominent corner site which makes a positive contribution to the streetscape.

The former Ultimo Post Office, built in 1901, is historically significant for its associations with the development of Ultimo/Pyrmont as a predominantly industrial and warehouse precinct by the turn of the Century. Construction of the post office helps to reflect the degree of development and consolidation by that time (Criterion A.4) (Historic Theme: 3.6 Establishing lines and networks of communication). The building reflects characteristics of Federation Classical and Federation Romanesque architectural styles and is important for its connection with NSW Government Architect W L Vernon (Criteria D.2 and H.1). Owing to its styling and its location on a major intersection, the former post office is an important element in the Ultimo streetscape. Further, it emphasises the scale of the former Ultimo Power House (now the Power House Museum) behind (Criterion E.1).³

4.1.3 Water Cooling System and Manifold

The s170 listing for the Water Cooling System and Manifold provides the following Statement of Significance (although it is also noted that the Water Cooling System and Manifold is specifically included within the 2020 SHR Listing of the Ultimo Power House site):

The water cooling system and manifold was an integral component of the operating system of the Power Station. The former Ultimo Power Station, (now the Powerhouse Museum) dating from 1899, is historically significant for being the original generating station for the supply of electricity to power the electric tramway network throughout Sydney. It was also one of the largest and most important generating stations in NSW for many years and has associations with the electrification of the suburban railway system and with the general reticulation of electrical power. The station also played a major part in the development of the Ultimo/Pyrmont area.⁴

4.1.4 Goods Line (Darling Harbour Rail Corridor)

The s170 listing for the Goods Line (Darling Harbour Rail Corridor) provides the following Statement of Significance:

The Darling Harbour goods line was part of the first railway opened in New South Wales in 1855, the current corridor corresponds with that purchased from the Harris family in 1853 for this purpose. It therefore has a high degree of significance as a place. The Ultimo Road Bridge is believed to be constructed in the 1850s, and is therefore one of the only remaining features of the original railway which joined Darling Harbour and Granville (Parramatta Junction) in 1855. The siting of the railway along what was the edge of Darling Harbour strongly influenced the development of Pyrmont and Ultimo. Because of it, wool stores, engineering works and other industries were built here after the 1870s, giving this part of Ultimo its industrial, rather than residential, flavour. The site also contains two railway bridges. The Railway Square road overbridge (outside the curtilage of this listing) built in 1855 is historically significant as the oldest railway bridge to be constructed and still in use in New South Wales. It is a strong connection to the first railway construction and the original Redfern (Sydney) Station. The Ultimo railway underbridge is a mid 19th century construction with classic revival inspired cast iron columns and mid 19th century sandstock brick abutments. Both items are assessed individually as historically rare, scientifically rare, archaeologically rare and socially rare.⁵

4.2 ASSESSMENT METHODOLOGY AND CRITERIA

The Assessment of Significance of the Powerhouse site is based on the principles and definitions previously consolidated in The Burra Charter, and the NSW Heritage Manual. This literature provides guidelines and criteria for the assessment of the heritage significance of a place. The Burra Charter defines cultural significance as:

- Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.
- Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects.
- Places may have a range of values for different individuals or groups.

The NSW Heritage Manual correlates the assessment of the significance of a place with the understanding and description of its main uses, association with individuals or groups, archaeological potential and overall meaning of the cultural significance within those groups. This assessment is done by comparing the significance of a place with the NSW Heritage assessment criteria, in which a place can meet more than one criterion. Such process will determine the level of significance of a place – either for the local government area, for the state of NSW or the broader Australian community – and will assist in preparing a brief statement of heritage significance.

For the assessment of local or State significance of an item, the NSW Heritage Guidelines indicates that the item must meet one or more of the following criteria:

- Criterion (a)—an item is important in the course, or pattern, of NSW’s cultural or natural history (or the cultural or natural history of the local area);
- Criterion (b)—an item has strong or special association with the life or works of a person, or group of persons, of importance in the cultural or natural history of NSW (or the cultural or natural history of the local area);
- Criterion (c)—an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);
- Criterion (d)—an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;
- Criterion (e)—an item has potential to yield information that will contribute to an understanding of NSW’s cultural or natural history (or the cultural or natural history of the local area);
- Criterion (f)—an item possesses uncommon, rare or endangered aspects of NSW’s cultural or natural history (or the cultural or natural history of the local area);
- Criterion (g)—an item is important in demonstrating the principal characteristics of a class of NSW’s (or a class of the local areas’):
 - Cultural or natural places; or
 - Cultural or natural environments

In addition to the significance criteria as presented above, archaeological significance is generally further informed by three key questions:

- Can the site contribute knowledge that no other resource can?
- Can the site contribute knowledge which no other site can?
- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

The heritage significance of the Powerhouse site has been assessed according to each of the above criterion, summarised in relation to the overall site elements as follows.

4.2.1 Criterion (a)—Historical Significance

- The Ultimo Power House, Tram Shed, Goods Line and Ultimo Post Office are historically significant for their construction during the main development era of Ultimo and Pyrmont when the major estates of the peninsula were subdivided and sold for State government, residential, and commercial purposes.
- The Ultimo Power House is historically significant as the first state-owned, large electricity generating station, constructed in Sydney to power the Sydney electric tramway network. From 1899 to 1963 it was the largest and most important electricity generating station in the State.
- The Ultimo Power House site is historically significant as a place where the NSW electricity authorities trialled significant technological advancements in the generation of electricity. This included large scale alternating-current generation and steam turbines.
- The Water Cooling System and Manifold is historically significant for its integral role in the function of the Ultimo Power Station.
- The Ultimo Tram Shed is historically significant as the first tram depot shed in NSW.
- The 1988 museum adaption has significance to the Ultimo /Pyrmont area providing a new overlay to the Power House buildings and represents an early example of adaptive re-use in NSW. However, key elements of the 1988, museum adaption obscure visibility to and from the State-Heritage listed Ultimo Power House.

4.2.2 Criterion (b)—Associative Significance

- The Ultimo Power House is associated with the cultural history of Ultimo.
- The Ultimo Post Office has associative significance as one of a group of approximately 32 buildings constructed in a similar style by NSW Government Architect Walter Liberty Vernon between 1890 and 1910 in Sydney.
- The 1988 museum adaption is associated with the work of architect Lionel Glendenning, exhibitions designer Richard Johnson, Powerhouse Director Dr Lindsay Sharp, and the former NSW Premier Neville Wran.

4.2.3 Criterion (c)—Aesthetic Significance

- The Ultimo Power House has aesthetic significance as the group of power station buildings and are a good example of one of the most important and intact group of power station buildings in the State.
- In its day, the Boiler House was one of the largest brick buildings in NSW and for seventy years its chimneys were significant landmarks.
- The Ultimo Post Office has aesthetic significance as a good example of a Federation era post office.
- The 1988 adaptive reuse of the former Power House buildings for a museum has some architectural and museological significance and is an example of post-modernist architecture

4.2.4 Criterion (d)—Social Significance

- The Ultimo Power House has social significance as demonstrated by the public esteem of its form, fabric and uses as held by architects, engineers, educators, donors, volunteers, visitors, and communities.
- Both the individual heritage buildings and the site as a whole has social significance for their long historical association with the industrial working class of Ultimo, with both the Ultimo Power House and Tram Sheds as major employers in the area. The buildings dominated the landscape and the resident’s daily lives were affected by the state of the smoke leaving the buildings.
- Following the conversion into a museum in the 1980s the Powerhouse site has retained a level of social significance for the local community and industry.
- The Powerhouse Museum has social significance for its innovative adaptive reuse of the Ultimo Power House and Tram Sheds.⁶
- The Powerhouse site has social significance for the community response to the potential closure of the Museum on the site and the subsequent decision to retain and renew the Museum.

4.2.5 Criterion (e)—Scientific Significance

- The water cooling system and manifold has some potential to provide information on the underground construction of the early water cooling systems in Sydney.
- Potential historical archaeological resources associated with former phases of historical occupation and use of the site to be present within the site represent research potential of the site to provide information and evidence of former occupation, life, and use of the site prior to the construction of the Power House. Historical archaeological resources at the site have potential to include evidence of structures and activities of former mid 19th century houses at 137 William Henry Street, 554-556 Harris Street, and 517-523 Pyrmont Street, as well as evidence of the former Sydney Omnibus Company Stables and City Carrying Co Stables.

4.2.6 Criterion (f)—Rarity

- As separate buildings, the former Ultimo Power House buildings, Ultimo Post Office, and Ultimo Tram Shed are representative examples of their types but not considered to be rare.
- The 1988 Wran Building is an example of Australian post-modernist architecture, designed by Lionel Glendenning, as part of a bicentenary program which included the National Maritime Museum and Darling Harbour.

4.2.7 Criterion (g)—Representativeness

- The Ultimo Post Office is a representative example of an early 20th Century, inner city post office.
- Collectively, the former Ultimo Power House buildings are a representative example of an early 20th Century power station.
- The former Ultimo Tram Depot (Harwood Building) is representative of the layout and arrangement of the NSW tramway system’s electric tram depots.
- The Wran Building is representative of post-modernist architectural designs associated with large scale commercial developments of the 1980s and 1990s in Sydney. However, its integrity has been reduced through unsympathetic modifications made to it between 2003 and 2015.

4.3 STATEMENT OF HERITAGE SIGNIFICANCE

The Ultimo Power House is of State significance historically for being the first large state-owned electricity generating station in NSW and the original generating station for the supply of electricity to power the electric tramway network throughout Sydney. It was one of the largest and most important generating stations in NSW. It was the site where most major technological advancements in electrical generation, including steam turbines and large-scale, alternating-current generation, were trialled by NSW electricity authorities. The station also played a major part in the development of the Ultimo/Pymont area.

The Federation-Era Ultimo Power House has associations with the electrification of the suburban tramway and railway systems and with the general reticulation of electrical power in Sydney. The Ultimo Power House also supplied power to and has close association with Pymont Bridge (SHR No. 1618), Glebe Island Bridge (SHR No. 1914), Sewage Pumping Station No.1 (SHR No. 1336) at Ultimo (and 15 other low level sewage pumping stations in Sydney). The Ultimo Power House is historically significant as the first state-owned, large electricity generating station constructed in Sydney. Built in 1899, it was the first power station constructed to provide electricity for Sydney's "new" electric tram system. There is historical significance in the relationship between the Ultimo Tram Depot and the Ultimo Power House, in addition to the relationship between the Goods Line and the Ultimo Power House. The Ultimo Power House is of State heritage significance for its transformative role in the 20th century redevelopment of the Ultimo/Pymont area from a major industrial location to a cultural, educational and tourism precinct was part of the Darling Harbour Bicentennial citywide adaptation project.

The historical purpose and function of the former power station is readable today through the building fabric, structure, in-situ engineering structures, gantry cranes and chimney bases.

The Ultimo Power House buildings are of State significance as a landmark group of buildings which relate closely to the visual and architectural industrial context of the area.

The Ultimo Power House, Tram Shed, Goods Line and Post Office are historically significant for their construction during the main development era of Ultimo and Pymont when the major estates of the peninsula were subdivided and sold for State, residential, and commercial purposes. Within the site both the former Ultimo Power House buildings and Post Office are of State Significance.

The Powerhouse site is of museological and architectural significance as a landmark early example of the adaptive reuse of a large-scale industrial heritage site, which was at the time in the 1980s considered a new approach to museum making for NSW. The transformation of the Power House through conservation and adaptation was recognised with several awards and was influential in the urban design of the later buildings in the precinct.

4.4 HERITAGE CURTILAGE (SHR)

The SHR curtilage of the former Ultimo Power House buildings has been assessed and gazetted recently (August 2020) (Figure 4.1) and is considered appropriate with no current recommendations for revision.

Despite its prominent corner position, the Post Office building is cut off from the wider site both visually and physically. Visually, the Wran Building blocks the connection of the Ultimo Post Office to the original Power House buildings, dominating the landscape around the Post Office, impacting its readability and presence on site. While a more appropriate curtilage to the Ultimo Post Office (Figure 4.2) would be an extended curtilage to better reflect the historical connections between the Post Office and Power House buildings, this is not physically possible due to the dominating presence of the Wran Building in the intervening space between the two SHR listings.



Figure 4.1 Ultimo Power House, 500 Harris Street, Ultimo, SHR Curtilage

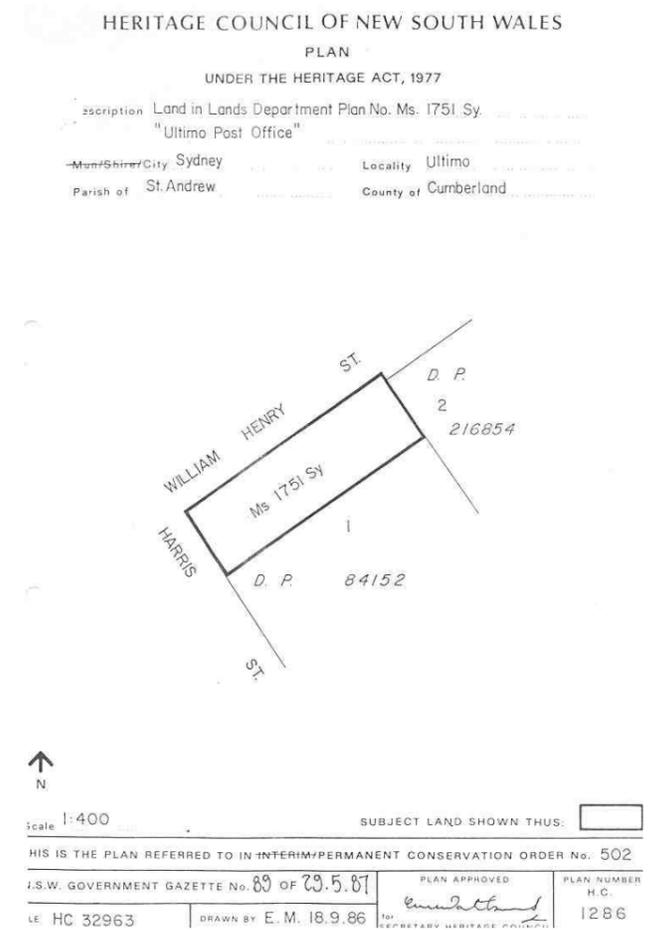


Figure 4.2 Ultimo Post Office SHR Listing