

9.1 HISTORY OF THE PUMP HOUSE

Built between 1898-9, the Pump House was an important part of the original Boiler House, containing the pumps that pushed water into the steam boilers that drove the Power House. The original Boiler House consisted of the Pump Room (Pump House) and the Boiler Hall (see Figure 9.4). The tender for the construction of the Pump House chimney was contracted to Messrs. Phippard Bros. and the work was completed in 1899. The original boiler house was a one storey brick building measuring 25m wide and 14m deep, with a basement, constructed to be symmetrical about the chimney stack (Figure 9.3). The original brick façade of the Pump House was of similar brickwork to that of the adjacent Office Building/ North Annex, with elaborate plinths, arch springing course, cornices, string courses at the crown of arch, while voussoirs and entablature were executed in moulded brick rather than stone as on the North Annex. The chimney was constructed of 890,000 bricks, rising 200 feet above the flue (see Figure 9.5 and Figure 9.6) and could carry furnace gases up to 5,000 h.p.¹ (Figure 9.5 to Figure 9.8). The Pump House originally contained two triplex plunger pumps with a capacity of 560 litres/minute, each driven by a 18.6kW electric motor.²

The New Boiler House (see Part C: Section 12) was constructed in 1902-1905, at which time the old Boiler House (including Pump House) was integrated into the design.³ Following the 1927-32 reconstruction of the Power House, the former Pump Room (including the chimney) was decommissioned⁴ (Figure 9.3).

In 1958 one of the retaining bands from the pump house chimney fell off, prompting a 1959 tender for the demolition of the former Pump House chimney stack. Brick by brick, the majority of the Pump House chimney was demolished in 1960, leaving only 25 feet of the chimney remaining along the northern elevation of the pump house⁵ (Figure 9.9). Further demolition of the former Pump House (the north east corner and remains of the chimney) occurred in 1967-68 for the construction of the William Henry Street bridge (completed in 1969 and replaced the former two-lane 1886 iron bridge in this location).

By 1984 the site of the former Pump House had become little more than a ruin, with part of the western section of the building remaining, covered by sections of the corrugated iron roof. Use of the area as a dump by Sydney City Council in the 1970s and 1980s had resulted in the collapse of the building floor in the east.⁶

By 2003, further disintegration and unrecorded demolition of the Pump House had occurred, although some of the remnant roof structure remained.⁷ In 2020, all that remains of the pump house are sections of the northern and eastern facades fronting William Henry Street, a small portion of the chimney and a few remnant pieces of the former roof truss. The Pump House space is not currently used for any purpose.

Previous Names	Old Boiler House, The Pump Room
Address	500 Harris Street, Ultimo
Lot & DP	Lot 1 DP631345
Built	1899
Heritage Listings	Sydney LEP 2012 (I2031)
Non-Statutory Listings	National Trust of Australia (NSW) Register, Powerhouse Museum (Stage Two), (S11648)

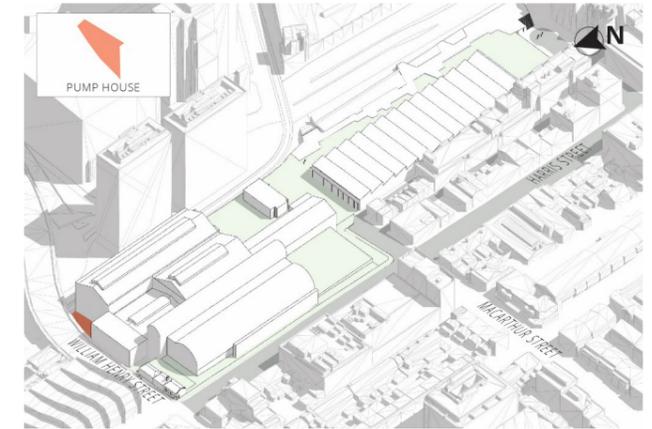


Figure 9.1 Location of the Pump House. (Source: John Wardle Architects with Curio Projects overlay).



Figure 9.2 Location of the former Pump House (Source: Powerhouse 2022)

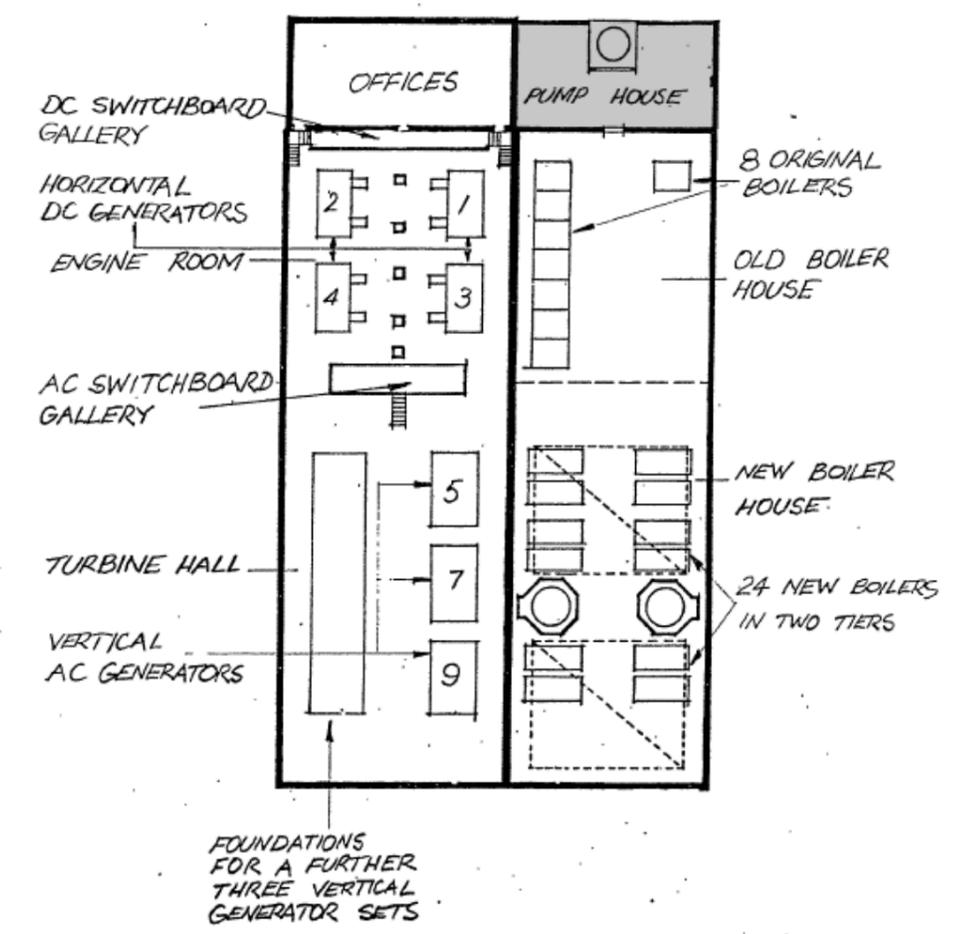
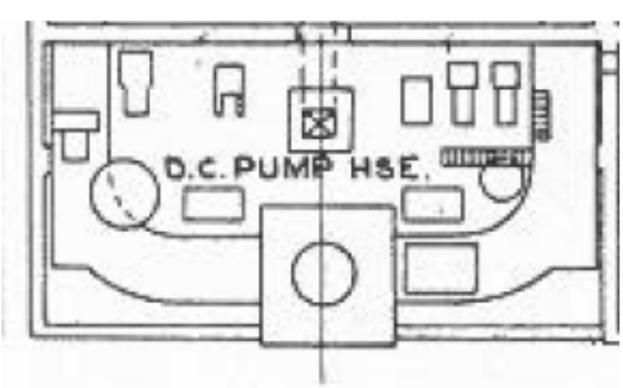
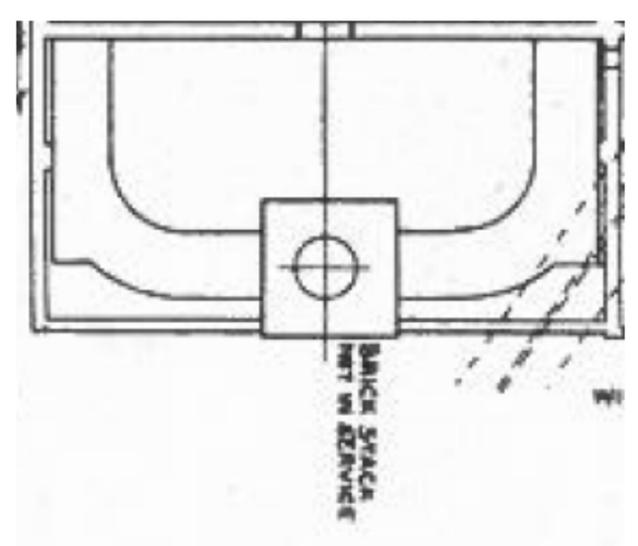
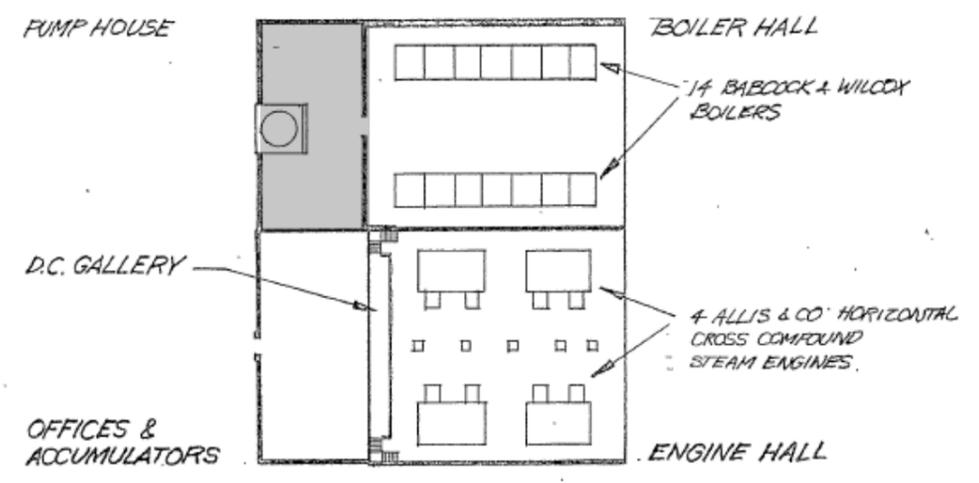
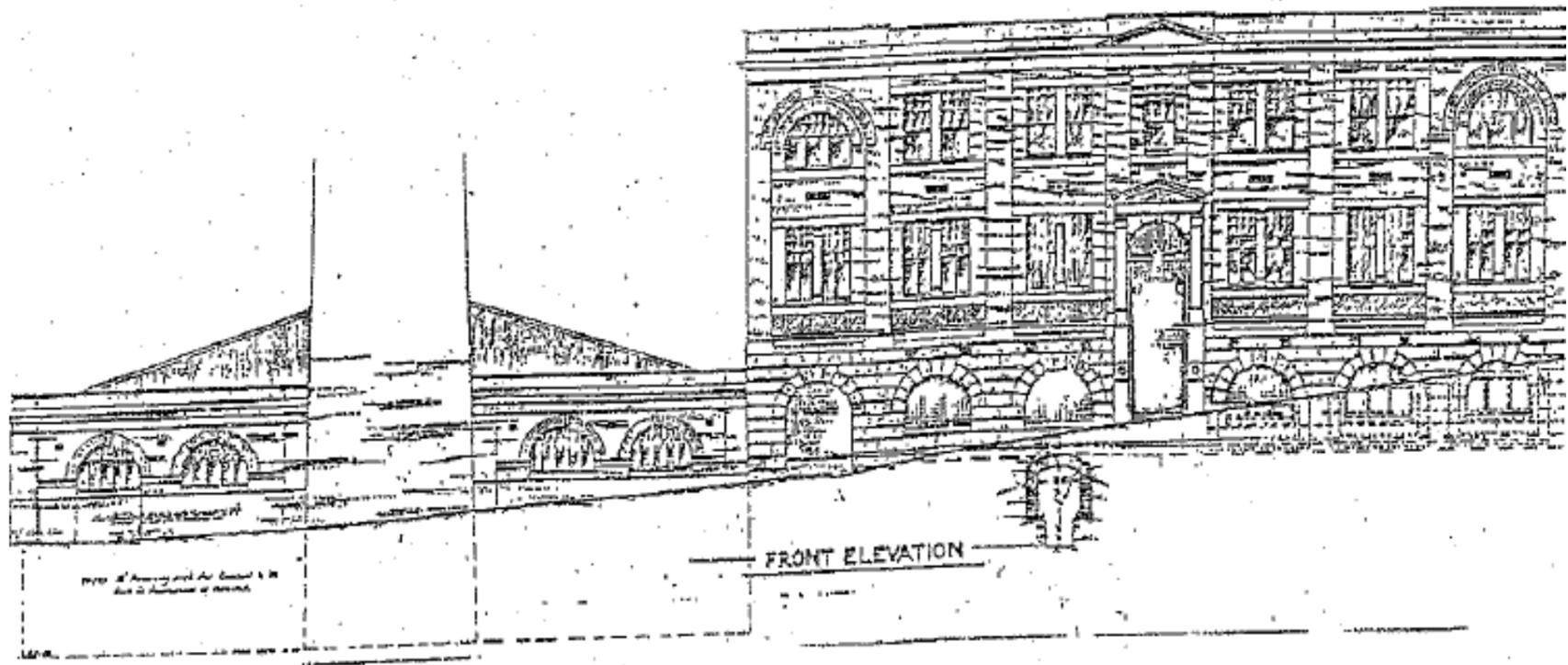


Figure 9.3 Top: Original north elevation of the old boiler house (Pump House) (left) and Office Building (right) (Source: NSWGT Contract No.12 Drawing No. 4 1898)
 Bottom: Pump House prior to (left) and after (right) 1932 Power House reconstruction (Left) (Source: Myers, 1933, p. 254)

Figure 9.4 1899 Layout of the Power House layout (left) and 1902 (right). Former Pump House in grey (Source: Godden et al. 1984 p. 98 & 104)



Figure 9.5 Construction of Ultimo Power House Pump House and Administrative Offices (North Annex), 1898 (Source: State Archives and Records Authority of NSW NRS-4481-2-[4/8645]-1219)



Figure 9.6 Construction of Ultimo Power House Pump House, 1898 (Source: State Archives and Records Authority of NSW NRS-4481-2-[4/8645]-1218)

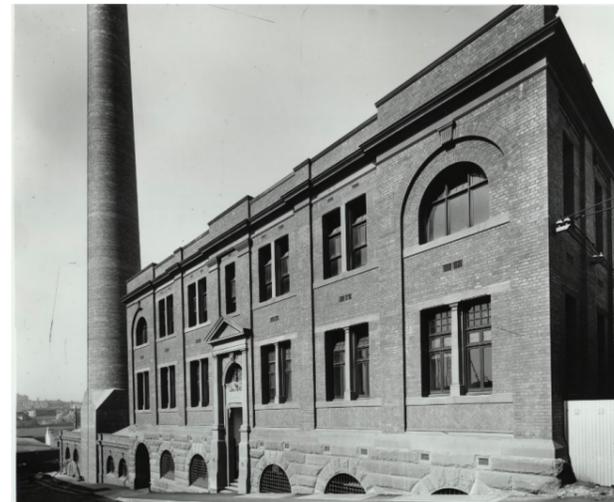


Figure 9.7 Ultimo Power House Administrative Offices (North Annex), and Pump House, c. 1899 (Source: State Archives and Records Authority of NSW NRS-4481-2-[4/8645]-1231)

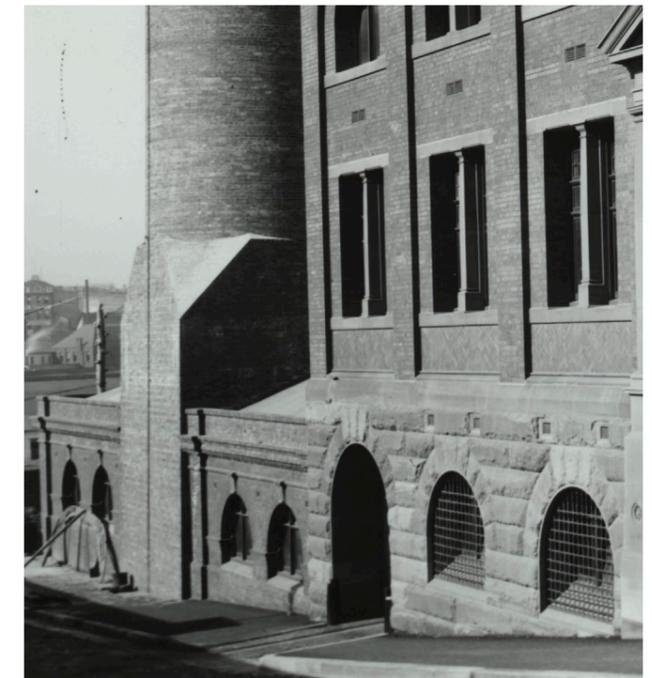


Figure 9.8 Close up of Pump House north elevation, c. 1899 (Source: State Archives and Records Authority of NSW NRS-4481-2-[4/8645]-1231)



Figure 9.9 William Henry Street frontage of Pump House and North Annex in 1965 prior to construction of William Henry Street bridge; Pump House chimney mostly demolished (Source: City of Sydney Archives SRC13937, CC BY 4.0)



Figure 9.10 Proposed site for bridge on William Henry Street, 1965 (Source: City of Sydney Archives NSCA CRS 48/4598, CC BY 4.0)



Figure 9.11 Proposed site for bridge on William Henry Street, 1965 showing Pump House (L) and North Annex (R). (Source: City of Sydney Archives NSCA CRS 48/4599, CC BY 4.0)



Figure 9.12 Demolition of the remains of Pump House chimney (Source: City of Sydney Archives SRC13952, CC BY 4.0)

9.2 PHYSICAL ANALYSIS OF THE PUMP HOUSE

An overall photo register and images of the Pump House as of 2020 is presented in Section 9.6.

9.2.1 Site and Setting

The Pump House forms part of the Powerhouse Ultimo Site at 500 Harris Street, Ultimo. The site of the former Pump House is located at the northern end of the site, bounded by William Henry Street (and bridge) to the North, the light rail line to the east, the Boiler House to the South and the North Annex to the west. Very little remains of the former Pump House structure. The Pump House remains visible from the upper levels of the North Annex or from the William Henry Street Bridge overpass. The site of the former Pump House is currently accessed from Level 1 of the Boiler House via a modern door insertion along the northern façade, as well as via a modern concrete stairwell and access door beneath the bridge overpass.

9.2.2 Built Elements

The Pump House site currently reads as an above-ground archaeological ruin. All that remains of the pump house are sections of the northern and eastern facades, a portion of the chimney and a few remnant pieces of the former roof truss (Figure 9.13 and Figure 9.14). The remaining brickwork shows evidence of red-brown, plastic moulded bricks, similar to the façade of the North Annex. The original size of the footprint of the Pump House remains clearly evident as delineated by the remaining northern and eastern wall fabric, the North Annex, and Boiler House walls. There are no internal spaces remaining.

While the remnant roof structure of the Pump House appeared evident in 2003 during the preparation of the original CMP, in 2021 all that remains of the roof is a couple of ferrous iron supports attached to the remnant section of the chimney and to the northern boiler house facade, and the outline of the former roof line of the Pump House visible in the brickwork along the northern wall of the Boiler House.

The Pump House was reportedly constructed with a basement, as well as with a tunnel that provided access to the original well.⁸ Physical analysis of the site in 2021 confirmed a basement level beneath the modern ground level, however this was not easily accessible for further investigation. A modern asphalt floor surface consistent with Level 1 of the Boiler House has been constructed across the former Pump House footprint, with concrete access stairs in the south east providing access to the William Henry Street level of the site. The modern Level 1 ground surface has visually truncated the remnant archway brickwork and windows along the northern Pump House wall. The remnant northern wall archways, visible from beneath the bridge overpass, have been bricked over.

9.3 HERITAGE SIGNIFICANCE

The former Pump House (1st Boiler House) is included in the following statutory heritage registers as part of the Ultimo Power House:

- Sydney LEP 2012, *The Powerhouse Museum Former Warehouse Buildings, including interiors*, I2031, 14 Dec 12.

The Pump House is not specifically included in the 2020 State Heritage Register listing for the Ultimo Powerhouse, and the extent structural remains (i.e. northern wall and chimney, eastern wall), are not included within the SHR curtilage as gazetted.

The former Pump House is also included on one non-statutory register: National Trust (NSW) Register *Powerhouse Museum (Stage Two)* (S11648).

9.3.1 Summary of Significance

Built as part of the original Ultimo Power House in 1899, the Pump House is historically significant as one of the original buildings of the Power House complex. However, unlike the other Power House buildings (North Annex, New Boiler House, Turbine & Engine Halls), the former Pump House has been mostly demolished, with only the northern and eastern walls, and part of the chimney stack, remaining. While views of the remnant facades and chimney have been predominantly obscured by the 1968 extension and raising of the William Henry Street bridge, these elements retain aesthetic significance as the only remaining evidence of the original Boiler House of the 1899 Ultimo Power House, which could be further enhanced and communicated by introduction of interpretation initiatives in this location. Archaeological remains of the former Pump House basement and tunnel may remain in a subsurface capacity, however physical investigation of the extent of subsurface remains has not been undertaken at present.

9.3.2 Summary of Significance

The 1968 raising and widening of the William Henry Street Bridge both destroyed a large proportion of the original structure of the Pump House, whilst simultaneously impacting views to the remains of the building. The location and remains of the former Pump House is mostly visible only from the William Henry Street bridge, and from the upper levels of the North Annex. The outline of the former Pump House roof line remains visible in the brickwork of the northern facade of the Boiler House.

9.3.3 Grading of Significant Components for the Pump House

The key components and elements of the fabric and form of the former Pump House have been ranked accordance to the Heritage NSW criteria for assessing significance, as summarised in Table 9.1 and depicted in Figure 9.17.



Figure 9.13 Remnant northern wall and chimney base (blue) of the 1899 Pump House (Source: Powerhouse 2022)



Figure 9.14 Remnant eastern wall (blue) of the 1899 Pump House (Source: Powerhouse 2022)

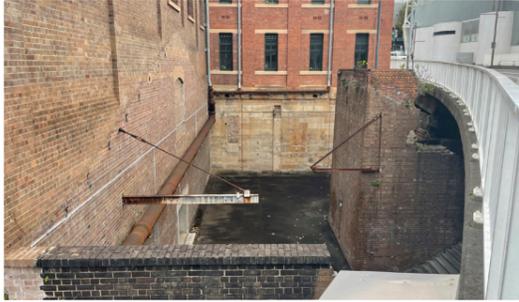


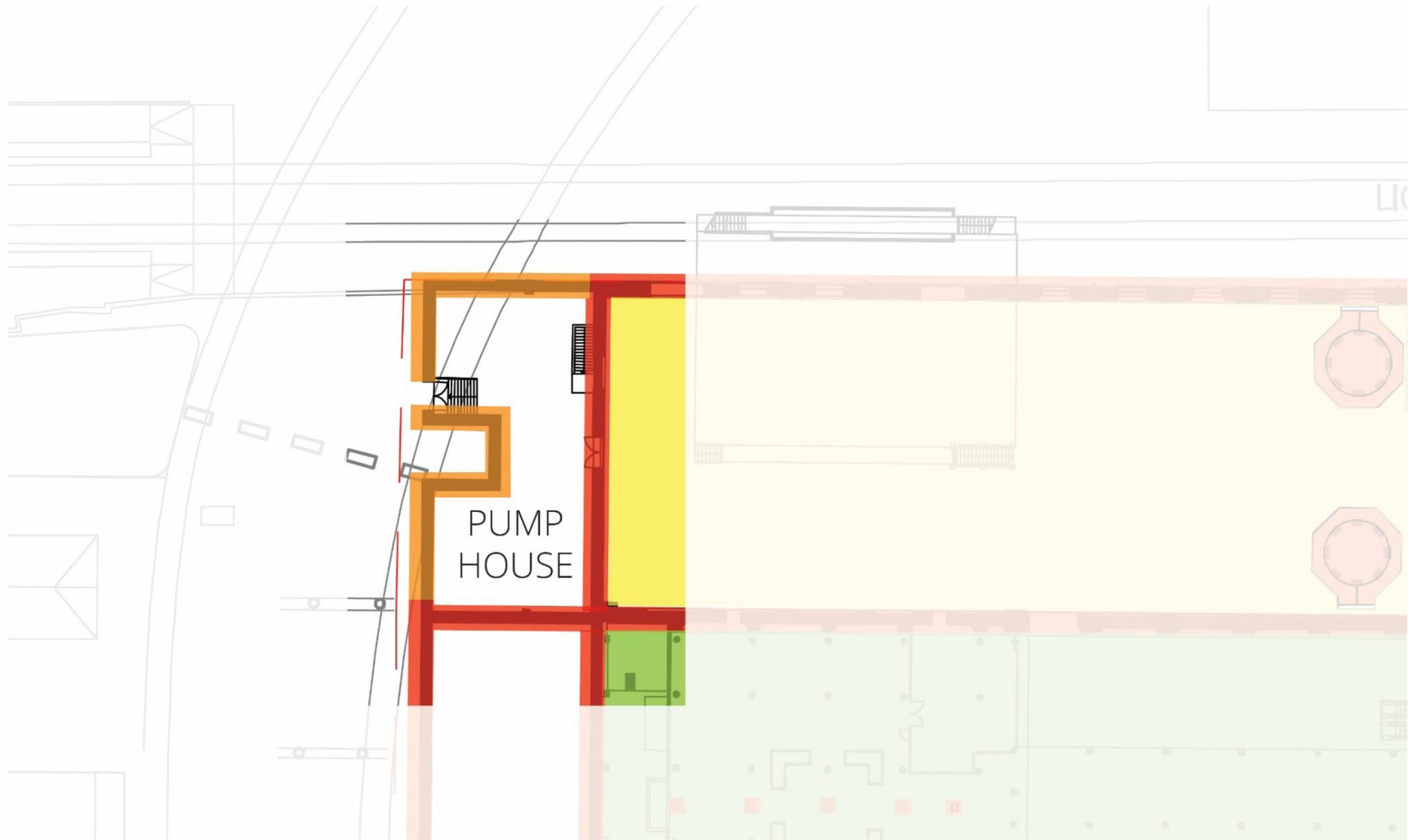
Figure 9.15 Remnant northern façade of the former Pump House is only visible from beneath the William Henry Street bridge (Source: Curio 2020)



Figure 9.16 View of Pump House remains from William Henry Street bridge (Source: Powerhouse 2022)

Table 9.1 Grading of Significant Components for the Pump House

ELEMENT	IMAGE	GRADING	NOTES
Roof Structure		● MODERATE	<p>The majority of the form and structure of the roof of the pump house is no longer present, with only several iron beams remaining attached to the remnant fabric of the chimney stack and to the northern wall of the Boiler House.</p> <p>The outline of the former Pump House roof remains visible on the wall of the boiler house and this visual feature should be retained.</p>
External Walls (Original)		● HIGH	<p>As one of the only remaining elements from the original Power House, the original walls are of high significance. Opportunities to interpret the remnant fabric of the Pump House should be investigated.</p>
Chimney		● HIGH	<p>As the only extant chimney from the original 1899 Power House, what remains of the pump house chimney is of high significance. Opportunities to interpret the remnant fabric of the Pump House should be investigated.</p>
Floor		● LITTLE	<p>The modern asphalt surface that has been constructed across the footprint of the former Pump House consistent with Level 1 of the Boiler House, including concrete access stairs adjacent to the Boiler House northern façade, and access to William Henry Street, are of little significance.</p>



SIGNIFICANCE GRADING

- EXCEPTIONAL
- HIGH
- MODERATE
- LITTLE
- INTRUSIVE

**POWERHOUSE ULTIMO
EXISTING CONDITION - LEVEL 1 PLAN**

24/09/2020

**John Wardle
Architects**



Figure 9.17 Former Pump House Grading of Significant Components (Curio 2021)

9.4 OPPORTUNITIES AND CONSTRAINTS

Opportunities and constraints specific to the former Pump House include:

Opportunities

- The Pump House site including remnant chimney and original Boiler House Footprint should be retained, conserved and interpreted, where possible. The space and remnant historic fabric has outstanding potential for creative reinterpretation that combines the existing remnant fabric, new built elements, landscaping, possible elevated pathways and cleverly designed interpretation.
- Creation of a new accessible outdoor space within the footprint of the former Pump House for Powerhouse utilisation
- Potential for a careful and sensitive adaptive reuse of this area of the site that allows for the construction of a new building within the remnant footprint of the original Boiler House. However the ongoing retention and protection of the remaining fabric would be preferred above alternative interpretative options, in order to facilitate future interpretation of the site and maintenance.
- Creation of a careful through-site pedestrian access directly from William Henry Bridge/Light Rail Station via the former Pump House site through to the Former Ultimo Power House could be explored to improve site access to the Powerhouse. Site-through access directly to the William Henry Bridge approaches that would allow for this unique historical ‘ruin’ to be accessed more easily and provide an opportunity to interpret this ‘forgotten’ area of the site.

Constraints

- The location of the former Pump House obstructed by the William Henry Street bridge presents a significant physical constraint for visibility and access to this area of the Powerhouse site.
- The exterior location of the Pump House means the remains of the building are significantly affected by weather, including frequent flooding of the modern stairwell, penetrating the basement level.
- The area is prone to vegetation growth, vandalism and garbage thrown or blown in via the overhead William Henry Street bridge.
- The proximity to the William Henry Street Bridge impacts the ability to interpret the former roof of the building. In 1984 when the majority of the roof truss remained, Godden et al⁹ discussed the potential to reconstruct the roof, this was again discussed in Architectural Project’s 2003 CMP.¹⁰ As of 2021, the extent of the former roof truss referred to in 1984 and 2003 no longer remains at the site. Any attempt to recreate the roof in another fabric (eg glass) to allow a visual connection to the ruins whilst providing cover, would be structurally and logistically difficult due to the position of the William Henry Street Bridge, would be hard to protect, and likely subject to vandalism. Therefore reconstruction of the former Pump House is no longer considered an appropriate or viable option for the site.

9.5 ITEM-SPECIFIC CONSERVATION POLICIES

Policy 26—Interpretation and Education: The remnant fabric of the former Pump House should be retained where possible, integrated into programmatic interpretation. The outline of the supporting arches and flues in the brickwork between the Pump House and the Boiler House should ideally remain visible.

9.6 PHOTO REGISTER FOR THE PUMP HOUSE

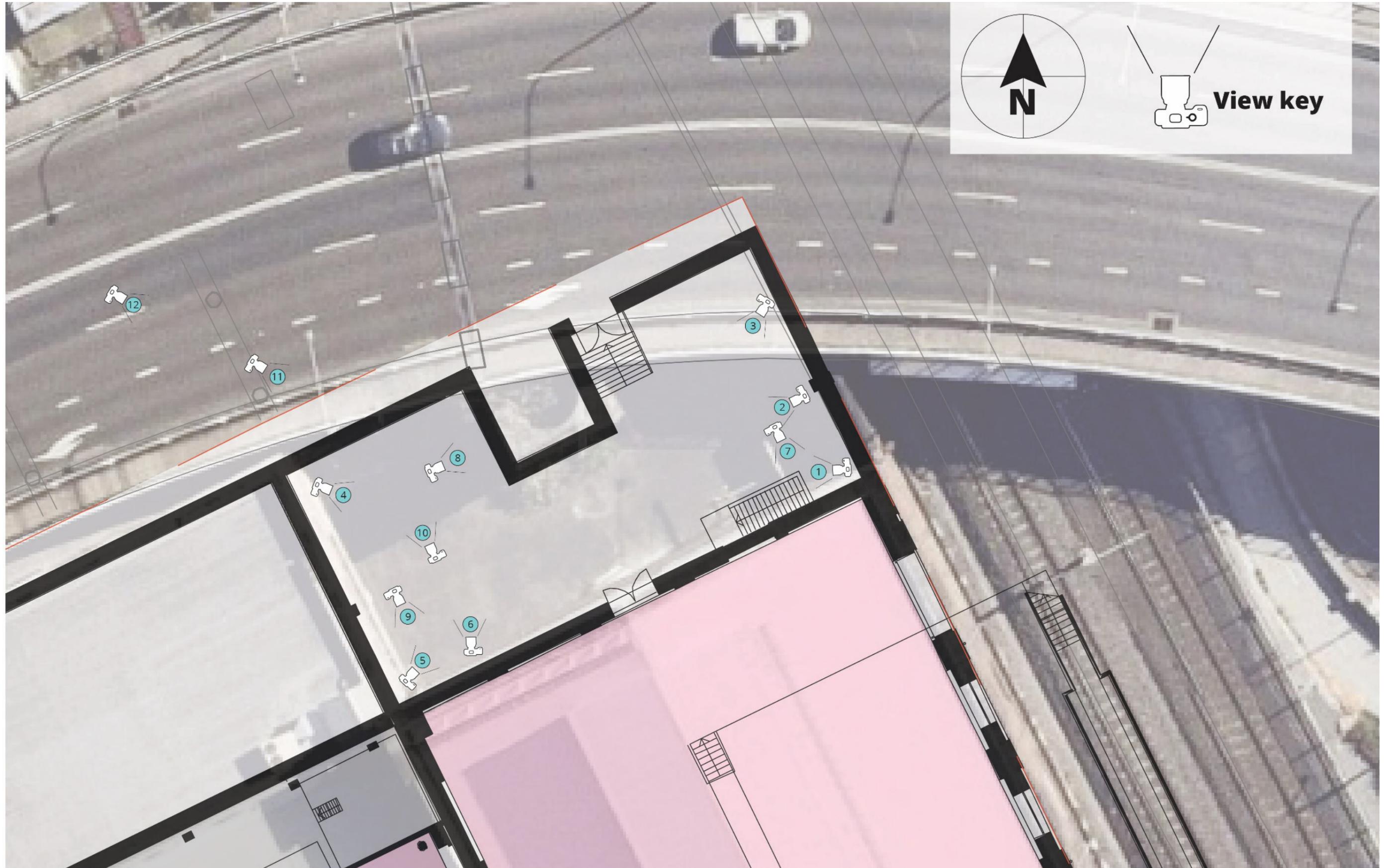
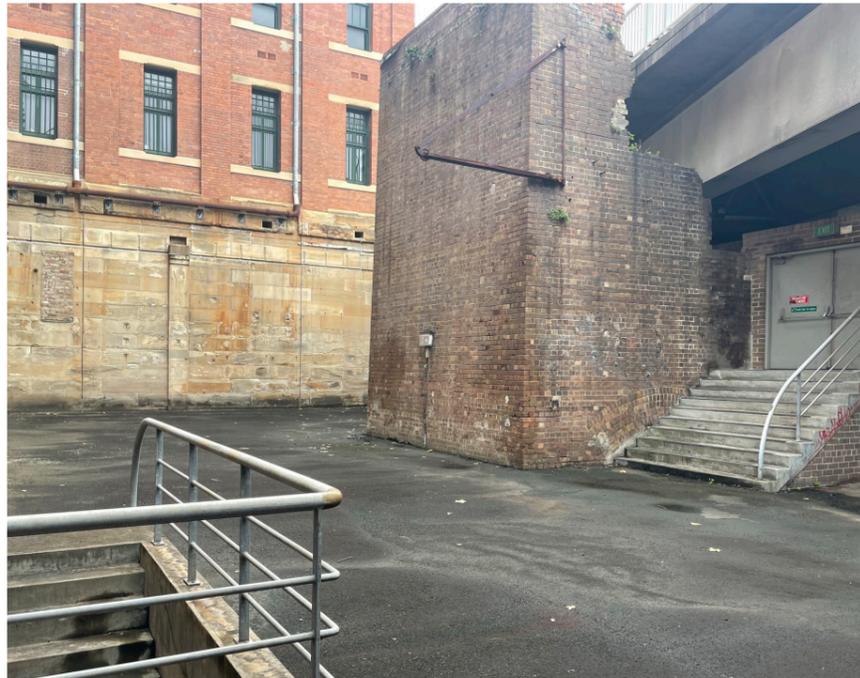


Figure 9.18 Pump House Photo Register



Pump House Viewpoint 1: North Annex in Background. Remnant chimney fabric and roof truss visible. Access to William Henry Street in right. Modern asphalt surface consistent with Boiler House Level 1.



Pump House Viewpoint 2: Eastern wall of North Annex



Pump House Viewpoint 3: Boiler House northern façade, outline of former Pump House roof visible in brickwork.



Pump House Viewpoint 4: Boiler House northern façade, outline of former Pump House roof visible in brickwork.



Pump House Viewpoint 5: Level 1, William Henry Street bridge resting on remnant north and eastern pump house walls, remnant chimney section.



Pump House Viewpoint 6: Level 1, interior of remnant northern wall and chimney, William Henry Street bridge above.



Pump House Viewpoint 7: Modern access stairs in southeast, adjacent to northern Boiler House facade



Pump House Viewpoint 8: Original brick archway obscured by construction of modern Level 1 surface



Pump House Viewpoint 9: Original brick archway obscured by construction of modern Level 1 surface



Pump House Viewpoint 10: Northern wall interior, bricked over archways



Pump House Viewpoint 11: Northern wall exterior from William Henry St, archways infilled with modern brick



Pump House Viewpoint 12: Northern wall exterior, adjacent to North Annex, view from underneath William Henry Street bridge.

9.7 ENDNOTES

- 1 Godden et al, 1984, p. 4.; NSW Department of Public Works 1900, p. 23.
- 2 Godden et al, 1984, p. 96
- 3 Architectural Projects, 2003, p. 15.
- 4 Myers, W. H., 'Reconstruction of Ultimo Power Station, Sydney', *Transactions of the Institution*, 1933, p. 254.
- 5 Godden et al, 1984, p. 37.
- 6 Godden et al, 1984, p. 14.
- 7 Architectural Projects, 2003 p. 105
- 8 Godden et al, 1984, p. 26.
- 9 Godden et al, 1984, p. 25.
- 10 Architectural Projects, 2003, p. 109.

10 THE ENGINE HOUSE

10.1 HISTORY OF THE ENGINE HOUSE

The Engine House was part of the original 1899 construction of the Ultimo Power House, constructed as the main engine room measuring 30m wide x 32m long, consisting of a DC switchboard gallery in the north, and the main engine room that was separated into two equally sized bays (Figure 10.4).¹ While the Engine House was effectively a southern continuation of the main structure of the North Annex (Office Building), it was designed and constructed in a more utilitarian character than its northern counterpart. The interior of the Engine House was constructed with terracotta tile flooring, and with skirtings and tile walls to a height of 1.6m.

The bays contained four sets of Allis-Corliss Horizontal Cross Compound Steam Engines, and each bay was served by a 30 tonne electrically-driven travelling crane supported from the Engine House walls and centre of the bays on continuous plate girders, which were in turn supported by lattice columns braced by arch beams (Figure 10.5). The cranes, supplied by H. W. Peabody and Company, were built in the United States and were revolutionary at the time as only one man was needed to operate them.²

At the time of installation, the switchboard was described as:

The switchboard, which is 40 feet long and 7 feet 6 inches high, has been delivered by the contractors, H. H. Kingsbury & Co., and the work or erection is about to commence. It will be placed on a gallery 90 feet long overlooking the engine-room 14 feet above the floor. Provision has been made so that the switchboard can be extended as may be required.³

On September 12th, 1901, a fire broke out in the Engine House when the woodwork surrounding the switchboard caught alight and burnt the cable insulation, shutting down the Power House and causing the sudden stoppage of trams on George and Elizabeth Streets (Figure 10.3). While the switchboard was completely burnt out by this fire, the Power House was shut down for less than 24 hours, and no lasting structural damage to the Engine House occurred.⁴

The Engine House was extended and altered in 1902 to construct and integrate the Turbine Hall (detailed in Part C: Section 11). Works in 1902 included cladding of the Engine House southern wall with metal sheeting,⁵ as well as additional gallery floors on the north (D.C. power) and south (A.C. power) walls (Figure 10.4). The new gallery floors were formed on “specially rolled corrugated permanent formwork which is one of the few surviving examples in Sydney”.⁶ Figure 10.6 and Figure 10.7 depict the Engine House after the 1902 extensions.

Further additions and alterations to the Engine House in 1913 included works to establish a substation in the Engine House to convert the alternating current (AC) generated by the new turbines in the Turbine Hall to direct current (DC). The Engine House substation consisted of a marble switchboard mounted near the centre of the room on the western side of the lattice columns, along with five rotary converters. The new switchboard, plus the need at this time to accommodate new switchboard apparatus required for tie-in cables for the new White Bay power house, resulted in the construction of a new mezzanine gallery along the western wall of the Engine House.

Previous Names	Engine Room, Generating Room, Engine Hall, Old Engine Room, Substation
Address	500 Harris Street, Ultimo
Lot & DP	Lot 1 DP631345
Built	1899
Heritage Listings	SHR 02045 “Ultimo Power House” LEP I2031, “Powerhouse Museum Former Warehouse Buildings, including interiors”
Non-Statutory Listings	Register of the National Estate (Powerhouse Museum (Stage Two), Place ID 100690) National Trust of Australia (NSW) Register (S11648, 24/10/2015)

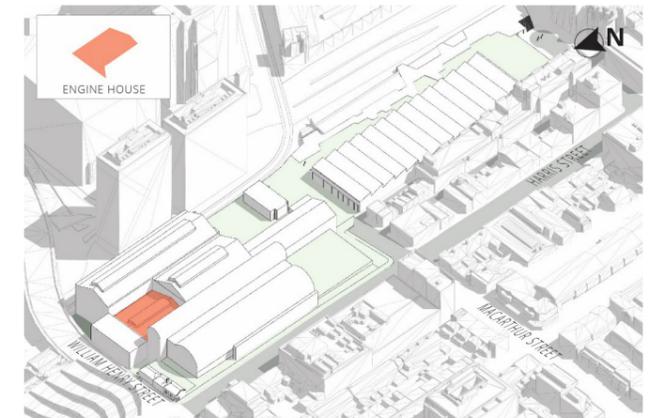


Figure 10.1 Location of the Engine House (Source: John Wardle Architects with Curio Projects overlay).



Figure 10.2 Interior of the Engine House in 2020 as part of the Powerhouse Museum (Source: Curio Projects 2020)

Following the construction of the separate switch house building in 1926, the south wall AC gallery of the Engine House was removed, while some further minor alterations and additions were undertaken in 1930. The original aesthetic of the Engine House interior (i.e. the terracotta floor tiling, skirting and wall tiles) was continued through both the 1902 and 1930 reconstruction works.⁷ In 1932 a burst water main caused severe flooding of the Engine House, damaging machinery and severely delaying tram services for the day.⁸

When the Ultimo Power House closed on 11 October 1963, the Engine House, along with the other Power House buildings, fell into disrepair and was subsequently damaged by decay, squatters, and vandals (Figure 10.9). During this period of neglect in the 1960s and 1970s, the Engine House roof was damaged by rain water resulting in significant deterioration.⁹

In the 1980s the Engine House was subject to adaptive re-use works and redevelopment to serve as an exhibition space for the new Powerhouse Museum. While most of the main structure of the Engine House overall and exterior was retained as part of the 1980s redevelopment works, impacts included substantial salvage of the interior heritage, including breaking a number of heritage items:

All electrical gear on the western gallery has been taken, even the brass covers and toggles from the electric light switches have been salvaged. But the salvage was not done with precision. Engines were smashed from their beds, slate panels broken to retrieve the last remaining pieces of copper, balustrades and railings torn out to allow easy access for demolition equipment¹⁰

Other 1980s alterations and impacts to the Engine House interior included removal of the western wall switchboard gallery, removal of the concrete engine pads and surrounding tiled walkways, and removal of the cast iron floor grates that allowed crane access to the basement.¹¹ While the northern switchboard was removed, the north mezzanine gallery was retained. The partial floor of the Engine House was extended across the building, dividing it into two distinct levels to be used for exhibition space. Other works undertaken in the 1980s to incorporate the Engine House with the new Powerhouse Museum format and new structures included removal of windows and brickwork in the exterior (western) wall for new openings and connections to the Wran Building, construction of a southern mezzanine level and access stairs. In 2020 the Engine House is used as an exhibition space for the Powerhouse Museum.

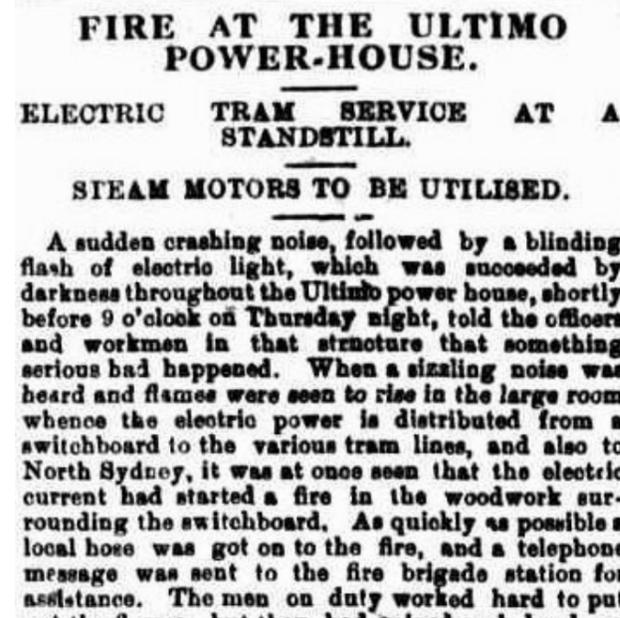


Figure 10.3 'Fire at the Ultimo Power-House', Goulburn Evening Penny Post, 14 Sep 1901, p. 4.

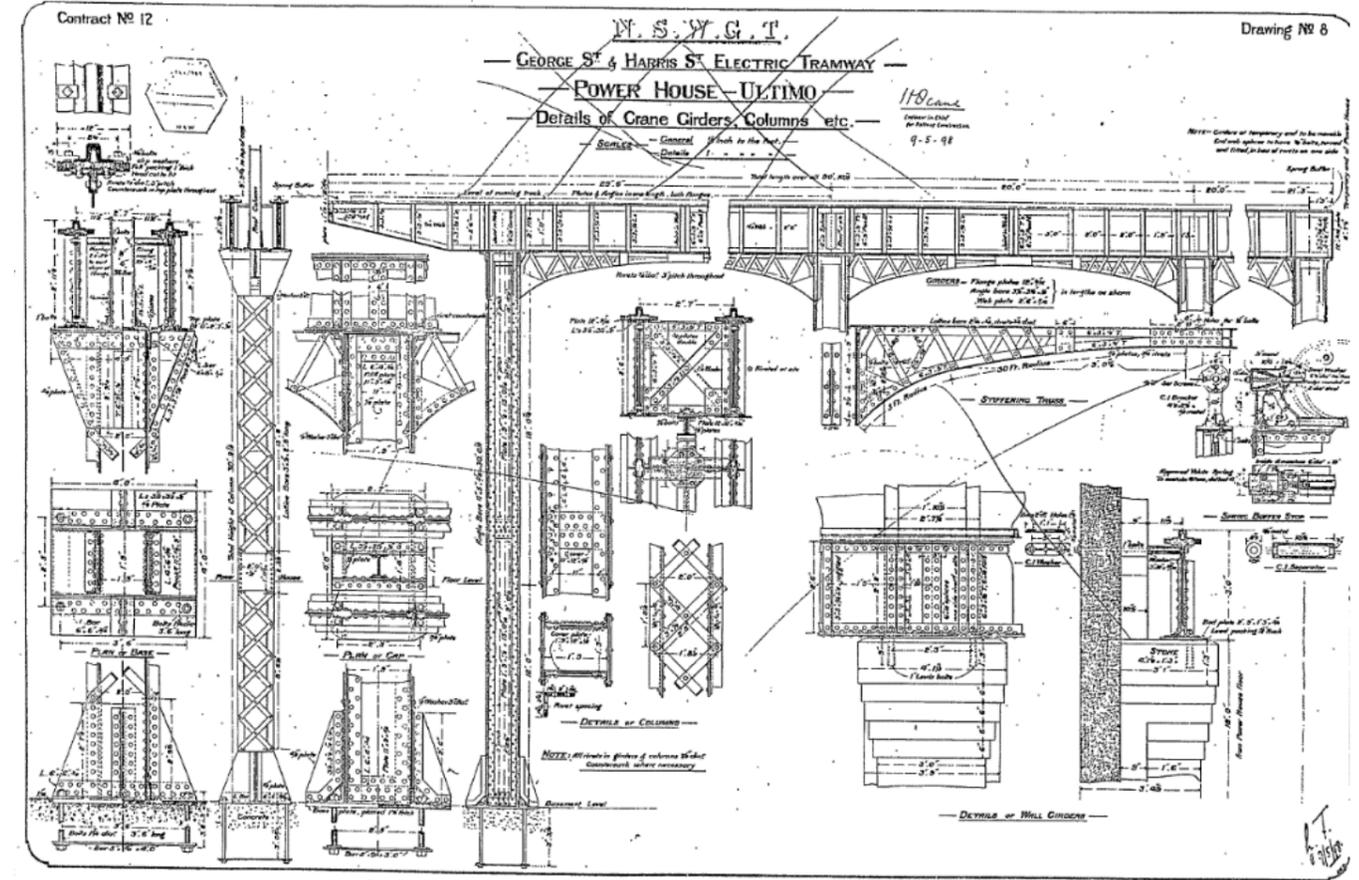


Figure 10.5 Contract 12 for the Crane Girders and Columns (Source: NSWGT cited in Godden et al., 1984, p. 86)

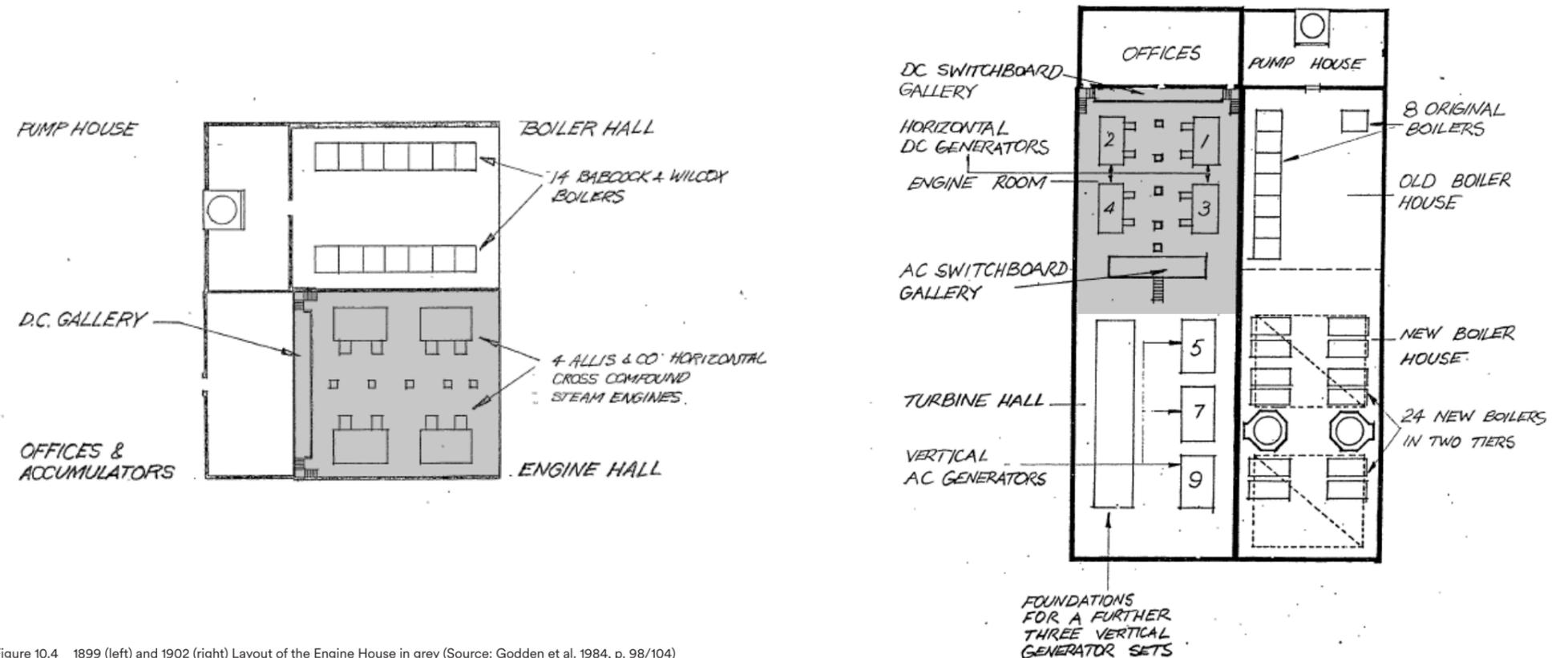


Figure 10.4 1899 (left) and 1902 (right) Layout of the Engine House in grey (Source: Godden et al. 1984, p. 98/104)

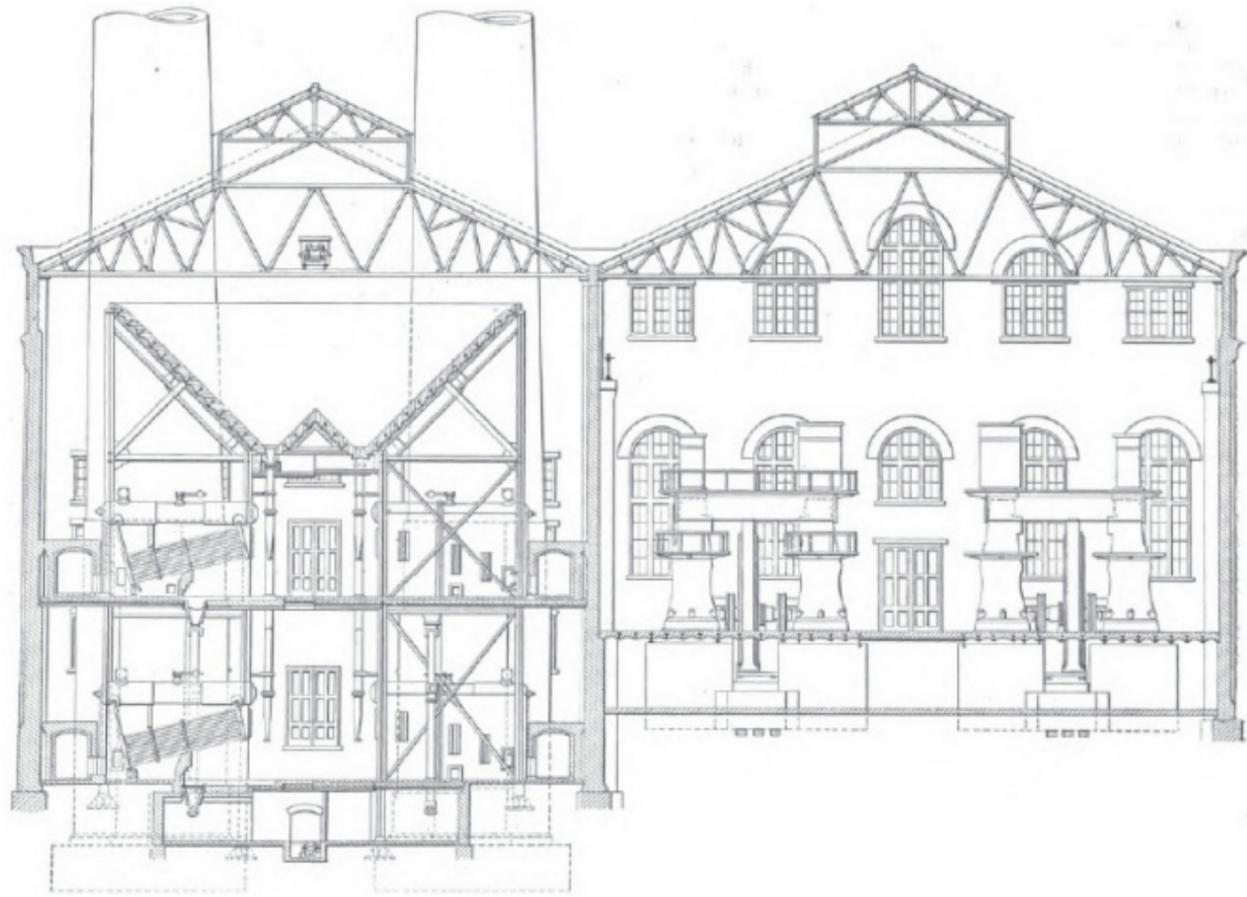


Figure 10.6 Sectional View of Boiler (left) and Engine Rooms (right) (Source: Electrical World and Engineer, 1902, p. 889)

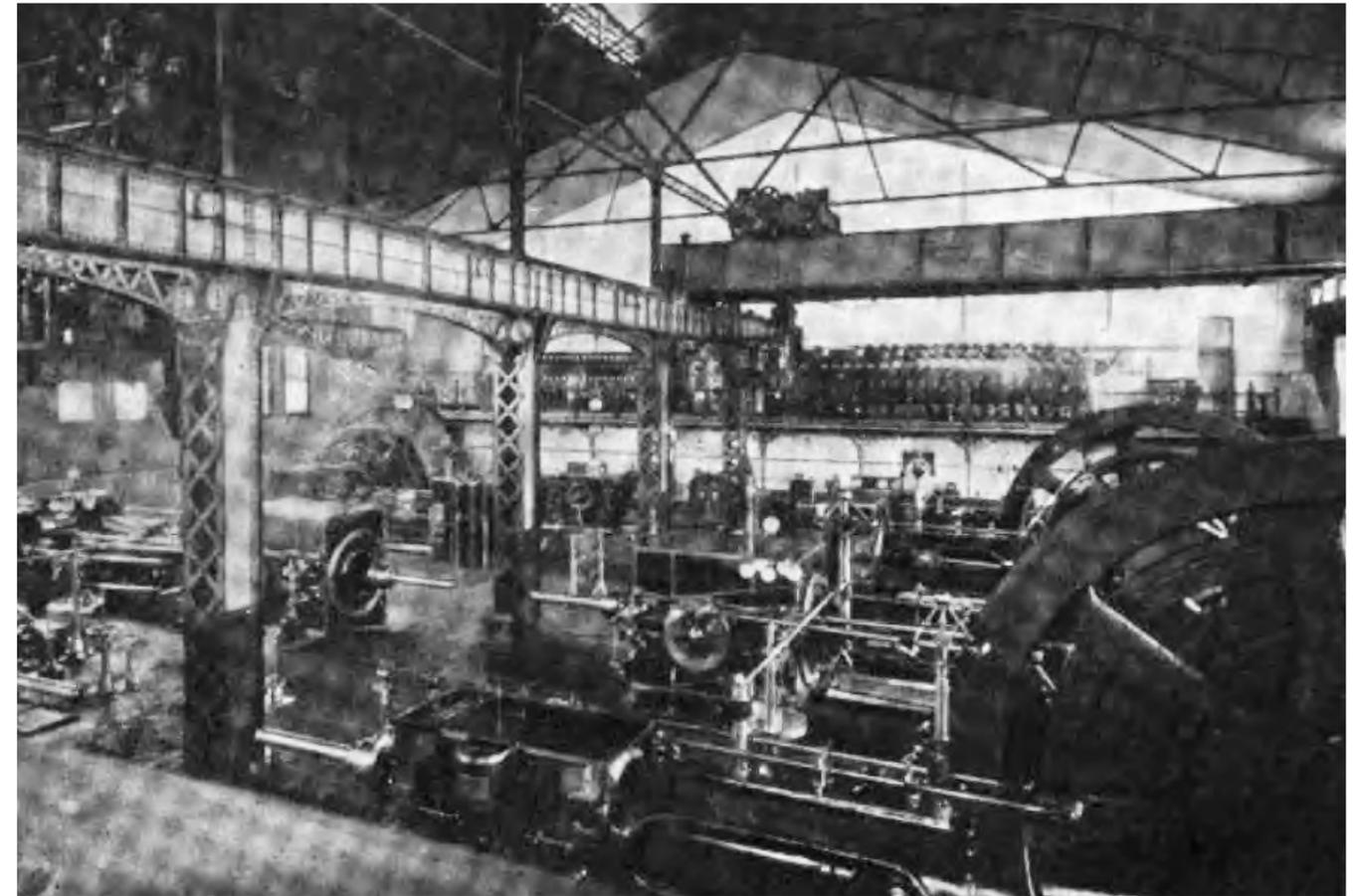


Figure 10.7 Engine Room c. 1902 (Source: Electrical World and Engineer 1902 p. 891)

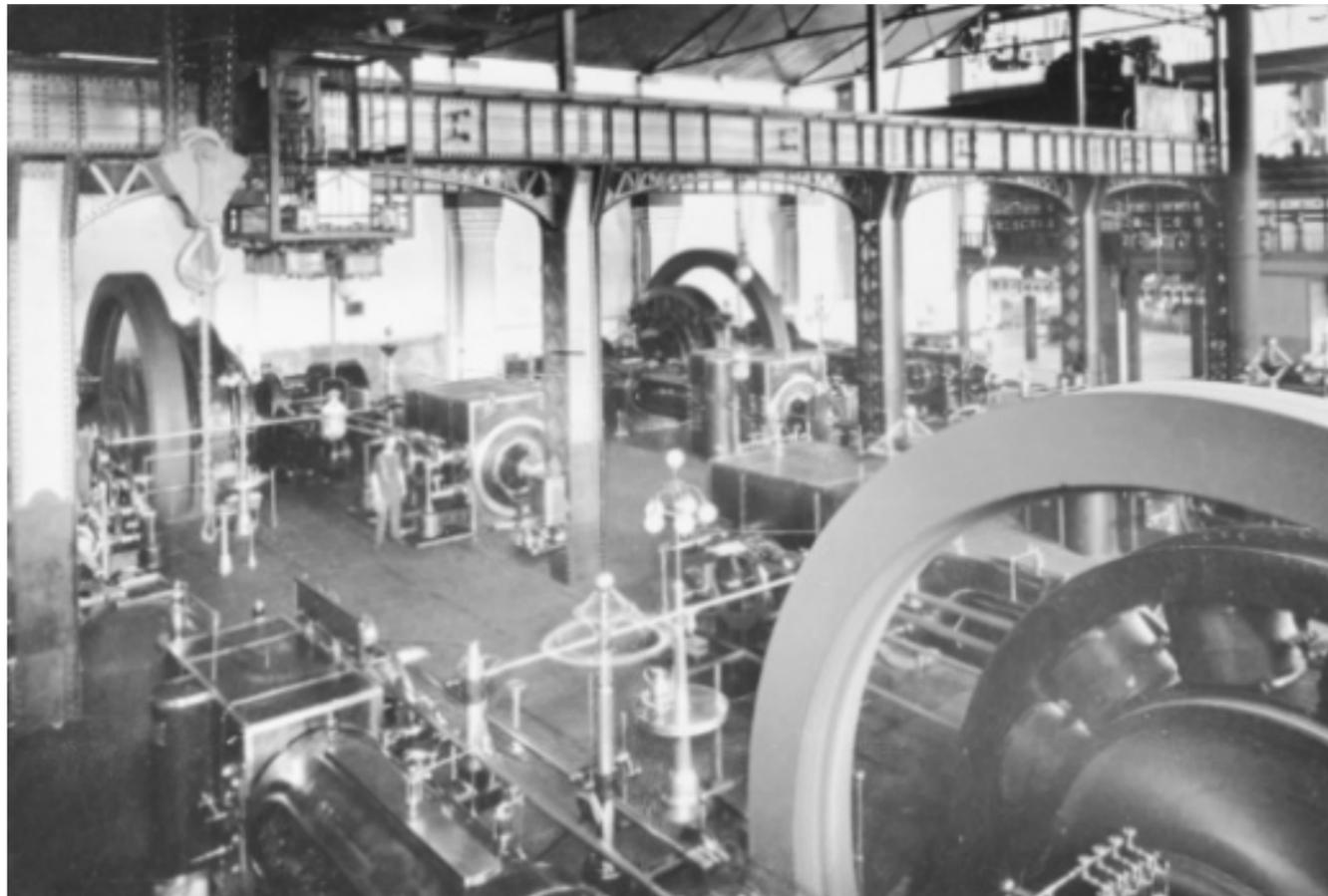


Figure 10.8 Engine House, Ultimo Power House, 1905 (Source: Powerhouse Photo Library 00q00196.jpg)



Figure 10.9 Ultimo Power House in the 1970s; location of former Engine House marked by red arrow. (Source: City of Sydney SRC23109)

10.2 PHYSICAL ANALYSIS OF THE ENGINE HOUSE

An overall photo register and images of the Engine House as of 2020 is presented in Section 10.6.

10.2.1 Site and Setting

The Engine House forms part of the Powerhouse Ultimo Site at 500 Harris Street, Ultimo. Within the Powerhouse Ultimo site, the Engine House abuts the North Annex to the north, the Boiler House to the East, the Turbine Hall to the South and the Wran Building to the west. Unlike many of the buildings on site, the Engine House never had a street frontage and was always located behind buildings on Harris Street.

10.2.2 Built Elements

The Engine House measures approximately 30m wide x 30m deep and is the most intact of the former Ultimo Power House buildings. The Engine House retains its original roof, trusses, and some of the remnant industrial infrastructure associated with the making of electricity for the Sydney tramway system, including wall cranes and five supporting latticed columns and arched beams. The western wall of the Engine Room is the building's only façade, and has been enclosed by the Wran Building making it an internal feature of the Powerhouse Museum. The exterior form of the Engine House has remained reasonably intact with faced brick laid in English bond- brown-grey on the exterior and with a white/grey finish on the interior.

The pilasters are strengthening devices and divide the west front (the building's only external façade) into five bays with paired windows. The openings of the metal framed windows are segmental-arches and each brick sill runs the length of the window only and not the length of the bay, as in the office building. The façade is completed by a parapet which conceals the box guttering. Beneath the parapet is a double stringcourse of brickwork.

The Engine Room retains many features; the overhead Case gantry cranes remain intact and in place; the white wall tiles were retained, and the floor was finished with tiles carefully matched to the originals; a hole in the eastern wall remains where a pipe carried steam from the Boiler House, and nearby there is a counter-weighted mechanism on the wall that once supported the pipe; the spherical glass light shades are reproductions of those seen in early photographs of the room; the switchboard gallery on the northern wall is mostly original, including one of two staircases and the cast-iron columns with decorative brackets that support the cast-iron floor plates; the other staircase and the wooden balustrades are reproductions. These remaining features inform how the space operated.¹²

The Engine Room features a vaulted corrugated iron roof with a louvred ventilating monitor which runs the length of the room, with the exclusions of the northern mezzanine which originally housed the switchboard.

The roof of the engine room incorporates a louvred ventilating monitor with a vaulted corrugated iron roof. The monitor runs the length of the of the entire room only and was not built above the switchboard mezzanine. There were formerly ten prominent outlet vents fabricated from sheet steel (or iron) with deflecting conical caps and finials. Two of these vents remain.¹³

The partial floor of the Engine House was extended in the 1980s, dividing the Engine House into two distinct levels, both of which are used for exhibition purposes. Level 2 of the space features modern stairs and mezzanine level to the south separating the Engine House from the Turbine Hall.

10.3 HERITAGE SIGNIFICANCE

The Engine House, as part of the Ultimo Power House, is included within the following statutory heritage register listings:

- State Heritage Register (NSW), *The Ultimo Powerhouse*, SHR 02045, gazetted 04 Sep 2020.
- Sydney LEP 2012, *The Powerhouse Museum Former Warehouse Buildings, including interiors*, I2031.

The Engine House is also included on two non-statutory registers: the Register of the National Estate *Powerhouse Museum (Stage Two)* (Listing 100690); and the National Trust (NSW) Register *Powerhouse Museum (Stage Two)* (S11648).

10.3.1 Summary of Significance—Engine House

As one of the original 1899 Ultimo Power House buildings, the Engine House is historically significant as part of one of the most important and intact group of power station buildings in the State. The spatial volumes of the Engine House, combined with the remnant industrial elements of the gantry beams, columns, overhead tracks and gantry cranes provide rare tangible evidence that the building once housed a prolific, majestic collection of industrial machinery that produced the electricity for the Sydney trams. The Engine House is relatively intact despite a number of internal modifications, particularly to the floor of the building.

10.3.2 Views

Unlike many of the buildings on site, the Engine House never had a street frontage and was always located behind buildings on Harris Street. Construction of the Wran Building in the 1980s enclosed the Engine House's only external façade (western wall). Enclosed by buildings on all sides, the Engine House is not readily visible from any exterior locations across the site, with the western facade an internal feature of the Powerhouse Museum visible only from within the Wran Building.

10.3.3 Grading of Significant Components

The key components and elements of the fabric and form of the Engine House have been ranked accordance to the Heritage NSW criteria for assessing significance, as summarised in Table 10.1 and depicted in Figure 10.12 to Figure 10.18.

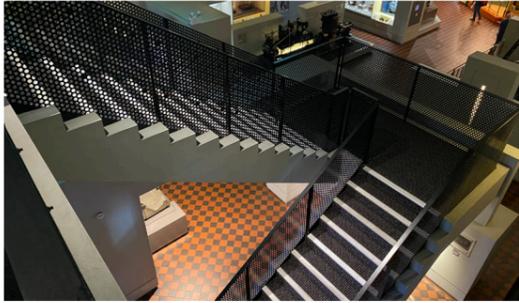


Figure 10.10 Interior of Turbine Hall c. 1986 (Source: Powerhouse Photo Library ST2D-MCN-1-.jpg)



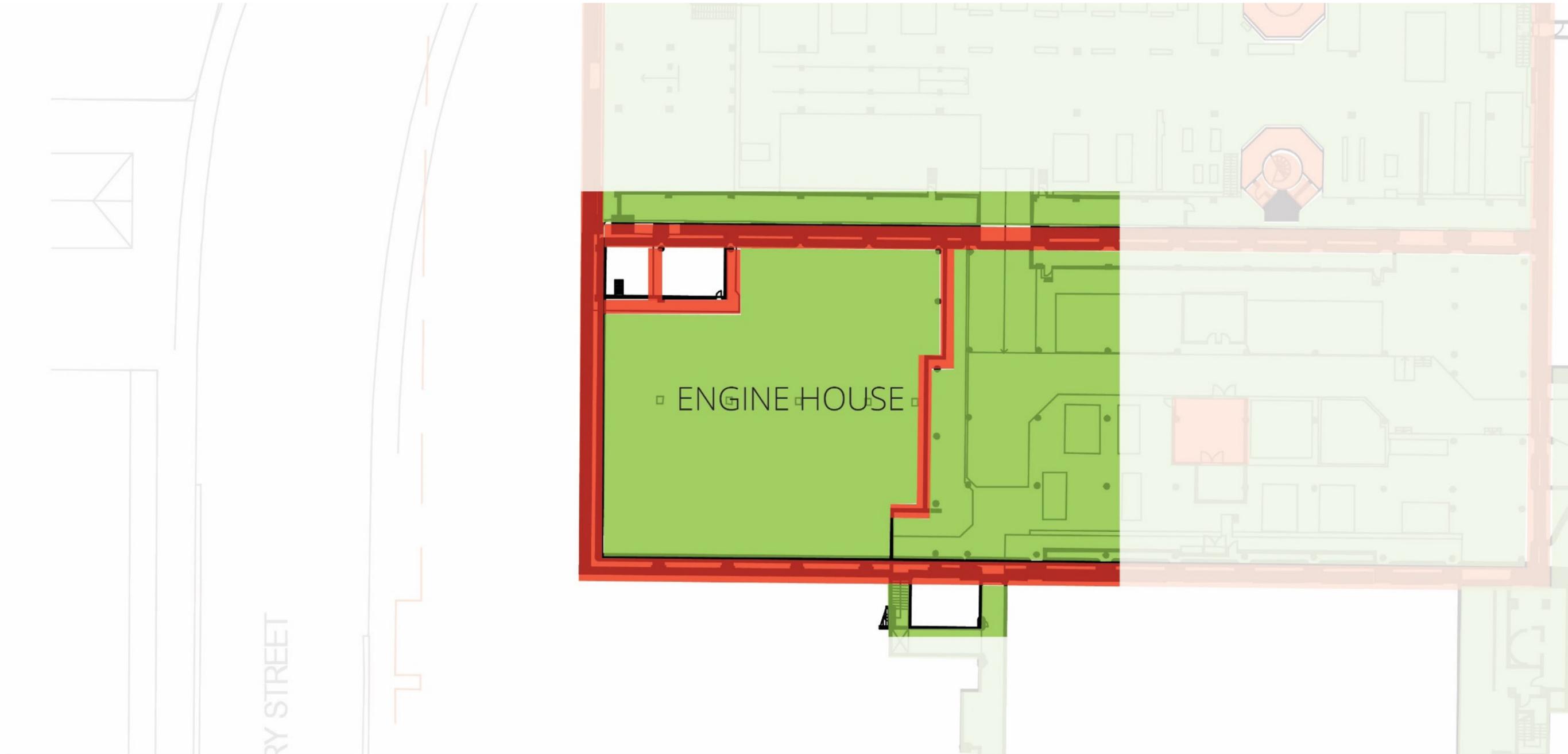
Figure 10.11 Engine Hall at Ultimo Power House being redeveloped as part of Powerhouse Museum Stage 2, c. 1986 (Source: Powerhouse Photo Library 00239730.jpg)

Table 10.1 Grading of Significant Components for the Engine House

ELEMENT	IMAGE	GRADING	NOTES
Roof Finish		● HIGH	The roof finish of the Engine House was relatively intact prior to its adaption into the Powerhouse Museum. The roof features a vent standard running north to south.
Roof Structure		● HIGH	The fabric of the Engine House roof structure has remained fairly intact, and is of high significance.
External Walls (Original)		● EXCEPTIONAL	<p>The external (western) wall of the Engine House is part of the original 1899 fabric of the building. The western façade is in good condition and relatively intact, with the exception of some new openings in the brickwork and removal of windows to integrate the Engine House into the 1980s museum adaptive reuse.</p> <p>The wall has been enclosed by the construction of the Wran Building, now visible only from the interior of the Wran Building.</p>
Windows (Original)		● HIGH	All original windows are of high significance.
Stairs (modern)		● INTRUSIVE	The existing modern stairs were added as part of the 1980s adaptation of the building for the Powerhouse Museum, removal of which (where practical) would allow the space of the Engine House to be reinstated more closely to its original spatial volume.

ELEMENT	IMAGE	GRADING	NOTES
Wall Tiles (white)		● EXCEPTIONAL	The white wall tiles along the northern mezzanine are original fabric, part of the wall finishes applied to the northern switchboard gallery of the Engine House.
Columns		● EXCEPTIONAL	The lattice columns constructed to support the wall cranes date to the 1899 construction of the Engine House and are of exceptional significance.
Floor finishes (Ground)		● MODERATE	<p>The ground floor has been modified with open sections sealed and floor tiles added.</p> <p>The Engine House was originally finished with terracotta floor tiles that were damaged quite badly during 1980s works, and therefore replaced with tiles to match original. It is possible that some original tiles remain, integrated with modern replicas.</p> <p>The floor tiles are of moderate significance reflecting the original finishes and presentation of the Engine House floor as constructed.</p>
Gantry Cranes and Beams		● EXCEPTIONAL	<p>The overhead travelling cranes when installed in the Engine Room and in the Turbine Hall in the first expansion were the most modern of their type in the world and are now rare and of exceptional significance.</p> <p>The lattice beams and supporting arch work constructed to support the wall cranes date to the 1899 construction of the Engine House and are of exceptional significance.</p>
Gallery floor (north), supporting columns and gallery stairs		● EXCEPTIONAL	<p>The base of the gallery floor and supporting columns retain the original iron features, including cast iron columns produced by Bonner & Son's Globe Foundry in Sydney (as per remnant columns in the North Annex).</p> <p>The gallery floors on the north and west walls of the Engine Room were formed on specially rolled corrugated permanent formwork which is one of the few surviving examples in Sydney. The gallery floor has been tiled, yet the tiles were damaged during the 1980s salvage operation.</p>

ELEMENT	IMAGE	GRADING	NOTES
Gallery stairs (north)		● EXCEPTIONAL	The north-eastern gallery access stairs are an original element of the building and of exceptional significance.
Modern inserts (including floor extension, southern mezzanine and museum displays)		● LITTLE	The modern inserts including extension of the north gallery to divide the Engine House into two distinct exhibition spaces, the southern mezzanine, etc are modern fabric installed as part of the 1980s adaptive reuse of the site for the Powerhouse Museum, and are of little heritage significance. The existing fit out in the Engine Room, including modern stairs and museum displays, obscures the significant fabric (columns, beams and trusses and views to gantry cranes) and special volume of the Engine Room.



SIGNIFICANCE GRADING

- EXCEPTIONAL
- HIGH
- MODERATE
- LITTLE
- INTRUSIVE

**POWERHOUSE ULTIMO
EXISTING CONDITION - BASEMENT PLAN**

24/09/2020
John Wardle Architects



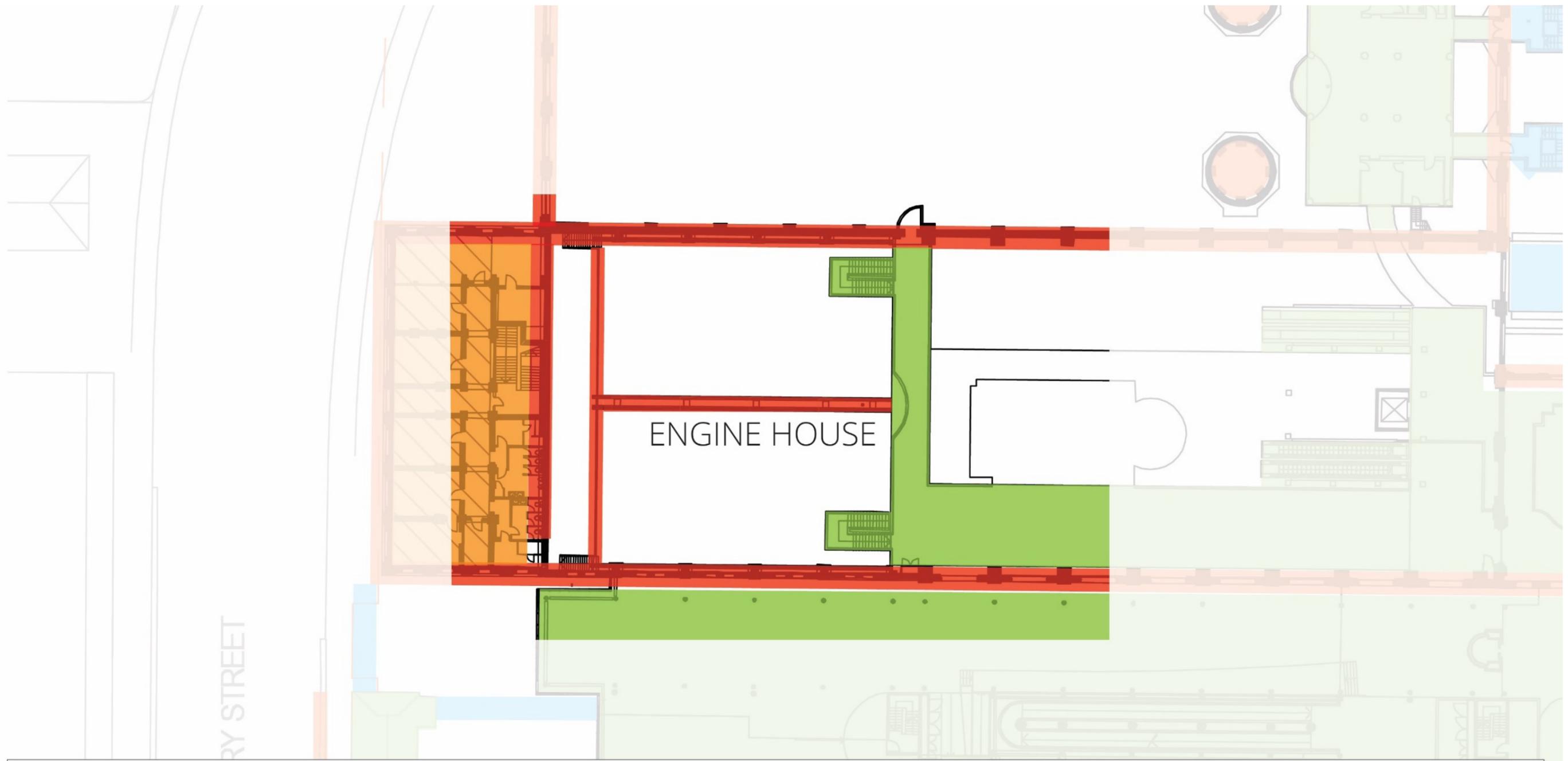
Figure 10.12 Engine House Grading of Significance Map (Basement)



Figure 10.13 Engine House Grading of Significance Map (Level 1)



Figure 10.14 Engine House Grading of Significance Map (Level 2)



SIGNIFICANCE GRADING

- EXCEPTIONAL
- HIGH
- MODERATE
- LITTLE
- INTRUSIVE

**POWERHOUSE ULTIMO
EXISTING CONDITION - LEVEL 3 PLAN**

24/09/2020

**John Wardle
Architects**

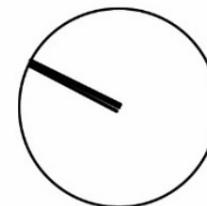


Figure 10.15 Engine House Grading of Significance Map (Level 3)

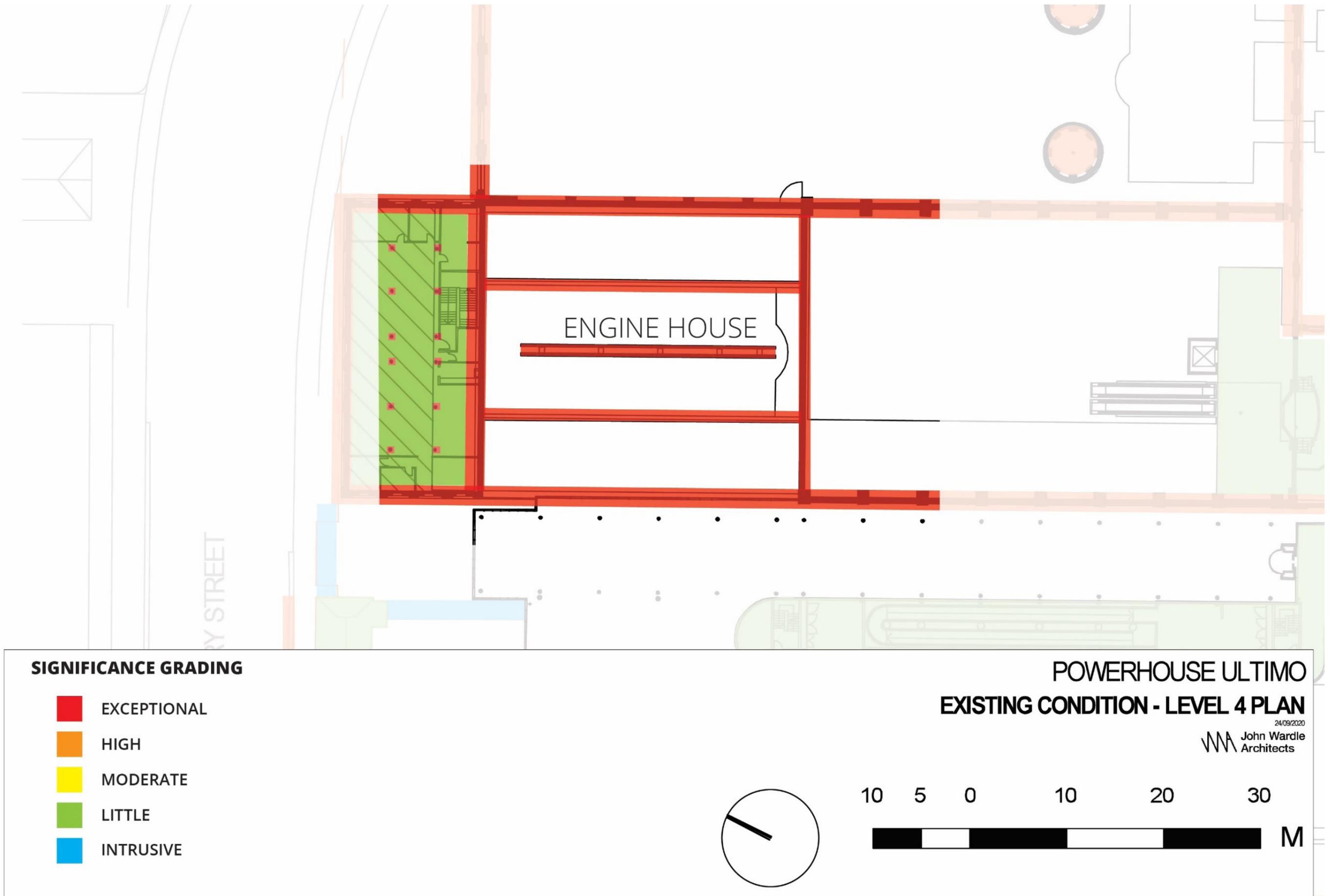


Figure 10.16 Engine House Grading of Significance Map (Level 4)

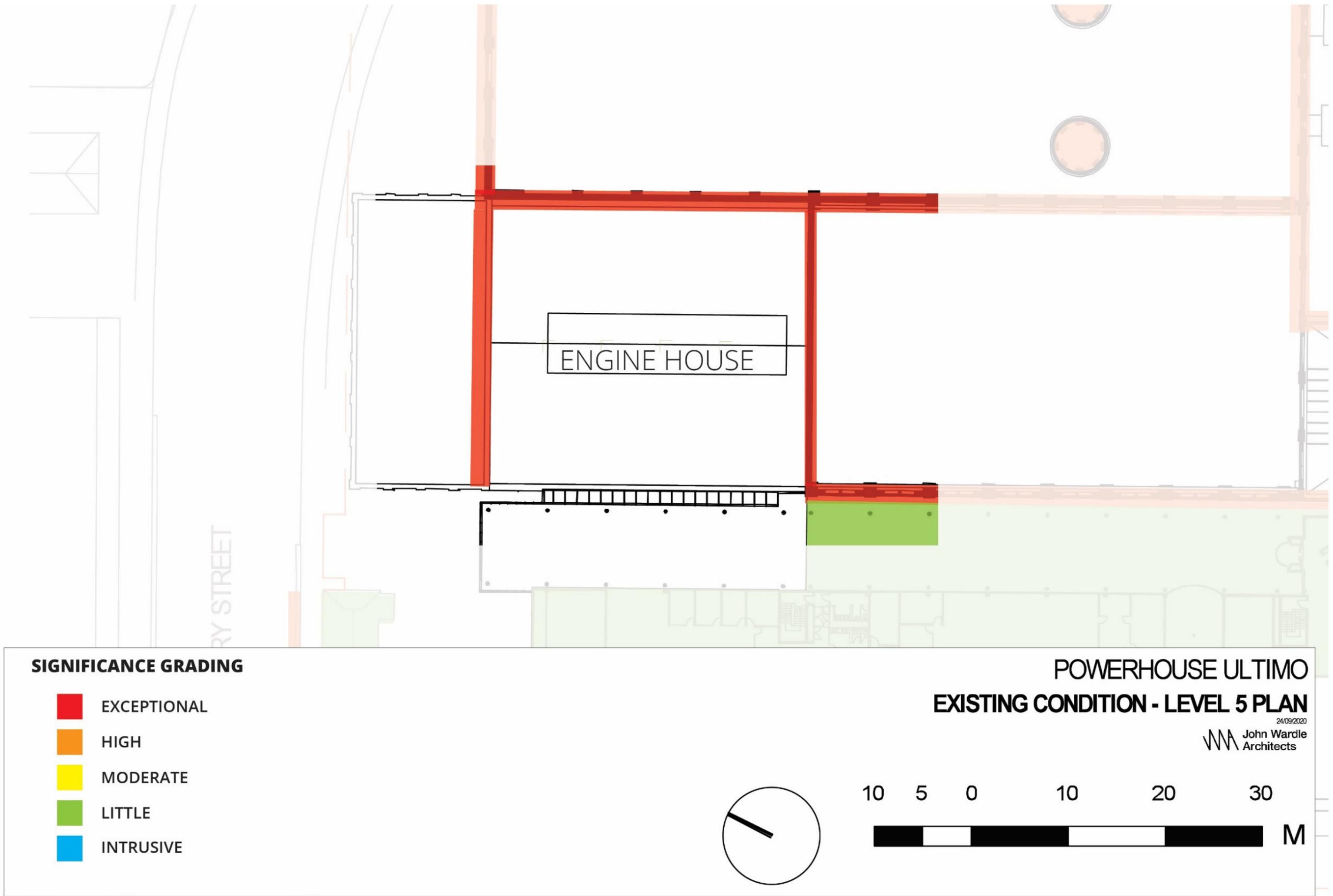


Figure 10.17 Engine House Grading of Significance Map (Level 5)

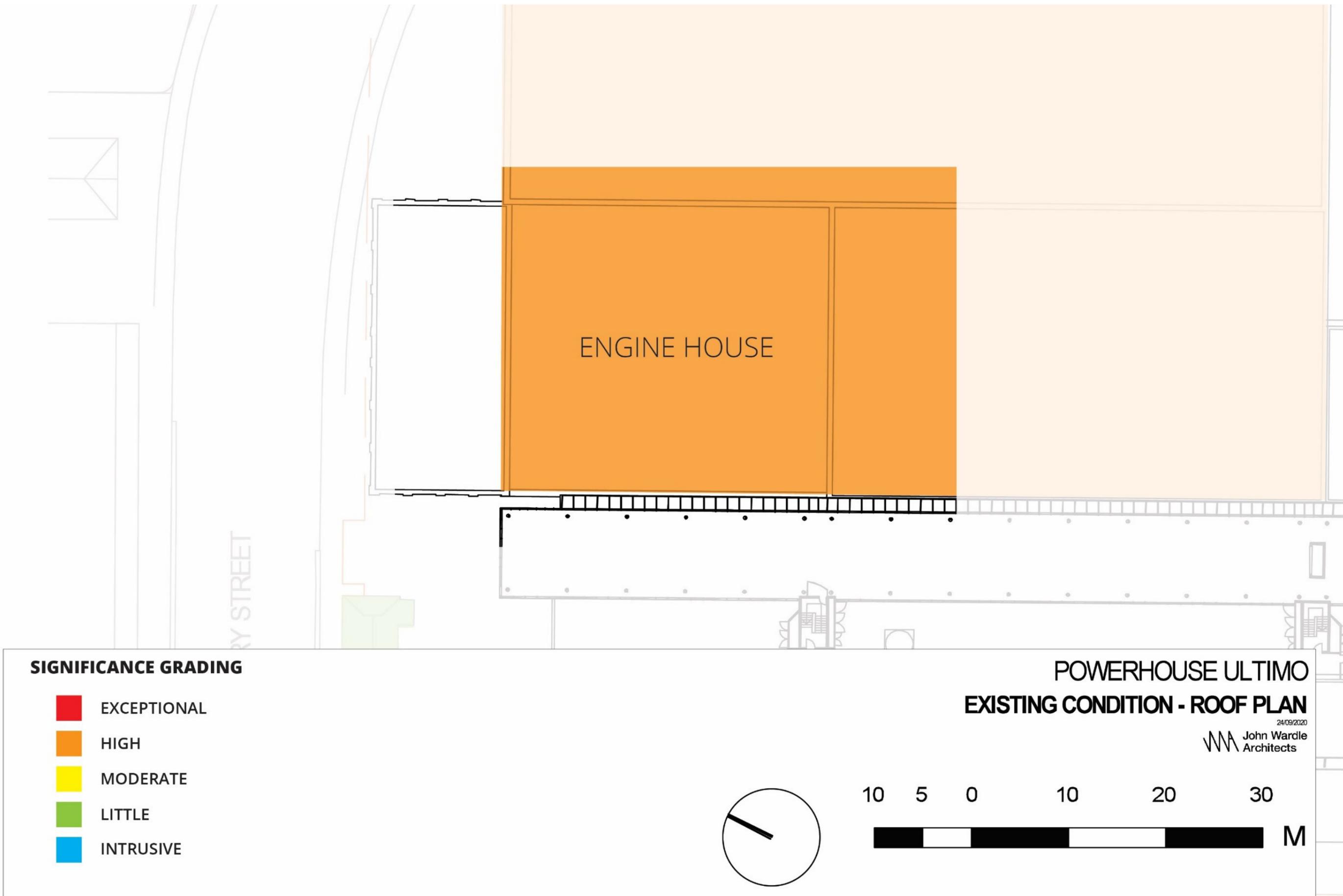


Figure 10.18 Engine House Grading of Significance Map (Roof)

10.4 OPPORTUNITIES AND CONSTRAINTS

Opportunities and constraints specific to the Engine House include:

Opportunities

- The existing fitout, including the modern stairs and museum displays, obscures the significant fabric and special volume of the Engine House. There is an opportunity through future works (such as removal of the modern fabric of the stairs and mezzanine inserts etc) to reinstate the original spatial volume and visual sightlines to the full-height of the columns, the overhead gantry cranes, overhead gantry tracks and associated remnant industrial fabric of the Engine House.
- Interpretation of the history and former use of the Engine House, including significant remnant elements of the gantry beams, columns, overhead tracks and cranes.

Constraints

- Any new elements proposed to be introduced into the Engine House space in future should not visually obscure the original gantry crane beams, overhead tracks, columns and gantry crane. New elements, if required to be introduced, should act as stand-alone lightweight elements that can be readily reversed in the future.
- Any future works to convert the Engine House space will need to consider how to manage elements such as light spill and acoustics so that there are no detrimental impacts to the original fabric of the building, as well as its spatial volume and overall visual aesthetic.
- Any activity that would require closing in the open roof plan (i.e. such as a false ceiling), covering and/or impacts to the trusses, gantry crane and columns would have a detrimental visual and physical impact on the significance of the building and would not be compatible or consistent with the remnant significant fabric and space.

10.5 ITEM-SPECIFIC CONSERVATION POLICIES

Policy 5—Buildings and Structures: The readability and presentation of the interior open space of the Engine House, Turbine Hall, and Boiler House is a significant feature of these former Power House buildings, and should be retained. The Engine Room, including its spatial volumes and associated original fabric (i.e. roof trusses, gantry columns, overhead tracks, beams and gantry cranes) form part of the significant fabric of the building. They should be retained, conserved and interpreted as part of any future use of the site.

Policy 7—Fabric: The removal of the modern stairs (little significance) within the Engine House would enhance the heritage values of the Engine House, allow the original space to be reinstated and appreciated in full.

Policy 15—Compatible Use: Any activity in the open spaces of the Engine House that would require closing in the open roof plan (i.e. such as a false ceiling), covering and/or impacts to the trusses, gantry crane and columns, would have a detrimental visual and physical impact on the significance of the building and would not be compatible or consistent with the remnant significant fabric and space.

10.6 PHOTO REGISTER FOR THE ENGINE HOUSE



Figure 10.19 Pump House Photo Register



Engine House Viewpoint 1: Level 2 (view from stairway landing)



Engine House Viewpoint 2: Level 2 (view from stairway landing)



Engine House Viewpoint 3: Level 2 (view from stairway landing)



Engine House Viewpoint 4: Level 2 (view from stairway landing)



Engine House Viewpoint 5: Level 2 (view from stairway landing)



Engine House Viewpoint 6: Level 2 (view from stairway landing)



Engine House Viewpoint 7: Level 2 (view from level 3)



Engine House Viewpoint 8: Level 2 (view from level 3)



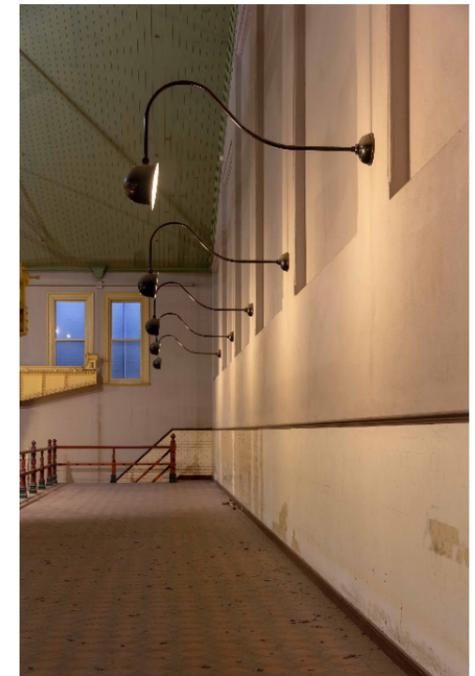
Engine House Viewpoint 9: Level 2 (view from level 3)



Engine House Viewpoint 10: Level 2



Engine House Viewpoint 11: Level 2



Engine House Viewpoint 12: Level 2

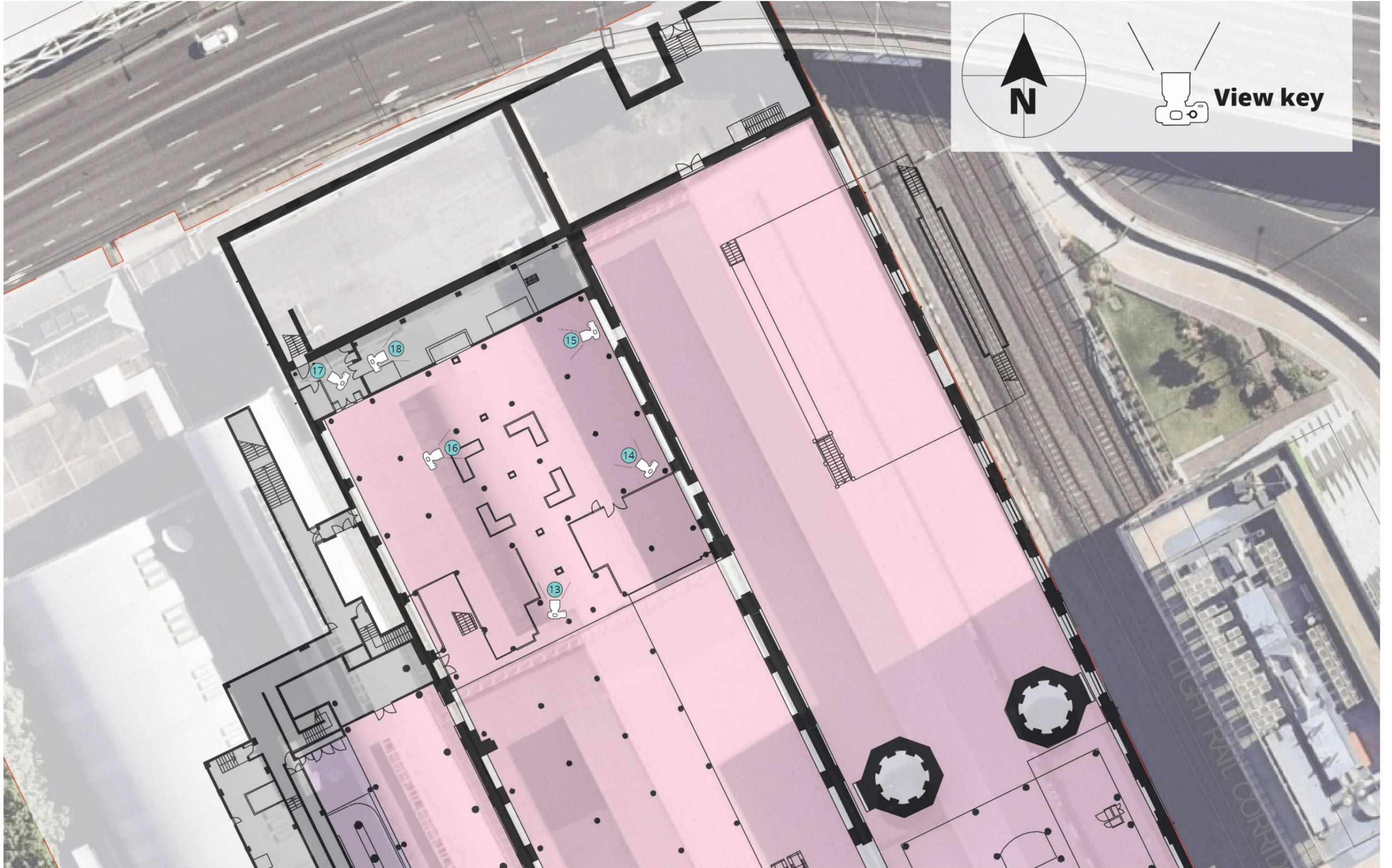


Figure 10.20 Engine House Photo Register (Level 1)



Engine House Viewpoint 13: Level 1



Engine House Viewpoint 14: Level 1



Engine House Viewpoint 15: Level 1



Engine House Viewpoint 16: Level 1



Engine House Viewpoint 17: Level 1. Access leading to North Annex. (See North Annex Viewpoint 5)



Engine House Viewpoint 18: Level 1 (view from stairway landing)

10.7 ENDNOTES

- 1 Steam Engines manufactured by E. P. Allis Co of Milwaukee, U.S.A; NSW Department of Public Works, 1900, p. 22.
- 2 Godden et al 1984, p. 87.
- 3 NSW Department of Public Works, 1900, p. 23.
- 4 'Fire at the Ultimo Power House', *Goulburn Evening Penny Post*, 14 September, 1901, p. 4.
- 5 TKD Architects, 2018, p. 5.
- 6 Godden et al, 1984, p. XVIII.
- 7 *ibid*, p. 23.
- 8 'Power-House Flooded', *Sydney Morning Herald*, 18 Mar 1932 p. 12.
- 9 Godden et al, 1984, p. 12.
- 10 *Ibid*, p. 15-16.
- 11 *Ibid*, p. XX, 15.
- 12 SHR Listing, *Ultimo Power House*. State Heritage Inventory, NSW Office of Environment & Heritage, Ultimo Power House (State).
- 13 Godden et al 1984, p. 6 ; Architectural Projects, 2003, p. 70.

11 TURBINE HALL