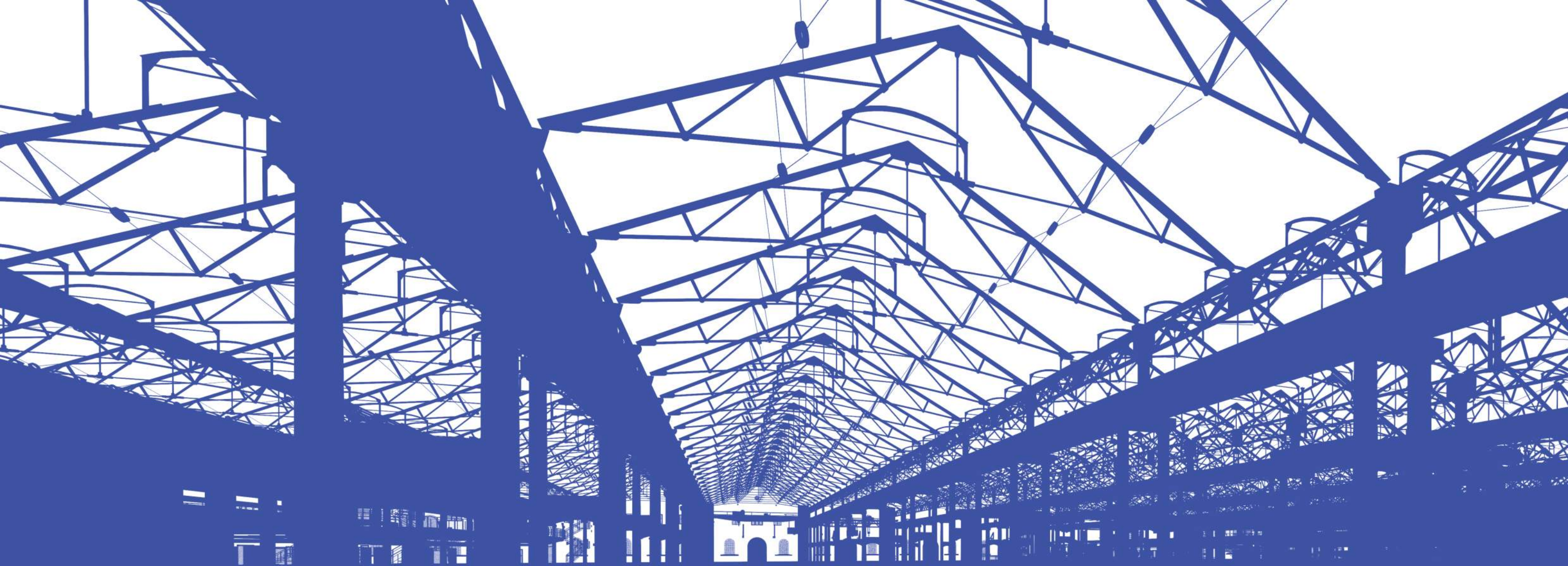




Redevelopment of the Locomotive Workshop

Design Report for State Significant Development Application
Bays 1-4A, Locomotive Workshop at the ATP, Eveleigh

November 2017

SISSONS

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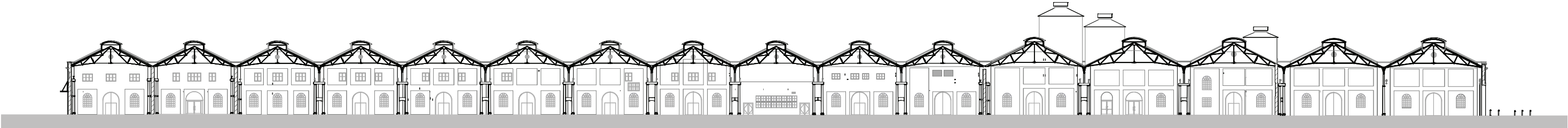
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1.0 Introduction

1.1 Introduction

This report supports a State Significant Development Application (SSDA) submitted to the Minister for Planning pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The Application (referred to as SSDA 8517) seeks approval for the adaptive reuse and redevelopment of the eastern portion of the Locomotive Workshop (being Bays 1-4a) within the Australian Technology Park (ATP), Eveleigh as described in the Proposed Development Description section of this report.

1.2 Background

Historically, ATP was used for railway maintenance, storage and other associated industries. Use of the site as marshalling yards and workshops formed part of a large railway-based precinct on both sides of the main railway line, dating from 1882 and growing in size until its closure in 1989. Since this time, the precinct has been progressively redeveloped and repurposed.

In 2014, the NSW Government resolved to offer development sites within the ATP for sale through a selective tender process conducted by Urban Growth NSW Development Corporation (UGDC). In November 2015 Mirvac Projects Pty Ltd (Mircvac) was named as the successful party and ownership and development rights of the precinct were subsequently transferred.

In December 2015, an SSDA was submitted to the Department of Planning & Environment for a multi-building redevelopment (i.e. Buildings 1, 2 and 3 shown in Figure 2) of the ATP to provide new commercial office, retail and community uses and a significant upgrade to the ATP public domain. Following public exhibition, and the submission of additional information, the development was approved by the Planning Assessment Commission on 20 December 2016. The construction of Buildings 1, 2 and 3 is currently underway.

The redevelopment of the Locomotive Workshop is also part of Mirvac's redevelopment strategy for the ATP. The Locomotive Workshop is to be redeveloped in its entirety, however planning approvals are sought through the submission of two separate SSDAs. This Application relates to the eastern portion encompasses the heritage Bays 1 and 2, the existing Blacksmith operation and Bays 3,4 and 4a. In conjunction with SSDA 8449 that relates to Bays 5-15, this Application is envisaged to be the next phase of urban regeneration within the ATP.

1.3 Site Location

The Locomotive Workshop is located within the Australian Technology Park (ATP), Eveleigh. The ATP precinct is located approximately 5km south of the Sydney CBD, 8km north of Sydney airport and within 200m of Redfern Railway Station and has an overall area of approximately 13.2 hectares. An aerial photograph of the ATP precinct is shown in Figure 1 and the locational context of the Locomotive Workshop is identified in Figure 2.

1.4 Overview of Proposed Development

This SSDA seeks approval for the following:

- demolition of existing 'modern' infill fit-out elements to Bays 3-4a, including display barriers in Bays 1 & 2;
- relocation of moveable heritage items;
- adaptive reuse of the Bays 1-4a and two annex structures for a mix of retail premises uses, function centre uses, information and education facility uses, general industrial uses, recreation facility (indoor) uses and associated back of house facilities;
- construction of internal and external alterations to Bays 1-4a;
- construction of a travelator between the Locomotive Workshop and Building 2;
- establishment of maximum quantum of 11,358m2 GFA to be provided within Bays 1-4a;
- heritage interpretation and conservation works;
- public domain improvements within the curtilage of Bays 1-4a;
- provision of an external building illumination system;
- signage; and
- associated utilities and infrastructure.

A more detailed and comprehensive description of the proposal is contained in the EIS prepared by Ethos Urban.

1.5 Document Overview

This document provides an overview of the architectural and design aspects of the proposed development, including the planning framework, design principles and specific design considerations.



Figure 1 - ATP Precinct

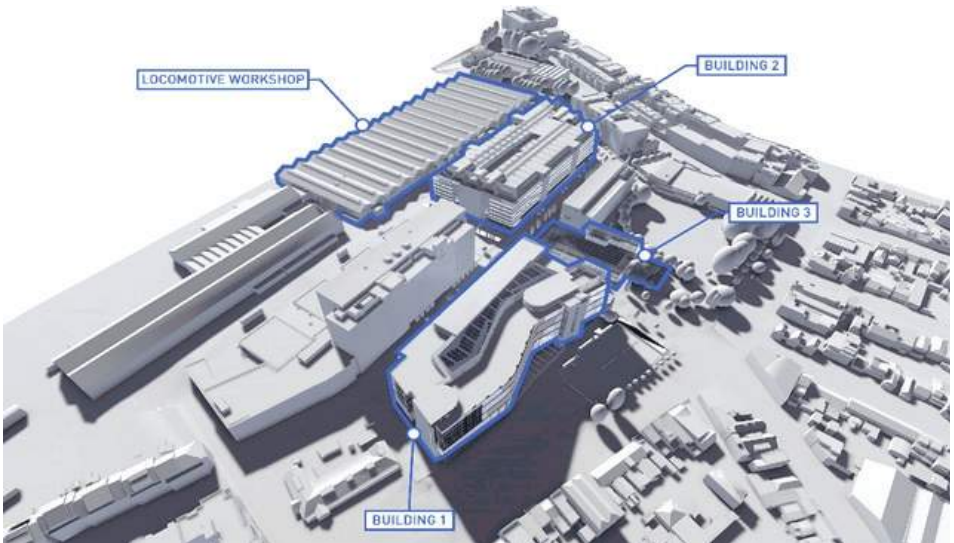


Figure 2 - Location and context of the Locomotive Workshops

1.6 Summary of Proposed Development

The following report provides detail on the below proposed items which form the submission for the Locomotive Workshops redevelopment.

Bay	Proposed Development
Building Interior Bays 1-2	Proposed works include: • Removal of existing display barriers • Heritage interpretation and conservation works • Relocation of moveable heritage items • Enhancements of entrances and openings including the enlargement of the opening between Bays 2 and 3 • Construction of a loading dock with new mezzanine heritage exhibition over and associated stairs • Construction of intertenancy walls to the Blacksmith/ Hard Arts area
Building Interior Bay 3-4a	Proposed works include: • Removal of existing 'modern' infill features • Construction of tenancy divisions, mezzanine floors, plant and equipment rooms, amenities and services pods, fire stairs and lift cores • Construction of the travelator • Enhancements of entrances
Building Exterior Bays 1-4a	• Installation of external lighting to enhance the building façade • Public domain improvements to the paving and footpath network within the boundary of the site • Demolition of the existing lean-to at the south-east corner of Bay 1 and construction of new contemporary glass tenancy in its place
Roof	• Roof upgrade - installation of insulation, upgrade of existing conditions in Bays 1 and 2 and insertion of natural daylight 'slots' in Bays 3-4a
Retail/ Office Annexes	• Removal of modern infill features • Refurbishment of single level heritage space • Enhancement of entrances



2.0 Site Overview

2.1 Context

2.1.1 Local Environment - Relationship to Key Urban Spaces

The Locomotive Workshops are located approximately 5 kilometres south of the Sydney’s Central Business District in the suburb of Eveleigh, bounded by the inner suburbs of Darlington, Redfern, Alexandria, Erskineville and Newtown and in close proximity to the University of Sydney and UTS. South-west of the site lies Sydney’s economic gateways, Port Botany and Sydney airport. The site is part of a connected regional band of research and high technology centres including North Right and the Sydney Airport environs.

Locomotive Workshop is accessible to:

- Tertiary Educational campuses: University of Sydney, University of Technology, University of NSW, University of Notre Dame and Sydney Institute of Technology.
- Health facilities such as Royal Prince Alfred Hospital and St Vincent’s Hospital.
- Regional and local open space – Victoria Park, Moore Park, Centennial Park, Prince Alfred Park, Redfern Park, Waterloo Park and Alexandria Park.
- Transport infrastructure – rail and bus networks, major road networks including regional roads linking to the Sydney CBD, Sydney Airport and Port Botany (such as Botany Road, Regent Street, Cleveland Street and O’Riordan Street).
- Residential and commercial developments proposed at Green Square and the Carlton United Brewery (CUB) site.

The site’s accessibility and close proximity to the above urban spaces presents opportunities to facilitate community and cultural facilities, public domain improvements and improved linkages between the site and surrounding employment hubs.

2.1.2 Local Context - Relationship to Immediate Context

The area surrounding the site contains a mix of residential, educational and railway uses. The regeneration of the Locomotive Workshop is intended to enhance the

planned redevelopment of the public domain within the ATP precinct, to be enjoyed further by the local community and users within the ATP precinct.

The surrounding locality, shown in the images below, has a strong streetscape and sense of local character, which the new Locomotive Workshops hopes to grow and support.

The site is bounded by Locomotive Street to the south; Innovation Plaza to the east; the railway corridor (including Redfern Station) to the north and State Rail operational facilities to the west. The images on page 6 illustrate the existing buildings on the site.

The Locomotive Workshops sits on the northern boundary of the ATP precinct. Neighbouring buildings to the south and east within the precinct are medium rise with primarily commercial uses.

Further to the east and west of ATP are primarily residential zones. The residential areas are characterized by fine grained subdivision pattern featuring narrow frontages (i.e.. 5-6m) and deep lots (i.e.. 30m) with streets to the front and laneways to the rear. Typical of many inner city areas of Sydney, the built form is a mixture of terrace housing, small single storey cottages, and two to three storey commercial and retail buildings.

The North of the site is defined by the railway corridor and more specifically Redfern Station. The station is considered one of the most significant assets of the Redfern-Waterloo precinct. Currently, funding is being invested by the Redfern-Waterloo Authority and Railcorp in a concept design study for the redevelopment of Redfern Railway station. The objective is for a town centre to form around Redfern Railway Station and create a civic space that connects the station to the ATP through well defined pedestrian and cycle linkages.

2.1.5 Planning Framework

State Environmental Planning Policy (SEPP) State Significant Precincts 2005 is the principal environmental planning instrument applying to the ATP. Schedule 3, Part 5 of the State Significant Precincts SEPP sets out the zoning, land use and development controls that apply to development on the site. Extracts of the State Significant Precincts SEPP zoning maps are included on pages 9 and 10 of this report.

As the development has a capital investment value of more than \$10 million it is identified as State Significant Development under the State Environmental Planning Policy (State and Regional Development) 2011, with the Minister for Planning the consent authority for the project.



Redfern Station



Markets at Carriageworks



Local residential streetscape



Carriageworks

2.2 Existing Buildings on Site



1. Locomotive Workshop



2. National Innovation Centre



3. Biomedical Building



4. Building 1



5. Media City



6. Nicta Building



7. Innovation Paza



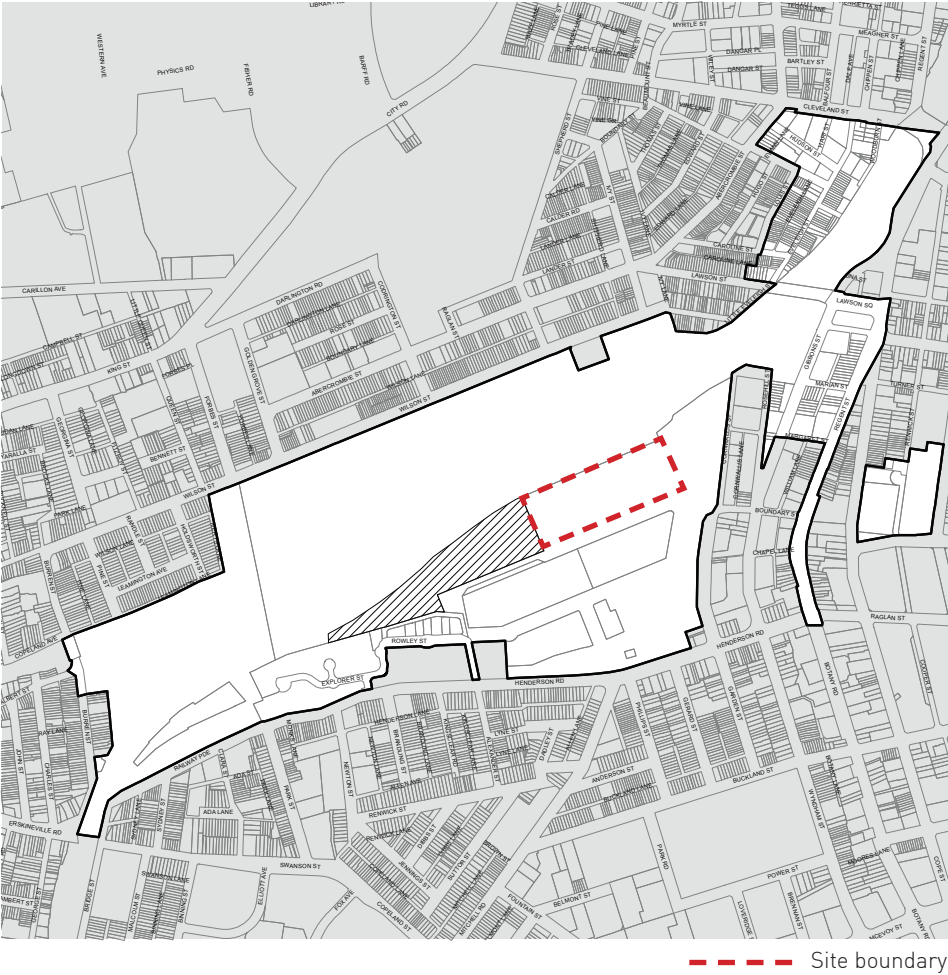
8. Building 2



Aerial view of the Locomotive Workshop with views north towards the CBD

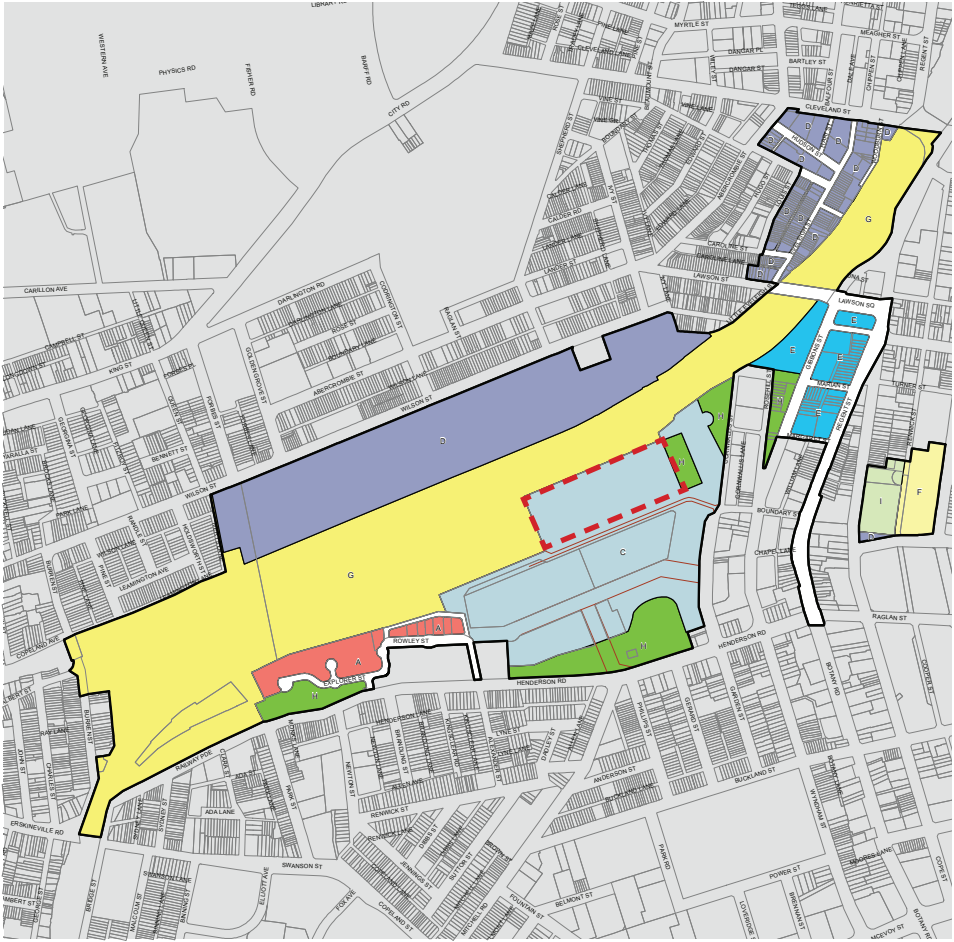
2.3 State Significant Precincts SEPP Development Control Maps

Site Map



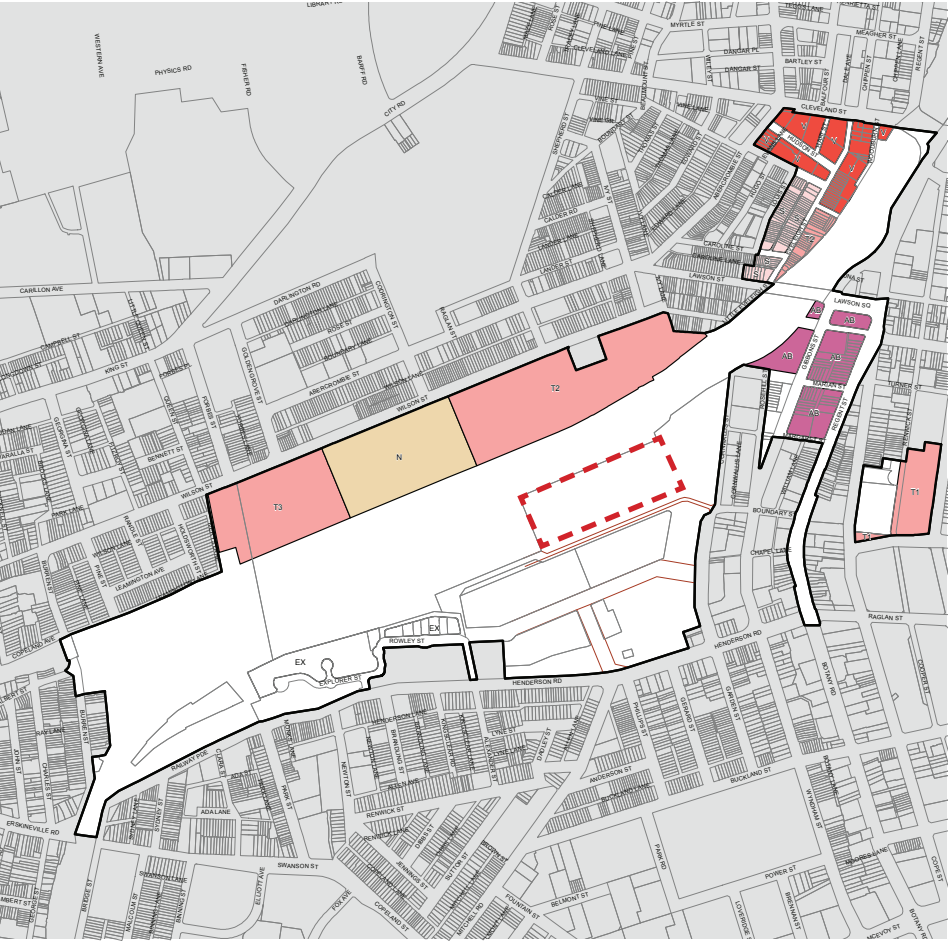
--- Site boundary

Zoning Map



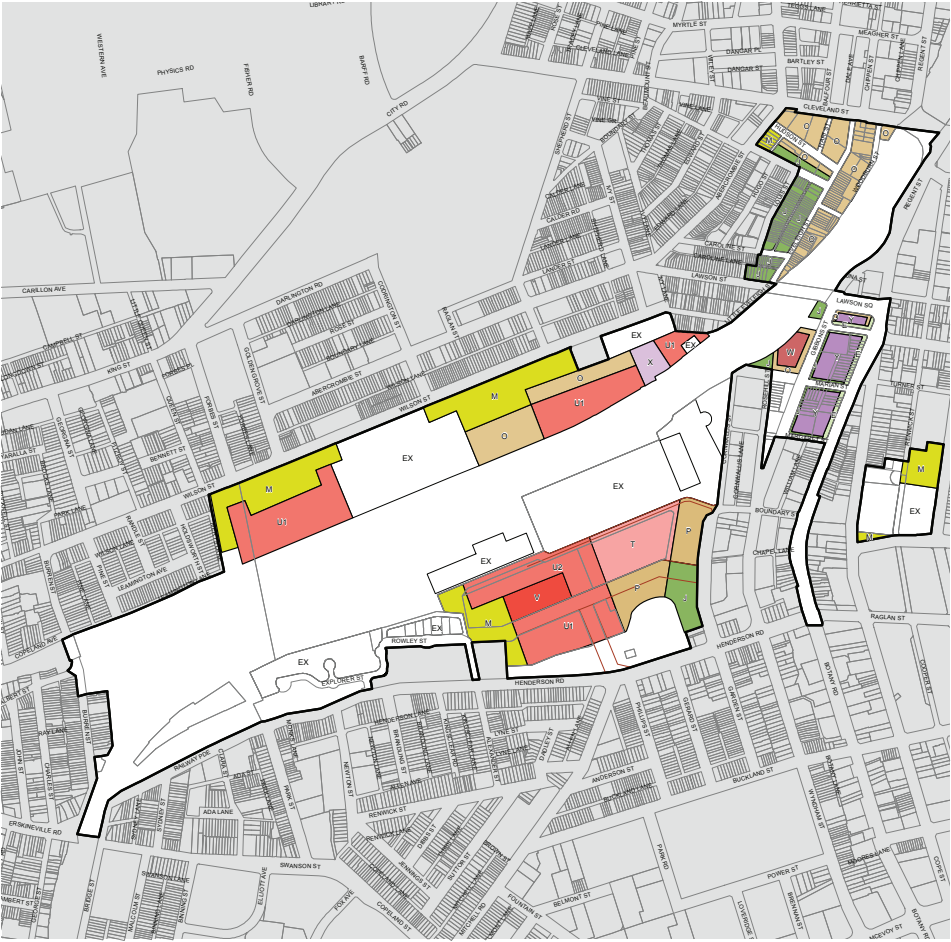
- Subject Land**
- Zone**
- A** Residential Zone—Medium Density Residential
 - B** Business Zone—Local Centre
 - C** Business Zone—Business Park
 - D** Business Zone—Mixed Use
 - E** Business Zone—Commercial Core
 - F** Special Purpose Zone—Community
 - G** Special Purpose Zone—Infrastructure
 - H** Recreation Zone—Public Recreation
 - I** Recreation Zone—Private Recreation
- Private Road**
- Cadastral**
- Cadastral 09/09/2011 © NSW LPI

FSR Map



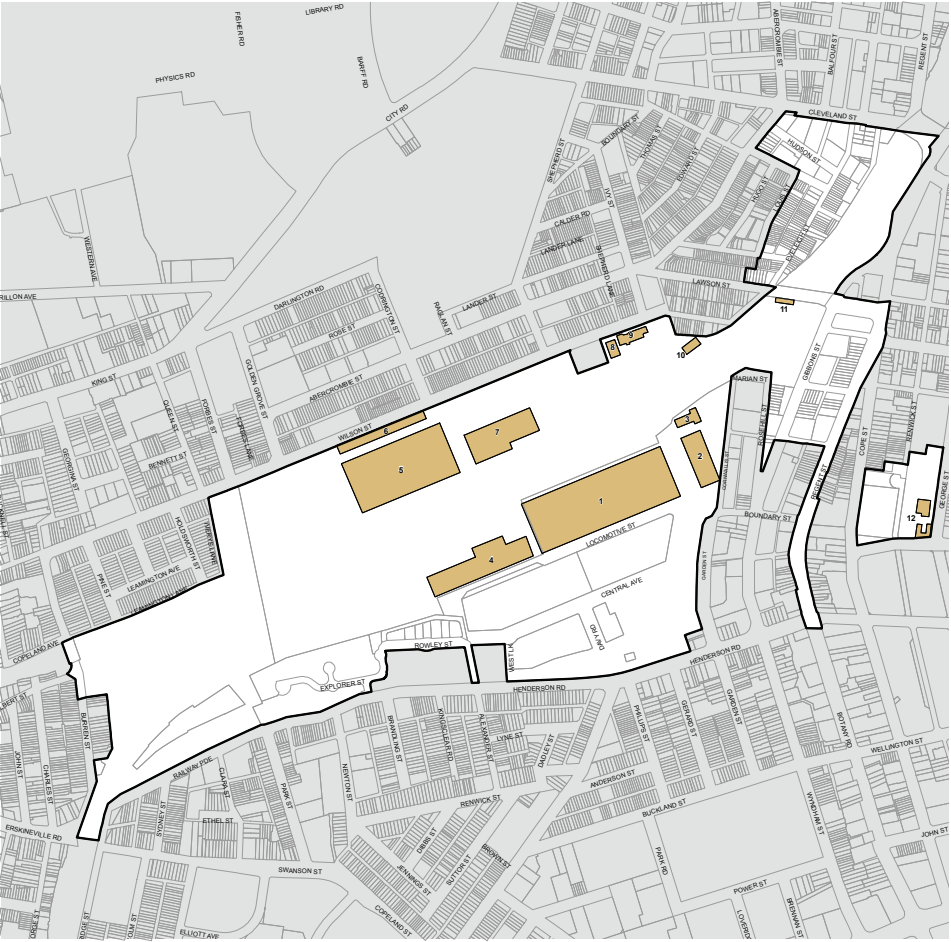
- Subject Land**
- Floor Space Ratio (n:1)**
- Total Maximum FSR / FSR For Residential Component**
- N** 1:1 0.5:1
 - S** 1.5:1 0.75:1
 - T2** 2:1 1:1
 - T3** 2:1 2:1
 - V** 3:1 1:1
- Maximum FSR**
- EX** Existing FSR
 - G** 1.3:1
 - T1** 2:1
 - AB** 7:1
- Private Road**
- Cadastral**
- Cadastral 09/09/2011 © NSW LPI

Building Height Map



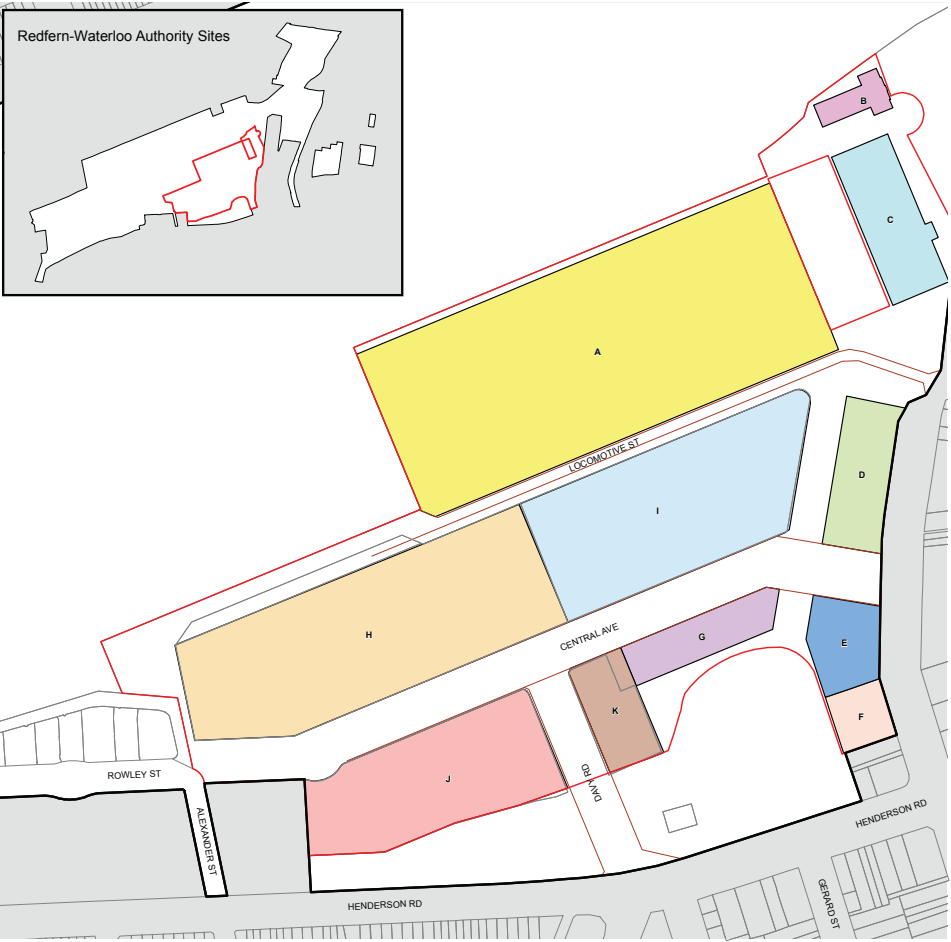
- Subject Land**
- Maximum Building Height (storeys)**
- E 2
 - J 3
 - M 4
 - O 5
 - P 6
 - T 9
 - U1 10
 - U2 11
 - V 12
 - X 14
 - Y 16
 - EX Existing
- Cadastral**
- Cadastral 09/09/2011 © NSW LPI

Heritage Map



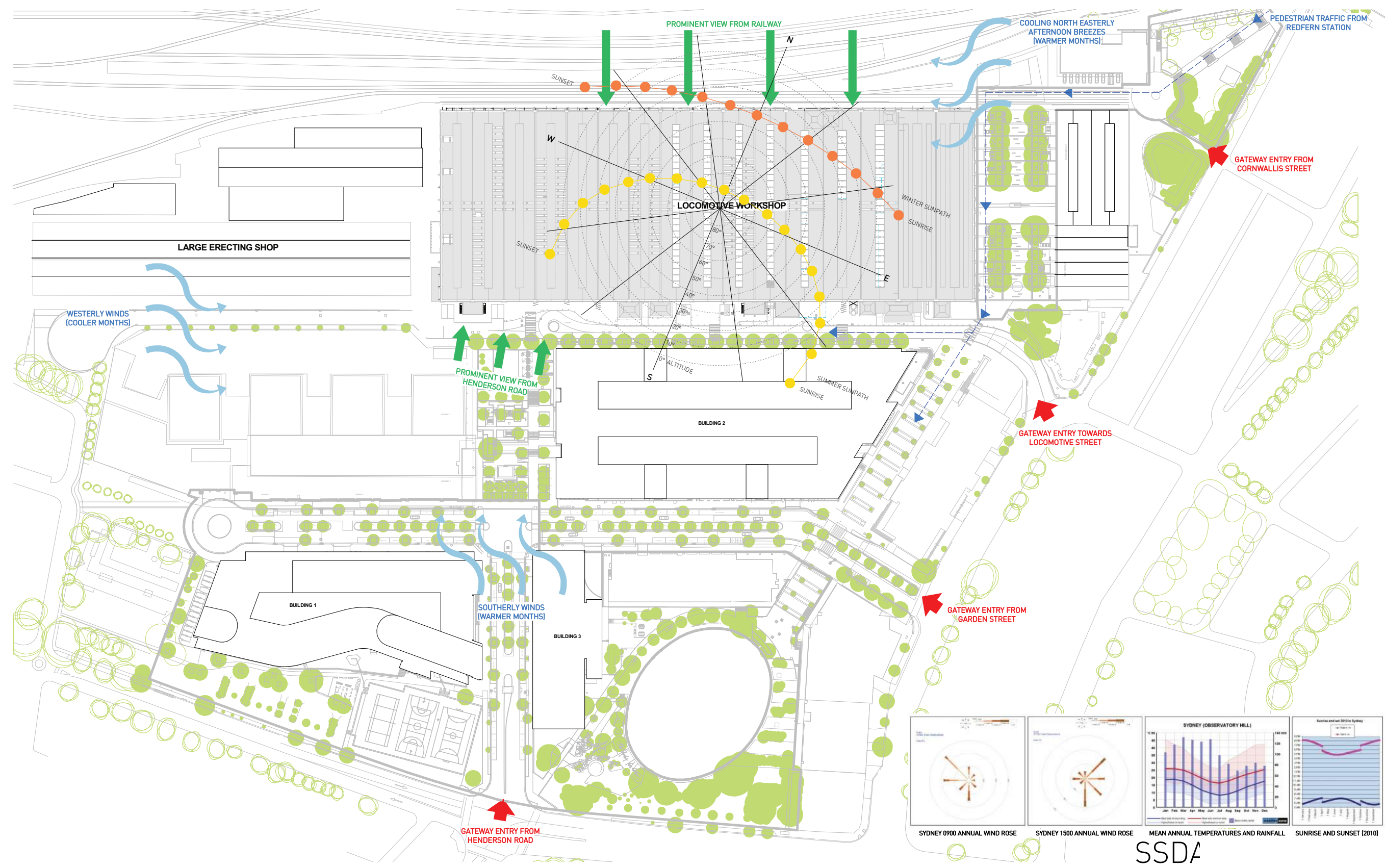
- Subject Land**
- Heritage Item**
- Cadastral**
- Cadastral 09/09/2011 © NSW LPI
- Australian Technology Park**
- 1 Locomotive Workshop
 - 2 New Locomotive Workshop
 - 3 Works Manager's Office
- South Eveleigh**
- 4 Large Erecting Shop
- North Eveleigh**
- 5 Carriage Workshops
 - 6 Blacksmith's Shop
 - 7 Paint Shop
 - 8 Scientific Services Building No. 1
 - 9 Chief Mechanical Engineer's Office Building
 - 10 Telecommunications Equipment Centre
- Redfern Railway Station**
- 11 Redfern Station Booking Office
- Former Redfern Public School**
- 12 Two Buildings on George and Phillip Streets
- Former Rachel Forster Hospital**
- 13 Five Storey Surgery Building and Part of Two Storey Colonnade Building
- Former Local Court House**
- 14 Former Court House Building

Maximum GFA Map



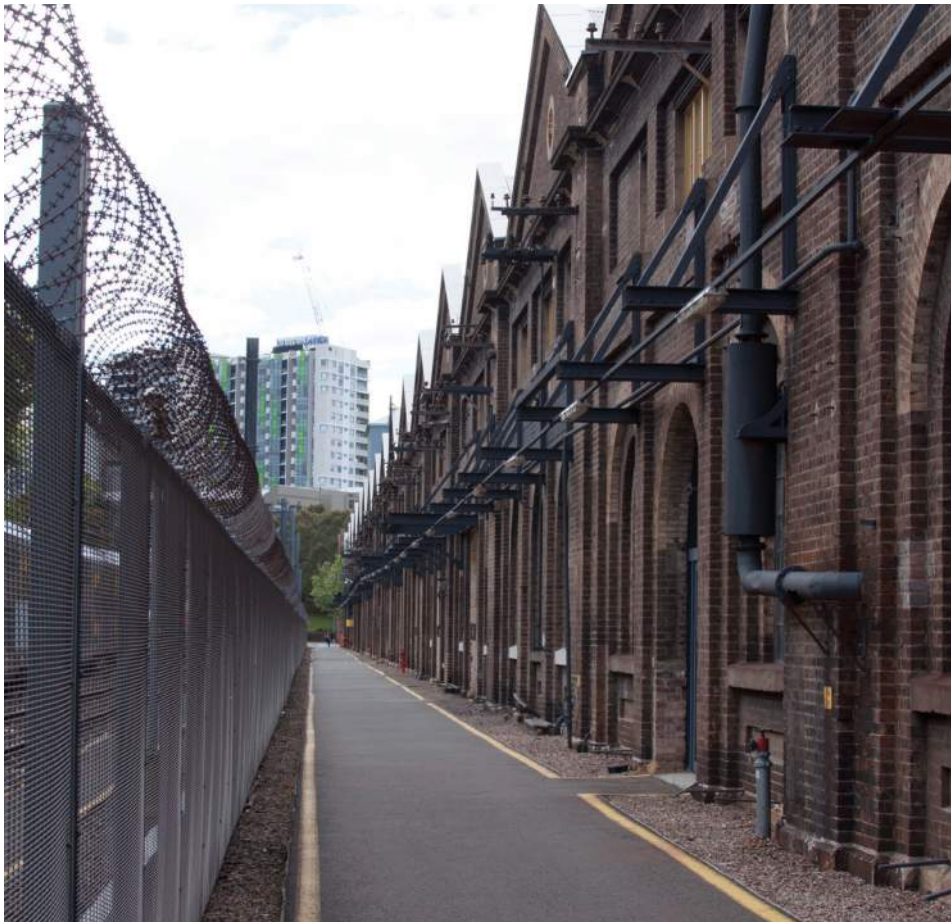
- Subject Land**
- Maximum Gross Floor Area (m²)**
- A 42,055
 - B 1,300
 - C 6,955
 - D 12,805
 - E 3,976
 - F 2,840
 - G 8,305
 - H 41,800
 - I 42,000
 - J 44,000
 - K 16,450
- Australian Technology Park**
- Private Road
- Cadastral**
- Cadastral 09/09/2011 © NSW LPI

2.4 Site Constraints and Opportunities



2.5 Existing External Conditions

The distinctive sawtooth form and heritage industrial materiality of the existing facades of the Locomotive Workshops are highly significant in defining the character of the building as well as the wider site. The condition of the facades varies from good to poor, with the building as a whole exhibiting a patina of heavy wear and use, mixed with the introduction of modern materials. The images below and right outline the existing condition of the building.



View down Northern Right of Way



Innovation Plaza



View of substations looking west down Locomotive Street



Southern facade along Locomotive Street

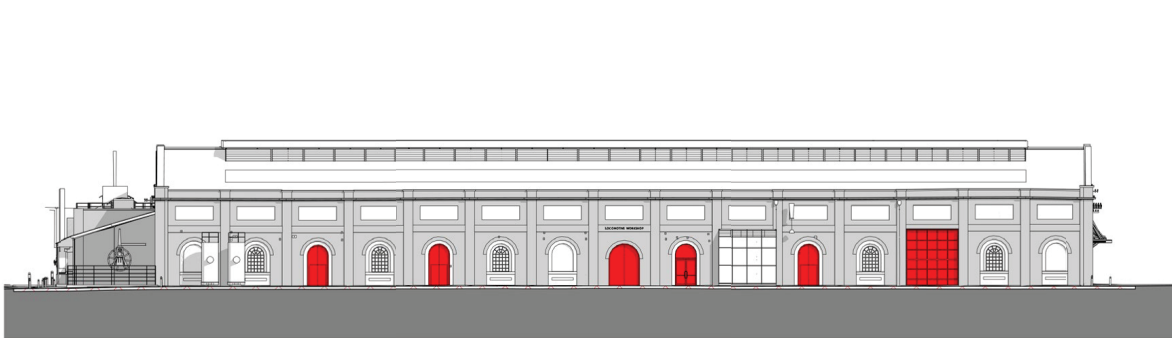


Substations on the southern facade

2.6 Existing Openings

The existing openings to the Locomotive Workshops consist of a language of primarily arched doorways and windows, interspersed with a number of rectangular and larger format openings. Generally, the doorways are located centrally to each bay, with a single window on either side.

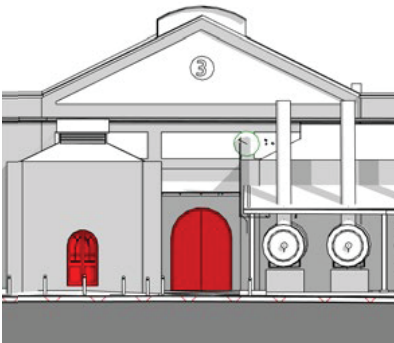
All existing doorways are shaded in red on the elevations below.



East Elevation



Detail - Rectangular opening and equipment interface, Bay 4



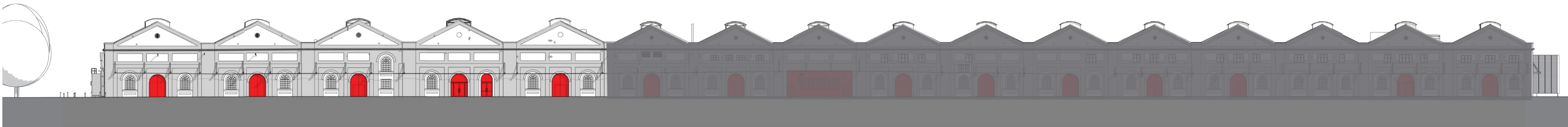
Detail - Annex interface and equipment, Bay 3



Detail - Modern large format opening, east elevation



South Elevation



North Elevation

2.7 Site History

2.7.1 Historical Overview

The Locomotive Workshops consists of a very large brick building divided into 16 bays running north-south. Each bay was originally used for one or more trades required to repair or manufacture locomotives and their components. The building is of masonry construction with a metal roof and presents as a two storey structure. A series of small annexes have been built along the southern side of the building. Internally, the building is supported on a steel frame and metal roof trusses, which have been incorporated within the redevelopment of the building. The majority of bays having been converted to commercial office space, function and exhibition areas in a variety of styles. Items of machinery have been placed on display and interpreted throughout Bays 3 to 15 of the building.

The Locomotive Workshops commenced construction in 1887 and was originally built in two parts. Bays 1 to 4, at the east end, contained the 'dirty' trades such as blacksmithing and boiler making, while Bays 5 to 15 contained the machining, tooling and assembly areas, with the two buildings separated by an open area. This area was

infilled in 1905 to become Bay 4A and the boiler making function extended into it. The Loco Workshops were the hub of locomotive manufacture from the 1880s to the 1930s, when many functions were progressively relocated to the newly-constructed Chullora Workshops. Surrounding the Loco Workshops were separate buildings (now gone) containing auxiliary trades such as spring making, pattern making, welding, copper smithing and foundry work. The Loco Workshops employed vast numbers of employees in these trades and many lived nearby in working class suburbs such as Redfern and Erskineville. By the 1960s, the Workshops had begun to wind down as the NSW Railways changed technology to diesel from steam. The Workshops finally shut in 1988 and were converted to the Australian Technology Park in the mid-1990s.

2.7.2 Existing Condition

Externally, the condition of the building ranges from good to poor. The building as a whole exhibits a patina of heavy wear and use, mixed with modern materials. Similarly window and door openings vary including both original steel framed arch windows, industrial style timber doors and more recent modern frameless glazed sliding and swing door systems. Internally the building is generally in good condition. Images of heritage machinery and heritage details which are in-situ are included on page 14.

Redevelopment in the mid 1990's saw major refurbishment and adaptive reuse of the building which largely stands intact to this day. Bays 1-2 where established as both a heritage exhibition space and workshop for a blacksmith; Bays 3-8 were converted to commercial and event spaces; bays 9-13 where emptied and refurbished with a new floor slab, and are currently used as a function space. Both Bays 14 and 15 function as independent commercial tenancies. Externally the works include an upgrade of the roof fabric including replacement of the second (non-heritage) layer of roof material and conversion of some clerestory roof ridges to roof lights with polycarbonate roof sheeting. Much of the original roof sheeting remains underneath visible from public areas inside the building.

As part of the same redevelopment works three modern annexes were added along Locomotive Street to house substations, electrical switch boards and fire equipment. An easement was also established along the western elevation to allow the erection of mechanical plant equipment concealed behind a screened enclosure. The heritage timeline on pages 12 and 13 and the construction timeline on page 15 illustrate the adaptive and felxible nature of the site throughout its history, demonstrating how uses and spatial functions have evolved over time.



Existing heritage display in Bays 1 and 2 looking south towards blacksmith



East-west circulation through bays 3-9 along former train-tracks



Exhibition hall looking toward south elevation



Panoramic view of south elevation along Locomotive Street

2.8 Heritage and Conservation Management

2.8.1 Heritage Framework

Heritage documentation for the site includes the Conservation Management Plan for the Locomotive Workshop building (CMP), the endorsed Heritage Asset Management Strategy (2015), the Movable Collection Management Plan (Final draft April 2015), the Interpretation Plans for the site and key heritage guidelines, including the Burra Charter (ICOMOS), and relevant NSW Heritage Division guidelines.

2.8.2 Conservation Management Plan

The Conservation Management Plan examines the history of the Eveleigh Locomotive Workshops and its extant building fabric to arrive at a statement of heritage significance from which conservation policies and strategies are developed. The report is supported by an inventory of building fabric. The place is considered to be of outstanding heritage significance on international, national, state, and local levels.

2.8.3 Key CMP Policies

Key CMP policies that have been considered when developing the Locomotive Workshops include:

- **ATP will be managed, conserved and developed in a way which retains and adds value – both the heritage value of the site and the economic and social value of the asset.**

The proposed refurbishment of the Locomotive Workshops, as part of the overall ATP redevelopment, is intended to contribute to an activated and enlivened precinct, revitalising a building with significant local and state heriatge value. The Locomotive Workshops, which once represented the cutting edge technology of their day, are to be reimagined as a hub for contemporary technology and innovation, whilst sensitively responding to the heritage elements which give the existing building its unique character.

The regeneration of the Workshops as a commercial and retail hub not only activates

the site socially, by bringing hundreds of people to the site daily, but also contributes to the economic wellbeing of not just the ATP precinct, but the wider Redfern community. A strong proposal achieving a critical mass of users will provide social and economic viability to the site well into the future.

- **ATP will continue to develop in a manner which respects and conserves the existing heritage values of the place, but which encourages exciting new development that is of sympathetic design.**

Successful adaptation is key to the preservation of the site’s unique heritage, linking the past to the present, and allowing it to project into the future. The proposed adaptation provides high quality, sympathetically designed commercial space to activate and invigorate the Locomotive Workshops precinct. The proposal touches the existing building lightly, by providing an independent, removable structure within the existing shell. The transparency and openness of the new development creates structural and programmatic clarity, whilst both conserving and highlighting the heritage value of the place.

- **Innovative commercial uses which use new technologies and deliver good heritage outcomes—in relation to both physical conservation and interpretation—will be encouraged.**

At the time of their inception, the Locomotive Workshops were a proud showcase for the greatest technology of the day, a tradition which will be carried on through the new uses of the building. The proposed commercial uses, which may included start-up spaces, internet of things, shared working platforms and media, attracting tenants at the forefront of their industries, mean that the refurbished Locomotive Workshops have the potential to become a significant centre for technology and innovation in Australia.

The proposed uses also allow great scope for conservation and interpretation, with full height atria providing areas for display and interpretation, as well as appreciation of in-situ elements such as hoists, crane beams, and existing roof structure. The atria and central access spine are publicly accessible through Bays 1 to 7, with an interpretation of the former railway tracks guiding pedestrians through the building along an east-west axis. This democratisation of the space affords workers and visitors alike the opportunity to appreciate the unique heritage building at close range.

- **The distinctive industrial character of the former Eveleigh Locomotive Workshops buildings should be conserved through use of appropriate materials and finishes.**

The proposed design conserves the authentic industrial character of the former Locomotive Workshops, showcasing the existing building on all scales, from the conservation of heritage structure and machinery, to windows and doors, and characteristic materials such as heritage face brick. All new materials introduced to the building will take their lead from what is existing, with use of glazing and other transparent materials a priority to ensure legibility of heritage items and the scale of the building. For further detail, please refer to sections 4.7 to 4.19 of the report.

- **Accommodation of new uses should be accompanied by a willingness to adapt and evolve as the Locomotive Workshops once did and be based on consideration of the potential impact of the new use on the heritage significance of the place.**

The design approach of the proposal centres around the idea of touching the existing structure lightly, by installing self-supporting, lightweight structures that sit within the building envelope, with minimal intervention to the heritage fabric. This strategy was developed not only as a means of best retaining the heritage integrity of the building, but also in order to retain the flexibility of the vast, industrial-scale spaces for potential future uses, which may differ from the ones intended today.

The Locomotive Workshops have a long history of flexibility and adaptation, from the original railway functions, to munitions manufacture, a site for Paddy’s markets, higher education and commercial uses, as outlined in the following heritage and construction timelines. The proposed development, as the next incarnation of the proud history of the site, aims to preserve and share the story of Eveleigh for future generations.

- **Adverse impacts on components, fabric or other aspects of significance (including use) should only be permitted where full assessment of alternative options has been undertaken to minimise adverse impacts.**

During the initial phases of the project, the design team has worked through numerous alternative options in order to achieve the optimal design outcome for the site. Based on research undertaken by Mirvac, it is believed that the combination of uses proposed will ensure the ongoing activity and longevity of the site. A number of these options have been outlined throughout this report.



The blacksmith’s shop, 1890

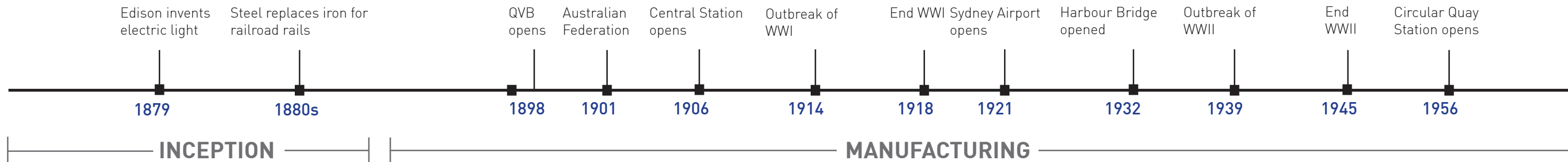


Metal forging on the steam hammer, 1926



Locomotive at Eveleigh, 1950

2.8.4 Locomotive Workshops Heritage Timeline



1871

Planning for a large modern workshops complex at Redfern began.

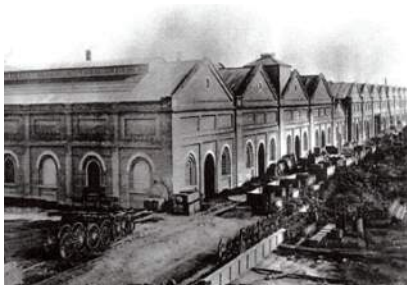


1875

The site at Eveleigh was selected, on land running along both sides of the then Sydney to Paramatta railway line.

1884

The building contract was awarded to George Fishburn and construction commenced on Bays 1-4.



1887

Workshops 1-4, occupied by 'dirty' trades, including blacksmithing and boilermaking, were officially opened. Workshops 5-15 contained machining, tooling and assembly areas, with the two buildings separated by an open space, and were completed and opened later in the year.

1889

The original phase of the yards included Bays 1-15 of the Locomotive Workshops, Bays 16-25 of the Carriage Sheds, Engine Running Shed, Paint Shop, a General Store and various smaller buildings, associated turntables, traversers and rail lines.

1905

The open space between the two workshop buildings was infilled to become Bay 4A, where boilermaker functions were relocated.

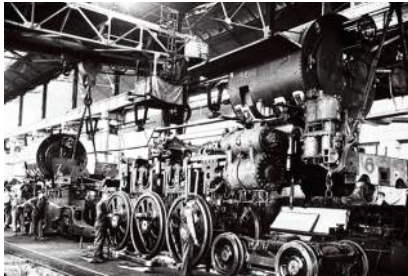
1914

Electrification of machinery in the workshops was completed.



1917

Several new buildings were added and the workshops were rearranged.



1925

Manufacture of new locomotives ceased at Eveleigh. The northern bay of the running shed was demolished. In the subsequent decade, many functions were relocated to the facility at Chullora.

1940-43

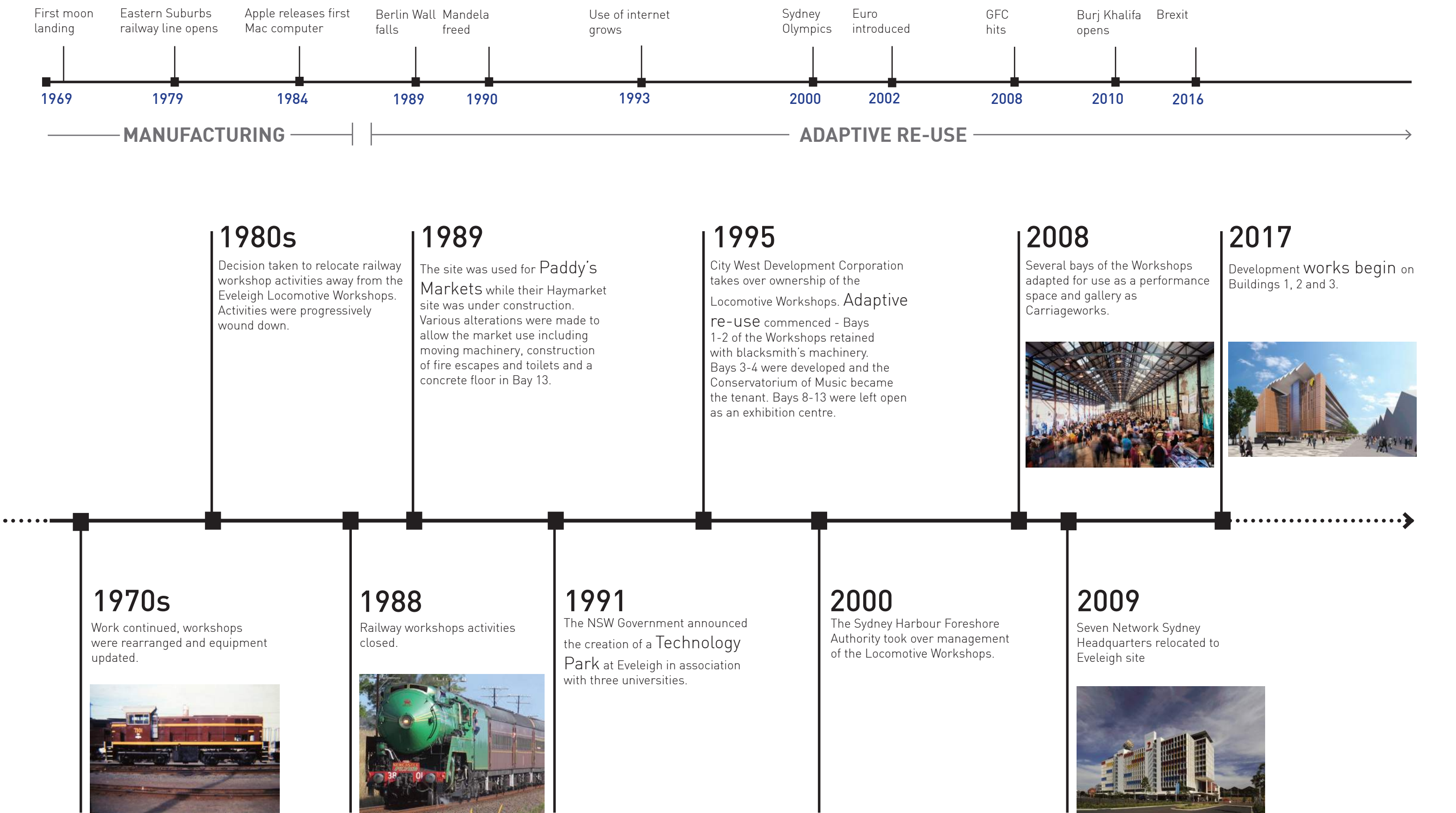
As a result of WWII, Bays 5 and 6 were cleared and a new mezzanine and machinery for shell manufacture was installed. Bay 8 was altered for a munitions annexe.

1945-52

Manufacture of new locomotives was reintroduced in 1945 and continued until 1952.



2.8.4 Locomotive Workshops Heritage Timeline



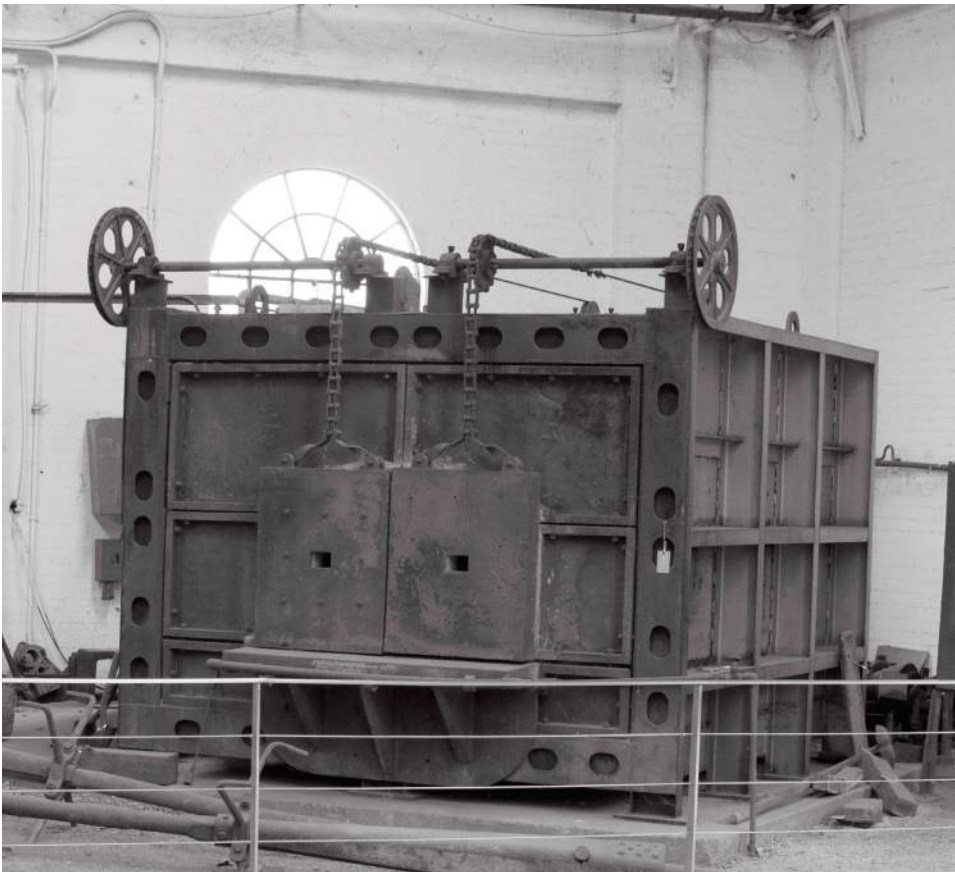
2.8.5 Existing Heritage Details



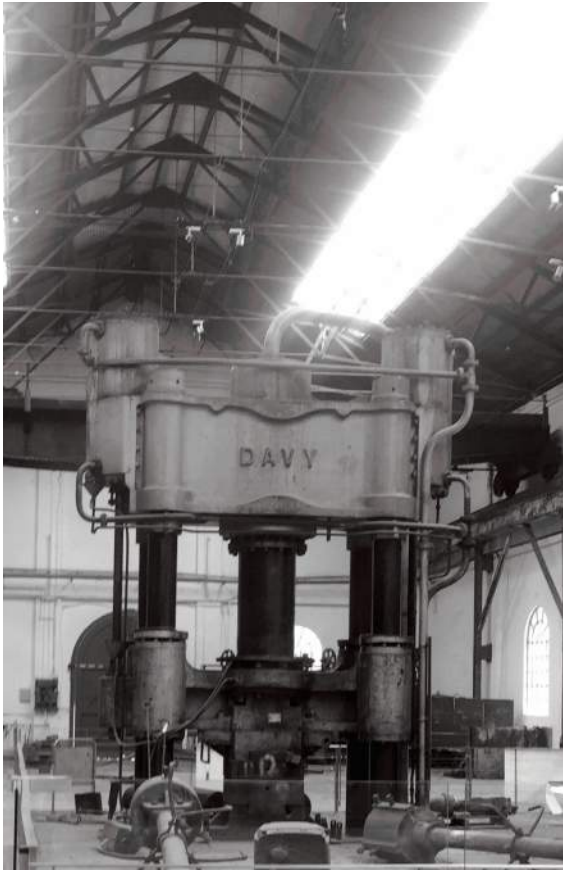
Heritage roof trusses



Arched heritage opening on southern facade



Heritage furnace in situ in Bay 1



Davy Press, Bay 1

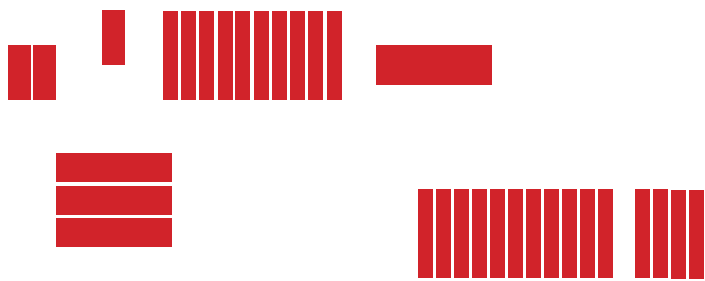


Exhibition Hall, Bays 8-13



Heritage equipment in Bays 1 and 2

2.8.6 Locomotive Workshops Construction Timeline



1887
Original workshops opened.



1901
Large Erecting Shop, new Foundry and Laundry constructed to the west of the workshops.



1905
Bay 4A enclosed and the Spring Shop established on the east side of Bay 1.



1914-25
Electrification completed.
North bay of the Running Sheds demolished.



1945-52
Locomotion construction reintroduced.



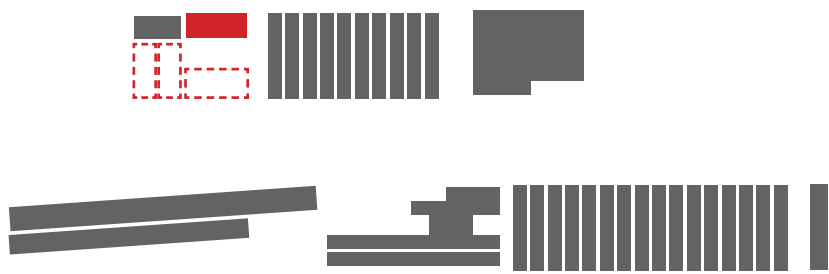
1965
Remaining bays of Running Shed demolished.
Steam locomotion abandoned.



1965-70
ACDEP Carriage Depot replaces running sheds.



1984-88
Spring Shop removed.
Eveleigh Locomotive Depot closes.



2017
Current buildings on site.

3.0 Built Form and Design Quality

3.1 Design Excellence

Design excellence is a key objective for the Locomotive Workshop site and adopting a mix of techniques and carefully considered processes have been adopted to ensure that this objective will be achieved. The proposal will achieve design excellence in accordance with the urban design principles as outlined in Redfern Waterloo Built Environment Plan (Stage One) August 2006 and the City of Sydney LEP 2012, detailed in the following pages of this report.

Design Excellence is defined in Clause 22, Schedule 3, Part 5 of the State Significant Precincts SEPP. The redevelopment of the Locomotive Workshops has been designed having regard to the following relevant matters:

1. Consent must not be granted to a new building or external alterations to an existing building unless the consent authority has considered whether the proposed development exhibits design excellence.
2. In considering whether proposed development exhibits design excellence, the consent authority must have regard to the following matters:
 - a. whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved
 - b. whether the form and external appearance of the building will improve the quality and amenity of the public domain
 - c. whether the building meets sustainable design principles in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security and resource, energy and water efficiency
 - d. if a competition is held as referred to in subclause (3) in relation to the development, the results of the competition.
3. The consent authority may require a design competition for any development over 12 storeys consistent with the guidelines issued by the Redfern-Waterloo Authority and approved by the Minister.
4. The Redfern-Waterloo Authority may draft a guideline to be approved by the Minister detailing what matters are to be addressed for design excellence and for the conduct of design competitions.

The following sections of this report address these matters in detail.

3.2 Design Approach

To date Sissons have worked in collaboration on the design of Buildings 1, 2 and independently on the Community Building (Building 3) within the ATP precinct. Sissons now see the successful redevelopment of the Locomotive Workshop as an extremely important component of the overall ATP precinct and contribution to the wider community. Sissons share Mirvac’s over arching vision to create workplace, retail and community spaces sensitively within the authentic and expansive volumes of the Locomotive workshop. The result will be a vibrant and accessible built form for both workers and the local community. In achieving this the Locomotive Workshop will be integrated within the broader public domain offering at ATP.

A selection of Sissons Architects’ projects is included to the right for reference.

3.2.1 Revitalisation and Redevelopment

The revitalisation and development of the Locomotive Workshops presents an opportunity to unlock this former industrial building and recreate it not as a business complex, but as a significant public building for the community.

Building on the existing heritage structure and referencing Eveleigh industrial heritage will be key in the creation of a complex and vibrant public offering for the growing commercial and local population.

The redevelopment of the Locomotive Workshops will deliver a public building which is reflective of the site and city’s reputation as leaders of contemporary best practice, innovation, leadership, community and the environment, whilst simultaneously paying homage to its significant industrial heritage.

A layered design approach will service the needs of the daily, commercial population as well as the surrounding community, providing a significant public internal space which is innovative, comfortable and usable. Environmental sustainability is integral to the spatial planning of the Locomotive Workshops, with the internal design maximising opportunities to access sunlight and utilising the building’s large roof area to collect and recycle rain water and generate electricity via roof mounted photo voltaic cells.

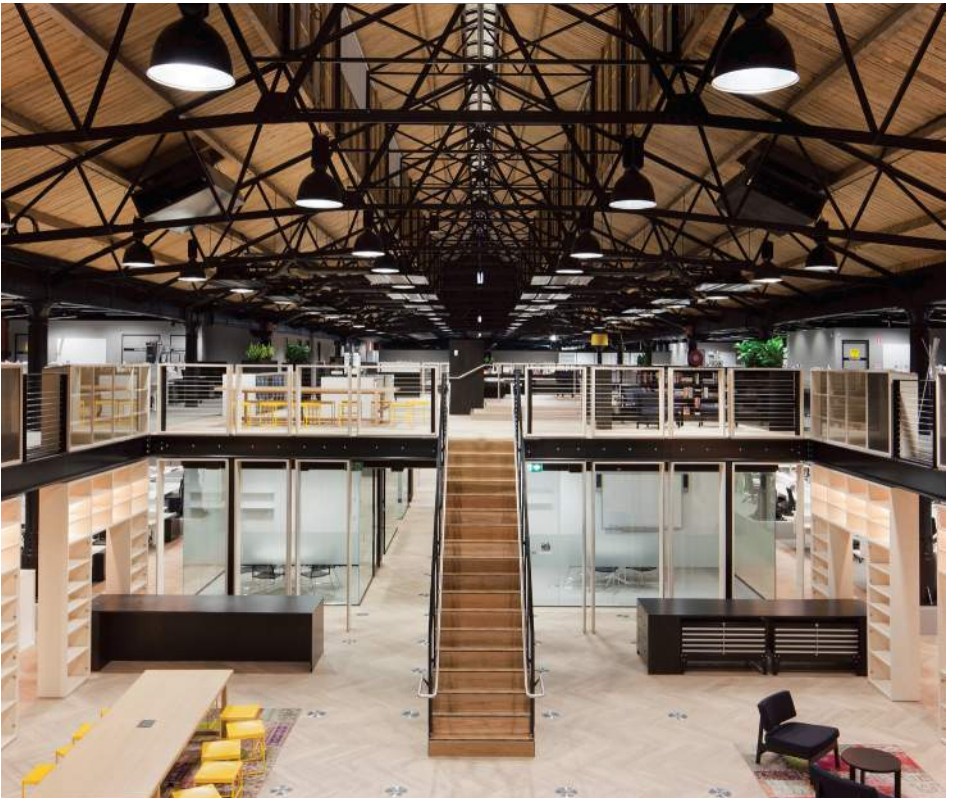
3.2.2 Sustainability / Community

Improved connectivity with Redfern Station prioritises the pedestrian and cyclist journey, promoting green transport. Community engagement has been critical in developing the public component of the scheme, and guiding the built form and uses within the building, which respond to and engage with community needs and aspirations, and the surrounding existing commercial and public realm.

In addition to a coherent and integrated interpretation strategy, a calendar of cultural events will ensure that the Locomotive Workshops continue to be relevant and thriving. The overlay of existing and proposed built form will work to communicate the site’s significant history as well as facilitating ongoing evolution of the place for individuals, small groups and the wider community alike.



8-10 University Avenue, Macquarie University



Goods Shed South, Melbourne

4.0 Design Principles

4.1 Overall Design Principles

“The best way to conserve a heritage building, structure or site is to use it ... Adaptation links the past to the present and projects into the future.”

New Uses for Heritage Places: Guidelines for the Adaptation of Historic Buildings and Sites

Underlying design principles focus on maintaining important physical aspects of the existing heritage building, including the inspiring sense of scale and size of the internal volume and a careful interpretation of the building’s previous uses. Where possible, new internal structures will be independent of the existing fabric, allowing the new development to maintain minimum impact on this significant heritage site. New building work will be detailed in a contemporary manner which while substantial, touches the building lightly.

The proposal has been developed to provide for interaction and visual connectivity both within the existing heritage building fabric and with the public domain for both building tenants and the wider community alike. Key drivers for the development of the commercial space is to provide a high level of appeal aligned with the aspirational expectations of a premium retail and function space tenants, whilst showcasing the unique heritage elements of the building.

While contemporary structural and services systems will be integral in the completed building, the very nature of the existing heritage fabric will create a substantial point of difference from a typical retail building, providing a unique spatial experience afforded by the low, expansive building form with an industrial aesthetic.

This proposal will see Locomotive Street transformed at the ground plane level. Entries to the retail offering will open towards Locomotive Street, with the public free to enter the building and circulate through the central access spine from bays 1 to 7. Access to customer parking will be provided from the basement level parking in

Building 2 via a travelator in Bay 4. The travelator has been designed in conjunction with a heritage interpretation specialist, creating unique opportunities for display and experience. Further details of the travelator are provided in Section 4.10.

The historical character and materiality of the Locomotive Workshop has informed the design of the heritage interpretation and retail spaces proposed within bays 1-4a. The floor plate layout is developed to work in harmony with the existing structural system. The proposed layout has been developed by reworking the rhythm of the bays into groups of primarily three, as shown in Diagrams A and B below, with the existing east-west axis, formerly train tracks, forming the principle circulation spine. The train tracks will be interpreted as metal inlays in the floor, to ensure the history of the building is both legible and celebrated.

While currently the bays have been numbered from 1 to 16, it is proposed as part of this submission to return the bays to their historical numbering, including Bay 4a, which was in-filled in 1905 as part of ongoing expansion works at the site.

Bays 1 and 2 currently house a substantial collection of cultural heritage pieces, comprised of a number of large items of insitu machinery, as well as loose heritage tools and equipment. The southern half of the bay is dedicated to use by a Blacksmith, and is the only part of the site to retain its original uses. New works to these bays are to be sensitively integrated and removeable, with minimal impact to existing heritage fabric. Where a loading dock has been inserted to service the building, a new heritage interpretation area is also proposed on a mezzanine above this, concealing and separating the functional and back of house uses from the general public, and creating a unique elevated view point for the heritage interpretation centre. A strategy to reinvigorate the space has been developed in conjunction with heritage interpretation consultants Trigger Design. The roof and daylighting conditions in Bays 1 and 2 are to remain as existing, with refurbishment as required.

The atria and double height spaces in Bays 3-4a are to be top lit, by refurbishing the existing polycarbonate central skylights, as well as providing new polycarbonate skylight slots over the central spine. Solar control can be provided via a combination

of high performance glazing specification and internal diffusers. A series of platforms, bridge links and stairs within the atria will promote simple and efficient connection and interaction in an inspiring environment.

Three key principles drive the interior design and spaces; interaction, transparency, and flexibility. The design team has sought to develop floor plates that foster a connected, softly expressed, efficient, human scale environment, which simultaneously showcases and embraces the rich heritage nature of the existing building.

Retail offerings at street level, in bays 1-4a and within existing brick annexes along Locomotive Street, will encourage use by the local community, drawing residents into the heart of the ATP precinct thus establishing it as a 7 day week precinct. The retail offerings are envisioned to create a unique makers precinct, in which the skills and processes of production are visible and tangible to the consumer. The introduction of artisan maker spaces also harks back to the industrial origins of the Locomotive Workshops. These maker’s spaces will be supported by a supermarket in bays 3-4a, which will ensure a constant flow of visitors to the site.

When complete, the Locomotive Workshop will be the corner stone of a new neighborhood, encouraging permeability and connectivity with the wider Redfern precinct, encouraging a community feel that is open, accessible and welcoming.

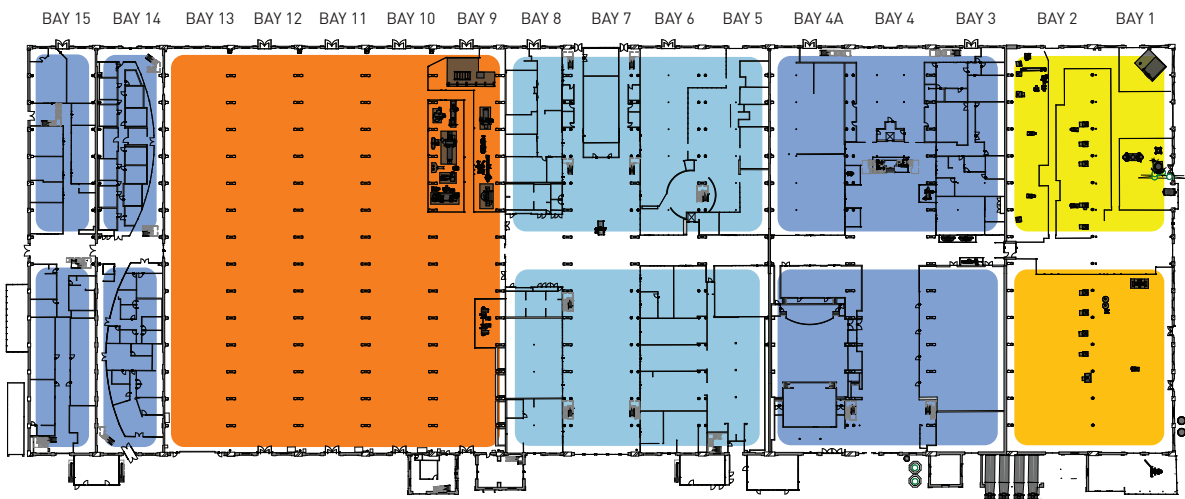


Diagram A - Existing functional zoning diagram

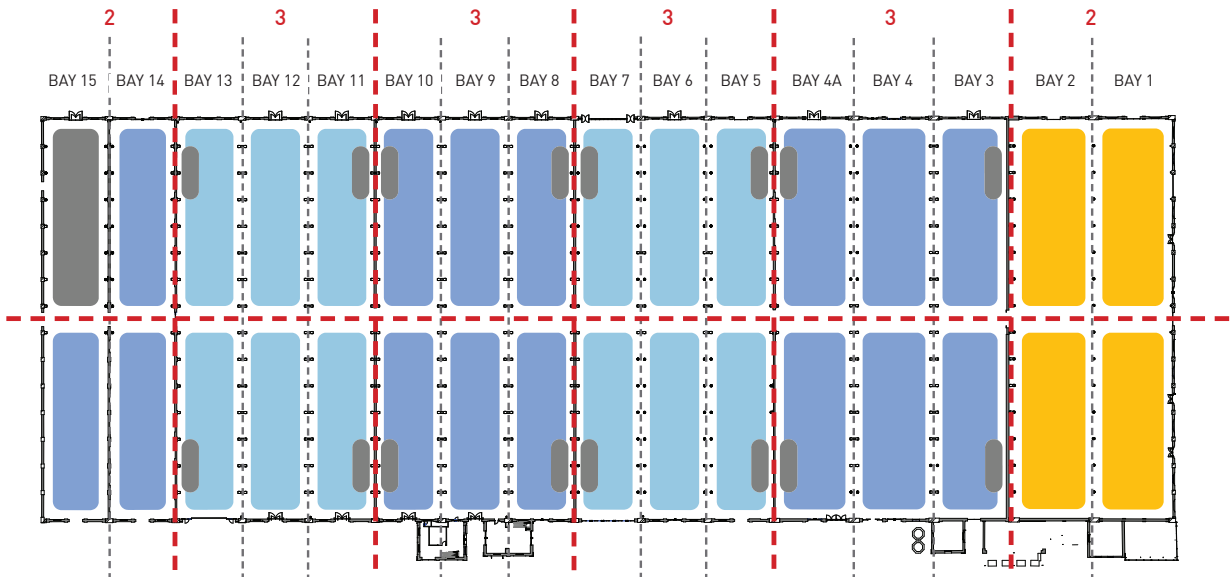


Diagram B - Proposed spatial hierarchy diagram

4.2 Retail Approach

In 1988, The Eveleigh Locomotive Workshops ceased to operate after over 100 years of operation. Conceived in the 1870s, and opened in 1871, the workshops were dedicated to the servicing and manufacturing of locomotive and rolling stock to aid the expansion of the Australian railway network. Over the subsequent decades, the complex grew in scale encompassing the Carriage Works, Spring Shop, the Foundry, the Paint Shop and the Large Erecting Shed. At its peak in 1952, the site was fully occupied with over 10,000 people working there every day. The Great Strike of 1917 heralded the modern age of labour and workforce rights, and was the catalyst for the modern labour union movement with Joe Cahill rising from workshop apprentice to Labour State Premier in 1952.

Since its closure, the site has been operating as the Australian Technology Park, an attempt to create a centre of innovation and technology research. Whilst this has been relatively successful, the unfortunate outcome is the creation of a somewhat soulless and isolated business park, which turns its back upon the local community, only providing facilities to local workers and the infrequent visitor. Currently, on approach, one is presented with closed boom gates, security guards and an overwhelming sense of not being welcome.

From the outset, our approach as designers has been to remove these barriers, open the doors and reintegrate the ATP precinct back into the surrounding neighbourhood. Over time, it would be possible to expand this influence into the entire Eveleigh Workshops precinct, including the North Eveleigh sites on the other side of the tracks. As a positive step, the renumbering of the Locomotive Workshop Bays will re-align itself with the existing Carriage Works building numbering sequence, allowing both building to be read together in context. Locomotive Workshops will be Bays 1 to 15 (including the reintroduced Bay 4a, and Carriage Works will recommence at Bay 16 upwards.

Over time there have been attempts to generate onsite community activities within the Locomotive Workshops (such as Finders/Keepers and railway heritage days) to create a sense of place. However, there has never been a compelling reason for the wider

community to make more frequent visits. The result is a distinct lack of activation that is unsustainable with no real sense of place.

The new revitalisation of this entire precinct by Mirvac is an opportunity to reverse this trend. The Locomotive Workshops has the potential to become the centrepiece of a comprehensive new innovation precinct, underpinned by the Commonwealth Bank (CBA) as the anchor tenant. Along with the technology teams, there is also the ambition to become a centre of learning with close affiliations with the local universities and enterprise research groups, realising the original dream when the site was converted in the 1980s of an urban innovations hub.

Fundamentally, this project is about partnerships and place making. Central to this concept is the creation of a social destination within the site that expresses its heritage significance and the unique sense of place that this affords. Throughout history, retail has been at the heart of many great social and community spaces, both small and large scale. Examples include Covent Garden, Mercado Central de Valencia and Sydney's Queen Victoria Building. While the nature of retail has changed over time, the principles remain the same - retail destinations are places where people interact, meet and do business daily. This new approach should be a partnership, where the four key user groups - workers, local community, students and visitors - have compelling reasons to make frequent visits. The heart of every successful location is the everyday offering, enhanced by inspired moments of delight, with the history and heritage of the original buildings as an intrinsic part of the mix.

Three new state of the art office developments are being constructed by Mirvac for occupation by the CBA where they can concentrate their focus upon new innovations and financial services technology. Upon completion, there will be approximately 200,000sqm of office space with a total of over 20,000 people working in the site - a number which exceeds the population when the Eveleigh Workshops were at their height of production. This creates the opportunity to return the site to its historic role as a highly populated place and a central dynamic hub with creation at its heart.

This on-site population represents a great opportunity to create a new place centred around people. The wider ambition is to create an 18-hour / 7-day economy, a place that is active early in the morning and deep into the evening, giving a great sense

of vitality and community throughout the year. Activation is critical to the long-term success both for the Locomotive Workshop and the wider Eveleigh South precinct, ensuring that it remains a viable asset within its historic context. It also creates the opportunity to re-engage the visiting public with the people, origins, stories and history of this significant building.

A driver of this activity is a wide spectrum of retail offerings and event spaces where people can easily shop but also just enjoy the space and the activation of the space. As part of this offer and as a primary anchor, is the provision of a supermarket, where the everyday needs of all can be met. This will ensure frequent visits throughout the day and throughout the year. With this as the key driver, it can support other supplementary and complimentary retail uses such as health, wellness, restaurants, cafes and food production. Contemporary retail is no longer about generic fast-moving consumer goods, rather there is a renewed emphasis upon fresh food - where it is sourced from and how it is made. As such, the supermarket has been envisaged as something well beyond the typical white box with fluorescent lighting. The design intent is to be sympathetic to the overall heritage fabric and complimenting the broader retail offer. A fresh food market in the truest sense, complemented by onsite food production with manufacture on display and a part of the theatre. Everything is an opportunity for an experience, to learn with that element of surprise and delight.

The building is primarily approached from the Redfern train station located at the north-east corner of the site. Every morning and every evening, thousands of people will make their way into the site via Innovation Plaza, running along the eastern side of the Locomotive Workshops. This ant track of people will become the driver for the success of this significant public open space. With a small permanent offer with the Locomotive Workshop this can be expanded and refreshed with the opportunity to curate outdoor activities and local events within Innovation Plaza regularly throughout the year. The location of the Blacksmiths and the Heritage Interpretation Space will be part of the heritage experience, allowing more people to understand the people, history and origins of the site. The Locomotive Workshop sits within the overall interpretation of the site. Bays 1 and 2 will be the focus of the heritage narrative within the Locomotive Workshop with the restored machinery, a state of the art display and interpretation centre, and the ongoing activities of the blacksmiths shop. In effect, all roads will lead to this section and the interpretation and heritage space.



Blacksmith shop circa 1890



Heritage elements in the Blacksmith



Heritage elements in the Bays 1 + 2

The location of the supermarket at the rear of Bays 3, 4 and 4a will further reinforce this exposure with the main pedestrian route into the retail space being through the heritage bays ensuring that all visitors can experience the majesty of the original works spaces within the full height space of Bays 1 and 2.

The critical success factors for the precinct include extended trading hours, critical mass, access to public transport, a quality offer ambience and amenity and functionality. The operational success of the building including the retail, relies upon the provision of two key elements. An efficient loading dock and direct covered access to customer parking. The design challenge has been to find suitable locations for these elements with minimal impact upon the original building. Initially it was suggested that a new basement be excavated beneath the existing building, however it was quickly determined that this would have too great an impact upon the original footings and foundations which are combination of timber piles and subterranean brickwork archways.

Fortunately, the adjacent new CBA Building 2 incorporates two new basements one of which could become available for retail and visitor parking. Access to this adjacent site can be provided with a low impact subterranean link which would not be visible from outside. A gently inclined travelator allows for efficient and comfortable access directly into the centre of a new retail space located in Bays 3,4, and 4A. This subterranean experience is seen as a chance to create an experience unlike any other. The design team has created a seamless heritage experience with the incorporation of artefact displays, information and a sound scape experience, bringing the visitor up and into the main retail space from an approach not seen before. It is also an opportunity to express subterranean elements of the building.

A centralised loading dock is an opportunity to locate the central logistics of the entire building into a consolidated space. In terms of retailing, all retail operators large and small have sophisticated logistics operations and rely on bulk deliveries to outlying stores around the region. The dock also needs to accommodate the waste management requirements not just for the retail component but for the entire building including its office uses. This includes waste management areas, wash down areas, garbage truck standing areas and garbage compactors. As such, a full-size loading dock is required

to service over 35,000 sqm of mixed use space.

A wide number of alternatives for the loading dock location were considered with regard to the potential impacts upon the heritage building and the public domain. One of the key design ambitions is to remove all vehicles from the public domain wherever possible, especially along Locomotive Street where it is possible to create a place for people, active on both sides by retail. Central to this ambition is the removal of all loading and delivery activity from this main thoroughfare (currently through bay 13 and bay 4), and the creation of a new remote central point of loading on the north-eastern corner of the building, this being closest point to the existing traffic entry point. This allows the dock space to be intrinsically linked directly to the retail space, ensuring safety, hygiene and operational efficiency.

A thorough review of the existing equipment and machinery in Bays 1 and 2 revealed that the majority of items in the northern end are not located in their historically correct positions, and as such are not considered to be good examples of how the spaces actually worked. This presented the logical location for the loading dock space, as the impacts upon the heritage nature of the space will be limited.

One of the great benefits of the loading dock location is the creation of a raised mezzanine level directly above. This new area will be dedicated to exhibitions, displays and presentations celebrating the building and its stories. Working closely with the heritage interpretation design team, this space will be a new purpose-built depository for knowledge and experience for the wider public. This elevated space will afford views over the heritage space below, giving an appreciation for the activities that used to occur within Bays 1 and 2. Heritage photographs of the space already demonstrate that this elevated position provides a unique and expansive view point, which will be made available to the general public via this new permanent viewing platform. The Davy Press will for the centrepiece of this display, with opportunities for sympathetic retail kiosks to further animate the space, creating more reasons for people to visit. Retail infused with heritage can only strengthen and support patronage and foot falls to this unique precinct and building.

Currently the south-east corner of the building is poorly presented with a ramshackle

lean-to canopy from the 1950s obscuring any sense of transparency and not providing activation from the public domain. This corner is a chance to incorporate an appropriate and sympathetic element to the building, a largely transparent, contemporary glass box, forming a new destination for a quality food and beverage offer and providing an active point of arrival into the site from the south-eastern approach. This simple rectangular steel and glass pavilion that matches the parapet height of the original separate pavilions that are dotted along Locomotive Street will also provide an opportunity to showcase the Guillotine, which is currently somewhat obscured by the lean-to. Its scale and proportions have been carefully and sensitively determined with respect to the Locomotive Workshop building. This element will be the only external addition to the building, and will provide a clue as to the new activities within.

Structurally, the design philosophy is based upon lightweight interventions within the building envelope. All new elements, including the dock platform and internal mezzanine spaces, are to be steel framed allowing for reversibility and differentiation with heritage fabric. A light touch is employed throughout and is especially evident wherever new and the old interface with one another. Steelwork affords the design team with a great deal of flexibility – columns are smaller and spans are longer when compared with traditional reinforced concrete systems. All original structure is to remain unchanged with its patina revealing the passage of time. New structure will be almost exclusively black, to differentiate old and new built fabric. All new elements can be dismantled and removed with no lasting impact upon the original fabric.

Fundamentally, good design is all about improving the quality of life. This project represents a unique opportunity for a Heritage led design process that reveals and celebrates the old, whilst embracing the new and all the social benefits it can bring. With the design philosophy firmly rooted in the great urban experience, the Locomotive Workshops can become a new destination for all, making a positive contribution to Sydney and its rich heritage.



Proposed view along Locomotive Street



Proposed view of the southern facade and Bay 1 corner retail



Proposed view of the retail and heritage interpretation space, bays 1 and 2

4.3 Responding to the Section

The existing heritage structure of the Locomotive Workshops is an asset to be celebrated and featured, and as such, is a major driver of the organising principles of the building. The existing system is based on a combination of columns, beams and hoist rails which support the trussed roof structure, as shown in Diagrams A and B.

The dimensions and locations of heritage structure dictate the floor levels, and allow us to derive opportunities for crossing between bays and enclosing tenancies. As such, a two storey system has been developed, allowing minimum head height beneath the mini truss system to dictate the first floor level. An option for a third level, such as in the existing conditions, was considered, however has not been included in this proposal. The proposed two storey system makes a feature of the roof trusses, hoist rails and other heritage equipment, allowing them to be showcased throughout the building.

As a result of careful response to the existing section, both the ground and first floors achieves a generous head height, and the impacts of stairs and lifts can be minimized.

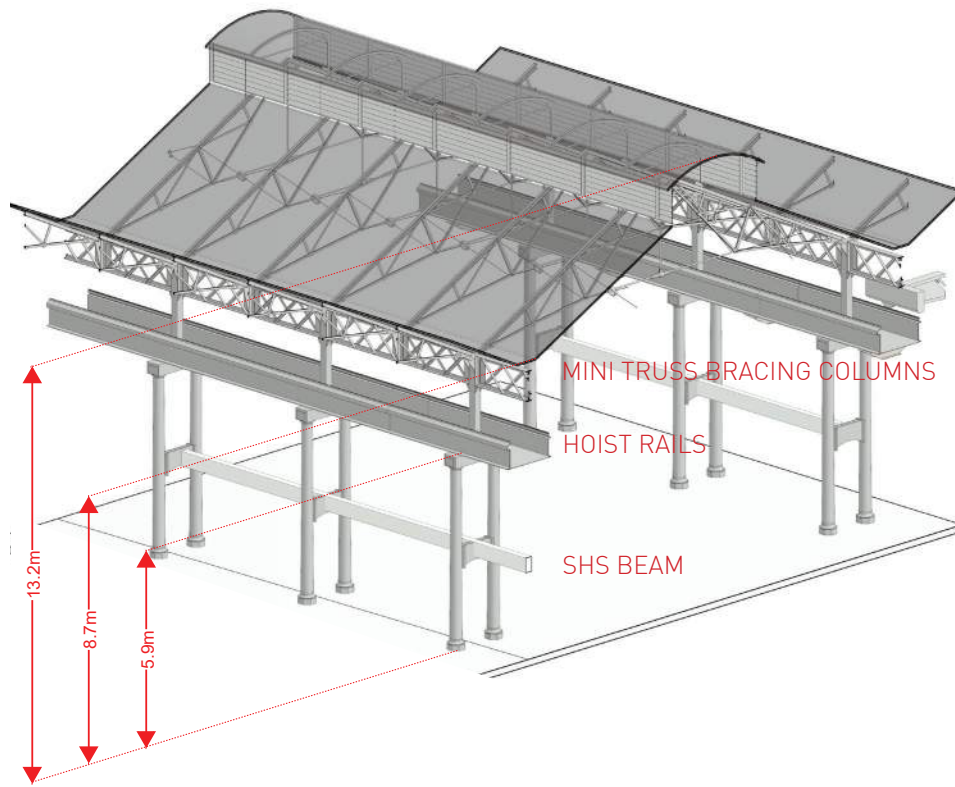


Diagram A: Typical Isometric Section of Heritage Structure



Diagram B: Exhibition hall view illustrating the composition of the heritage structure

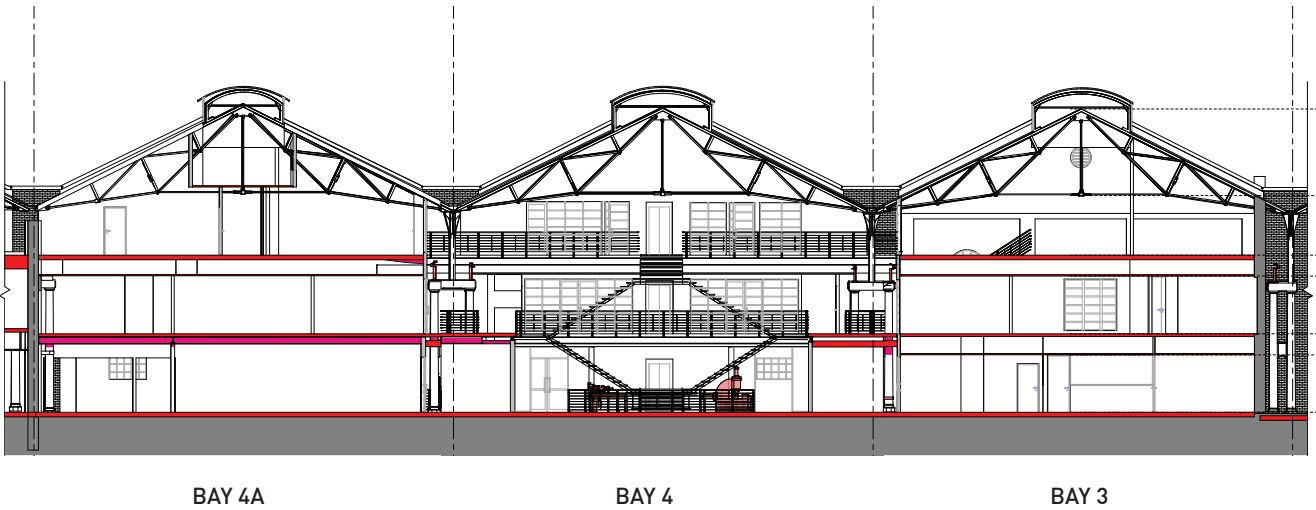


Diagram C: Existing commercial floorplate section, Bays 3-4a

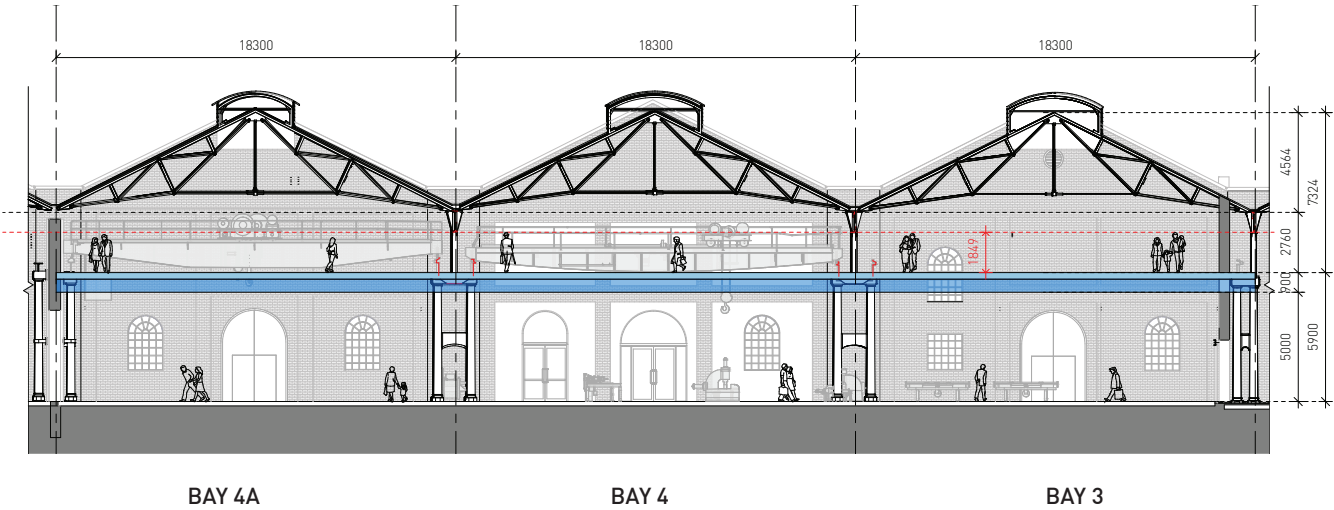


Diagram D: Proposed commercial floorplate sketch section, Bays 3-4a

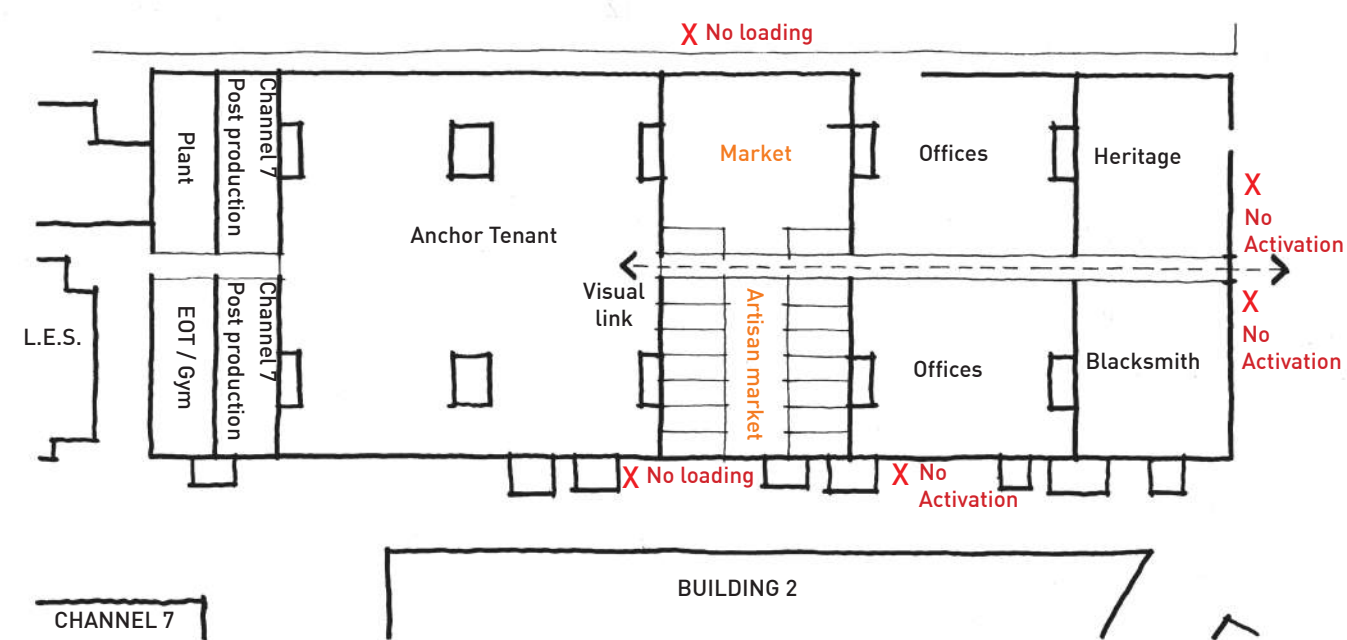
4.4 Organising Principles

Organisational System - Option B

This option considered shifting the large format tenant further to the west, with the market in the central bays and offices to the east, adjacent to the heritage and blacksmith areas. Similarly, Bay 15, which is isolated from the rest of the building by an ongoing tenancy in Bay 14, was allocated as plant, end of trip and a gym space.

While this option retains visual links throughout and provides better pedestrian links from Innovation Plaza to the market bays, it still creates limited activation along the eastern facade. As well as this, the dock would be remote from the the large format market store, which is logistically problematic. Equally, loading opportunities to the central bays are limited to small vans along the northern right of way and to the south along Locomotive Street.

Organisational System - Option B

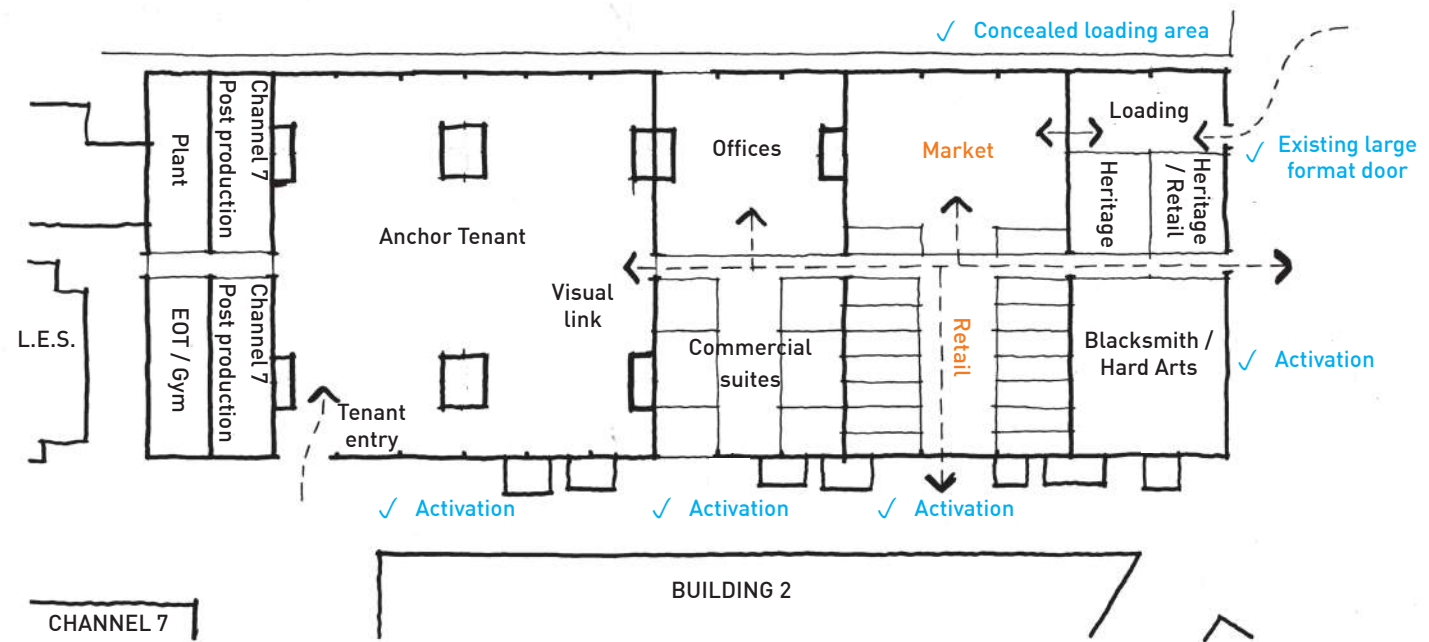


Organisational System - Option C

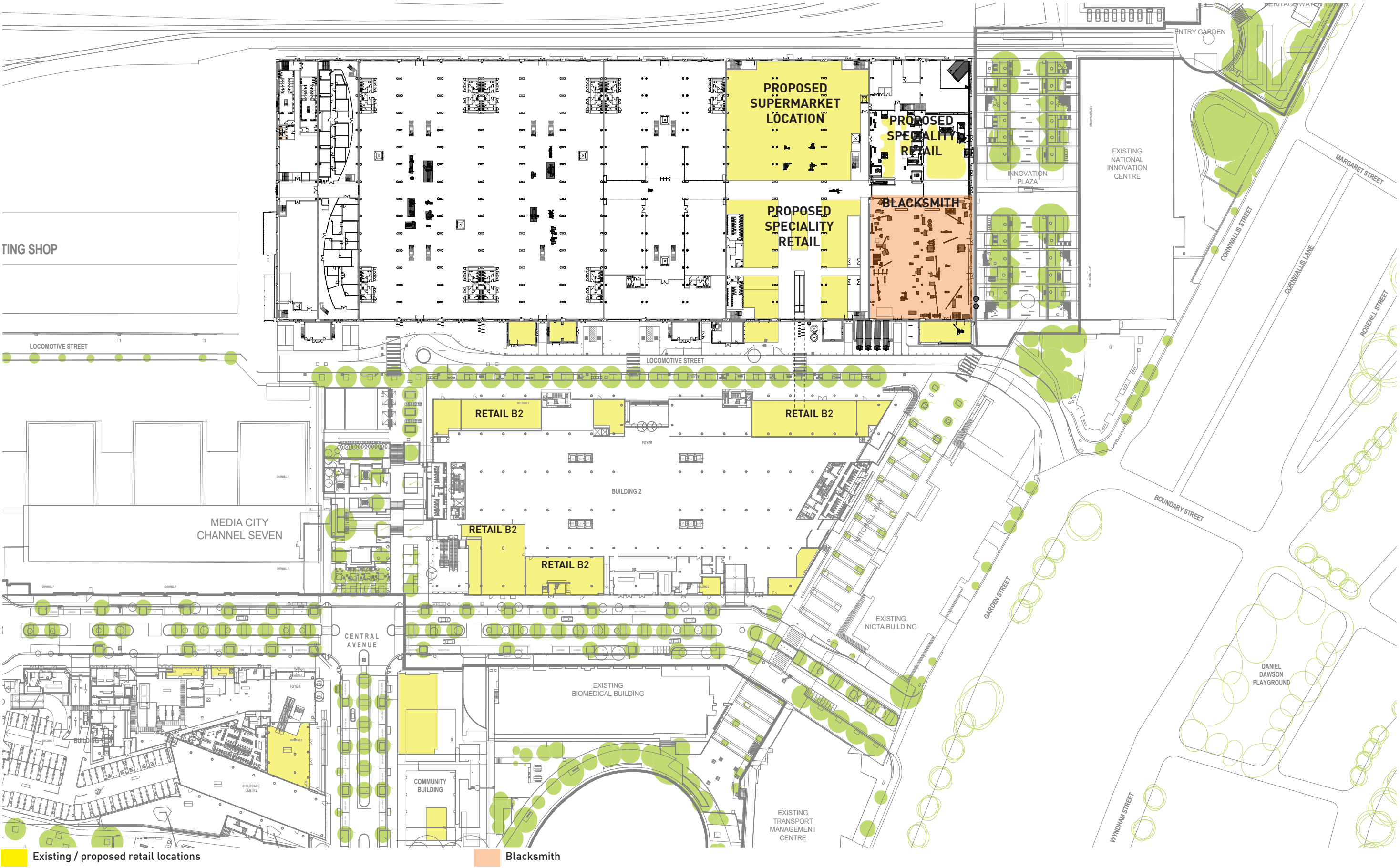
In this alternative, from which the proposed scheme was developed, A gradual progression of public to private space unfolds east to west, with heritage interpretation and blacksmith functions remaining in Bays 1 and 2, and a small amount of retail providing activation to this facade. Retail is then provided in the adjacent bays, with a loading dock at the north eastern corner of the building servicing these bays, as well as the rest of the building. Smaller format commercial suites are located in bays 5-7, with the large format tenant remaining towards the western end of the building, with plant and end of trip located in Bay 15.

This progression allows public access along the east-west circulation spine, reinforcing the pedestrian links from Redfern station and Innovation Plaza, as well as visual links throughout the whole building. The loading area is concealed, and keeps truck access to the corner of the site and away from Locomotive Street. Due to the direct connection between the market and the dock, this solution is logistically viable. As well as this, this layout creates activation along the western and southern facades.

Organisational System - Option C



4.5 Precinct Activation - Retail Location Plan



Site Retail Location Plan

4.5 Bays 1-4a Plans



Proposed Ground Floor Plan Bays 1-4a

Heritage item

4.5 Bays 1-4a Plans



Proposed First Floor Plan Bays 1-4a

4.6 Specific Design Considerations

4.6.1 Adaptive Re-use Detail

Industrial heritage places and spaces possess the opportunity to link the contemporary world to the work of the past. The Locomotive Workshop has a rich, larger than life history of economic, architectural and technical achievements, of infrastructure, of processes and procedures and the transformation of materials. It is important to acknowledge and recall the social structures and the work of those who laboured within the Locomotive Workshops.

Architecturally how the existing building will be adaptively reused, including the process for removing intrusive fabric, whilst maintaining the heritage significance of the building is central to this proposal.

The works proposed within bays 5-15 and 1-4A as part of separate SSDA submissions aim to unify what is a currently a fragmented arrangement of spaces and uses into a logical sequence of open circulation and both retail and commercial tenancies that respond to the existing heritage building fabric.

According to the significance attributed to fabric in the CMP, components deemed integral to the heritage fabric will be maintained while more recent interventions since the mid 1990's will be stripped out. The following outlines the work proposed:

- Maintain a public circulation space running west to east through Bays 1 to 7.
- Bays 1-2; Current existing heritage exhibition area to be generally retained and

upgraded. A new loading dock is proposed at the northern end of the bays, servicing the adjacent supermarket and the rest of the building. A new heritage interpretation area is proposed above this, returning the floor plate to the general public via an elevated mezzanine. The blacksmith area will be retained as existing.

- Bays 3-4a; Existing two and three storey commercial tenancy. Will be converted to two storeys of retail tenancies.

The internal wall between bays 4a-5 and is regarded as significant heritage fabric. It is intended to enlarge the opening between bays 4a/5 along the public circulation route to enhance lines of site through the building revealing more of the heritage super structure.

The existing facades of Locomotive Workshop reveal stages in the evolution of the building over time, additions and manipulations. The proposal seeks to maintain existing openings and where original windows remain, restore and repair these as necessary, by refurbishing existing steel / wrought iron frames, sashes and glazing. Heritage timber doors are to be retained internally in an open position, with new infill steel and glazed openings to the exterior for weatherproofing and thermal performance. Where not original the proposal seeks an upgrade to a modern door and glazing systems within the existing openings. These interventions will enhance security, thermal performance and visibility into the interior for the building.

4.6.2 Transport, Traffic and Parking Management

Currently the Locomotive Workshop is accessible to pedestrians via Locomotive Street to the south, Innovation Plaza to the east and via right of way along the northern

boundary. Vehicular access is via Locomotive Street providing access for deliveries, taxi drop off and limited visitor and accessible car parking spaces. No end of trip facility exists and formal bicycle parking is limited to some external spaces along Locomotive Street. There is no major loading dock however truck and van access typically occurs at multiple locations through existing openings at bays 2, 3, 5 and 13 relative to each tenancy.

This proposal seeks to maintain access from Locomotive Street for minor deliveries, taxi drop off and visitor parking including accessible spaces. Minor servicing will be allowed along the northern right of way. An end of trip facility located ground floor bay 15 will house facilities for both retail and commercial employees. Visitor cycle spaces will be accommodated on locomotive street.

A separate loading dock is proposed at the northern end of Bays 1 and 2, to be accessible to trucks at limited, non-peak times of day.

Visitor and staff car parking will be available in Building 2, and will be connected directly to the Locomotive Workshops via a new travelator proposed in Bay 4. Accessible parking bays are to be located on Locomotive Street.

A more detailed description of both the existing and proposed traffic arrangements can be found within the 'Traffic and Transport Impact Assessment' submitted as part of the this SSDA application.



Existing exterior heritage conditions



Existing heritage equipment display in Bays 3-4a



Proposed new corner retail, Bay 1

4.7 Material Palette

4.7.1 Southern Elevation

The Southern elevation forms the primary entry to each tenancy within the Locomotive Workshop, accessed from Locomotive Street. Existing heritage windows will be maintained and restored. Larger format openings will be upgraded with new interventions sitting sensitively within the existing fabric, reflecting the same language of steel and glass that is proposed throughout the building. The proposal seeks to maintain existing openings and where original windows remain, restore and repair these as necessary, by refurbishing existing steel / wrought iron frames, sashes and glazing. Heritage timber doors are to be retained internally in an open position, with new infill steel and glazed openings to the exterior for weatherproofing and thermal performance.

The southern elevation offers the primary opportunity for tenancy signage, discussed



Heritage openings at Carriageworks



Treatment to heritage openings at Kings Cross Station, London

in Section 4.19 of this report.

4.7.2 Eastern Elevation

The eastern elevation bounds Innovation Plaza, which is a primary pedestrian path and gathering space. Public access to the building is available via the east-west circulation spine. Existing heritage windows will be maintained and restored. Larger format openings will be upgraded with new interventions sitting sensitively within the existing fabric, reflecting the same language of steel and glass that is proposed throughout the building. Heritage timber doors are to be retained internally in an open position, with new infill steel and glazed openings to the exterior for weatherproofing and thermal performance.

4.7.3 Northern Elevation

The northern elevation has seen minimal modification during its lifetime and is highly visible from the western rail corridor. Existing heritage windows will be maintained and



Exposed wrought ironwork at Ostbanenhallen, Oslo



Heritage adaptive reuse at Goods Shed, Melbourne

restored. This facade remains the most original, while more recent interventions have happened on all other facades.

4.7.4 Interior

A simple, elegant and sensitive material palette of glass and steel is proposed for the interior base build, which is intended to showcase the heritage features of the building, as well as maximising vision and daylight throughout. Transparency is a key design element, both in creating lines of vision, and in expressing the existing industrial architecture.

Refer to mood imagery below and material palette on page 33 for further information.

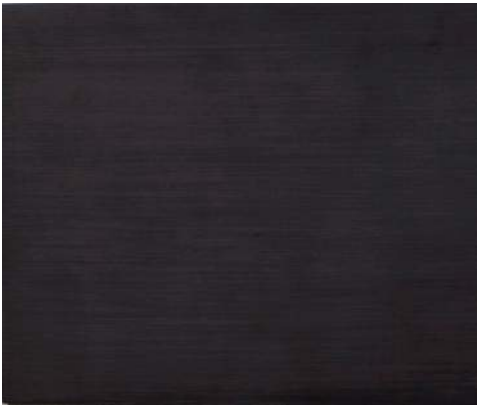


Steel and glass materiality



Heritage adaptive reuse at Essen Design Centre, Germany

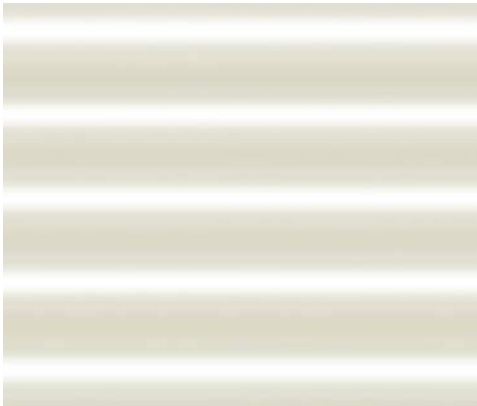
4.7 Material Palette



Black Anodised Aluminium to window and door frames



Existing heritage brick facade retained



Corrugated Steel Roof Sheetting - Colorbond Surfmist



Glass infill to new external openings



Polycarbonate to roof lights



Concrete block to new solid intertenancy walls



Actuated glass smoke ventilation louvres



Wire Balustrade to stairs and first floor to future detail



Heritage details including contrasting brick arches, wall ties and metal details to be retained

4.8 Openings

4.8.1 External Openings

In general, the approach towards openings is to maintain and enhance heritage openings, glazing and framing elements wherever possible, whilst reinforcing these characteristics through new interventions. The proposal seeks to maintain existing openings and where original windows remain, to restore and repair these as necessary.

Larger format openings will be sensitively upgraded. An additional pane of clear glass will be installed internally where required for thermal comfort and to meet

ESD requirements. Where original windows have been infilled, they will generally be restored as openings in line with the overall aesthetic approach.

Typically the language of each new opening arrangement will entail a painted steel frame which is offset from the existing opening, then in-filled with contemporary aluminum and glass infill. The heritage industrial aesthetic of the building will be carried through into all new external items.

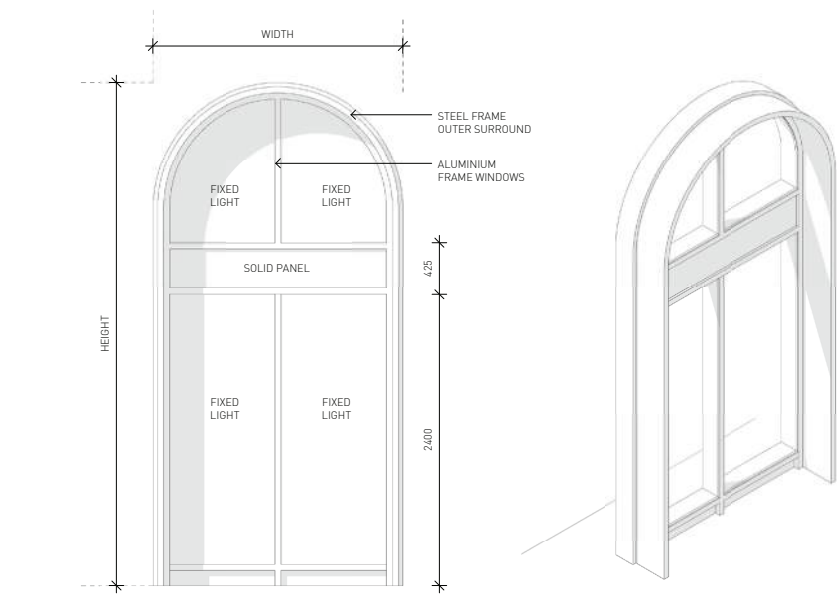
Due to the variation of the heritage openings, each door and window opening will need to be individually considered and detailed, based on a range of window types with a common language. Fixed, arched, rectangular and large format openings have been adapted to suit each individual existing heritage opening, with a common datum and

unifying design. Where heritage timber doors are existing, these will be preserved and retained in an open position internally.

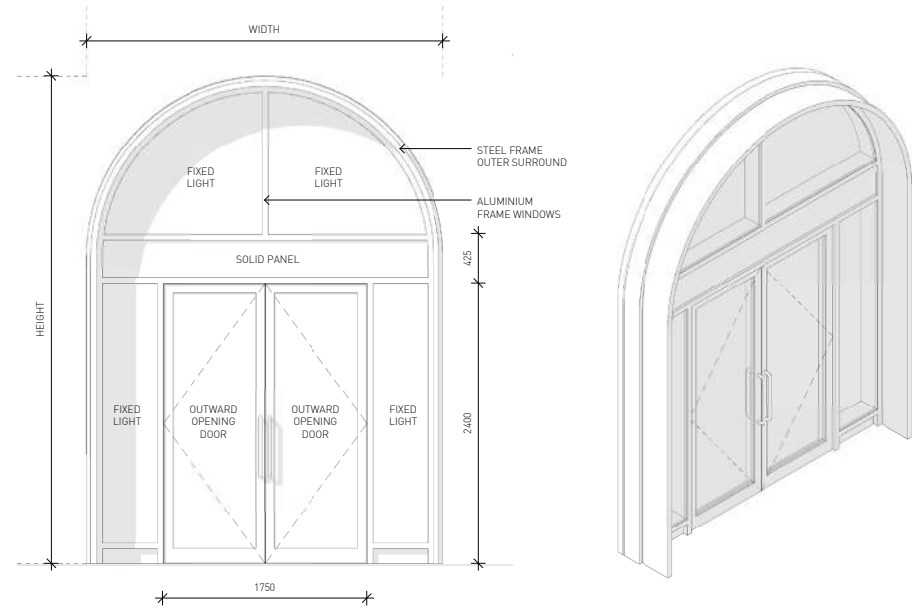
The existing solid roller door to the loading dock will be replaced by a framed and glazed roller door, to allow improved transparency and consistency with other openings.

Along the northern facade, all existing patterned glass is to be retained and replaced to match existing as necessary. Along the southern and eastern facades, all glass will be replaced by clear glazing within new or existing / refurbished frames, allowing for clearer lines of vision to the interior.

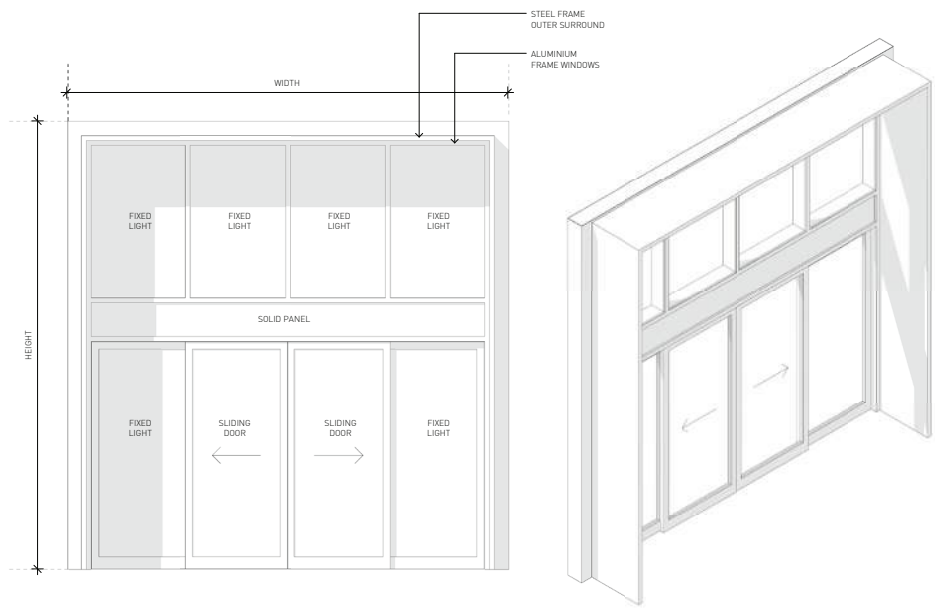
A selection of these window types are detailed below.



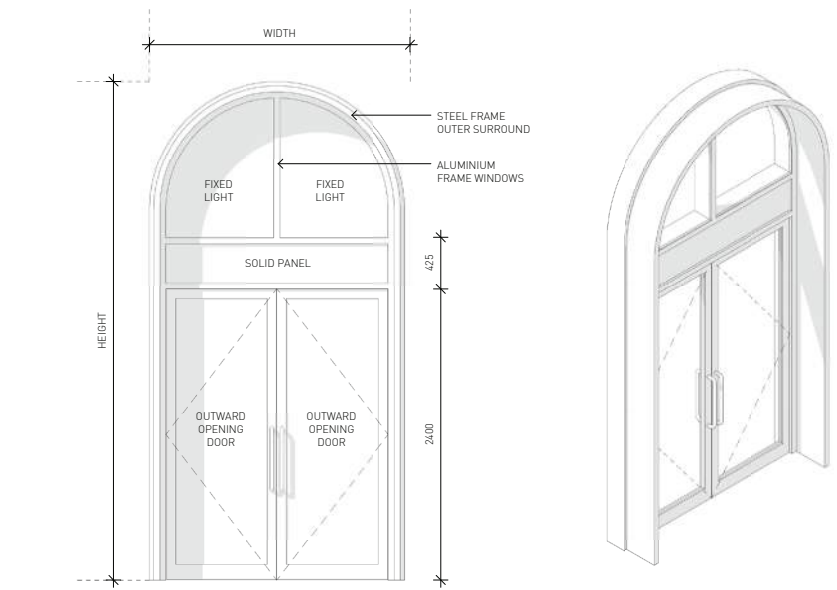
Type PA1 Fixed Transom



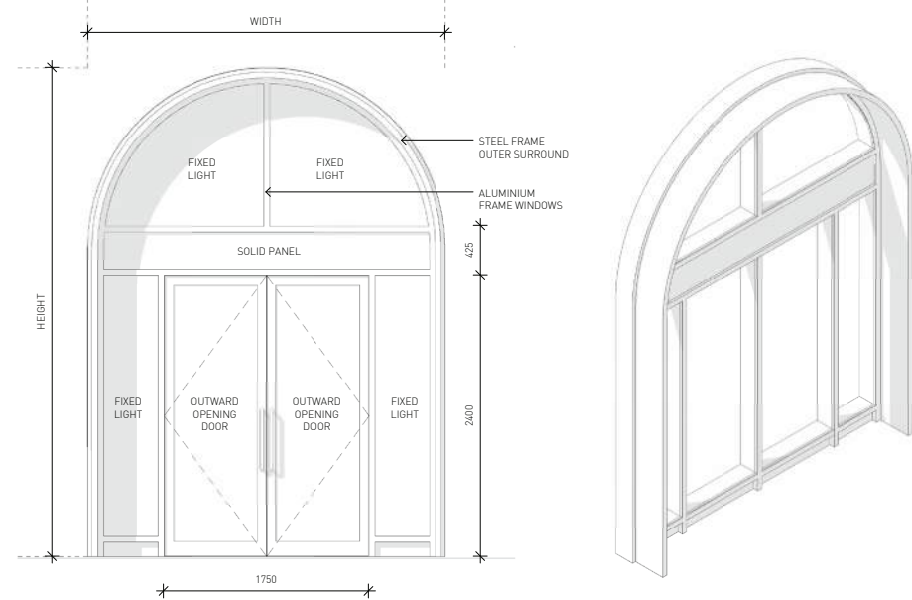
Type PB3 Double Doors



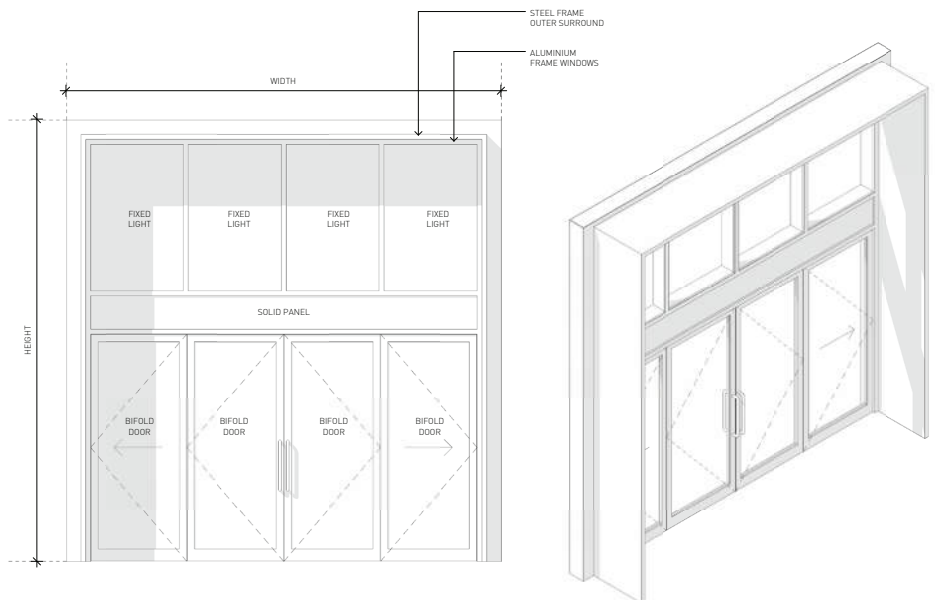
Type PC4 Sliding Doors



Type PA3 Double Doors



Type PB1 Fixed Transom



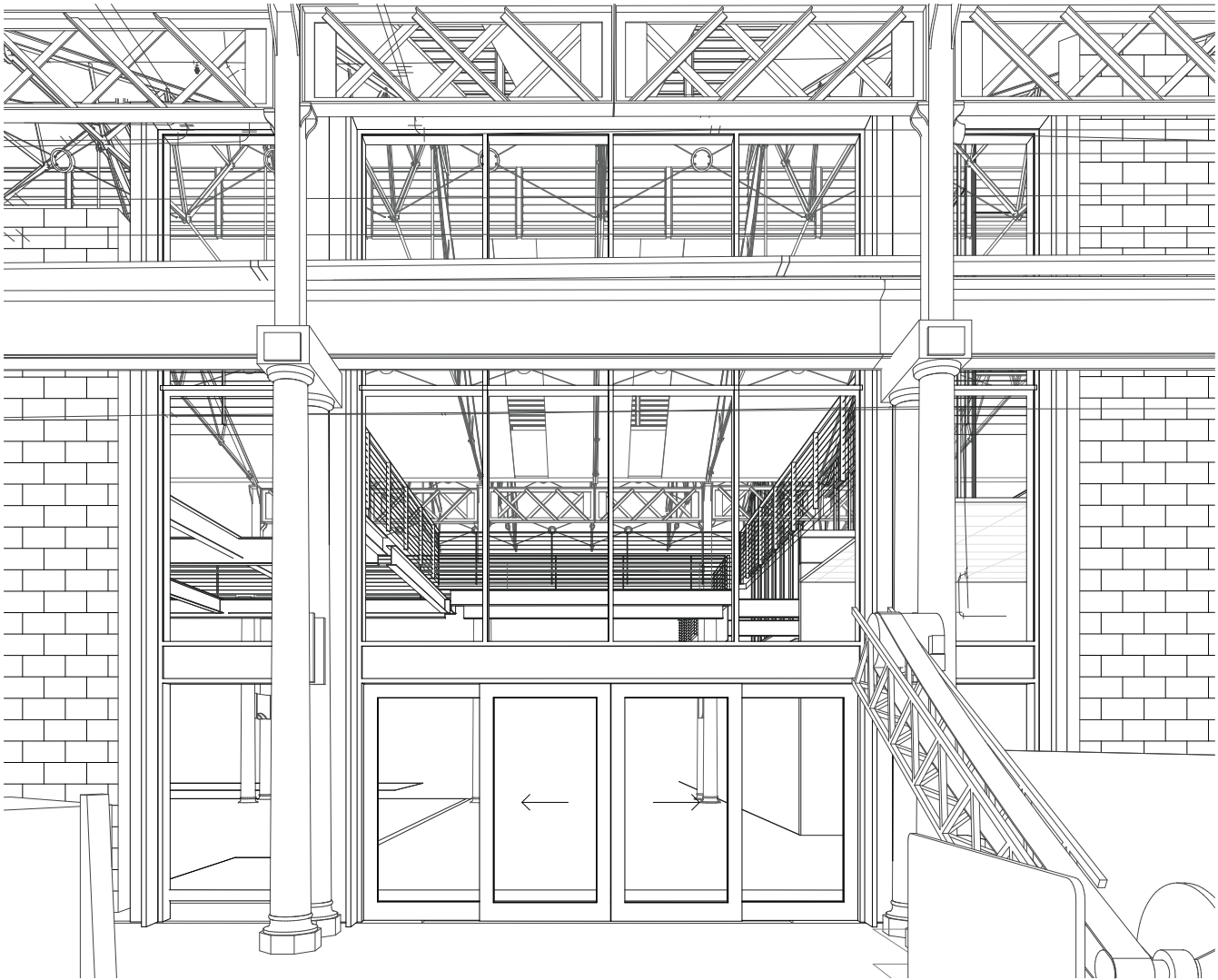
Type PC5 Bifold Doors

4.8.2 Intertenancy Walls

The proposed solid intertenancy walls are to be block construction or similar, in a neutral grey colour. The wall is to be visually recessive, acting as a backdrop to the heritage structure and allowing it to be showcased.

Solid intertenancy walls have been pulled back from the spine, creating a broad visual corridor lined by heritage columns and guided by the railway track interpretation inlay. Where intertenancy walls are required to cross the central spine for fire compartmentalisation, these are to be an extension of the treatment for external openings, enhancing the existing industrial aesthetic through framed, infill-glazed elements. These will generally be left in an open position. The intention is to create clear lines of vision down the central access spine, with minimal visual intrusions.

Retail tenancy walls are to be simple glazed walls with minimal framing elements. The tenancy walls are to be as open and transparent as possible, allowing clear sight lines to heritage features and promoting the feeling of an open and collaborative workplace. The intended outcome is a visual and hierarchical clarity, creating a legible and accessible shared zone.



Proposed intertenancy glazed wall between Bays 2 and 3 for fire separation

Proposed intertenancy wall plan



Existing intertenancy wall between bays 2 and 3 - modern infill block work

4.9 Roof Treatment

4.9.1 Existing Conditions



VAULTED ROOFLIGHTS CIRCA 2013

RECENT ROOFLIGHT ARRANGEMENT

4.9 Roof Treatment

4.9.2 Historic Conditions

The original roofs had extensive areas of glazing immediately below the monitor roofs. The configuration of this glazing remained only in Bay 15 west but this was removed in 1996. In most bays the area of roof lighting had been greatly reduced and located further down the roof slope prior to this. Early photographs indicate that the original system provided a high level of natural light.

Locomotive Workshops Conservation Management Plan



Bay 1 North circa 1890

4.9 Roof Treatment

Due to the large, deep footprint of the Locomotive Workshops, the roof form is a significant element of both the functional and aesthetic character of the building. In order to improve both thermal and daylight performance, whilst maintaining the integrity of heritage components, the following strategy is proposed.

4.9.3 Daylighting Strategy

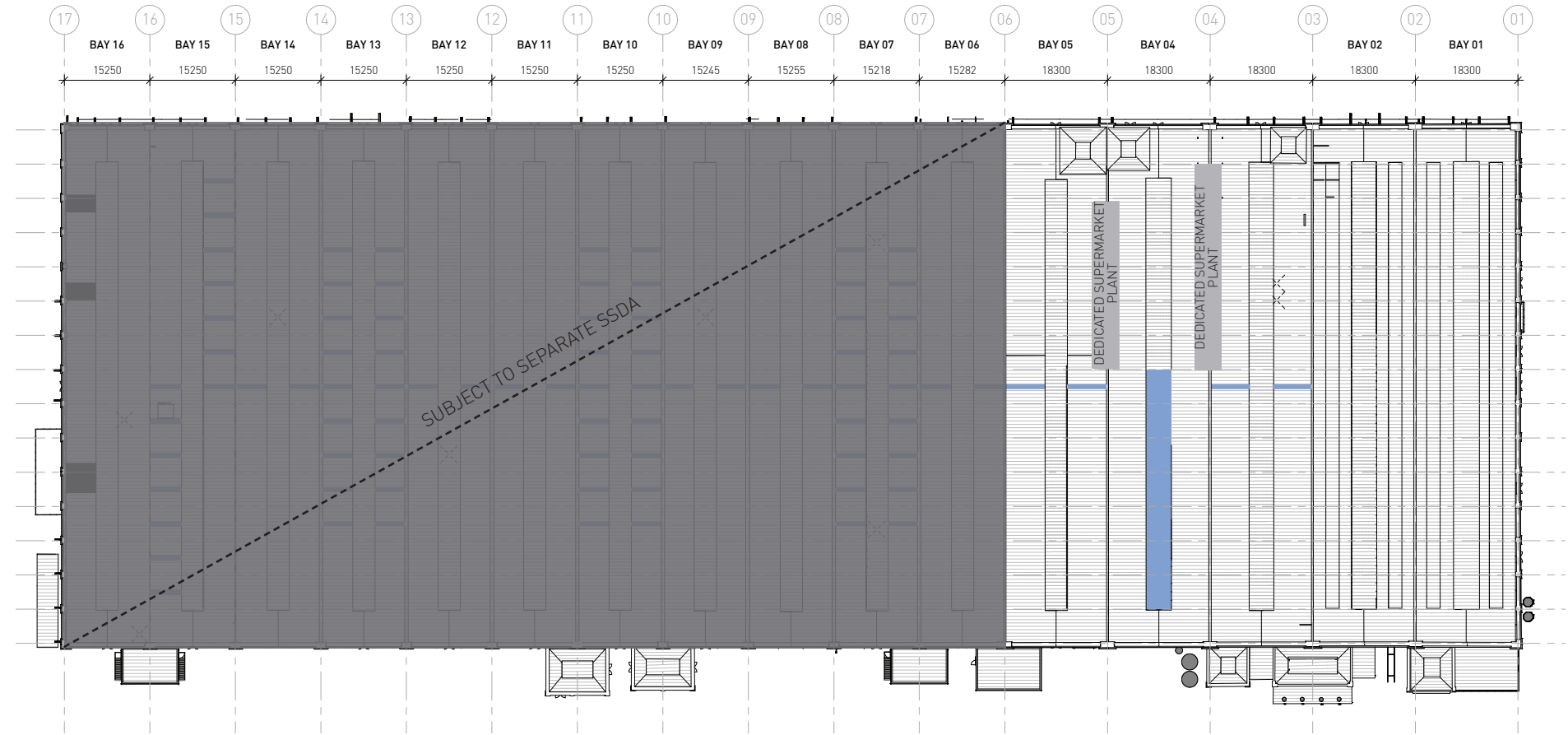
The existing lantern skylight is to be retained over the atrium to the southern half of bay 4, while the northern half is to be replaced with solid metal sheeting, to suit the purpose below. A number of additional skylight ‘slots’ are to be installed over the east-west circulation spine, to provide a more evenly distributed quality of light throughout the retail bays. Heritage louvres are to be retained (except where smoke ventilation louvres are required). Please refer to the ESD report prepared by NDY that accompanies this submission, as well as parts 4.9.4 and 4.9.6 for further detail.

The roof condition in Bays 1 and 2 is to be retained as existing, with sheeting to be upgraded as required.

4.9.4 Upgrade Strategy

In order to minimise intrusion to the heritage roof elements, a construction and upgrade strategy is proposed which allows the inner layer of heritage roof sheeting, as well as heritage structure to be left in place throughout.

The current structure of the roof includes two layers of sheet metal; the heritage layer, currently visible from the interior, and a more recently added layer to the exterior. It is proposed that the heritage roof elements will be retained insitu, while the outer layer of roof sheeting is removed, new insulation installed, and a new outer layer of metal sheeting is installed. New roof platforms are also to be installed to support additional roof plant.



Proposed roof plan



Heritage truss detail with existing polycarbonate roof



Existing roof conditions



Existing roof conditions at the Large Erecting Shed, adjacent to the site

4.9 Roof Treatment

4.9.5 Proposed roof system

- 1 New 0.45mm Metal Sheetting
- 2 Fletcher Insulation 130mm Permastop Building Blanket, with foil side facing down, inatalled over purlins and located between metal deck and saftey mesh.
- 3 100mm Roof Rack to allow for blanket to recover to nominal thickness.
- 4 50mm Pink Partition 32 installed at over 0.45mm metal sheetting.
- 5 Perforated acoustic panel, Supawood Supacoustic or similar installed between heritage purlins.
- 6 Existing heritage truss.

