

Heritage Impact Statement

LOCOMOTIVE WORKSHOPS, BAYS 5-15,
SSD8449 MODIFICATION 05 (SKYLIGHTS)



AUGUST 2019

Prepared by Curio Projects
FINAL REPORT

Document Information

Citation

Curio Projects 2019, *Heritage Impact Statement—Modification to Skylights, Bays 5-15, Locomotive Workshop (SSD8449- Modification 5)* prepared for Mirvac.

Local Government Area

City of Sydney Council

Cover Image

Locomotive Workshops

ISSUE No.	ISSUE DATE	VERSION	NOTES/COMMENTS	AUTHOR	REVIEWED
1	01/08/2019	Draft Report	For client review	Tatiana Barreto	Sam Cooling
2	06/08/2019	Final Report	For submission to DPE	Tatiana Barreto	Sam Cooling

This report has been prepared based on research by Curio Projects specialists. Historical sources and reference material used in the preparation of this report are acknowledged and referenced at the end of each section and/or in figure captions.

Unless otherwise specified or agreed, copyright in intellectual property of this report vests jointly in Curio Projects Pty Ltd.

Curio Projects Pty Ltd
Suite 9/17 Thurlow Street
Redfern NSW 2016
Australia

Contents

Document Information.....	2
Table of Figures.....	4
Executive Summary.....	5
1. Introduction.....	6
1.1. The Purpose of this Report	6
1.2. Background	6
1.3. Site identification	6
1.4. Relevant Statutory Context	7
1.4.1. Statutory Heritage Listing.....	8
1.5. Limitations and Constraints	8
1.6. Authorship	8
2. Historical Timeline	9
2.1. Locomotive Workshops.....	11
3. Physical Analysis	13
3.1. Locomotive Workshops—Bays 5-15	13
3.1.1. Roof Upgrade.....	13
4. Heritage Significance.....	18
4.1. Heritage Significance—Bays 5-15	19
5. Description of the Proposed Development.....	20
6. Assessment of Heritage Impact.....	23
6.1. Physical Impacts.....	23
6.2. Visual Impacts.....	24
7. Conclusions and Recommendations	26

Table of Figures

Figure 1.1: South Eveleigh Precinct (Red), Bays 5-15 in Blue (Source: Google Earth with Curio additions, 2019).....	7
Figure 1.2: Locational context of the Locomotive Workshops (Source: Sissons 2017).....	7
Figure 2.1: Schematic representation of the Loco Workshops bays, oriented north. (Source: GML 2013: 16).....	11
Figure 3.1: SSD 8449 approved skylights (Source: Sissons, 2017)	14
Figure 3.2: Bay 7/8, previous fit out prior to commencement of 2019 works (Source: Curio 2017).....	15
Figure 3.3: Previous Fitout and Existing Roof Plan (Source: Sissons 2017).....	16
Figure 3.4: SSD 8449 Approved Commercial Roof Plan (Source: Sissons, 2017)	17
Figure 5.1: Proposed Commercial Roof Plan (additional skylights from approved marked in red) (Sissons, 2019)	21
Figure 5.2: Comparison Plan, approved vs proposed (Source: Sissons, 2019).....	22
Figure 6.1: Roof profile of the Large Erecting Shed (Source: Ethos Urban)	23

Executive Summary

Curio Projects Pty Ltd has been commissioned by Mirvac to prepare a Heritage Impact Statement (HIS) to support a Section 4.55 Modification Application to the NSW Department of Planning and Environment (DPE) for the approved State Significant Development Application (SSD8449) for Bays 5-15 of the Locomotive Workshop, South Eveleigh (formerly Australian Technology Park). The s4.55 modification application seeks approval for alterations to the approved commercial roof plan in Bays 5-15, regarding the installation of additional skylights throughout the Locomotive Workshops ceiling.

Two SSDAs relating to the Locomotive Workshops were submitted to the NSW DPE in November 2017, one for the eastern portion of Locomotive Workshops (Bays 1-4a) (SSD 8517), and one for the western portion (Bays 5-15) (SSD 8449). SSD 8449, to which this s4.55 modification refers, provided approval for the roof upgrade and lighting strategy for Bays 5-15, required to improve thermal and daylight performance within Bays 5-13 and 15.

This report has been prepared with reference to the HIS for the original SSD Application (Curio Projects 2017, *Heritage Impact Statement for Locomotive Workshop (Bays 5-15)*, prepared for Mirvac), as well as other relevant heritage and statutory guidelines documents.

The modification proposes the installation of additional skylights throughout the Locomotive Workshops roof, increasing natural light penetration from approximately 6% to 11%, benefiting the indoor areas.

The proposed skylight 'slots' will be installed only within the modern fabric of the roof, updated to improve natural light within the space. The modification will not require a major physical intervention in the building or compromise the integrity of the exposed roof trusses or the original shape, bulk and roof profile. Therefore, the additional skylights are considered to have a neutral physical impact.

The increase in the number of skylight slots will serve to offset and reduce the need for further artificial lighting within the Locomotive Workshops, which is more in keeping with the original heritage setting of the Workshop (i.e. limited use of artificial light), while also avoiding the need for additional wiring and clamping that would be required to install additional artificial lighting. This modification will provide more natural daylight to the Level 1 floor plate, atrium areas and provide greater light spill to ground floor, creating an improved working and retail environment and increased indoor natural light quality.

Therefore, while the increase in skylight slots will present a minor visual impact to the roof of the Locomotive Workshop, this impact is consistent with that approved through SSD 8449, and is considered on balance, to be an acceptable heritage impact due to the positive outcome of the improvement of the light quality and sustainability standards.

1. Introduction

1.1. The Purpose of this Report

Curio Projects Pty Ltd has been commissioned by Mirvac to prepare a Heritage Impact Statement (HIS) to support a Section 4.55 Modification Application to the NSW Department of Planning and Environment (DPE) for the approved State Significant Development Application (SSD8449) for Bays 5-15 of the Locomotive Workshop, South Eveleigh (formerly Australian Technology Park). The s4.55 modification application seeks approval for minor alterations to the approved commercial roof plan in Bays 5-15, regarding the installation of additional skylights throughout the Locomotive Workshops ceiling.

The purpose of this HIS is to identify any potential heritage impact that the proposed modification works within Bays 5-15 may have on the overall heritage values and significance of the Locomotive Workshops and the wider significance of the former Eveleigh Railway Workshops (ERW).

It is noted that the revised skylight strategy as presented through this report for Bays 5-15 is also proposed for Bays 1-4a of the Locomotive Workshops, providing consistency of skylight design across the whole roof structure. A separate HIS has been prepared relating specifically to Bays 1-4a, as it is subject to a separate SSDA (SSD8517).

This report has been prepared with reference to the HIS for the original SSD Application (Curio Projects 2017, *Heritage Impact Statement for Locomotive Workshop (Bays 5-15)*, prepared for Mirvac), as well as other relevant heritage and statutory guidelines documents.

1.2. Background

Historically, South Eveleigh (formerly known as ATP) was part of the Eveleigh Railway Workshops (ERW), 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.

Two SSDAs relating to the Locomotive Workshops were submitted to the NSW DPE in November 2017, one for the eastern portion of Locomotive Workshops (Bays 1-4a) (SSD 8517), and one for the western portion (Bays 5-15) (SSD 8449). The s4.55 modification to which this HIS refers is for SSD 8449, approved on 22 February 2019.

Approved on 22 February 2019, SSD 8449 provided approval for the redevelopment of Bays 5-15 including demolition of the existing 'modern' infill fit-out elements, and adaptive reuse of the Bays 5-13 and Bay 15 for commercial purposes.

1.3. Site identification

The Locomotive Workshop is located within the former Australian Technology Park (ATP), now part of the South Eveleigh Precinct as part of the redevelopment of the site. South Eveleigh 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 South Eveleigh (former ATP) precinct is shown in Figure 1.1 and the locational context of the Locomotive Workshop building is identified in Figure 1.2.

The subject site of the present report is located on Bays 5 to 15 of the Locomotive Workshops, which are located in the north area of the South Eveleigh site, adjacent to the railway line, and within Part Lot 400, DP119309.



Figure 1.1: South Eveleigh Precinct (Red), Bays 5-15 in Blue (Source: Google Earth with Curio additions, 2019)

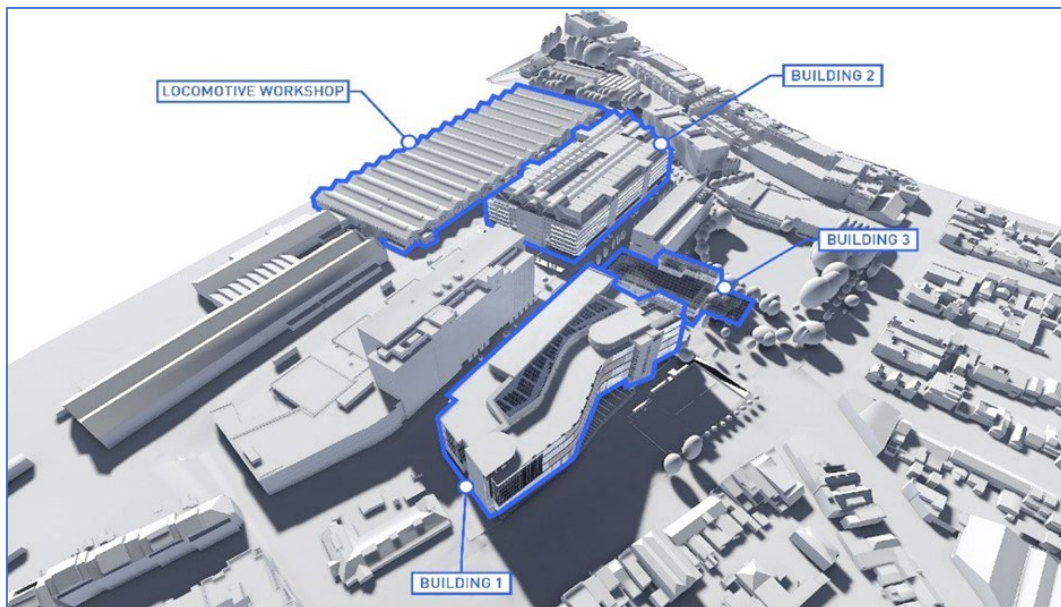


Figure 1.2: Locational context of the Locomotive Workshops (Source: Sissons 2017)

1.4. Relevant Statutory Context

In NSW, heritage items and known or potential archaeological resources are afforded statutory protection under the:

- *Environmental Planning and Assessment Act 1979* (NSW) (EPA Act); and
- *Heritage Act 1977* (NSW) (Heritage Act).

There are further planning policies and controls that provide a non-statutory role in the protection of environmental heritage. These include Development Control Plans for each local Council area.

Generally speaking, the purpose of the Heritage Act (as amended) is to conserve the environmental heritage of the State, including items listed on the State Heritage Register (SHR), as well as providing protection for archaeological 'relics' under Division 9, which includes the requirement for excavation permits under Section 140 of the Act (or Section 60 in the case where 'relics' are situated within sites or places on the State Heritage Register).

However, where a project is assessed to be a State Significant Development (SSD) in accordance with the EPA Act, the process of development approval with regards to heritage differs. Notably, applicants are not required to obtain separate heritage statutory approvals, including built heritage and historical archaeology approvals under Section 60 of the NSW Heritage Act (1977) or Aboriginal Heritage Impact Permits (AHIPs) under Section 90 of the National Parks and Wildlife Act, 1974.

1.4.1. Statutory Heritage Listing

The Eveleigh Railway Workshops (SHI #01140) and Eveleigh Railway Workshops Machinery (SHI #01141) are listed on the NSW State Heritage Register, as well as the ATP S170 Heritage and Conservation Register (ATP S170 Register).

The following items are also listed, individually, on the ATP S170 Register:

- Eveleigh Locomotive Workshops Precinct (including the subject site) (4745500);
- Eveleigh Locomotive Workshops Machinery Collection (4745505);
- Engine Shop (former) (4745503);
- Locomotive Workshops Building (4745501);
- Works Managers' Office (former) (4745502);
- Water Tower (4745504).

1.5. Limitations and Constraints

This report has been prepared with close reference to the HIS for the original SSDA application (Curio Projects 2017). No further historical research has been undertaken for this modification. This HIS does not include assessment of any non-heritage related planning controls or requirements.

1.6. Authorship

This report has been prepared by Tatiana Barreto, Architectural Consultant, with senior review and input by Sam Cooling, Heritage Specialist of Curio Projects Pty Ltd.

2. Historical Timeline

This chapter provides a brief timeline summary of the historical phases of use and development activity at the subject site in order to provide historical context. For a full historical overview, reference should be made to the Stage 1 HIS (Curio Projects 2017).

In general, the history of the South Eveleigh (former ATP) site can be summarised into four main phases of occupation and use:

- Phase 1** Pre-European Environment/Aboriginal Occupation (c20,000BP–1794)
- Phase 2** Early Land Grants, Chisholm Estate (1835–1880)
- Phase 3** Establishment and development of Eveleigh Railway Workshops (1880–1989)
- Phase 4** Recent History/History of the ATP (1989–Present)

While the Locomotive Workshops are understood as one part of the wider ERW site, the following timeline provides a key historical summary of the former ATP site only, specific to the Locomotive Workshops (indicated in bold). Section 2.1 provides a brief summary of the development of the Locomotive Workshops.

Table 2.1: General Historical Timeline for Locomotive Workshops

YEAR	DESCRIPTION
1871	Planning for Eveleigh Railway Workshops (ERW) commenced
1878	Resumption of 64.5 acres of land from John Chisholm for construction of Eveleigh Railway Workshops (ERW)
1882	Development and building of ERW commenced
1885	Engine Running Shed completed and commenced operation.
1887	Locomotive Workshops Completed. Bays 1–4 officially opened. Bays 5–15 completed and opened later in the year.
1887	Carriage Workshops constructed
1887	Work Managers and Timekeepers Office completed.
1899	Large Erecting Shed completed
1892	Union negotiations lead to ERW closure on Saturdays
1907	New Locomotive Shop erected
1908	Manufacture of new locomotives commenced at Eveleigh
1913	Terrace houses/shops resumed for Alexandria Goods Yard
c1914	Pedestrian Bridge completed
1914	New Locomotive Shop extended
1914	Electrification of ERW machinery completed
1916	Eight strikes at ERW due to poor working conditions.
1917	Alexandria Goods Yard completed
1917	New Foundry and pattern shop constructed
1923	Australian Railways Union (ARU) Shop Committee established at ERW
1925	Davy Press installed
1925	Manufacture of new locomotives ceased

Curio Projects

Archaeology | Built Heritage Assessments | Heritage Feasibility Reviews | Interpretation | Archival Recordings | Adaptive Reuse Projects

YEAR	DESCRIPTION
1925	NSW Railways acquired Chullora site for new railway workshops intended to supersede ERW
1937	Chullora workshops opened. Some repair work transferred from ERW
1940	Production of shells in Bays 5-6 of Locomotive Workshops
1942	Air raid shelters constructed
1945	Reintroduction of locomotive construction until 1952
1965	Steam locomotion abandoned
1970s	ERW modernized to meet demands of servicing & repairing modern diesels and rolling stock
1986	Restored 3801 locomotive commences tourist operations from ERW Large Erecting Shop under management of 3801 Limited
1986	Closure of the Locomotive Workshops
1989	Closure of all ERW
1989+	Demolition of numerous ERW buildings including Foundry and Alexandria Goods Yard
1989	Paddy's Markets relocated to Bays 5–15 of Loco Workshops. Machinery relocated to Bays 1–4a
1991	ATP Works commence. Wrought Artworks recommission blacksmiths forges in Bay 1 and 2
1993	ATP formally established
1994	Paddy's Markets returns to Haymarket
1994-5	Conversion of Works Manager's Office to International Business Centre
1996	ATP Opens
1996	Adaptation of New Locomotive Workshops for National Innovation Centre
1999	Biomedical Building construction commences
2005	Ownership of ATP and parts of North Eveleigh transferred to RWA (Redfern Waterloo Authority)
2006	3801 returned to custody of NSW Rail Transport Museum and relocated from LES
2007	CarriageWorks Theatre opens
2008	NICTA building completed
2009	Eveleigh Markets open in former Blacksmith's Shop, North Eveleigh
2010	Media City Building opens. Innovation Plaza upgrade is completed, permanent display of heritage pivot and steam crane, new seating and lighting installed
2012	Ownership of ATP transferred from RWA to Sydney Metropolitan Development Authority
2013	Ownership of ATP transferred from SMDA to UrbanGrowth NSW Development Corporation
2014	ATP CMP formally endorsed
2016	Ownership of ATP transferred to Mirvac
2018	Concept Plan SSDA for ATP Redevelopment Approved
2019	Locomotive Workshops SSDA approved

2.1. Locomotive Workshops

Construction of the Locomotive Workshops commenced with Bays 1–4 in 1887, which were immediately put into operation while the remaining bays (Bays 5–15) were still under construction. This led to these two zones (Bays 1–4 and Bays 5–15) being built as separate structures, with the space in between functioning as a laneway. The laneway was later filled in, connecting the two structures to function as a single building (the Locomotive Workshops), connected by a new bay known as Bay 4a.

The Locomotive Workshops functioned on the southern side of the railway line, as one of four key functional buildings involved in the manufacture and maintenance of locomotives (also including the Large Erecting Shed, the Engine Running Sheds, and New Locomotive Shop), supported by other ancillary operations in subsidiary buildings within the site. The orientation of the 15 bays within the Locomotive Workshops is presented in Figure 2.1. As the function and requirements of the ERW site changed over time, so too did the function of each bay within the Locomotive Workshops. The change in use of Bays 5-15 of the Locomotive Workshops over time is summarised in Table 2.2.

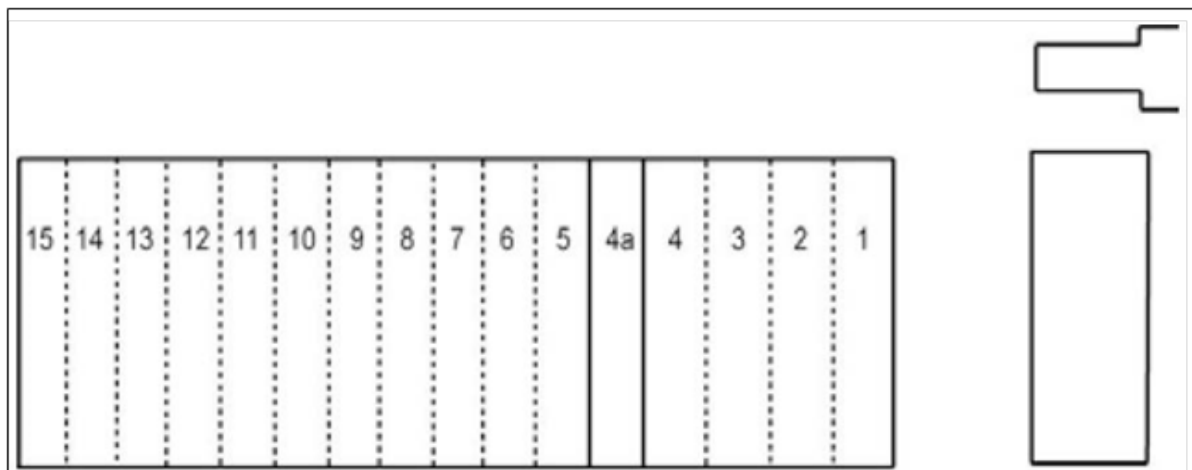


Figure 2.1: Schematic representation of the Loco Workshops bays, oriented north. (Source: GML 2013: 16)

Table 2.2: Change in use over time of Bays 5-15

BAY	1887	1905	1924	1984	2009
5	Tender Repair Shop	Erecting Shop	Tender Shop	Canteen (south)/Fitting Shop (north)	Offices
6	Erecting Shop	Erecting Shop	Tender Shop	Millwrights Shop/Bar Store	Offices
7	Erecting Shop and Traverser	Erecting Shop	Wheel Shop and Traverser	Fitting Shop	Offices
8	Erecting Shop	Erecting Shop	Tender Shop	Fitting Shop	Offices
9	Wheel Shop	Wheel Shop	Machine Shop	Axle and Wheel Shop	Offices
10	Machine and Fitting Shop	Machine and Fitting Shop	Machine Shop	Machine Shop	Exhibition Space

Curio Projects

Archaeology | Built Heritage Assessments | Heritage Feasibility Reviews | Interpretation | Archival Recordings | Adaptive Reuse Projects

BAY	1887	1905	1924	1984	2009
11	Machine and Fitting Shop	Machine and Fitting Shop	Machine Shop	Machine Shop	Exhibition Space
12	Paint Shop	Paint Shop	Machine Shop	Machine Shop	Exhibition Space
13	Paint Shop and Traverser	Paint Shop and Traverser	Machine Shop	Machine Shop	Exhibition Space
14	Pattern and Joinery Shop	Pattern and Joinery Shop	Tool Room/Brass Finishers	Tool Room/Air Brakes	Offices
15	Locomotive Store	Locomotive Store	Millwrights	Store/Rail Motor Test Room	Offices

3. Physical Analysis

A brief physical analysis is provided below for contextual purposes, particularly with reference to Bays 5-15. Text presented here has been sourced from the ATP CMP and the original HIS for the SSDA, referenced as appropriate.

The ATP site reflects an amalgamation of railway land gradually resumed since 1878. Areas of land once occupied by the Alexandria Goods Yard and resumed for the construction of the Eastern Suburbs Railway tunnels and extensions of the Eveleigh locomotive workshops are contained within the ATP site in addition to the land initially resumed for the locomotive workshops. The site boundary does not correspond with the boundary of the Eveleigh Locomotive Workshops nor does it reflect any particular historical management area.

Three of the four most significant buildings of the Eveleigh Locomotive Workshops have been retained within the ATP site—the locomotive workshops, the new locomotive shop and the works manager's office.... Most of the ancillary buildings that occupied the Eveleigh Locomotive Workshops have been demolished.

The most prominent building on the site is the Locomotive Workshop, a two storey sandstone brick structure of Neo Classical form consisting of 16 equally sized bays, internal hollow cast iron columns and wrought iron trusses, and corrugated iron roofing. Externally, arched openings pierce through the 460mm thick brick walls which once allowed for trains and machinery to exit and enter the building. The openings are now solid, glazed or operable. (GML 2013:47)

3.1. Locomotive Workshops—Bays 5-15

Prior to redevelopment, Bays 5-15 of the Locomotive Workshops housed the 1990s fit out of the Locomotive Workshop building, consisting of office space (Bays 5-6 and 14-15); open central space, café and infill office space (Bays 7 and 8); and an open Exhibition Hall (Bays 9-13).

SSD 8449 provided approval for the demolition of the 1990s fit out in Bays 5-13 and 15, and adaptive reuse for commercial premises uses and light industrial uses. The 1990s 'modern' infill fit-out office elements in Bays 5–15 generally consisted of mezzanine levels, which in some locations were two storeys in height. Following the demolition of these modern office fitouts, the adaptive reuse of Bays 5–15 through the construction of internal improvements for commercial use, will not exceed a single storey mezzanine.

3.1.1. Roof Upgrade

One of the proposed modifications approved though SSD 8449 was the roof upgrade and lighting strategy for Bays 5-15, required to improve thermal and daylight performance within the bays. The original HIS presented two types of strategies to approach it:

- the 'Upgrade Strategy', entailing the installation of insulation and new outer layer of metal sheeting installed; and
- the 'Daylighting Strategy', entailing the insertion of natural daylight 'slots'.

While the first one involved the roof sheeting and insulation, the second one proposed the addition of several skylights throughout the ceiling of Bays 5-15, in order to increase the thermal and daylight performance of the indoor areas.

The daylight 'slots' (as approved through SSD 8449) (Figure 3.1) were modelled according to the Large Erecting Shed concept, consistent with the aesthetic of the roof of the adjacent building. The slots as approved are distributed over the central spine between Bays 5-13 and the central atria only (Bays 6, 9 and 12), representing 5% of Gross Building Area.

Figure 3.2 presents the former (1990s) fitout of Bays 5-15, prior to commencement of demolition works as approved through SSD 8449, while Figure 3.3 and Figure 3.4 present the existing roof and SSD approved roof plan modifications, respectively.



Figure 3.1: SSD 8449 approved skylights (Source: Sissons, 2017)



Figure 3.2: Bay 7/8, previous fit out prior to commencement of 2019 works (Source: Curio 2017)

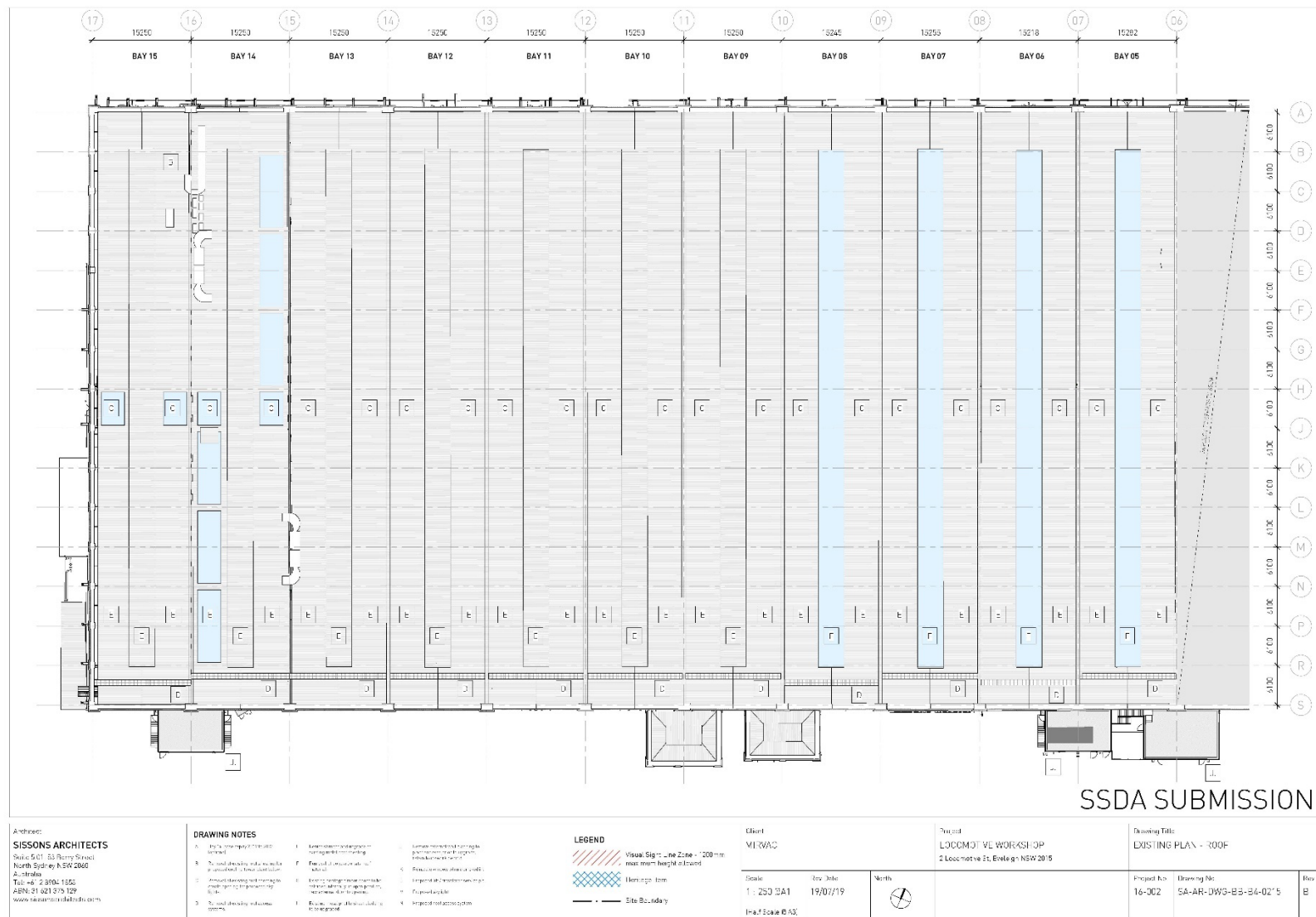


Figure 3.3: Previous Fitout and Existing Roof Plan (Source: Sissons 2017)

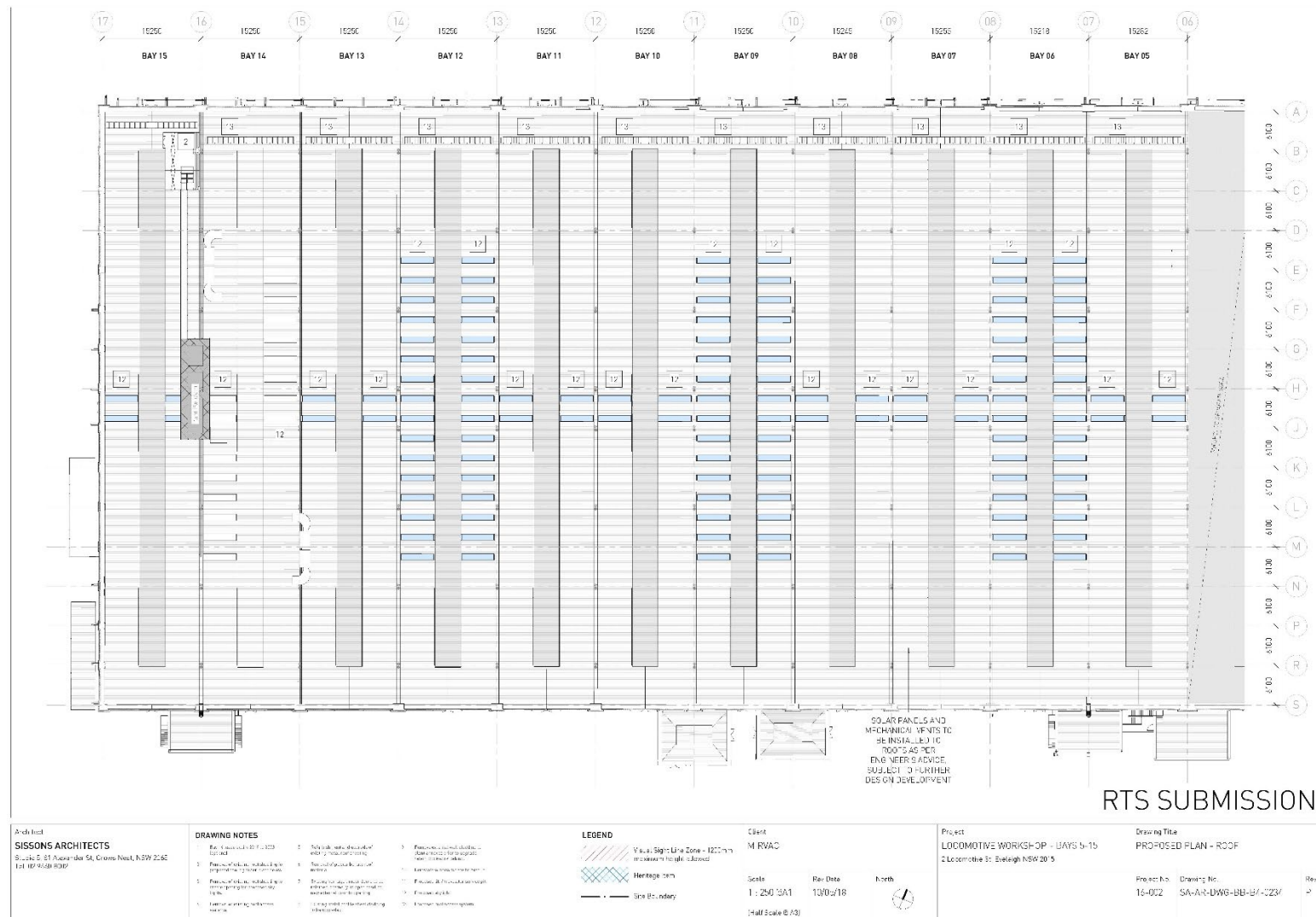


Figure 3.4: SSD 8449 Approved Commercial Roof Plan (Source: Sissons, 2017)

4. Heritage Significance

The following summary statement of significance for the South Eveleigh (former ATP) site has been drawn from Section 7.5.1 of the ATP CMP (GML 2013).

ATP provides important evidence of the founding and gradual expansion of the largest railway workshops in NSW over a period of 100 years. The Eveleigh Railway Workshops was a highly significant and ambitious public endeavour of a type that rarely occurs today. Eveleigh was a government-established and government-run industrial workshop designed to provide self-sufficiency for the Sydney and NSW railways, without reliance on private operators who did not possess the funds or workforce to cope with demand during the nineteenth century. It employed and developed the best technology available at the time and continued to innovate in response to changes in the NSW railways system and management policy throughout its years of operation.

The ATP site contains an amalgam of land gradually resumed for railway use during the nineteenth and twentieth centuries. The land was resumed for a number of expansions of the Locomotive Workshops, establishment of the Alexandria Good Yard and construction of the Eastern Suburbs Railway connection to the Illawarra line, and involved demolition of an area of housing north of Henderson Road. At its peak, the area was the most important rail precinct in NSW.

Three of four remaining buildings and a significant machinery collection from the State-significant Eveleigh Locomotive Workshops are contained within the ATP site. The Locomotive Workshops building, New Locomotive Shop and Works Manager's Office form a historically and aesthetically significant group that demonstrates the scale and importance of the Eveleigh Locomotive Workshops and are a landmark along the western railway. The distinctive, highly detailed industrial buildings provide powerful evidence of the importance of the workshops as a major industrial undertaking in NSW during the late nineteenth century. Individual items of the Locomotive Workshops Machinery Collection remain significant items of technical achievement. These range from the Davy Press, a unique machine in Australia and rare in a world context, to the Departmental Lathe, a precision machine built locally. While the Machinery Collection is not entirely intact, it retains a high level of significance and the collection within the blacksmiths workshop is relatively complete.

The ATP site holds great significance for members of the local community and current and former workers within the NSW railways and is central to many local community members' connection with the Redfern/Darlington area. As the site of the former Eveleigh Locomotive Workshops, ATP is emblematic of a type of work no longer common in NSW and the remaining buildings are seen as a testament to the many thousands of workers and their families that made their living within its walls. The pride in the history of the Eveleigh Locomotive Workshops is evident through the dedication of the many volunteers that continue to work in the Large Erecting Shed, the blacksmith business in Bays 1 and 2 South and the open days and tours led by former workers, as well as the many views expressed during the community consultation process.

The ATP site has strong historical connections with the surrounding area, including North Eveleigh and Redfern Station, as well as a historical connection with the expansion, pattern and type of development that occurred in adjacent suburbs. While the former

Eveleigh Locomotive Workshops are significant in their own right, this significance is increased by their relationship to the Eveleigh Railway Workshops as a whole, including the former Carriage and Wagon Workshops at North Eveleigh and the former Macdonaldtown Gas Works.

4.1. Heritage Significance—Bays 5-15

The fabric within Bays 5–15 of the Locomotive Workshop identified in the CMP of exceptional and high significance consists of:

- External walls, including all original openings;
- Original internal layout of the building, including arrangement of bays divided by double rows of cast-iron columns;
- Turntable south of Bay 12 (external to the Locomotive Workshop building—and the subject of a separate SSDA approval for the public domain);
- Overhead travelling cranes;
- Traverser; and
- Machinery displayed throughout Bays 5–15.

Some current elements present in Bays 5–15 of the Locomotive Workshop have been identified as being of little heritage significance. These include:

- Office fit out in Bays 5–9 and 14–15;
- New annexes to Bays 5–6, 8–10 and 14–15;
- Modern Glass Doors; and
- Carpet throughout Bays 5–9 and 14–15.

5. Description of the Proposed Development

Following the approval of SSD 8449, it has become apparent that more natural light will be required within the Locomotive Workshop. This feedback was received from both an environmental/economic viewpoint, as well as feedback from prospective commercial tenants. Therefore, the s4.55 Modification to SSD 8449 seeks approval for alterations to the approved commercial roof plan in Bays 5-15 consisting of the installation of additional skylights throughout the Locomotive Workshops roof.

The modification proposes to increase the skylight area from approximately 6% of GBA to approximately 11% of GBA, benefiting the indoor areas located on level 1, ground and in the atrium spaces. This addition is proposed for the following reasons:

- Provision of better indoor light quality;
- Feedback from tenants is that more daylight is required;
- More daylight to offset the need for additional artificial lighting (energy saving).

Figure 5.1 presents the proposed locations of the additional skylights throughout Bays 5-15.



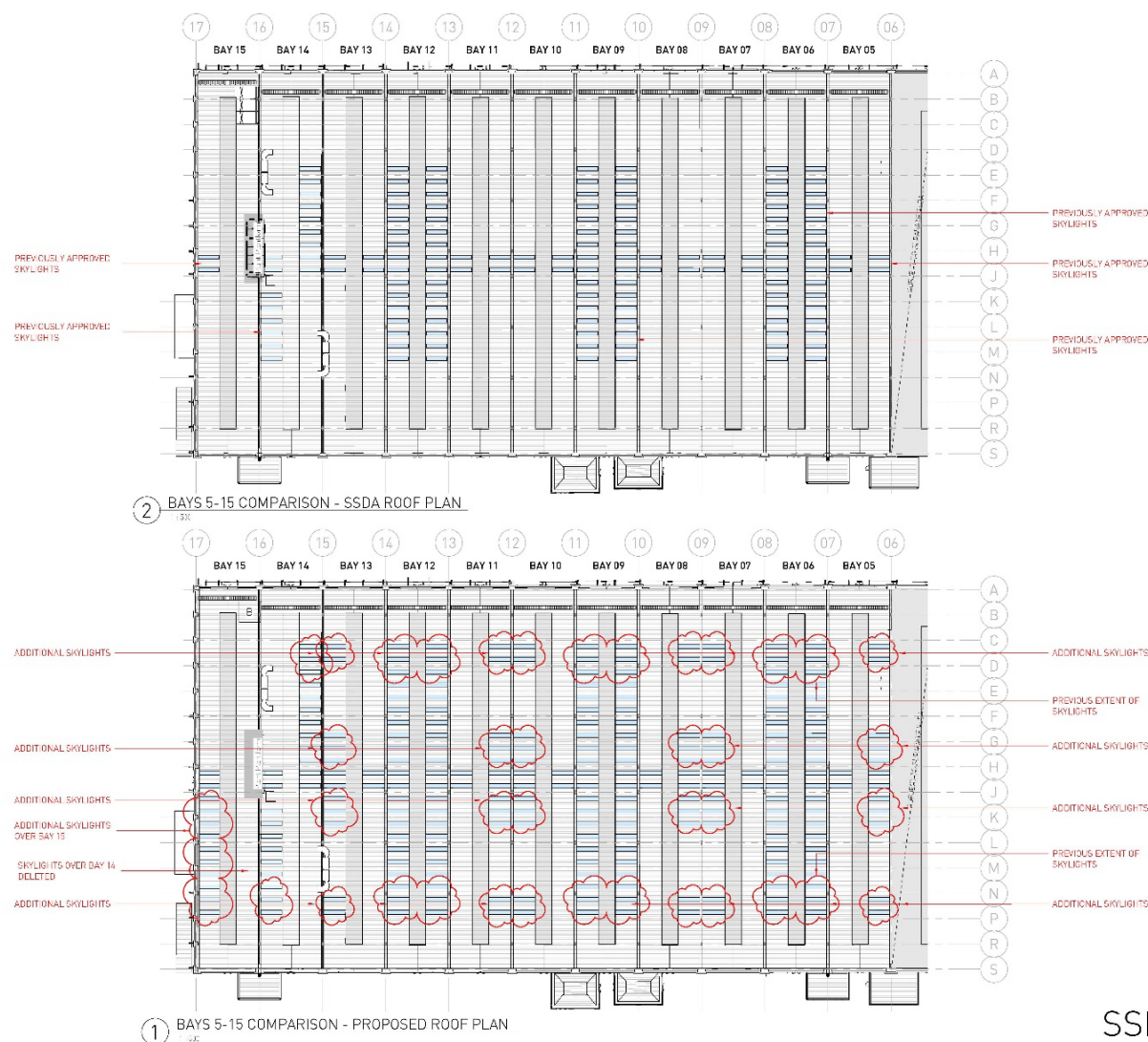


Figure 5.2: Comparison Plan, approved vs proposed (Source: Sissons, 2019)

6. Assessment of Heritage Impact

6.1. Physical Impacts

The current structure of the roof of the Locomotive Workshop consists of two layers of sheet metal: the exterior which is a modern layer, added in the 1990s during the creation of the ATP; and the interior, which consists of original roof trusses and other associated historic fabric. There is no insulation between the two layers of roof which is a major limiting factor in controlling the thermal environment of the building¹.

The modification involves the increase in the number of new skylight 'slots' to the building roof. The additional 'slots' have been modelled on the existing roof conditions within the Large Erecting Shed (Figure 6.1), and will be consistent with the dimensions and material as those approved under SSD8449 – constructed from polycarbonate sheeting or similar.

The addition of the skylights will increase the thermal and daylight performance of the internal areas of the bays, without requiring a major physical intervention in the building or compromising the integrity of the exposed roof trusses or the original shape, bulk and roof profile.

The proposed skylight 'slots' will be installed only within the modern fabric of the roof, updated to improve natural light within the space. Therefore, as the physical impacts relate only to modern fabric, the additional skylights are considered to have a neutral physical impact.



Figure 6.1: Roof profile of the Large Erecting Shed (Source: Ethos Urban)

¹ Curio Projects 2017, *Heritage Impact Statement for Locomotive Workshop (Bays 5-15)* p:79

6.2. Visual Impacts

As discussed in Section 6.1, the additional skylight's are the same shape, dimension and material to those approved through SSD 8449, respecting the scale, proportion and spacing of the approved roof design as it is recognised that views through the heritage roof trusses and to the ceiling is a significant element of the Locomotive Workshops aesthetic. Each additional 'slot' has been strategically placed according to the roof geometry so that the new elements will not draw any particular attention, placed to achieve the best possible symmetry and consistency within and between bays. The modification proposes an overall increase in the skylight area from approximately 6% Gross Building Area (GBA) (as approved through SSD 8449) to approximately 11% GBA.

With respect to the visual impacts of the skylights, the original HIS (Curio 2017) stated that:

Changes to the roof skylights will create a major change in how the roof skylights are currently viewed in Bays 6, 9 and 12 and along the central spine from Bays 5-13. This is due to the fact that the current skylights, whilst not original, are historically arranged in vertical patterns from north to south in each of the bays. Changing the aesthetic across 5% of the roof in order to achieve the 'daylight strategy', will result in a complete loss of the readability of the 'vertical' pattern of skylights in these specified locations.

The roof lighting of the Locomotive Workshop, particularly in the form of skylights, has, however, been altered numerous times over the years in order to accommodate different historic activities within the various bays. Whilst a technique similar to the proposed daylight 'slots' has not been applied before within the Locomotive Workshop, it has been implemented at the Large Erecting Shed with great success.

As a key part of the renewed use of the Locomotive Workshop as a place of innovation, it is consistent that a reconsideration of the best roof lighting application and techniques be applied in order to encourage the environmentally sustainable functioning of the building. By reducing the roof skylights across the whole of the Locomotive Workshop from approximately 20% of the existing roof, to 5% maximum as proposed, including in Bays 6, 9, and 12, the roof lighting will meet with the NABERS 5 (environmental sustainability) requirements. It will result in an energy efficient daylight strategy which is a positive outcome for the long-term environmental sustainability of the site.

This assessment of the visual impact of the new skylights remains applicable to the increase in quantity of skylights, as relevant to the modification to which this HIS supports.

As a result of the increase in skylights, the indoor areas of Bays 5-15 will benefit from a significant increase in natural light penetration, improving the working environment and decreasing the need for artificial lighting. The increase in skylights will also improve the environmental rating of the Locomotive Workshops, as lighting controls have PE (Photoelectric cells) – photo controls which will monitor daylight and turn on/off lights as needed throughout the day. This will also facilitate a further economic benefit for the development.

Furthermore, the increase in the number of skylight slots will serve to offset and reduce the need for further artificial lighting within the Locomotive Workshops, which is more in keeping with the original heritage setting of the Workshop (i.e. limited use of artificial light), while also avoiding the need for additional wiring and clamping that would be required to install additional artificial lighting.

Therefore, while the increase in skylight slots is acknowledged to present a minor visual impact to the roof of the Locomotive Workshop, this impact is consistent with that approved through SSD 8449, and is considered on balance, to be an acceptable heritage impact due to the positive outcome of the improvement of the light quality and sustainability standards.

7. Conclusions and Recommendations

The s4.55 Modification to which this HIS relates, proposes alterations to the approved roof plan of Bays 5-15, within the Locomotive Workshops building (South Eveleigh Precinct, former ATP), part of the former Eveleigh Railway Workshops. SSD 8449 provided approval for the roof upgrade and lighting strategy for Bays 5-15, required to improve thermal and daylight performance within Bays 5-13 and 15, including the introduction of skylight 'slots'.

Following approval of SSD 8449, it became apparent that additional lighting would be required within the Locomotive Workshop. Therefore, the modification which this HIS supports (Mod 5) proposes the installation of additional skylights throughout the Locomotive Workshops roof, increasing natural light penetration from approximately 6% of GBA to approximately 11% of GBA, providing substantial benefit to the indoor areas located on level 1, ground and in the atrium spaces.

The additional 'slots' have been modelled on the existing roof conditions within the Large Erecting Shed, and will be consistent with the dimensions and materiality of the skylights already approved under SSD8449 – to be constructed from polycarbonate sheeting or similar.

The proposed skylight 'slots' will be installed only within the modern fabric of the roof, updated to improve natural light within the space. The modification works will not require a major physical intervention in the building, nor in any way impact or compromise the visual integrity of the exposed heritage trusses or the original shape, bulk and roof profile. Therefore, the introduction of additional skylights within Bays 5-15 are considered to have a neutral physical impact.

The increase in the number of skylight slots will serve to offset and reduce the need for further artificial lighting within the Locomotive Workshops, which is more in keeping with the original heritage setting of the Workshop (i.e. limited use of artificial light), while also avoiding the need for additional wiring and clamping that would be required to install additional artificial lighting. This modification will provide more natural daylight to the Level 1 floor plate, atrium areas and provide greater light spill to ground floor, creating an improved working and retail environment and increased indoor natural light quality.

Furthermore, the increase in quantity of skylights will facilitate a substantial improvement to the environmental rating of the Locomotive Workshops, as lighting controls have PE (Photoelectric cells) – photo controls which will monitor daylight and turn on/off lights as needed throughout the day. This will also facilitate a further economic benefit for the development

Therefore, while the increase in skylight slots will present a minor visual impact to the roof of the Locomotive Workshop, this impact is consistent with that approved through SSD 8449, and is considered on balance, to be an acceptable heritage impact due to the positive outcome of the improvement of the light quality and sustainability standards.