POINTOFVIEW

DA LIGHTING REPORT - RETAIL

LOCOMOTIVE WORKSHOP

MIRVAC

23.10.2017

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.

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 (Mirvac) 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.

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.

PROPOSED DEVELOPMENT DESCRIPTION

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 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;
- 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.

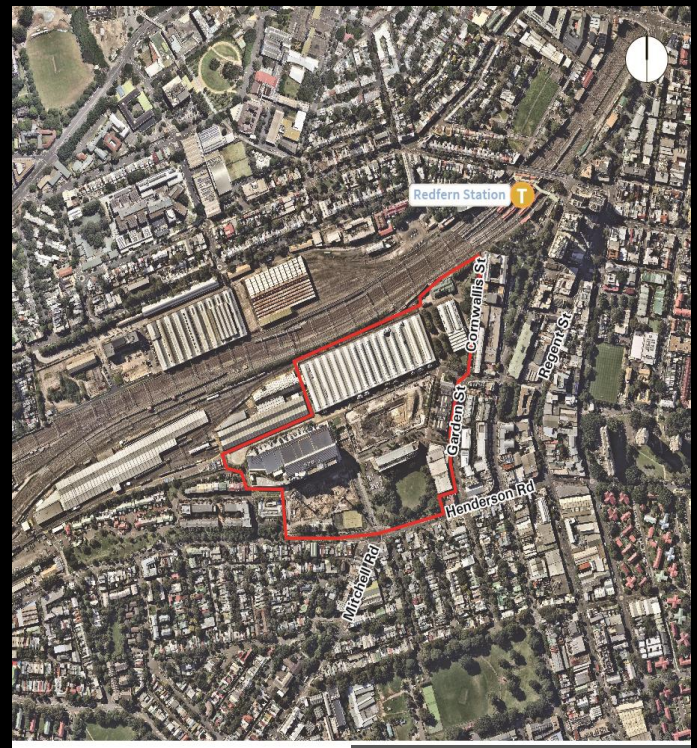


Figure 1 – ATP Precinct

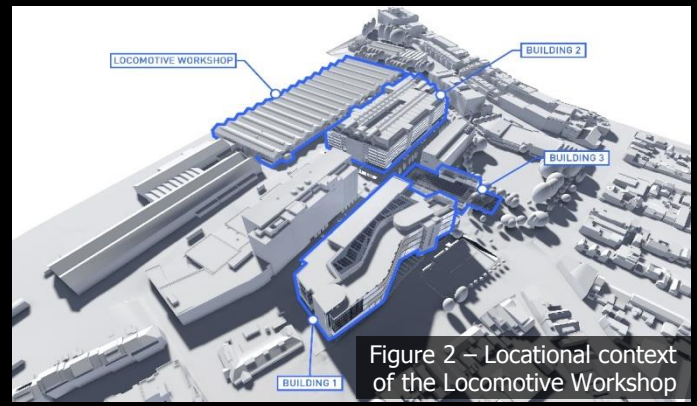
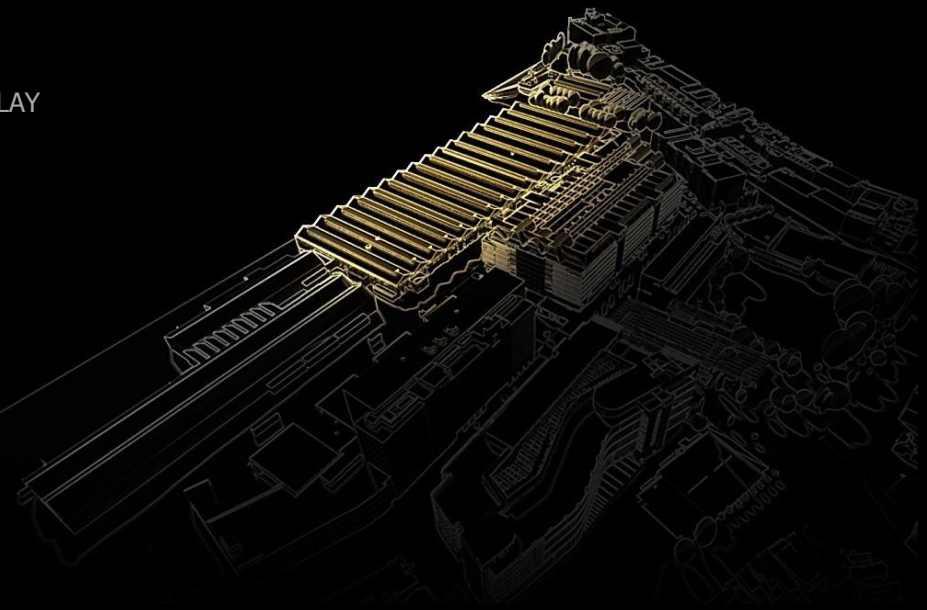


Figure 2 – Locational context of the Locomotive Workshop

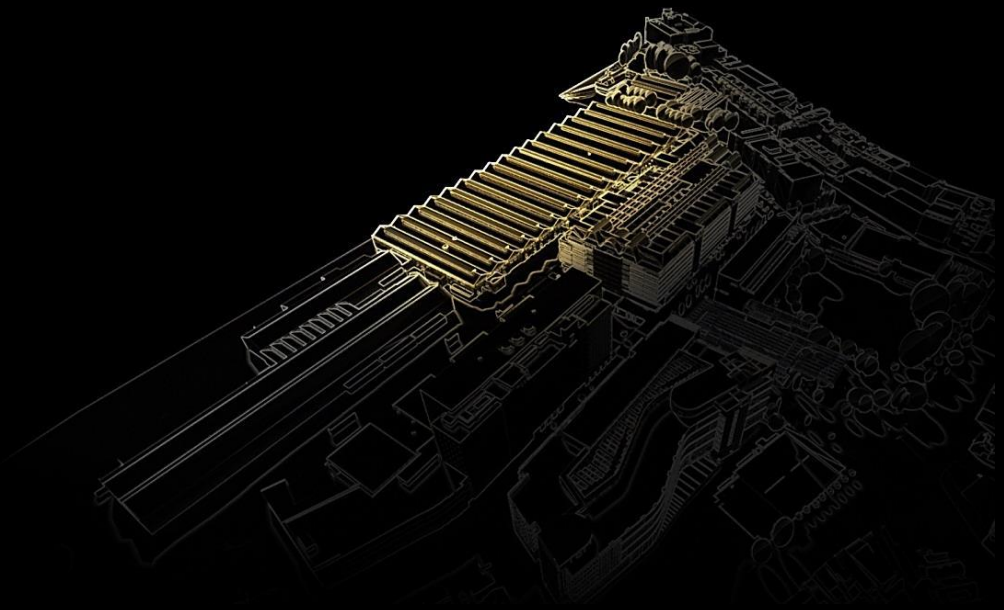


HISTORY & INSPIRATION

__ASPIRATIONS

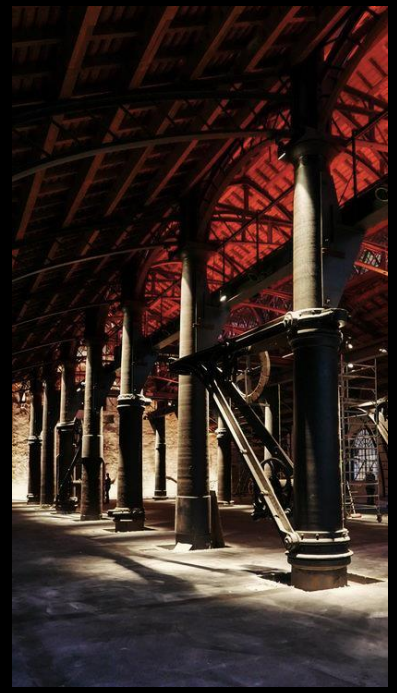
__LOOKING BACK AT THE SITE

__INSPIRATION & RELEVANT PROJECTS



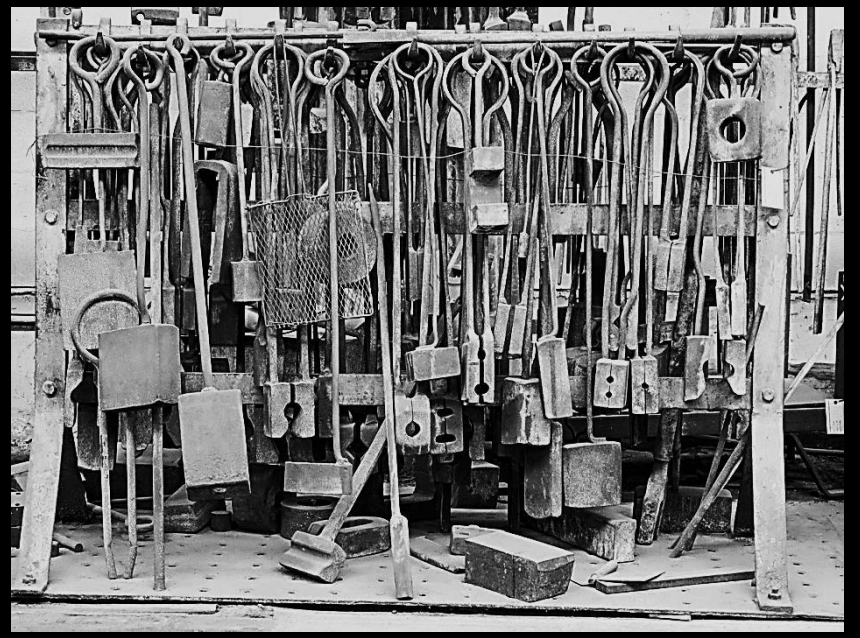
__OUR APPROACH

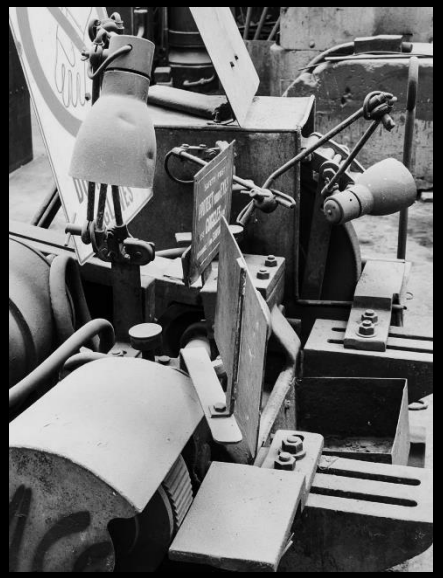
__Lighting to enhance architectural style, form and details
__Lighting will be sympathetic to heritage elements
__Lighting to activate space from day to night and attract public attention
__Discrete luminaires with glare control and minimal light spill
__Minimise physical impact to heritage fabric
__Use of LED for better performance and energy saving


__CELEBRATE HERITAGE

__Embrace the **DAYLIGHT** and **NATURAL LIGHT**
__Enhance the history and **HERITAGE ARTEFACTS**
__Artificial lighting **INSPIRED** by traditional luminaire types
__**REINFORCE** Heritage Precinct
__Provide **LIGHTING** to historical elements with contrast





__LOOK + FEEL OUTSIDE

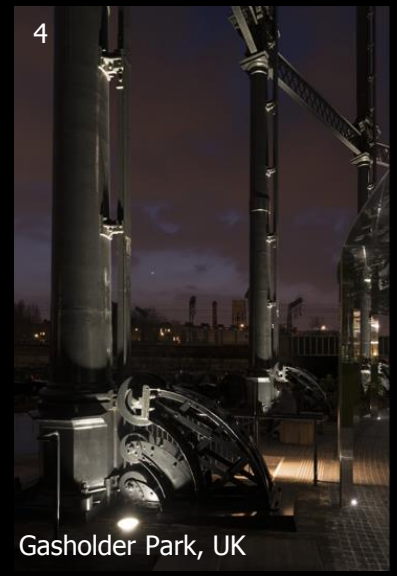
Some examples of projects to demonstrate lighting design used in this type of environment:

1. Lighting to the pilasters
2. Lighting to doorways and window reveals
3. Lighting to the pediments / parapets
4. Lighting to exterior heritage artefacts
5. Decorative industrial pendants and wall lights

Wellington Street, Ottawa

Manchester Royal Exchange, UK

St Louis Library, Missouri



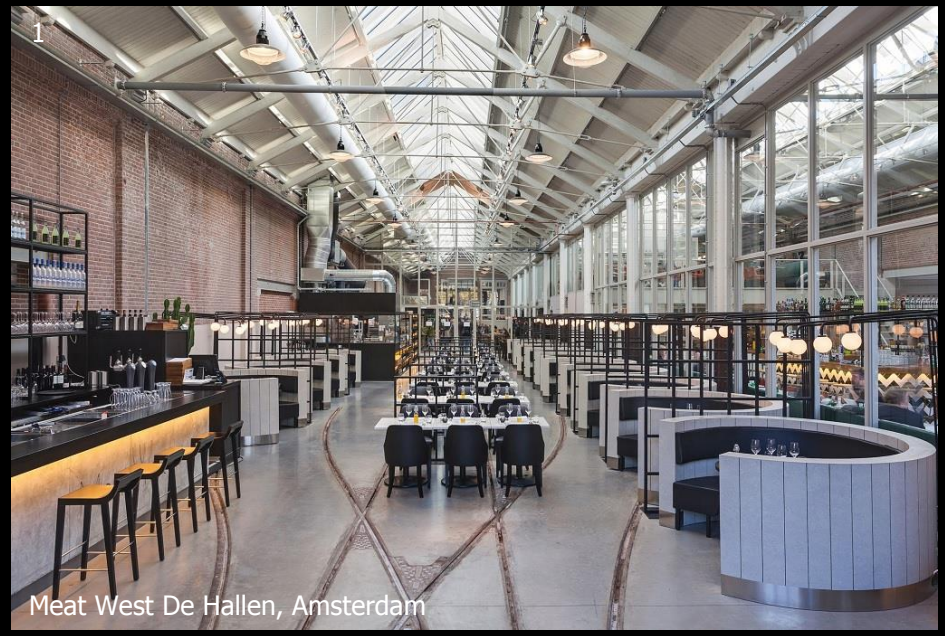
Gasholder Park, UK

Shed 1, Tasmania

__LOOK + FEEL INSIDE

Some examples of projects to demonstrate lighting design used in this type of environment:

1. High bay ambient lighting
2. Accent llighting to artwork and artefacts
3. Localised lighting to seating and break out spaces
4. Dedicated lighting over tables
5. Industrial wall lighting



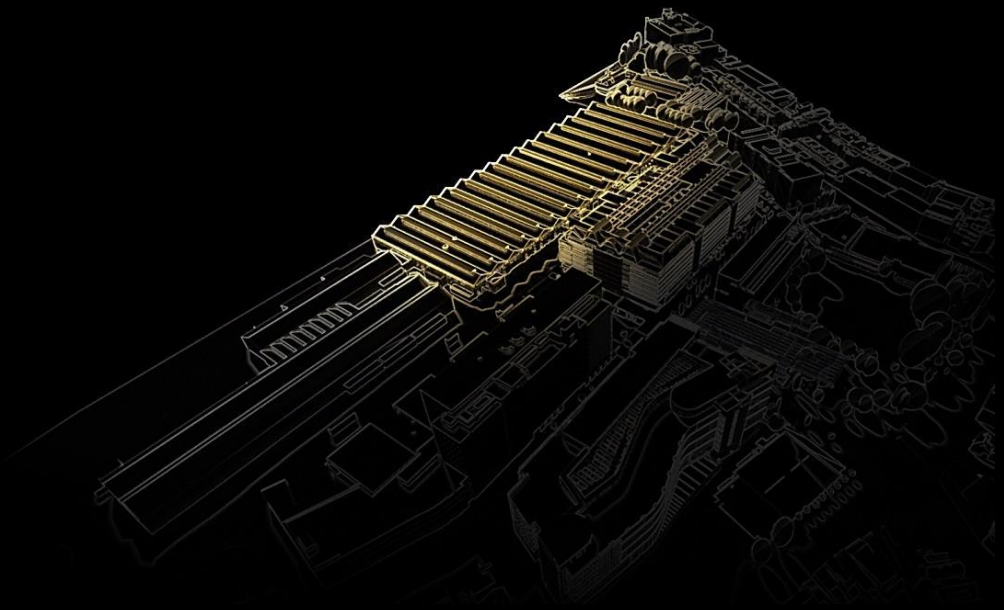
Meat West De Hallen, Amsterdam

German Gymnasium, Kings Cross London

Tramsheds, Sydney

St Pancras Renaissance Hotel, London

Buba, Frankfurt



__AUSTRALIAN STANDARDS

_AS 4282:
Compliance with AS4282, obtrusive light. Ensure minimised direct light spill/pollution through focussing lighting appropriately to building and landscaping surfaces. Luminaires used will maintain glare control.

_AS/NZS 1680.2.1:
Compliance with AS1680 for Interior and workplace lighting for circulation spaces.

__SAFETY & SUSTAINABILITY

_High Protection:

IK Rating
Denotes the degree of a protection by enclosures for electrical equipment against external mechanical impacts in accordance with IEC 62262:2002 and IEC 60068-2- 75:1997. All luminaires are to be certified to an appropriate degree of protection. The mounting height of luminaires is to be considered for public access to minimise the
opportunity for vandalism.

IP rating
Denotes the ability of a luminaire or enclosure to protect internal parts from the outside environment. All exterior luminaires up lighting will be protected to IP67, and downlighting will be protected to IP65 or greater.

Wildlife Damage
Cables protected from damage caused by wildlife e.g. bird spikes or protective conduit to cabling.

Anti-vandal cages
Protective cages to prevent theft and malicious tampering to the luminaire fixture when positioned in accessible places.

Cable Installation
Ensuring cables are potted for protection against shock, vibration and waterproofing. Specifics will need to be discussed in coordination with electrical contractor.

_Low Energy:

Lighting Technology
Best practice lighting technology will be used to ensure long life, fit-for purpose and low energy LED technology.

Efficacy
Exterior luminaires will have a minimum efficacy of 60 lm/W, in line with NCC requirements.

Dimmability
Dimmable lighting will be used for interior lighting F&B to allow for reduced, energy saving light levels for late night trading.

Low running costs
Specification of low wattage LED luminaires will require less power and lower running costs.

_Low Maintenance:

Corrosion Resistance
Corrosion resistance is particularly relevant in luminaire selection.

Control
The interior lighting will be effectively controlled for visual, usage and energy saving purposes. Luminaires will be grouped and programmed into scenes to allow for manual or automated dimming/switching. Visual lighting scenes will be programmed into a control scheme to create lighting effects that may vary depending on user density, time of night or special events.

Lamp Life
Specification of long life LED luminaires with 50,000 hours.

Warranty
Luminaires specified will required 5 year warranty.

Transformers and control gear
This equipment will be housed inside the building to minimise visual interruption.

__VISUAL IMPACT

Size and appearance
Selection of luminaires will consider the physical size, amongst a number of other parameters depending on the light effect required. Small slimline luminaire will be proposed where possible.

Concealment
Where possible fixtures will be mounted and concealed / partially or fully by existing ledges and architectural details. Where this is not possible the colour of the fixture and the glare control from the fixture will be specified to minimise visual impact both day and night.

Colour
We would recommend a bronze finish to the fixtures which is softer and more sympathetic in relation to the sandstone over and above black or beige

Cable reticulation
Specifics will need to be discussed in coordination with electrical contractors and electrical engineers, however we will propose Mims cable as a possibility, which can be moulded to suit detailed stonework and weathers to be hidden from view

Transformers and control gear
This equipment will be housed inside the building to minimise visual interruption.

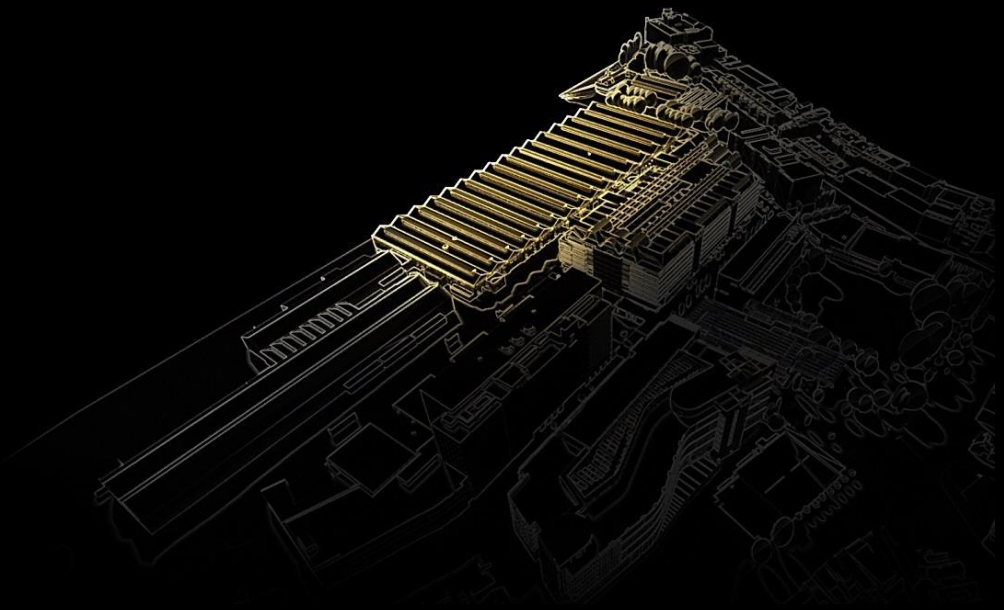
__PHYSICAL IMPACT

Fixing locations
Fixing to the façade will be a necessity to enable the illumination and celebration of these facades at night. To minimise the impact on the fabric of the building fixing points will be focussed where possible at grout or joint lines on the vertical surfaces to prevent damage from water ingress.

Treatment of penetrations
Any fixing points directly in to stone will be specified to be treated to eliminate water ingress and possible degradation to the stone cause by this.

Materials
Fixings will be specified as stainless steel to avoid rusting preventing colouring stone and expansion racking caused by rusting of fixings.

Cable reticulation
The principle will be to minimise penetrations, reticulating cable on ledges will be a preference, information to be detailed in coordination with electrical engineers and contractors.



__LUMINAIRE TYPOLOGY

Some examples of luminaire types to demonstrate the different shapes and sizes of LED lighting:

1. In-ground uplight example
2. Small accent light example
3. Small linear LED
4. Miniature LED projector example
5. Recessed linear LED projector example
6. Industrial pendant example

1

2

3

4

5

6

__LUMINAIRE TYPOLOGY

Architectural

1. Track and Spot example
2. Industrial high-bay example
3. Surface mount downlight example
4. In ground uplight example

Decorative

5. Industrial floor lamp style
6. Industrial wall light style

1

2

3

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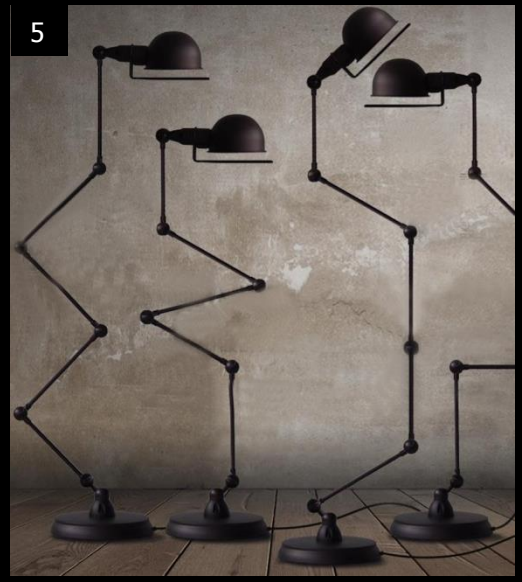

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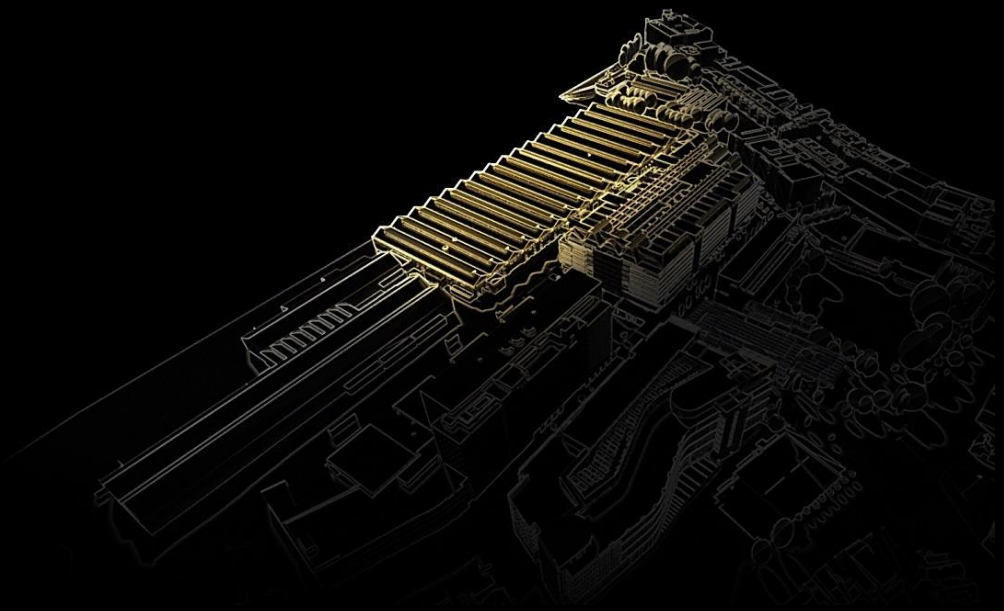


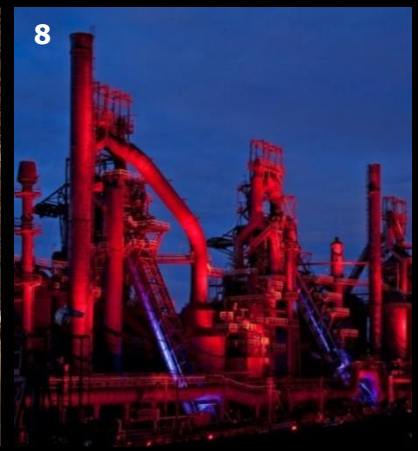
__SOUTH FACADE

__EAST FACADE

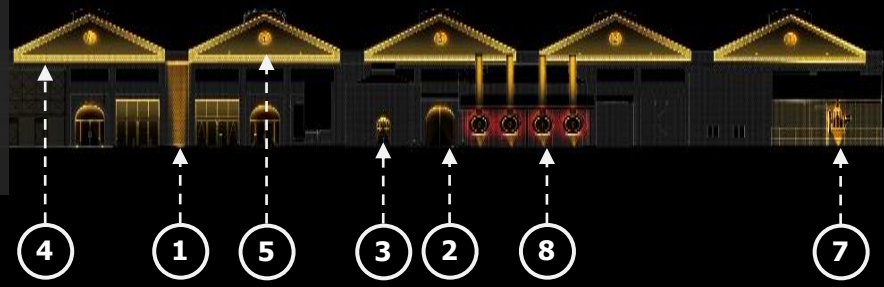
__NORTH FACADE

__SOUTH FACADE

1. Linear in ground uplight to graze the pilasters
2. Inground uplights to accent the doorways
3. Luminaire mounted to window ledge to light the window reveal
4. Linear LED to uplight the façade pediment
5. Signage with integrated lighting
6. Linear LED located above the entrance portals (see next page)
7. Uplighting to Heritage Artefacts and cafe
8. Uplighting to Heritage Boiler house
   Note: possible use of colour



BAYS 5-15 - SUBJECT OF A SEPARATE SSDA APPLICATION



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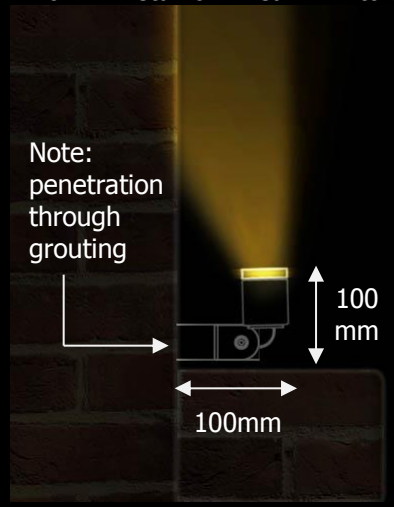
No 4. Detail of Linear LED to uplight the façade pediment:



NOTE: FAÇADE RENDER TO DEMONSTATE LIT EFFECT OF TYPICAL BAY

__SOUTH FACADE

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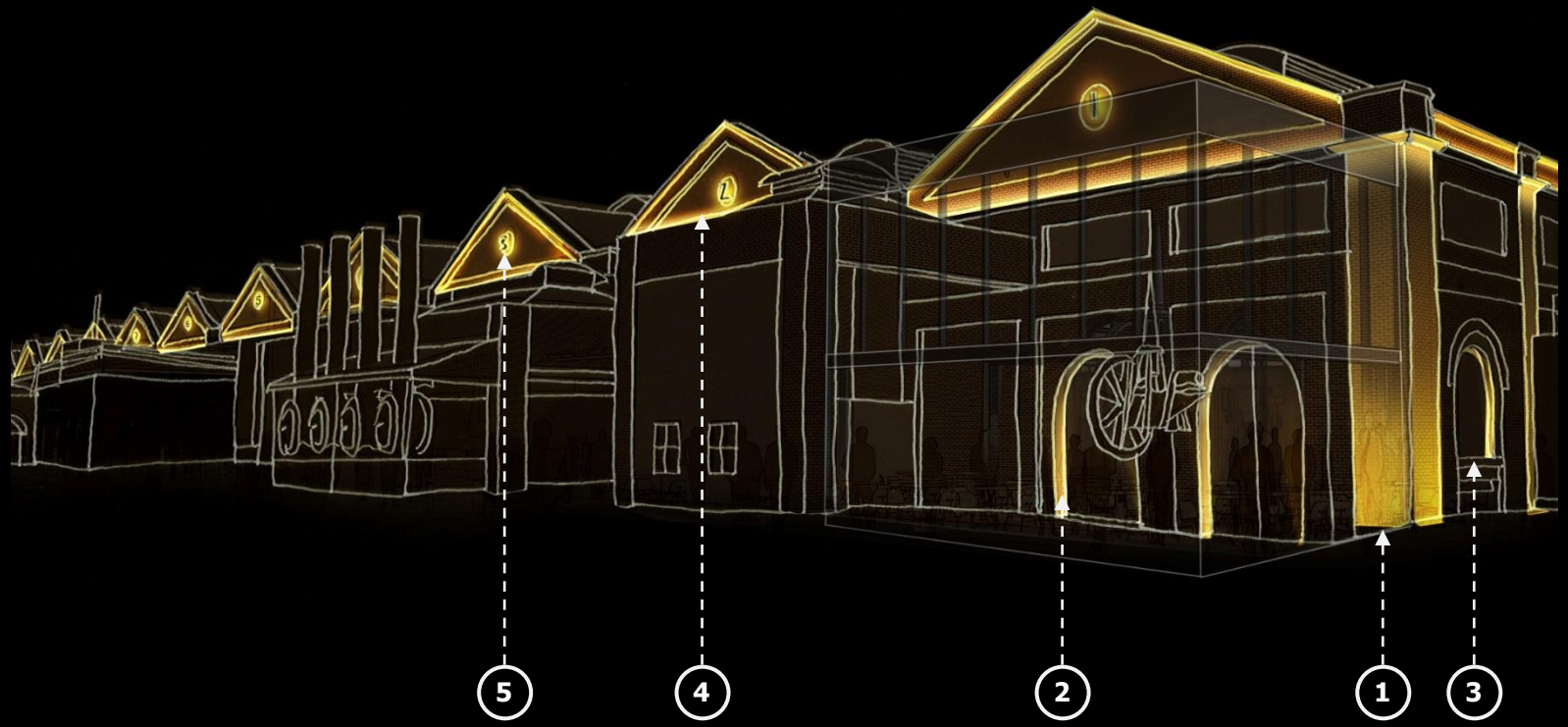
8. Uplighting to Heritage Boiler house
   Note: possible use of colour



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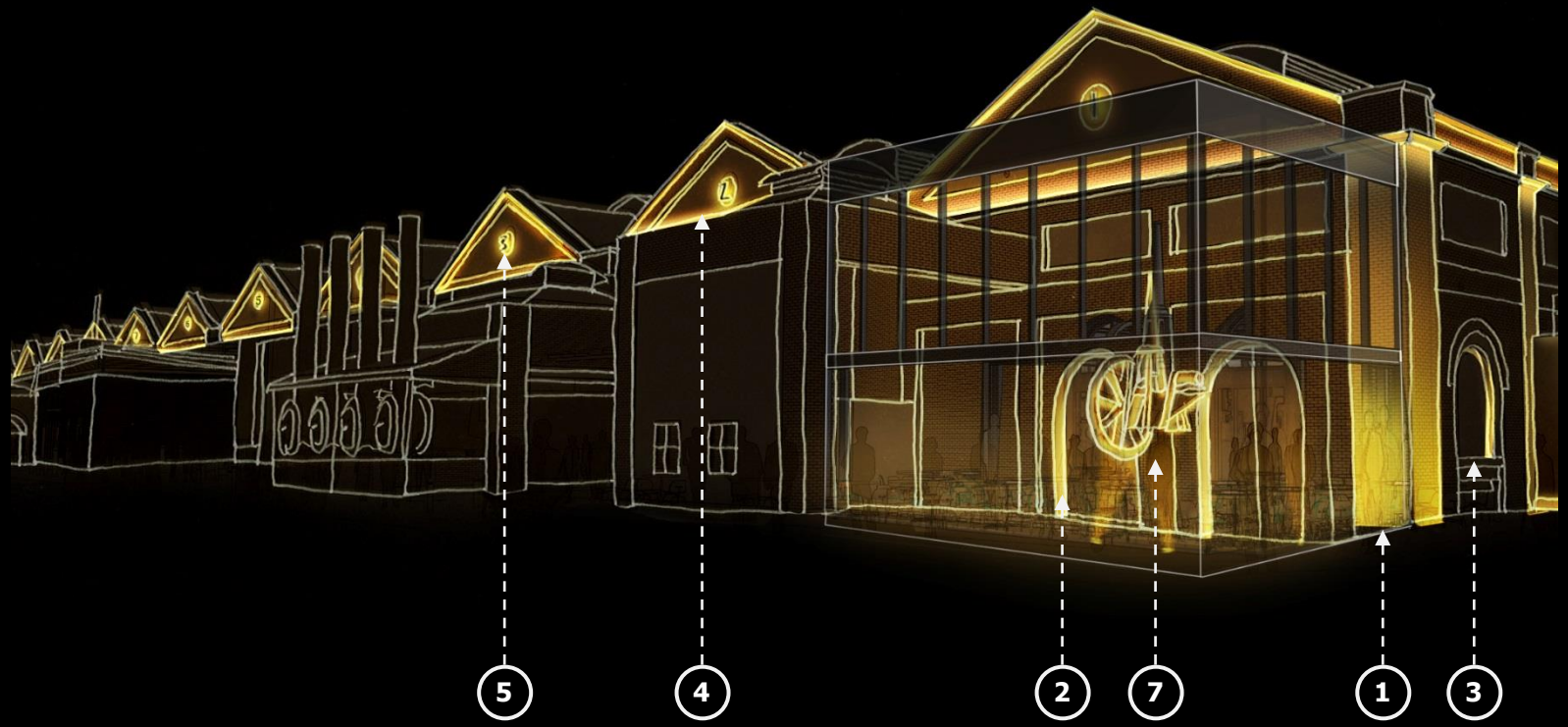

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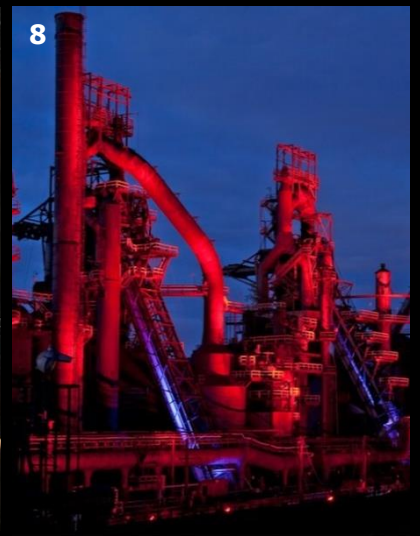
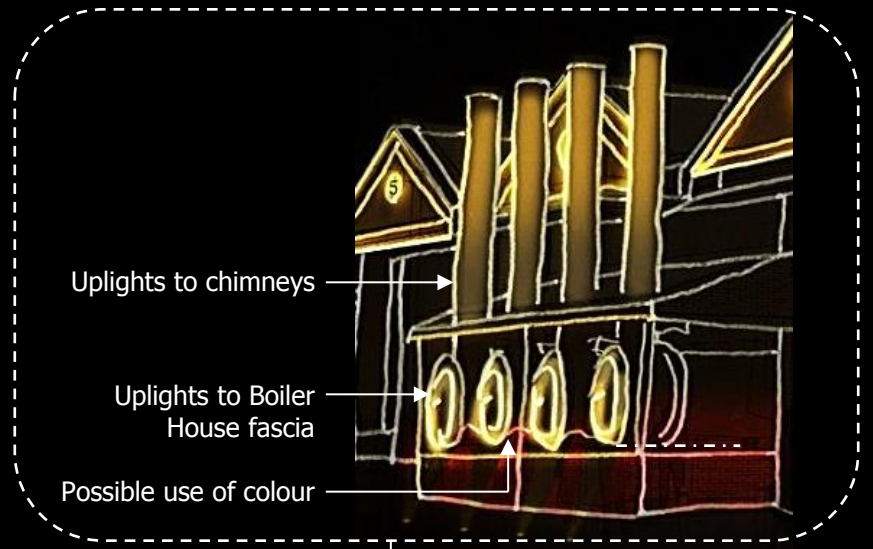
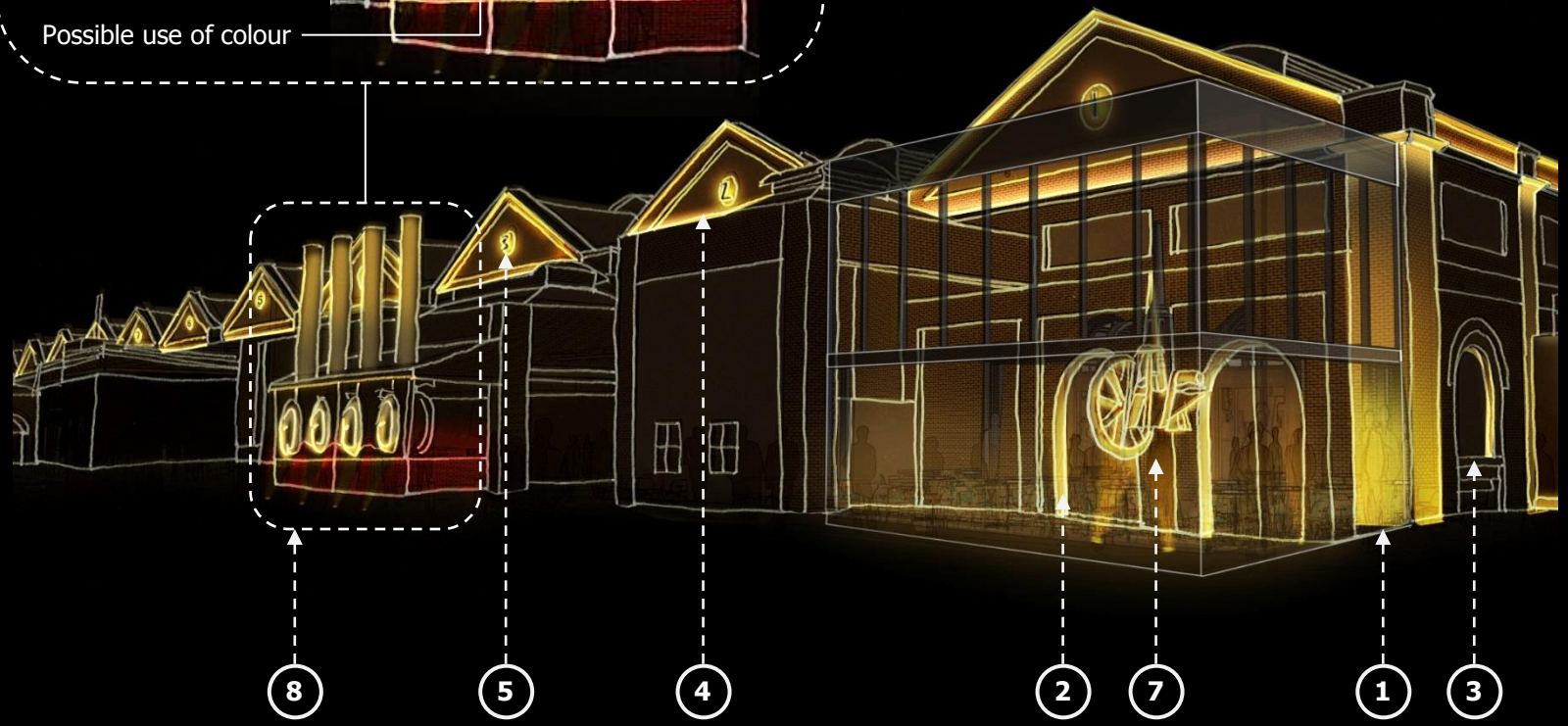
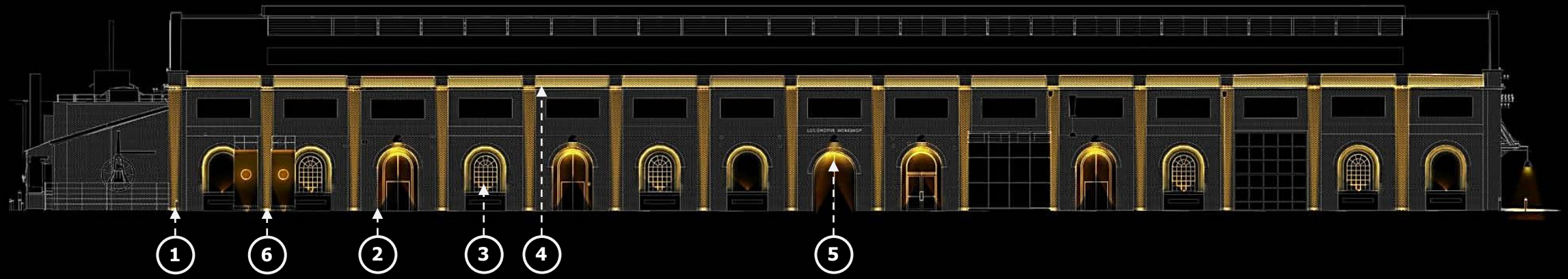






__EAST FACADE

1. Linear in ground uplight to graze the pilasters
   Note: exterior pipework will need to be relocated
2. Inground uplights to accent the doorways
3. Luminaire mounted to window ledge to light the window reveal
4. Linear LED to uplight the façade parapet
5. Wall lights located over the doorways
6. Uplighting to Heritage Artefact



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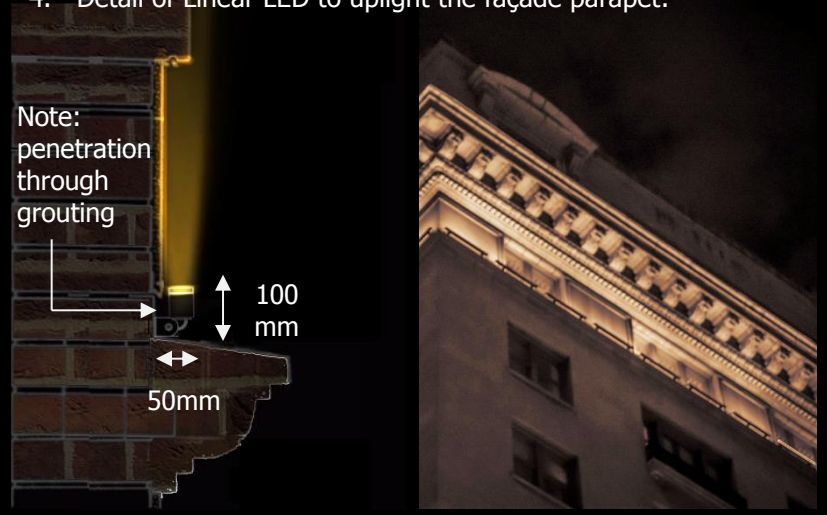
NOTE: FAÇADE RENDER TO DEMONSTATE LIT EFFECT OF TYPICAL BAY

4. Detail of Linear LED to uplight the façade parapet:



POINTOFVIEW

DESIGN CONCEPTS EXTERIOR: EAST FACADE

__EAST FACADE

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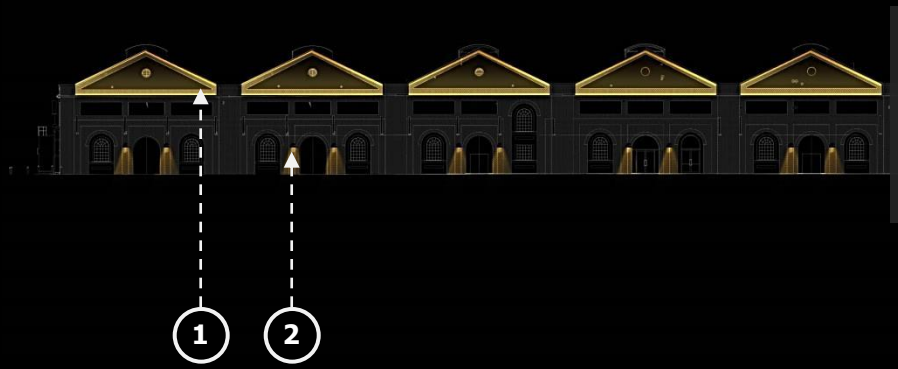
NOTE: FAÇADE RENDER TO DEMONSTATE LIT EFFECT OF TYPICAL BAY

POINTOFVIEW

DESIGN CONCEPTS EXTERIOR: **EAST FACADE**

__NORTH FACADE

1. Linear LED to uplight the façade pediment
2. Pendants suspended from the existing steel brackets



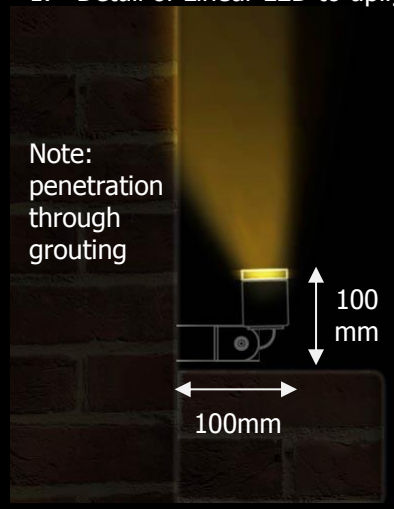
BAYS 5-15 - SUBJECT OF A SEPARATE SSDA APPLICATION

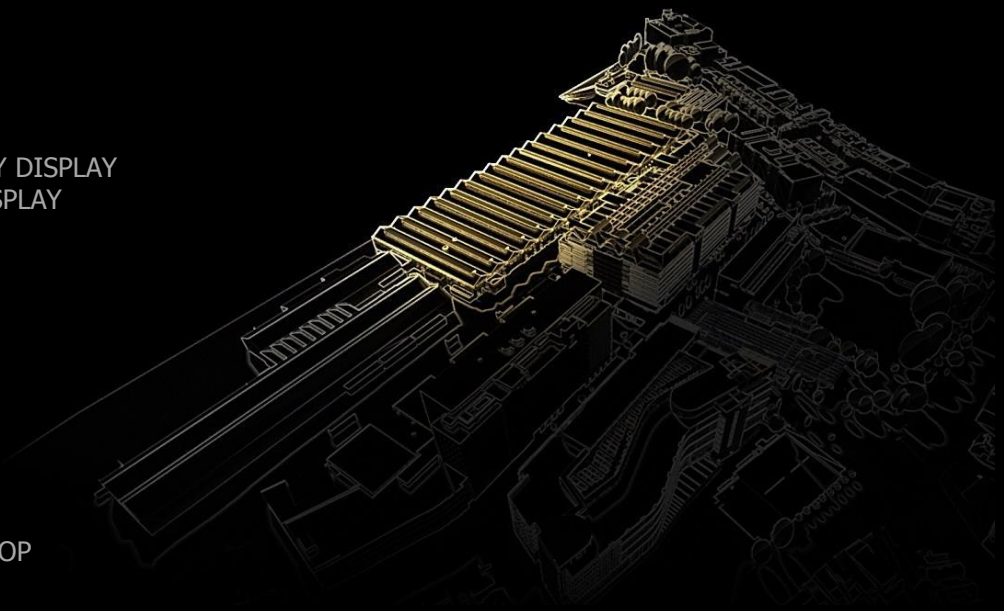
__NORTH FACADE

1. Linear LED to uplight the façade pediment
2. Pendants suspended from the existing steel brackets

NOTE: FAÇADE RENDER TO DEMONSTATE LIT EFFECT OF TYPICAL BAY

1. Detail of Linear LED to uplight the façade pediment:





__INTERIOR LIGHTING

_Architecture Enhancement

Columns

In ground uplights with low glare will be used to light the columns.

Roof Structure

The roof structure will not be directly lit. During the day the daylight will drown out any artificial lighting. By night the roof will rely on spill light from other lighting so the Heritage Elements can be more prominent in the space.

Heritage Gantry

Track and Spot lighting will be used to light the gantry. High colour rendering, size, location and colour of luminaires will be considered to avoid interference will the heritage item.

_Circulation & Breakout Zones

Ambient design intent

In high ceiling spaces a series of high bay luminaires will be used to provide general lighting to the space. The 'look and feel' will be of traditional heritage style.

In areas where the ceilings are lower, surface mounted can luminaires will be used.

Accent design intent

Track and Spot lighting will be used throughout the space to provide accent lighting to architectural elements and zones.

Localised design intent

Where there are break-out seating areas and tables the lighting will be localised to this zone by floor mounted lighting, table lighting and localised task lighting.

_Heritage Artefacts

Accent lighting will be provided to the large-scale architectural heritage elements. Size, colour and mounting locations will be sympathetic to the heritage artefacts to ensure they are lit with consideration and care.

In Situ Machinery

Where the fixed machinery items are located the lighting will be integrated / concealed and coordinated with the raised floor to provide lighting to the display.

Exploded Machinery Display

Lighting to the exploded display will be via accent lighting from track and spots. The size, colour and discreet location of the luminaires considered to avoid any obstructions to the display.

Small Artefacts Display

Dedicated luminaires will be provided to the small artefacts display.

The Kiln

Accent lighting to the kiln from above will be provided. The option to introduce colour (such as reds and ambers) to represent the heat of the kiln could be present here.

Exhibition Space

A flexible lighting approach to the exhibition space by track and spots will be used so spotlights can be adjusted to suit the artwork.

_Tenancies

Task specific lighting within the tenancy areas are to be provided by tenants.
Tenants to submit their lighting scheme for review and comments by the design team to ensure that the scheme is in accordance to the general approach in the space.

_Signage

Lighting will be sympathetic to the heritage and all signage will be concealed, low in glare and non-obtrusive to the space.

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