Coal Drops Yard, King's Cross Central, London/
Specialist Lighting/Employer's Requirements/
Stage 3 Report/Revision 02/
31/05/16

SPEIRS+MAJOR

Content/

1.0 INTRODUCTION

1.1 Report Overview

The following report has been produced by Speirs + Major to document the public realm and communal areas lighting design for Coal Drops Yard at Stage 3 in the design process.

The Speirs + Major scope covers:

- The yard including the viaducts, bridges, stairs and entrances
- The edge of Stable Street, lower Stable Street and the steps and bridges in these areas
- The external appearance of the two Coal Drops buildings including the roof peels
- The circulation cores within the two Coal Drops buildings

Whilst the retail lighting will be designed by the tenants, its appearance will be key to the image and cohesiveness of Coal Drops Yard, particularly after dark. To try to ensure that the retail lighting compliments and contributes to the overall appearance of Coal Drops Yard, we have also produced a set of non-prescriptive guidelines for tenants, which are described later in this report.

The report is intended to allow the design to be handed over to the appointed Design & Build contractor for development to Stage 4 and construction.

The lighting concept has been developed in adherence to the Lighting Design Vision for King's Cross Central, developed by Speirs + Major in 2007.

1.2 Report Structure

The report sets out the concepts which underpin the public realm lighting design, together with initial design information as to how the concepts should be achieved.

Section 2 describes the overarching lighting design concept for the whole area.

Sections 3 to 7 break Coal Drops Yard into logical areas and set out the design information for each element as follows:

- A **Description** of the concept for each element, together with an outline of how the concepts are to be achieved.
- A statement of any **Technical Requirements** which must be met.
- An outline of the aspects of the lighting design which required further **Design Development** by the Design & Build Contractor during Stage 4.

Section 8 describes the way in which the lighting should be controlled, to allow the full lighting control specification to be developed during Stage 4.

Section 9 discusses the requirements for temporary lighting both for events and seasonal lighting.

Section 10, the technical appendix, provides full schematic design information including layouts, indicative sketch details, luminaire specification and other supporting documentation.

1.3 Design Development

As already indicated, the information contained within this report is schematic design information only. Whilst the concepts are well established, the design information (i.e. layouts, specifications etc.) require further development through to a fully detailed design. This design development work is to be carried out by the appointed contractor as part of the Design & Build contract.

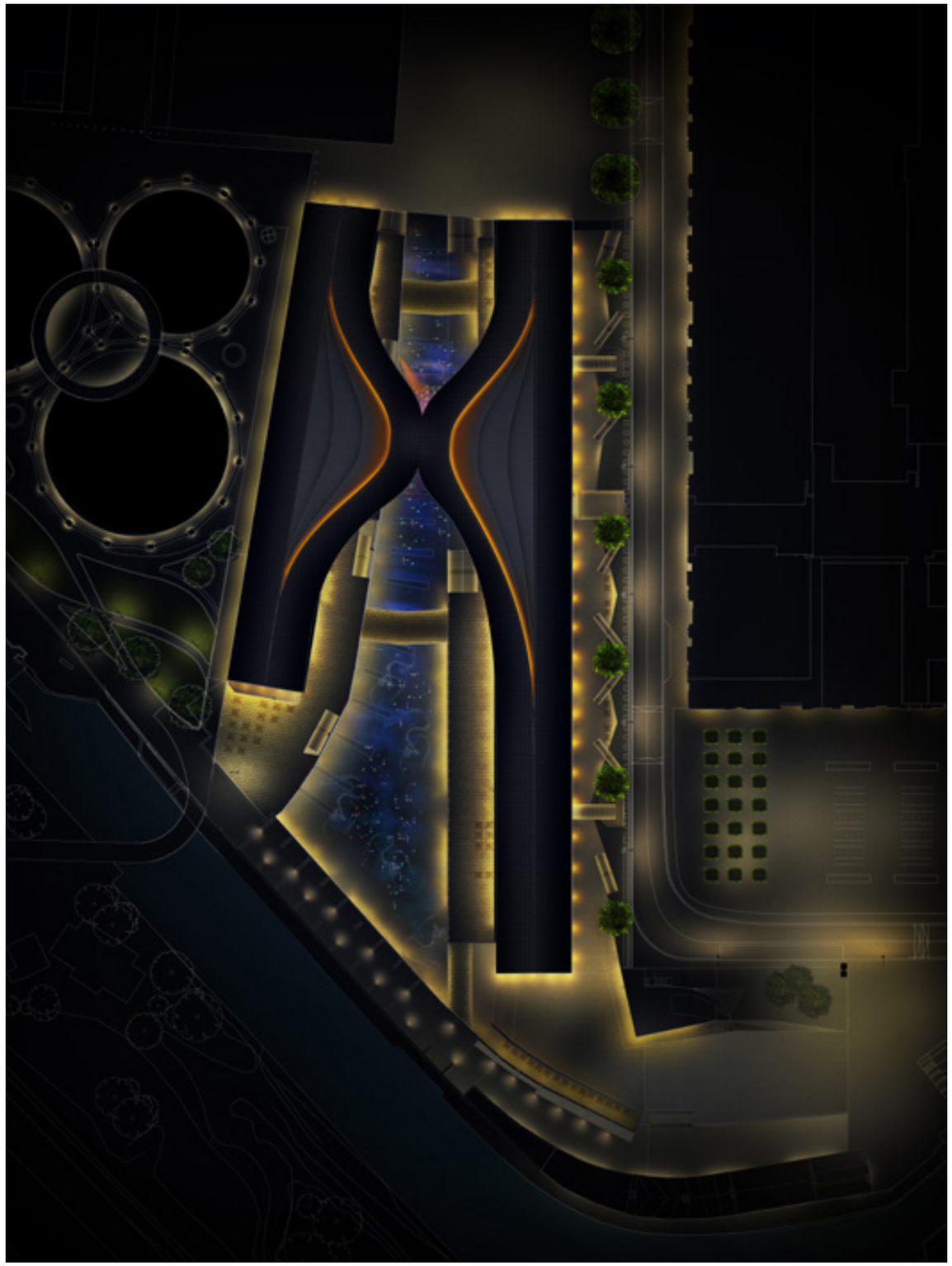
The ongoing development of the design will require the involvement of an experienced lighting specialist as part of the contractor's design team. The additional design development work will include:

- Development of lighting layouts.
- Execution of lighting calculations to verify the technical performance of the final layouts.
- Development of lighting details and integration with the architectural design, in particular, sensitive integration into the listed fabric.
- Finalisation of the luminaire specification, including fixtures that require specific modification for the project.
- Production of a full specification for the lighting control system.
- Design and execution of prototypes and mock-ups as required.
- Discharge of any lighting-related planning conditions.

Mock-ups will be essential to determine the most appropriate way to light key elements of the scheme (such as the illumination of the roof peels).

More detailed notes on the design development required for each area or element are contained within Sections 3 to 7.

2.0 DESIGN CONCEPT



Indicative plan render of Coal Drops Yard and surrounding context after dark

2.1 Overarching Concept

The lighting of Coal Drops Yard requires the careful balancing of two aims:

On one hand, the development of the area as a retail destination requires the use of lighting to contribute to the creation of a safe environment, to improve people's sense of security and to help make the site legible and accessible after dark.

On the other hand, there is a strong desire to retain the atmospheric, historic and industrial character of Coal Drops Yard. This approach will help to maintain the integrity of the area and in doing so will help to create a unique retail experience.

In response to these two aims, lighting will be used judiciously and sensitively, applying light where it is needed and preserving comparative darkness where it is not. Light levels will be carefully set and controlled to support the safe use of the site and to contribute to people's enjoyment of the buildings.

An understated approach will be used to the architectural application of light: it will be used to describe the massing of the buildings and to influence the character and ambience of the area in preference to highlighting the architectural detailing. The quality and colour temperature of light will be chosen to compliment the historic materials and the brick in particular.

Where light fittings need to be attached to the buildings, care must be taken with the fixings, cabling and containment to conceal them as far as possible and to conserve the historic fabric.

2.2 Key Design Principles

The lighting concept for Coal Drops Yard has been developed upon a foundation of key design principles as follows:

- Celebrate Coal Drops' unique industrial heritage through the use of shadow play, high contrast and drama.
- Define layers of light to establish holistic strategy and appropriate technique for each layer.
- Avoid the use of lighting techniques typically associated with shopping malls including cove lighting, high degree of uniformity and the use of luminaire 'families'.

Given the complex relationship between the historical heritage of Coal Drops and the needs of the retailers to ensure a commercial success, the lighting scheme aims to strike the right balance between what are often conflicting design criteria. The following section of the report sets out the design information including a short description of the design approach, technical requirements and a list of items requiring further design development by the Design & Build contractor's design team on an area by area basis.

Diagram indicating layers of light for Coal Drops Yard

3.0 STABLE STREET, LOWER STABLE STREET, MAIN RAMP, ENTRANCE STAIRS + RAMP

3.1 Stable Street Pavement + Landscape

Description

The pavement along the western edge of Stable Street is already illuminated by the existing street lighting fixtures which include rearward facing pedestrian luminaires. This illumination should be adequate to illuminate up to the edge of Lower Stable Street without modification, but this should be verified by further calculation during Stage 4 when the landscape and architectural layouts are finalised.

The trees along the western edge shall be illuminated by ground-recessed uplights in warm white light (3000K) to complete the illuminated 'green spine' running from Tapper Walk down to Granary Square.

Technical Requirements

The lighting must meet the following technical requirements:

Pavement (a 2m wide band adjacent to the street)

Class: S2
Average design maintained illuminance: 10 lux
Minimum maintained illuminance: 3 lux

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Verification of the illumination of the pavement by calculation
- Integration of the ground-recessed uplighters into the landscape
- Finalisation of the luminaire specification

3.2 Lower Stable Street

Description

The intent is that Lower Stable Street should have a different lit character to the yard area. This is to be achieved through the use of expressed luminaires with industrial aesthetics mounted onto the eastern elevation of the Eastern Coal Drops building. The diffuse distribution from these fixtures will both light the street and cast some light onto each elevation, which will mitigate the 'lower ground' nature of the space. Warm white light (3000K) shall be used to create a welcoming environment and to compliment the colour of the brickwork.

It will be important for the eastern elevation of Lower Stable Street to appear very active. This appearance will in part be provided by the internal illumination of the kiosks, but it is strongly recommended that the finish of the walls making the rest of the elevation should be fairly light or, perhaps, diffusely reflective.

Technical requirements

The lighting must meet the following technical requirements:

Typical pavement (a 3m wide band adjacent to the Eastern Coal Drops building)

Class: S2
Average design maintained illuminance: 10 lux
Minimum maintained illuminance: 3 lux

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Verification of the illumination of Lower Stable Street by calculation.
- Development of the luminaire mounting and cabling detail.
- Finalisation of the luminaire specification.
- Design development of luminaires requiring specific modification for the project with the nominated manufacturer.
- Prototyping and mock-up of such luminaires for Client and Design Team approval.

Early concept sketch of Lower Stable Street

3.3 Main Ramp

Description

The main ramp runs from Granary Square down to the southern gable of the Eastern Coal Drops.

Whilst some of this area is not strictly covered by the scope of the project, it is the Client and Design Team's aim to eliminate the line of lighting columns running down the centre of the ramp that form part of the lighting design for the Fish & Coal scheme (by Hoare Lea). This aim requires a combination of two lighting elements: a louvred, linear detail integrated into the soffit around the perimeter of H Pavilion and the addition of a further reflector system on to the rear of the western Granary Square lighting mast.

In addition to lighting the ramp, the additional reflector system shall be designed to illuminate the area bounded by the roadway, Ghat Steps, Fish Bridge, Fish & Coal and the ramp, in order to remove the need for lighting columns within this area.

At the base of the ramp the area widens. Here additional illumination shall be provided by wall-mounted fixtures mounted on the Wharf Road Viaduct (see section 4.2) and a continuation of the wall-mounted fixtures from Lower Stable Street (see Section 3.2) on the southern gable of the Eastern Coal Drops building.

The southern gable of the Eastern Coal Drops building will be given gentle additional emphasis to create a visual draw down the ramp through soft uplighting from ground recessed fittings.

All illumination shall be in warm white (3000K).

Technical requirements

The lighting must meet the following technical requirements:

Top of ramp (area immediately outside start of Fish & Coal building)

Average design maintained illuminance: 15 lux
Minimum maintained illuminance: 5 lux

Middle of ramp

Average design maintained illuminance: 7.5 lux
Minimum maintained illuminance: 1.5 lux

Bottom of ramp (open area immediately outside anchor unit at southern end of Eastern Coal Drops)

Average design maintained illuminance: 5 lux
Minimum maintained illuminance: 1 lux

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Feasibility study including structural calculation for the addition of fittings to the existing lighting mast.
- Development of the additional mast reflector system.
- Development of the soffit integration detail on Pavilion H.
- Verification of the illumination of the ramp by calculation.
- Development and mocking up of the illumination of the southern façade of the Eastern Coal Drops building (Client and Lighting Designer to be present).
- Integration of the ground-recessed uplighters into the landscape.
- Finalisation of the luminaire specification.

3.4 Entrance Stairs + Ramp

Description

All entrance stairs and the ramp from Stable Street to Eastern Coal Drops and from Stable Street down to Lower Stable Street will require supplementary local illumination both to ensure their safe use and to help make the entrances to the building clearly visible from Granary Square.

LED modules will be integrated into the handrails. LED points will be used rather than linear systems to make the sources as discrete as possible. Care must be taken to avoid back spill or scalloping onto adjacent walls.

All illumination shall be in warm white (3000K).

Technical requirements

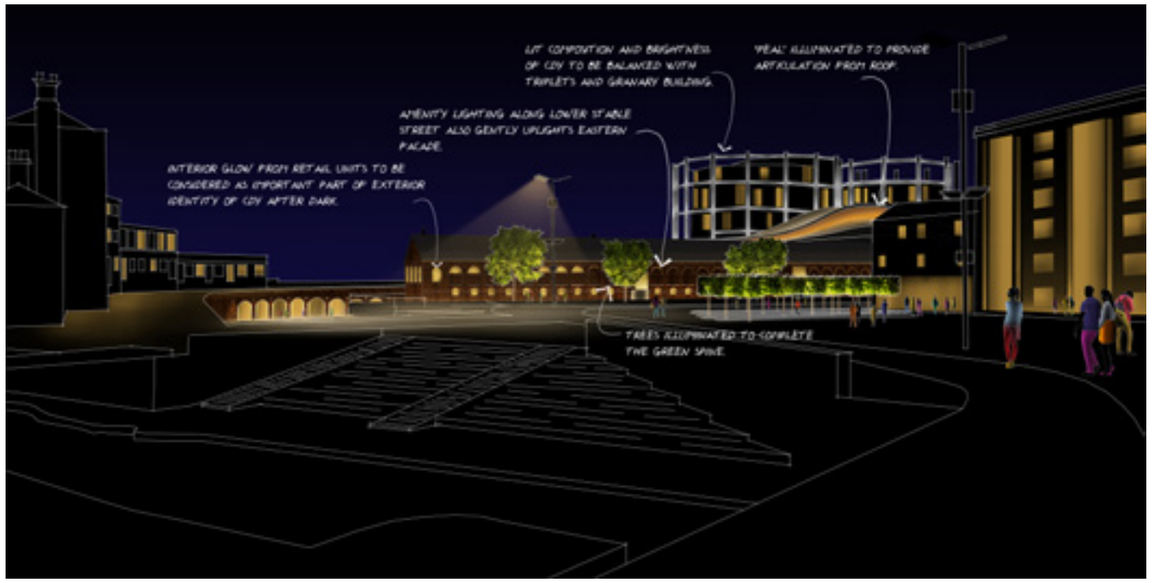
The lighting of the steps and ramp must meet the following technical requirements:

Average design maintained illuminance: 30 lux
Minimum maintained illuminance: 15 lux

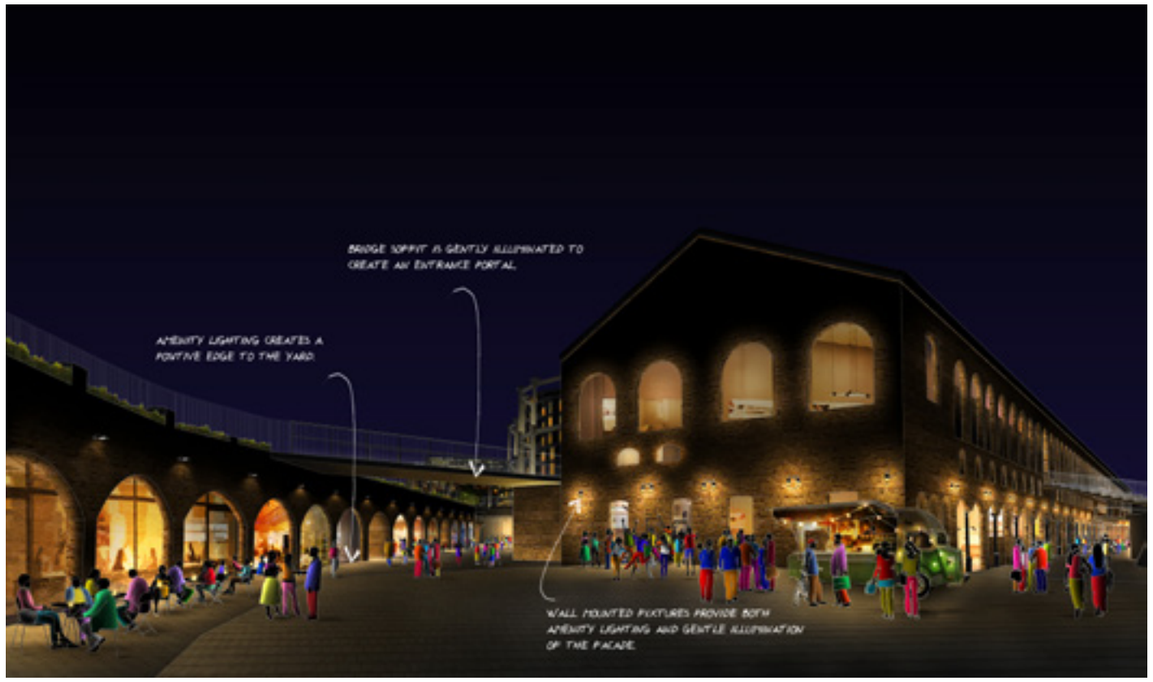
Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Development of the handrail integration detail.
- Provision of a section of prototype handrail with working lighting for Client and Design Team approval containing at least two LED modules at the appropriate spacing.



Early concept sketch showing principle of additional lighting to the rear of Granary Square mast



Early concept sketch of open area at the base of ramp

4.0 YARD, VIADUCTS, STAIRS, BRIDGES + TOWPATH ENTRANCES

4.1 Yard + Viaducts

Description

The yard is to be lit from its edges so that the amenity lighting will have a similar distribution to the spill lighting from the retail units: brightest adjacent to the buildings where most people will walk, with illumination levels diminishing further away from the buildings. This technique is to be used along the eastern edge of the Western Coal Drops, the western edge of the Eastern Coal Drops and the northern edge of the Wharf Road Viaduct.

The fixtures are to be wall mounted to avoid the addition of lighting columns. Small flood lights with forward throw, low glare optics are to be used to achieve the light distribution required. These should also have minimal back spill / back spill protection accessories in order to minimise the amount of light split onto the building facades. On the viaduct level, the main beam of light must not extend beyond the edge of the viaduct as this will result in unacceptable glare at yard level. The aim is to keep the brickwork as dark as possible to create a contrast with the retail interiors. The fixtures are to have a simple, contemporary aesthetic so that they attract as little attention as possible.

The same type of fittings will also be installed along the edge of the viaduct along the western edge of the southern half of the yard. This will allow further amenity light to be provided where the yard is at its widest.

Despite this, the very centre of the yard in the wider area to the south will not achieve a defined lighting standard. That said, the lit retail windows around the perimeter of the yard will ensure that the space feels safe and there will be well illuminated routes around the perimeter of the yard for people to choose if they wish. The only associated consideration should be for the landscape design: that the paving / cobbles should be laid so that they do not provide trip hazards.

The deep area under the viaduct along the western edge of the yard has the potential to be gloomy and unattractive by day and night. Additional amenity lighting will be provided attached to the columns, together with uplighting throughout the area to ensure that the soffits appear light.

Amenity lighting to the area outside anchor F&B unit at the southern end of Western Coal Drops shall be provided through the use of expressed luminaires mounted onto the southern elevation of the Western Coal Drops building on both levels. On viaduct level, additional column mounted luminaires are required to provide supplementary illumination to the southern end of the open area where the Coal Drops scheme interfaces with the High Line. The luminaire and column specification shall match that of equipment specified as part of Triplets Park lighting scheme (by Hoare Lea / Townshend Landscape Architects) to promote a consistent equipment palette.

In the same manner to the Eastern Coal Drops building, the southern gable of the Western Coal Drops building will be given gentle additional emphasis to create a visual draw through soft uplighting from ground recessed fittings.

All illumination shall be in warm white (3000K).

Technical Requirements

The lighting must meet the following technical requirements:

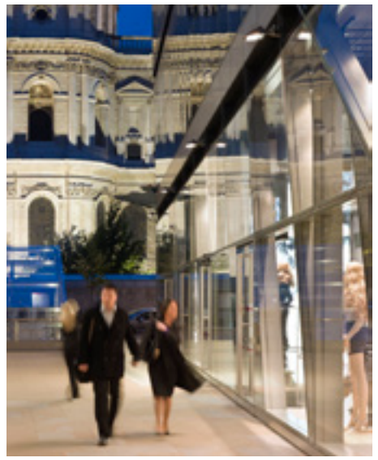
Walkway on Yard + Viaduct levels (8m wide band adjacent to the buildings)

Class: S1
Average design maintained illuminance: 15 lux
Minimum maintained illuminance: 5 lux

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Verification of the illumination of walkways on both Yard and Viaduct levels by calculation.
- Verification of the illumination of open area outside anchor F&B unit on Viaduct level by calculation.
- Finalisation of the luminaire specification.
- Lighting mock-up / tests to assess the back spill of light on to the brickwork, and the design development of relevant back spill shield accessory with the luminaire manufacturer.
- Prototyping and mock-up of such luminaires for Client and Design Team approval.
- Development and mocking up of the illumination of the southern façade of the Western Coal Drops building (Client and Lighting Designer to be present).
- Development and mocking up of the illumination of the soffit of Western Coal Drops building using minimum of 2no. uplighter luminaires (Client and Lighting Designer to be present).
- Integration of the ground-recessed uplighters into the landscape.
- Development of the luminaire mounting and cabling detail including the custom column mounting bracket as well as custom wall mounting bracket detail to avoid clash with drainage pipes.
- Prototyping and mock-up of custom mounting brackets for Client and Design Team approval.



Reference images indicating brighter perimeter conditions within retail environments.

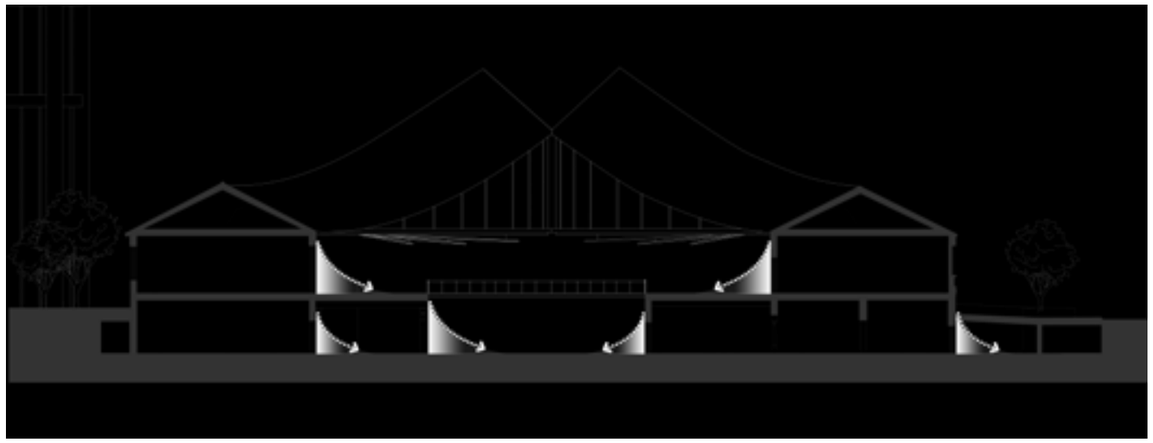


Diagram indicating proposed intensity of amenity lighting

4.2 Stairs

Description

As with the steps running from Stable Street, all of the stairs within the yard area will require supplementary local illumination to ensure their safe use and to highlight them to assist with wayfinding.

The same lighting detail should be implemented using discrete LED modules integrated into the handrails.

All illumination shall be in warm white (3000K).

Technical requirements

The lighting of the stairs (1m wide perimeter band from each side of stairs) must meet the following technical requirements:

Average design maintained illuminance: 30 lux
Minimum maintained illuminance: 15lux

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Development of the handrail integration detail.
- Provision of a section of prototype handrail with working lighting for Client and Design Team approval containing at least two LED modules at the appropriate spacing.

4.3 Bridges

Description

As with the stairs, all bridges will require supplementary local illumination to ensure their safe use and to highlight them to assist with wayfinding.

The same lighting detail should be implemented using discrete LED modules integrated into the handrails.

All illumination shall be in warm white (3000K).

Technical requirements

The lighting of the bridges over Lower Stable Street (1m wide perimeter band from each side of handrail) must meet the following technical requirements:

Average design maintained illuminance: 30 lux
Minimum maintained illuminance: 15 lux

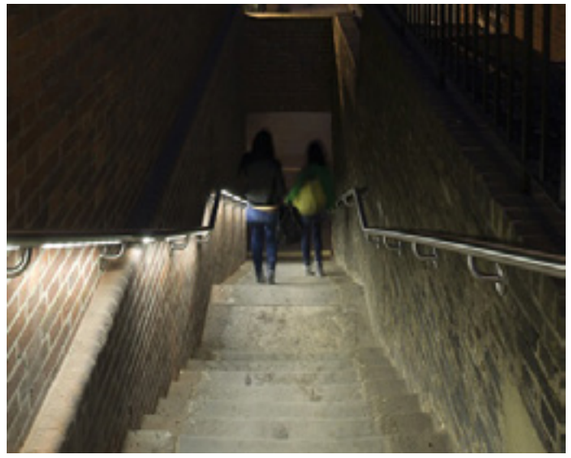
The lighting of the 3 bridges within the yard (1m wide perimeter band from each side of handrail) are to be considered as extension of the retail walkways, rather than 'bridges' per se, and must meet the following technical requirements:

Average design maintained illuminance: 15 lux
Minimum maintained illuminance: 5 lux

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Development of the handrail integration detail.
- Provision of a section of prototype handrail with working lighting for Client and Design Team approval containing at least two LED modules at the appropriate spacing.



Reference images of integrated handrail lighting

4.4 Towpath Entrances

Description

The towpath entrances need to be gently illuminated to provide a transition between the unlit towpath and the subdued illumination of the yard. Their vaulted structure also needs to be highlighted to identify them as an entry/exit point and to ensure that they have a positive presence.

A series of expressed wall lights shall be used to provide both the amenity and architectural lighting. The fixtures shall be of the same style used on Lower Stable Street.

All illumination shall be in warm white light (3000K).

Technical Requirements

The lighting must meet the following technical requirements:

Average design maintained illuminance: 10 lux
Minimum maintained illuminance: 3 lux

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Verification of the illumination of the ground plane by calculation.
- Development of the luminaire mounting and cabling detail.
- Finalisation of the luminaire specification
- Design development of luminaires requiring specific modification for the project with the nominated manufacturer.
- Prototyping and mock-up of such luminaires for Client and Design Team approval.

Reference images of illuminated vault

5.0 RETAIL LIGHTING

Coal Drops Yard, King's Cross Central
London, UK

5.1 Retail Guidelines

As previously mentioned in the Report Overview (Section 1.1), the retail lighting will be designed by the tenants as part of their fit-outs. However the highly glazed nature of the retail units (on the yard-facing facades at least) means that their interior lighting and shop window lighting will have a major impact on the image and ambience of Coal Drops Yard after dark.

This is particularly true for the main anchor tenant whose vast glazed area and central, elevated position will hugely influence the whole of Coal Drops Yard.

It is vital therefore that all tenants support the vision for the after dark appearance of Coal Drops Yard: that the yard itself should retain an atmospheric, industrial character, whilst also providing a safe and enjoyable experience and that the retail units should develop their own character but with certain restrictions to ensure that the overall site retains elegance, coherence and cohesiveness.

To that end, tenant lighting guidelines have been produced to form part of the tenant pack. It is advised that the Client should retain some power through the tenancy agreements to enforce changes should the spirit of the guidelines be ignored to the detriment of the wider development.

Two sets of guidelines have been developed: one standard set of guidelines to apply to all the regular tenants and the anchor tenants on the end units, and a second set of guidelines unique to the central anchor tenant. These guidelines can be found in the appendix in Section 10.5.

Lighting within the shop windows has a hugely important role to play in Coal Drops Yard even after the retail units have closed. Keeping the shop windows illuminated will be immensely important to the F&B tenants to ensure that Coal Drops Yard does not feel as though it has shut down until they too have closed. Therefore it is strongly advised that the tenancy agreements should include a 'Keep Lit' clause, though the exact duration of this will need further discussion.

The shop windows could be switched off by timeclock after the F&B units have closed as footfall is likely to be very low, which will save energy and money. Alternatively keeping the shop windows illuminated throughout the night is likely to make Coal Drops Yard feel safer to pedestrians and may reduce the likelihood of troublemakers gathering. Ultimately this will be a decision for the Client and Estate Management Teams.







Reference images of various retail lighting

6.0 CIRCULATION CORES

6.1 Typical Cores

Description

The circulation cores will require illumination of both horizontal and vertical surfaces to maximise visibility from the surrounding areas. This is to be achieved through a combination of different lighting techniques.

There are two distinctive entrance conditions to the cores; ‘reveals’ and ‘vaults’. For the reveals where the depth of the entrance arch is shallow, it is proposed that ground recessed luminaires are introduced to provide soft uplighting to clearly define the core entrances. For the vaults, the use of expressed luminaires surface mounted on brick walls will gently fill the space with light, allowing the vault to glow from within.

Within the deep plan areas of the cores, surface mounted downlights will provide supplementary lighting onto the floor to positively illuminate the circulation routes.

Surface mounted point source LED downlights positioned within architectural slot detail around the lift core will provide graze lighting down the feature metal mesh cladding to reveal its folded ‘curtain’ form and texture. These luminaires are to be made individually controllable via DMX protocol to provide subtle animation through chasing movement of light. This vertical illumination will allow the lift core to be highly visible and legible from the yard to assist with wayfinding. It will also provide positively defined horizontal illuminance around the lift core on the floor.

To ensure safety, the stairs will be positively illuminated through use of large diffused square downlights surface mounted on the soffits of landing.
The display gallery area on the ground floor is to be lit from track mounted spotlights located on the soffit of first landing.

All illumination shall be in warm white light (3000K).

Technical Requirements

The lighting must meet the following technical requirements:

General circulation and stairs:

Average design maintained illuminance: 50-150 lux

Design Development

The Design & Build contractor’s design team will need to carry out design development including (but not limited to) the following:

- Verification of the illumination of the general circulation zone by calculation.
- Verification of the illumination of the stairs by calculation.
- Development of the luminaire mounting and cabling detail.
- Development and coordination of concealed slot lighting detail with ceiling design.
- Finalisation of the luminaire specification.
- 1:1 scale mock-up of feature metal mesh lighting.

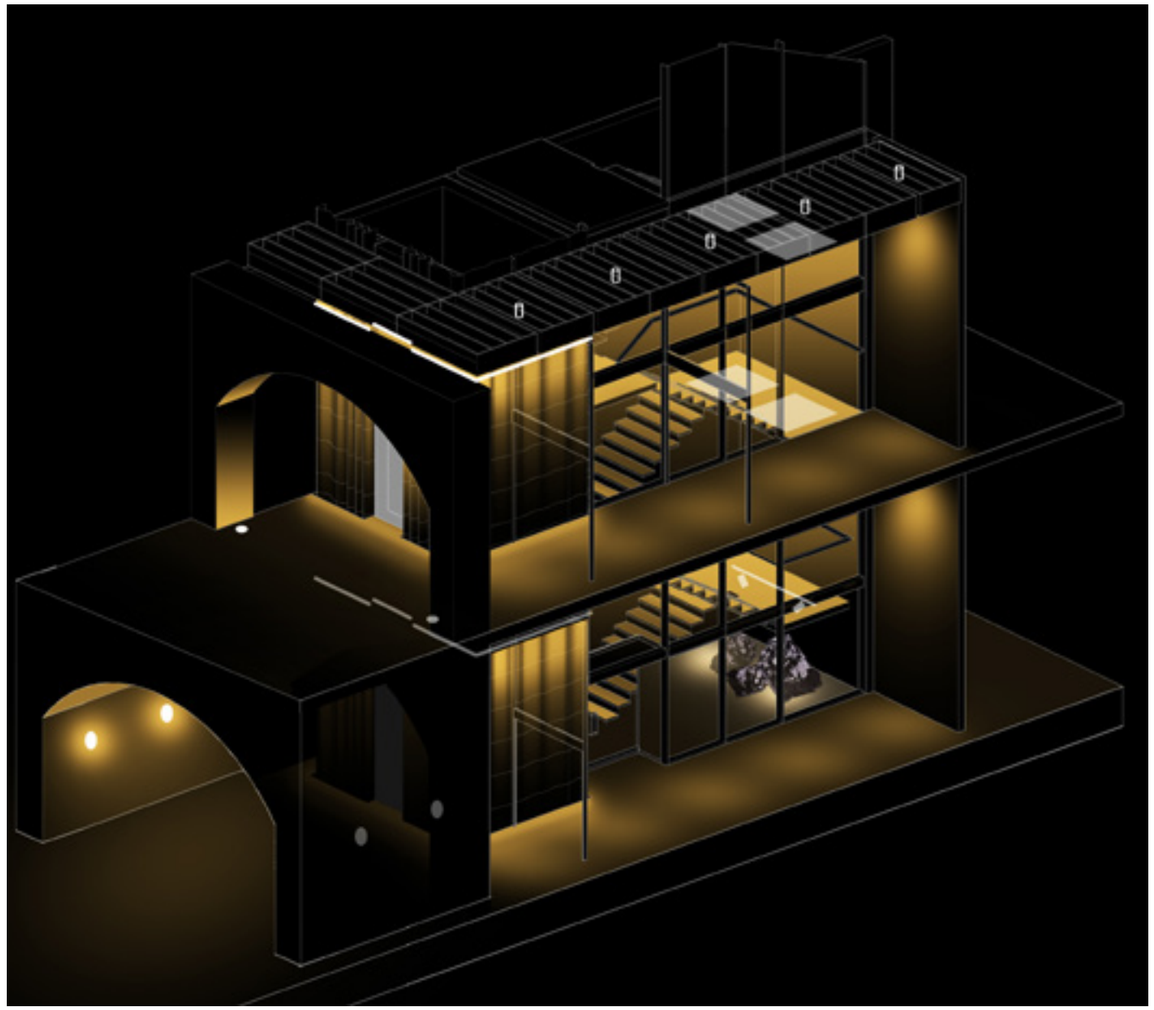


Diagram indicating typical core lighting scheme

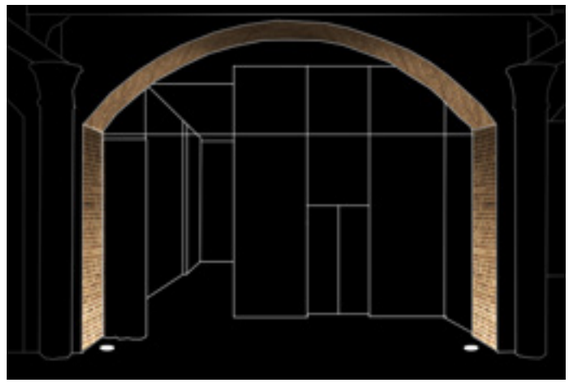
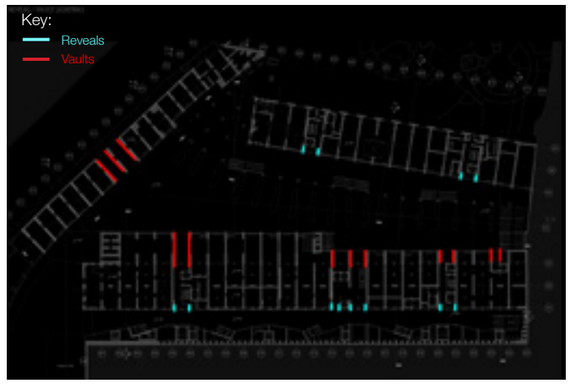
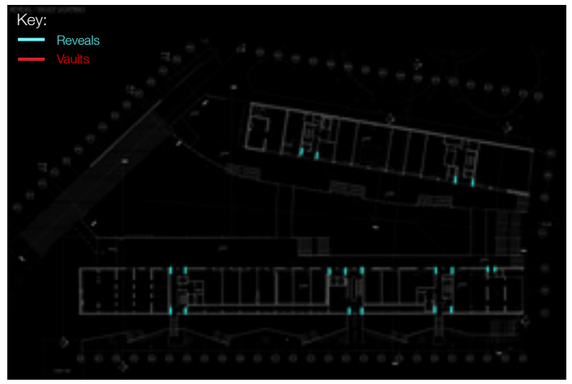


Diagram indicating ‘reveal’ entrance condition and the use of ground recessed uplighters.

Diagram indicating ‘vault’ entrance condition and the use of wall mounted luminaires.



‘Reveals’ vs ‘Vaults’: location plan - Yard level



‘Reveals’ vs ‘Vaults’: location plan - Viaduct level

6.2 Feature Core (core 4)

Description

Generally speaking, the lighting design approach to the feature core is similar to that of the typical cores. However, an alternative approach shall be taken to illuminate the stairs.

For the feature stairs, it is proposed that treads are arranged with a slight overlap, each with a diffused linear LED system integrated at the back so that the soffit of each tread is uplit from below. Soft reflected light will spill back on to the treads at low level through the riser. This will also allow the stair core to glow from within like a 'lantern'. The design of the stair riser, particularly its openness / perforation percentage will have a fundamental impact on the quality and quantity of light falling on to the treads. Once again, the development of the stair lighting detail will need to be developed further during Stage 4.

The lift cores within core 4 are highly glazed which allows the lift car to be visible from outside. The lighting of lift cars therefore forms a vitally important part of the overall composition of the lighting scheme within the feature core. In order to create a visual contrast against the surrounding and to allow the lift cars to appear 'glowing', the general illuminance on the lift shaft side of the feature core has been designed to a lower level than that of the stair side.

Inside the car, general lighting shall be provided through a uniform backlit 'light box' ceiling system. The development of the lift car lighting will need to be developed by the contractor's design team during Stage 4 in collaboration with the nominated lift car manufacturer to ensure a full coordination with the car design. To ensure a single point of responsibility, it is recommended that the lighting system is designed and supplied as part of the specialist lift car package.

The feature metal mesh 'curtain' around the glazed lift core shall be illuminated in the same manner as the metal mesh in all other typical cores.

Technical Requirements

The lighting must meet the following technical requirements:

General circulation and stairs:

Average design maintained illuminance: 50-150 lux

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Verification of the illumination of the general circulation zone by calculation.
- Verification of the illumination of the stairs by calculation.
- Development of the luminaire mounting and cabling detail.
- Finalisation of the luminaire specification
- 1:1 scale mock-up of integrated stair tread lighting detail including trials of the stair riser for Client and Design Team approval.
- 1:1 scale mock-up of lift car interior lighting detail for Client and Design Team approval.

Early concept sketch of feature core

Diagram indicating feature core stair lighting principle

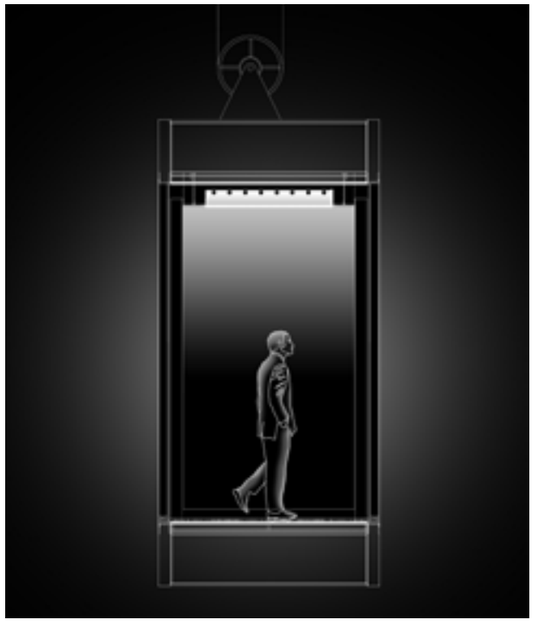


Diagram indicating lift car lighting intent

7.0 ANCHOR UNIT + ROOF PEEL

7.1 Roof Peel

Description

The roof peel is the major architectural statement of the development, and is likely to become the image of the development.

Careful illumination of the peel will compliment and reinforce this architectural statement so that it will have even greater impact after dark.

The design of the peel and the fact that it integrates with a skylight part way means that the outside and inside of the peel must be lit separately. The available mounting positions and differing viewing angles means that the internal and external illumination requires different lighting techniques.

On the exterior, the peel shall be uplit using linear LED fixtures. The continually varying width of the skylight means that the offset distance of the luminaires will also vary along the length of the roof. A high power linear LED system with wide beam optic shall be mounted on vertical return of the top roof ‘cheek’ panel to gently wash the inner surface of peeling roof ‘ribbon’ with warm white light. The surface of the ribbon cladding will need to be developed during Stage 4 to ensure that it will scatter light to ensure that it is visible from all directions (rather than reflect the light in a single direction as a mirror or highly polished surface would); the success of the illuminated effect will depend on the correct specification of this surface finish.

On the interior, a similar approach shall be applied. The peeling roof ribbon shall be illuminated from a continuous linear slot set into the bulkhead opposite the peel. High power LED projectors with asymmetric optics spaced at approximately 1m centres will cast some light up the peel above the slot, but the majority of the light down the peel. These will need to be carefully focussed to avoid creating glare for shoppers in the anchor unit. Whilst the wash of light will inevitably fade away towards the base of the roof ribbon, the intention is to illuminate as much of the timber cladding as possible.

The slot will be louvred to reduce views along the slot. The fittings will break for each beam to ensure that the beams are not strongly illuminated. The fittings will also need to incorporate individual DMX control as the distance between the peel and the bulkhead varies continuously along its length, so the fittings will need to be dimmed differently along the entire detail to create consistency in brightness along its length. The width of peel illuminated will diminish towards the ends.

The importance of this element to the development and the difficulty of the lighting task means that it is essential that this is tested by a 1:1 scale mock-up of a section of peel.

Both lighting details will use warm white light (2700-3000K) to compliment the material finishes of the peel. The exact colour temperature of the LED is to be determined by a full scale mock up.

Technical Requirements

A clean and uniform light distribution and consistent lit effect on surfaces without any unattractive scalloping patterns of light, sharp defined shadowing or visible shadow gaps. Direct view of equipment, and in particular, the LED light source itself, to be minimised through the use of louvres to ensure the visual focus is kept on the illuminated roof peel surface.

Design Development

The Design & Build contractor’s design team will need to carry out design development including (but not limited to) the following:

- Development of the two lighting details including the louvred channel design.
- 1:1 mock-up to test and refine the two lighting details and to demonstrate the lit effect to the Client and Design Team.
- Finalisation of the luminaire specification.
- Development of the luminaire mounting and cabling detail including confirmation of suitable accessible location for remote drivers and associated DMX control components.

Early concept sketch of anchor unit seen from yard

8.0 LIGHTING CONTROL

8.1 Lighting Control Intent

Overview

Coal Drops Yard will be an ever-changing part of the Kings Cross Central estate. Whether receiving deliveries in the early morning, operating with all the stores open, operating with only F&B outlets open or simply acting as a thoroughfare in the early hours of the morning, the lighting within Coal Drops Yard will need to change constantly to adjust to the changing needs of the site.

A lighting control system will be required to programme and deliver all of these lighting different lighting scenes, to enable energy savings through dimming and to allow estate management centralised control and monitoring.

A public realm lighting control system is currently being delivered across the estate. Coal Drops Yard shall be added as an additional area to this control system, with all of the elements contained within the Speirs + Major scope included on the system. Whilst the interior element of the feature roof peel lighting is located within the anchor store interior, the lighting of roof peel (both interior and exterior) shall be controlled by the Landlord, not by the anchor tenant.

System Detailed Design + Specification

The system is being designed and delivered for Argent by Control Lighting (www.control-lighting.com, contact: Ray Dolby).

Control Lighting shall be engaged to undertake the detailed design of the Coal Drops Yard control system design during Stage 4 contractor design development.

The system installed must be based around the ETC Paradigm architectural lighting control system.

Specific Requirements

As the functionality offered by the system is understood and the use of the system is well established, a detailed system specification has not been produced. However we have stated below a small number of specific requirements for Coal Drops Yard below:

- Photocell (to be attached to a north-facing surface unaffected by artificial illumination and out of direct view of the public)
- DMX control for the lighting of the roof peel
- DMX control for the feature metal mesh curtain lighting within cores.
- Touchscreen (to be located with the equipment racks) to allow local control and testing

A full system specification must be sought from the Lighting Designer in the event that the Client decides to discontinue the expansion of the site-wide lighting control system.

Equipment Location

Sufficient space must be allocated within a dry, clean, ventilated plant room or similar space to accommodate the control racks.

Commissioning + Programming

The quotation for the system must allow sufficient time for both commissioning and programming of the system.

At least three days of programming time (include after hours working) must be allowed within the allocation of site time. This allocation cannot be affected by any overruns in time spent commissioning.

Event Lighting Control

Coal Drops Yard is intended to be a very active events space. The brief and design for this is still being developed by Argent and the events consultant Allium.

Lighting control for events is almost certainly to be hired in on an event-by-event basis. However, a cost allowance should be made for a simple push button interface which could be temporarily installed at the event control desk point to enable selection of two architectural lighting control states (in essence a house lighting control).

The requirement for this ‘house lighting’ control interface should be ascertained during Stage 4 with the Client and Allium.

9.0 TEMPORARY LIGHTING

9.1 Event Lighting

Description

As previously stated, Coal Drops Yard is anticipated to be a very active events space. The nature and details of the events likely to be staged are currently under development by Argent and events consultant Allium.

The permanent lighting infrastructure to stage these events is likely to be limited to rigging points, power provision and a data network, to the specification of the events consultant. These requirements will need to be picked up in the architectural and electrical designs respectively.

At present there is no intention to include permanent event lighting fixtures with the initial installation. Provided that the lighting infrastructure is sufficient it will be easy to add these at a later stage if required.

In Section 8.1 a temporary 'house lighting' control has been mooted for positioning at the event control desks. The requirement (or otherwise) for this needs to be discussed during Stage 4 contractor design development.

Speirs + Major have also suggested the inclusion of a 48mm diameter events lighting bar, to be mounted to the edges of the viaducts along their full length (except at the steps), to provide lighting positions for the full extent of the yard. The requirement (or otherwise) for this also needs to be discussed during Stage 4 contractor design development, but cost allowance should be made for it in the meantime.

Design Development

- Finalise infrastructure requirements with Argent and Allium.

9.2 Seasonal Lighting

Description

It is likely that will be a need to install seasonal lighting, most notably Christmas lighting.

The aspiration that Coal Drops Yard should be a unique, stylish retail destination needs to be reflected within the design of the seasonal lighting. It is probable that this will need to be specially commissioned, perhaps with the involvement of an artist or designer.

Seasonal lighting will require rigging and power provision. Also, given the advance in technologies, data provision would also be advisable.

The most unique position available for an installation would be suspended underneath the soffit of the anchor unit above the yard. Given that there will be rigging, power and data provision here for events, nothing further should be needed for seasonal lighting.

More conventional positions for seasonal lighting would be across the facades of the buildings above the archways. However, we would advise against these both to avoid the obvious and to avoid damage to the fabric of the buildings. It would be worth having data and power available underneath the soffits of the viaducts to enable installation underneath or along the edges of the viaducts.

We would advise installing power and data provision (most probably within ground recessed units) within the area at the base of the ramp as this would seem a natural position for a Christmas tree or other installation.

Provision for Lower Stable Street would be difficult without mounting onto listed fabric. Instead we would advise installing power and data provision to enable Christmas lighting to be installed into the trees down Stable Street continuing the provision down the 'green spine'. Great care must be taken with the choice of data connector and positioning. The insensitive power provision on the Cubitt Square and Cubitt Park masts and columns will not be acceptable.

As with the event lighting provision, the rigging provision and the power/data provision should be picked up in the architectural and electrical drawings respectively.

All details relating to seasonal lighting needs to be further discussed and developed during Stage 4 contractor design development, but cost allowance should be made for it in the meantime.

Design Development

The Design & Build contractor's design team will need to carry out design development including (but not limited to) the following:

- Develop Seasonal Lighting infrastructure provision with Argent.
- Research discrete socket types suitable for wet locations and provide samples for Client and Design Team review.

Reference image of specially commissioned seasonal lighting installation