

# Euston Tower - Lighting Strategy

January, 2024



# Introduction

This report outlines the lighting strategy for the Euston Tower development public realm and tower nighttime appearance. The design work here has been developed in collaboration with Architects 3XN and Landscape Architects DSDHA. This proposal, along with the landscape works, is illustrative at this stage and will be refined and further coordinated at a later design stage.

This document is intended to support the planning application, which has been submitted on behalf of British Land Property Management Limited, who is the Applicant.

## Project Description

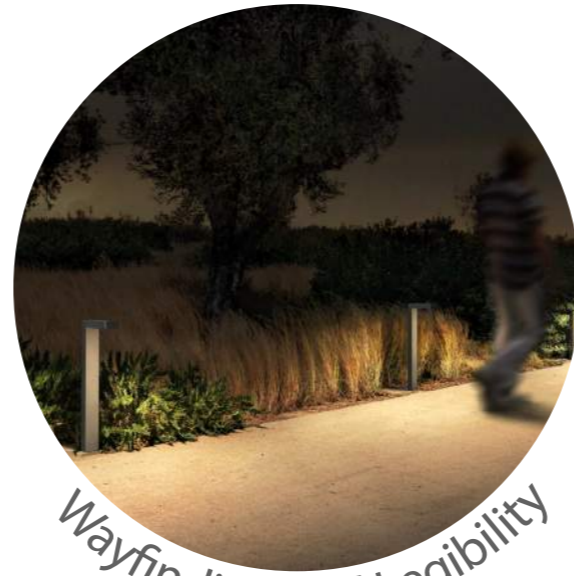
The proposal involves the redevelopment of Euston Tower comprising retention of parts of the existing building (including central core, basement and foundations) and erection of a new building incorporating these retained elements, to provide a 32-storey mixed-use building providing offices and research and development floorspace (Class E(g)) and office, retail, café and restaurant space (Class E) and learning and community space (Class F) at ground, first and second floors, and associated external terraces; public realm enhancements, including new landscaping and provision of new publicly accessible steps and ramp; short and long stay cycle storage; servicing; refuse storage; plant and other ancillary and associated work.

The ground floor will connect directly with levels 01 and 02 through a terraced landscape with publicly accessible staircase and ramp that will integrate biodiverse planting, seating, and spaces to socialise along the level change. The accessible ramp will lead from the ground floor within the central square to the cafe entrance on Level 01. The set of external stairs and accessible lift from Level 01 will allow for access to publicly accessible facilities and terrace on Level 02. Integrated beneath the terraced landscape will be a ramped cycle entrance that will lead to 861 long-stay cycle store within the tower's basement. Gas delivery for the proposal will be accessed through a controlled entrance point at Triton Square and unloaded at a designated point on the west end of Brock Street. Basement delivery and parking access will be maintained through the shared cycle-vehicle entrances on Drummond Street.

The Proposed Development will include the enhancement of the existing public realm in Regent's Place, along Brock Street, Hampstead Road, and Euston Road within the applicant's ownership boundaries above ground totalling nearly 8000m<sup>2</sup>.



*Placemaking*



*Wayfinding and Legibility*



*Perception of Safety*

# Lighting Philosophy



*Minimise Light Pollution*



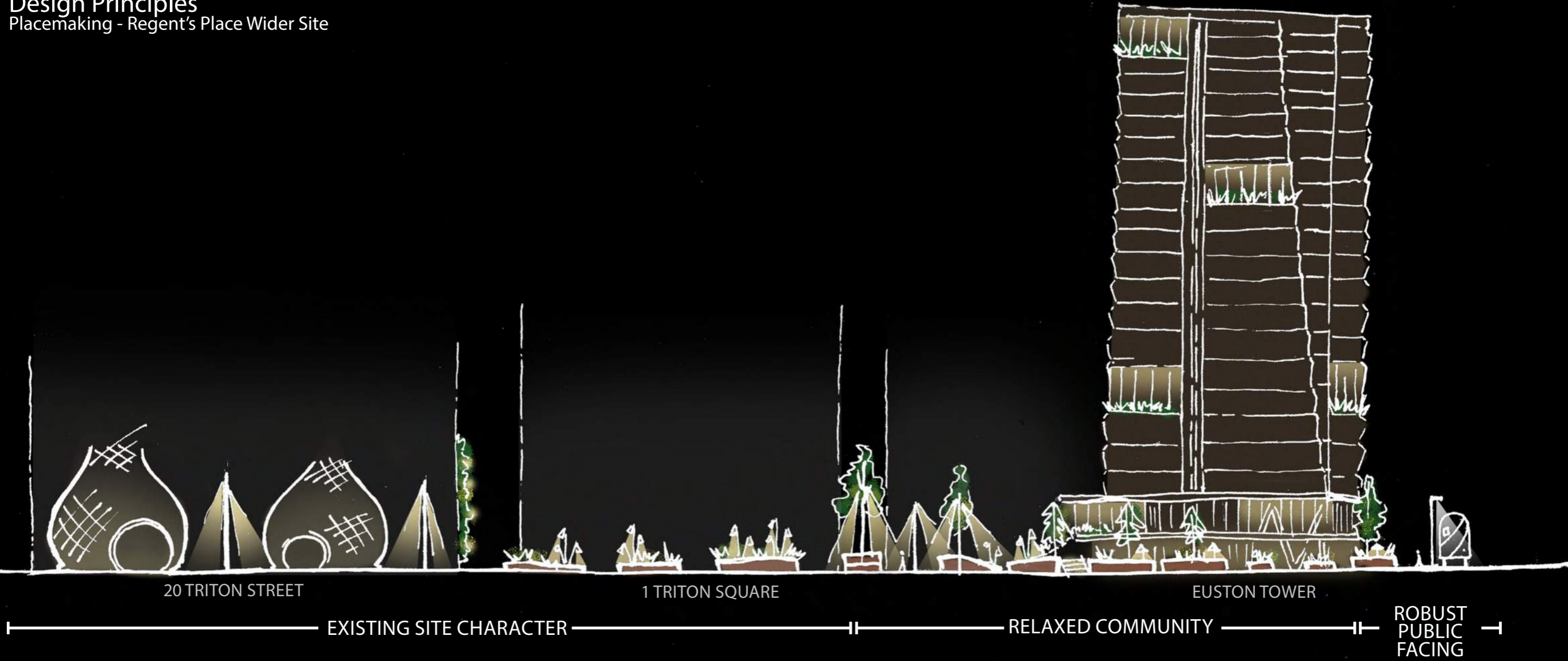
*Sustainability*



*Community*

# Design Principles

Placemaking - Regent's Place Wider Site



## EXISTING SITE



## NEW DEVELOPMENT

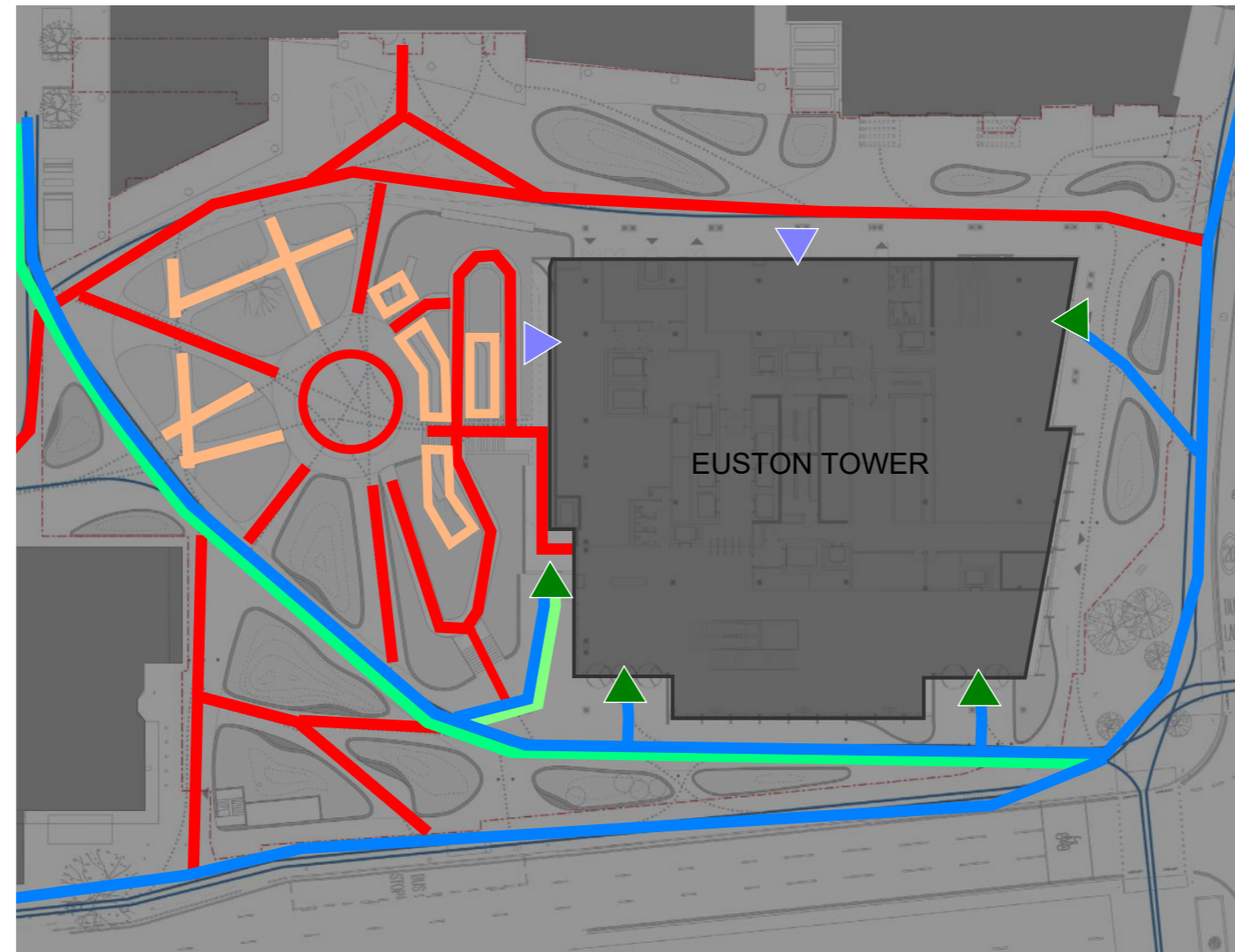
## Design Principles Wayfinding and Legibility

Lighting will reinforce wayfinding and legibility across Regent's Place, different routes and character areas will be defined by equipment typology and appropriate light levels.

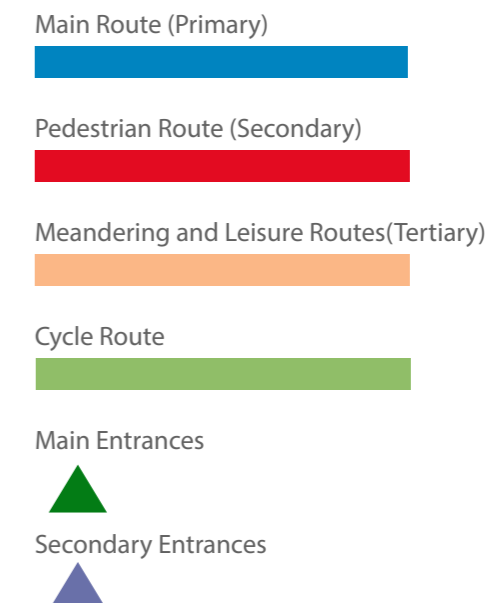
Primary routes will be distinctly brighter than secondary routes intended for pedestrians and meandering. The key route intended for shared use with cyclists will feature column mounted lighting.

Secondary and Meandering routes will be characterised by lower illuminance levels, equipment will be low level, and integrated to seating or other street furniture. In seating areas, lighting will create a focus inviting visitors to dwell and activate the space.

Building entrances will be accentuated by dedicated focus lighting to signal their importance.



Overall site route map



Cycle routes



Pedestrian routes



Meandering and Leisure routes



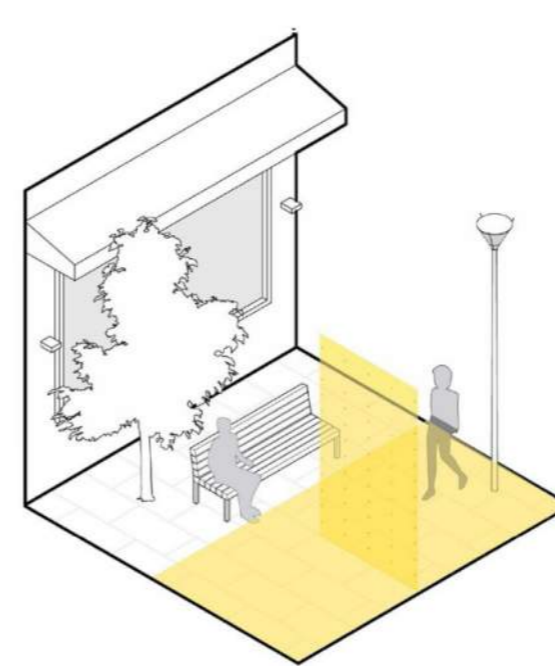
Main entrances

## Design Principles

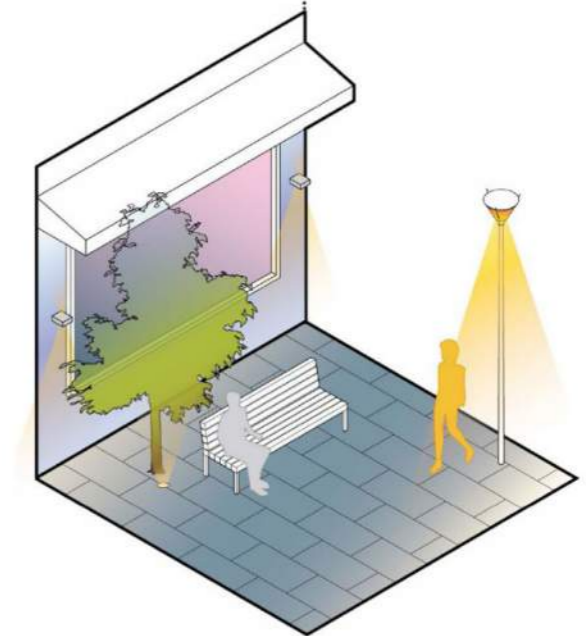
### Safety

The lighting strategy will create a safe and welcoming environment in the hours of darkness. Traditionally best practice in lighting design has leant itself to simply satisfying minimum and average requirements of illuminance in the horizontal plane and vertical planes. The proposed approach goes beyond this, considering quality, contrast and distribution, to create a balanced approach with layers of light. This approach has been developed by [Arup Research](#).

- Surface illumination combined with vertical and spatial accents
- Prioritise low contrast fixtures to minimise instances of glare
- Lighting integrated at low level to avoid direct view to fixtures; the effect is visible, rather than the light source.
- Creation of focal points to encourage dwell, activation and natural surveillance through occupation.



Design by Criteria - Conventional Approach



Holistic Design - Arup Approach

The illuminated soffit draws the eye upward, enhances perceived brightness, and appears welcoming

The permeable glazed facade showcases the internal lit character of the building, and emanates a light glow to its immediate surroundings.

Dedicated lighting to entrances creates pools of light aiding wayfinding into the building

Downward accent light to landscape elements creates playful pockets of light and minimises upward light, reducing contribution to sky glow

Illumination at seating creates an inviting ambiance for a moment of leisure



## Design Principles

### Community

The project's aspirations to continue to provide accessible community spaces will be supported by the lighting strategy:

- Interior lighting visible through the permeable façade will reveal activity inside and create a sense of anticipation
- Lighting at podium level will lead visitors to community and coworking spaces
- Focused lighting to Regent's Place Plaza could support projectors and/or other temporary lighting for integration with artwork or other community events, bringing the opportunity to imbue the lighting with an element of play for all ages
- Improvement to peoples' wellbeing by having access to quality public space at night

While it is intended that the lighting will support improved use and activation, lighting is not intended to be used throughout the night. A security setting is proposed to reduce illumination levels outside of standard operating hours (between 11pm-7am), which will be achieved through sitewide control system.



Community events at night



Public space activated by play artwork

## Design Principles Sustainability

The lighting system will be developed to align with the wider projects sustainability goals, this will be achieved by:

- The lighting strategy will effectively and efficiently illuminate public spaces, such that equipment can be minimised, reducing embodied and operational carbon.
- The lighting strategy will include a robust future proof control system, to adapt to future use and new technologies.
- The scheme will use contemporary luminaires with high efficiency LED light sources, high quality optics and optical accessories to ensure that unnecessary light spill is minimised.
- Equipment selection: will include fixtures with durable materials, and consider future re-use and modular replacement and upgrade.
- Utilise standard products, avoiding cost and complications of bespoke solutions.

Generally the following principles of circular economy will be applied to the lighting design.

### 1. Circle of lighting materials

Lighting products should be capable of being dismantled to base components to be up or down cycled, or, as a last resort, re-cycled and returned to the materials reservoir.



### 2. An adaptable system

Lighting systems must be able to adapt to new layouts, functions and programmes over a building's lifetime, while being able to integrate with technologies that may not exist at the time of design.



### 3. Higher flexibility, higher resilience

Lighting outputs, layers, and distributions of light within a space must be flexible to accommodate variable functions and uses throughout the day.



### 4. High quality design

A successful circular lighting design must go beyond box checking of energy efficiency and longevity. The quality of the lighting design will have a significant impact on the longevity of its use, affecting its circularity.



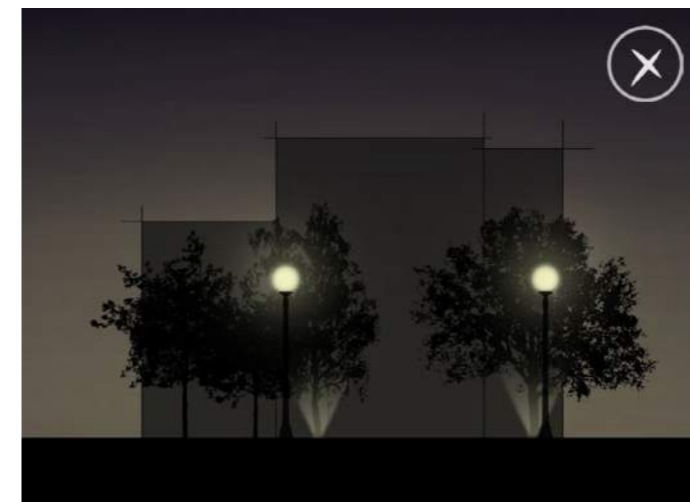
## Design Principles Minimising Light Pollution

Regent's Place features high ambient light levels due to spill light from commercial properties, lighting in the existing public realm, signage to retail units and any lit seasonal features.

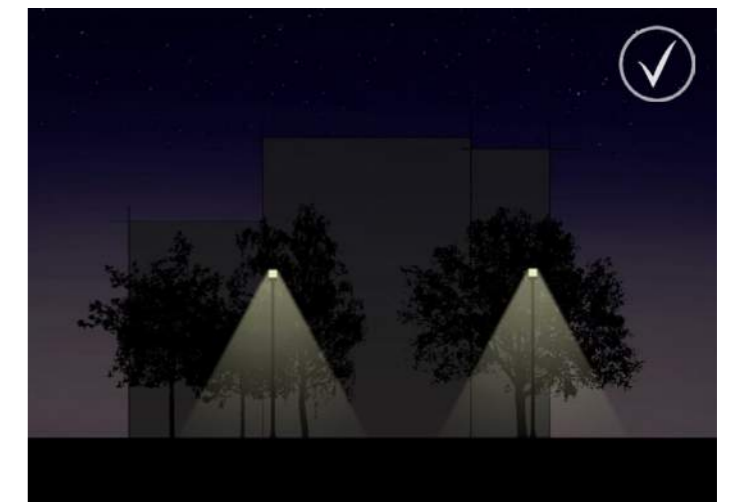
Existing lighting conditions, provided by a combination of lighting equipment on the site and borrowed light from adjacent installations, combined with the central London location makes this site unsuitable for creating inherent darkness typically required to support habitats for bats and insects.

While true darkness cannot be achieved, there are a number of measures to be employed to minimise the detrimental effects of lighting:

- Warm white light will be used across site, preferred by people and various bat species
- Lighting equipment will feature focused downward light and optical accessories to minimise upward light and ensure that any unnecessary light spill is minimised.
- The control system will ensure that lighting is in operation only at times that it is required. For example on light nights in the summer, lighting equipment will only be in use from dusk up until the curfew time (11pm)



Upward light



Controlled downward light



## Design Strategy

### Overall Site Characteristics

Main design characteristics throughout the site include:

- A Moonlighting from trees creates visual interest and casts a dappled light effect on planting below
- B Pools of light at entrances aids wayfinding into the building and feels welcoming
- C Accent illumination beneath seating encourages dwell
- D Downward accent lighting to planters minimises upward sky glow and creates pockets of warm glow within the planting
- E Column lighting to the shared pedestrian and cycle path increases vertical illumination, enhancing perception of safety and aiding wayfinding
- F Low level lighting to wetland paths creates reflections on the surface of the water
- G Multi-spots to columns can be used for events or performances to create increased lighting to central area or decorative projection.



Site wide lighting strategy

## Design Strategy

### Euston Road - Entrances

#### Lighting Layers:

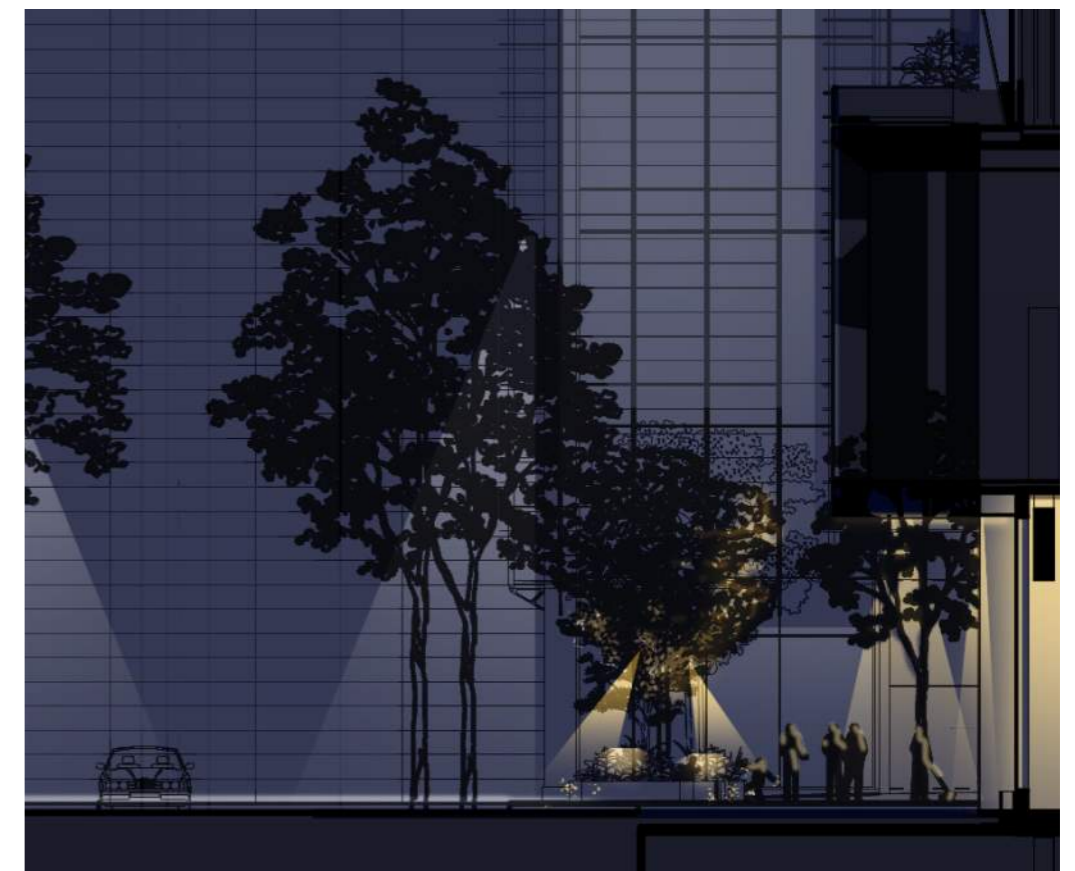
1. Light effuses from the facade, casting incidental lighting on surrounding planting and providing comfortable ambient light. As the facade is permeable, the inner workings of the building appear welcoming and accessible.
2. Entrances to the building are marked by pools of light at the threshold, increasing wayfinding into the building.
3. Uplighting to the canopy lifts the perceived brightness of the space while creating a consistent lit surface treatment around the building.
4. Interior illumination on the upper levels of the building lightly accent the adjacent exterior structure, defining the buildings night-time appearance by enhancing the rhythm of the facade.
5. Walls adjacent to entrances will be lit externally to emphasise signage
6. Fins will be accented to continue the lit surface at the upper level. Accenting these elements raises perceived visual brightness of the area and showcases another element of the facade's rhythm.
7. Downward accent light to landscape elements create playful pockets of light. This treatment continues the precedent approach from Regent's Place, creating visual cohesion across the wider site.



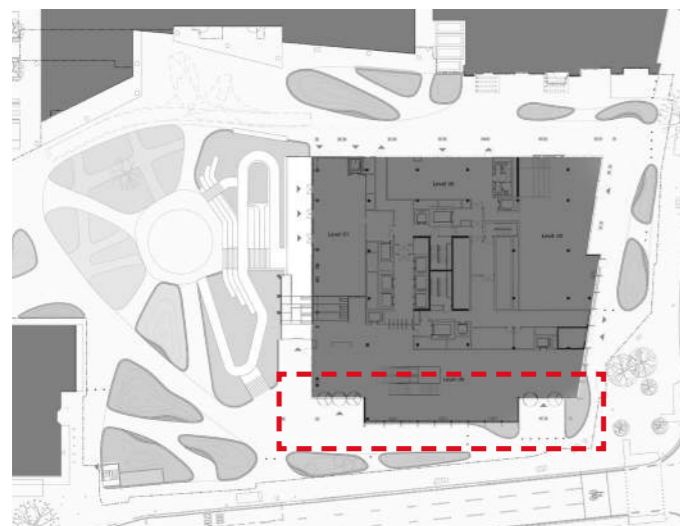
Euston Road | Lighting Study Perspective



Euston Road | Lighting Study Perspective



Euston Road | Lighting Study Section



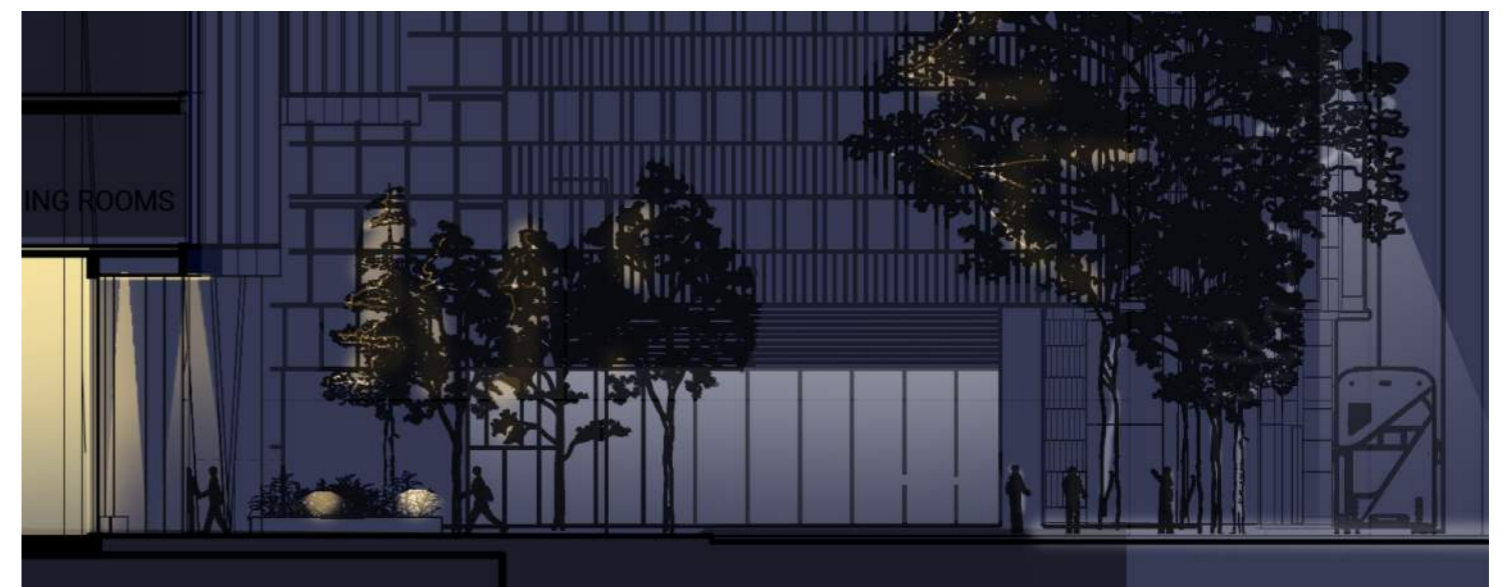
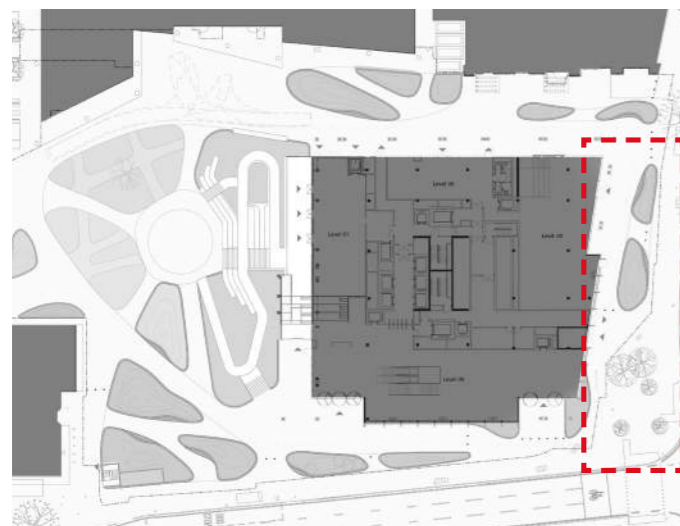
## Design Strategy Hampstead Road

### Lighting Layers:

1. Light effuses from the facade, casting incidental lighting on surrounding planting and providing comfortable ambient light. As the facade is permeable, the inner workings of the building appear welcoming and accessible.
2. Entrances to the building are marked by pools of light at the threshold, increasing wayfinding into the building.
3. Uplighting to the canopy lifts the perceived brightness of the space while creating a consistent lit surface treatment around the building.
4. Interior illumination on the upper levels of the building lightly accent the adjacent exterior structure, defining the buildings night-time appearance by enhancing the rhythm of the facade.
5. Walls adjacent to entrances will be lit externally to emphasize signage or community message board
6. Downward accent light to landscape elements create playful pockets of light. This treatment continues the precedent approach from Regent's Place, creating visual cohesion across the wider site. The physical appearance of low level luminaires located in planting along Hampstead Road will share visual characteristics aligned to similar equipment on site and will be physically robust to suit the high traffic, public thoroughfare.



Hampstead Road | Lighting Study Perspective



Hampstead Road | Lighting Study Section

# Design Strategy

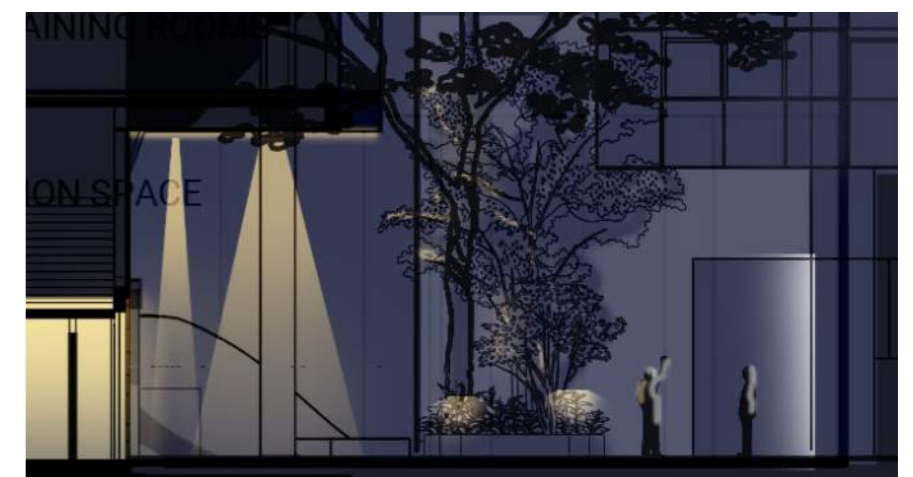
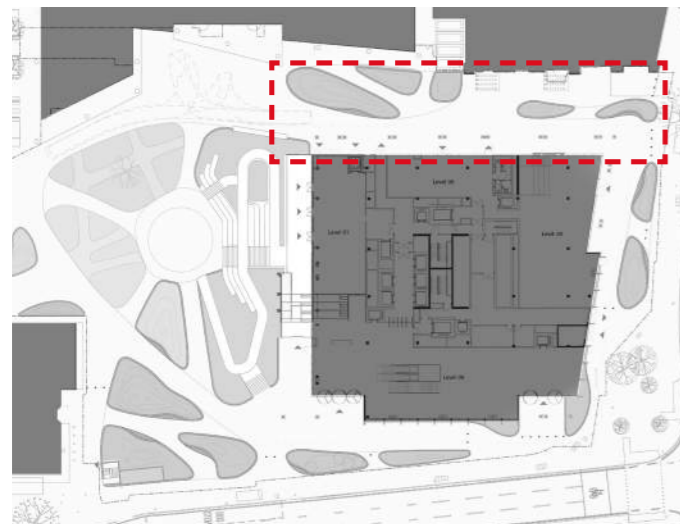
## Brock Street

### Lighting Layers:

1. Light effuses from the facade, casting incidental lighting on surrounding planting and providing comfortable ambient light. As the facade is permeable, the inner workings of the building appear welcoming and accessible.
2. Entrances to the building are marked by pools of light at the threshold, increasing wayfinding into the building.
3. Uplighting to the canopy lifts the perceived brightness of the space while creating a consistent lit surface treatment around the building.
4. Downward accent light to landscape elements create playful pockets of light. This treatment continues the precedent approach from Regent's Place, creating visual cohesion across the wider site.



Brock Street | Lighting Study Perspective



Brock Street | Lighting Study Section

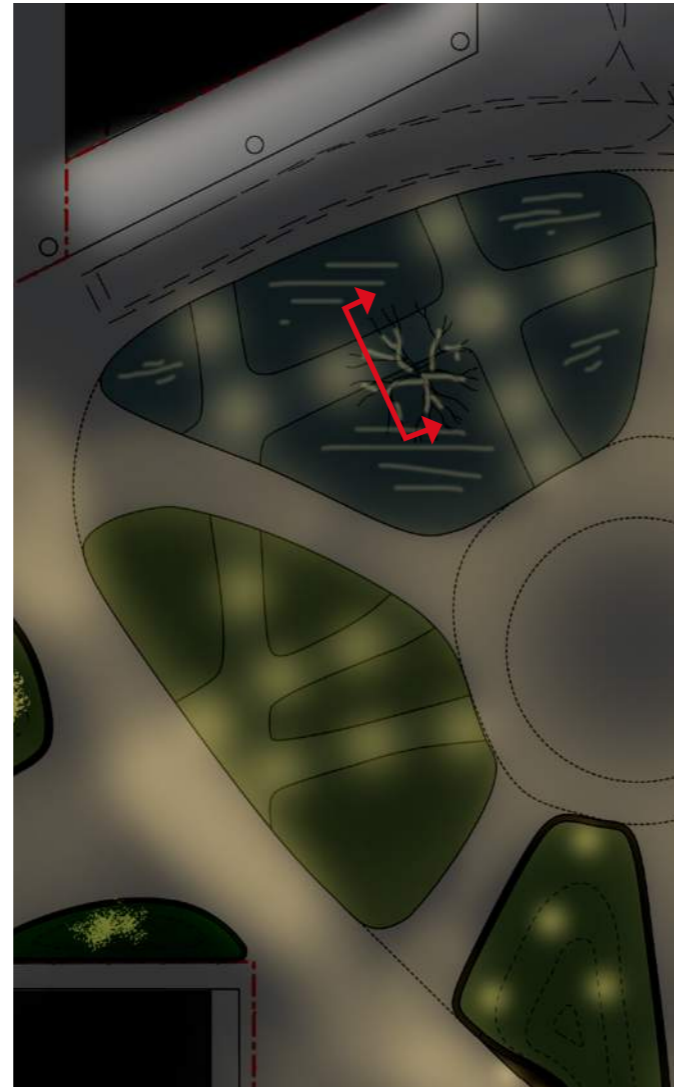
## Design Strategy

### Wetlands

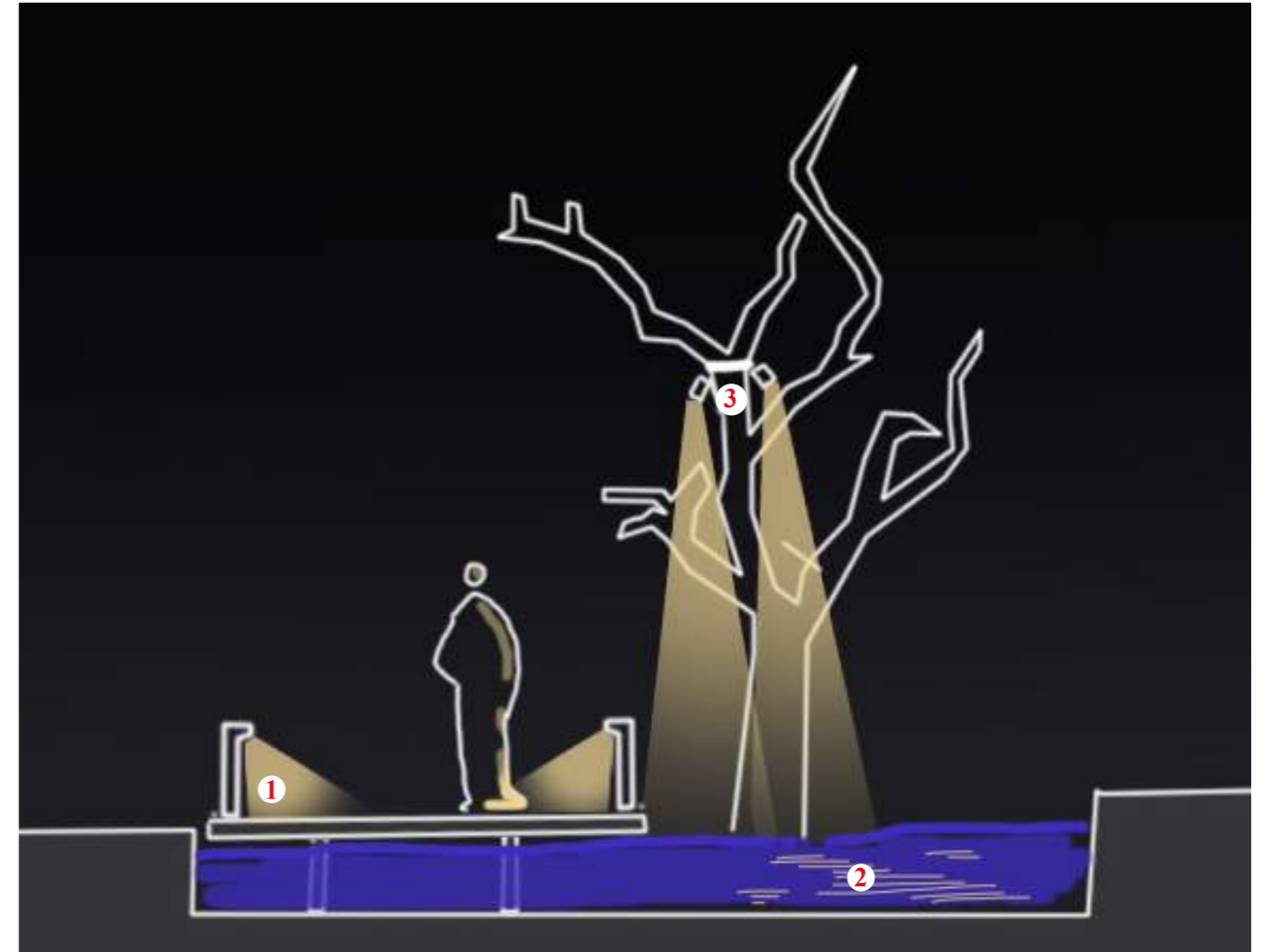
The North-most wetland area is expected to maintain water at all times while the south-most wetland area is expected to flood occasionally, water draining away within 24 hours. Direct light to these areas is intentionally avoided, to encourage reflections on the water's surface.

#### Lighting Layers:

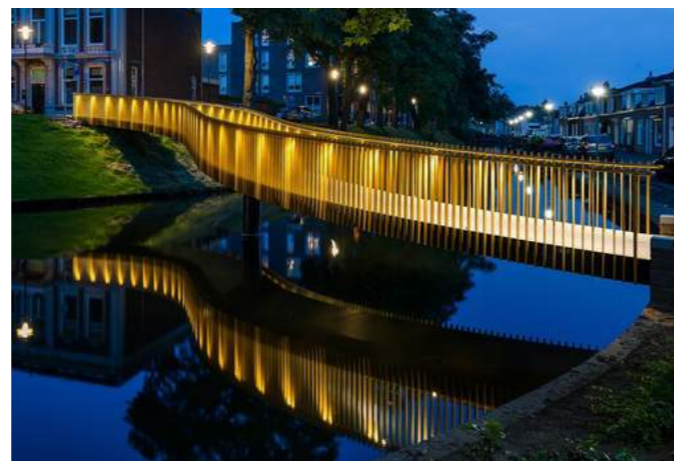
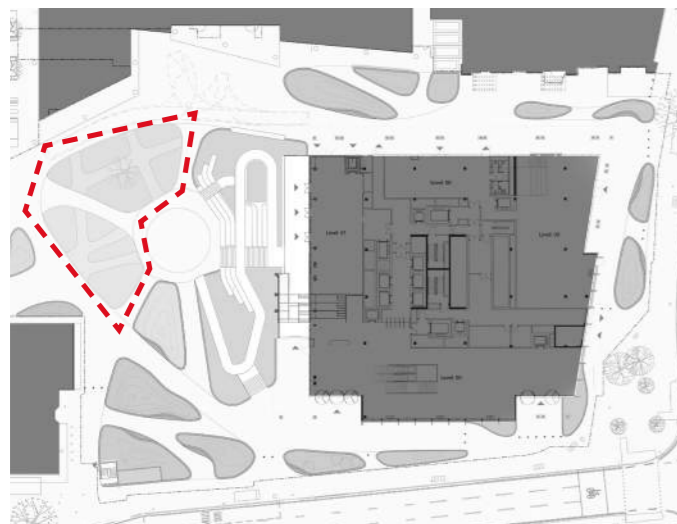
1. Low level path lighting lends a subtle effect to the areas, allowing a small amount of incidental light to be cast on nearby planting.
2. Nearby lighting and surrounding building lighting will reflect in the water.
3. Downlight accenting at the habitat tree draws vertical visual interest and will reflect back into the pool below.



Wetland Areas | Plan



Wetland | Lighting Study Section



Reference | Lighting reflected in water



Reference | Low level path light



Reference | Moonlighting

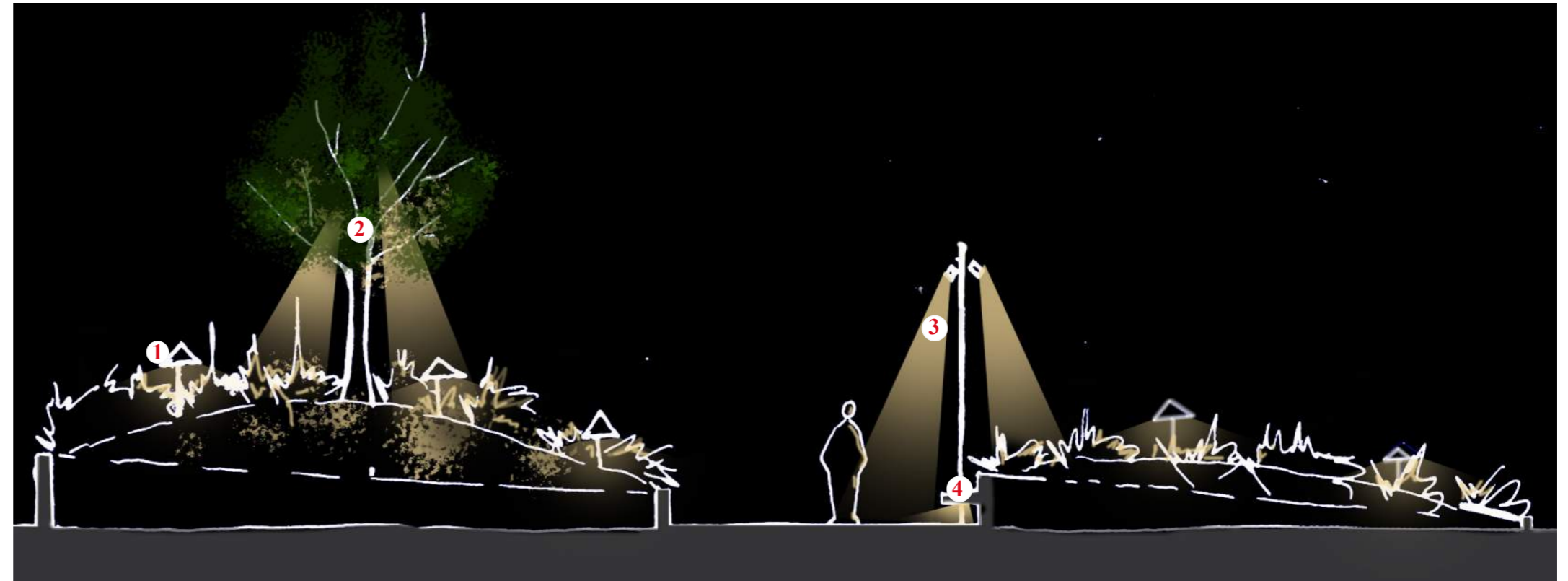
## Design Strategy

### Euston Road - Planting Areas

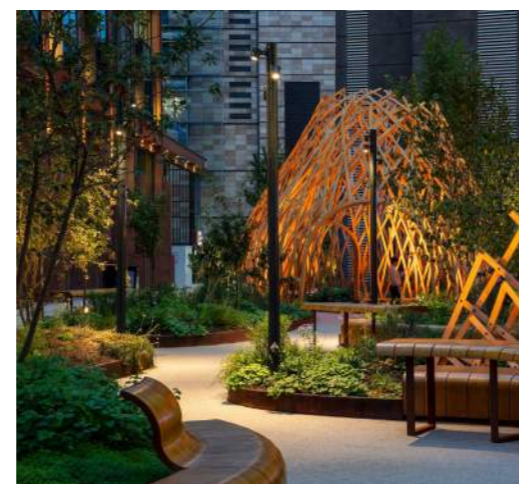
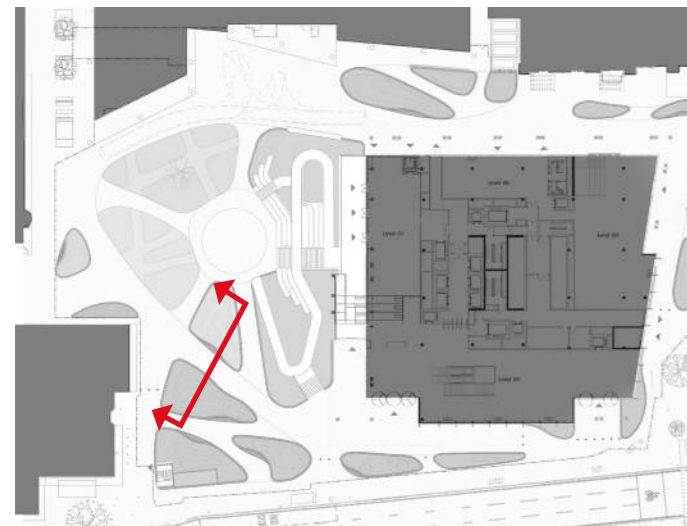
The planting areas adjacent to Euston Road will feature a consistent design language carried across from other areas recently redeveloped in the wider site. Where possible and appropriate, lighting equipment to Euston Tower landscape areas will use the same family of fixtures as used across the wider site, to ensure visual continuity throughout.

#### Lighting Layers:

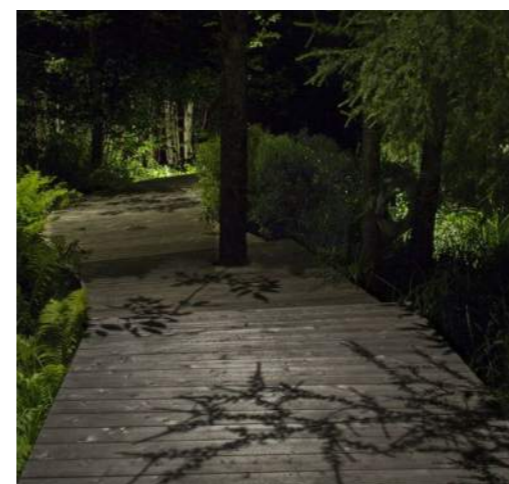
1. Downward accent light to landscape elements create playful pockets of light. This treatment continues the precedent approach from Regent's Place, creating visual cohesion across the wider site.
2. Moonlighting from trees creates visual interest and casts a dappled light effect on planting below, this features is used adjacent to 1 Triton.
3. Column-mounted lighting illuminates the proposed bike path and main thoroughfare of the site. Columns will maintain a pedestrian scale, lending a comfortable atmosphere, yet still providing essential vertical illumination for safe wayfinding through the site for both cyclists and pedestrians.
4. Individual, soft point sources at the bench underside create a welcome seating environment, and harken to the soft pockets of accent light in the landscaping.



Shared Cycle route | Lighting Study Section



Reference | Regent's Place



Reference | Moon lighting



Reference | Bench lighting



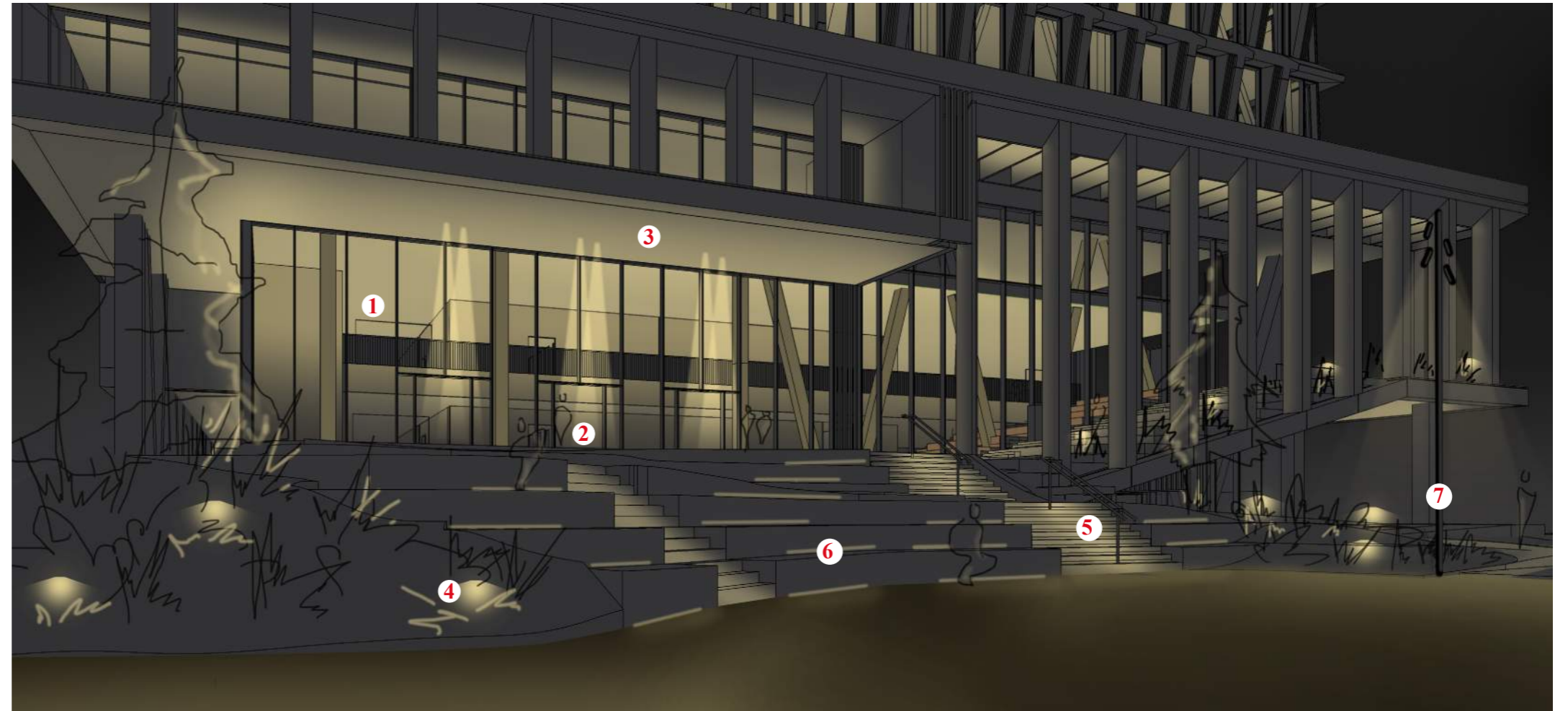
Reference | Downward accent light

## Design Strategy

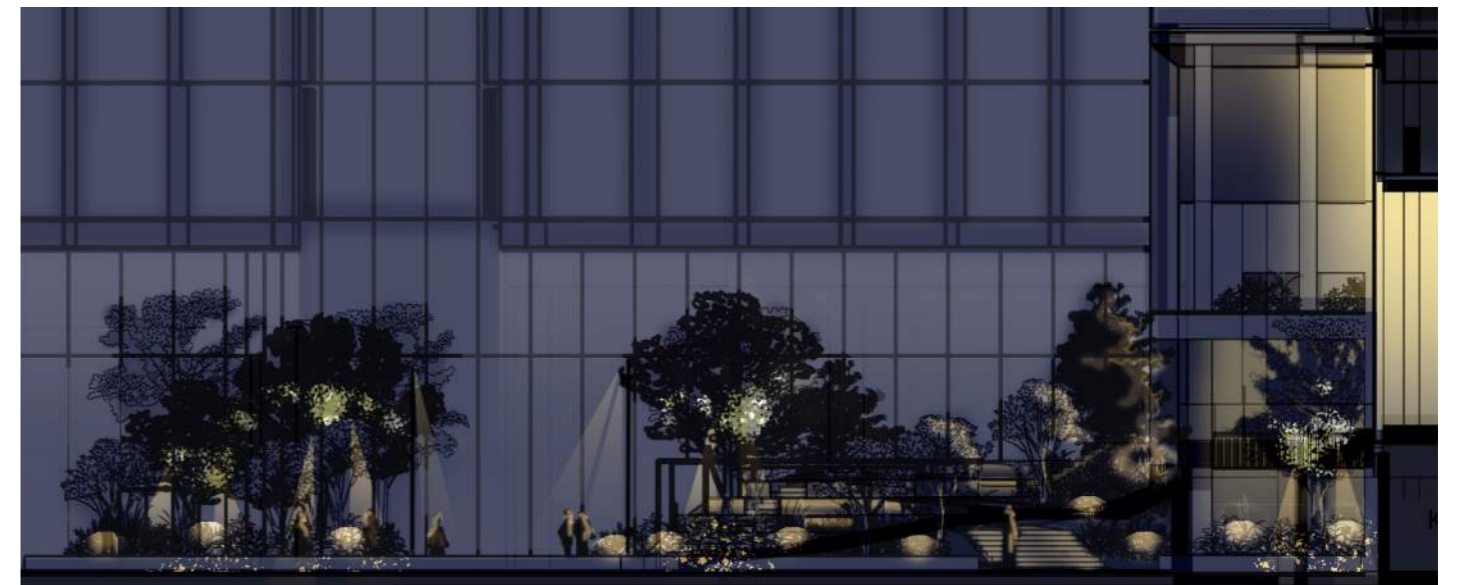
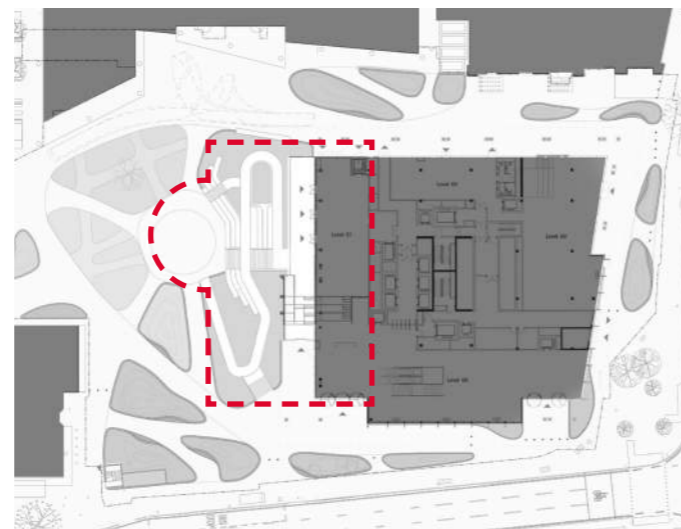
### Podium and Central Site

#### Lighting Layers:

1. Light effuses from the facade, casting incidental lighting on surrounding planting and providing comfortable ambient light. As the facade is permeable, the inner workings of the building appear welcoming and accessible
2. Entrances to the building are marked by pools of light at the threshold, increasing wayfinding into the building.
3. Uplighting to the canopy lifts the perceived brightness of the space while creating a consistent lit surface treatment around the building
4. Downward accent light to landscape elements create playful pockets of light. This treatment continues the precedent approach from Regent's Place, creating visual cohesion across the wider site.
5. Lighting integrated to the handrail provides direct illumination to stairs
6. The seating area will feature integrated bench lighting, in intermittent locations, inviting people to dwell.
7. Dedicated column lighting (8m) to the central area provides illumination for flexible programming and creates the opportunity for additional lighting that can help create community activation
8. There is to be a provision of a power supply to the Regent's Place Plaza for flexible programming such as markets and outdoor cinema.



Podium Seating | Lighting Study Perspective



Regent's Place Plaza and Podium | Lighting Study Section

## Design Strategy

### Tower Characteristics

Euston Tower's night time appearance will be characterised by its interior lighting, terrace lighting and landscape strategy.

The form of the building will be revealed by the interior lighting shining on to the window reveals, creating a sense of form and rhythm that varies upon viewing angle. In contrast, uplighting to terrace soffits, will be continuous delineating their form.

Soffit uplighting is also employed at the podium level creating a welcoming entrance and visual interest from a distance in the hours of darkness.

It is expected that in the hours of darkness, outside of operating hours, lighting equipment to commercial spaces will be programmed to switch off when offices are unoccupied. As such internal lighting will create an occasional, unpredictable pattern in the lit effect.

The upper floors housing plant equipment are not intended to be illuminated in the hours of darkness.

Warm white light is recommended throughout to harmonise with the natural warmth of the facade material.



Terrace | Lighting Study Section



Reference | Soffit lighting, effect of spill light, illuminated interior



Euston Tower | Lighting Study Perspective



# Design Strategy

## Controls

It is anticipated that publicly accessible areas in Euston Tower will operate with defined opening hours, with potential extended opening times for events. The commercial and lab enabled tenant spaces will have 24/7 access.

The typology of equipment and hours of use will vary throughout the hours of darkness. This will be aligned to seasonal variation. The lighting control system is an essential tool to manage these assets and minimise unnecessary energy use. (Graphics opposite illustrate variation in hours of use throughout the year).

The lighting control system will have a single master 'owner' or 'user'. The system will have the capability to grant access to and be operated by multiple users, for example; British Land, commercial and retail tenants, and/or community user groups. The extents of permissions granted to different user groups will be determined in later design stages.

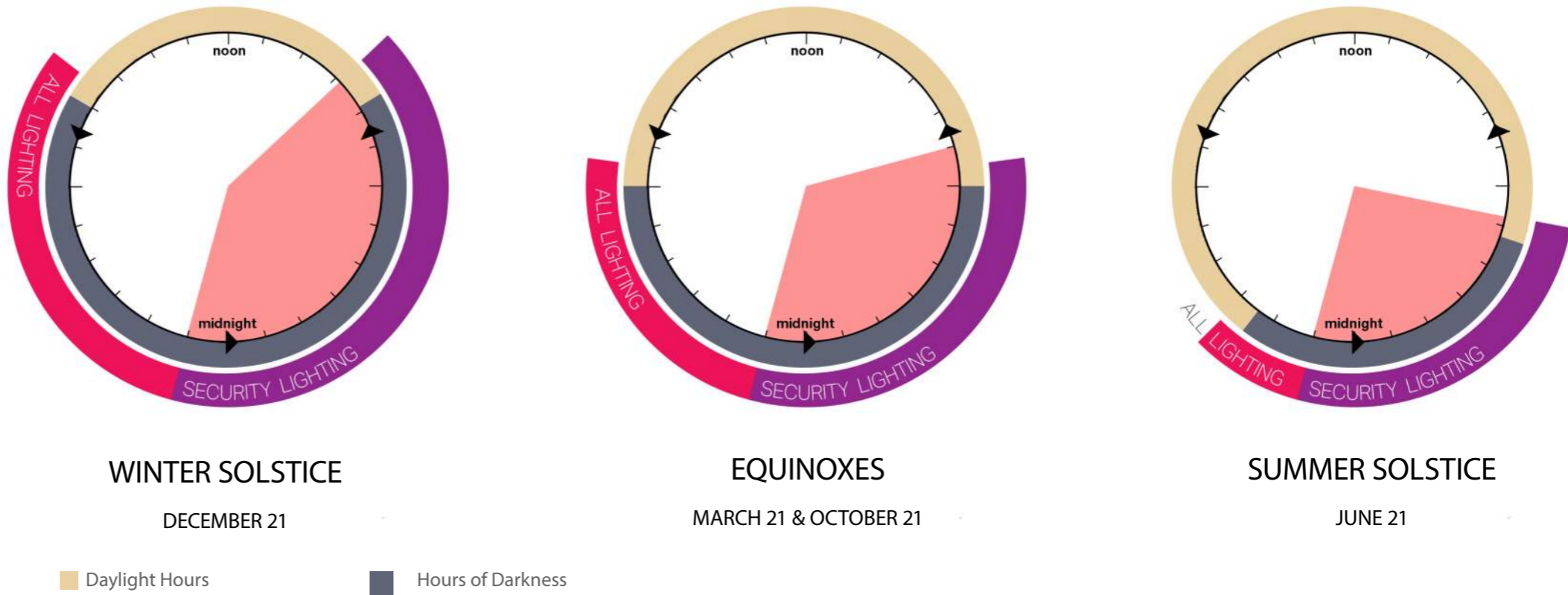
The public realm lighting will be controlled via a digitally addressable lighting control system that enables luminaires to be grouped into scenes that can be programmed to be recalled at certain times and for different uses. The lighting control system will have the capability to be programmed for timed events and to be overridden as required.

The lighting control system may be a stand alone system, or may be a part of Euston Tower's lighting control system. The system is to be developed such that it features capability to communicate with lighting control systems operating exterior across the wider Regent's Place site.

Any illuminated signage used on site is to be provided with a means to control the intensity of the lit element post installation. This is to ensure that the surface luminance/brightness can be adjusted to meet the requirements of design guidance and be balanced with the surrounding ambient light levels to avoid excessive brightness and over-dominance of the visual scene.

It is imperative that all lighting equipment and controls are future-proofed to allow for the potential integration with maturing digital, smart-city and/or smart-building technologies. As a minimum this shall include the provision of DALI addressable drivers within all luminaire types, allowing for future connection of a CMS and two-way communications such as fault reporting or device self-diagnostics.

- Generally all lighting will:
- Provide a reliable and energy efficient amenity to the Euston Tower development.
  - Be automatically controlled so as to only be activated during hours of darkness and within defined and agreed time periods.
  - Allow separate control of architectural, signage and landscape lighting; allowing switch off and/or dim down of groups or routes after the curfew time(s).
  - Allow opportunity for adaptive control of areas/zones/types of lighting in response to the likely usage and activation of the space required throughout hours of darkness.
  - The lighting control system will enable the possibility to monitor lighting equipment for faults and energy usage.



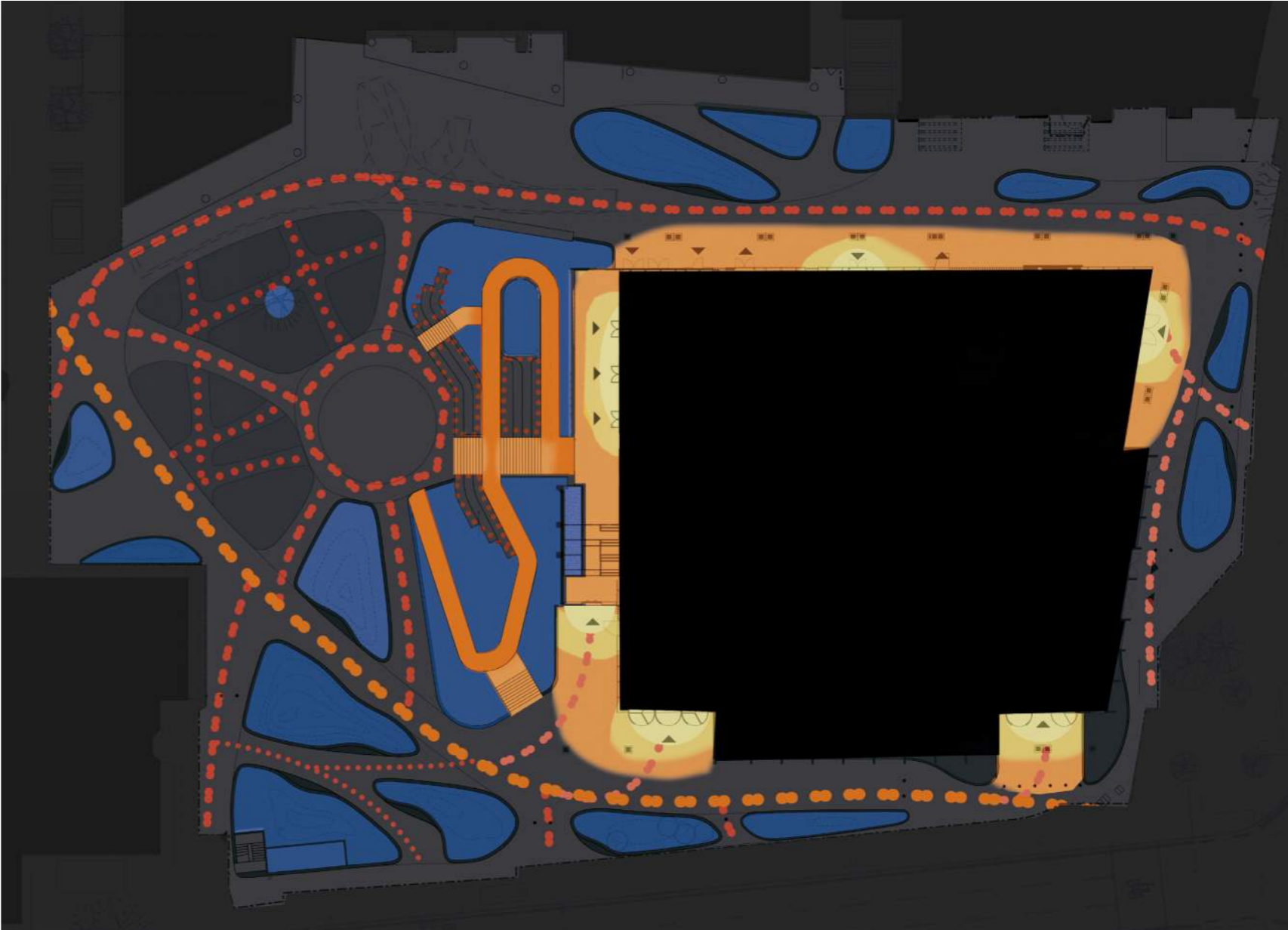
# Design Strategy

## Lighting Criteria

Due to the project's location in central London, the project is classified as being within Lighting Zone E4. This Lighting Zone is characterised as an urban area with high levels of brightness and nighttime activity.

The lighting strategy as presented in the previous sections is to be developed through following design stages to achieve the performance criteria as detailed below in the Lighting Criteria Table. The lighting performance criteria have been informed by the guidance as presented within the following documents:

- BS EN 12464:1 2021 Light and Lighting - Lighting of Workplaces, Part 1: Indoor Workplaces
- BS EN 12464:2 2021 Light and Lighting - Lighting of Workplaces, Part 2: Outdoor Workplaces
- BS EN 5489:1 2020 Design of Road Lighting. Part 1: Code of practice for lighting of roads and public amenity areas
- BS EN 13201:2, 2015 Road Lighting, Part 2: Performance Requirements
- CIBSE SLL Lighting Guide 6, 2016: The Exterior Environment
- Institute of Lighting Professionals (ILP) Guidance Note GN01, 2020: Guidance Notes for the Reduction of Obtrusive Light.
- CIBSE SLL Lighting Guide 21, 2021: Protecting the night-time environment



Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Environmental Zones from the Institute of Lighting Professionals Guidance Note 01 (2020): Guidance Notes for the Reduction of Obtrusive Light

Lighting Criteria			
Locations	Average maintained horizontal illuminance	Average maintained vertical illuminance (for facial recognition)	Notes
Entrances	50 lx	10 lx	
Entrance Transition/Plaza (Events)	30 lx	6 lx	
Transition/Stair	20 lx	-	Stair 20 lux average, 10 lux minimum
Cyclist Route	10 lx	3 lx	0.25-0.4 uniformity
Primary Routes	7.5 lx	2.5 lx	
Secondary Routes	5 lx	1.5 lx	
Tertiary Routes	3 lx	1 lx	
Accent Lighting	NA	NA	