

FOUNDRY

PRSM - 2349

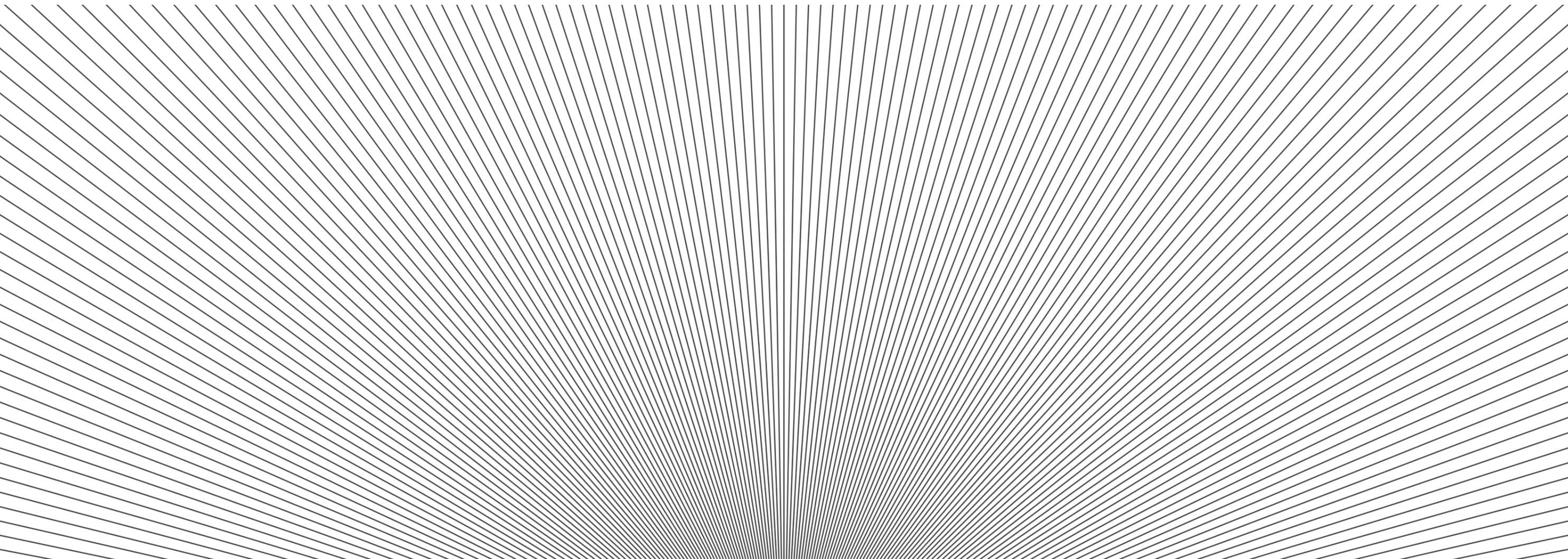
Felix Hotel - Kyn Cambridge

Exterior & Landscape Lighting Concept

5th February 2021

Revision A

Please note this presentation design intent only, to convey the proposed lighting strategy. Final fittings, positions, quantity to be confirmed with further coordination and detail design.



LIGHTING STRATEGY CONSIDERATION

LOCATION & CONTEXT // USE & PURPOSE



CONTEXT & LOCATION:

Hotel Felix located within the North West Cambridge Development is set within a residential area of Cambridge. The property is partly surrounded by residential properties, the agricultural association (NIAB) as well as open fields. The property is set in beautiful, leafy gardens, just 1 mile from Cambridge city centre. The existing property is a substantial Victorian Villa property with extensive landscaped grounds, combining its **traditional Victorian architecture** with contemporary design.

PURPOSE & USE

Kyn Cambridge will be a care home with residents of varying age, ability, medical conditions & eye sight. 'Many residents will have poor eyesight and their adaption to changes in levels of illuminance is relatively slow.'

It is important **minimise glare** by utilising indirect lighting and spotlights only used with care. Sudden changes in illuminance between adjacent areas are not recommended. Exterior lighting is required to mark the access routes to the entrance and provide basic safety and security for residents, staff & visitors during the hours of darkness.

LIGHTING CONSIDERATIONS

The lighting strategy will be conscious of this properties history and context as well as the surrounding buildings (Google Map Images to the right).As part of the design of the exterior lighting scheme we have considered the local context, ensuring that any **exterior lighting design is appropriate** so that it does not appear visually out of keeping with the immediate surrounds. It is also important in the design of all exterior lighting schemes to avoid obtrusive light, ensuring that luminance, illuminance and source intensity levels are within appropriate limits for the immediate area.



LIGHTING STRATEGY CONSIDERATION

ECOLOGICAL REPORT & GUIDELINES

LIGHTING GUIDELINES

The lighting scheme for Hotel Felix exterior landscape we will consider and take cognisance of the following guidelines and principles for the lighting design;

- Bat Conservation Trust
- ILP Guidance - LIP Bats and artificial lighting in the UK - 'Bats and built environment'
- Ecological Appraisal Report - Ecology Solutions ES Group

LEGAL PROTECTIONS OF BATS

Due to the decline in bat numbers over the last century and the importance of specific roost requirements in their life cycle, all species of bat and their roost sites (whether bats are present at the time or not) are fully protected under international and domestic legislation.

It illegal to kill, injure, capture, or cause disturbance that affects populations of bats, obstruct access to bat roosts, or damage or destroy bat roosts. Individual bats are protected from 'intentional' or 'reckless' disturbance under the Wildlife and Countryside Act 1981 (as amended).

LIGHTING STANDARDS

There are a number of British Standards that relate to various components of lighting – BS5489 for road lighting, BS12164 for outdoor workplaces, BS12193 for sports lighting – and there are also guidelines that relate to crime prevention, prevention of vehicular accidents and amenity use. BS5266-1:2011 relates to the design of emergency lighting and specifies that the minimum lighting level within an escape route from a building is 1 lux. While this represents an increase in lighting, because of the nature and infrequent use of emergency lighting (as most systems are non-maintained – off unless an emergency occurs) this should not pose an issue to bats.

ECOLOGICAL REPORT

No bats were seen to emerge any of the buildings within the site, although Brown Long-eared Bat droppings were recorded within a loft void of Building B1. It is therefore considered that the demolition of the buildings within the site does has the potential to destroy a bat roost, or otherwise adversely affect bats and the demolition cannot proceed without a Natural England licence pertaining to bats.

RECOMMENDATIONS

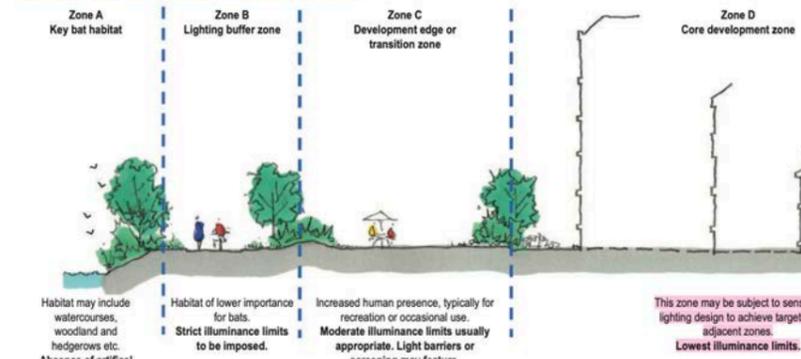
The **lighting scheme for the site should be designed with due regard for bats** and be in accordance with the Bat Conservation Trust's Bats and artificial lighting in the UK Guidance Note 08/189; consideration will be given to the lighting of woodland belt and edge habitats, which have been shown to be of some value to locally present bat species. Specifically, the lighting design should incorporate lighting types and designs to limit any light spillage, which will allow habitats, such as the boundary hedgerows, to remain dark and not shine directly upon the installed boxes.

Lighting across the site would be designed to ensure that light spill is kept to a minimum in known areas of interest, such as the boundary hedgerows.

Bats and artificial lighting in the UK

Guidance Note 08/189

Example of illuminance limit zonation



ILP BATS & ARTIFICIAL LIGHT

Lighting in the vicinity of a Bat roost causing disturbance and potential abandonment of the roost could constitute an offence both to a population and to individuals (Garland and Markham, 2007).

Dark buffer zones can be used as a good way to separate habitats or features from lighting by forming a **dark perimeter** around them. Buffer zones rely on ensuring light levels (levels of illuminance measured in lux) within a certain distance of a feature do not exceed certain defined limits. (Image Above).

Appropriate luminaire specifications

- Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- The use of specialist bollard or low-level **downward directional luminaires** to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an low upward light ratio and with good optical control should be used
- Luminaires should always be mounted on the horizontal, ie no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

LIGHTING STRATEGY: The exterior lighting scheme will be carefully designed alongside Ecologist to ensure that no lighting elements negatively impact the Bats found within the ground of kyn Cambridge. The lighting scheme will comply fully with the guidance set out by the ILP and as listed below. Please refer to the following page to see the illuminance limit zonations

PLANNING CONSIDERATIONS

Guidance & Planning

LIGHTING GUIDELINES

As part of the scheme for Kyn Cambridge we will consider and take cognisance of the following guidelines and principles for the lighting design of the exterior areas;

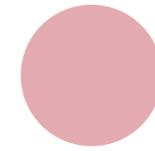
- SLL Handbook - Chapter 25: Exterior Architectural Lighting
- SLL Handbook - Chapter 19 Communal Residential Buildings
- SLL Handbook - Chapter 19.5 Nursing & Care Homes
- CIBSE / SLL Lighting Guide 6: The Exterior Environment
- Enlighten: Lighting for Older People and People with Dementia
- ILP Guidance - ILP Bats and artificial lighting in the UK - 'Bats and built environment'
- Ecological Appraisal Report
- Cambridge Local Plan (2018) Policy 34: Light Pollution Control • South Cambridgeshire Local Plan (2018) Policy SC/9: Lighting Proposals

CIBSE/SLL Lighting Guide 6: The Exterior Environment

In the design of any exterior lighting scheme it is important to consider the local context, ensuring that any exterior lighting design is appropriate so that it does not appear visually out of keeping with the immediate surrounds. It is also important in the design of all exterior lighting schemes to avoid obtrusive light, ensuring that luminance, illuminance and source intensity levels are within appropriate limits for the immediate area.

CAMBRIDGE LOCAL PLANNING POLICY

For all lighting proposals, the applicant should identify the purpose and use of the lights, the potential users of the lighting scheme (e.g. for recreation facilities) and the hours the lights will be in operation (summer-time and winter-time). The hours of operation will be expected to be kept to a working minimum and applicants should demonstrate this in their application. Keeping the use of the lighting to a minimum will reduce the impact the lighting may have on the environment.



Energy Efficiency

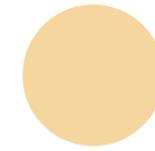
Lighting Approach: All luminaires will be LED to maximise energy efficiency and lifespan of fittings. LED fittings also require less frequent maintenance and offer more options for optics and glare guards.



Sky Glow

Upward light, the orange glow visible around urban areas resulting from the scattering of artificial light.

Lighting Approach: The majority of lighting will be directed downwards (i.e bollards and wall lights). Uplighting and spotlights will be kept to a minimum and will have cowls/shields to prevent glare.



Glare

Visual source intensity, the uncomfortable brightness of a light source when viewed against a dark sky. It is light shining into the eye preventing a person from seeing the illuminated area properly.

Lighting Approach: The majority of lighting will be directed downwards (i.e bollards and wall lights). Uplighting and spotlights will be kept to a minimum and will have cowls/shields to prevent glare.



Light Trespass & Light Nuisance

Light Trespass or Light Nuisance - light spillage beyond the boundary of the property on which a light is located.

Lighting Approach: All lighting will be focused around the central landscape leave the site boundaries in darkness with the exception of a few low level BOH way finding lights.

Appendix 6: Requirements for Specific Lighting Schemes (Pg 205)



LIGHTING STRATEGY

SENSITIVE BAT LIGHTING & ILLUMINANCE LIMIT ZONATION



LANDSCAPE LIGHTING STRATEGY

MASTER GLOW PLAN

LIGHTING STRATEGY

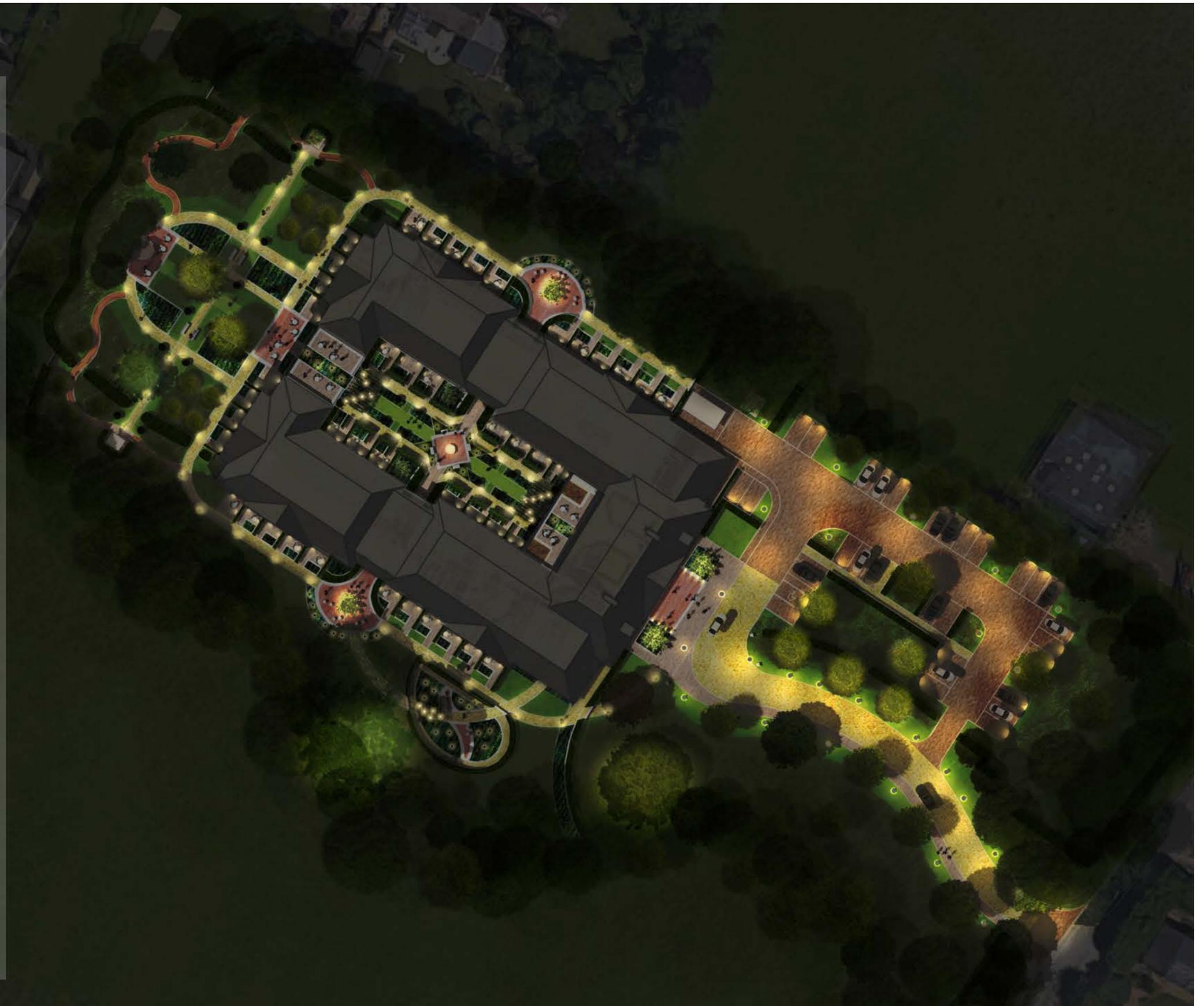
The Kyn Cambridge lighting strategy will focus the lighting on the pathways with controlled downwards lighting while creating special moments of feature lighting around the seating areas, terrace and pergolas.

The exterior lighting scheme will 'avoid obtrusive light, ensuring that luminance, illuminance and source intensity levels are within appropriate limits for the immediate area.' The lighting will have a residential feel, using low level indirect lights to illuminate pathways, keeping all lighting low glare & focused on key elements of the exterior landscaping. Creating a relaxing and enjoyable space for staff, residents and visitor to use the space safely in the hours of darkness.

Uplighting to key feature trees depending on Ecology sign off.

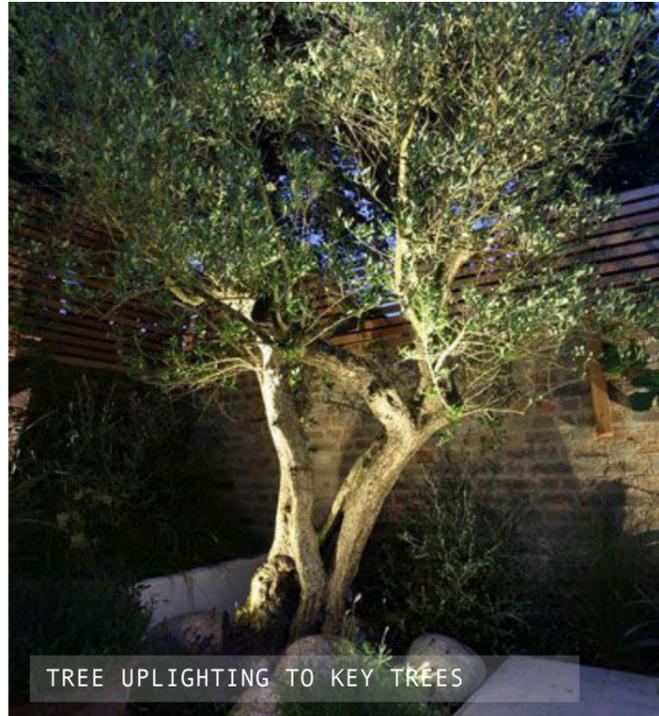
Careful consideration will be given to the specification and position of light fittings. The bollard and planting luminaire will all feature cowls and be directed downwards.

Emergency lighting will also be used to delineate exit routes. Wall lights & step lights to illuminate BOH service areas.



LANDSCAPE

REFERENCE IMAGES



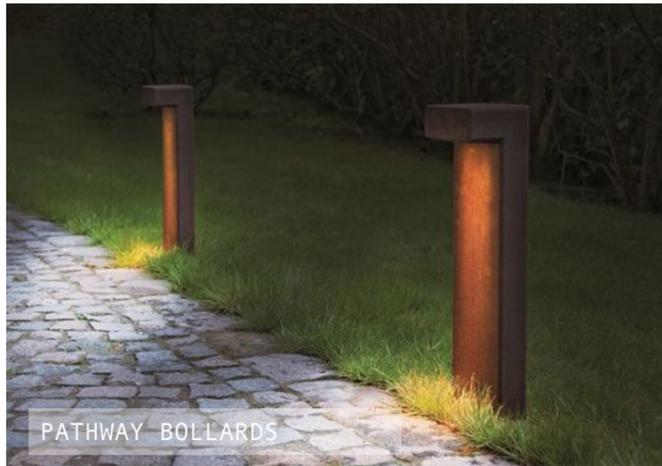
TREE UPLIGHTING TO KEY TREES



WALL LIGHTS IN PRIVATE TERRACE



SPIKE MOUNTED PLANT LIGHTING



PATHWAY BOLLARDS



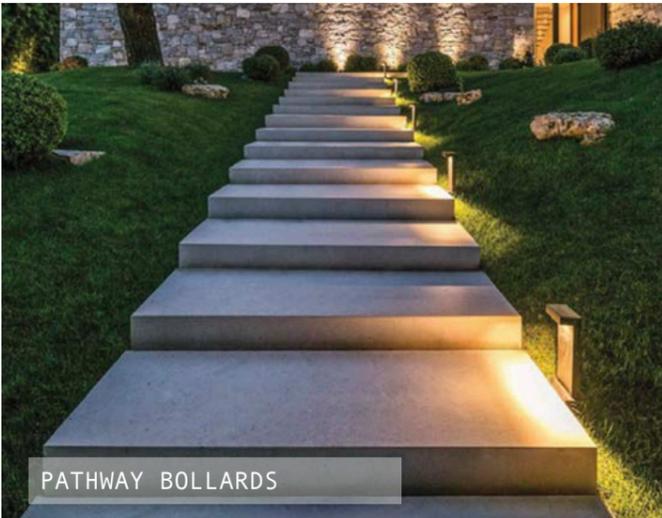
PATHWAY BOLLARDS & TREE UPLIGHTING



RELAXED SEATING AREA, UNDER LIGHTING



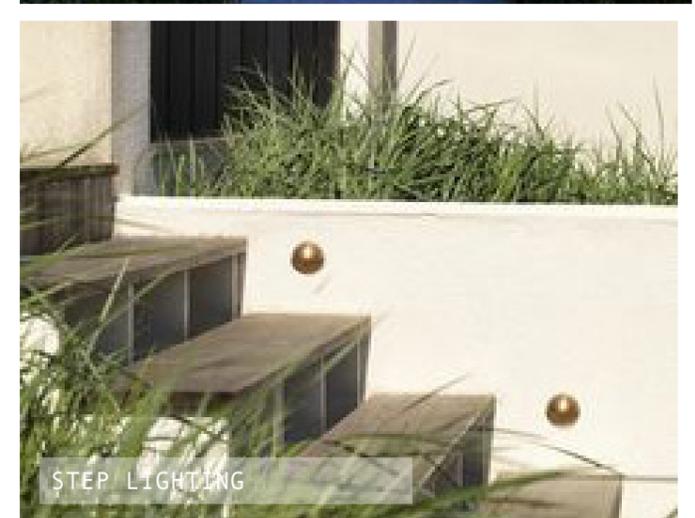
PERGOLA LIGHTING - DECORATIVE PENDANTS



PATHWAY BOLLARDS



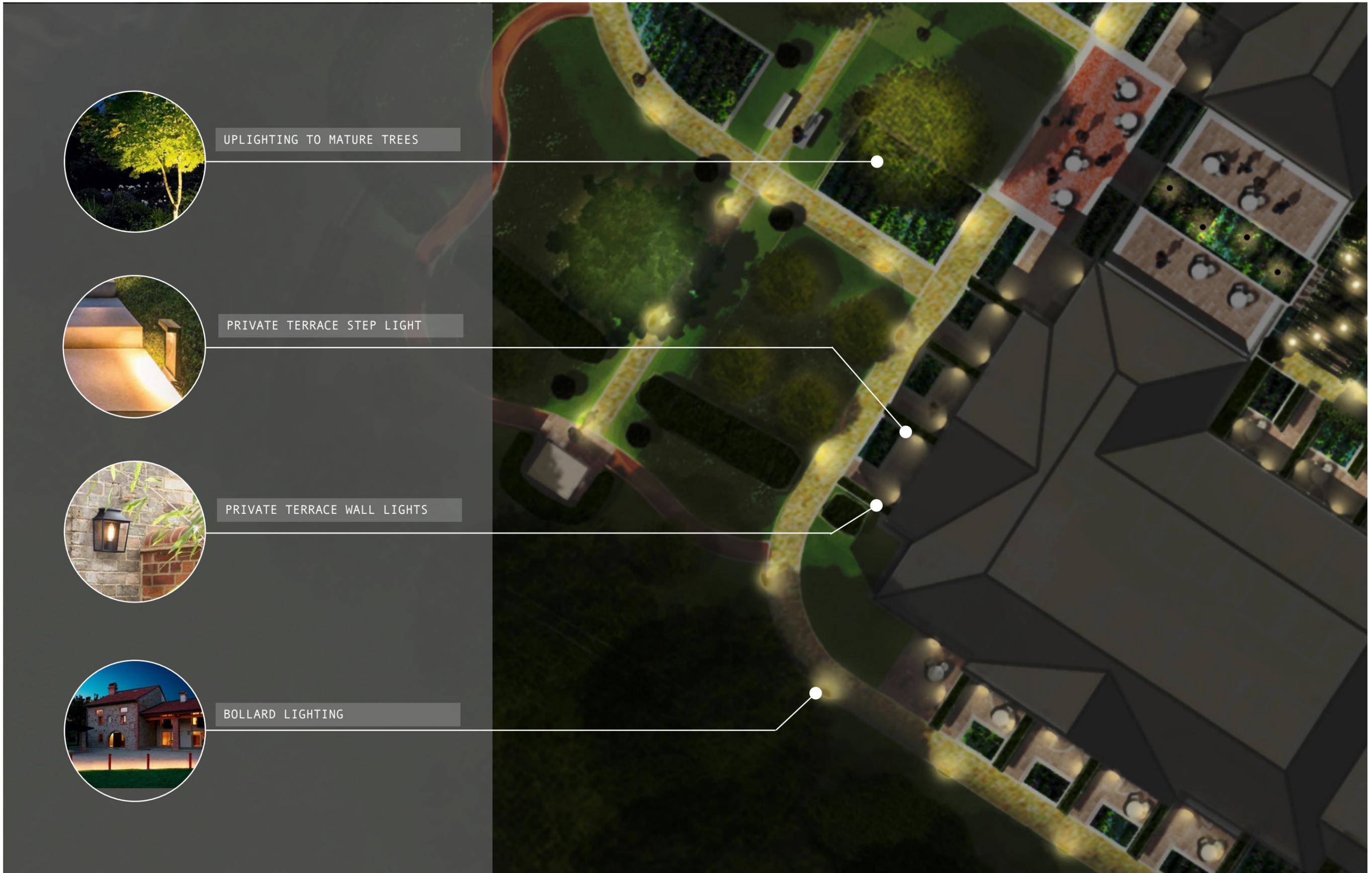
PLANT SPIKE LIGHTING



STEP LIGHTING

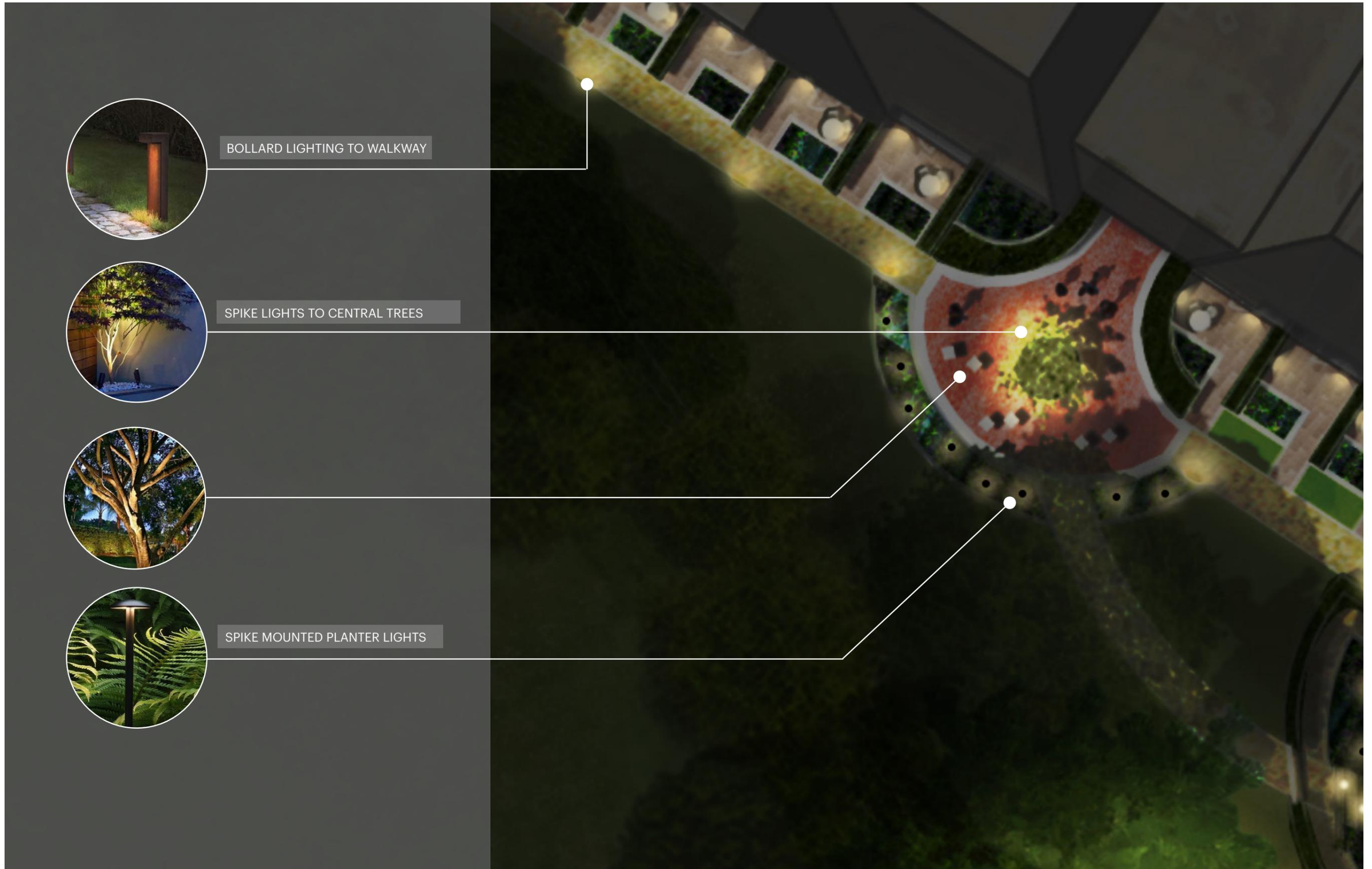
WALKWAYS

GLOW PLAN



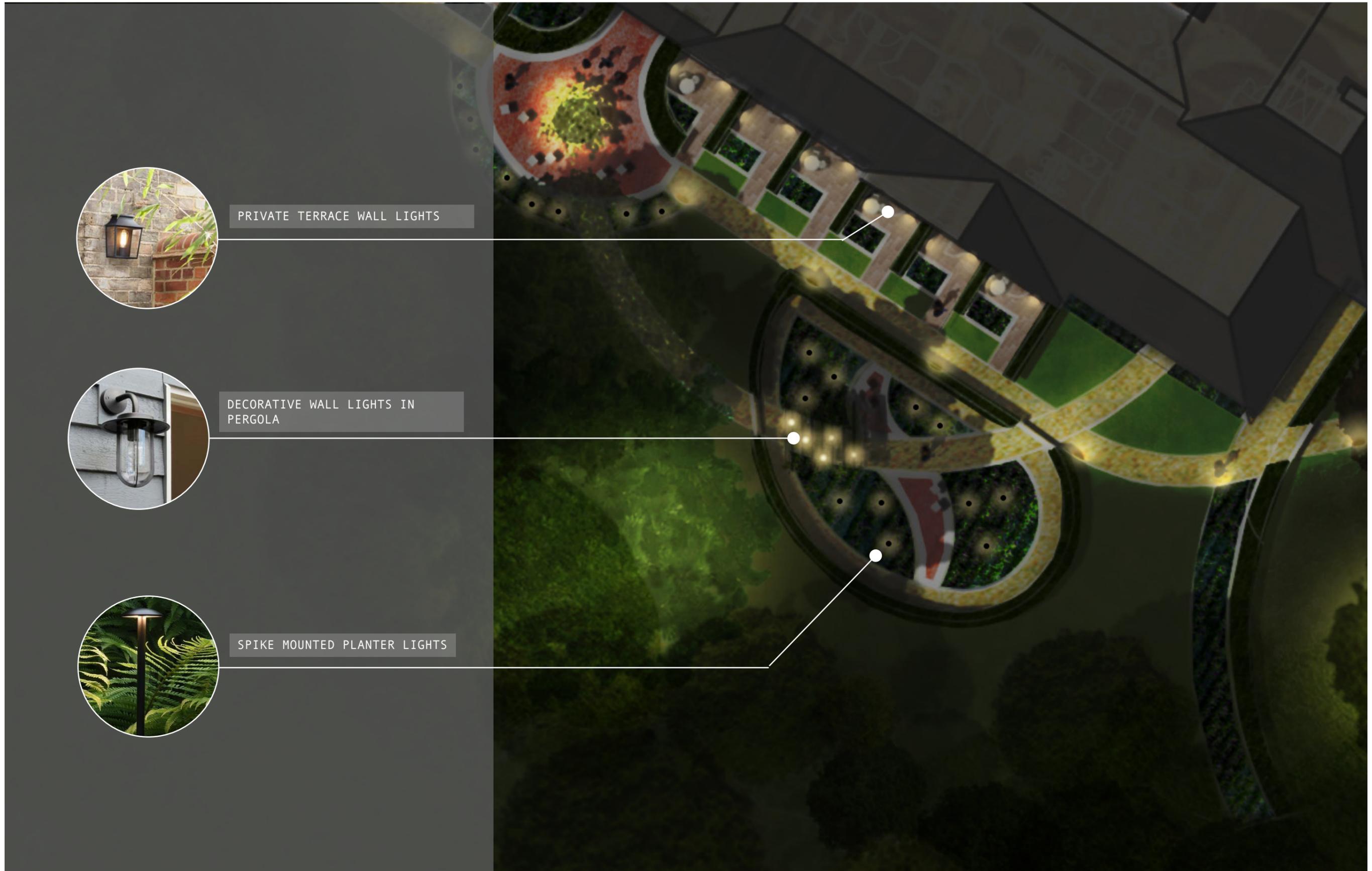
TERRACE & SEATING AREA

GLOW PLAN



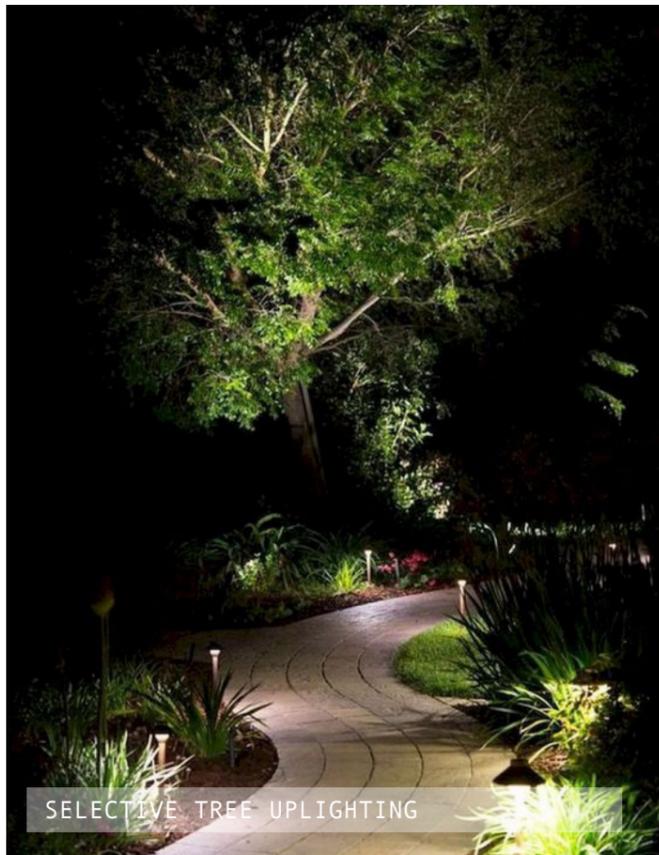
SENSORY GARDEN

GLOW PLAN



COURTYARD FACADE LIGHTING

REFERENCE IMAGES & RENDER



SELECTIVE TREE UPLIGHTING



PLANT SPIKE LIGHTING

The courtyard lighting will be subtle, focusing around the pathways and terraces with specialist uplighting only in key locations such as the centre of the courtyard.

The facade itself will be lit from wall lights mounted either side of the residence bedroom doorways.

The wall lights will be traditional in styling to fit in with the heritage of the building. They will also feature cowls to reduce upwards lit spill.

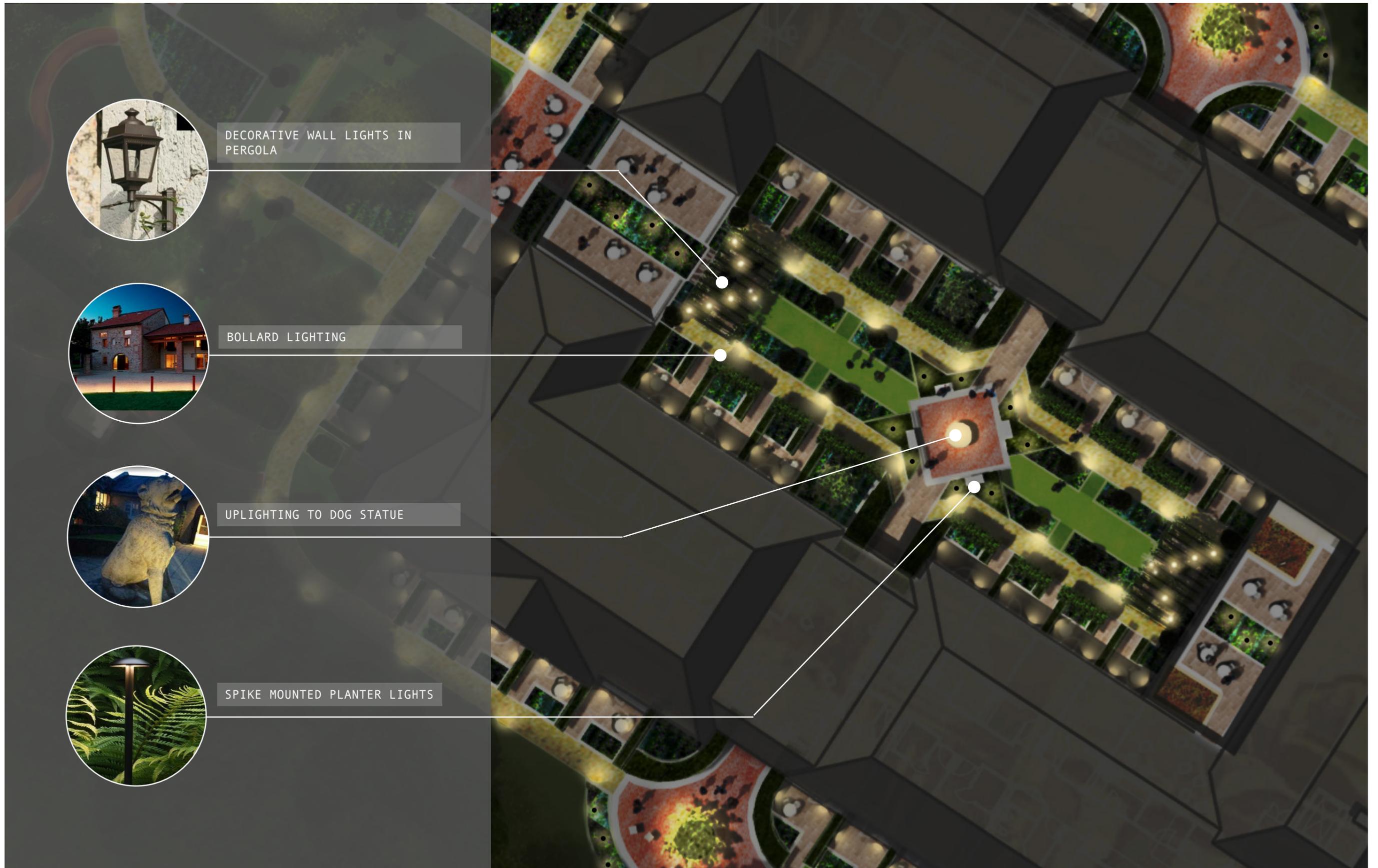
Emergency lighting will be used to denote exit routes. Wall lights to illuminate BOH service areas.



BACK FACADE RENDER

COURTYARD

GLOW PLAN



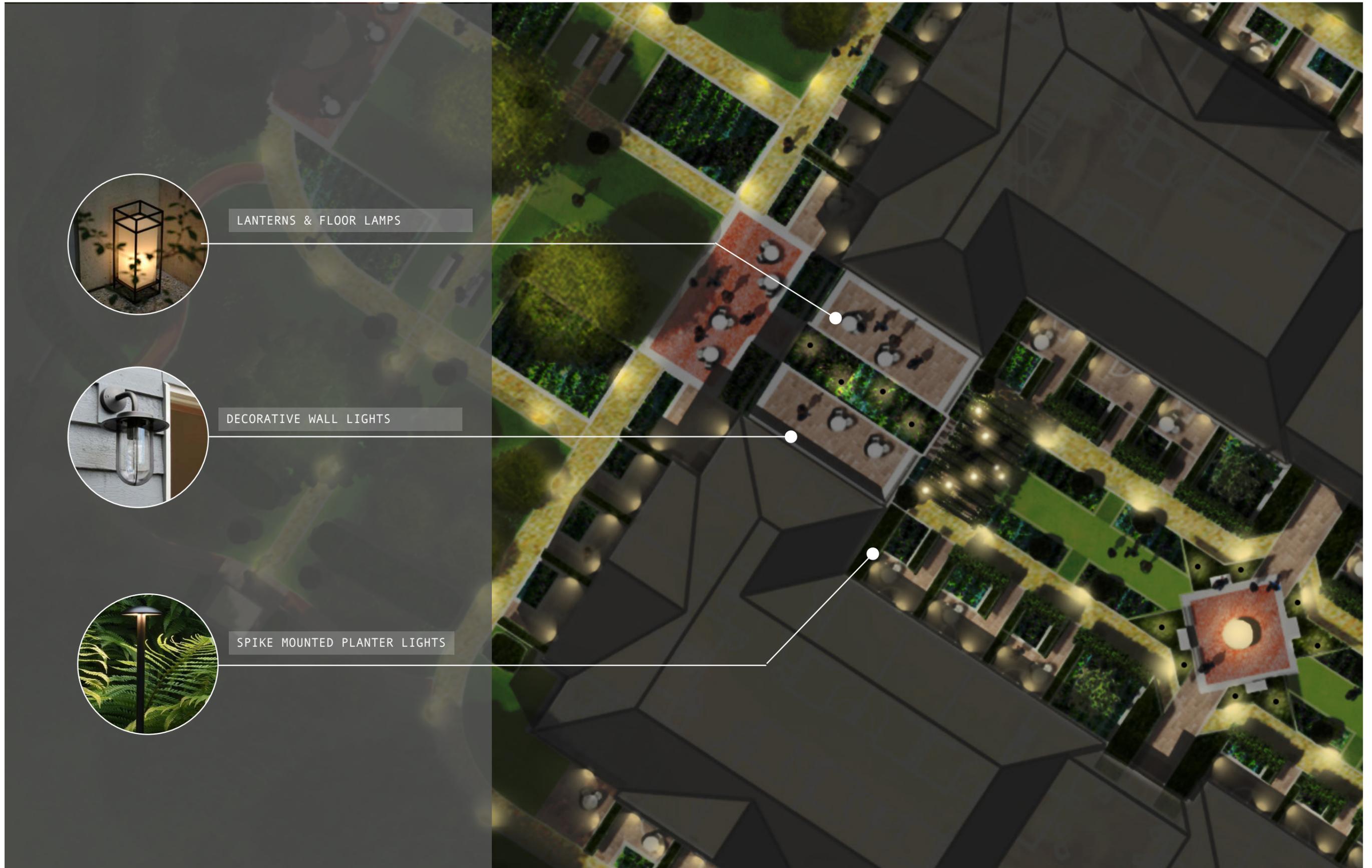
DECORATIVE WALL LIGHTS IN PERGOLA

BOLLARD LIGHTING

UPLIGHTING TO DOG STATUE

SPIKE MOUNTED PLANTER LIGHTS

TERRACE
GLOW PLAN



ENTRANCE & DRIVEWAY

REFERENCE IMAGES



WALL LIGHTS



WALL LIGHTS

The terrace & seating area lighting will have a hospitality feel, using low level indirect lights to illuminate pathways, decorative lanterns, integrated seating lighting to create a relaxing and enjoyable space for staff, residents and visitor to use the space safely.



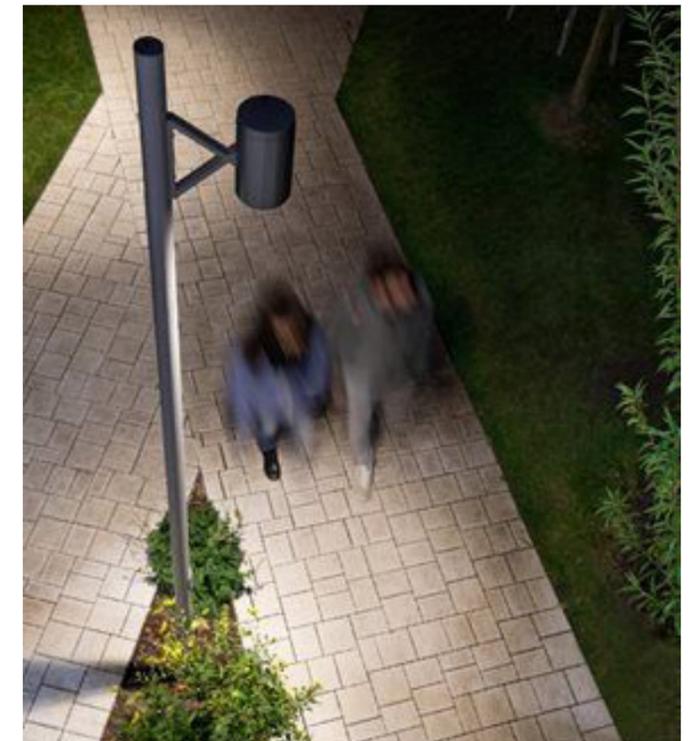
BOLLARD LIGHTING TO PARKING SPACES



POST MOUNTED LANTERN



POST MOUNTED LIGHT



PATHWAY LIGHTING



STEP LIGHTING

ENTRANCE & DRIVEWAY

GLOW PLAN



FACADE LIGHTING

REFERENCE IMAGES & RENDER



PATHWAY BOLLARDS



STEP LIGHTING TO ENTRANCE



LIGHTING TO PARKING SPACES



SELECTIVE TREE UPLIGHTING



STEP LIGHTING TO WALKWAY

The facade lighting will be subtle, focusing on the entrance and staircase. Uplighters will frame the doorway, a central pendant will be suspended in the porch to draw your eye to the doorway.

Lighting will spill from the interior of the property, creating a warm inviting glow.

Wall recessed step lights will be mounted to the side of the staircase to provide lighting to the steps and walkways.

The driveway will feature column mounted lights with beam control to illuminate down on to the parking space.

Uplighters will be used to pick up the feature trees at the front of the property, (Ecologist to confirm).

Emergency lighting will be used to denote exit routes. Wall lights to illuminate BOH service areas.



FRONT FACADE RENDER

LANDSCAPE LIGHTING STRATEGY

GLOW PLAN



LANDSCAPE LIGHTING CONTROL STRATEGY

LIGHTING CONTROL GROUPS



- Pathway Bollard Lighting
- Terrace Lighting
- Sensory Garden Lighting
- Courtyard Lighting
- Resident Terraces
- Entrance & Facade Lighting
- Parking Lighting
- Mature Tree Lighting

These groups have independent lighting control meaning that can be turned on and off via the lighting control system as well via the manual control override.

CONTROL STRATEGY

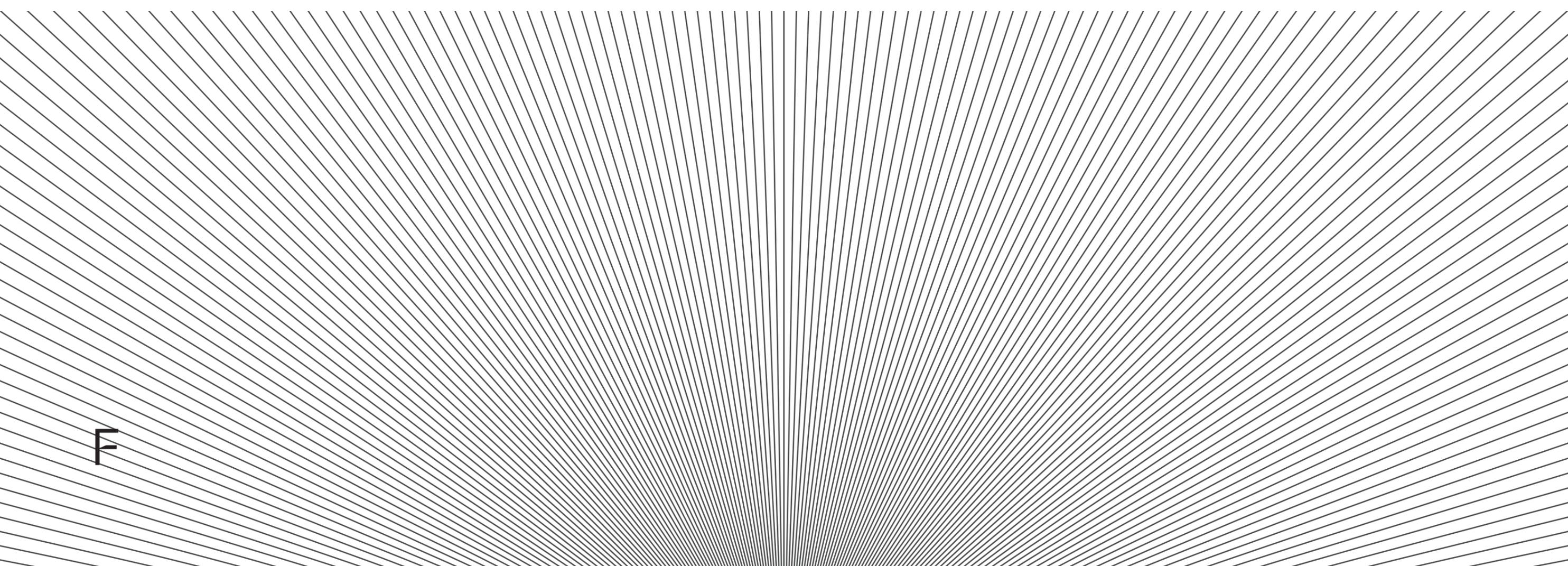
The lighting control system shall be complete with integral astronomical time clock, memory scene controller, control modules.

A series of pre-set operational lighting scenes shall be programmed into the control system memory. These scenes will cater for typical operating conditions (Morning / Afternoon / Dusk / Evening / Night) and shall be selected automatically via astronomical time clock and photo sensors at a designated time or manually via control plates. This will ensure no lighting is on unnecessarily during the night.

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