

LUONNON LYHDYT

LUONNON LYHDYT | PART B: LIGHTING MASTERPLAN FOR KRUUNUVUORENRANTA
14TH JUNE, 2013



SPEIRS+MAJOR | DESIGNERS WORKING WITH LIGHT
WEST 8 URBAN DESIGN & LANDSCAPE ARCHITECTURE

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SITE POTENTIAL

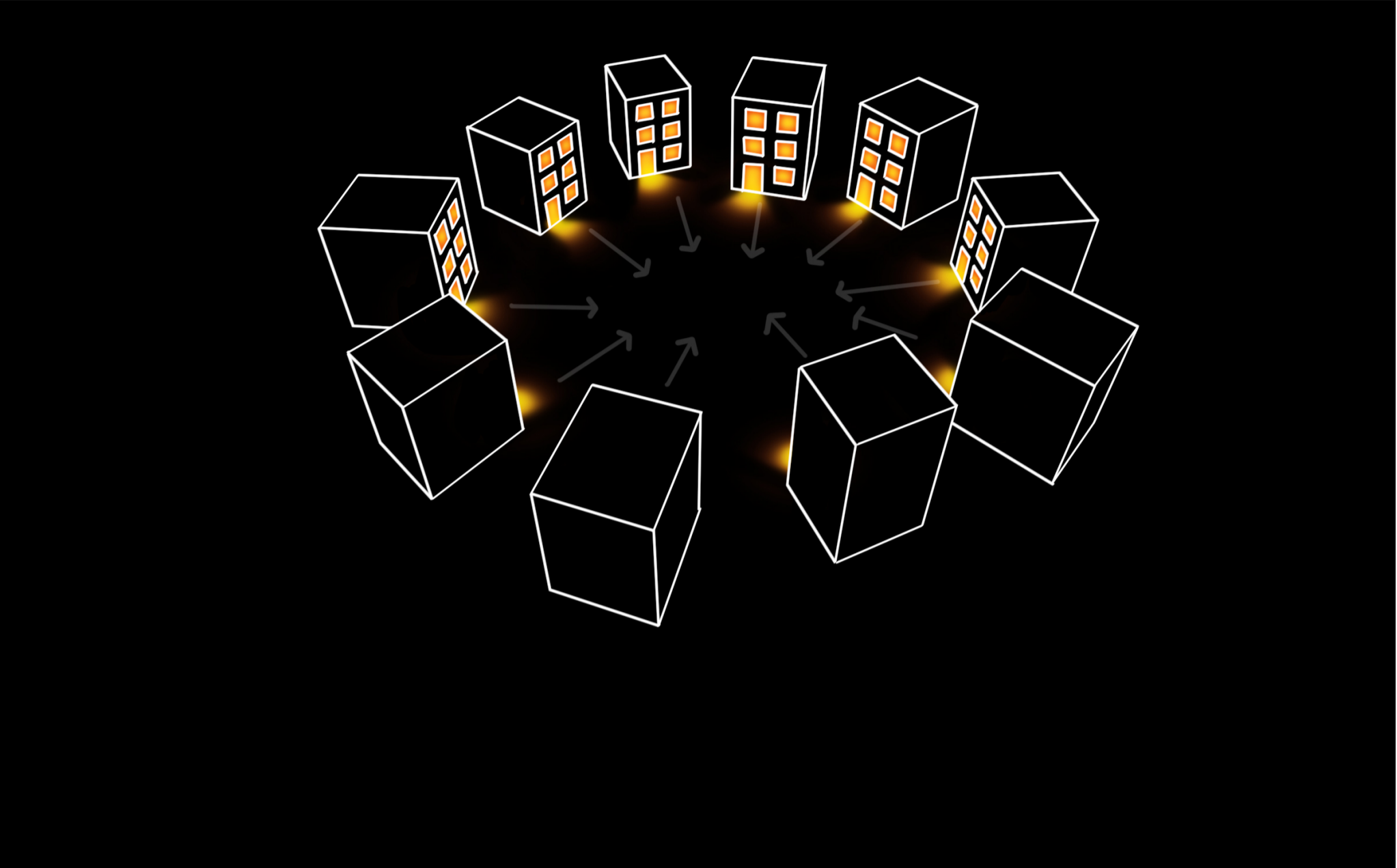
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SITE POTENTIAL
CONTEXT

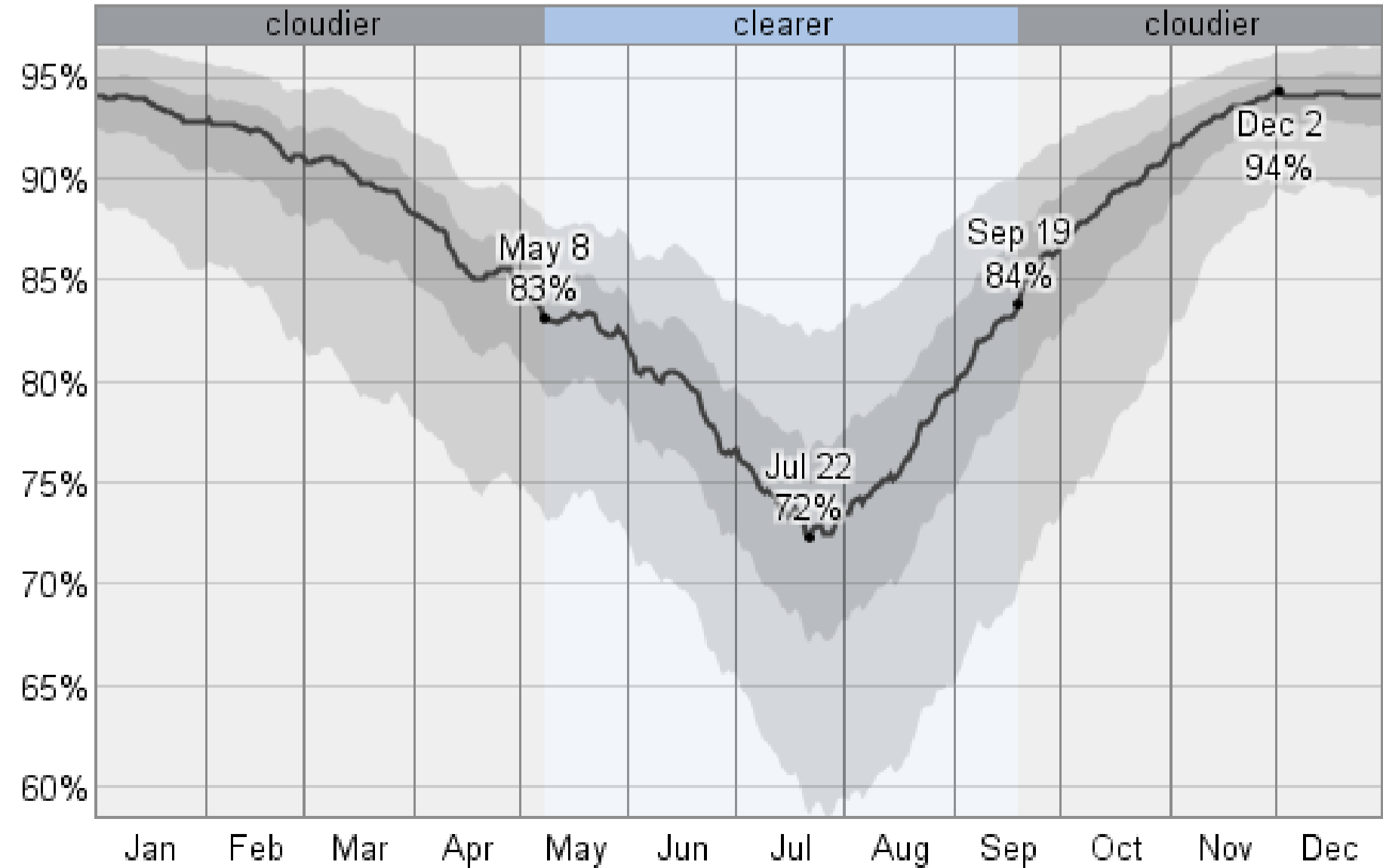
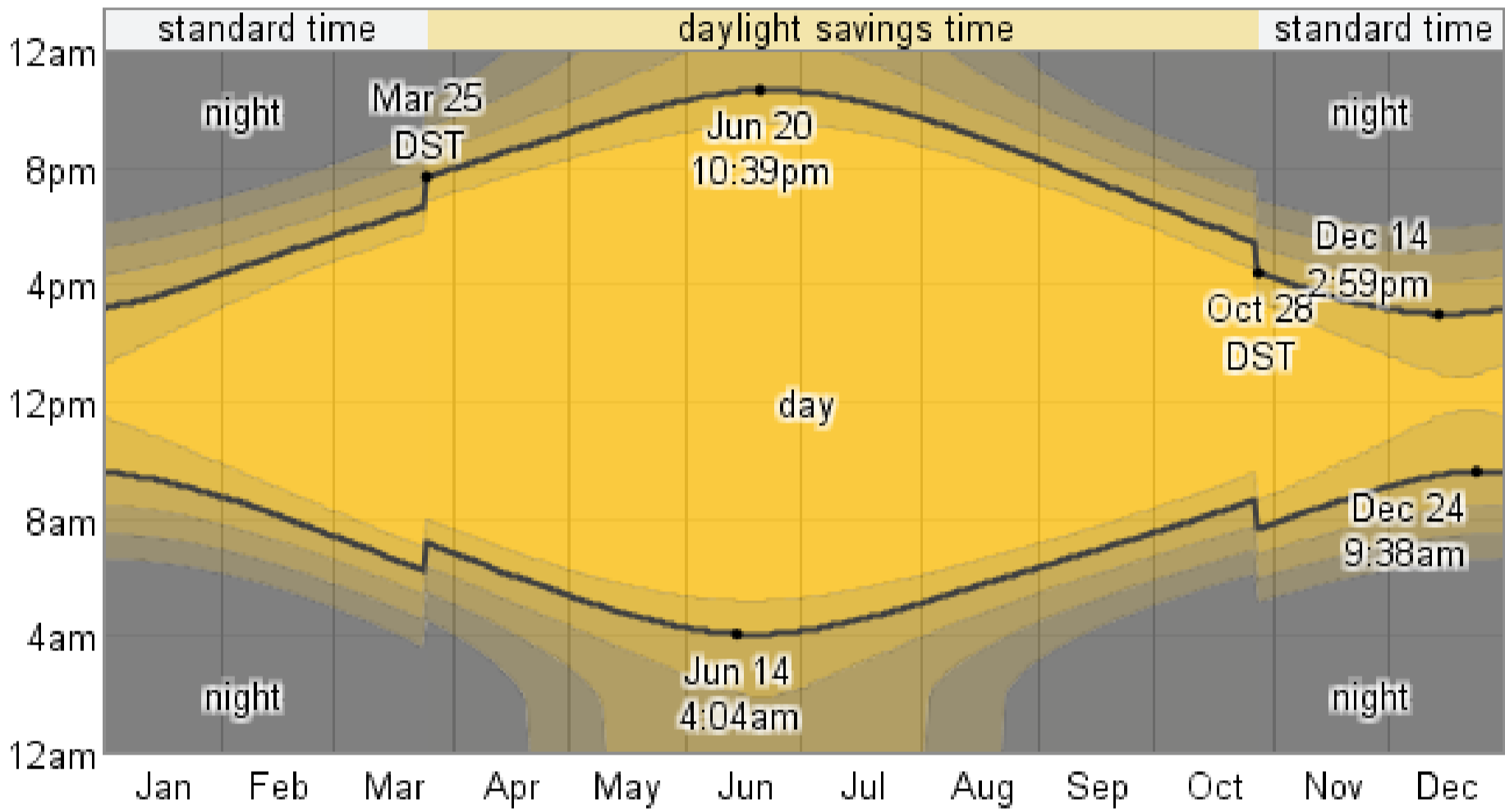
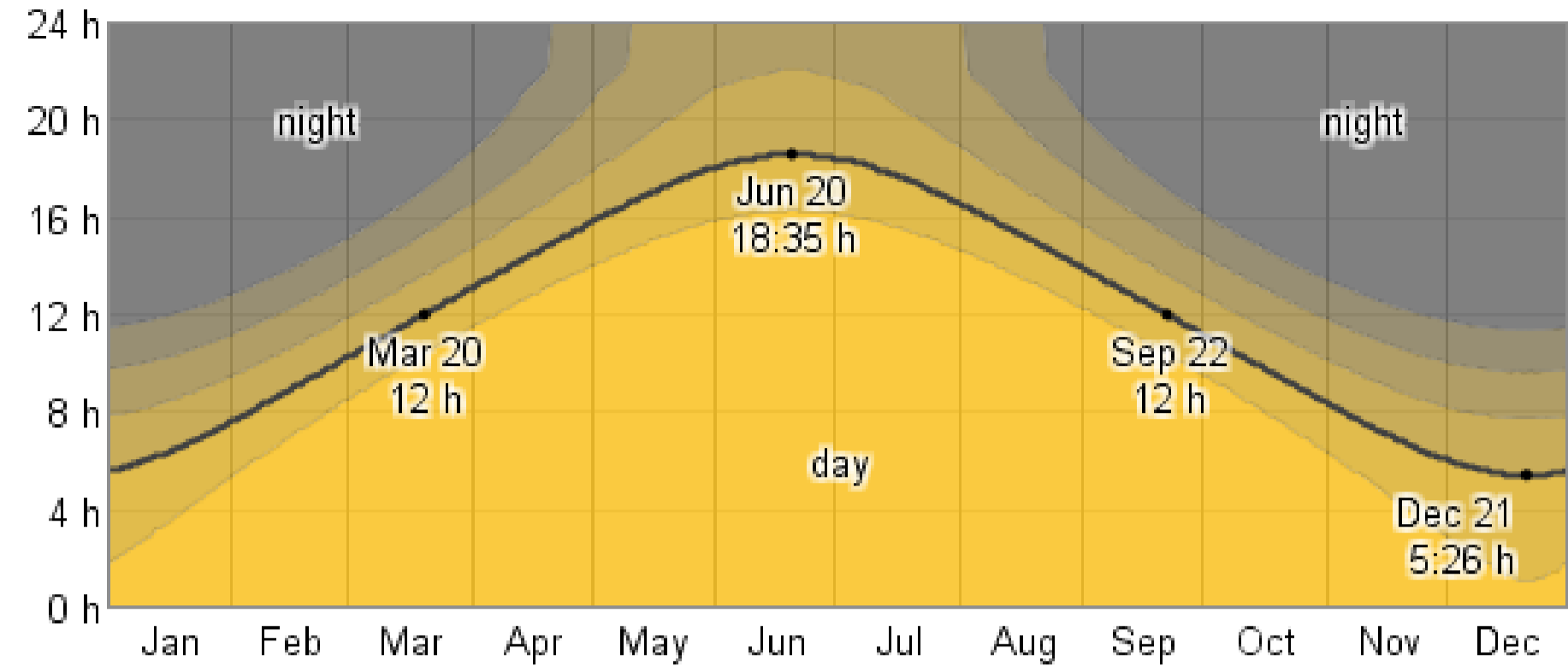


SITE POTENTIAL
CONTEXT



SITE POTENTIAL

OPPORTUNITY



SITE POTENTIAL

OPPORTUNITY

HARNESSING NATURE

During the summer months the citizens of Helsinki enjoy long hours of daylight, during which the practical and psychological needs for artificial light are somewhat less than during the winter, when there are as few as 4 hours of natural light during the daytime. The latest lighting technologies will enable the plentiful light provided by nature during the summer to be exploited by allowing the quantity of artificial light to be reduced wherever and whenever possible.

When snow covers the landscape during the wintertime it provides a naturally luminous surface which, again, will enable the amount of artificial light to be minimised whilst maintaining good levels of perceived brightness.

The freezing of the sea during the wintertime also extends the physical boundary of the coastline and presents the opportunity to invite visitors into Haakoninlahti Harbour to construct and enjoy ice light art.

APPRECIATING DARKNESS

Just as the natural landscape is the backdrop against which man-made forms and activities are set, natural darkness is the backdrop through which man-made light weaves.

A fundamental principle of the project is to minimise the use of artificial light and to use it in an intelligent and flexible manner – putting just the right amount where it is needed and when it is needed.

Darkness helps to:

- provide a connection to nature and views of celestial bodies.
- draw views through to the surrounding land- and sea-scape, Helsinki city and Suomenlinna.
- provide a sense of privacy.
- provide good contrast against which light art features and communal focal points can be easily identified.
- heighten senses of smell and hearing in nature.
- saves energy and minimises impacts on ecology.

CREATING A BENCHMARK FOR ARTIFICIAL LIGHT DESIGN & LIGHT ART

Artificial light in the exterior public realm cannot mimic the vast scale and ever shifting qualities of natural light nor can it completely compensate for its absence, but it is a valuable tool which can be used to help the inhabitants of and visitors to Kruunuvuorenranta find their way safely and feel secure after sunset. The extended hours of darkness during the wintertime also present a fantastic challenge and creative opportunity to explore the potential of artificial light to provide moments of magic and spectacle and to reinforce a sense of individual and collective identities in the public realm during the hours of darkness. The aspiration is for Kruunuvuorenranta to become and to be branded a 'neighbourhood of light' in which 'public light' and 'private light' are unified and which demonstrates the highest quality examples of light art and sustainable design.

PRINCIPLES

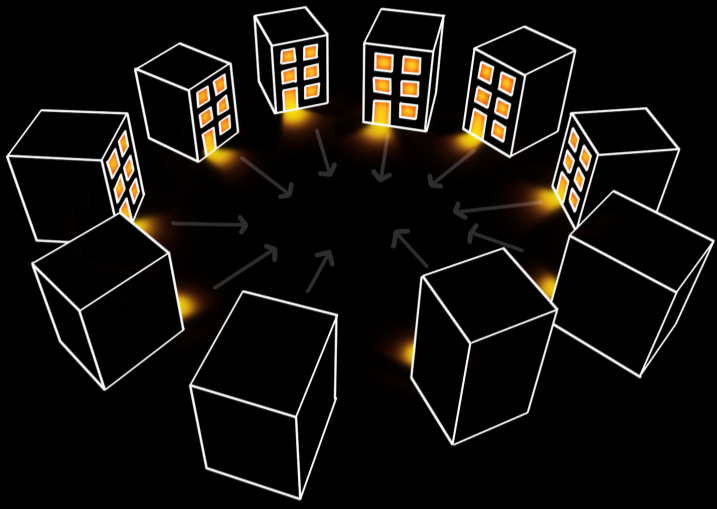
'LANTERNS'

THE 'LANTERN' AS THE UNDERLYING CONCEPT FOR THE SITE AFTER SUNSET

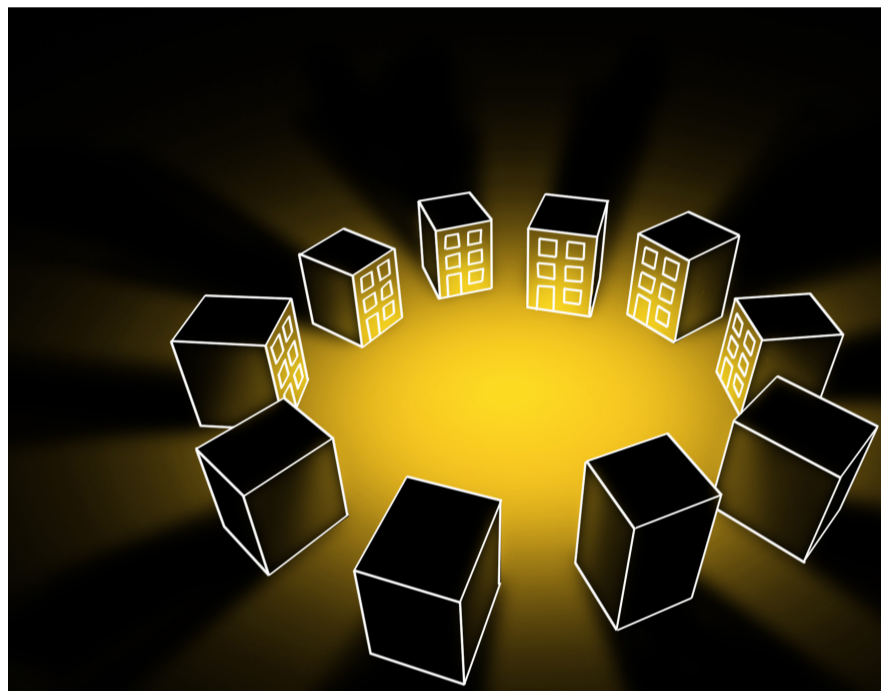
ROLE OF LIGHT

THE SOCIAL, ECONOMIC AND ENVIRONMENTAL CRITERIA FOR THE DESIGN OF LIGHT SITE-WIDE

PRINCIPLES
'LANTERNS'



LIGHT EMANATES FROM THE HOME



LIGHT FORMS THE FOCUS OF COMMUNITIES



LIGHT RESPONDS TO PEOPLE

PRINCIPLES

'LANTERNS'

LANTERN:

'A transparent or translucent protective case admitting light.'

People have always created artificial light not only to help them see after dark but to create points of focus within communities, communicate with each other, aid navigation and provide an atmosphere of joy and magic.

In the 1400s streetlighting was provided through lanterns hung outside individual houses. Each resident chose the style of their lantern and was responsible for it. The lanterns not only served as way-finding beacons and portable signals but enabled the lit image of public space to be created and enriched by its residents.

The 'lantern' and the idea of 'light emanating from within' (and in particular from the home) is the underlying concept for artificial lighting throughout the site and manifests itself on a range of scales .

'INTERNAL GLOW'/ LIGHT EMANATES FROM THE HOME

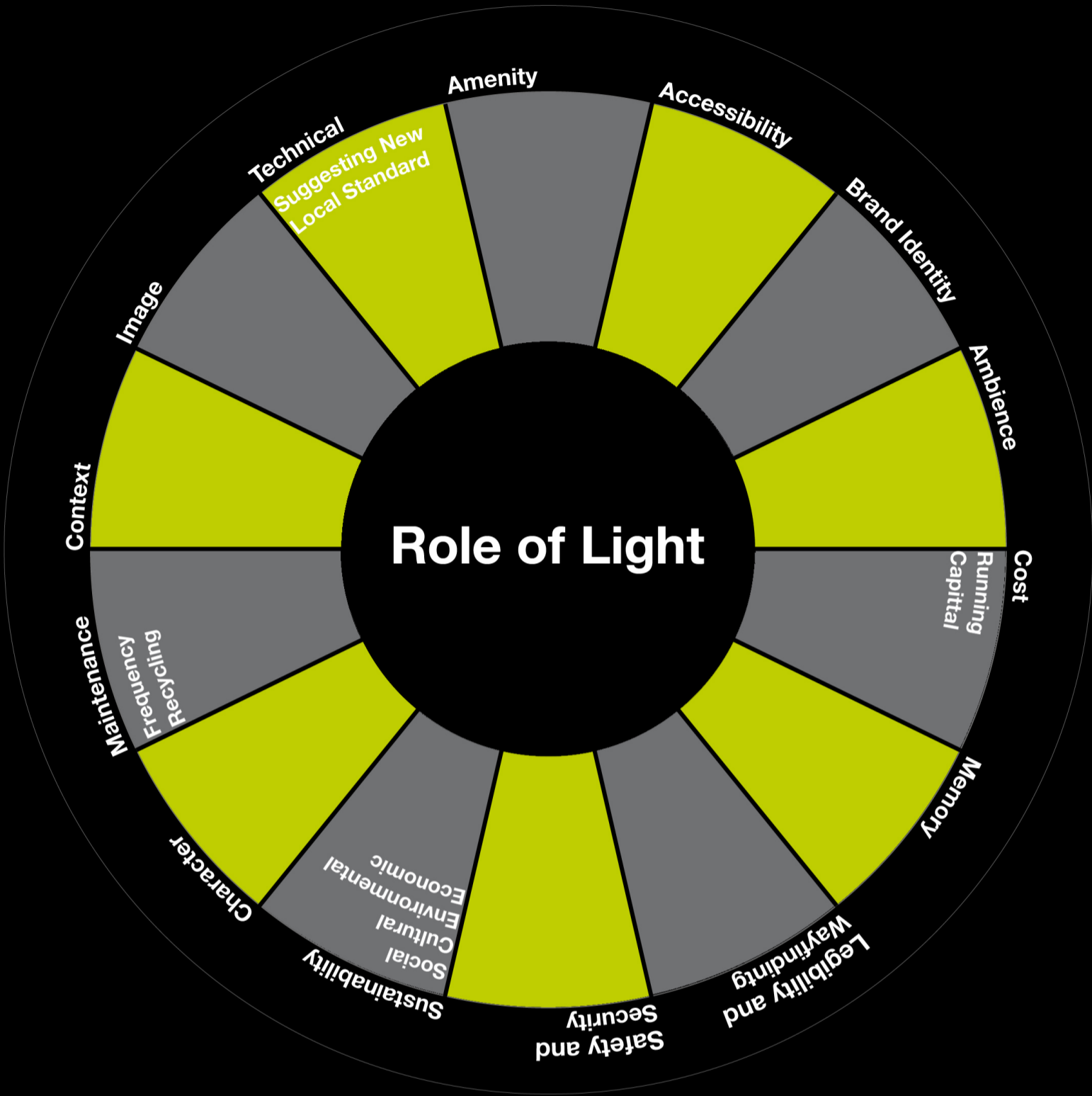
Light is delivered to courtyards from niches and to streets from porches. Structures glow from within.

'FOCAL POINTS'/ LIGHT FORMS THE FOCUS OF COMMUNITIES

Light art is integrated into public amenities and courtyards.

'TASK LIGHT'/ LIGHT RESPONDS TO PEOPLE

Light is responsive to human presence and activity.



PRINCIPLES

ROLE OF LIGHT

Context

- Long daylight hours during summertime vs long darkness hours during wintertime require flexible lighting control
- Views to nature and across to the city centre and Suomenlinna must be protected
- Helsinki is generally a dark city with very limited and controlled external architectural and retail lighting - the lighting to Kruunuvuorenranta must follow these principles
- Warm colour temperatures are generally used for amenity lighting in Helsinki city and in Kruunuvuorenranta
- The use of coloured light must be very limited as it is in the city centre

Amenity

- Light must be delivered and controlled to facilitate specific activities at specific times
- Visual comfort must be enhanced through avoiding glare, controlling contrast to create smooth visual transitions/adaptation of the eye and working with lit vertical as well as horizontal surfaces
- Scale of lighting must relate to the scale of space, user type and nature of activity

Ambience

- Light should be used to create individual and varied community identities (through niche design, courtyard art etc.)
- Light should be used to encourage exercise and play
- Light and preserved darkness must be designed to enhance the experience of nature

Character

- The scale, mounting and intensity of light will be used to distinguish residential areas from public ones
- The industrial heritage of the site will inform the character of equipment used in public areas

Legibility and Way-Finding

- Key legibility elements - gateways, nodes, routes, landmarks - will be positively illuminated to help provide a legible environment in the absence of daylight
- A few selected public buildings and heritage features should be given a distinctive lit presence to render them after-dark landmarks
- The edge of the land/sea should be kept predominantly dark, punctuated by focal points of public landmarks and the main harbour (Haakoninlahti)
- Thresholds into courtyards should be positively lit, especially vertical surfaces
- The colour temperature, intensity and uniformity of light along with the scale and type of mounting should provide subtle distinctions between districts
- Integral light to street names will be used to aid way-finding

Image

- The after-dark image of the site will be derived from the site's heritage and the patterns of activity of people

Memory

- Light and lighting will be used to reveal and celebrate the site's industrial heritage
- The contrast of light and darkness will be used to help create positive memories of light art and a 'neighbourhood of light'

Accessibility

- Light must be used to make spaces and forms legible through balancing light and darkness on both vertical and horizontal planes
- Glare (direct and reflected sources) must be avoided

Safety and Security

- Contrast of light and dark should be used to highlight potential hazards (steps, crossings etc.)
- Materials' reflectances should be optimised to help further demarcate hazards and reveal paths through nature
- Good facial recognition should be provided in primary urban public spaces through appropriate mounting heights, light distribution and colour rendering of sources
- Increased perceived brightness of sources with good colour renderings must be factored into designs to avoid over-lighting
- Light and darkness should be balanced across the site to avoid hindering adaptation of the eye from one space to the next
- Light will be used to help create a sense of passive surveillance - 'eyes on the street' - and community pride (e.g. through niche lights and porch lights)
- Positively lit active frontages (vertical illumination) should be used to help light key public spaces

Cost

- Light levels must be minimised where and when possible to minimise running costs
- Long life sources and robust materials must be utilised to reduce maintenance costs
- Whole life-cycle costs must be considered during detailed design

Maintenance

- Luminaires will be mounted in locations accessible for maintenance
- Remote monitoring of streetlighting sources via a site-wide lighting control system is recommended to report and predict failures
- The palette of lighting equipment and light sources is minimised to simplify maintenance regimes
- Clearance of snow and ice will be considered when determining the luminaire mounting details
- The harsh environmental conditions (temperatures of -30°C) must be considered when specifying equipment

Technical Criteria

- Current European and Finnish best practice is to be employed

Environmental Sustainability

- Over-lighting must be avoided through balancing light and darkness site-wide and limiting the quantity and intensity of externally-lit features and landmarks and the duration for which they are in operation
- Light spill above the horizontal must be limited to minimise sky glow
- Permanent electrified lighting installations should not be introduced into wild natural areas (Kruunuvuori)
- Energy-efficient light sources are recommended and their perceived brightness in mesopic conditions taken into consideration

SITE-WIDE BALANCE

MASTERPLAN

THE IMAGE OF KRUUNUVUORI, A MAP OF LIGHT AND DARKNESS IN PLAN AND ELEVATION

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OPEN SPACES

CHARACTER OF EACH PLACE

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MAP OF STRUCTURES TO HAVE INTEGRATED LIGHTING

HERITAGE

MAP OF HERITAGE FEATURES TO BE ILLUMINATED

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MAP OF LIGHT ART LOCATIONS

LIGHTING CONTROL

DIMMING STRATEGY

SITE-WIDE BALANCE
ILLUSTRATIVE MASTERPLAN



1. Mirror-clad silo in reflective pool + glowing steps
2. Dynamo-powered cool LED marker-lights
3. Lit trees framing bridge landing
4. Positively lit bridge underside
5. Cool white bollard pathlight/tree uplight
6. Warm white feature crane-light with internal glow
7. Warm down-lit quay wall
8. Warm downlit promenade wall
9. Uplit trees
10. Warm localised lighting to cafe
11. Warm localised lighting to terrace kiosk
12. Warm wall-mounted lanterns
13. Illuminated niches
14. Courtyard furniture applied light art
15. Warm porch light
16. Industrial streetlighting post with internal glow
17. Warm white streetlighting
18. Warm integral lighting to bus/tram shelters
19. Removable battery-powered lanterns hung from soffit
20. Dynamo-powered backlit industrial pipes on heritage pier
21. Uplit yellow heritage crane
22. Silo 468
23. Warm down-lit plith wall
24. Cool white pedestrian spotlighting post
25. Silo footprint light art
26. Sauna
27. Rechargeable sauna path marker lanterns
28. Industrial post mounted catenary lantern
29. 'Field of Cat's eyes'
30. Warm pedestrian park lighting post
31. Lit soffit & walls of thresholds
32. Play equipment applied light art
33. Cool spotlit skate park
34. Warm spotlit natural slide
35. Cool integrated lighting to fountain jets

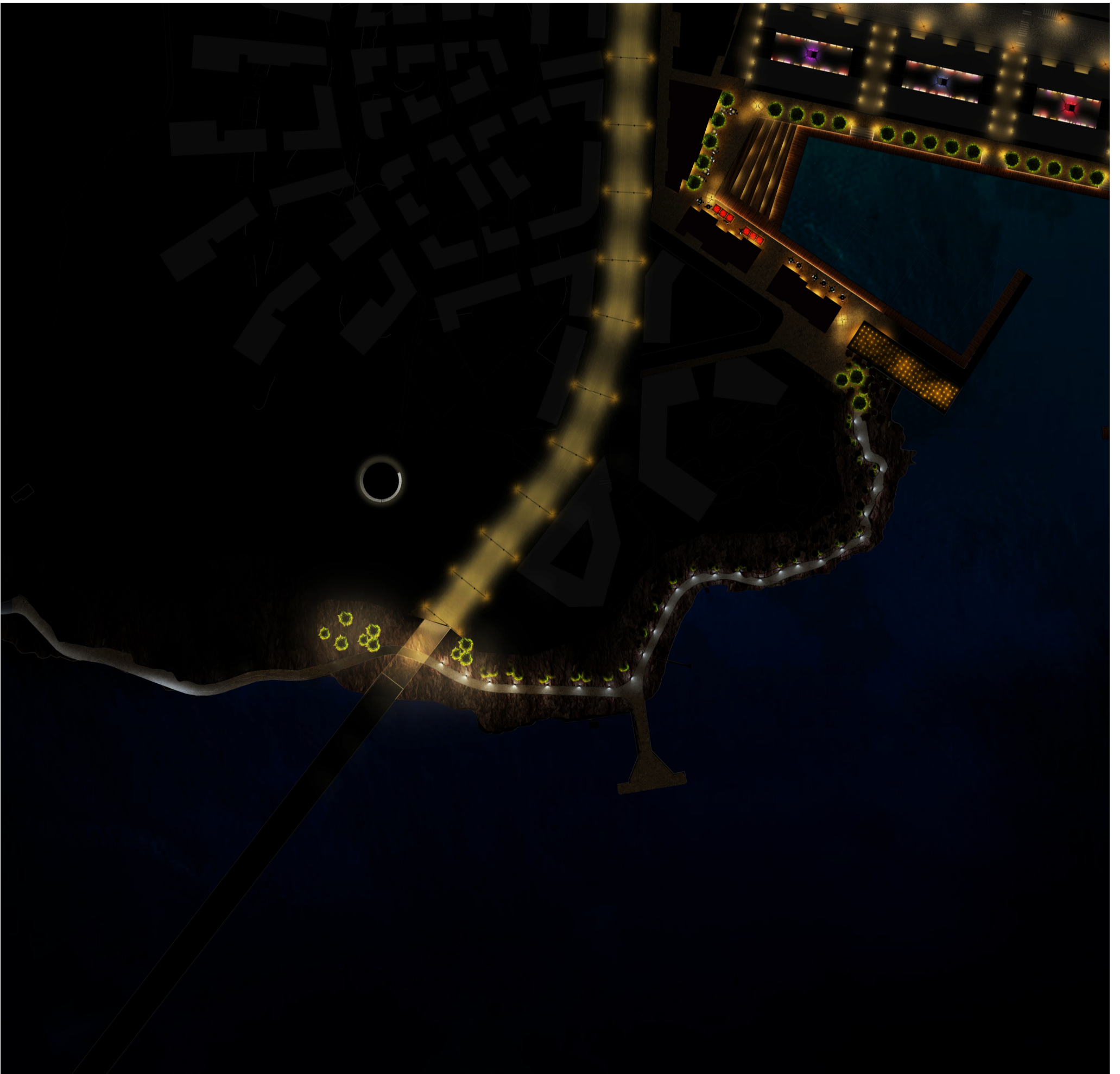
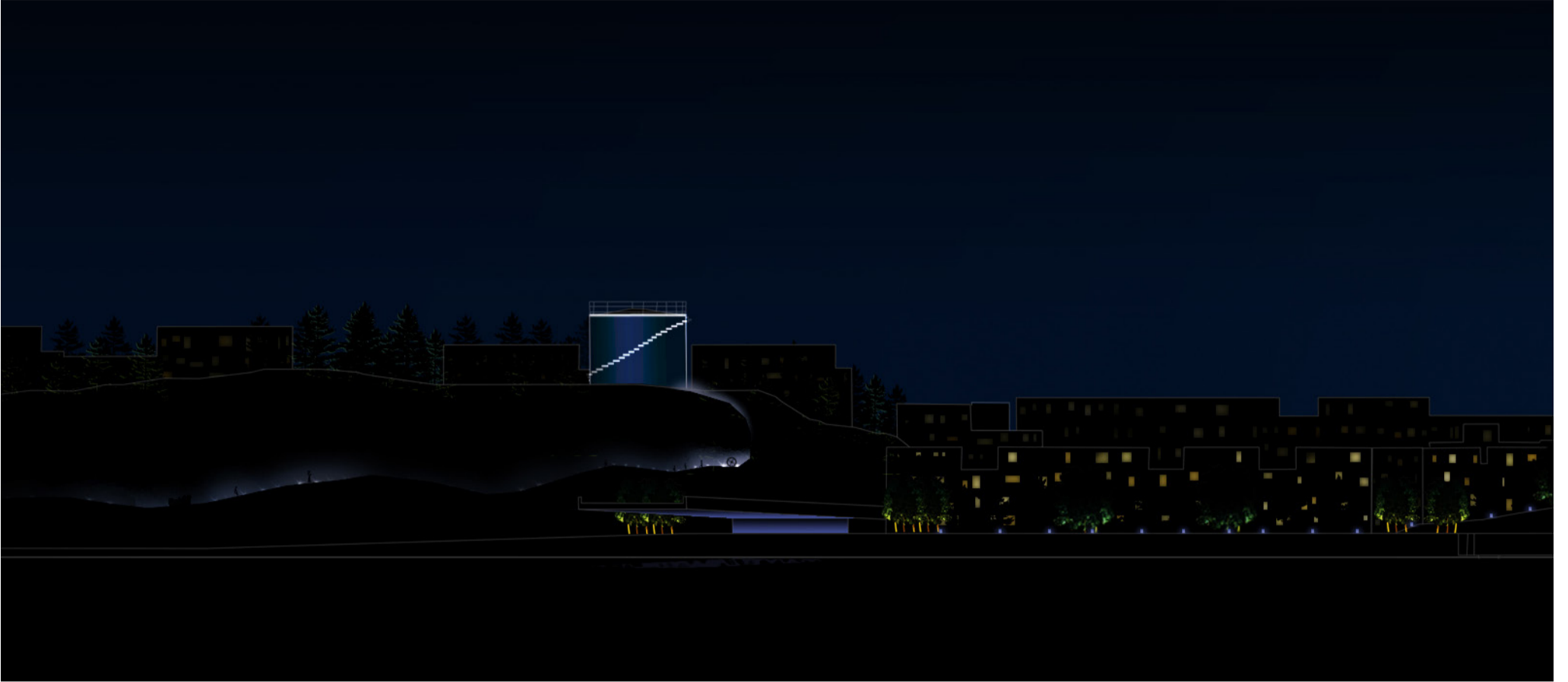
SITE-WIDE BALANCE

IMAGE OF KRUUNUVUORENRANTA

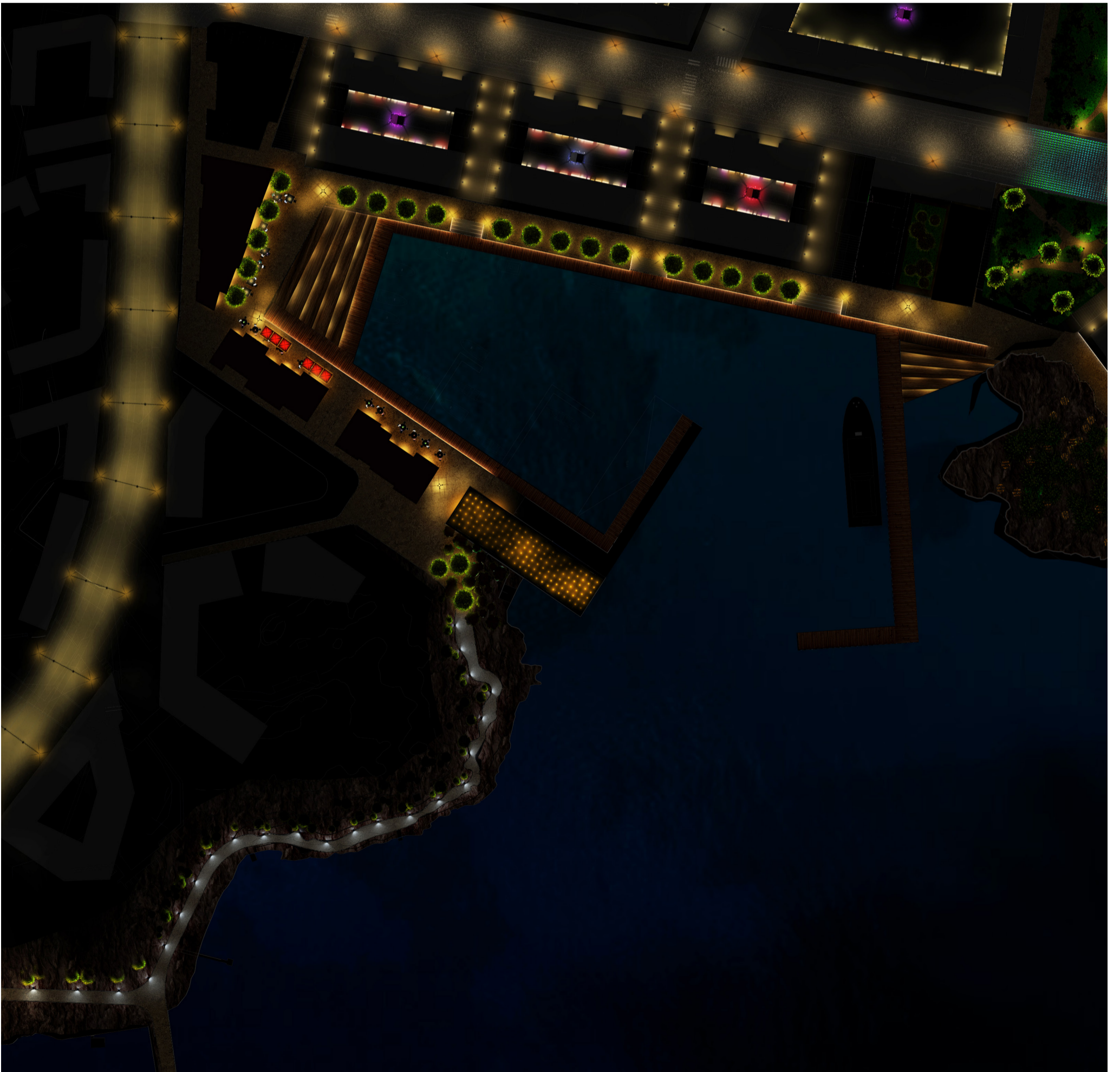
The site will be an important new elevation within Helsinki. The water's surface provides a highly reflective foreground which, when fluid, will create a broken animated reflection of the lit image of the waterfront – in effect almost doubling up the perceived quantity of light present when viewed across the water. Light will therefore be minimised and used sensitively to reveal gateways and selected heritage and landscape features.

Urban areas and selected heritage features will be made clearly identifiable through contrast with the surrounding darker natural landscape and residential areas. The densest composition of light will be in Haakoninlahti Harbour, which will stand out as a warm glowing gateway and public space. The intensity of light will diminish towards Kruunuvuori in the north and Koirasaaret in the south.

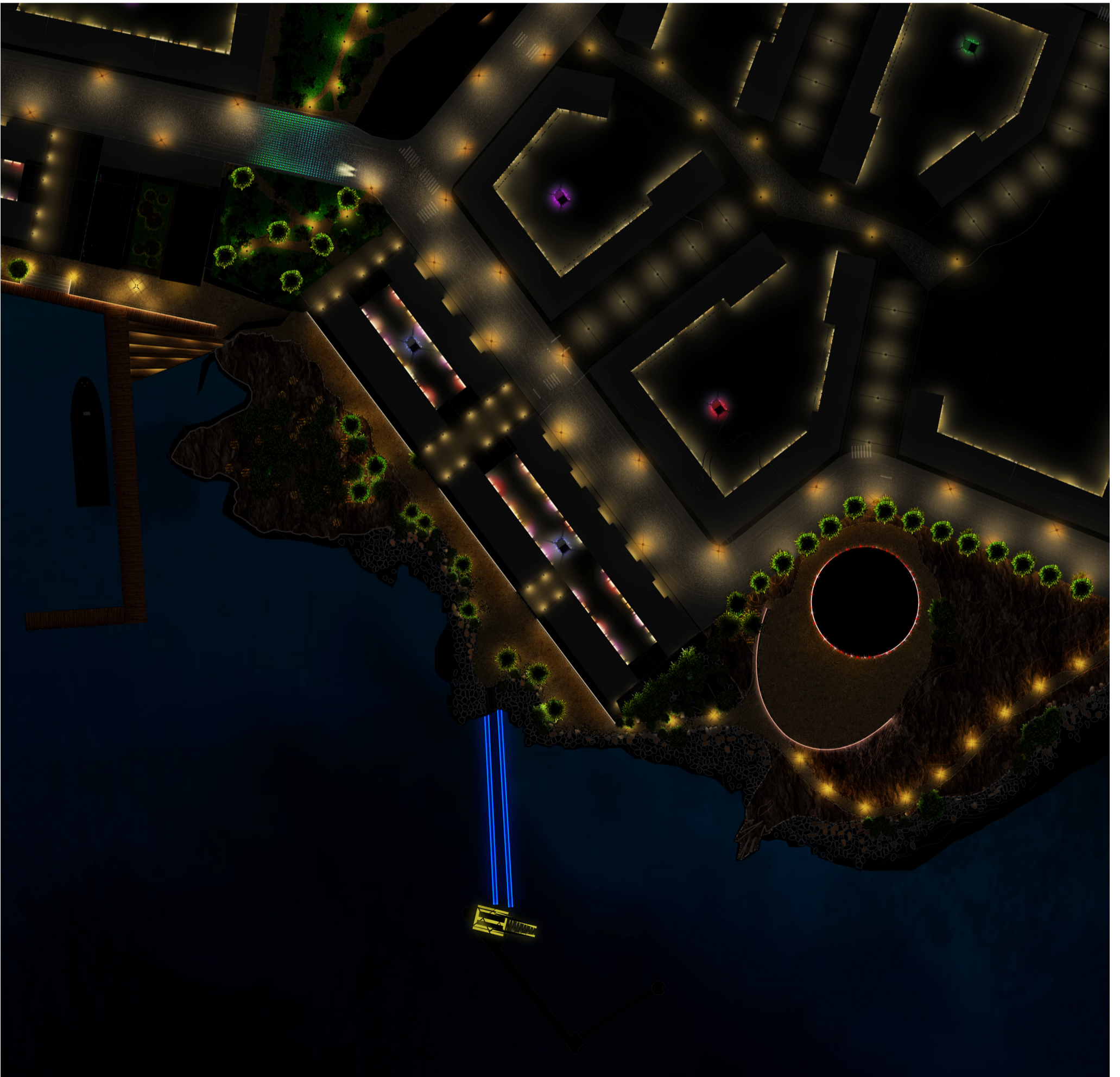
SITE-WIDE BALANCE
KRUUNUVUORI



SITE-WIDE BALANCE
HARBOUR

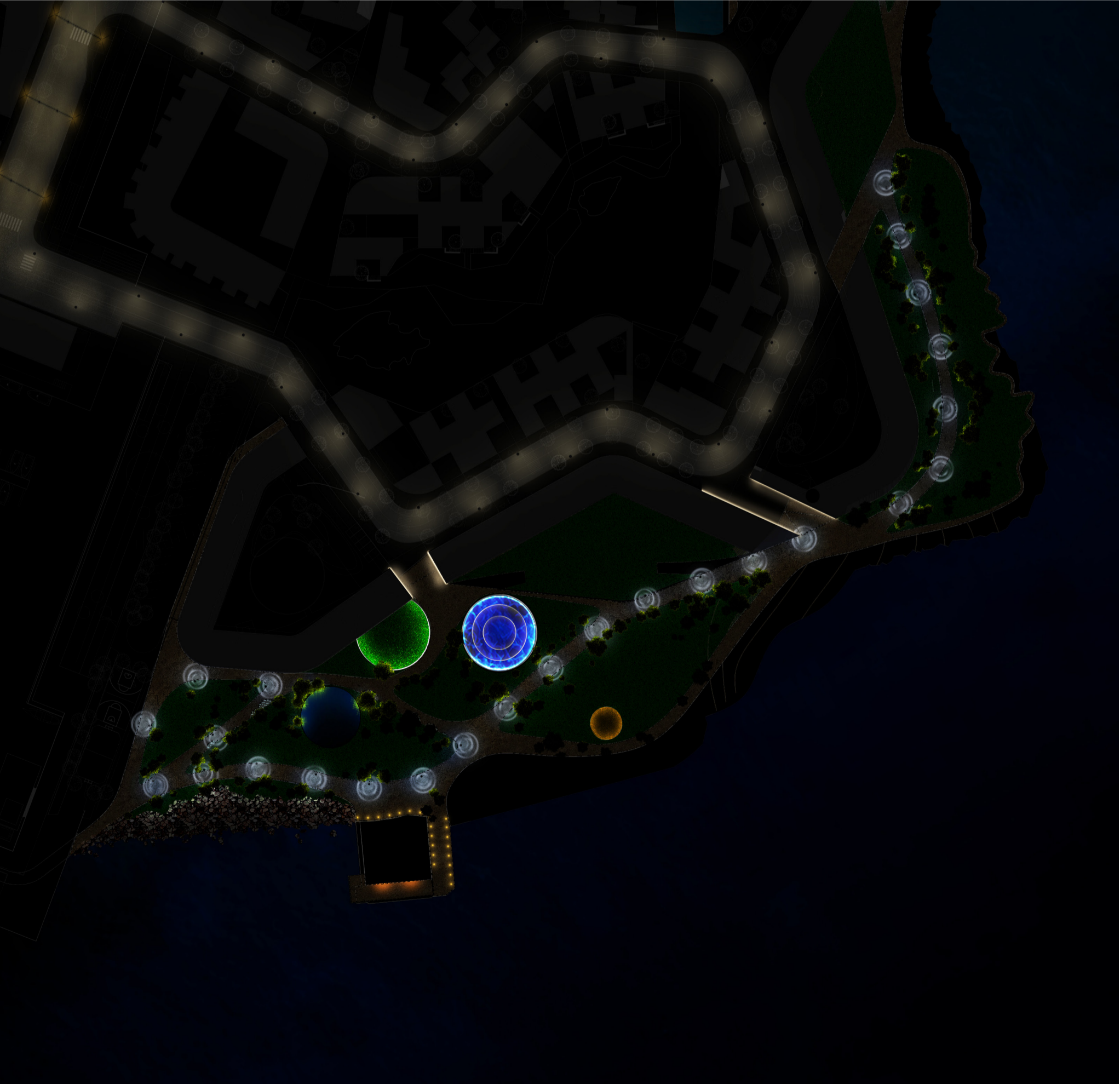
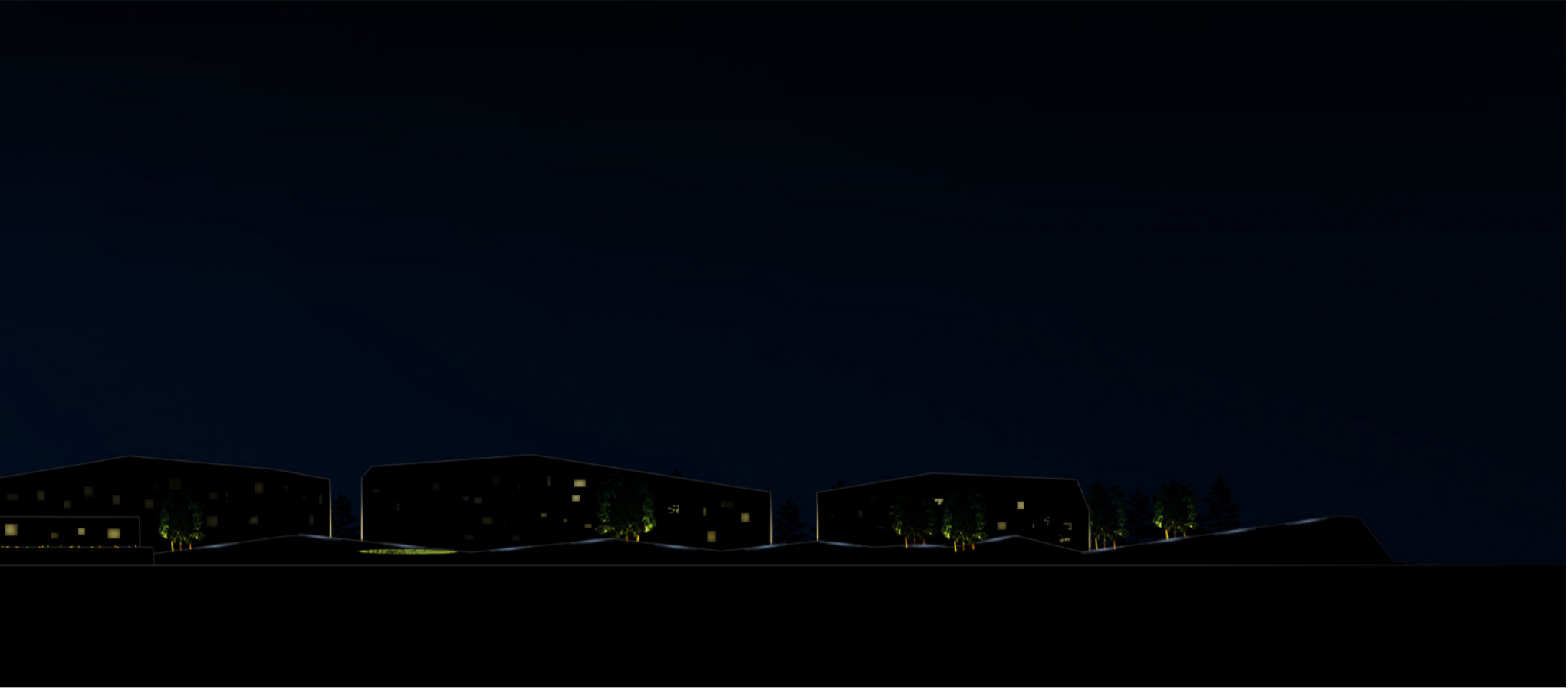


SITE-WIDE BALANCE
WIIRINLAITURI & ILONPUISTO



SITE-WIDE BALANCE

KOIRASAARET



ROUTES

MAP OF LIGHTING STANDARDS

The streetlighting will provide the base layer of functional light for Kruunuvuorenranta.

Whilst horizontal illumination levels have been recommended and will play an important role in enhancing safety, it is well established in the field of urban lighting that solely fulfilling requirements for prescribed horizontal illuminance levels will not necessarily lead to a satisfactory lighting solution. A purely functional, quantitative approach to lighting can lead to a design that is bland and overly utilitarian, placing the emphasis firmly on the immediate visual task and relegating spatial experience and sensitivity to the specific natural contexts to a secondary consideration.

Creating an after-dark environment that enhances safety, security and accessibility does not necessitate high light intensities and strong horizontal illuminance, but rather the selective illumination and modelling of key surfaces, forms and details. The illumination of vertical surfaces, whether they are natural (e.g. trees) or man-made (e.g. architectural and hard landscape features) are important aspects of the lighting to routes, especially with regard to the pedestrian experience.

Even soft lighting to vertical surfaces can greatly increase the legibility and perceived brightness of a space, whilst providing visual interest and creating distinctive characters through revealing materiality and texture. Lighting to vertical surfaces can also help to provide diffuse reflected light to peoples' faces, helping to aid facial recognition and further heighten perceptions of security.

Hemispherical Illumination

On pedestrian paths, hemispherical illuminance 'A-' classes should be considered as alternatives to horizontal illuminance classes, in accordance with the European Lighting Standards PD CEN/TR 13201-1:2004 (Table 4).

Hemispherical illuminance calculations consider the amount of light falling onto (and modelling) objects in space. They provide an indication of the amount of light falling onto 3-dimensional objects and people and so can provide a clearer understanding of the way in which an object can be seen and understood after dark. As such, hemispherical illuminance criteria are deemed an appropriate option for pedestrian areas, where the illumination and uniformity levels applied to objects in space can be more critical than those on the ground plane alone. Hemispherical illuminance classes are particularly usefully applied in situations where luminaire mounting heights are very low.

ROUTES
MAP OF LIGHTING STANDARDS



ROUTES

MAP OF LIGHT SOURCES

The light sources used for streetlighting will play a major role in determining how Kruunuvuorenranta is perceived after dark within its wider context. Whilst the site will be punctuated by various distinctive and memorable focal points of light, the streetlighting will to a large degree constitute the general background ambience of Kruunuvuorenranta during the hours of darkness.

Helsinki city is generally lit with warm colour temperatures of streetlighting and indeed studies have indicated that warm sources are preferred by the local residents. As such, warm 2700K - 3000K LED or metal halide (e.g. 'CosmoPolis' lamp) with a colour rendering of 60+ is recommended for streetlighting to help knit Kruunuvuorenranta into its urban context and to support its residential character.

It is recommended that pedestrian paths in the natural flowing landscape of Koirasaaret and the harsh rocky environment of Kruunuvuori are illuminated with cold white LED both to distinguish them from paths through urban areas and - in the case of the path on Kruunuvuori - to maximise the perceived brightness of the lighting per watt (to maximise lm/W of the source).

ROUTES
MAP OF LIGHT SOURCES



ROUTES

MAP OF MAXIMUM MOUNTING HEIGHTS

As a general rule mounting heights are minimised in the interests of promoting human scale and minimising light trespass through windows. Mounting heights are also selected in order to optimise views through to nature and are rationalised according to the nature of the street (tram/residential/waterfront) to aid legibility.

ROUTES

MAP OF MAXIMUM MOUNTING HEIGHTS

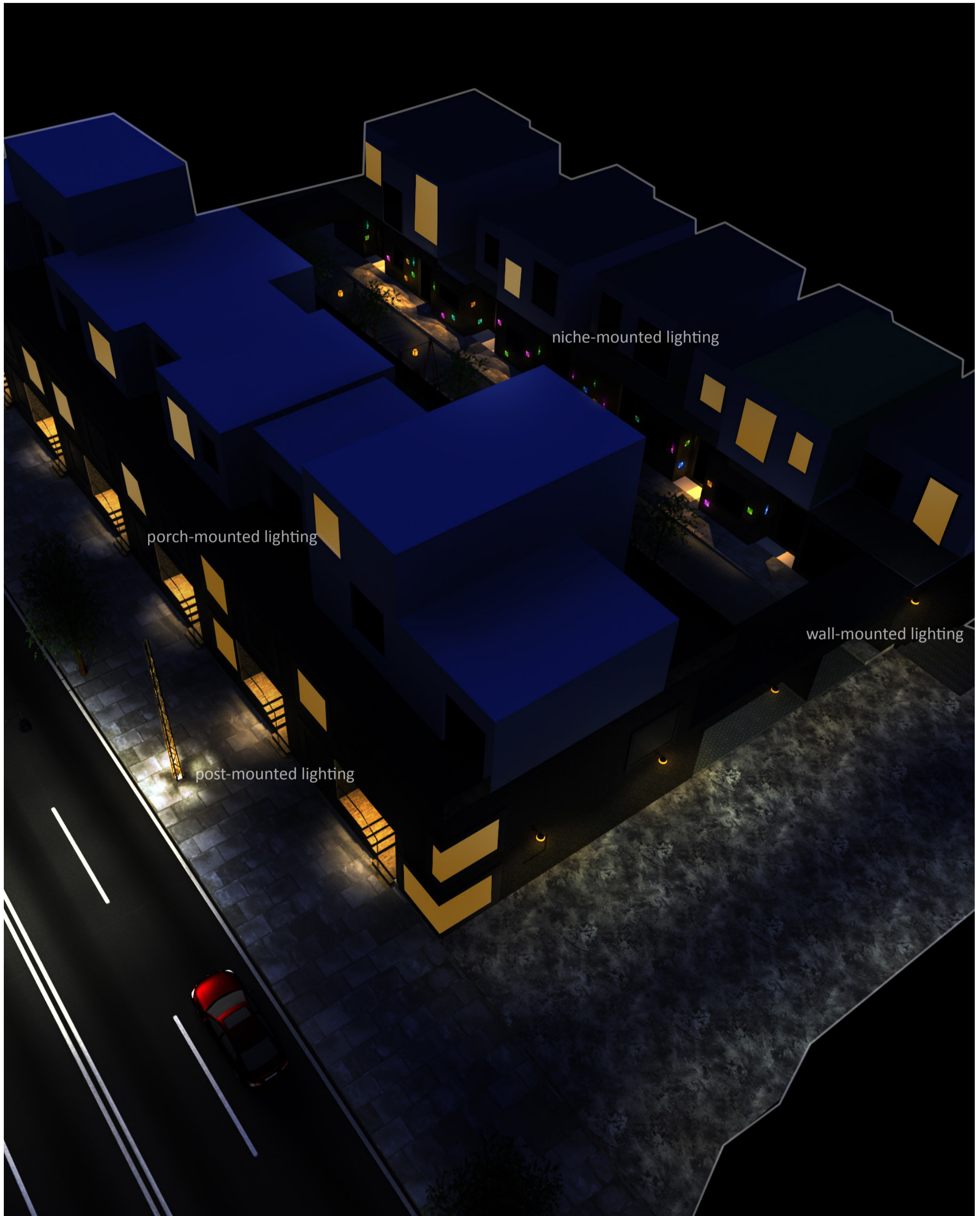


ROUTES

MAP OF MOUNTING TYPES

The general principle for the network of roads, streets and paths serving the residential quarters is that the mounting position of the light source moves from post/catenary on main roads onto the facades of side streets and then is integrated within the facade in residential courtyards - the light sources progress from the street into the facade the more private the route becomes.

Light sources are generally intended to be hidden, in favour of making the lit surfaces (landscape/road/wall etc.) and their colours/textures the dominant features rather than the equipment itself. The exceptions to this are the industrial posts, which become internally glowing features to enhance the pedestrian experience and the wall-mounted lanterns leading towards the waterfront, which aid way-finding and provide a visual link with the porch lighting on Saaristolaivastonkatu.



ROUTES
MAP OF MOUNTING TYPES



OPEN SPACES

MAP OF CHARACTER TYPES

The various public spaces in Kruunuvuorenranta will become important focal points not only for locals but for visitors, whether they are from Helsinki city or further afield. Each will have its own distinctive character after dark through the manner of illumination.

In some cases the scale and density of lighting will be quite low key to enhance a more private and cosy ambience - such as in residential courtyards.

In others, like in Haakoninlahti Harbour, the emphasis will be more on creating an active 'public living room', which is activated by night-time economic activity such as cafes and bars and which attracts people to experience light art events, night markets and other evening activities. Such spaces will naturally appear brighter through the range of activities present and the illumination they necessitate. They will also be subject to larger scale lighting interventions which celebrate the industrial and natural context of the site after dark.

Haakoninlahti Park is a green spine running through the heart of the site and will generally have a darker character which is punctuated by a series of distinctive lighting interventions - illuminated play equipment, a lantern-like pavilion, lit water features and natural landscape features. The integrity of its lit character will be maintained from East to West, with fields of reflective 'cat's eyes' scattered across the intersections with Saaristolaivastonkatu and Haakoninlahdenkatu that allow illuminance levels to be reduced through creating a naturally luminous/reflective road surface.

OPEN SPACES
MAP OF CHARACTER TYPES



ARCHITECTURE

MAP OF AFFECTED FACADES

Niches

Dedicated recesses/slots/niches should be provided on residential facades that face courtyards to help frame the courtyard and provide functional light to its perimeter whilst avoiding light spill through residents' windows.

Porches

Porches facing primary streets should enable the mounting of a city-owned and powered lantern which illuminates the entrance and contributes to the illumination of the pedestrian path.

Thresholds

Architectural gateways into courtyards should be positively illuminated (soffits and walls) to create easily identifiable and welcoming thresholds.

Streetnames

Bespoke street name plaques with integral lighting should be designed and installed to lend the neighbourhood a distinctive identity and to aid wayfinding after dark.

Lantern soffit

The harbour building will house key public amenities and occupies an aesthetically important location. As such it will house a light art installation that is demountable/portable for functional and artistic use during events.

ARCHITECTURE
MAP OF AFFECTED FACADES



STRUCTURES

MAP OF TYPES

A number of structures or 'small architecture' will exist on the site - some introduced as part of this lighting and landscape concept but others introduced as part of the set of street furniture required in any urban development - bus shelters, kiosks etc.

Each of these structures will require some form of artificial illumination not only to provide functional task lighting but also to make them identifiable after nightfall. The lighting for each should be part of an integrated design solution (as opposed to a retro-fitted overlay) and should respond creatively to the 'lantern' concept - i.e. structures glowing from within.

STRUCTURES

MAP OF TYPES



HERITAGE

MAP OF LOCATIONS

The heritage features - oil silos, silo footprints and piers/crane - will form the main lit features of the waterfront elevation. Each will be subject to a unique lit treatment.

HERITAGE
MAP OF LOCATIONS



LIGHT ART

MAP OF TYPES

The approach towards light art interventions is that they should be integrated into existing heritage structures and future public street furniture/equipment as opposed to becoming a separate overlay. In this way they are functional features that serve visitors and the local community during the daytime (e.g. picnic tables, benches, bicycle racks) and they become works of applied light art after dark. These structures can also be designed to create daytime light art through the filtering and reflection of natural light through various materials.

LIGHT ART
MAP OF TYPES



LIGHTING CONTROL

ROUTES & LANDSCAPE

Lighting control systems have long been used within buildings to deliver flexibility, variable ambiances, assist with lighting management and produce energy savings. The external public realm, however, has thus far been slow to embrace the wealth of opportunities presented by lighting control systems.

A development-wide lighting control system should be implemented to provide a flexible, intelligent and future-proofed lighting system that is tailored to meet the needs of its residents and visitors at all times and which ensures that lights are dimmed or switched down whenever/wherever possible. This is particularly important given the wide variations in natural light conditions and surface luminance conditions involved.

As well as the obvious energy-saving benefits, the lighting control system could enable remote monitoring of individual light sources to provide feedback regarding remaining lamp-life and imminent faults, helping to make maintenance regimes easier and more efficient. Dimming streetlighting during the late night will also help to enhance the character of the site and can support the well-being of its residents through providing a 'quieter' ambience late at night.

A wireless street-lighting control system is recommended, which would provide stepped dimming, individual addressing of light sources and remote monitoring.



COURTYARDS

ARCHITECTURE
NICHES

LIGHT ART
PIHAKEINUT



lit niches

courtyard applied light art

COURTYARDS REQUIREMENTS



The courtyards form the hearts of the communities. They bridge the gap between public and private space and provide a focus for every-day interaction and outdoor play after dark.

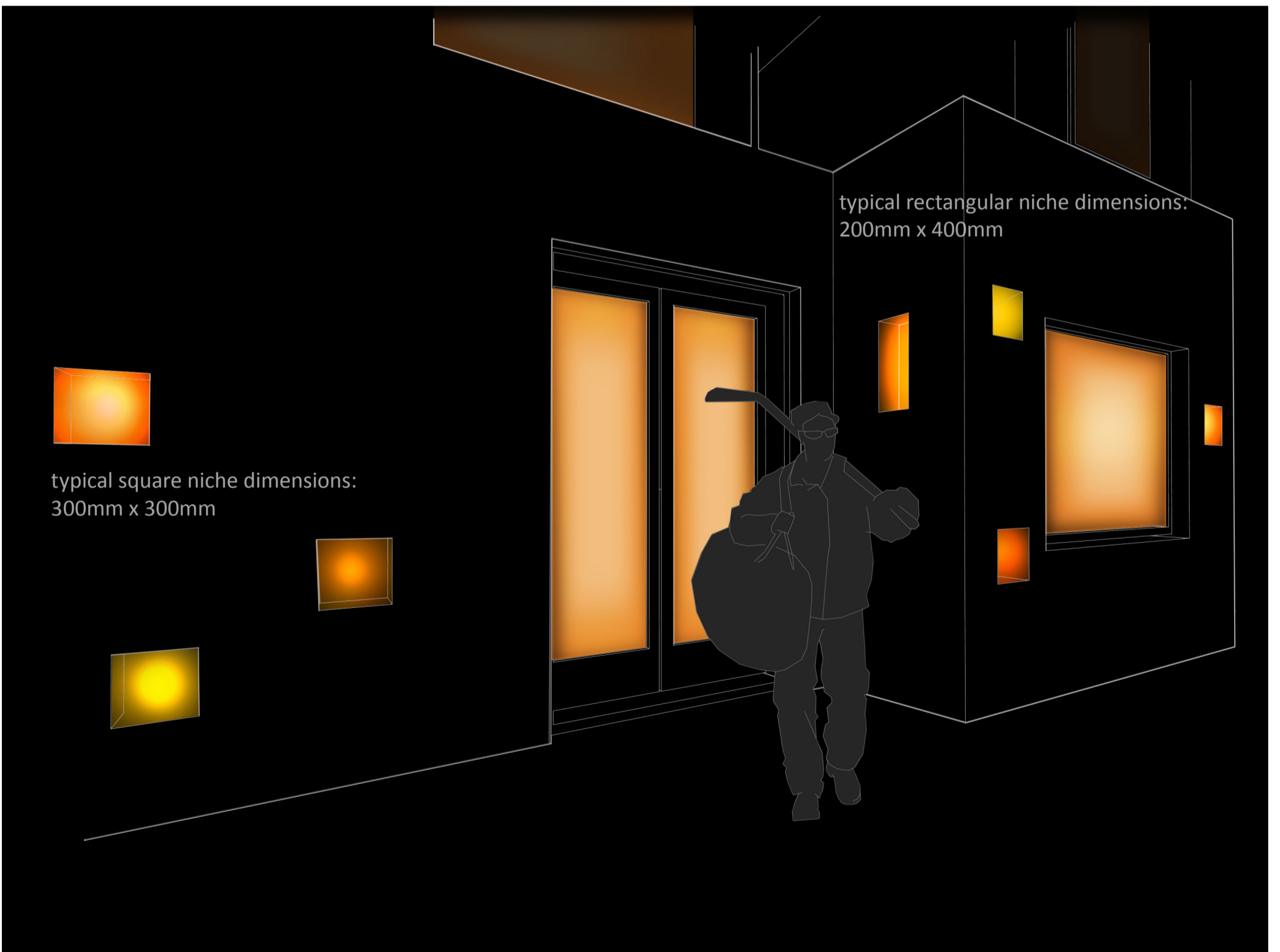
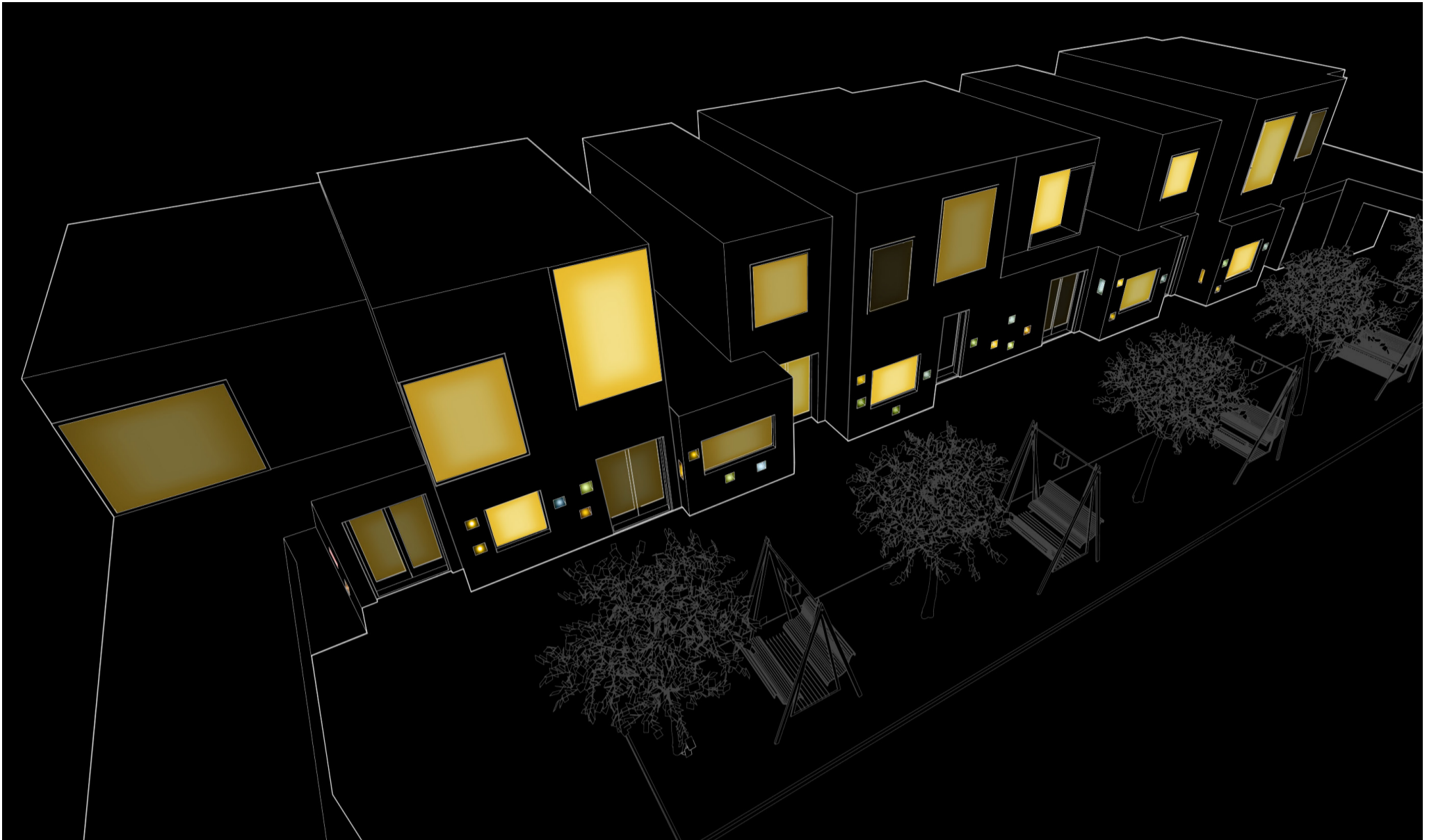
The residences frame each courtyard and their windows provide light to them naturally when people are at home. The random pattern of illuminated interior finishes and backlit curtains and blinds provide illumination to the space, enhance a sense of security/passive surveillance and enrich the night scene through variation.

Each courtyard-facing residential facade should incorporate integrated lighting to provide functional illumination for residents and to reinforce individual and community identities after dark.

A set of guidelines have been written which aim to ensure that lighting is integrated into residential facades in an appropriate manner where required. The guidelines are also intended to be flexible enough to allow and positively encourage the individual creativity of each design team. The creative response to the 'niches' in each courtyard should bring diversity and individuality amongst Kruunuvuorenranta's neighbourhoods after dark.

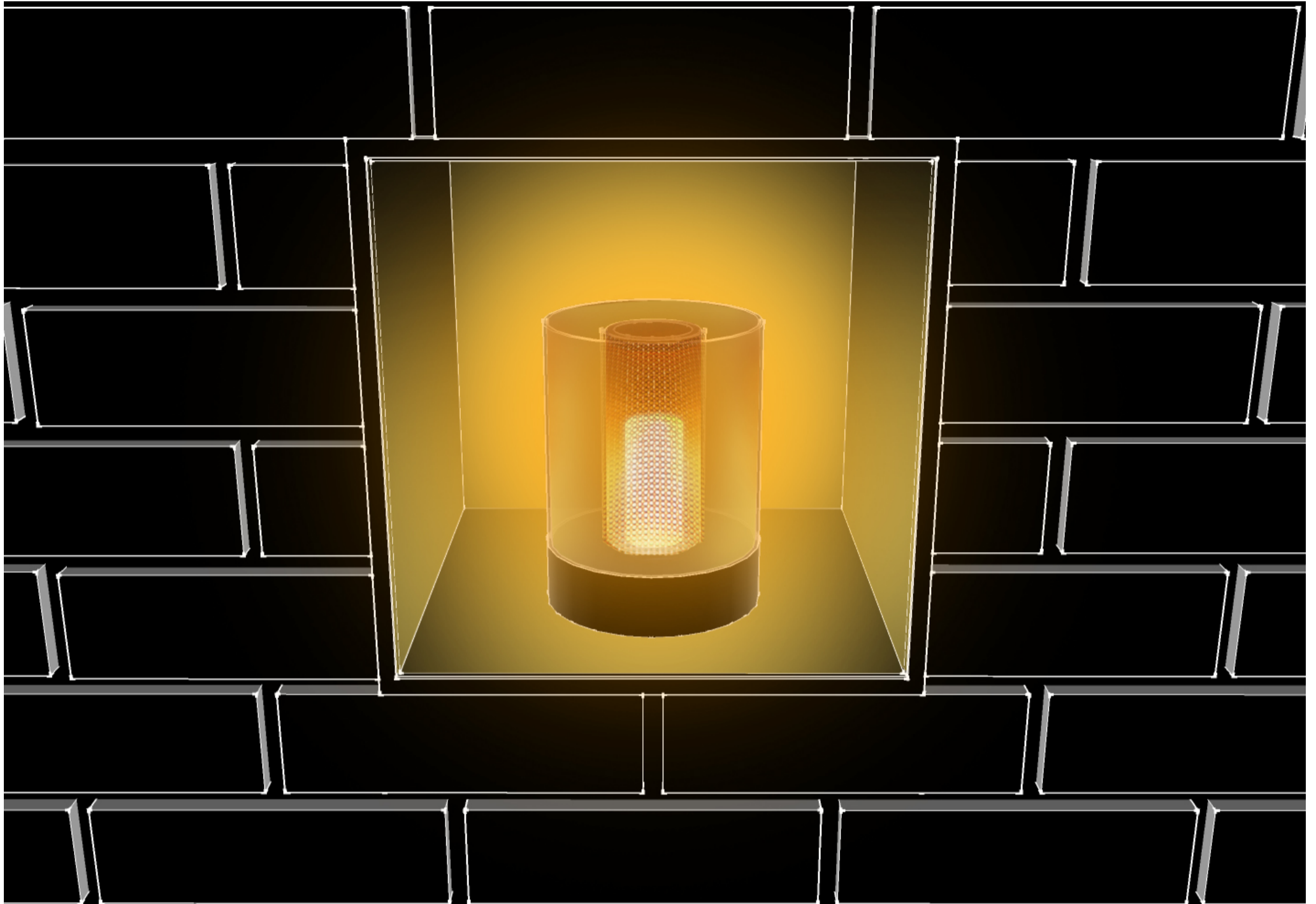
- The niche must be a bespoke solution for the style of facade into which it is installed.
- The niche must be designed as a functional as well as artistic feature - they should negate the need for a separate lighting system around the perimeter of each courtyard.
- The niche must be seamlessly integrated into the facade - not applied onto it.
- The size and shape of niches must be proportioned relative to the scale and style of facade.
- The layout of niches must be designed such that there is a visual balance created across the whole facade.
- The niches should provide consistent and sufficient light to the perimeter of the courtyard to enable safe passage.
- Niches should only be integrated at ground floor level.
- Warm white 2700K - 3000K LED lighting should be used.
- Where light sources are designed to be viewed directly they must not cause glare.
- Each niche should utilise distinctive materials which are tested for their appearance under the specified light source.
- A mock-up of a typical working (i.e. lit) niche must be submitted for approval by the City Planning Department.

COURTYARDS
TYPICAL NICHE LAYOUT



COURTYARDS

TYPICAL NICHE DETAIL - DIRECT LIGHTING



Courtyard Perimeter

| | |
|---|--|
| Luminaire type: | Surface-mounted lantern with radial distribution |
| Light source: | LED/CFL |
| Mounting: | Into niche (permanent fixing) |
| Height to source: | 1-2m variable |
| Colour temperature, K: | 2700K |
| Colour rendering, Ra: | 80+ |
| Light Levels, within 3m width from facade: | E_{ave} 5 lux & min. 0.15 uniformity or SC_{min} 1 lux (semi-cylindrical illuminance) |

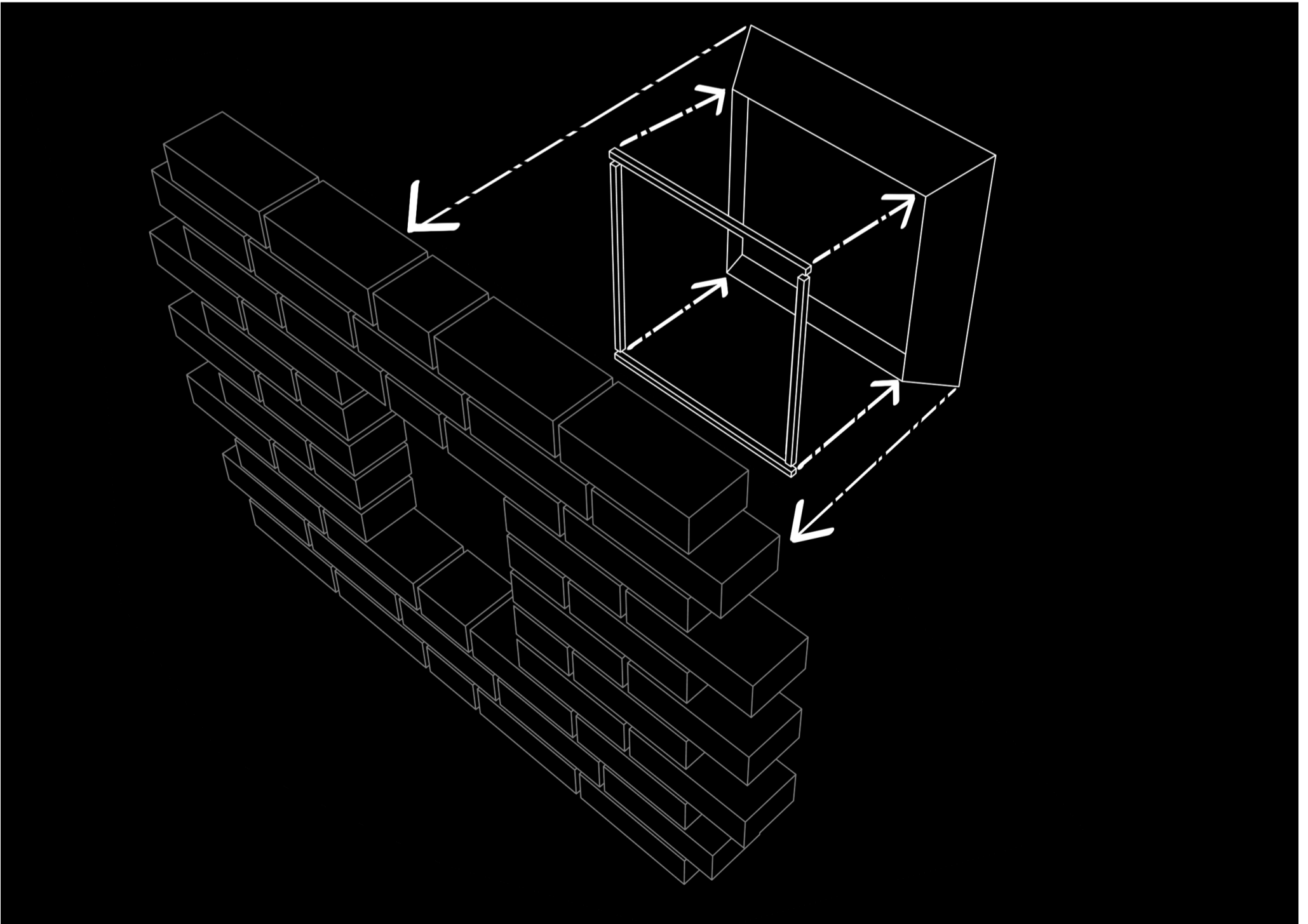
COURTYARDS

TYPICAL NICHE DETAIL - INDIRECT LIGHTING

indirect lighting variant

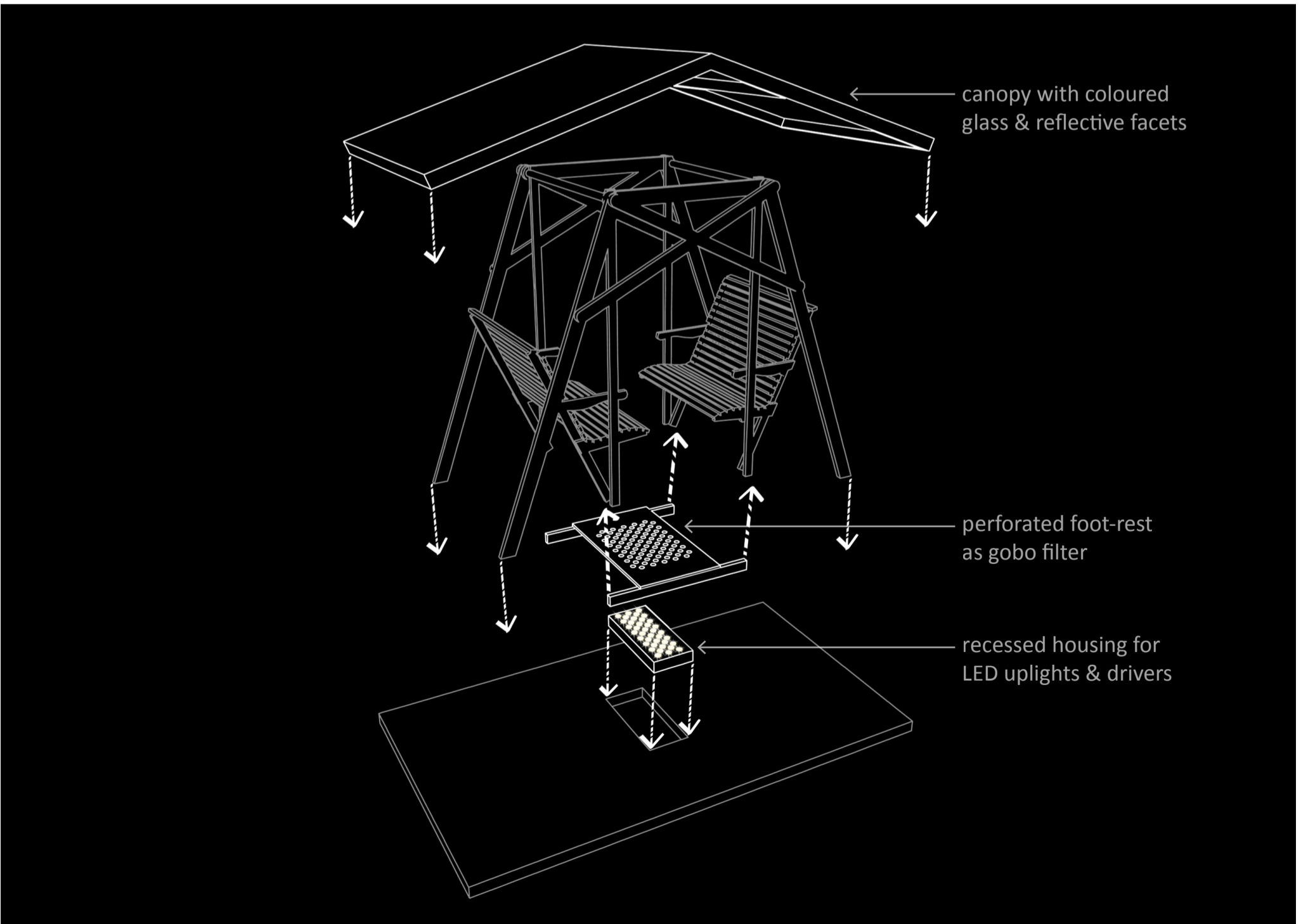


concealed high power LED strips, coloured niche interior



COURTYARDS

LIGHT ART EXAMPLE - PIHAKEINUT



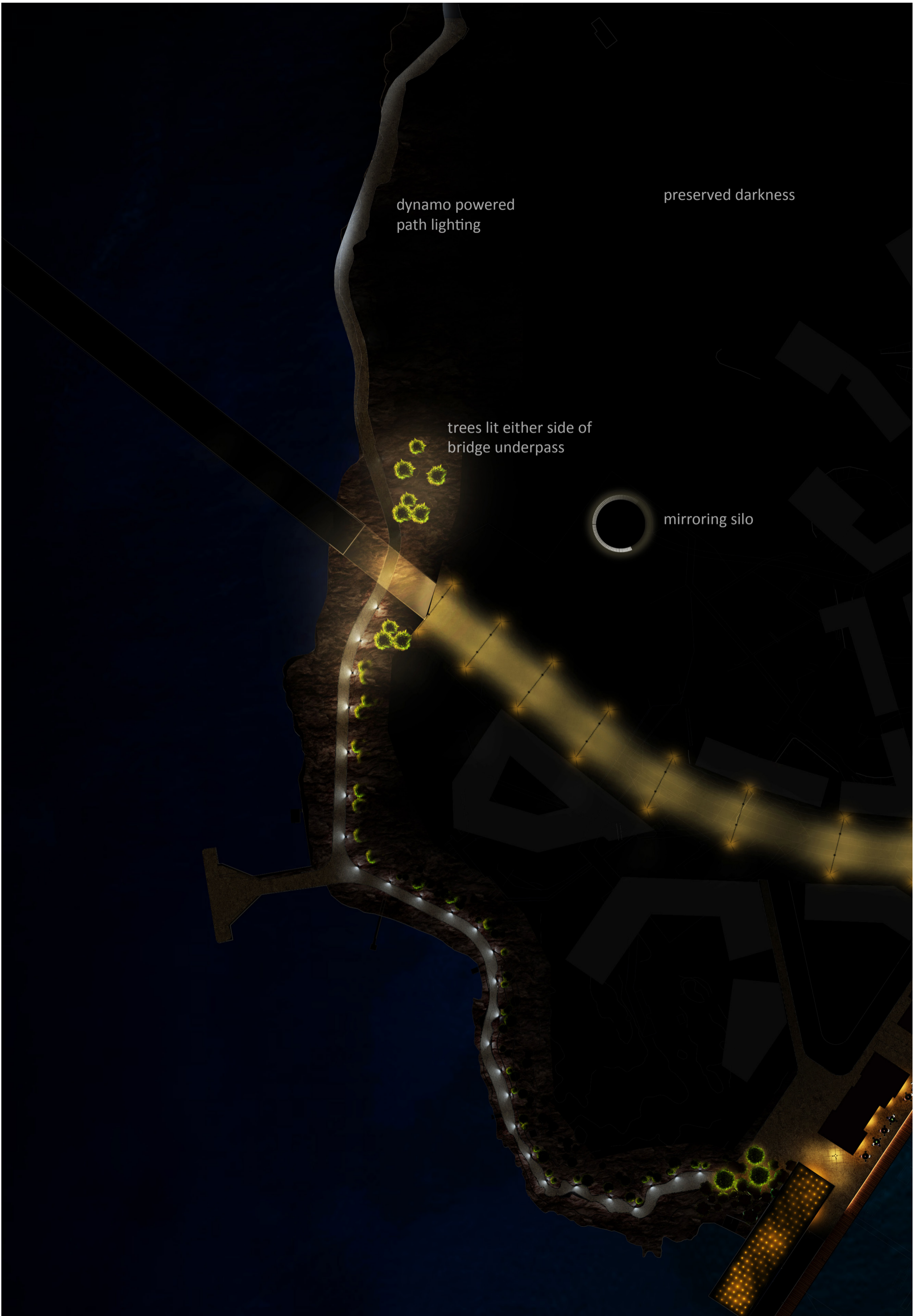
KRUUNUVUORI & SILO

ROUTES

DYNAMO-POWERED PATH

HERITAGE

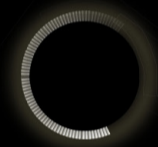
MIRRORING SILO



dynamo powered
path lighting

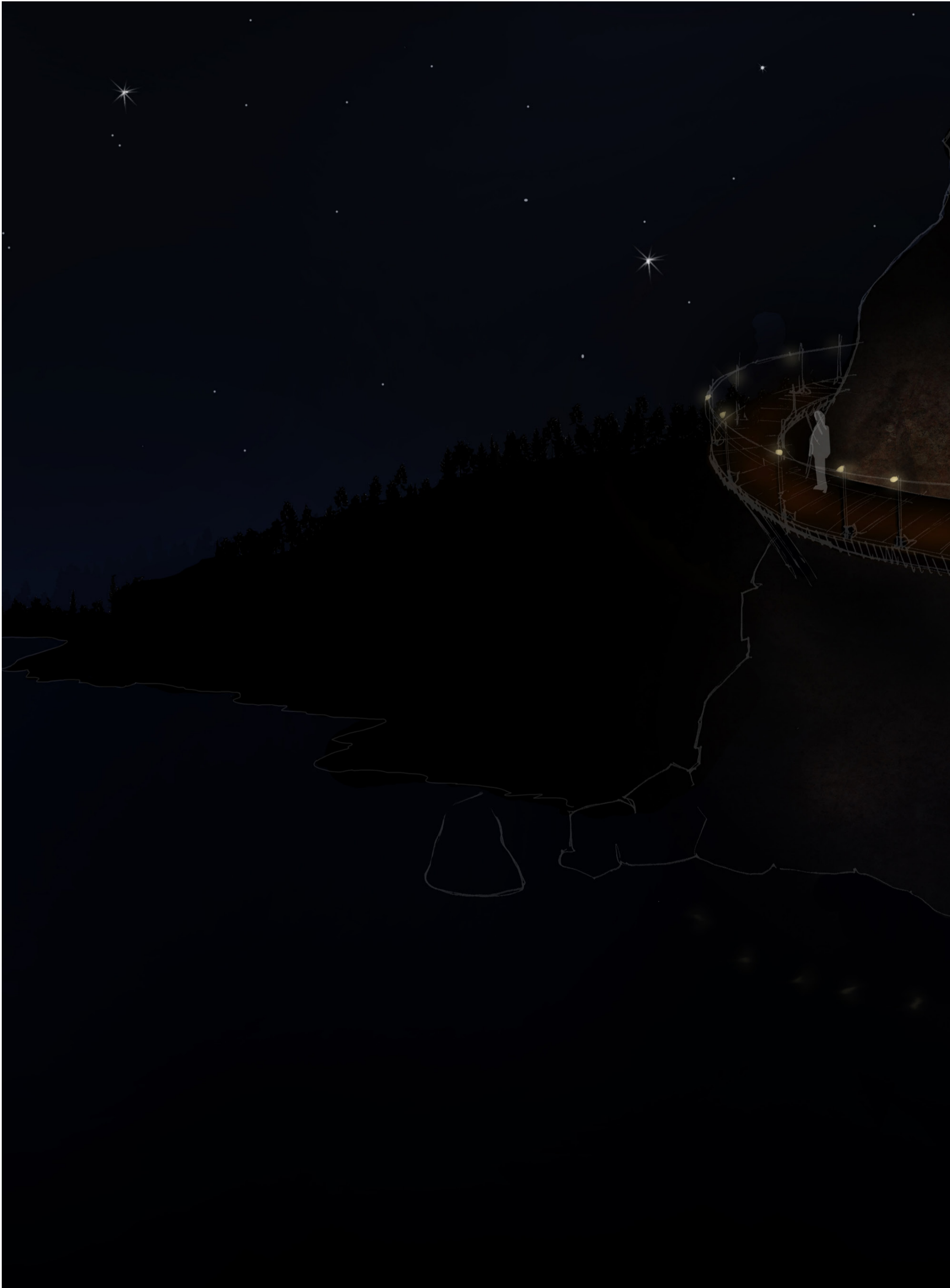
preserved darkness

trees lit either side of
bridge underpass

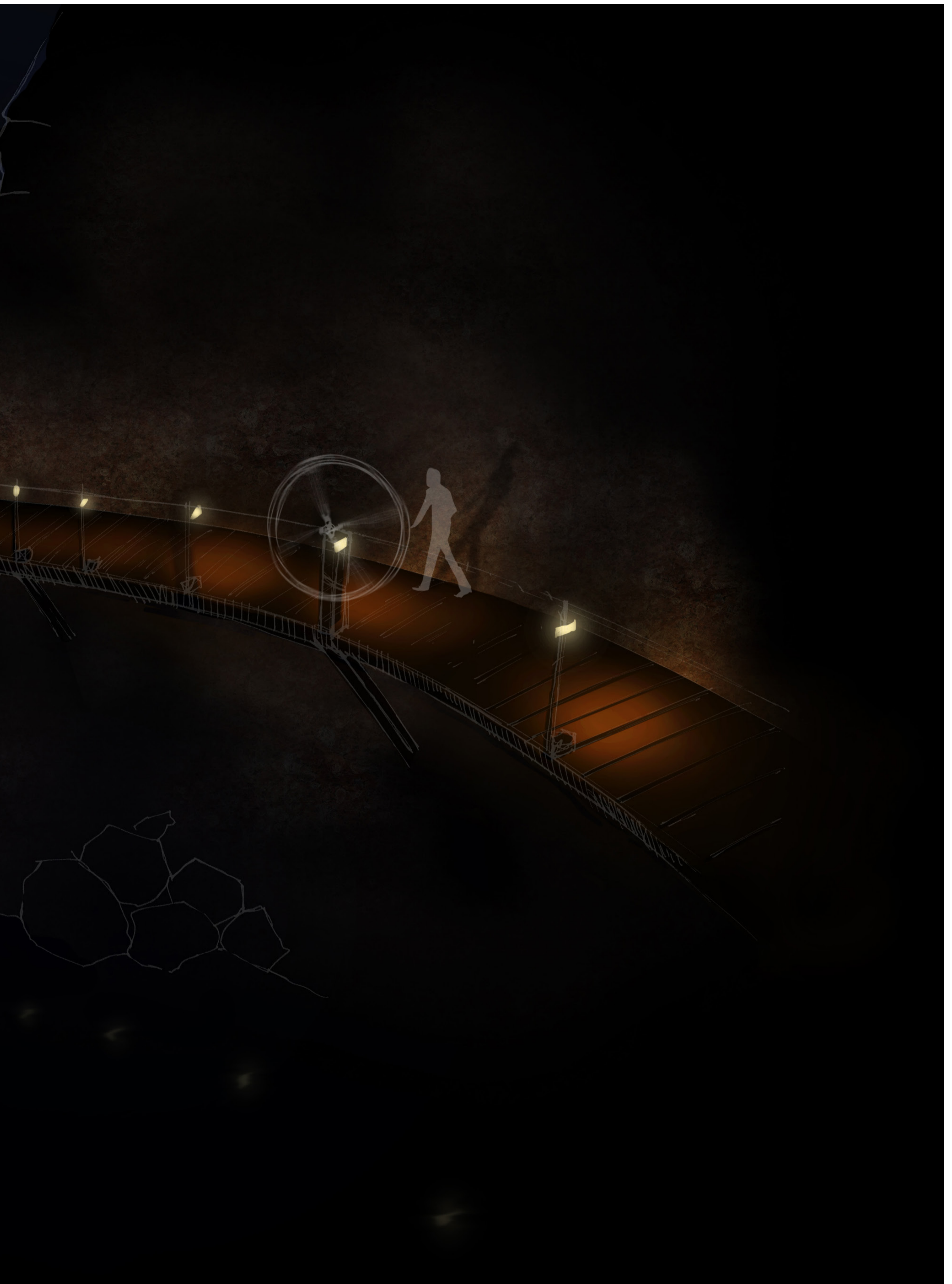


mirroring silo

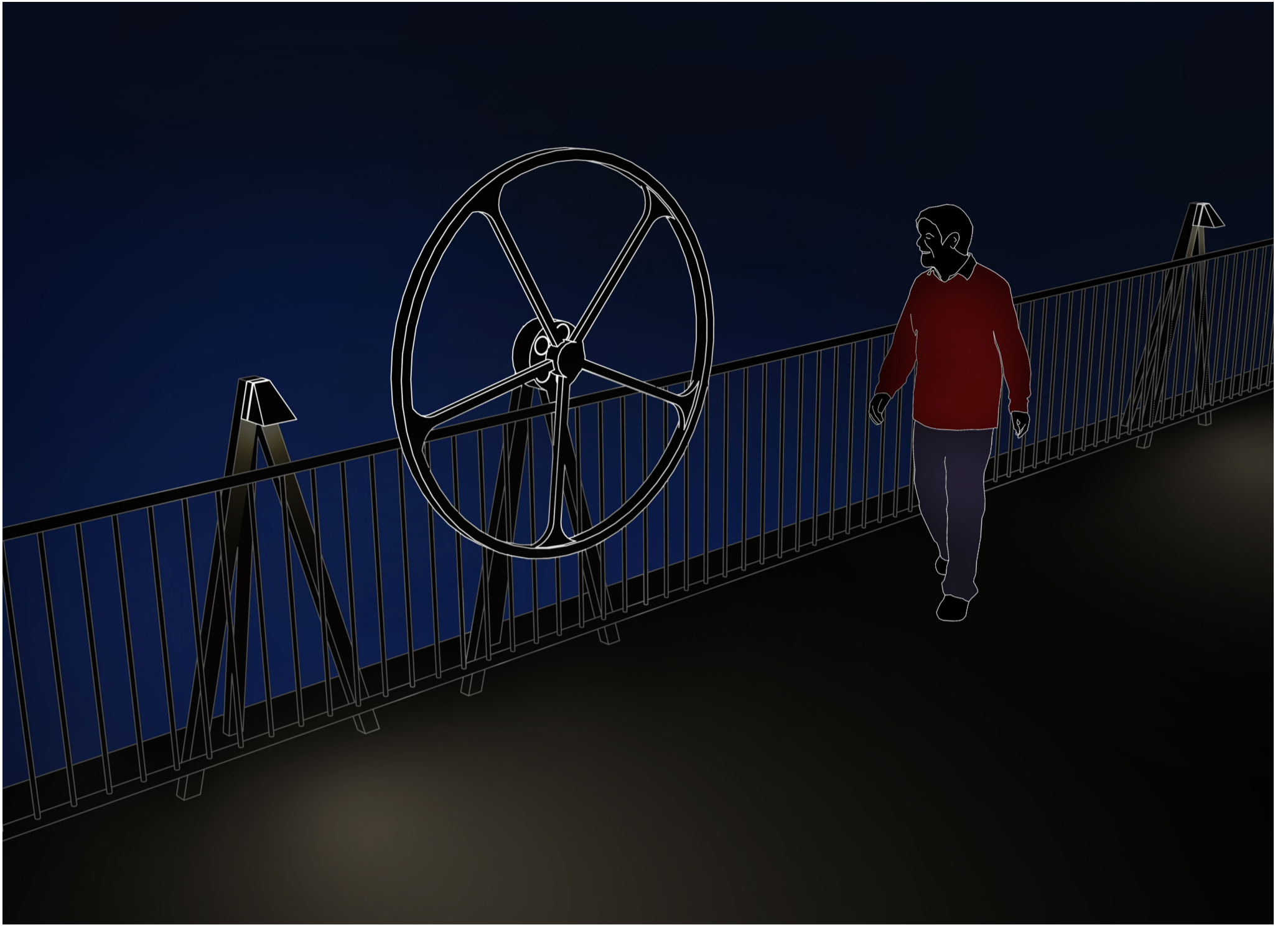
KRUUNUVUORI & SILO
ROUTES



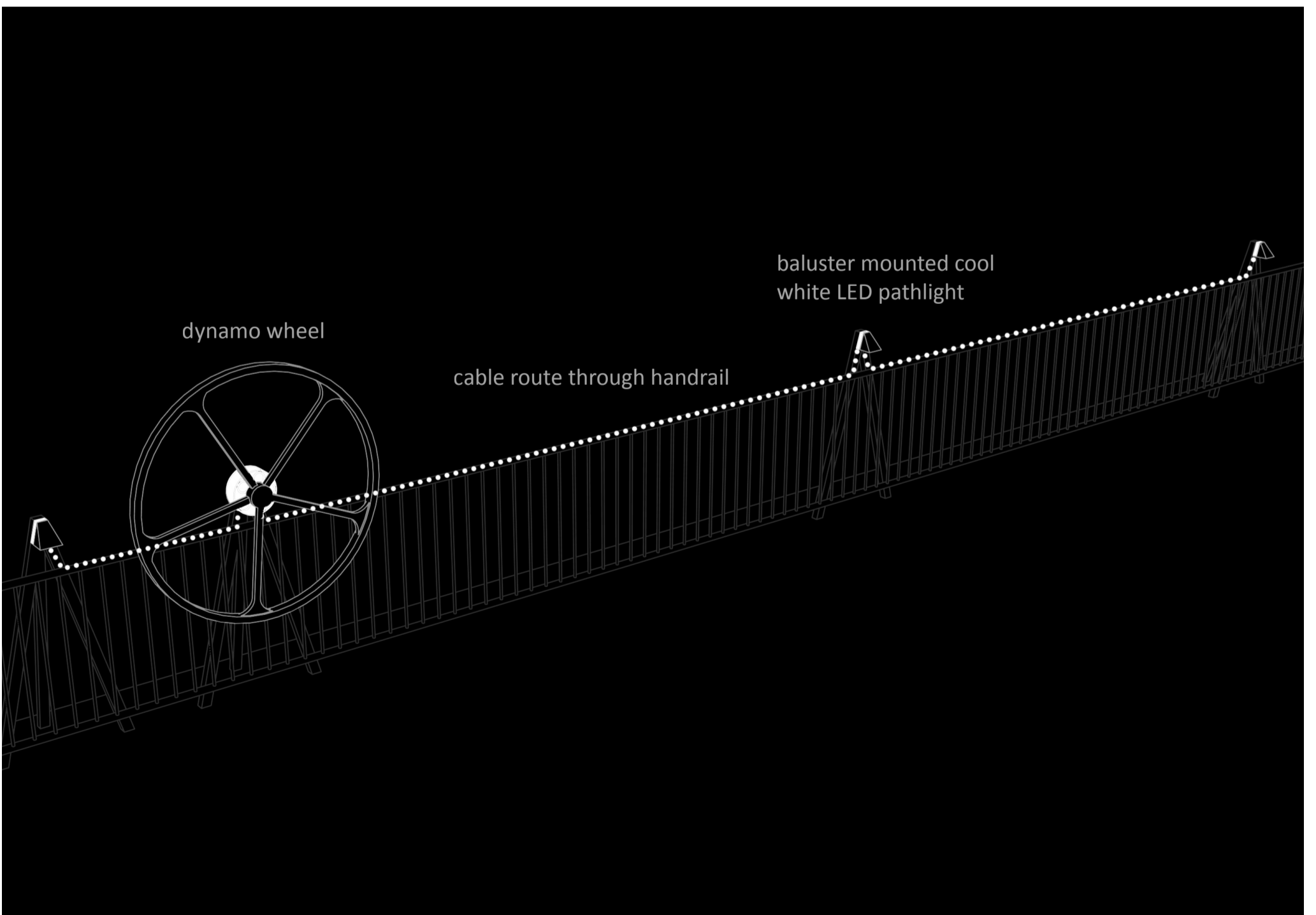
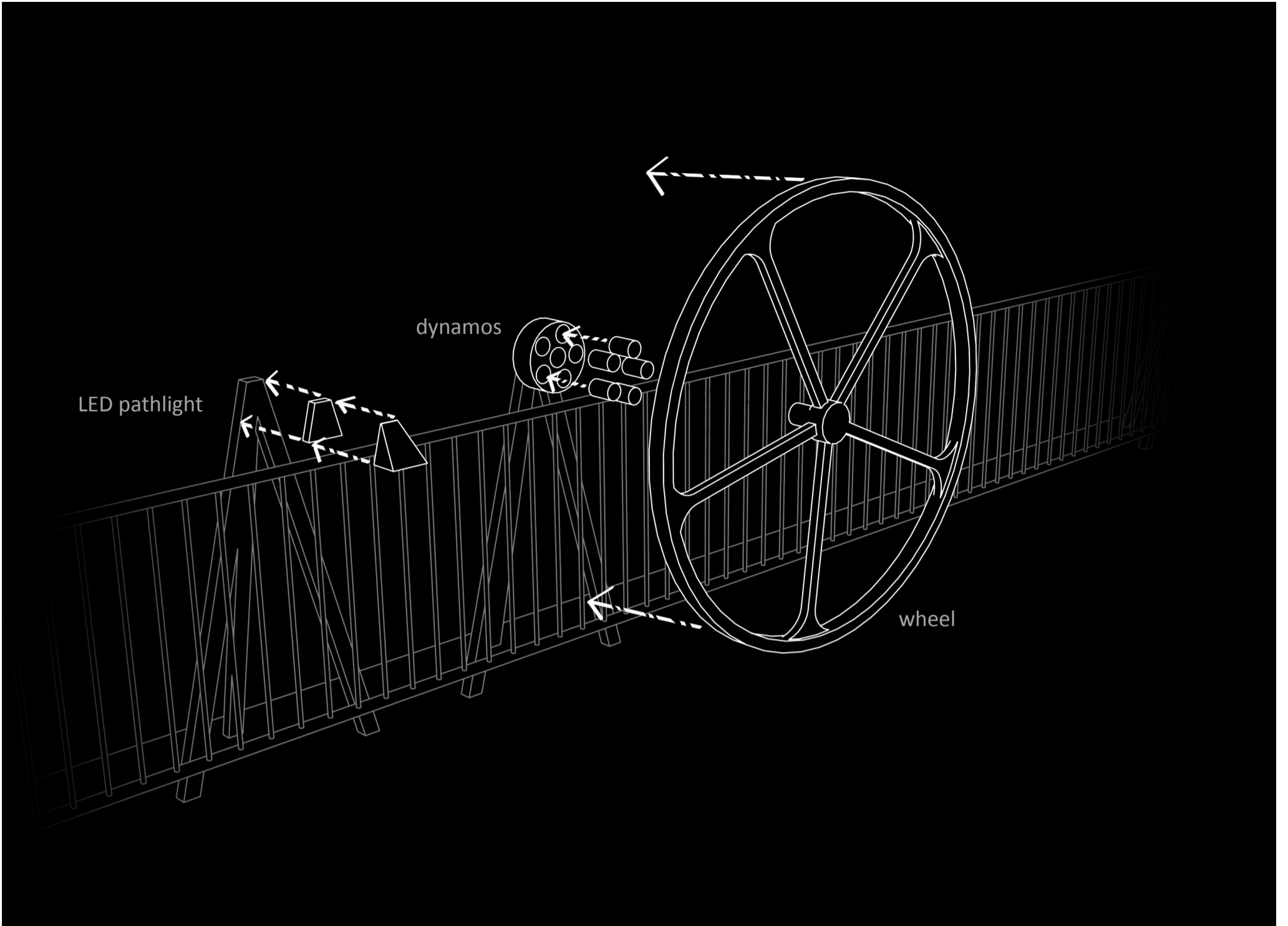
KRUUNUVUORI & SILO
ROUTES



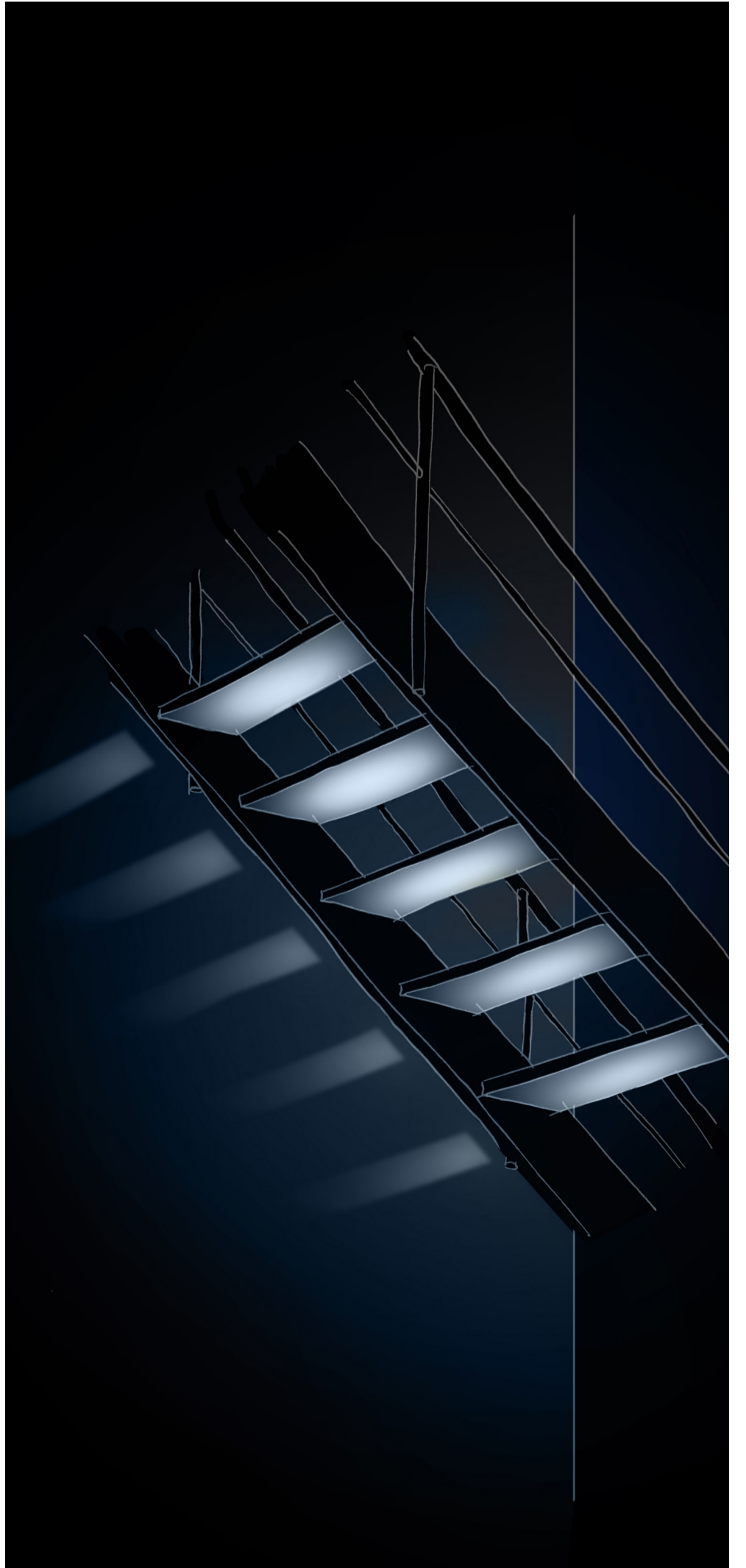
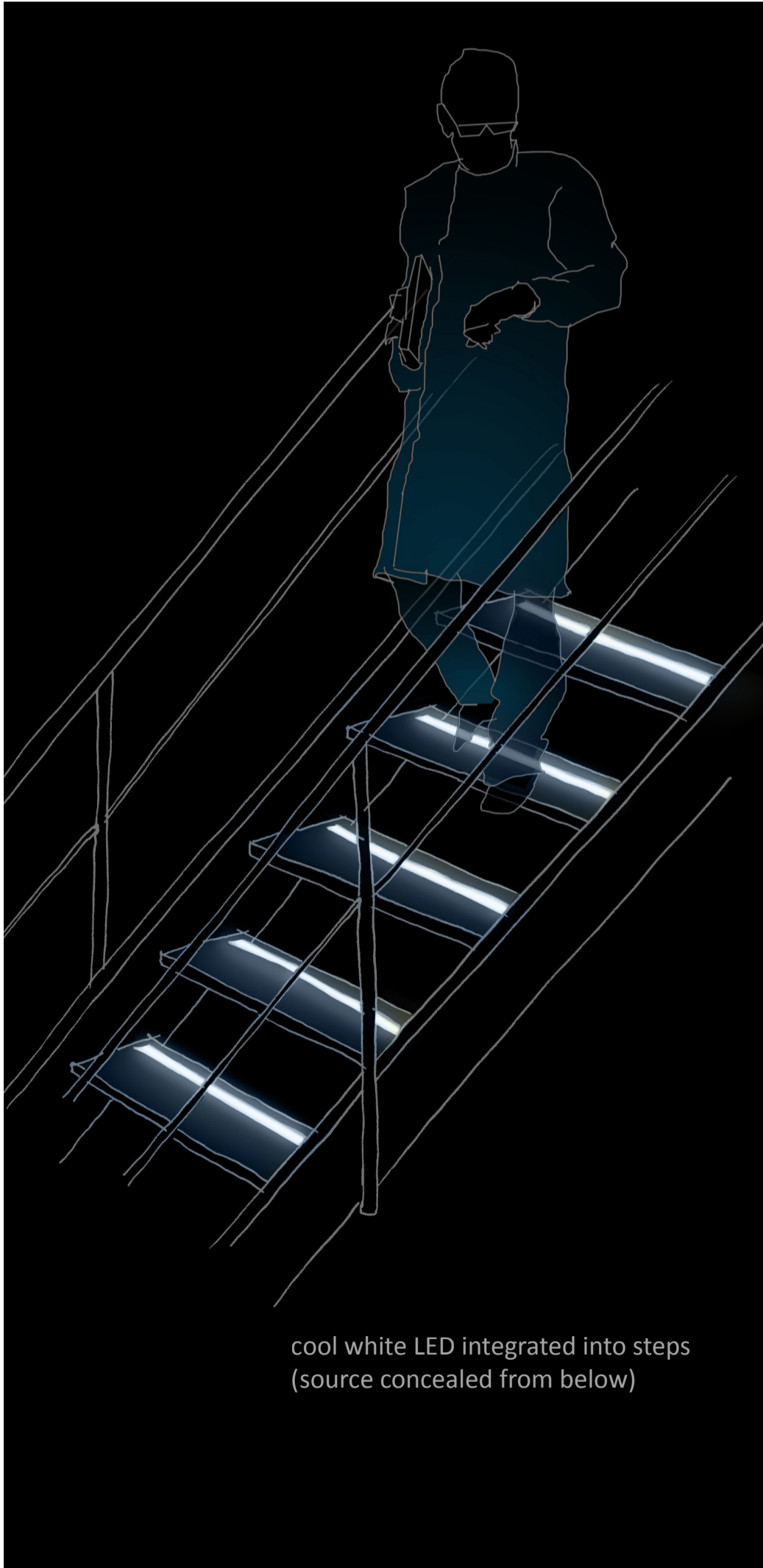
KRUUNUVUORI & SILO
ROUTES



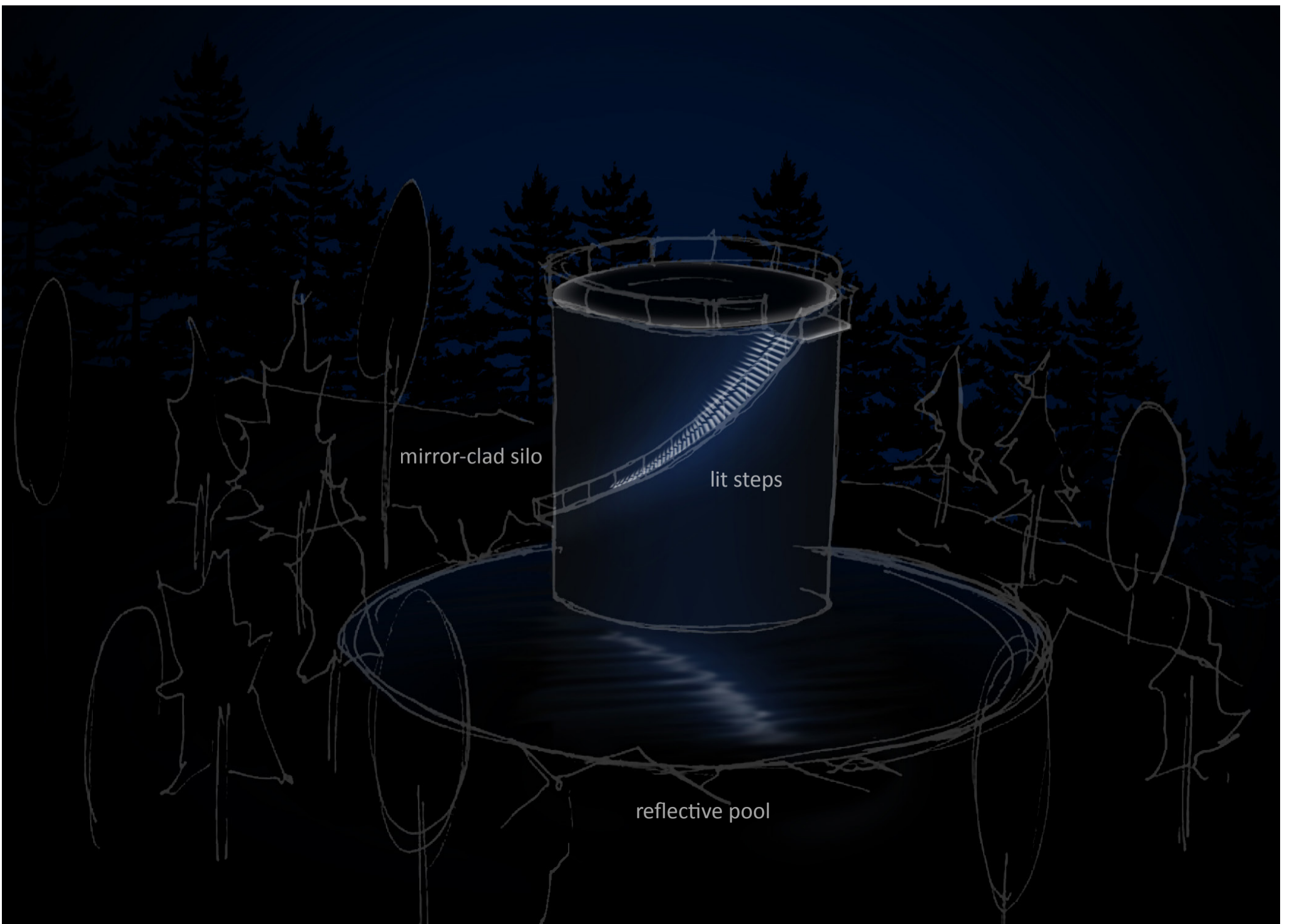
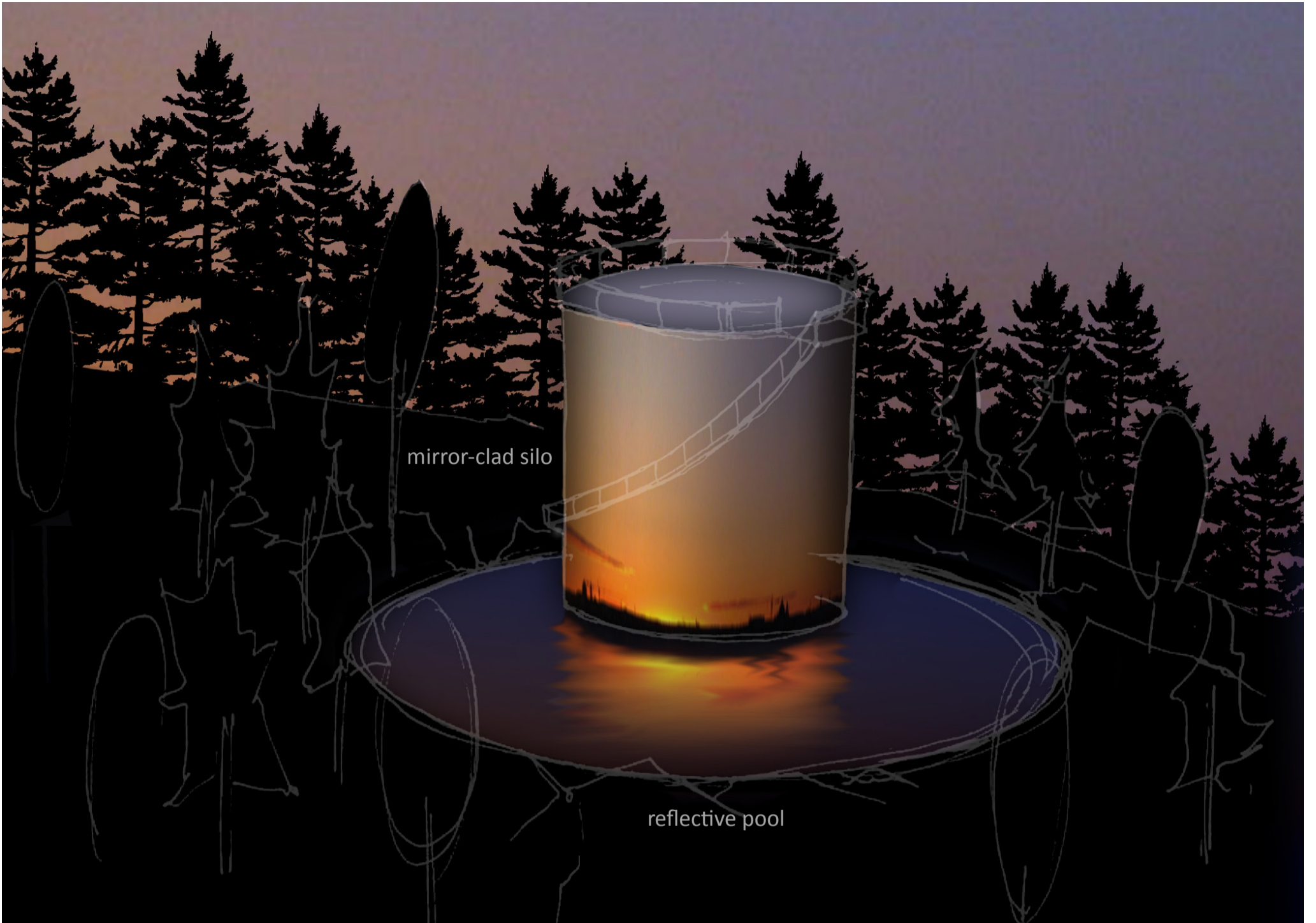
KRUUNUVUORI & SILO
ROUTES



KRUUNUVUORI & SILO
HERITAGE



KRUUNUVUORI & SILO
HERITAGE

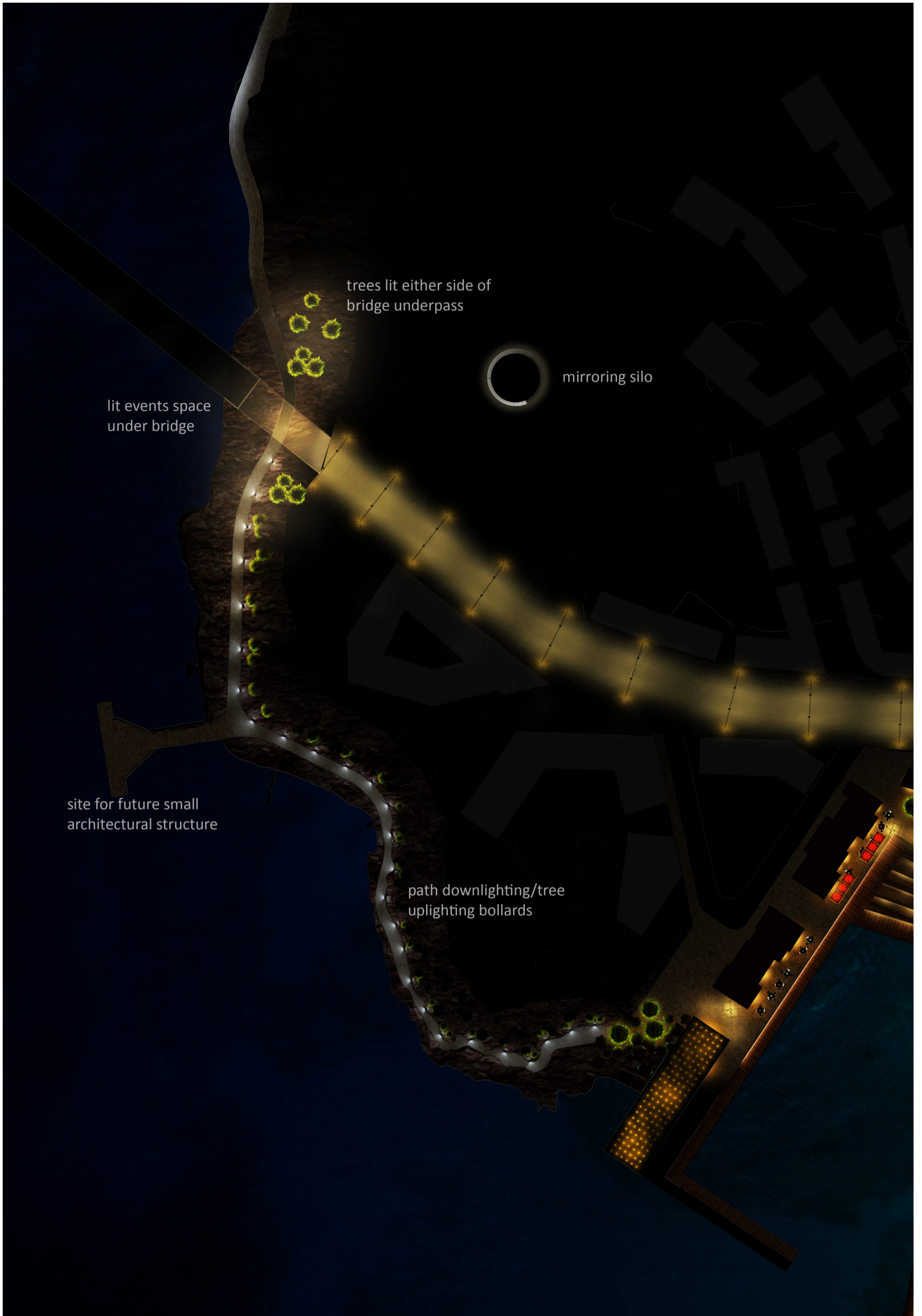


WESTERN FORELAND & OIL PIER

STRUCTURES/LIGHT ART
BRIDGE UNDERPASS

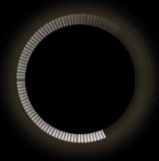
HERITAGE
OIL PIER

ROUTES/LANDSCAPE
PATH LIGHT/TREE UPLIGHTING BOLLARD



trees lit either side of
bridge underpass

lit events space
under bridge



mirroring silo

site for future small
architectural structure

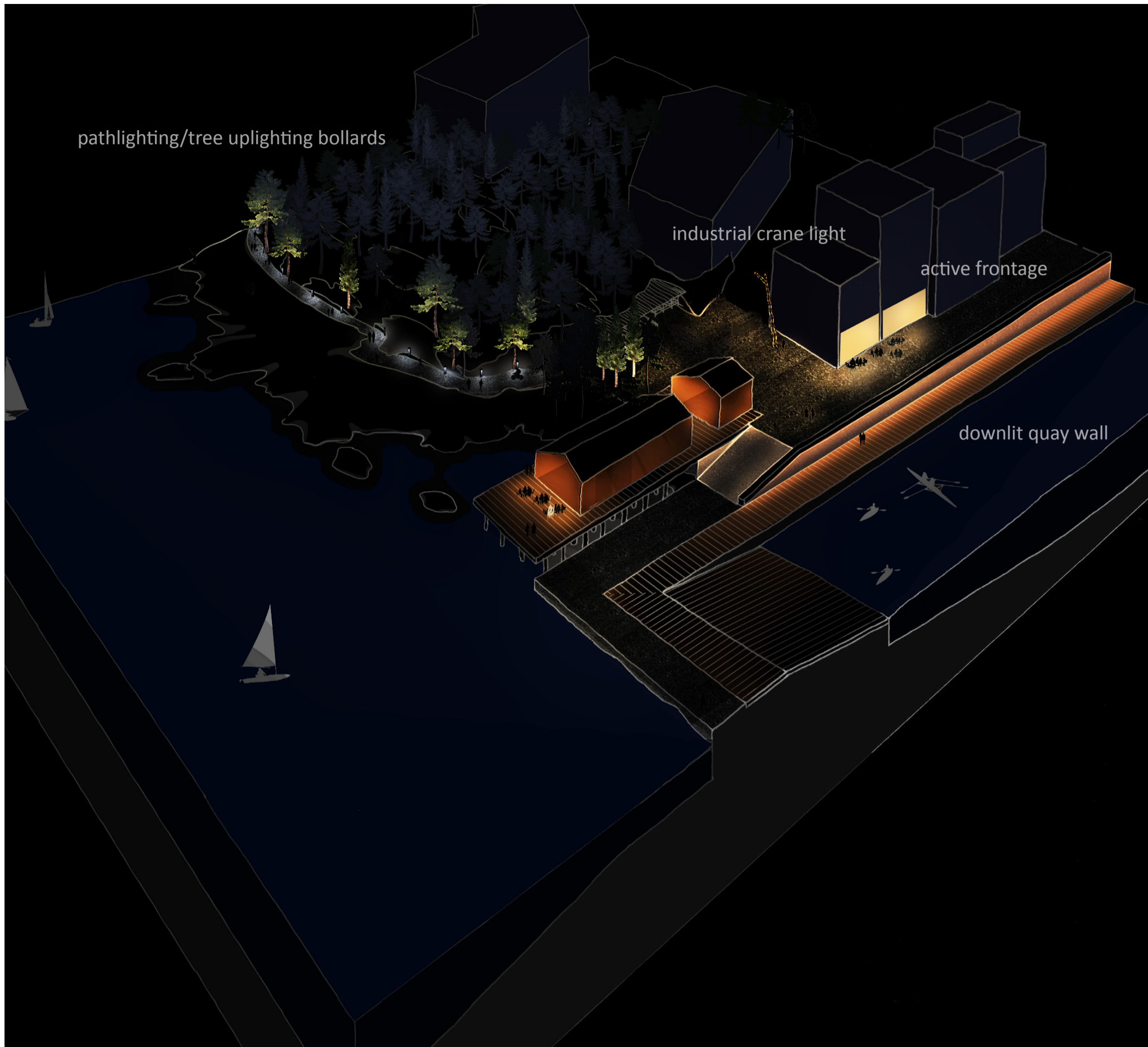
path downlighting/tree
uplighting bollards



Without well-designed lighting the bridge underpass could become a gloomy and unpleasant secondary space by day and by night. The bridge deck provides shelter and creates a compressed space that has the potential to become a useful site for events and art.

WESTERN FORELAND & OIL PIER

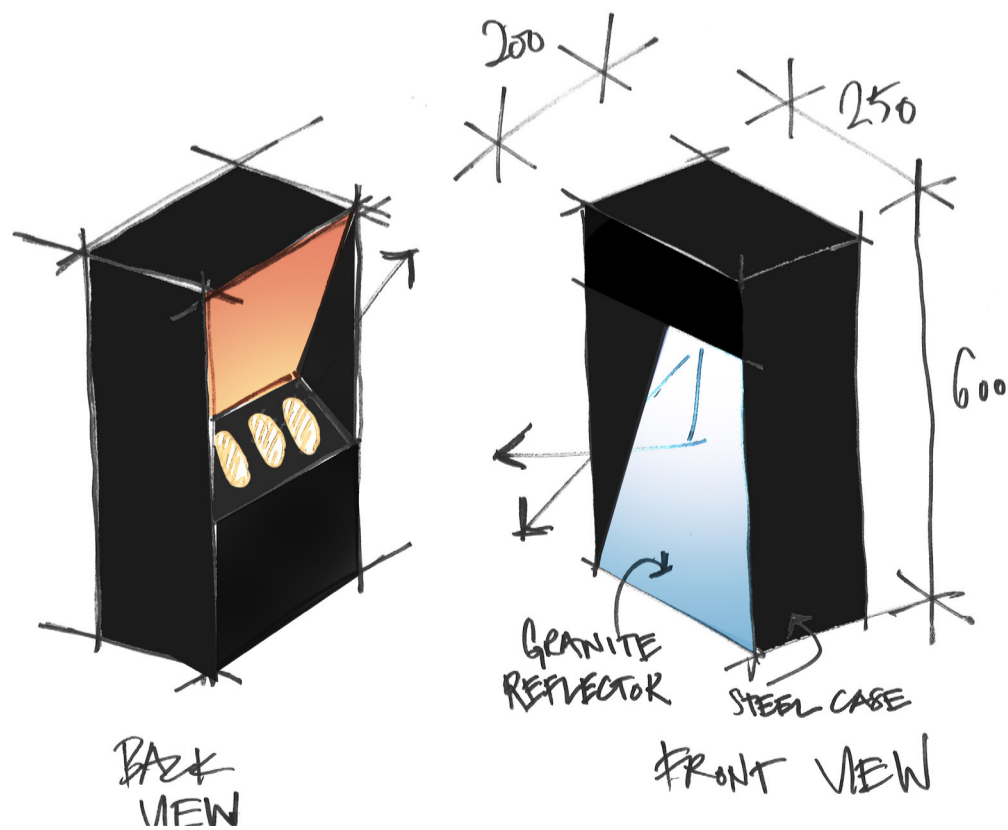
OVERVIEW



WESTERN FORELAND & OIL PIER

ROUTES/LANDSCAPE

A robust steel lighting bollard which incorporates both path lighting and tree uplighting is suggested for use on the path. This will provide functional light to the path and a softly lit backdrop.



HAAKONINLAHTI HARBOUR

STRUCTURES
LIGHT CRANES

OPEN SPACES
HAAKONINLAHTI SQUARE

ROUTES
QUAY WALLS, PROMENADE WALLS, INDUSTRIAL POSTS

ARCHITECTURE
NODE BUILDING, SAUNA, ACTIVE FRONTAGE

LANDSCAPE
TREES, TERRACES

LIGHT ART
DEMOUNTABLE LANTERN ARRAY



industrial crane lights

lit wooden terrace

industrial crane light

downlit quay wall

active frontage

lantern soffit

uplit trees

industrial posts

pathlighting/tree uplighting bollards

lit wooden terrace

industrial crane light

HAAKONINLAHTI HARBOUR

OVERVIEW

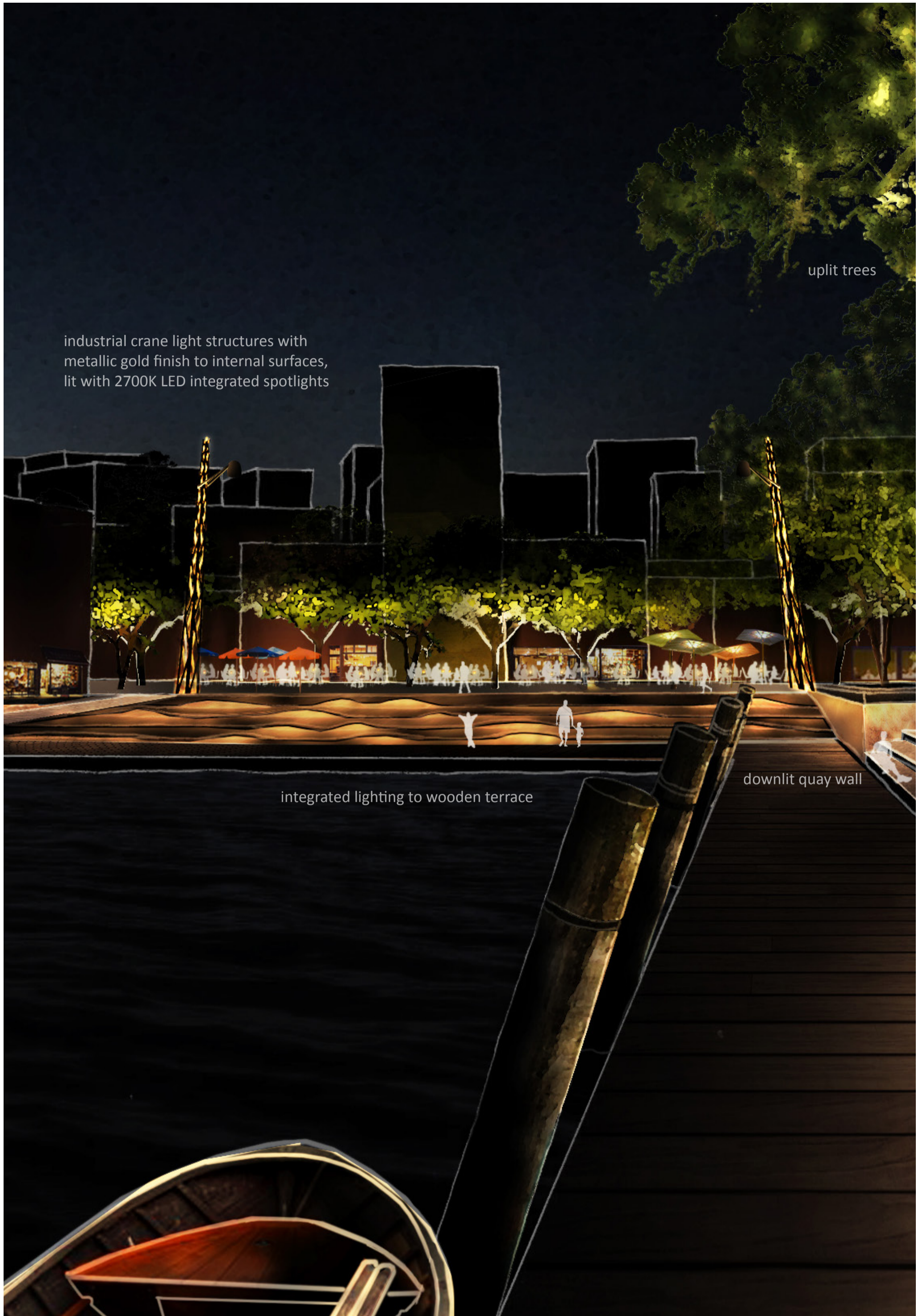


HAAKONINLAHTI HARBOUR

OVERVIEW



HAAKONINLAHTI HARBOUR
STRUCTURES



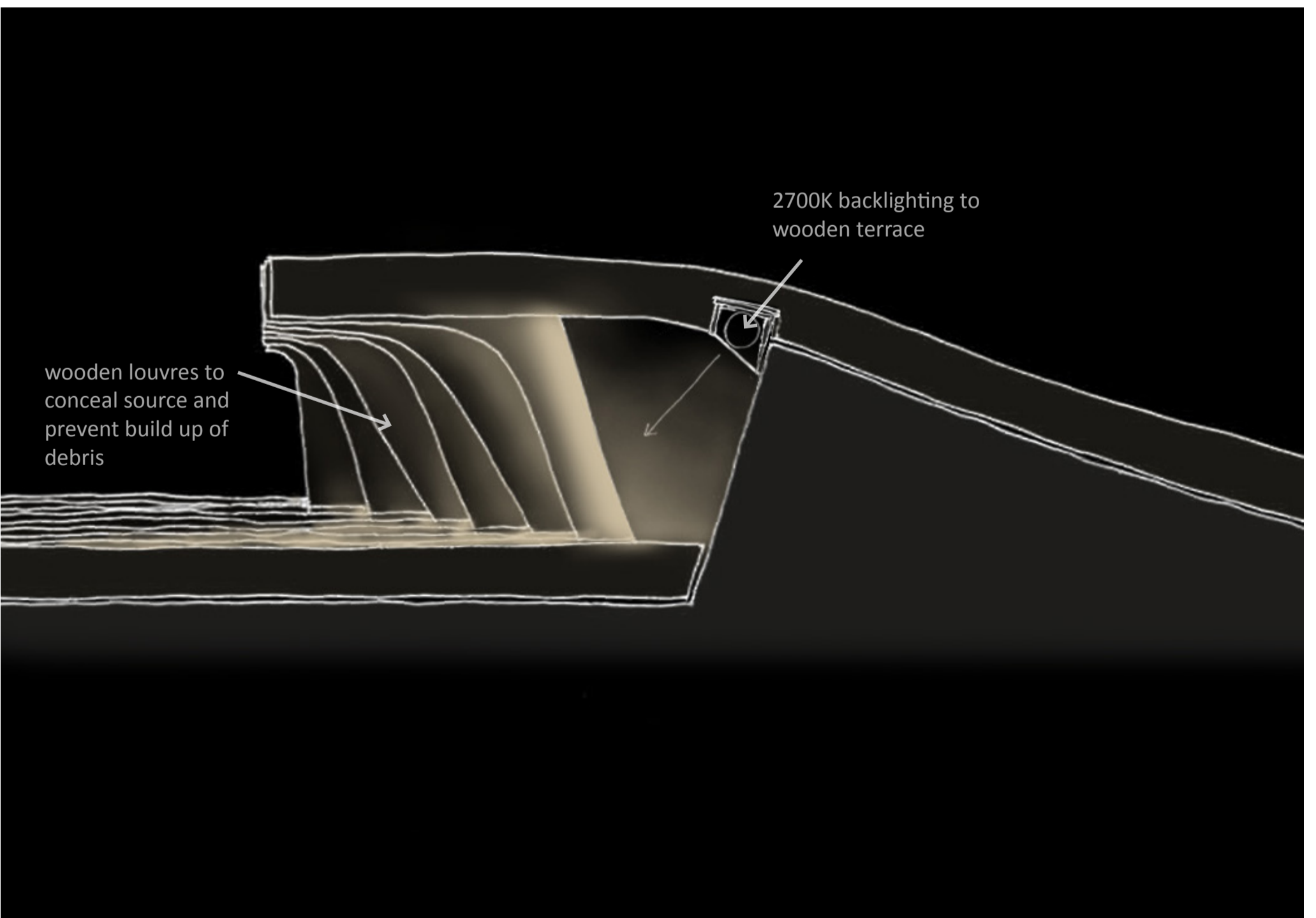
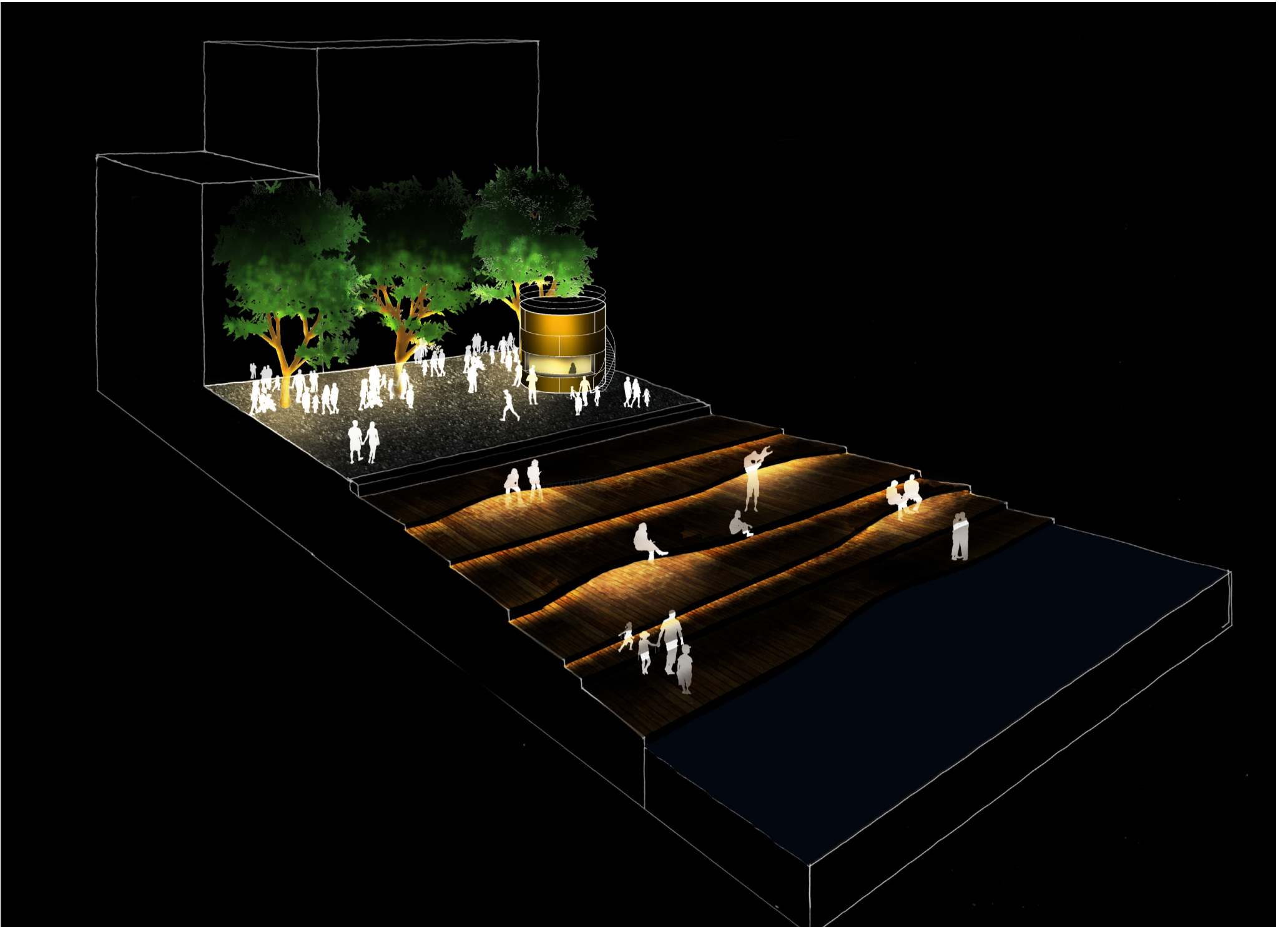
uplit trees

industrial crane light structures with
metallic gold finish to internal surfaces,
lit with 2700K LED integrated spotlights

integrated lighting to wooden terrace

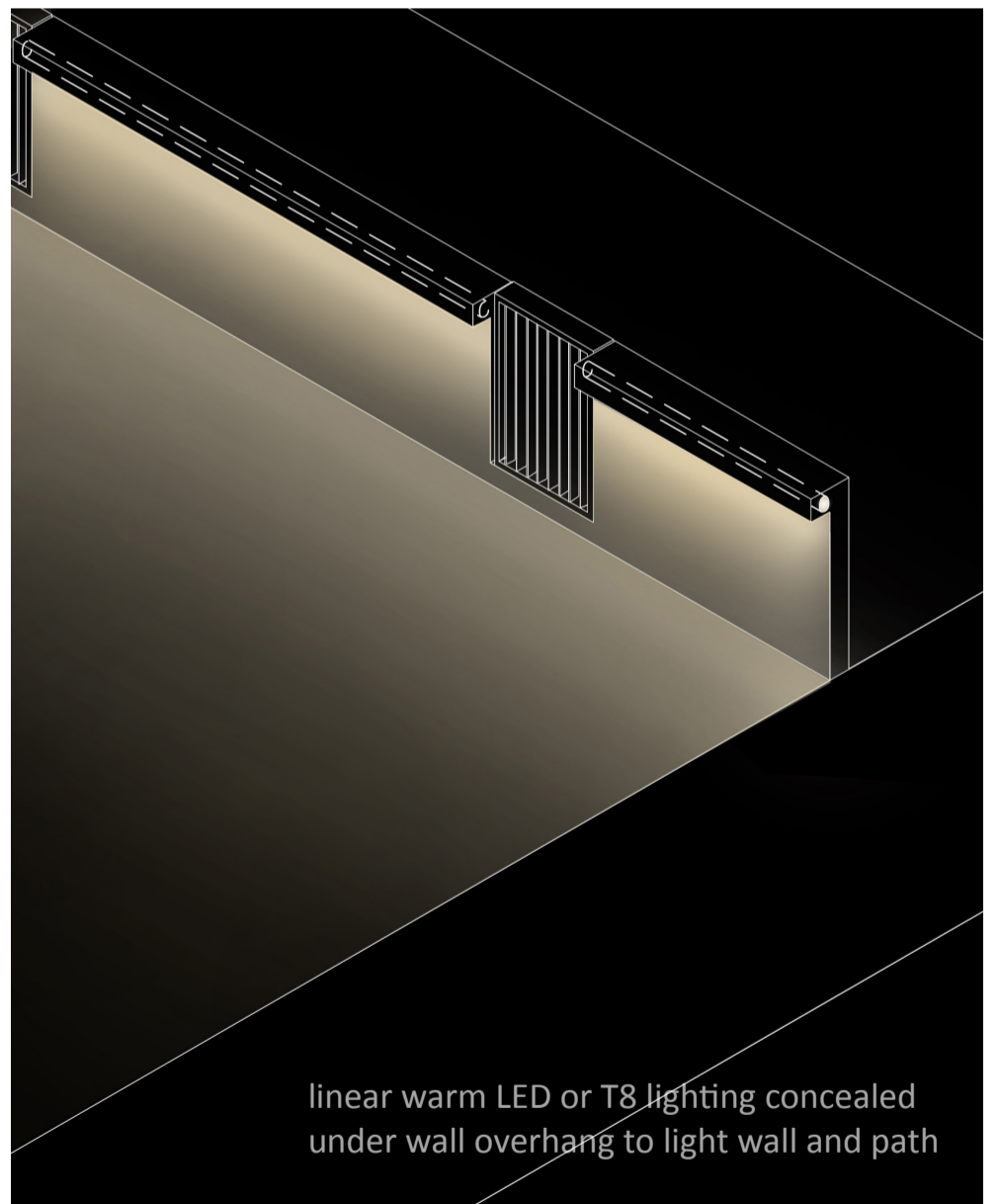
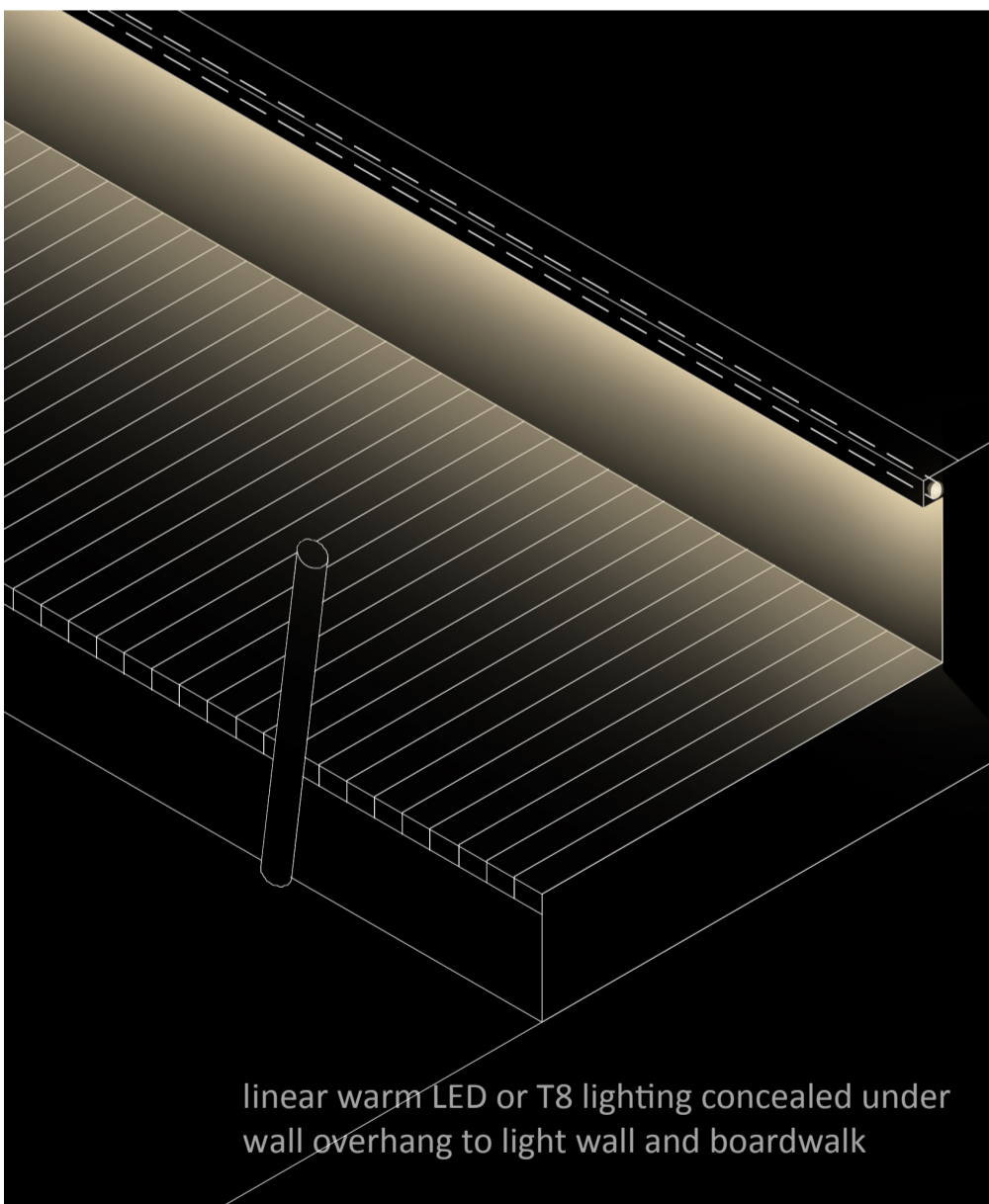
downlit quay wall

HAAKONINLAHTI HARBOUR
OPEN SPACES



HAAKONINLAHTI HARBOUR

ROUTES



HAAKONINLAHTI HARBOUR

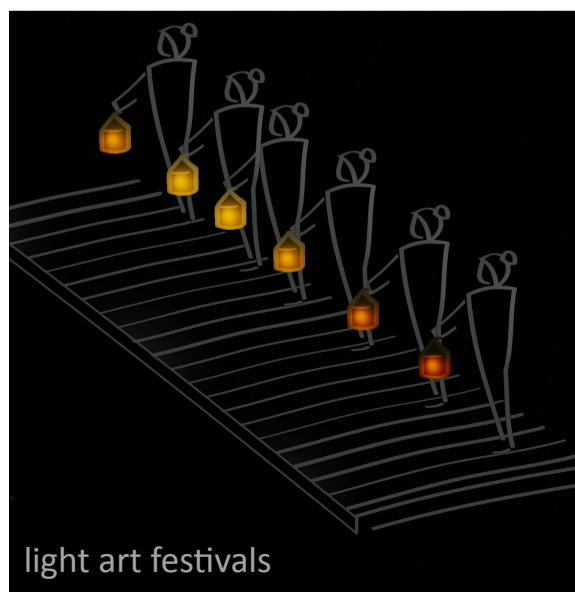
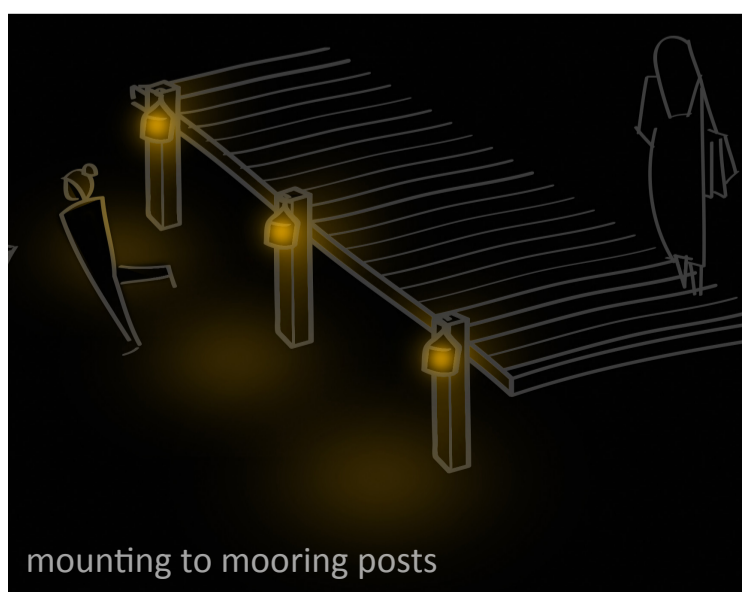
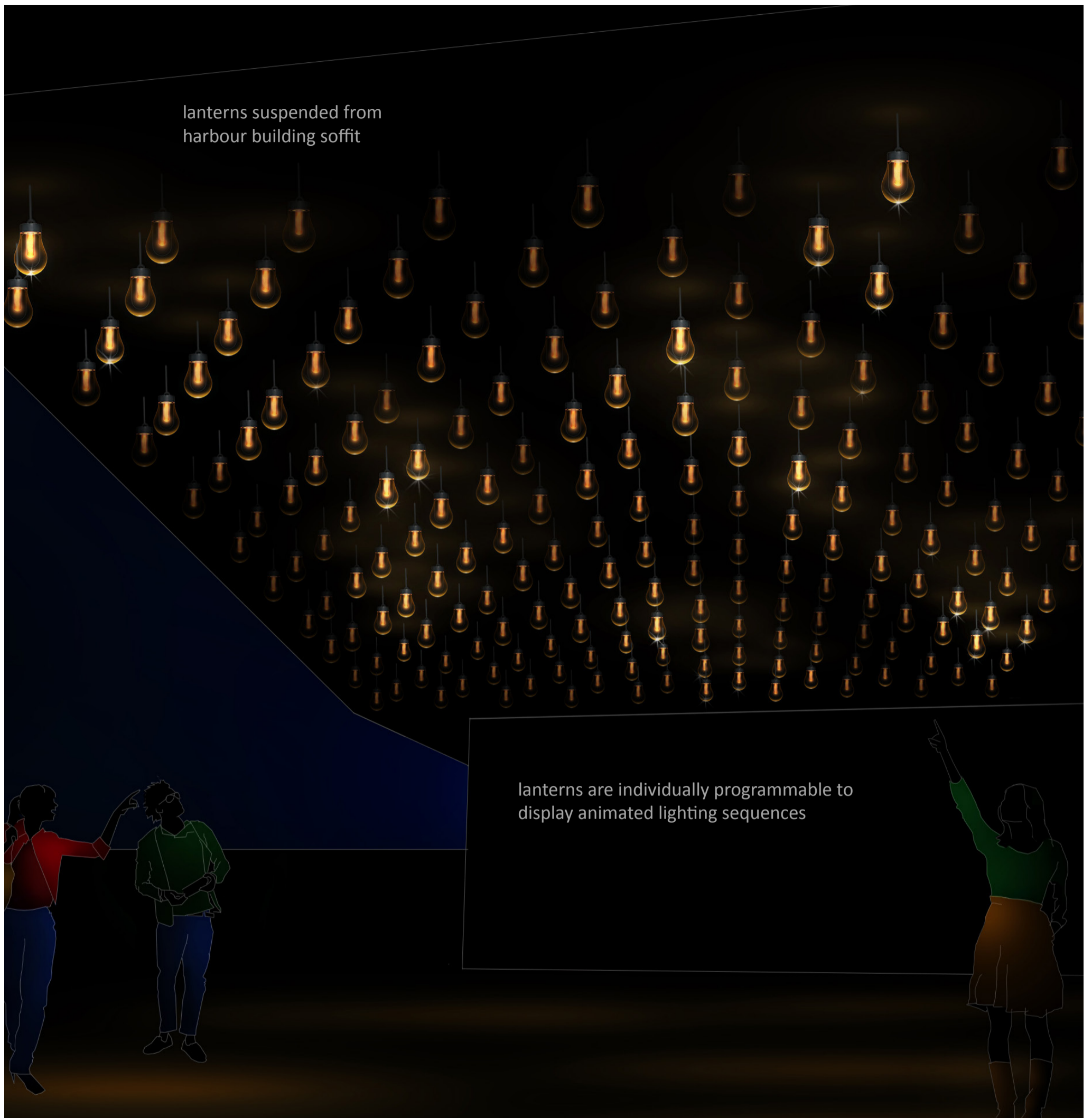
ROUTES



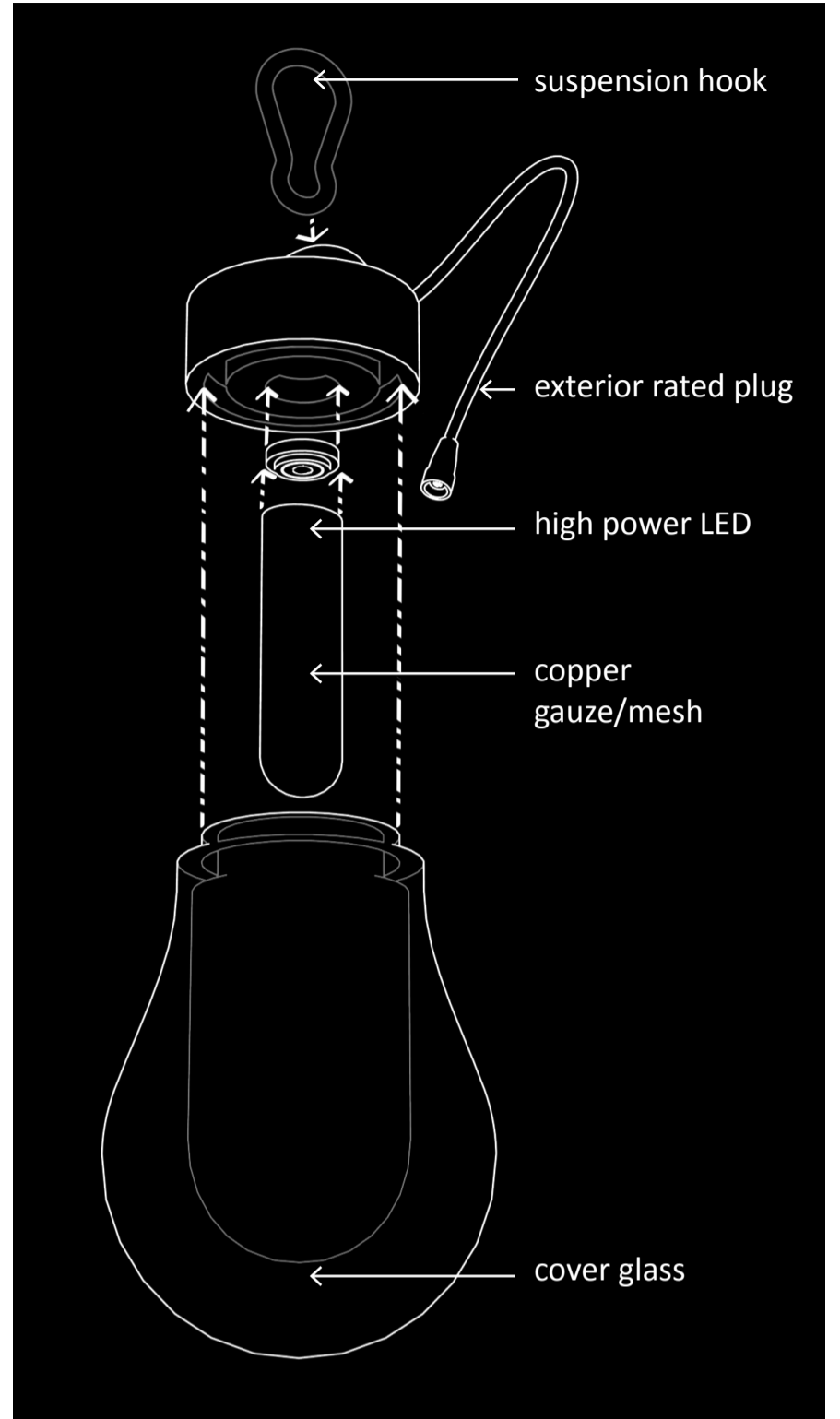
HAAKONINLAHTI HARBOUR

LIGHT ART

The node building will be the most prominent public building in Kruunuvuorenranta and occupies a prime location at the junction of the two main urban public spaces - the harbour and the park. The building's soffit offers the perfect location for a dynamic light artwork composed of a grid of programmable bespoke hanging LED lanterns. The lanterns contain rechargeable batteries and are demountable for special events such as festive celebrations, Christmas markets and light arts shows.



HAAKONINLAHTI HARBOUR
LIGHT ART



WIIRINLAITURI

ROUTES
PROMENADE WALL

LANDSCAPE
TREES

HERITAGE
PIER & CRANE



lit crane & pipes

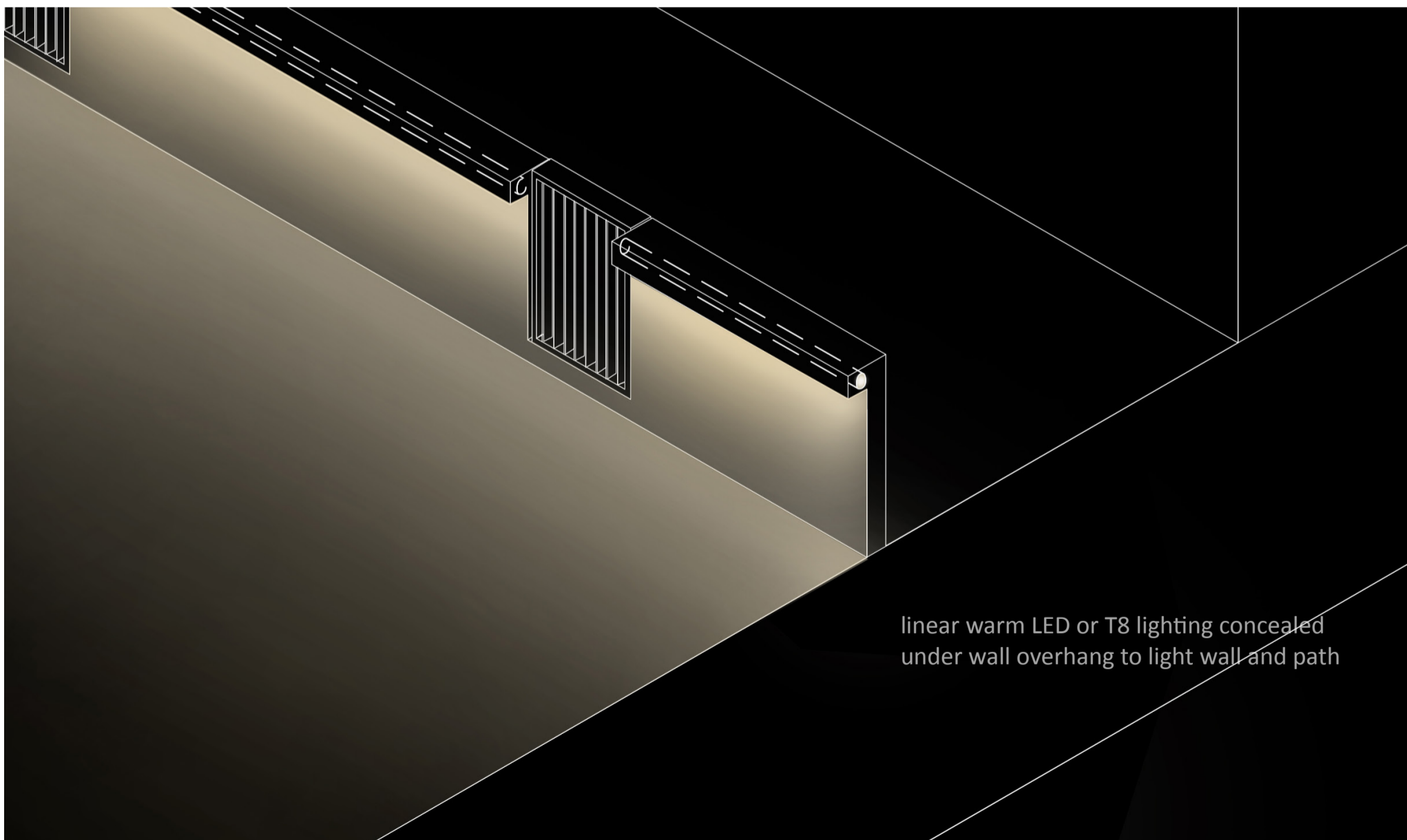
downlit wall & path

courtyard niches

courtyard applied light art

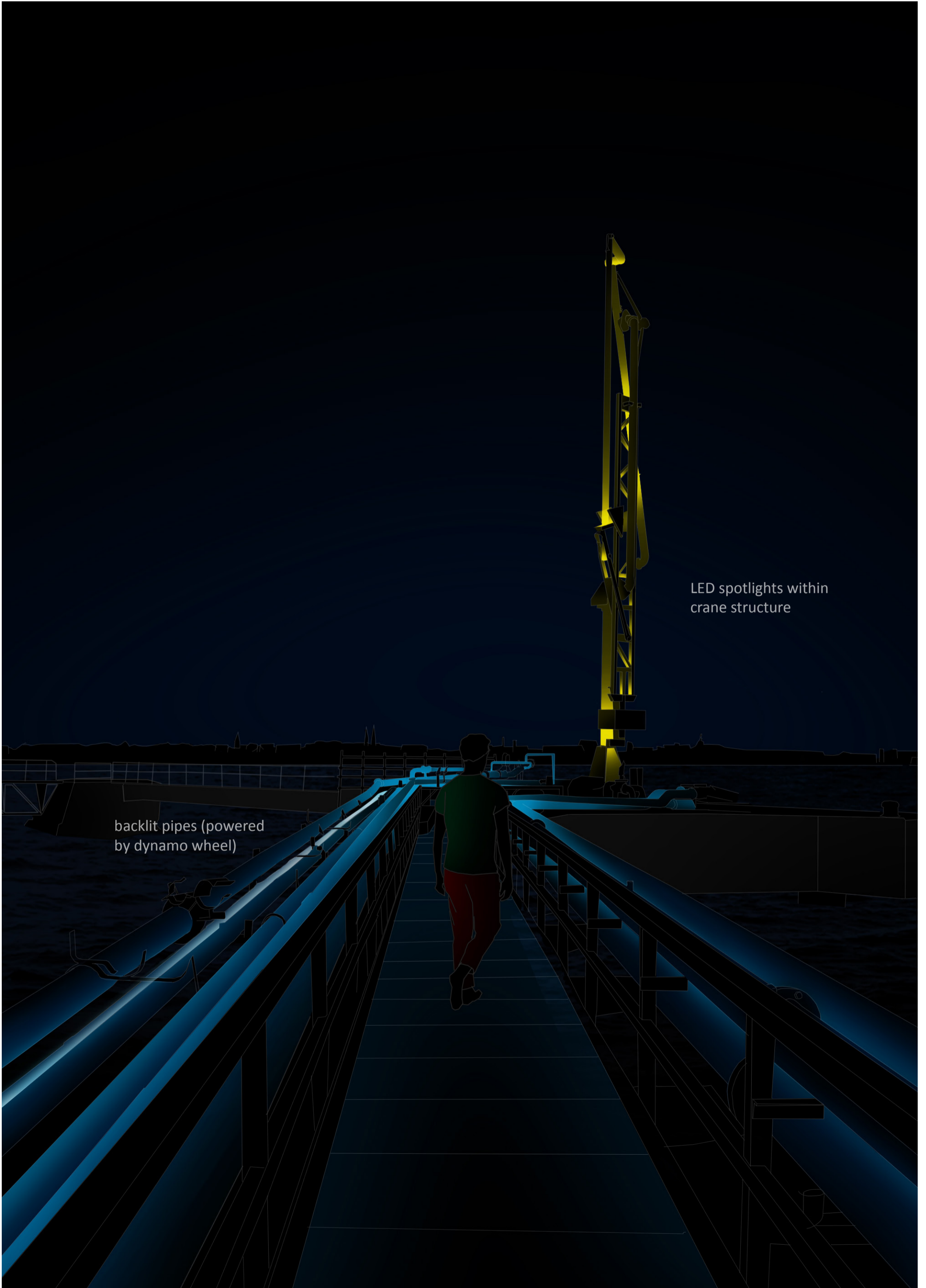
WIIRINLAITURI

ARCHITECTURE/LANDSCAPE/ROUTES



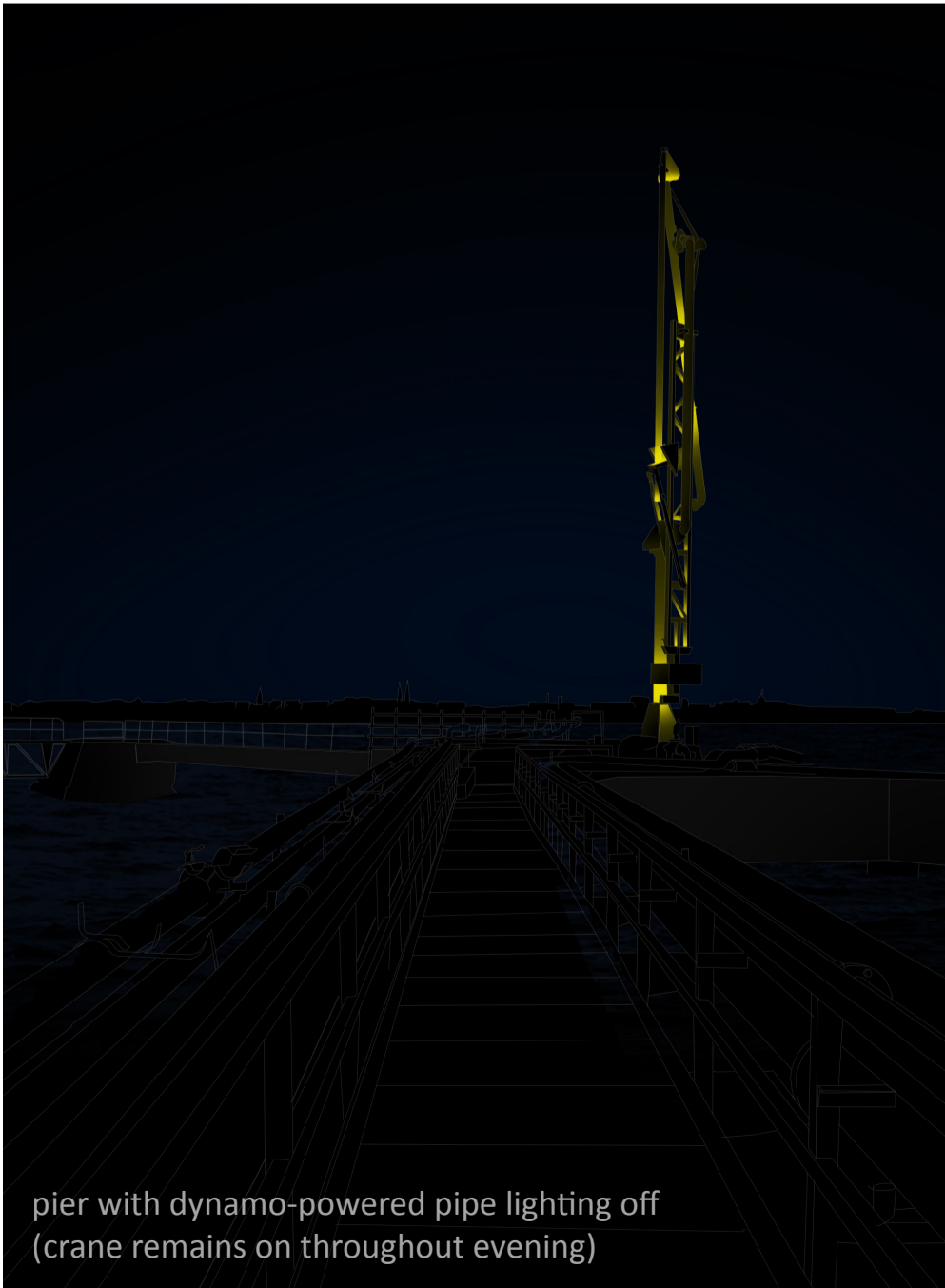
linear warm LED or T8 lighting concealed under wall overhang to light wall and path





backlit pipes (powered
by dynamo wheel)

LED spotlights within
crane structure



pier with dynamo-powered pipe lighting off
(crane remains on throughout evening)



ILONPUISTO

ROUTES

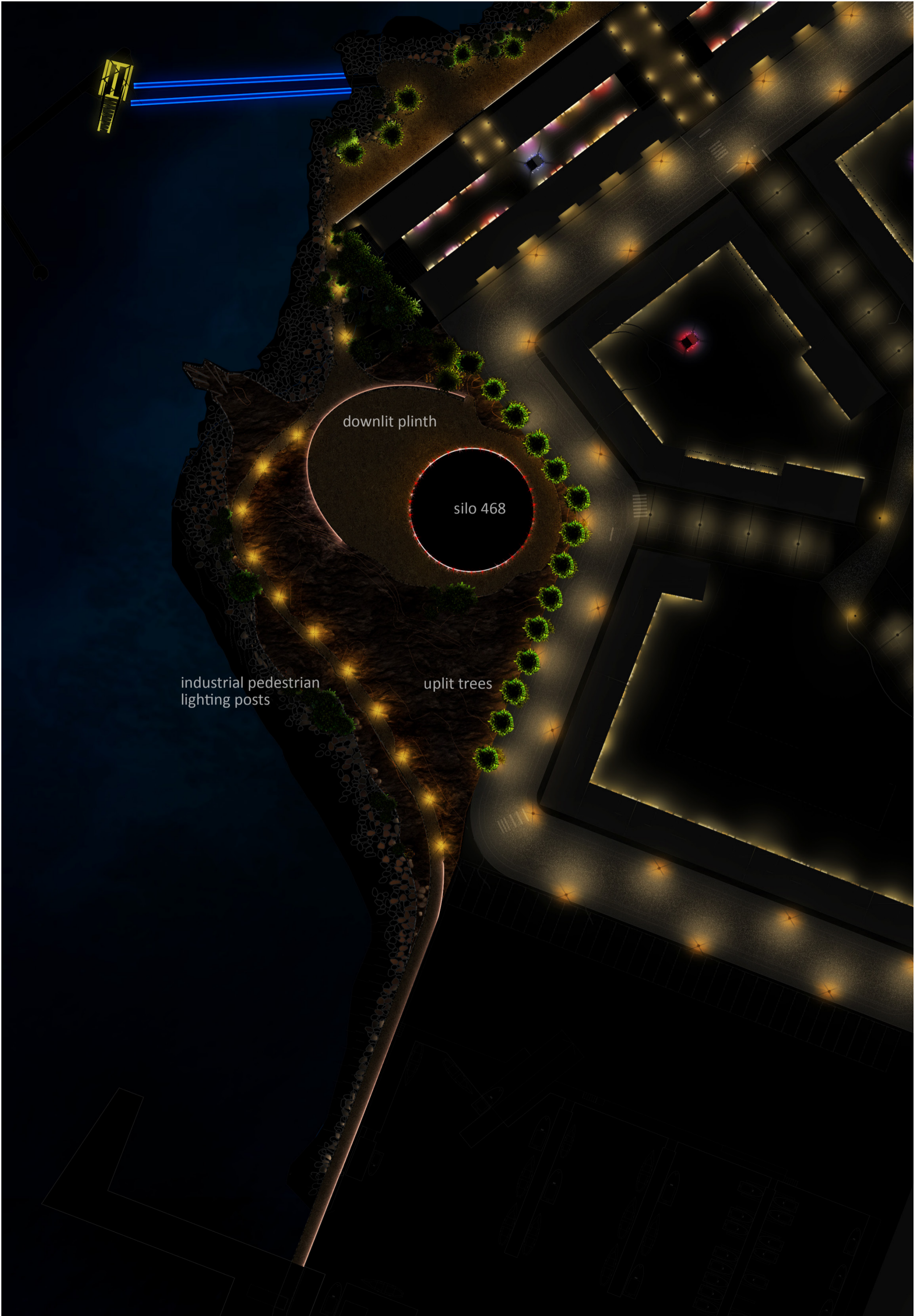
INDUSTRIAL POSTS, PLINTH WALL

LANDSCAPE

TREES

HERITAGE

SILO 468



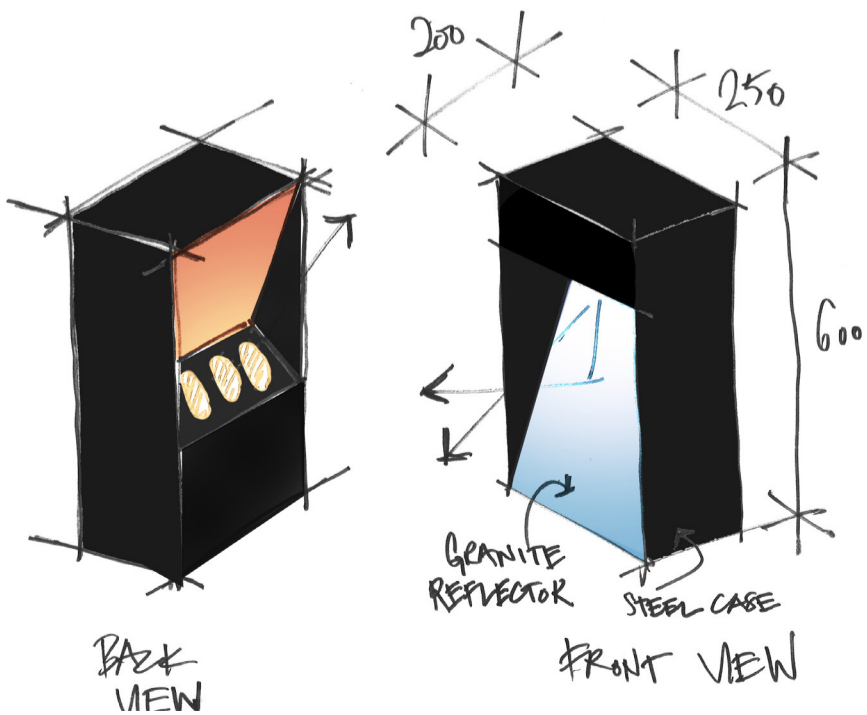
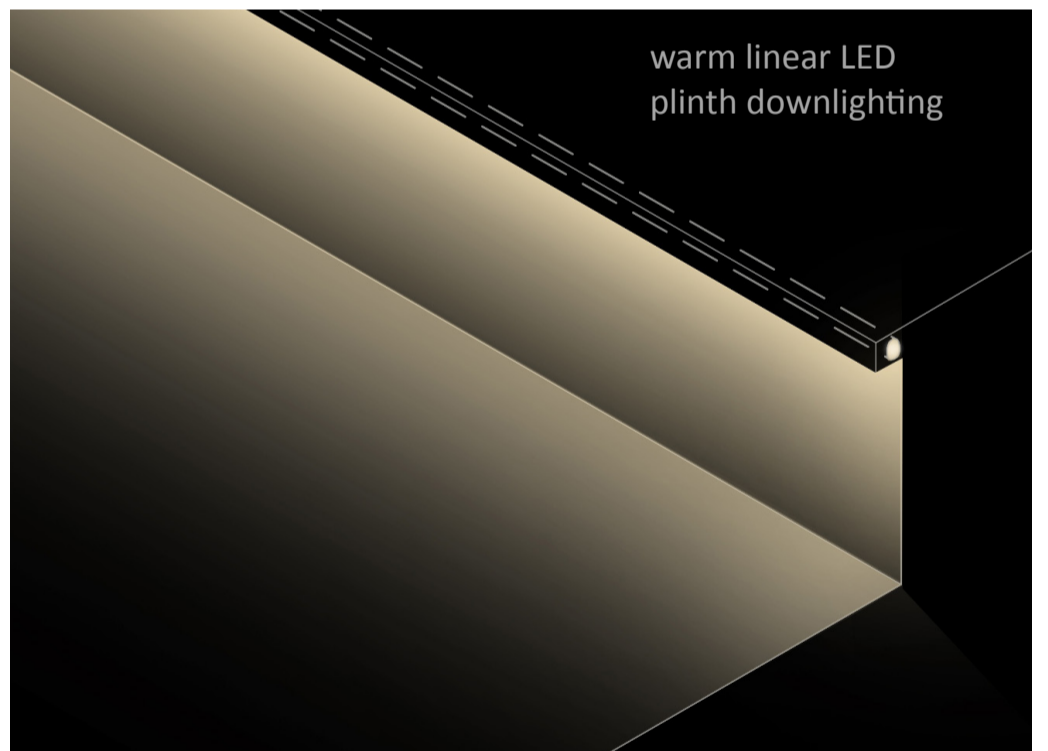
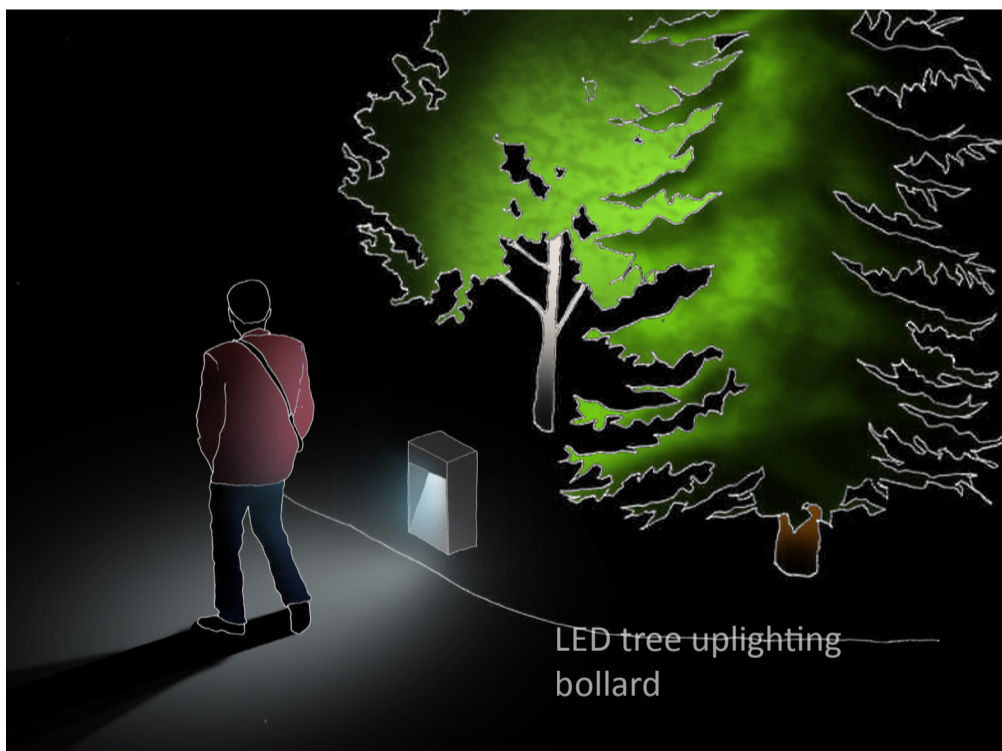
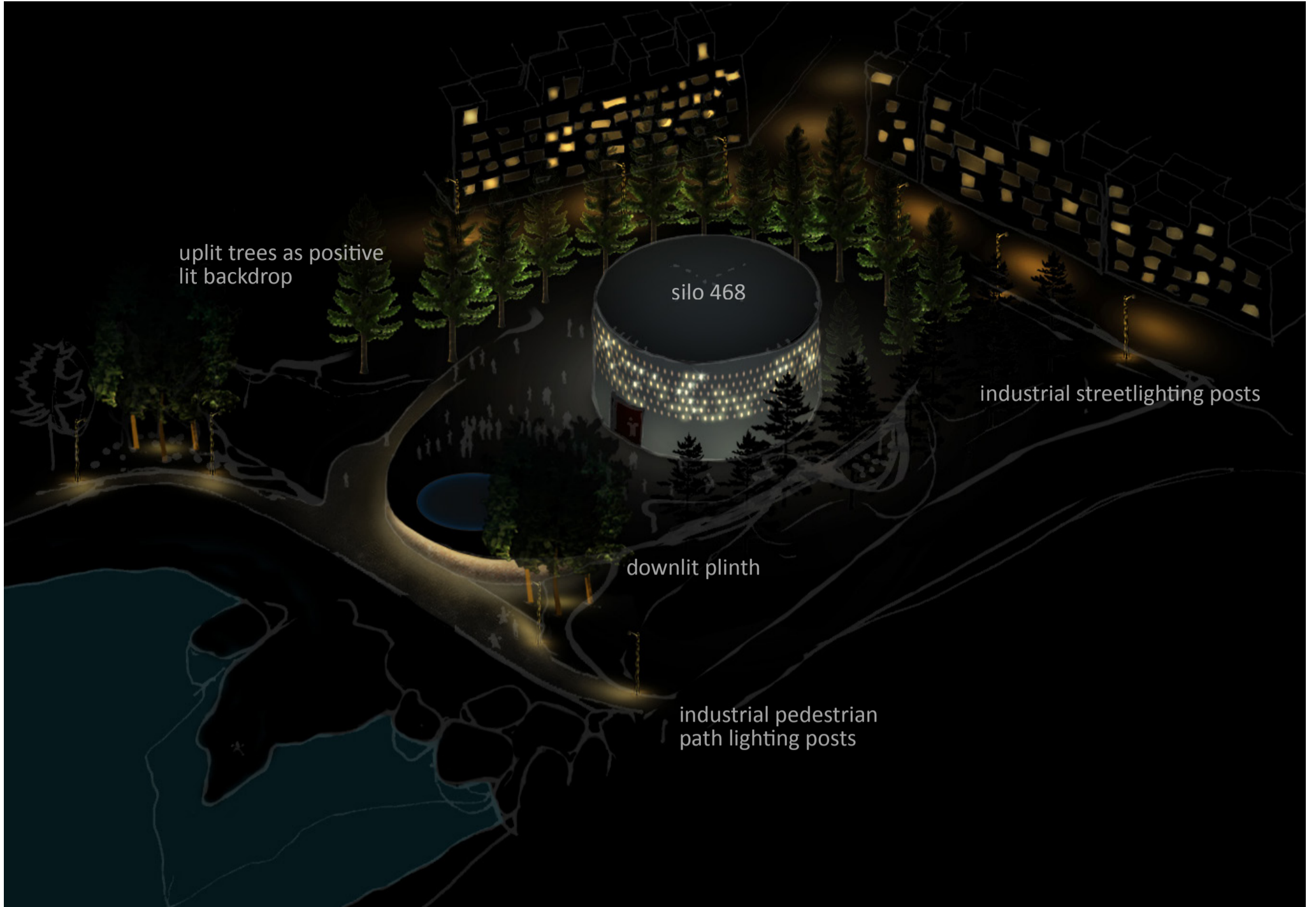
industrial pedestrian
lighting posts

downlit plinth

silos 468

uplit trees

ILONPUISTO
LANDSCAPE





KOIRASAARET

ROUTES
SPOTLIGHTING POSTS

ARCHITECTURE
SAUNA, THRESHOLDS

LANDSCAPE/HERITAGE/LIGHT ART
SILO FOOTPRINTS



fire-light from sauna

lit trees around reflective pool

lit walls to thresholds

integrated light to water features

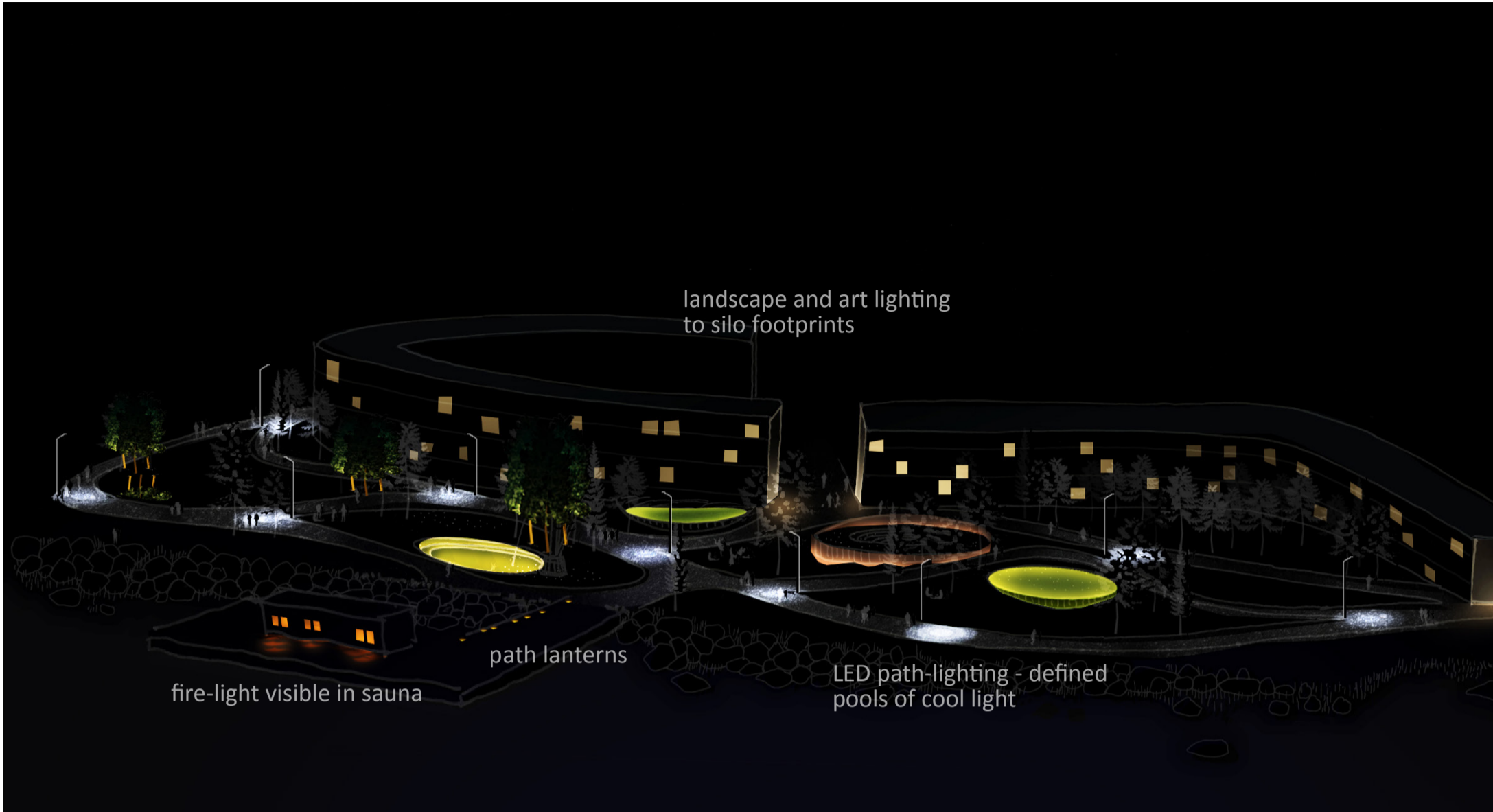
gobo projection to flower beds

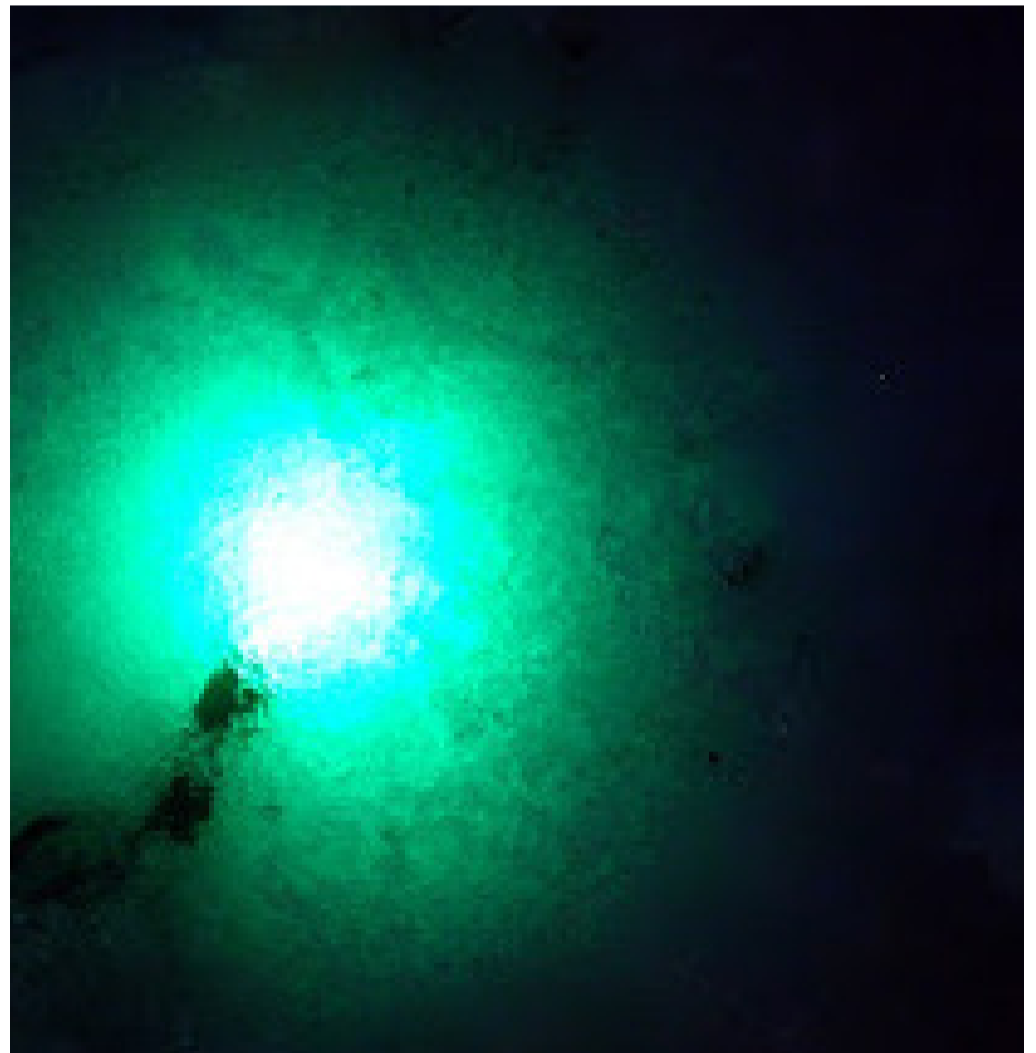
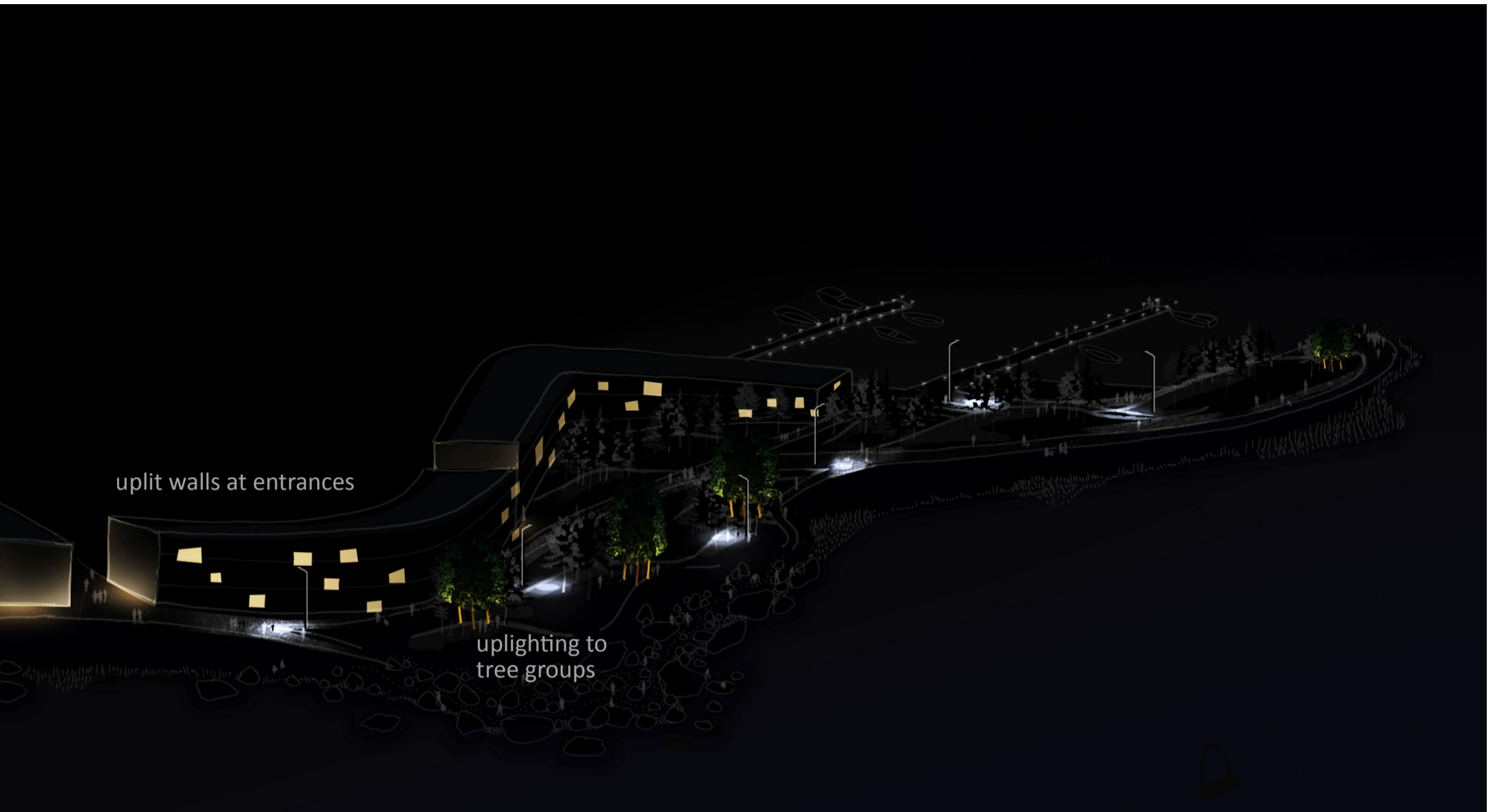
LED path lighting - defined pools of cool light

uplighting to tree groups

KOIRASAARET

OVERVIEW







uplit trees around reflective pool



infinity mirror effect, underwater LEDs



gobo projection to grass



fibre optic under snow

HAAKONINLAHTI PARK & PLAYGROUND

ROUTES

PARK POSTS, CAT'S EYE JUNCTIONS

ARCHITECTURE

PAVILION, THRESHOLDS

STRUCTURES/LIGHT ART

PLAY EQUIPMENT

LANDSCAPE

TREES, WATER FEATURES



lit pine trees at node

field of cat's eyes

lit walls & soffit of thresholds

glow from pavilion interior

field of cat's eyes

pedestrian lighting posts

lit fountains

spotlit slide

integrated light to play equipment

projection onto skate ramps

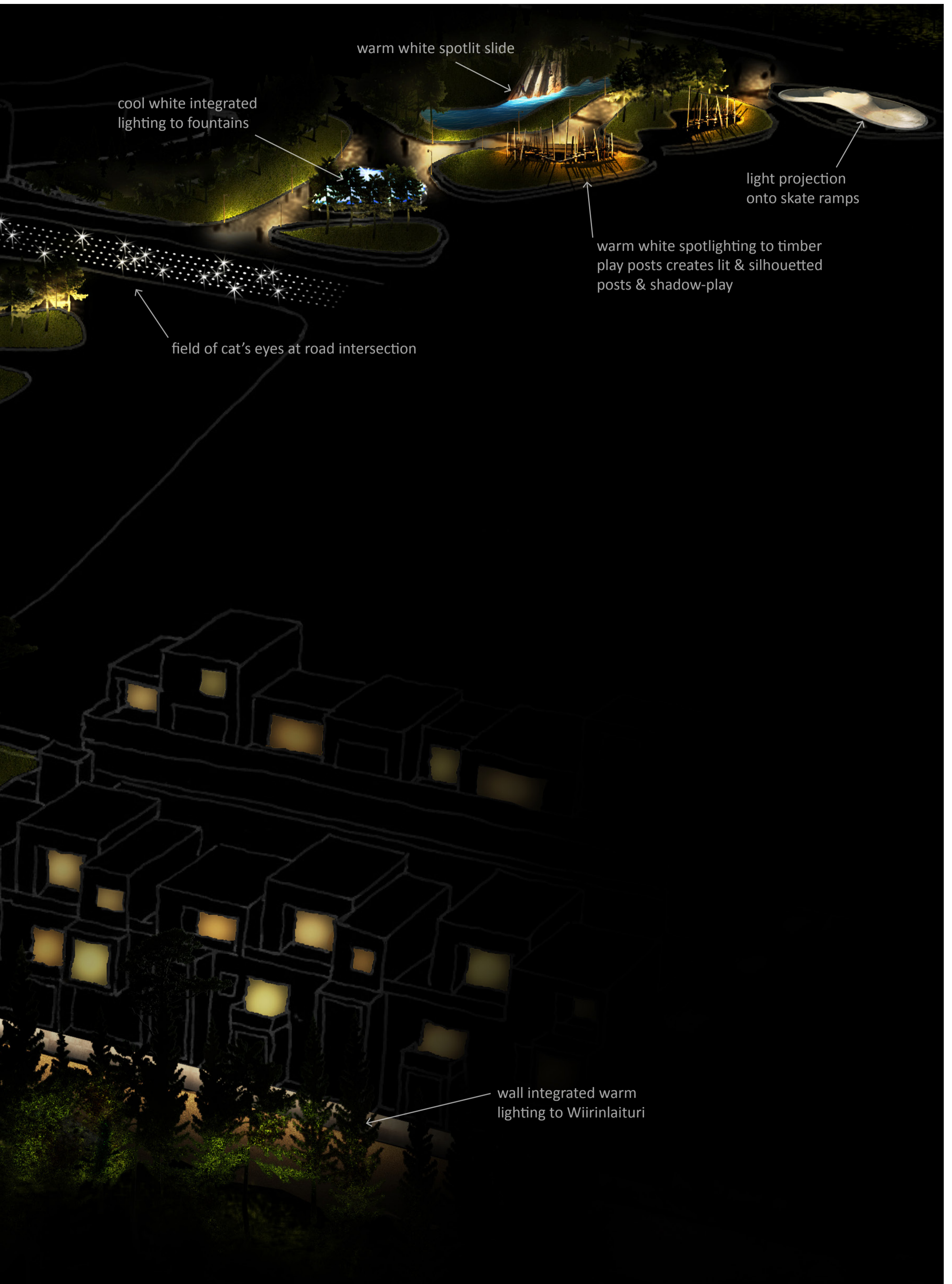
HAAKONINLAHTI PARK & PLAYGROUND

OVERVIEW



HAAKONINLAHTI PARK & PLAYGROUND

OVERVIEW



warm white spotlight slide

cool white integrated lighting to fountains

light projection onto skate ramps

warm white spotlighting to timber play posts creates lit & silhouetted posts & shadow-play

field of cat's eyes at road intersection

wall integrated warm lighting to Wiirinlaituri

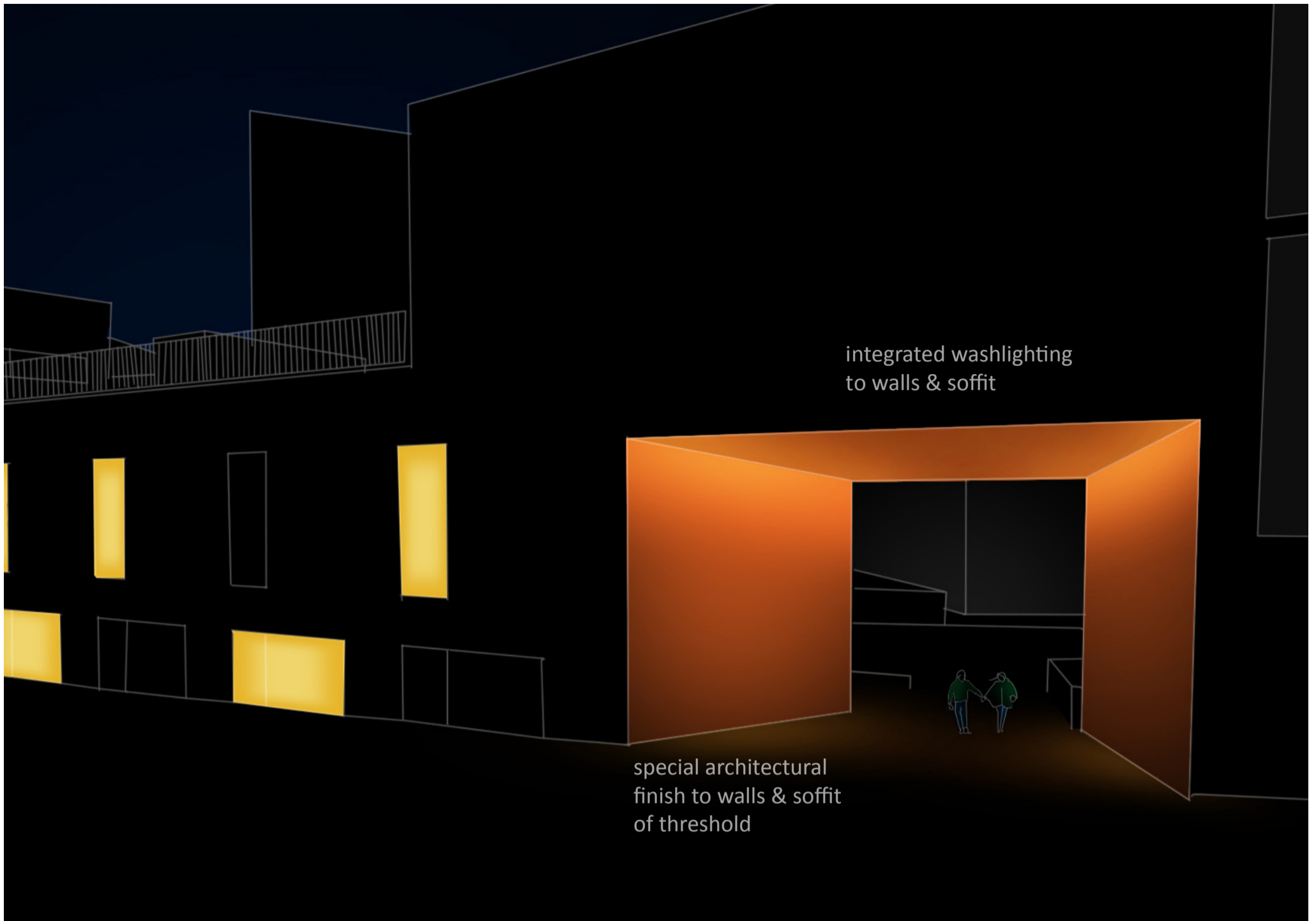
HAAKONINLAHTI PARK & PLAYGROUND

ROUTES



Saaristolaivastonkatu and Haakoninlahdenkatu cut through Haakoninlahti Park and Playground. The visual character and ambience of the park should be the dominant one at these intersections. As such, the industrial post mounted streetlighting systems associated with Saaristolaivastonkatu and Haakoninlahdenkatu should stop at the intersection with the park, replaced by a 'field of cat's eyes' to create a highly reflective, luminous roadway that is activated both by spill light from surrounding streetlighting and pedestrian path lighting as well as by car and tram headlights. The field of cat's eyes serve to highlight the intersection for safety and create a naturally dynamic light artwork. The reflective points can be coloured and mounted onto a series of low level bollards to highlight the edges of the roadway during the wintertime if/when the cat's eyes are covered by snow.

HAAKONINLAHTI PARK & PLAYGROUND
ARCHITECTURE

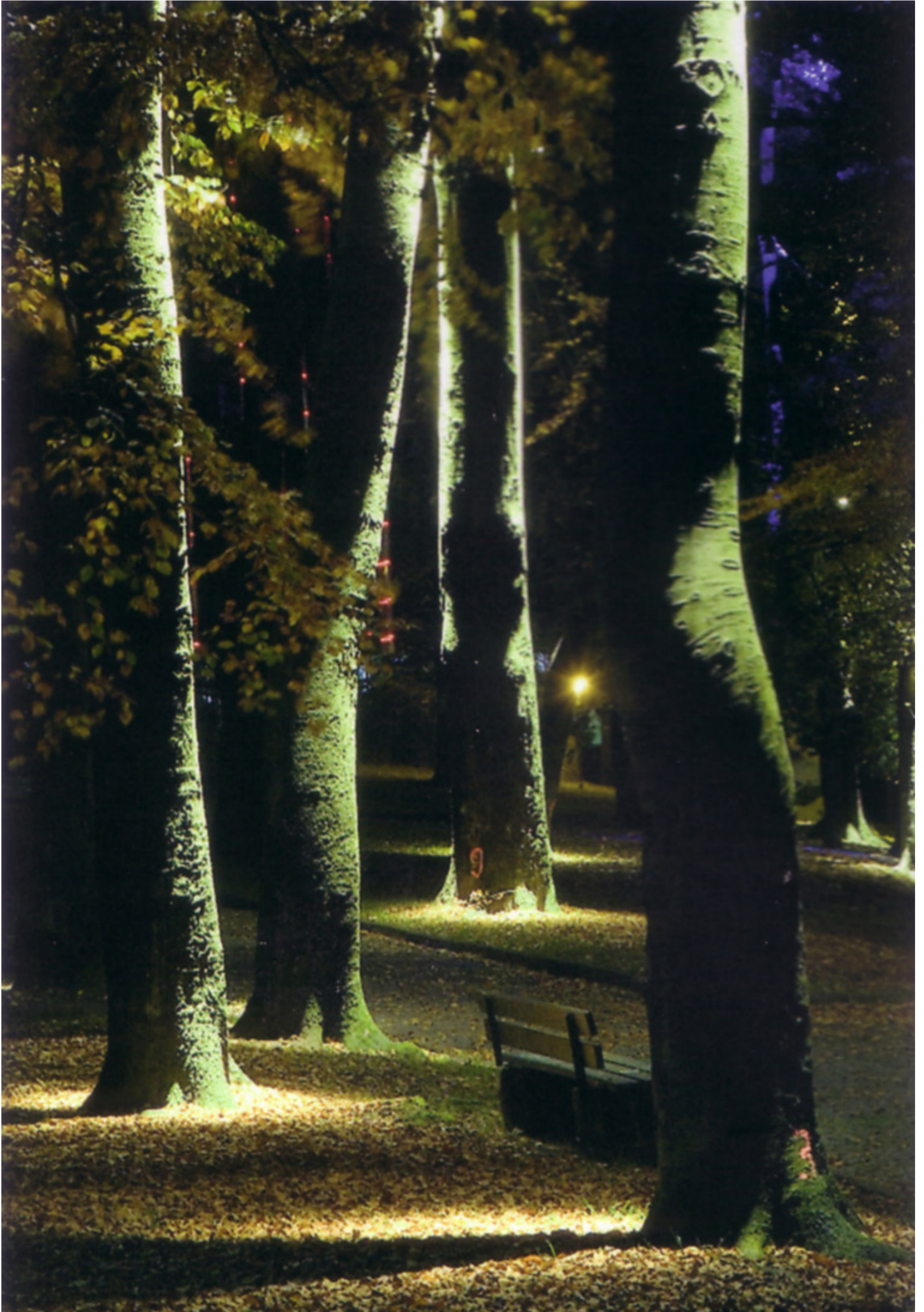


HAAKONINLAHTI PARK & PLAYGROUND

STRUCTURES



HAAKONINLAHTI PARK & PLAYGROUND
LANDSCAPE



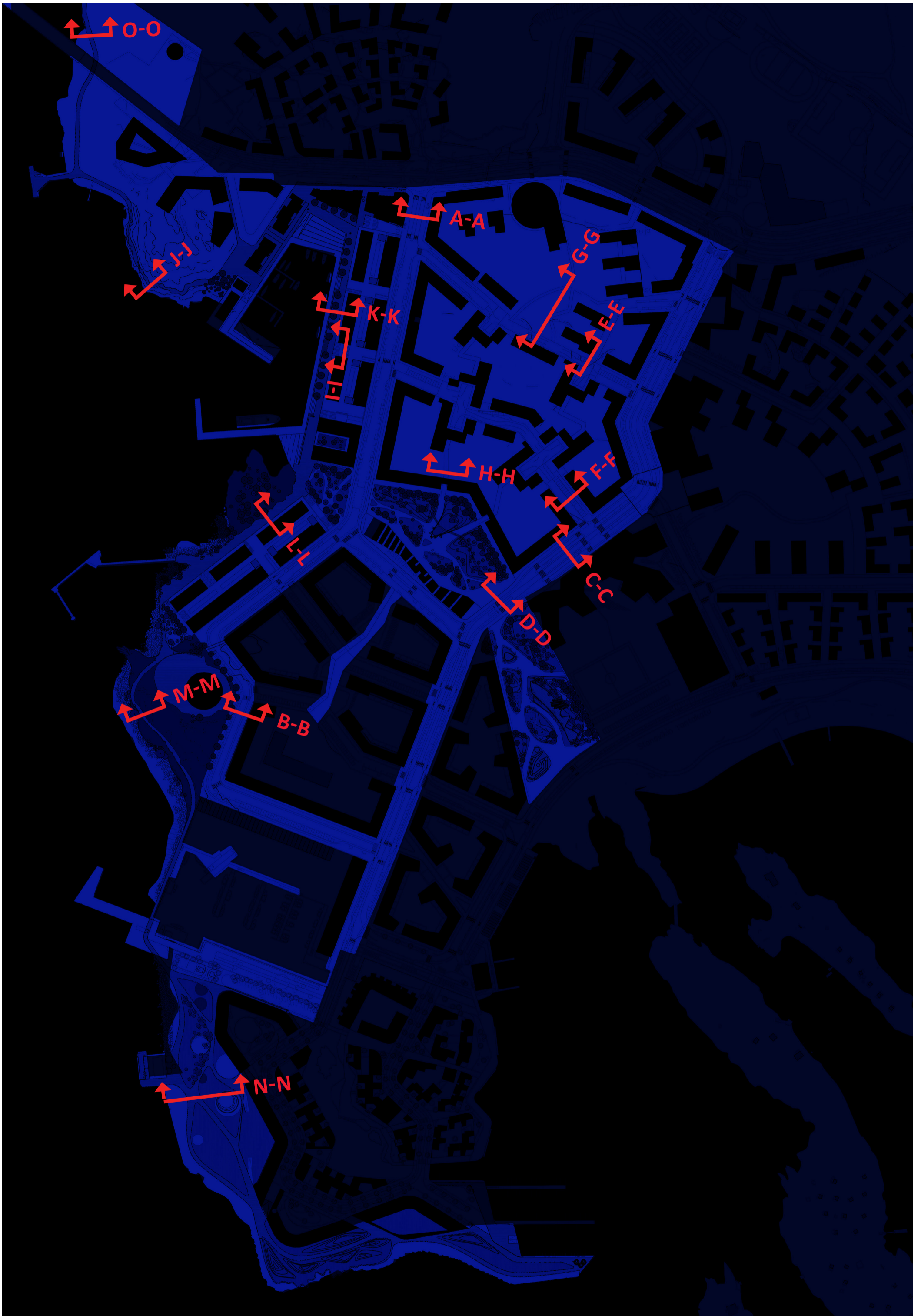
ROUTES

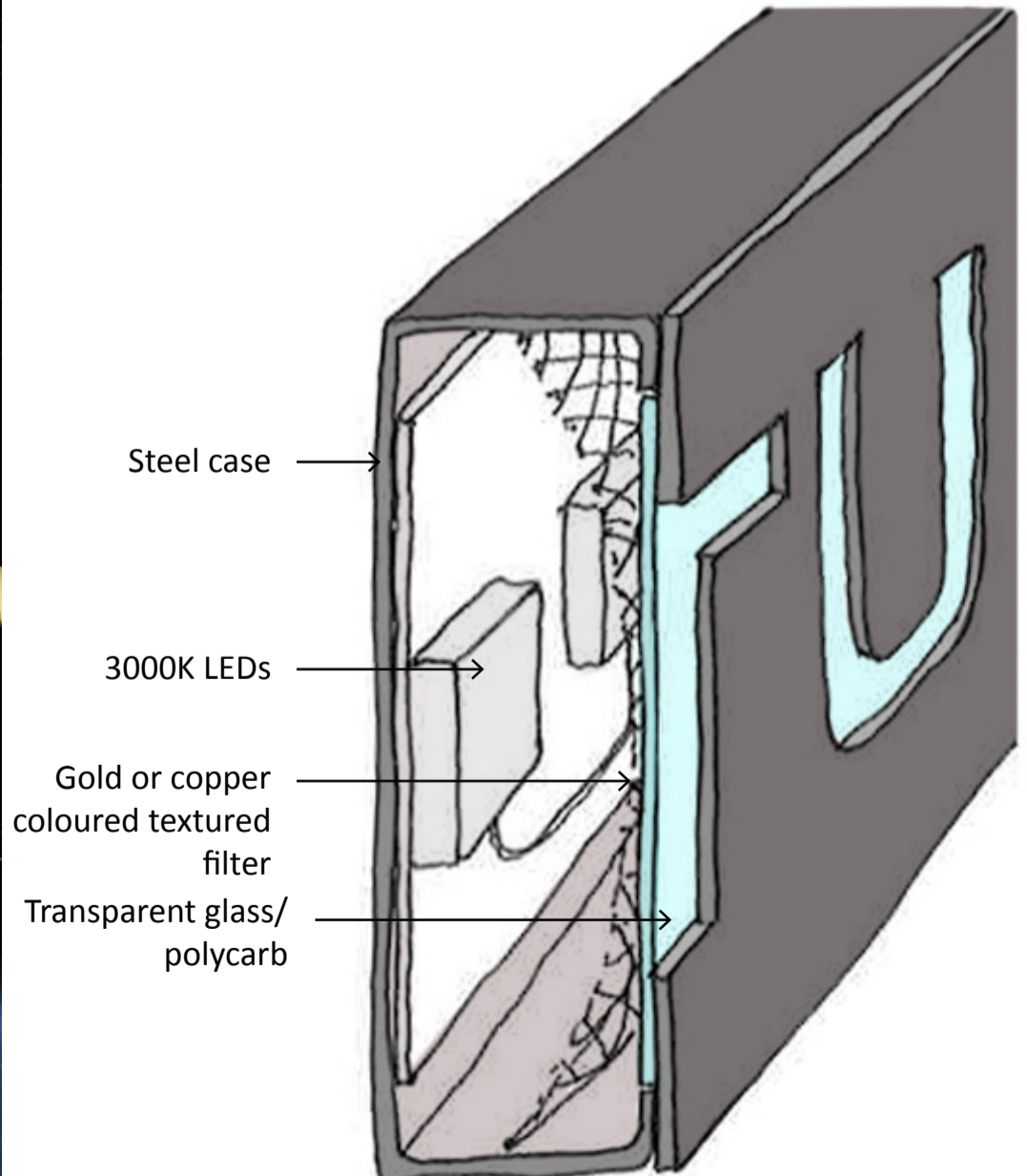
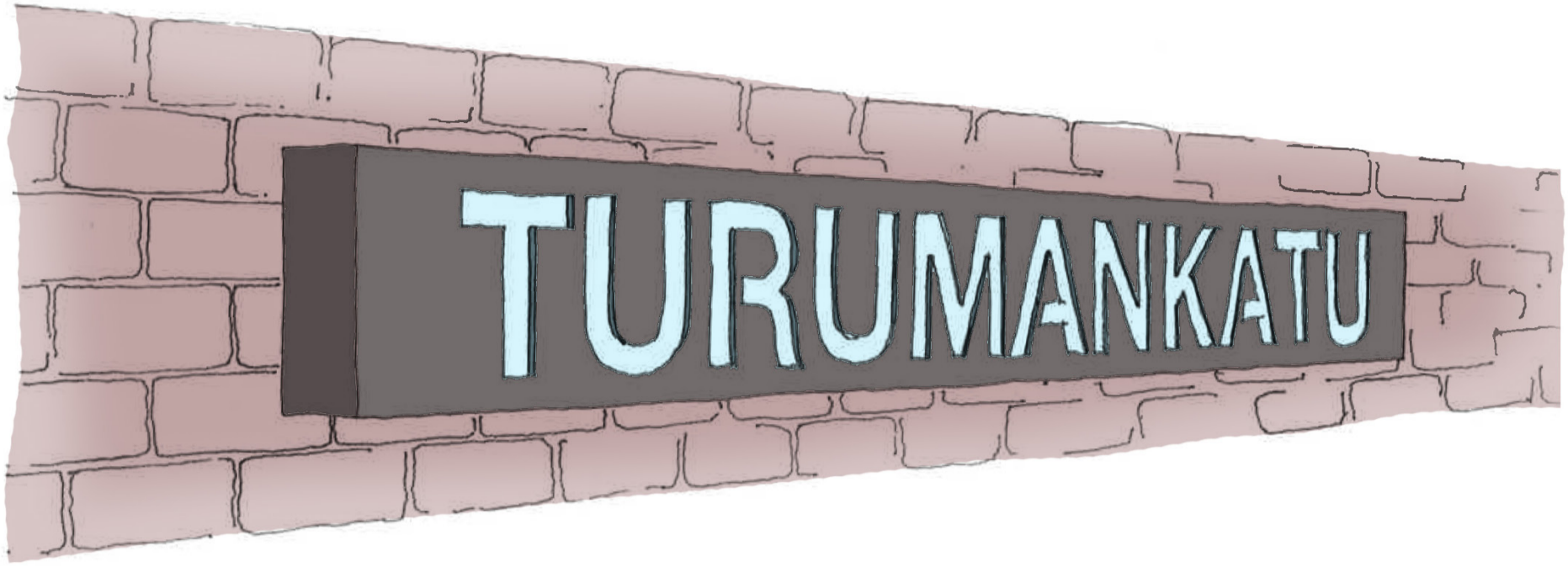
STREET NAMES

INDUSTRIAL STREETLIGHTING POSTS

PORCH LIGHTS

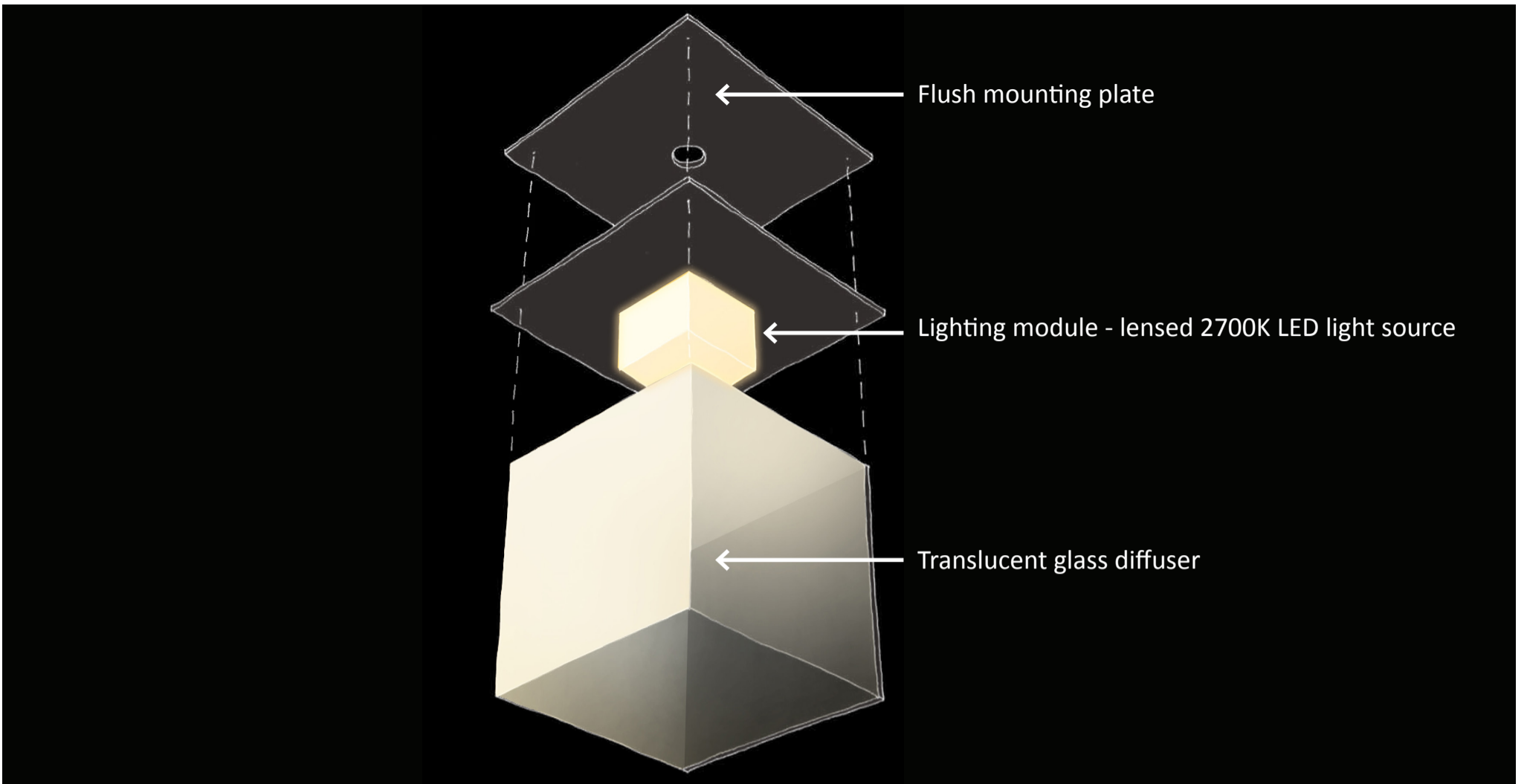
ISOMETRIC SKETCHES





ROUTES

INDUSTRIAL LIGHTING POSTS & PORCH LIGHTS





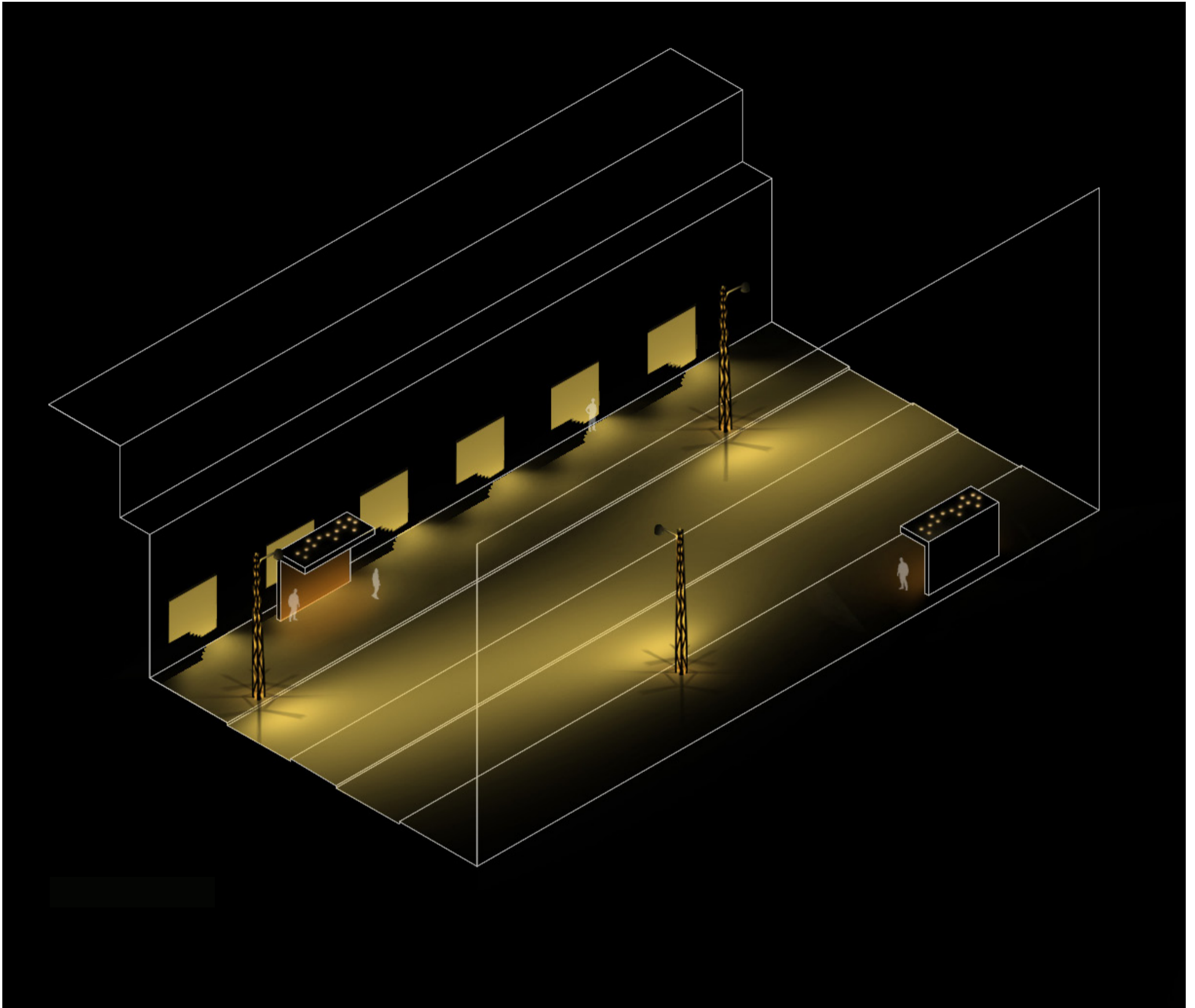
Pre-Curfew State



Post-Curfew State

ROUTES

SAARISTOLAIVASTONKATU, A-A



Roadway

| | |
|------------------------------|---|
| Luminaire type: | Streetlight with asymmetric roadway optic |
| Light source: | LED or ceramic metal halide |
| Mounting: | Industrial post, outreach bracket mounted |
| Height to source: | 8m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | AL4b/AE4 |
| Lighting Class, post curfew: | AL5/AE5 |

Industrial Post Integral Downlight

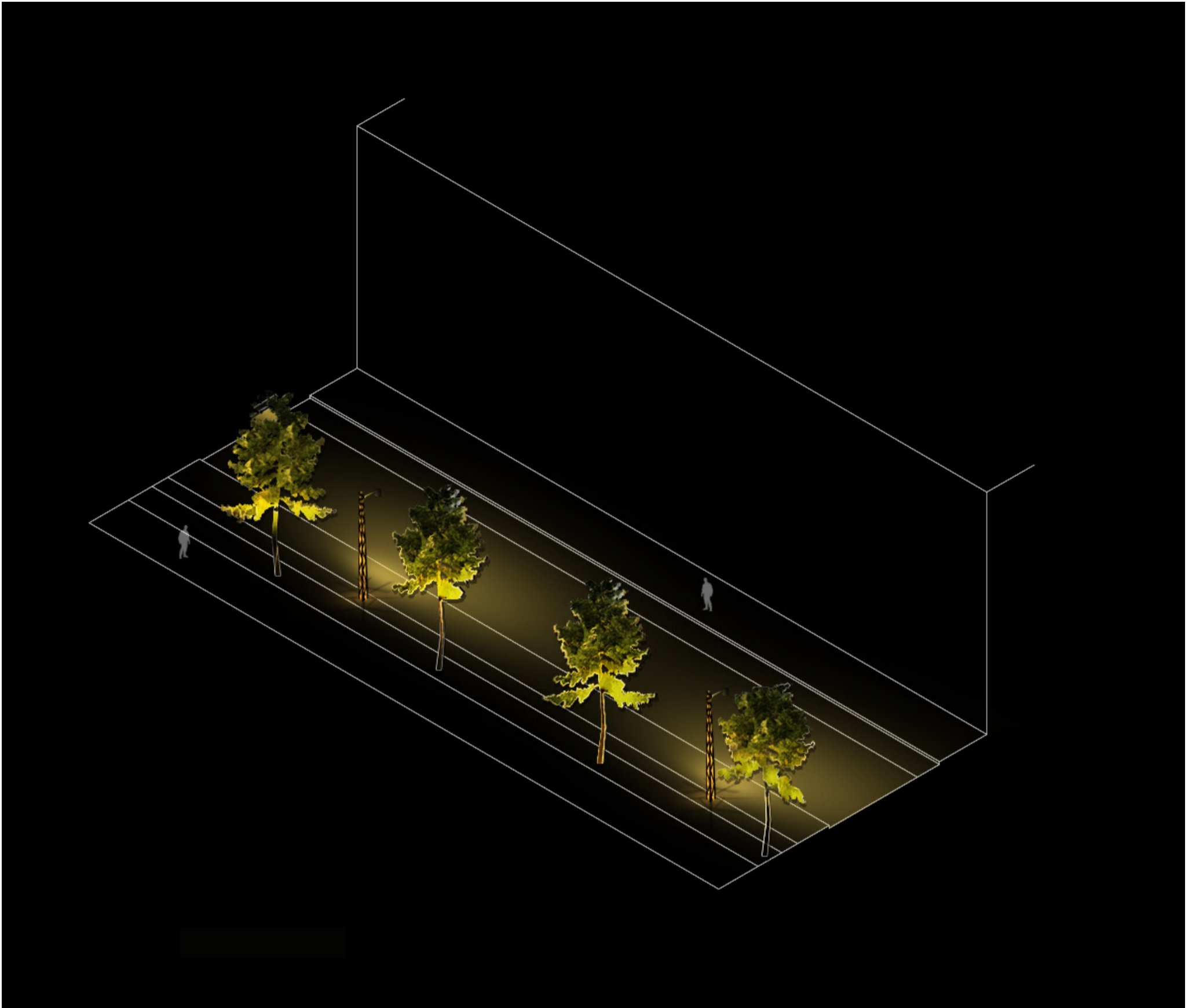
| | |
|------------------------|---|
| Luminaire type: | Narrow beam spotlight |
| Light source: | LED or ceramic metal halide |
| Lit materials finish: | Matt metallic gold painted finish to post's internal surfaces |
| Mounting: | Within top of industrial post |
| Height to source: | approx. 8m |
| Colour temperature, K: | 2700K |
| Colour rendering, Ra: | 80+ |

Porch Light

| | |
|------------------------|---------------------------------------|
| Luminaire type: | Custom bulkhead with backspill shield |
| Light source: | LED or compact fluorescent |
| Mounting: | Porch soffit |
| Height to source: | approx. 4m |
| Colour temperature, K: | 2700K |
| Colour rendering, Ra: | 80+ |

ROUTES

SAARISTOLAIVASTONKATU, B-B



Roadway

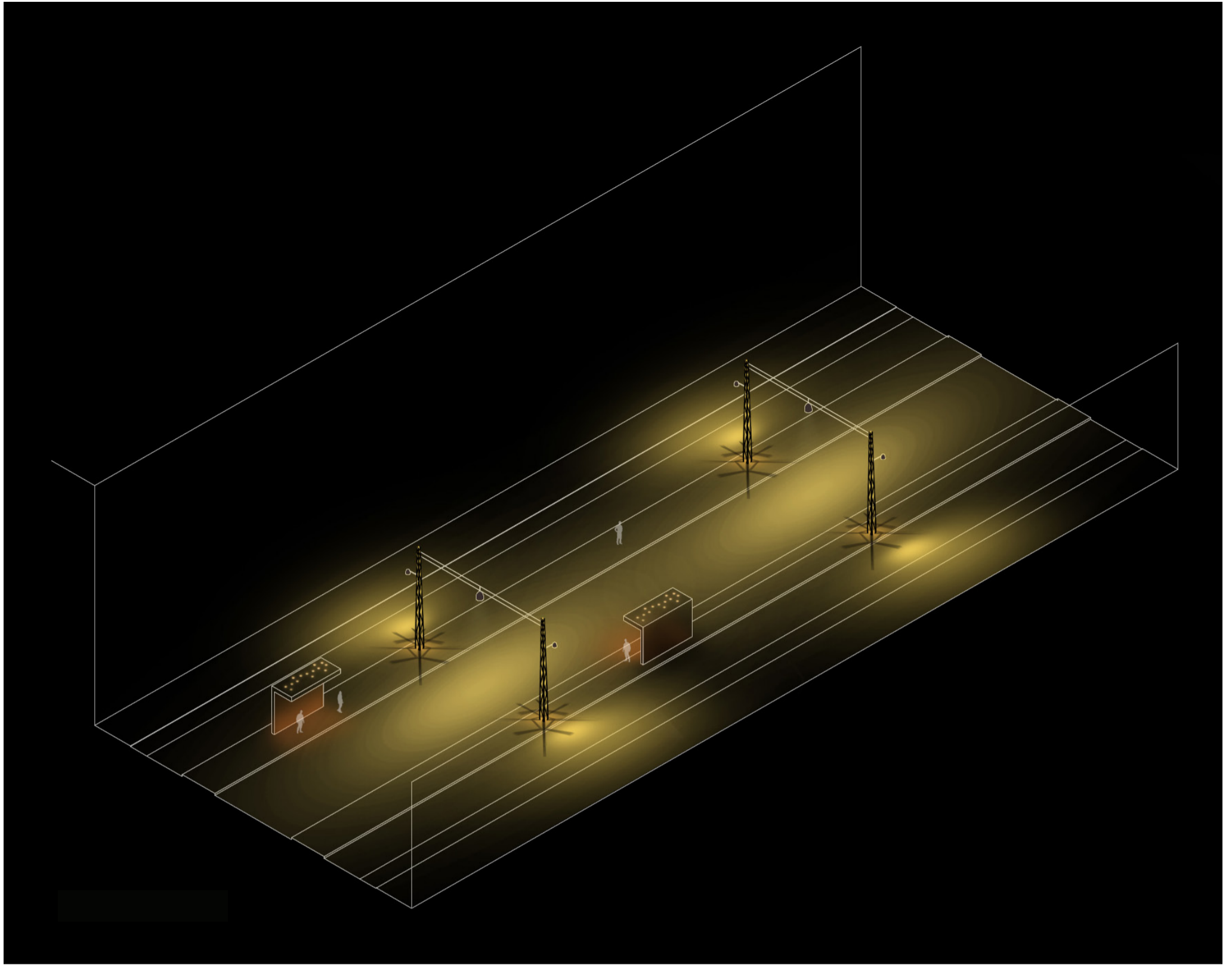
| | |
|------------------------------|---|
| Luminaire type: | Streetlight with asymmetric roadway optic |
| Light source: | LED or ceramic metal halide |
| Mounting: | Industrial post, outreach bracket mounted |
| Height to source: | 8m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | AL4b/AE4 |
| Lighting Class, post curfew: | AL5/AE5 |

Industrial Post Integral Downlight

| | |
|------------------------|---|
| Luminaire type: | Narrow beam spotlight |
| Light source: | LED or ceramic metal halide |
| Lit materials finish: | Matt metallic gold painted finish to post's internal surfaces |
| Mounting: | Within top of industrial post |
| Height to source: | approx. 8m |
| Colour temperature, K: | 2700K |
| Colour rendering, Ra: | 80+ |

ROUTES

HAAKONINLAHDENKATU, C-C



Roadway

| | |
|------------------------------|--|
| Luminaire type: | Streetlight with bisymmetric roadway optic |
| Light source: | LED or ceramic metal halide |
| Mounting: | Industrial post, catenary wire mounted |
| Height to source: | 10m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | AL3-AL4a/AE3 |
| Lighting Class, post curfew: | AL4b/AE4 |

Pedestrian/Cycle Path

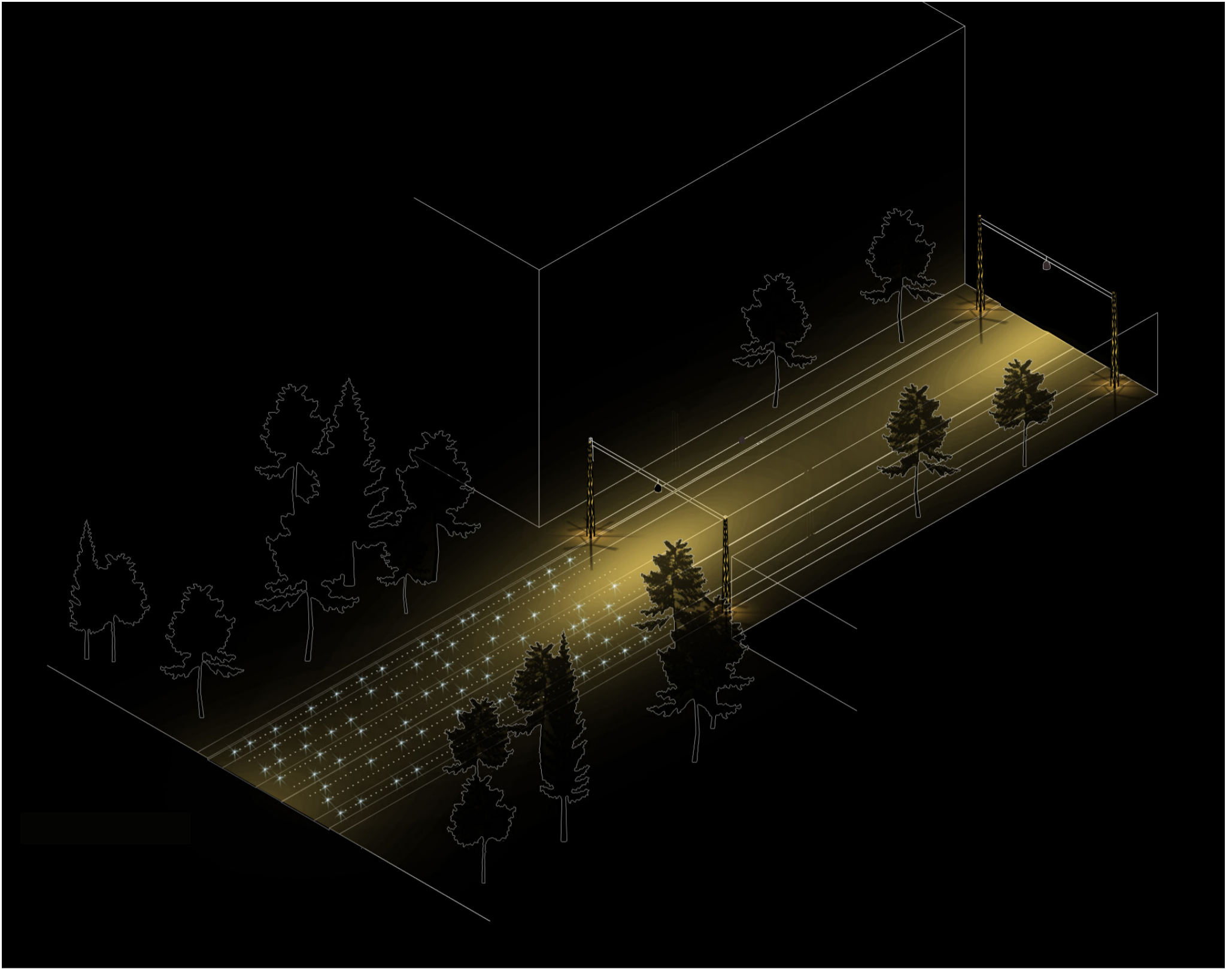
| | |
|------------------------------|---|
| Luminaire type: | Streetlight with asymmetric roadway optic |
| Light source: | LED or ceramic metal halide |
| Mounting: | Industrial post, bracket mounted |
| Height to source: | 5m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | K3 |
| Lighting Class, post curfew: | K3 |

Industrial Post Integral Downlight

| | |
|------------------------|---|
| Luminaire type: | Narrow beam spotlight |
| Light source: | LED or ceramic metal halide |
| Lit materials finish: | Matt metallic gold painted finish to post's internal surfaces |
| Mounting: | Within top of industrial post |
| Height to source: | approx. 10m |
| Colour temperature, K: | 2700K |
| Colour rendering, Ra: | 80+ |

ROUTES

HAAKONINLAHDENKATU, D-D



Roadway

| | |
|------------------------------|--|
| Luminaire type: | Streetlight with bisymmetric roadway optic |
| Light source: | LED or ceramic metal halide |
| Mounting: | Industrial post, catenary wire mounted |
| Height to source: | 10m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | AL3-AL4a/AE3 |
| Lighting Class, post curfew: | AL4b/AE4 |

Industrial Post Integral Downlight

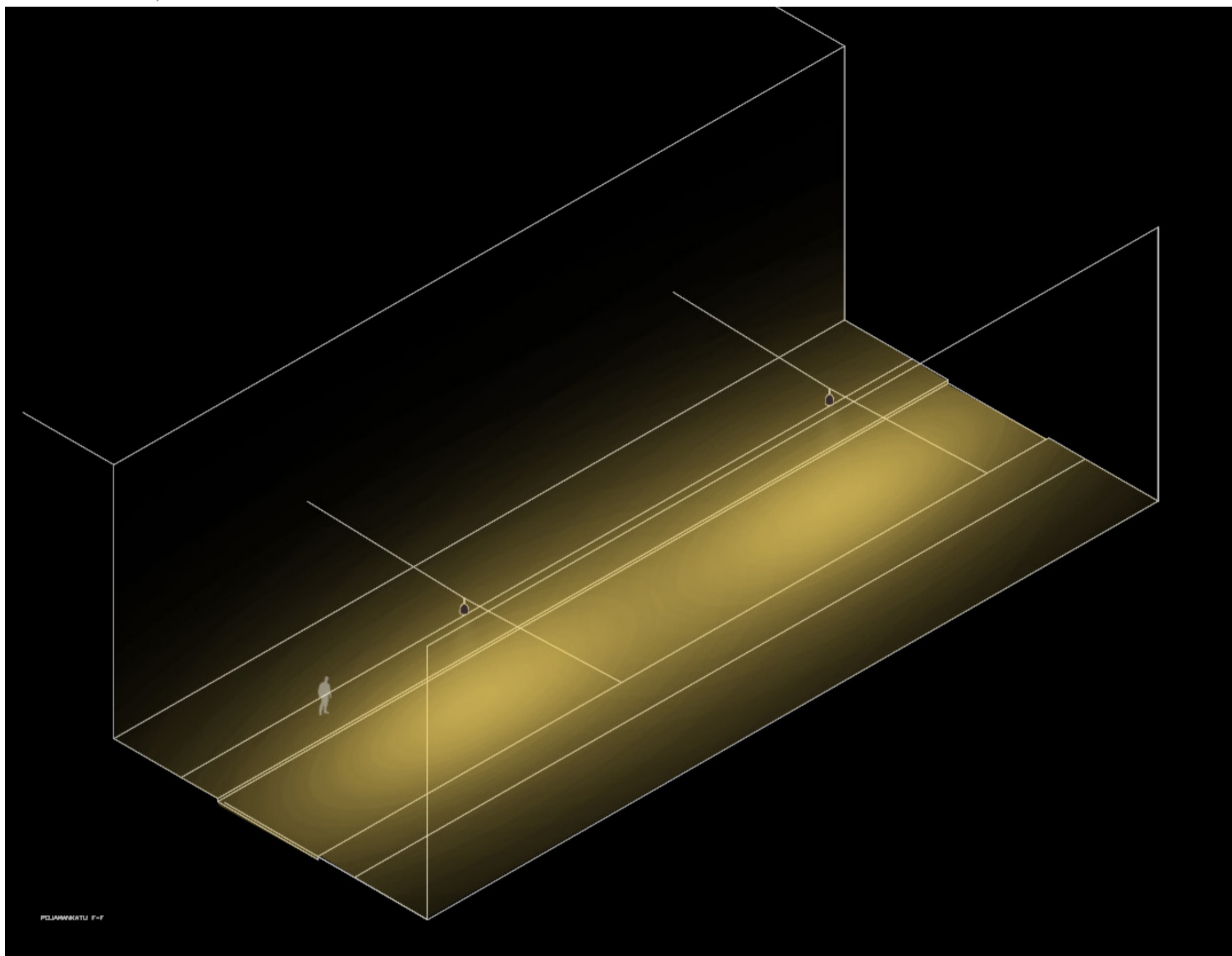
| | |
|------------------------|---|
| Luminaire type: | Narrow beam spotlight |
| Light source: | LED or ceramic metal halide |
| Lit materials finish: | Matt metallic gold painted finish to post's internal surfaces |
| Mounting: | Within top of industrial post |
| Height to source: | approx. 10m |
| Colour temperature, K: | 2700K |
| Colour rendering, Ra: | 80+ |

Junction with Haakoninlahti Park

| | |
|-------------------|---------------------|
| Luminaire type: | Bespoke 'Cat's eye' |
| Light source: | N/A (reflective) |
| Mounting: | Ground-recessed |
| Height to source: | 0-10mm |
| Lighting Class: | N/A |

ROUTES

POJAMANKATU, E-E



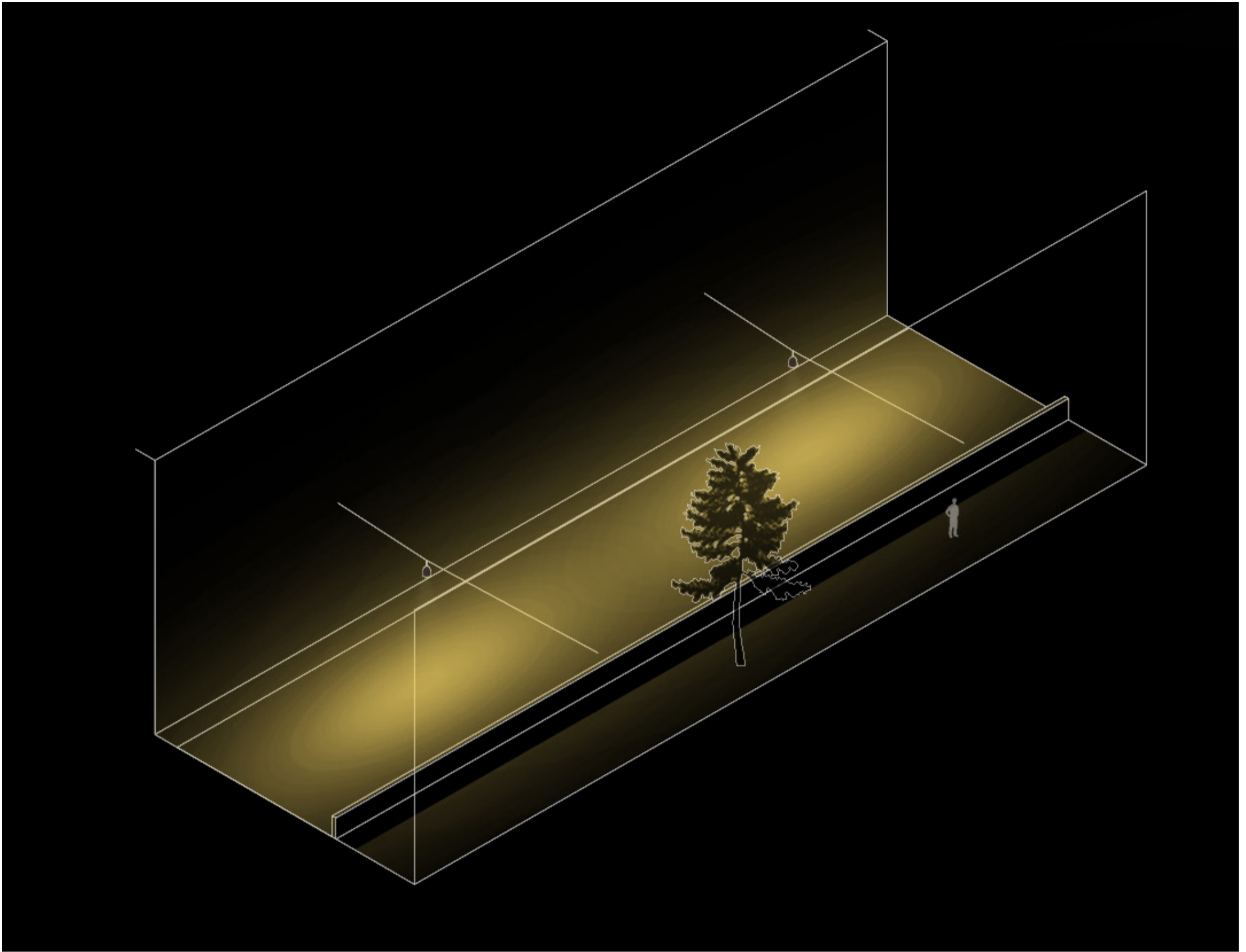
POJAMANKATU E-E

Street

| | |
|------------------------------|--|
| Luminaire type: | Streetlight with bisymmetric roadway optic |
| Light source: | LED or ceramic metal halide |
| Mounting: | Wall-mounted catenary |
| Height to source: | 4m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | K3 (K5 in park area) |
| Lighting Class, post curfew: | K4 (K5 in park area) |

ROUTES

TURUMANKATU, F-F

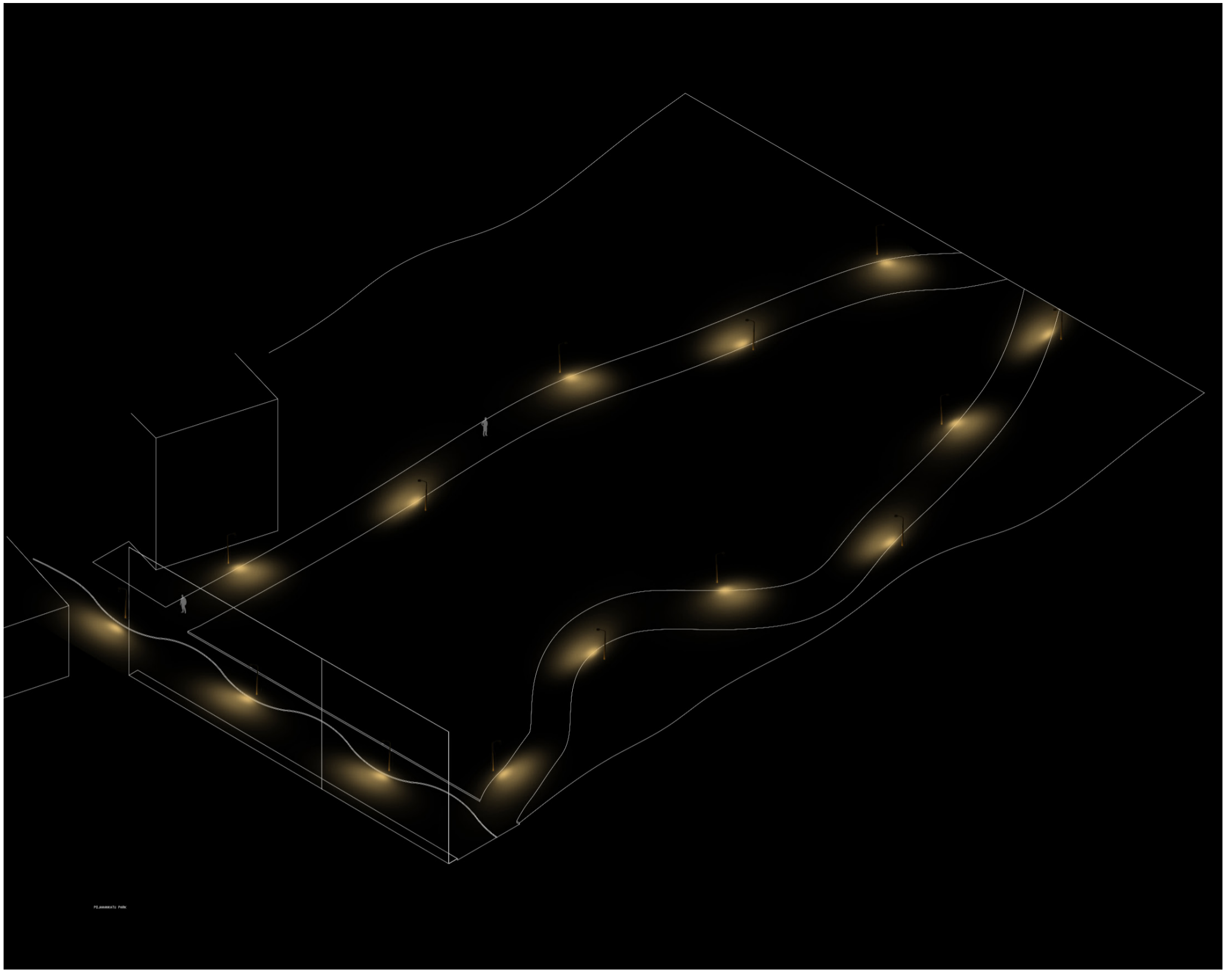


Street

| | |
|------------------------------|--|
| Luminaire type: | Streetlight with bisymmetric roadway optic |
| Light source: | LED or ceramic metal halide |
| Mounting: | Wall-mounted catenary |
| Height to source: | 4m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | K3 (K5 in park area) |
| Lighting Class, post curfew: | K4 (K5 in park area) |

ROUTES

POJAMANKATU, G-G

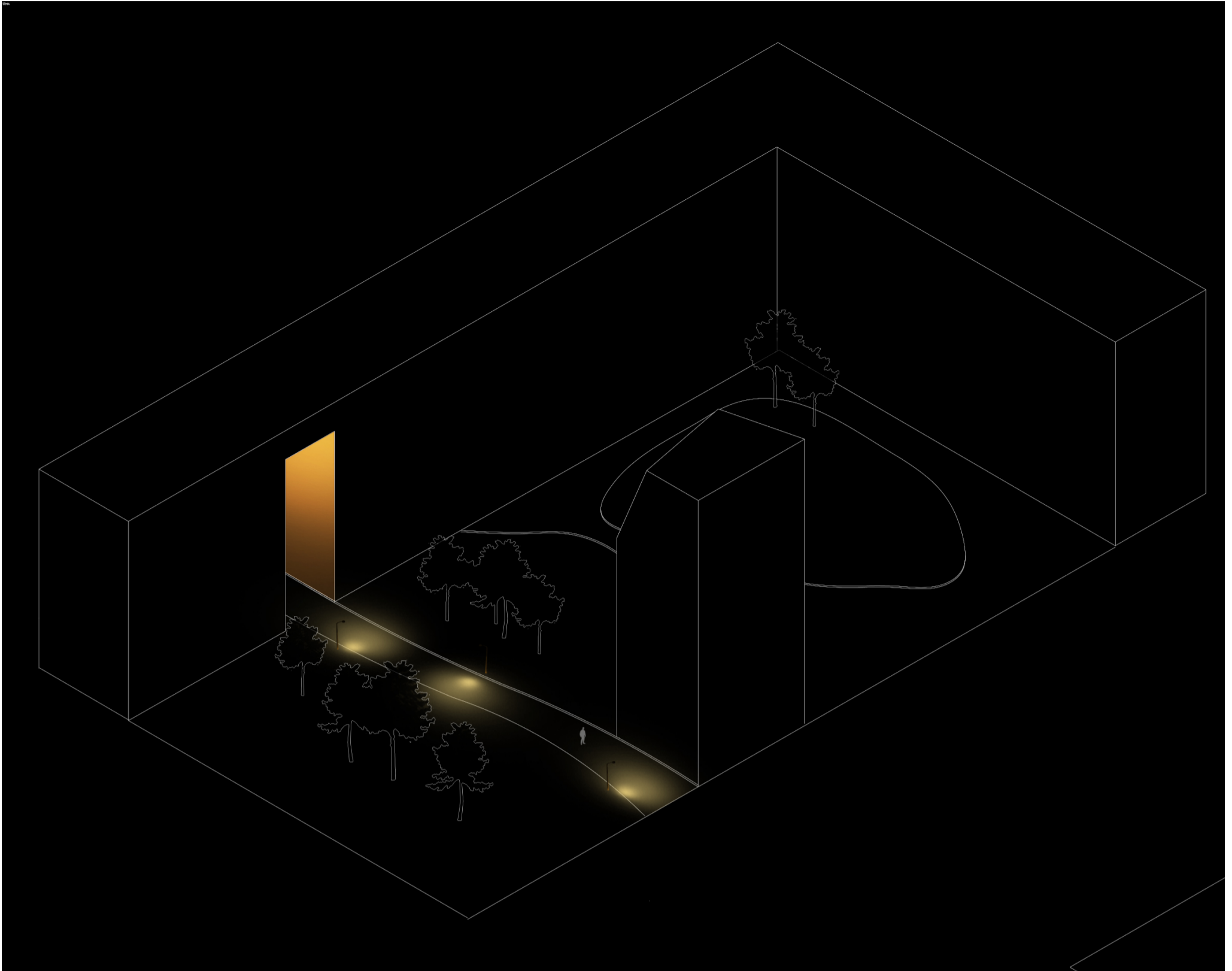


Path

| | |
|------------------------------|---|
| Luminaire type: | Pedestrian pathlight with asymmetric distribution |
| Light source: | LED or ceramic metal halide |
| Mounting: | Steel post |
| Height to source: | 4m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | K5 |
| Lighting Class, post curfew: | K5 |

ROUTES

UDEMANKUJA/HEEMEMAKUJA, H-H



Path

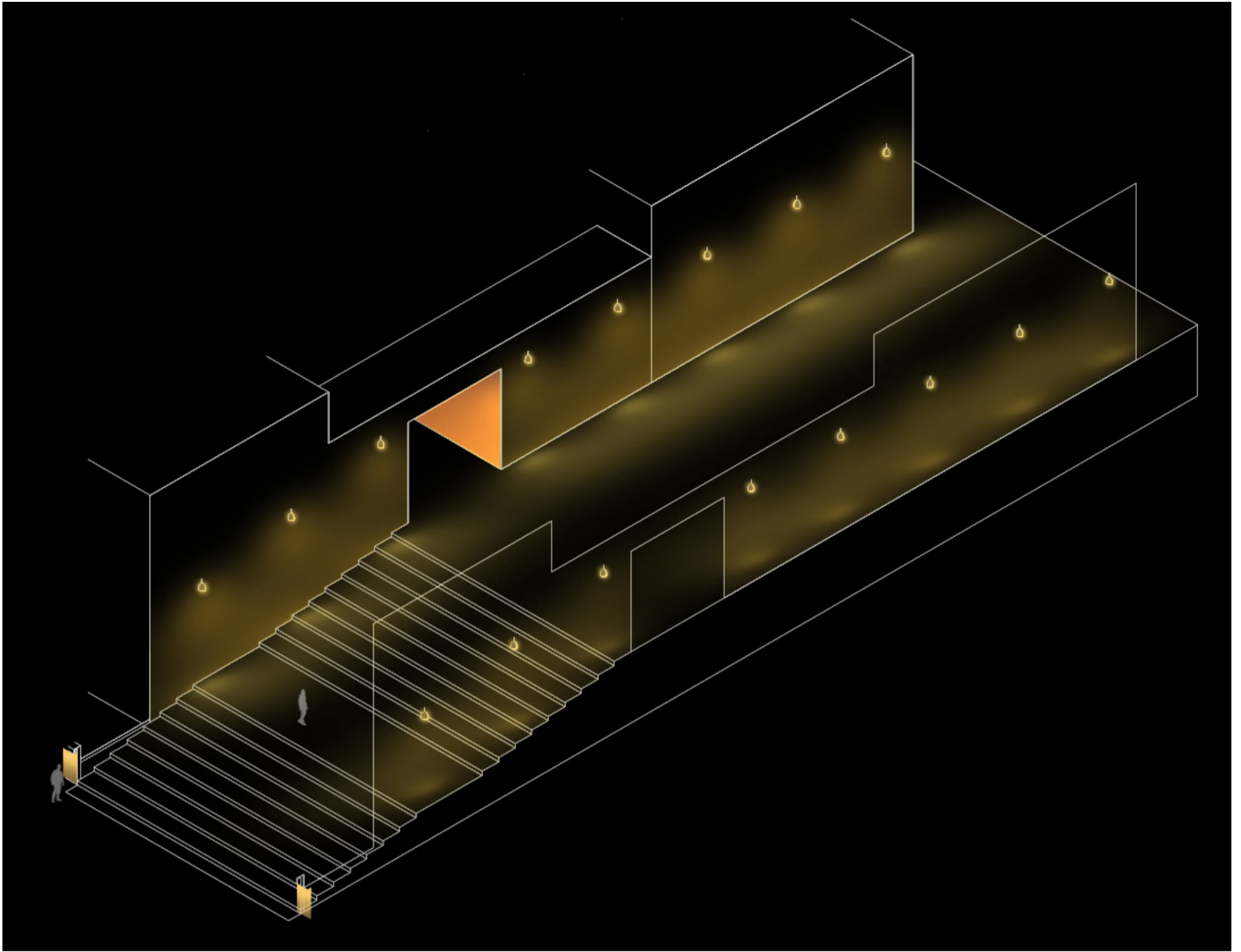
| | |
|-----------------------------|---|
| Luminaire type: | Pedestrian pathlight with asymmetric distribution |
| Light source: | LED or ceramic metal halide |
| Mounting: | Steel post |
| Height to source: | 4m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | K5 |
| Lighting Class, pre curfew: | K5 |

Threshold Archway Lighting

| | |
|------------------------|--|
| Luminaire type: | Washlight |
| Light source: | LED or ceramic metal halide |
| Mounting: | Integrated into architectural wall/soffit, source concealed as far as possible |
| Colour temperature, K: | To best compliment architectural finish/colour, must be white colour temperature |
| Colour rendering, Ra: | 90+ |

ROUTES

WIIMA/WIRMA, I-I

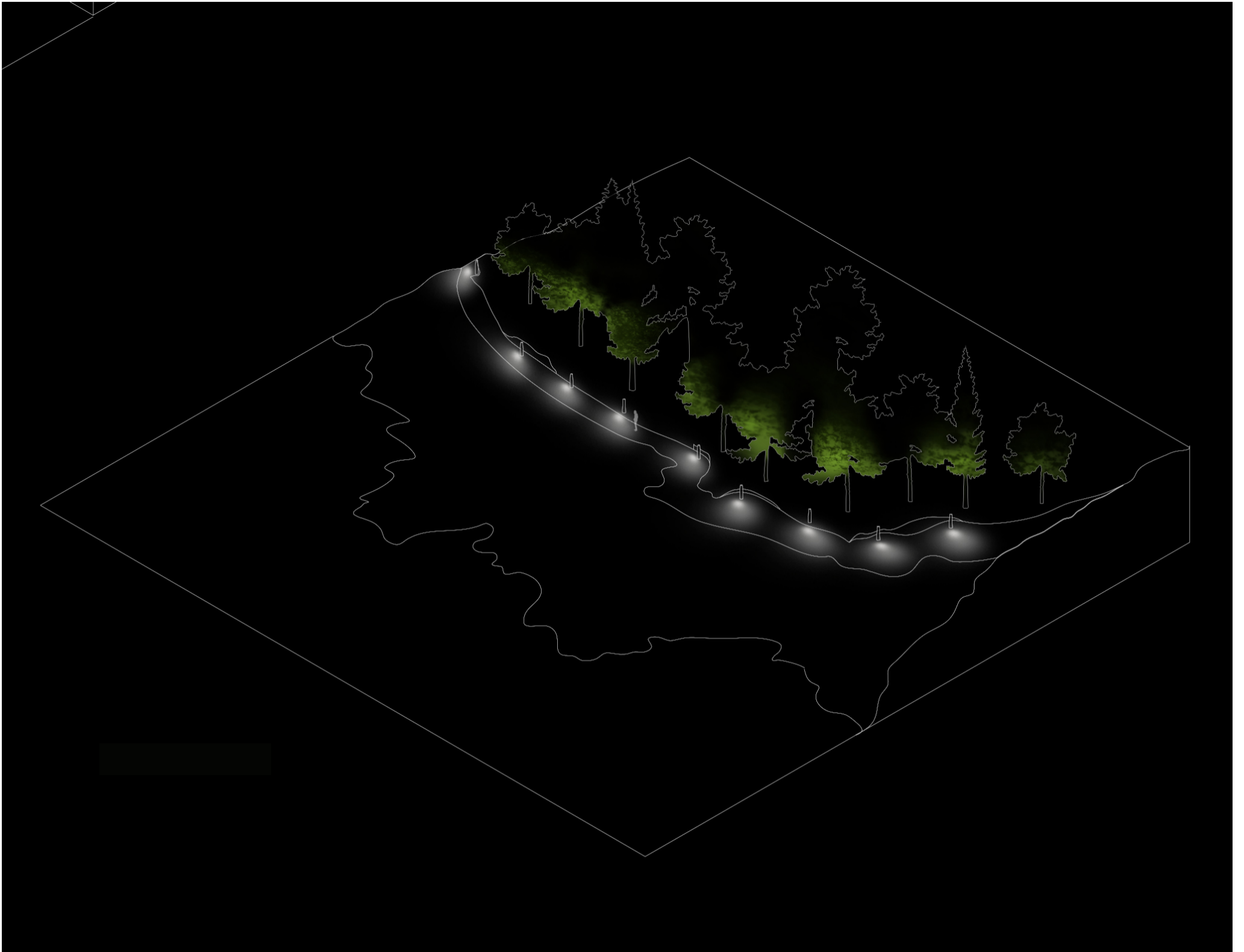


Path

| | |
|------------------------------|---|
| Luminaire type: | Lantern with asymmetric distribution & diffused backspill to light wall |
| Light source: | LED or ceramic metal halide |
| Mounting: | Wall-mounted |
| Height to source: | 4m (to suit architectural dimensions) |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | K5 |
| Lighting Class, post curfew: | K5 |

ROUTES

WESTERN FORELAND, J-J

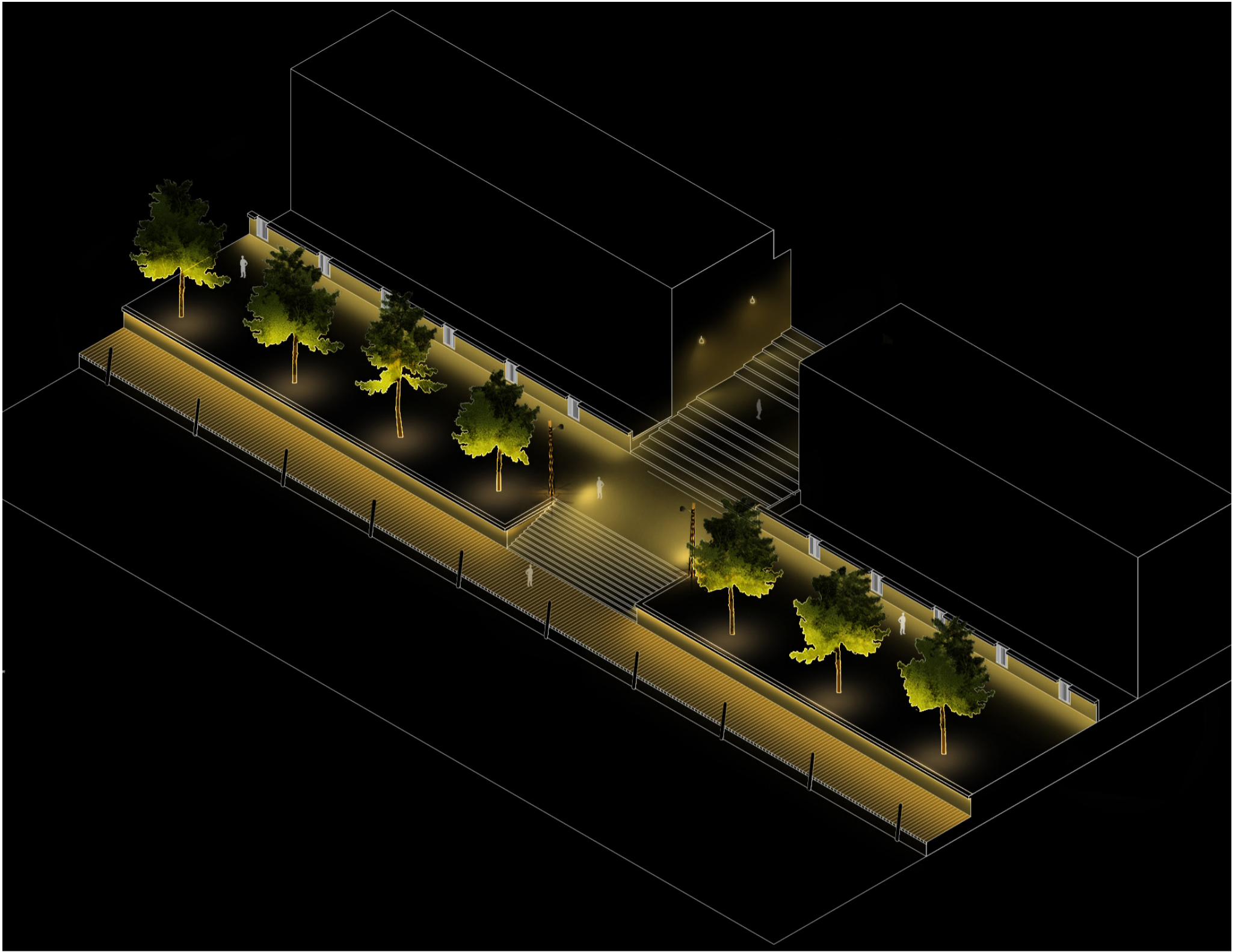


Path

| | |
|------------------------------|--|
| Luminaire type: | Steel bollard with granite reflector housing two lighting components |
| Path downlight Component: | |
| Luminaire type: | Path washlight |
| Light source: | LED or ceramic metal halide |
| Height to source: | 600mm-800mm |
| Colour temperature, K: | 5000K |
| Colour rendering, Ra: | 80+ |
| Lighting Class, pre curfew: | K6 |
| Lighting Class, post curfew: | K6 |
| Tree uplight component: | |
| Luminaire type: | Spotlight |
| Light source: | LED or ceramic metal halide |
| Height to source: | 300mm-500mm |
| Colour temperature, K: | 3000K |
| Colour rendering, Ra: | 80+ |

ROUTES

HAAKONINLAHTI PROMENADE, K-K



Path

| | |
|------------------------------|---|
| Luminaire type: | Linear washlight |
| Light source: | LED or T26 linear fluorescent |
| Mounting: | Recessed & concealed behind wall overhang |
| Height to source: | 1.8m (to suit wall height) |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 80+ |
| Lighting Class, pre curfew: | K6 |
| Lighting Class, post curfew: | K6 |

Boardwalk

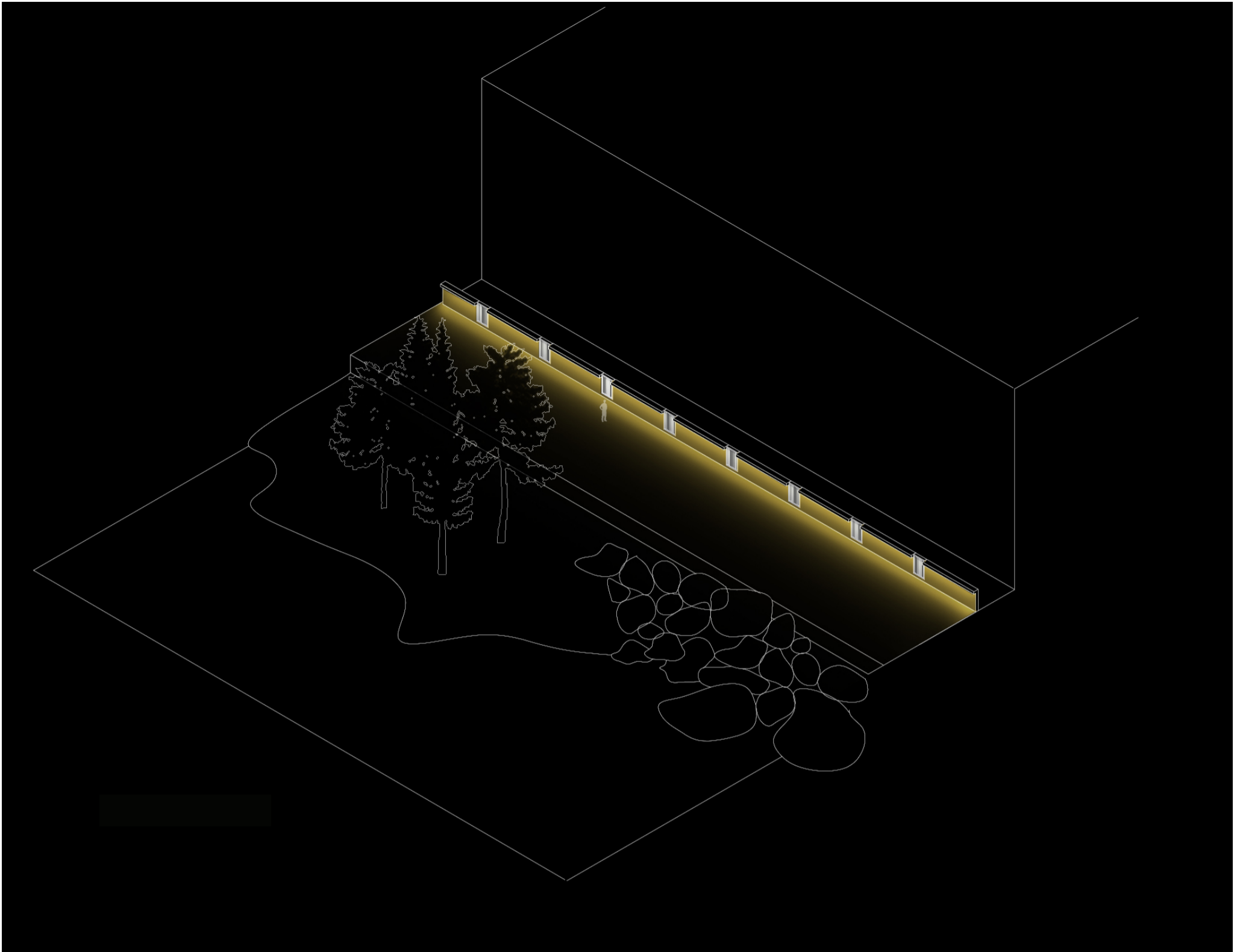
| | |
|------------------------|---|
| Luminaire type: | Linear washlight |
| Light source: | LED or T26 linear fluorescent |
| Mounting: | Recessed & concealed behind wall overhang |
| Height to source: | 1.8m (to suit quay wall height) |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 80+ |
| Lighting Class: | N/A |

Trees

| | |
|------------------------|-----------------------------|
| Luminaire type: | Adjustable focus uplight |
| Light source: | LED or ceramic metal halide |
| Mounting: | Ground mounted |
| Colour temperature, K: | 3000K |
| Colour rendering, Ra: | 80+ |

ROUTES

WIIRINLAITURI, L-L

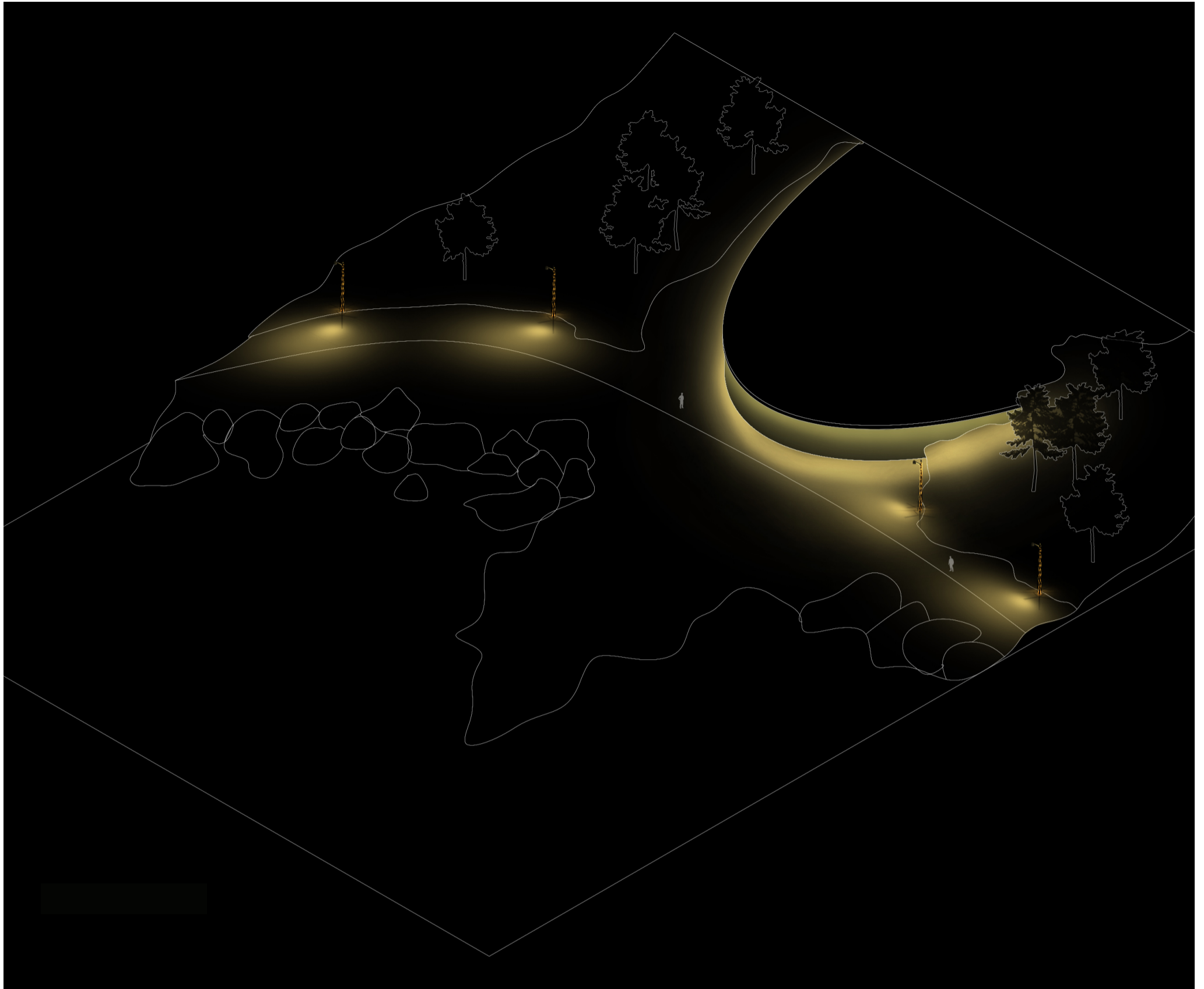


Path

| | |
|------------------------------|---|
| Luminaire type: | Linear washlight |
| Light source: | LED or T26 linear fluorescent |
| Mounting: | Recessed & concealed behind wall overhang |
| Height to source: | 1.2m - 1.8m (to suit wall height) |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 80+ |
| Lighting Class, pre curfew: | K6 (within 3-4m of wall) |
| Lighting Class, post curfew: | K6 (within 3-4m of wall) |

ROUTES

ILONPUISTO, M-M



Path

| | |
|------------------------------|---|
| Luminaire type: | Pedestrian pathlight with asymmetric distribution |
| Light source: | LED or ceramic metal halide |
| Mounting: | Industrial post |
| Height to source: | 5m |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class, pre curfew: | K6 |
| Lighting Class, post curfew: | K6 |

Industrial Post Integral Downlight

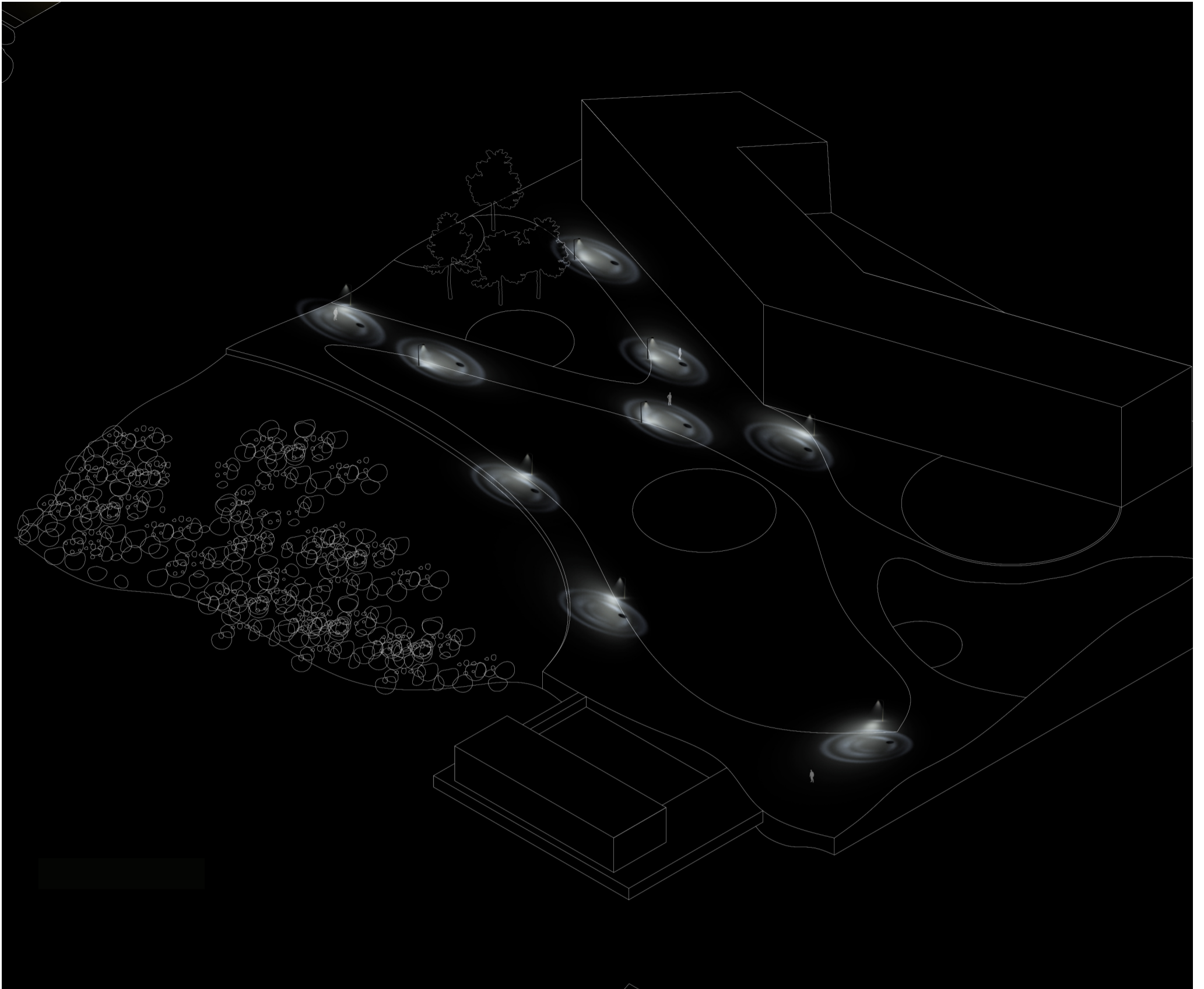
| | |
|------------------------|---|
| Luminaire type: | Narrow beam spotlight |
| Light source: | LED or ceramic metal halide |
| Lit materials finish: | Matt metallic gold painted finish to post's internal surfaces |
| Mounting: | Within top of industrial post |
| Height to source: | approx. 5m |
| Colour temperature, K: | 2700K |
| Colour rendering, Ra: | 80+ |

Ramp & Plinth Foreground

| | |
|------------------------|---|
| Luminaire type: | Linear washlight |
| Light source: | LED or T26 linear fluorescent |
| Mounting: | Recessed & concealed behind wall overhang |
| Height to source: | 1.8m (to suit plinth height) |
| Colour temperature, K: | 2700K - 3000K |
| Colour rendering, Ra: | 80+ |

ROUTES

KOIRASAARET, N-N

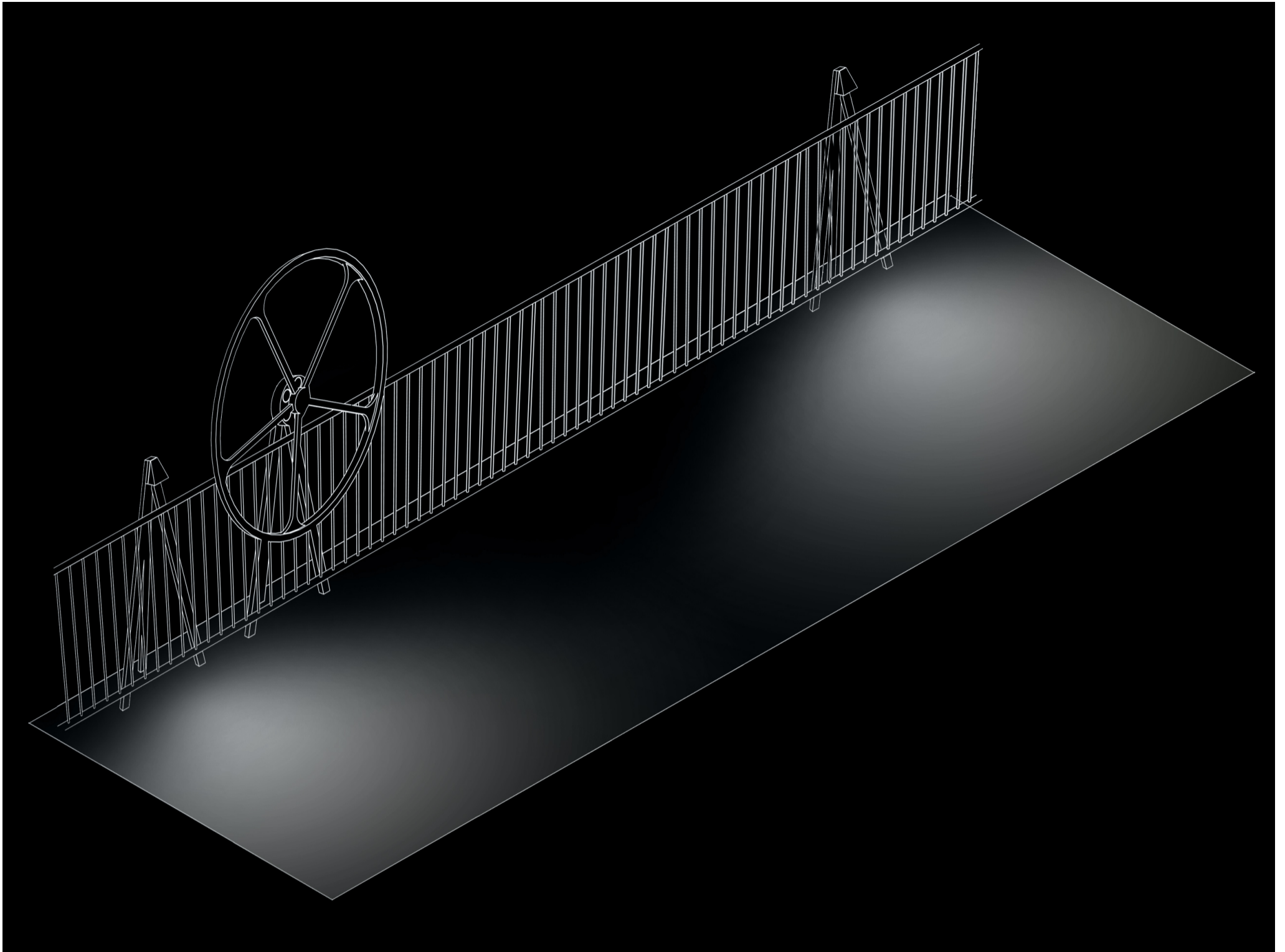


Path

| | |
|-----------------------------|--|
| Luminaire type: | Pedestrian pathlight with radial/circular distribution and defined beam edge |
| Light source: | LED with focusing lens |
| Mounting: | Steel post |
| Height to source: | 4m |
| Colour temperature, K: | 5000K |
| Colour rendering, Ra: | 80+ |
| Lighting Class, pre curfew: | N/A |

ROUTES

KRUUNUVUORI PATH, O-O



Path

| | |
|------------------------|-----------------------|
| Luminaire type: | Asymmetric washlight |
| Light source: | Dynamo-powered LED |
| Mounting: | Balustrade integrated |
| Height to source: | approx. 1.2m |
| Colour temperature, K: | 5000K |
| Colour rendering, Ra: | 60+ |
| Lighting Class: | N/A |

