Introduction

The Kingston Riverside Supplementary Planning Document (draft December 2016) identifies the fundamental significance of the River Thames in the historic development and present character of Kingston.

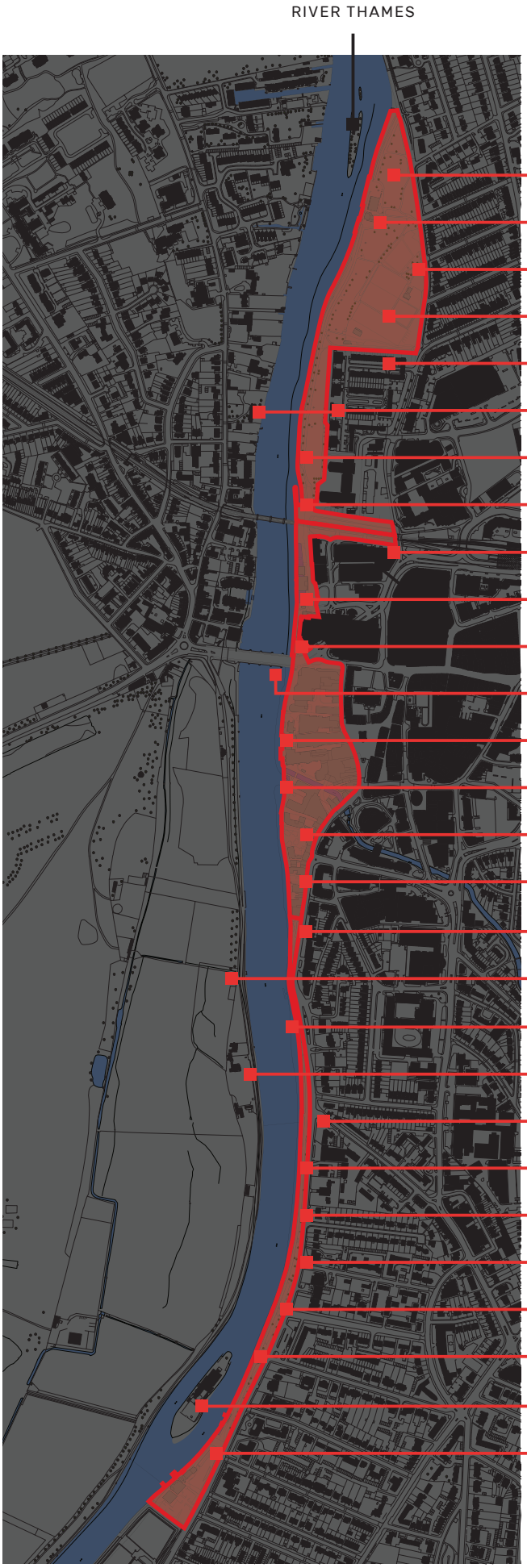
A key challenge for future development along the riverside is balancing the requirements of humans and wildlife, not least after dark. Where lighting is necessary to promote safety and security of a growing population, protect property and facilitate a vibrant night-life in the 24-hour city, artificial illumination can also have profound effects on nature.

Obtrusive, excessive and uncontrolled lighting risks exacerbating the erosion of the natural character of a place and can have negative impacts on ecologies and on human health. Artificial lighting plays a significant role in the incremental impingement of the 'urban' across the 'rural' on a local and on a district level.

This document aims to help guide future development along Kingston Riverside with the aim of providing a framework for an ecologically sensitive approach to the provision of both artificial lighting and natural darkness across Kingston town centre.

View of London from International Space Station
29th September 2015 (c) Nasa.

The bright patch is Kingston Town Centre. The dark areas to the West are Bushy and Hampton Court Parks.



Secondary East-West Routes
Boater's Inn and Rowing Club
Play Area
Tennis Courts
Tennis Courts
Riverside Residential
Riverside Walk
ENTRANCE TO CANBURY GARDENS
Railway Bridge
Turk's Launch
John Lewis
Kingston Bridge and Environs
Riverside Walk
Charter Quay
TOWN CENTRE CONNECTIONS
Chestnut Road
TOWN END
Bushy Park / Home Park
Town End Pier
Barge Walk
Residential Junctions
Portsmouth Road
Cycle Path
Overlooking Residences
New access points to Promenade
QUEEN'S PROMENADE
Raven's Ait
The Harts Boatyard

CANBURY GARDENS

HISTORIC TOWN CENTRE

QUEEN'S PROMENADE AND RAVEN'S AIT

1.0 Kingston Riverside After Dark

1.1 Environmental Zones.

The CIE provides a classification of Environmental Zones for artificial light planning purposes.

Zone 1 - Intrinsically dark areas.
The project area's location within Greater London means that it is difficult for any area to be considered intrisically dark.

Zone 2 - Low district brightness areas.
The River Thames, Bushy Park and Home Park are Sites of Special Scientific Interest (SSSI) and efforts should be made to maintain the substantially dark character of these areas.

Zone 3 - Medium district brightness areas.
Suburban residential areas within and around Kingston have a higher light level. This is due primarily to street lighting and private residential lighting that promotes safety and security. Nonetheless, the brightness should be managed so as to match levels of activity and traffic types.

Zone 4 - High district brightness areas.
As a vibrant town centre with high levels of night-time activity, lighting levels within Kingston are significant higher than surrounding areas. This includes street and public amenity lighting, private commercial lighting from shop fronts and office premises, architectural feature lighting and temporary lighting for events.

Each of these broad Environmental Zones is made up of a variety of informal lighting character areas, differentiated by lighting qualities such as brightness and colour temperature or different types of lighting equipment and mounting heights. These character areas are explored in more detail later in this report.

Environmental Zone map
Map produced from on site survey during November 2016.

1.2 Edges

At night-time these Environmental Zones are defined by shifts in lighting conditions signalled by views and barriers.

The most prominent element of the night-time scene is the darkness of the Thames. Spanning the river is Kingston Bridge, floodlit in blue from the eastern bank. Bushy and Home Parks provide a dark edge beyond the river south of the bridge. On the eastern side, Portsmouth Road produces the lit edge to the river.

The density of residential developments on the western bank of the river reduces north of the bridge. The riverside path through Canbury Gardens provides a lit edge to the river, with only activity areas, such as the tennis courts breaking the darkness before the lit windows of the residential areas are visible through the tree line.

Edges map
Map produced from on site survey during November 2016.

1.3 Routes

The length of the project area is connected by a failry continuous pedestrian route ,which is only partially interrupted around the quiet back of house area at Horsefair Quay. Lighting to this route is inconsistent in brightness, equipment and quality, especially around the historic town centre. The route is not specifically lit south of Town End.

The quality of lighting to pedestrian links off this riverside walk is varied. Selected paths through Canbury Gardens are illuminated, providing safe routes to residential areas. Within the town centre, the brightness and specification of lighting to alleyways and passages to the market square do not always suggest safe, viable, clearly defined routes, especially down un-overlooked alleys.

Portsmouth Road links the town centre from the south, and is well lit for pedestrian, cyclist and motor traffic. Light spill from Portsmouth Road illuminates Queen's Promenade. Routes through the town centre meet over Kingston Bridge, a busy dual carriageway that links east and west banks. To the north of the project area, relatively quite roads link the town centre to the residential suburbs.

The Thames itself is used at night by small powered boats and recreational rowing purposes.

Route map
Map produced from on site survey during November 2016.

1.4 Night-Time Activity.

Park uses define both the northern and southern sections of the project area. In the north, Canbury Gardens is moderately well used after dark. The towpath and river side walk are illuminated for pedestrians and cyclists into the evening, and the Boater's Inn, Rowing Club and Tennis Courts are all active further into the night. Lit routes connect Canbury Gardens to the adjacent residential developments and across Lower Ham Road to the East. Even from across the river, residential properties extend the sense of natural surveillance within the park.

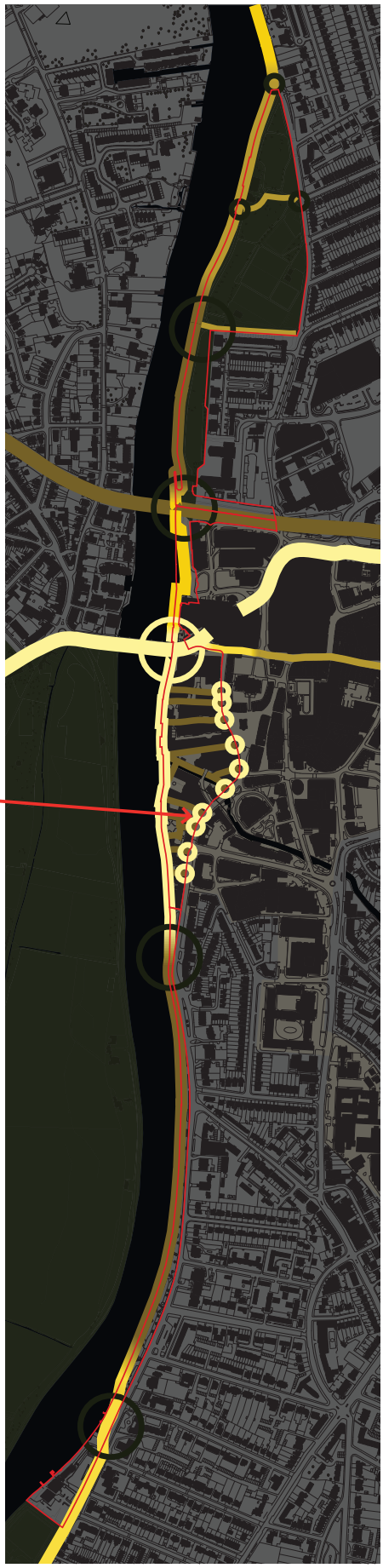
In the South, Queen's Promenade is significantly quieter after dark. There is currently no lighting to the pedestrian route along the river, as pedestrians and cyclists are directed along Portsmouth Road. There are limited generators of activity along this part of the river, aprt from Raven's Ait and the Boat Houses in the south. There is limited natural surveillance from across the river or from across Portsmouth Road.

Activity levels are much higher within the historic town centre. Kingston Bridge is well used by cars and pedestrians, and divides northern and southern sides of the town centre. To the South, the riverside walk is a busy pedestrian quarter rich in evening uses such as bars, restaurants and theatres. To the north, a back-of-house feeling dominates, with service access to the John Lewis department store, under-used Quays and multi-storey car parks offering little to the public realm.

Activity map
Map produced from on site survey during November 2016.

1.5 After Dark
Lighting conditions along the riverside path is inconsistent, varying on a range of criteria including brightness, uniformity, colour temperature and equipment. The illumination of east-west routes meeting the riverside path doesn't sufficiently respond to the specific character of each connection, and thereby constrains movement between the river and adjacent urban and suburban areas.

Junctions of disconnection between the riverside and town centre. Alleyways may be adequately illuminated but do not match the quality of the light in the town centre. They do not encourage and invite pedestrians to use the alleyways as a safe and viable route to get to the riverside.



Movement
Key

- Brightly Lit Route
- Moderately Lit Route
- Low Lighting Route

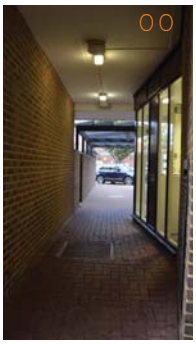
Movement map
Map produced from on site survey during November 2016.

1.6 Lighting and Ecology

The most prominent element of the night-time scene is the darkness of the Thames. The development of lighting along the river bank is substantial, intensifying around Kingston Bridge but reducing North of the railway bridge and South of Town End. To the West, Hampton Court Park is a significant area of darkness. Within this general pattern of brightness, there are significant sources of both darkness and light pollution, particularly towards the river within the town centre.

Ecological areas map
Map produced from on site survey during November 2016.

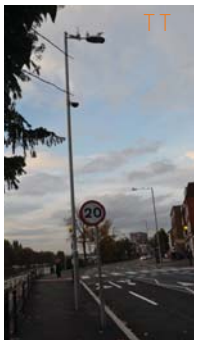
2.0 Existing Lighting Equipment



Lighting types

Routes through Canbury Gardens are lit using a variety of lighting equipment: to the north, heritage-style column-mounted lanterns at a pedestrian (<4m) scale (A-F) and to the south, taller (>8m) column-mounted floodlights (G-I). Warm white and sodium lamp types predominate. Activity areas are lit using column-mounted floodlights with sodium lamp package. The tennis courts are flood lit using high-intensity discharge lamps.

Down Hall Road and Thames Side are lit using standard street lights with sodium and white discharge lamp packages (J-L). At John Lewis, private column and wall mounted globe lighting (M) illuminates the river side, with sodium lamp packages producing a low-quality night-time scene. This extends to the bridge underpass and ramps (O-P).



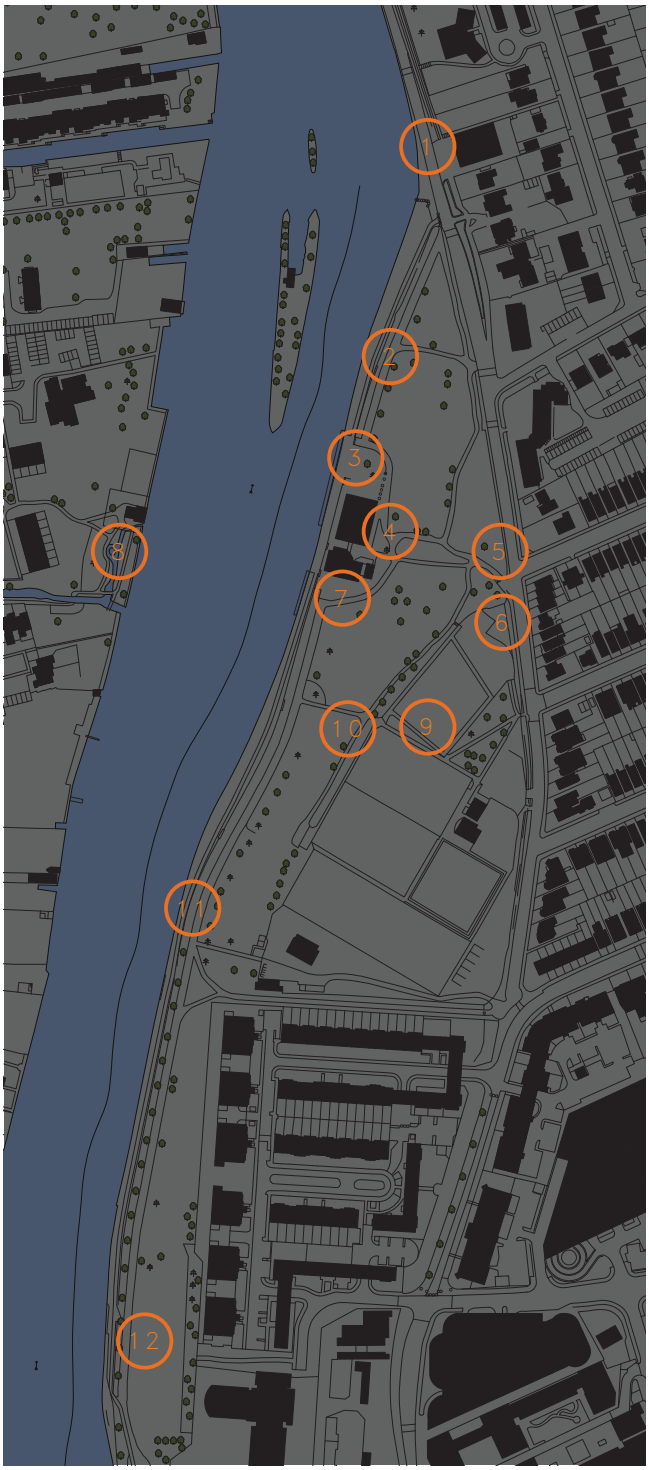
The feature flood lighting of Kingston Bridge is achieved using powerful blue-LED column-mounted floodlights (N). Street lighting on the bridge deck is provided using high-intensity discharge lamp packages within heritage-style lamp standards mounted on the bridge wall (Q).

South of the bridge, the riverside walk and historic town centre is illuminated using a very wide range of different column and wall-mounted lighting types from public and private sources (R-VV).

Queens Promenade has no specific lighting.

2.1 Canbury Gardens

2.1 Canbury Gardens After Dark
Canbury Gardens is a predominantly darker area between the river and the adjacent residential developments, a sense enhanced by the height and density of tree cover. This dark zone is bisected by the riverside path, lit using column-mounted luminaires that produce distinct pools of light along the route. Additional amenity lighting is provided to activity areas - specifically floodlighting of the private tennis courts and around the Boater's Inn, rowing clubhouse and the children's play area - that produce extraneous light within the generally dark area.



Photographic Survey
Site visit, November 2016.

1 White lighting along Lower Ham Road.

5 View of tennis courts from north. Externally lit through tent structure. Spill lighting to north.

9 View of tennis courts from north. Externally lit through tent structure. Spill lighting to north.

2 White lighting from 4m heritage-style columns along Thames Path north of Kingston Rowing Club.

6 Reflected spill lighting onto trees and vicinity from tennis court, viewed from the west.

10 Reflected spill lighting onto trees and vicinity from tennis court, viewed from the west.

3 Low quality security lighting around Kingston Rowing Club. Positive animation from inside.

7 Uneven pools of light created by taller floodlights between trees on Thames Path.

11 Uneven pools of light created by taller floodlights between trees on Thames Path.

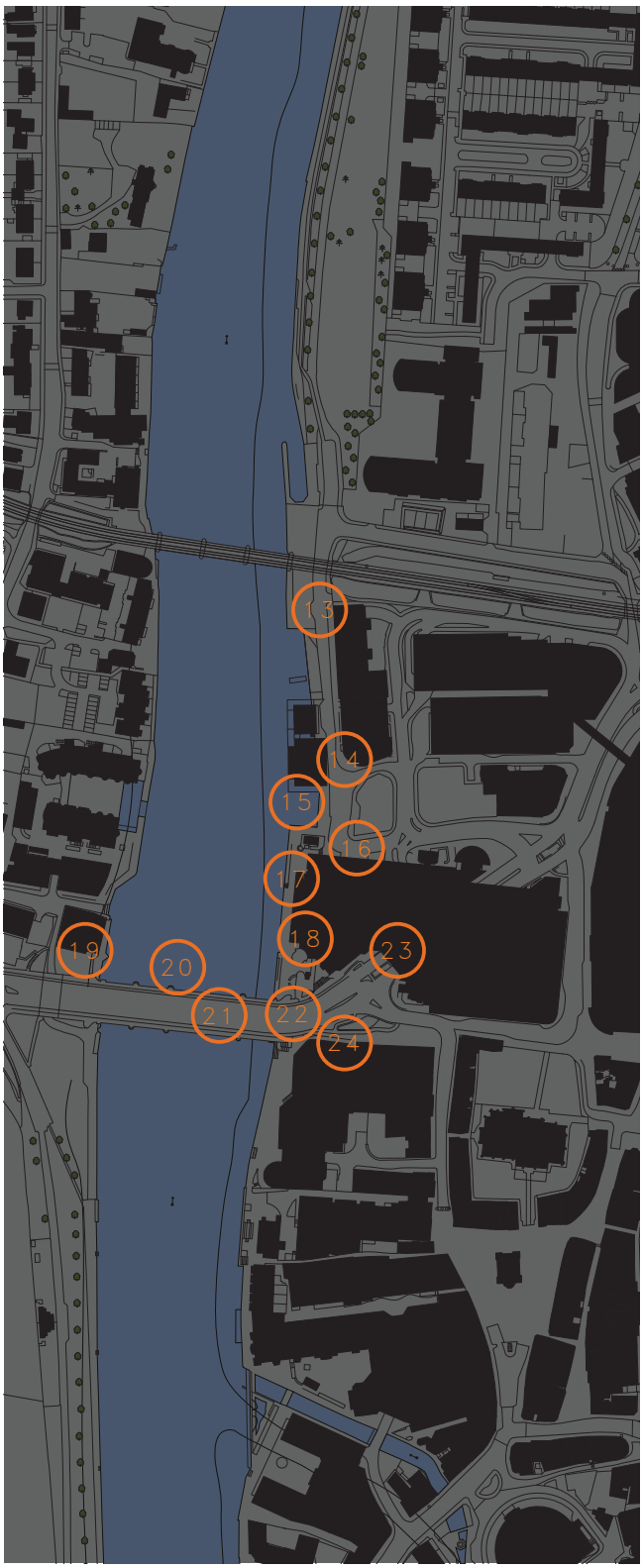
4 White lighting from 4m heritage-style columns on approach to The Boater's Inn.

8 Significant areas of darkness around entrance.

12 Significant areas of darkness around entrance.

2.2 Between the Bridges

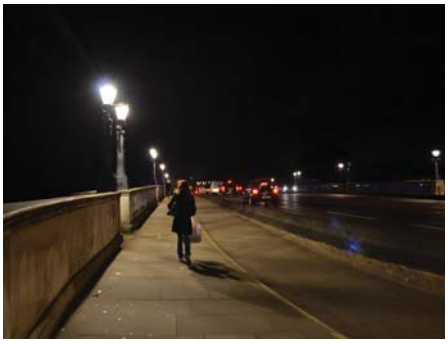
2.20 Between the Bridges.
Illuminance levels increase between the southern entrance to Canbury Gardens and the Kingston Bridge. Street lighting onto Thames Side leads to the back of house and car parking area serving John Lewis. Turks Quay receives no dedicated lighting. Around the base of John Lewis, speciial column- and wall-mounted globe luminaires light the riverside path and arcade leading to the bridge underpass. All lighting is low-quality sodium lighting.



Photographic Survey
Site visit, November 2016.

13 Column mounted lighting on building side of Thames Side.

17 Distinct column and wall mounted luminaire family using sodium lighting.



21 Bridge lit using heritage lanterns with white-light discharge lamps.

14 Little animation offered on level after dark. Little sense of proximity to town centre.

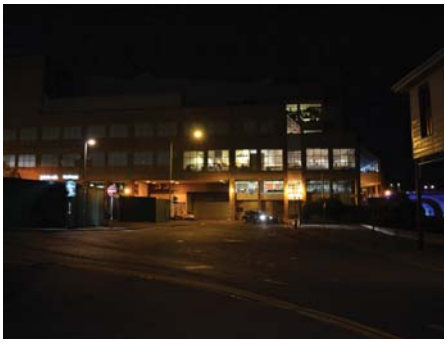
18 Little ground floor animation; sense of an unused arcade with little sense of security.

22 Sodium lighting on underpass. Vertical illuminance increases sense of security.

15 Dark, unmarked edge of river. White facade reflects street lighting in water.

19 Uplighting to trees on Western bank. Animation from commercial and residential buildings.

23 Very busy road. Bright underpass contrasts with relatively dark lighting of road and footway.



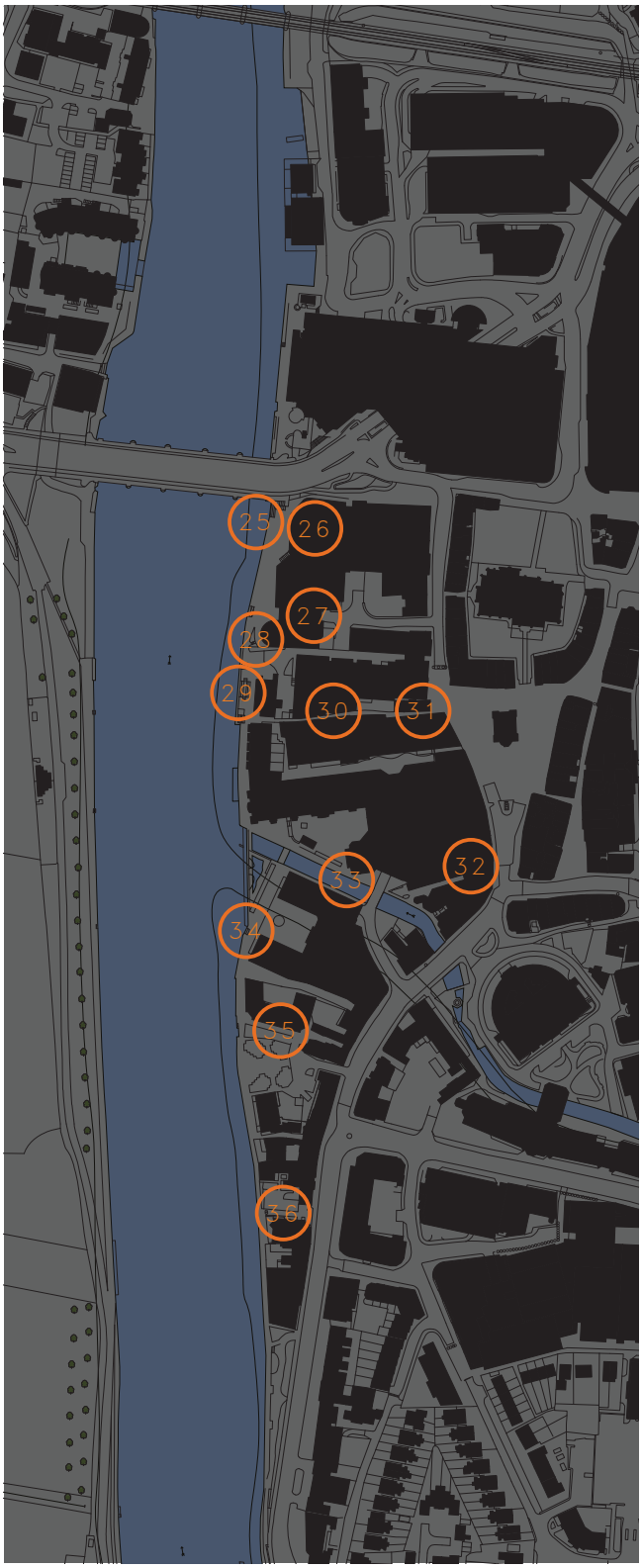
16 Back-of-house quality of John Lewis. Wide roads and closed facade at ground level.

20 Bridge brightly lit using column mounted floodlights on Eastern bank.

24 Ramp and steps to bridge relying on spill light from road and retail frontages.

2.3 Historic Market Town Centre

2.30 Historic Town Centre After Dark
Night-time conditions along the riverside path is inconsistent, with varying street, amenity, feature and architectural lighting along the length of the route. Feature lighting is most prominent around Kingston Bridge, which is floodlit in blue and immediately to the south, where restaurants and bars use lighting to create a welcoming night-time ambience. The riverside walk itself is lit using a wide range of equipment, reflecting the varied pattern of ownership and tenancy. Links to the town centre are typically illuminated using low-quality sodium lighting, again with some variation according to building ownership. There is little feature lighting to these east-west links, failing to capitalise on the importance and distinctiveness of these routes.



Photographic Survey
Site visit, November 2016.

25 High levels of glare produced from very prominent floodlighting of bridge.

29 Variations in colour temperature, direction and lamp types creates a varied night-time scene.

33 Sodium lighting and feature lighting of Hogsmill within Charter Quay.

26 Large illuminated panels are a significant feature, but are screened by semi-mature trees.

30 Patchwork of lighting methods to network alleyways use primarily sodium lighting.

34 Sodium lighting and feature lighting of Hogsmill within Charter Quay.

27 Lighting to white surfaces of undercroft brighten space, but no sense of a clear route to centre.

31 View of alleyway using wall-mounted lighting from brightly lit Market Square.

35 Sodium lighting and feature lighting of Hogsmill within Charter Quay.

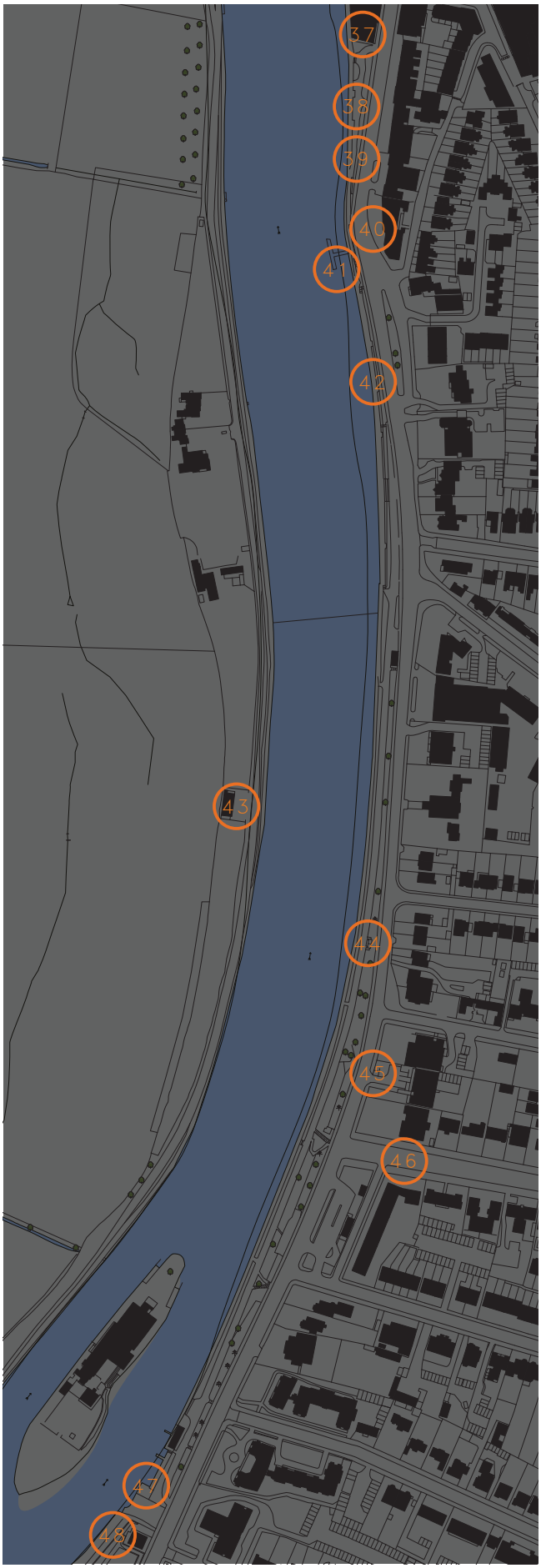
28 Range of lower level lighting techniques create a differentiated lit scene.

32 View of alleyway using wall-mounted lighting from brightly lit Market Square.

36 White lighting from wall mounted luminaires used part of the way along alleyway.

2.4 Town End to Raven's Ait

2.40 Town End to Raven's Ait After Dark
South of Town End, the Riverside path is not directly lit. The ambient brightness along the path is produced by backspill from the street lighting columns that line the Portsmouth Road. Along the route, there are a small number of isolated pockets of lighting associated with riverside properties and moored boats. The path receives limited natural surveillance due to the distance from the nearest residential properties, the elevation of the path and the density of tree coverage.



Photographic Survey
Site visit, November 2016.

37 Town End illuminated from spill lighting of street lights.

38 Public space is under lit and does not reach potential as a positive night-time social space.

39 Town End has no particular night-time presence.

40 Road and new cycle path illuminated using 10m street lighting columns.

41 River edge and access to moored boats lit using spill lighting only.

42 Queen's Parade illuminated using spill lighting only. Dark areas close to overshadowing planting.

43 Lighting of some structures interrupts natural character of bank.

44 Lit WC remains open into the early evening, but no lighting to paths leading to it.

45 Limited overlooking / visual connection of Promenade from residential properties.

46 White lighting along perpendicular residential street contrasts with sodium lighting on main road.

47 Column-mounted luminaires provide lighting to car park serving Raven's Ait.

48 Column-mounted luminaires provide lighting to car park serving Raven's Ait.