Lighting design guide

Royal Docks

MAYOR OF LONDON

Newham London

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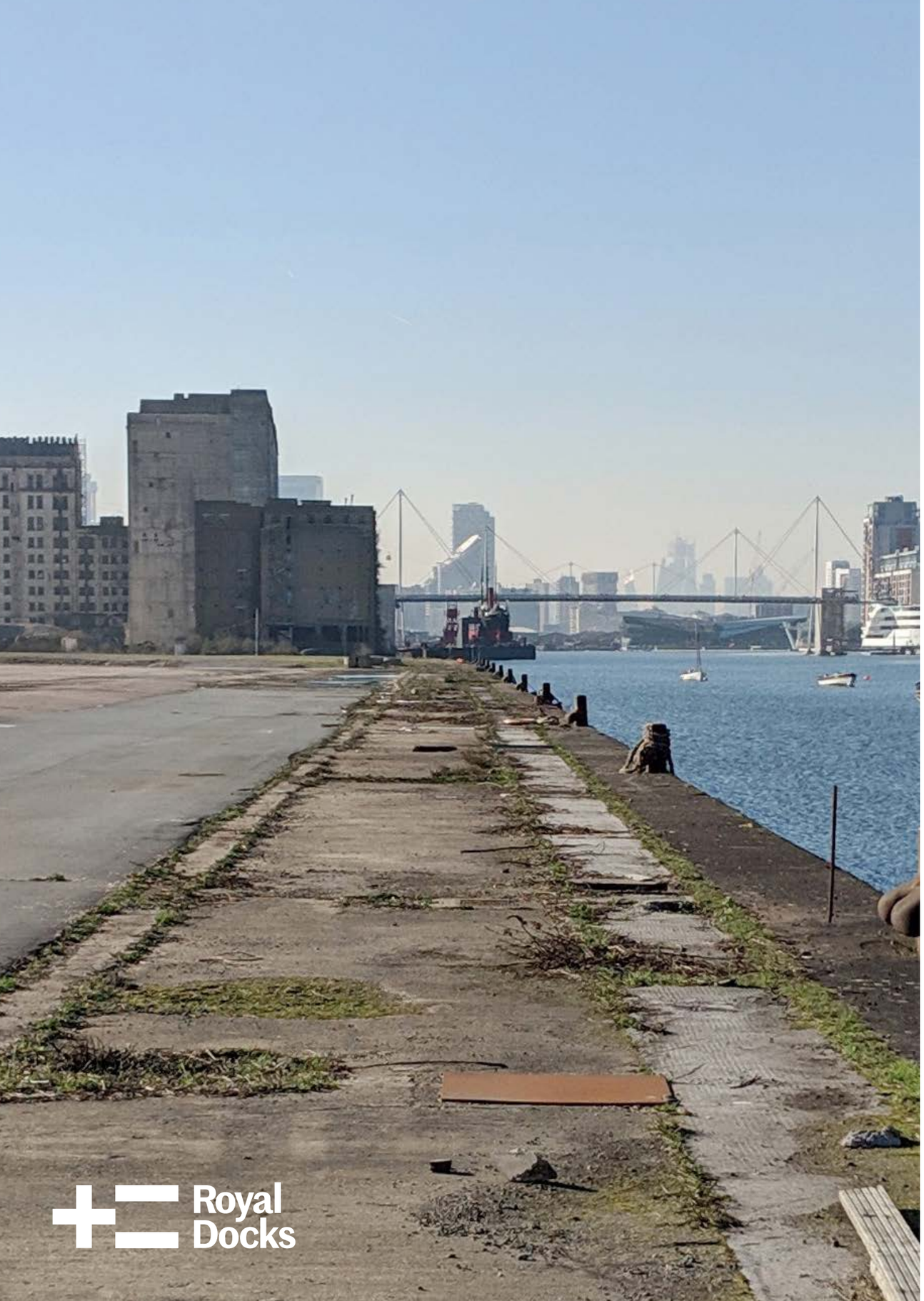


Our public spaces play a fundamental role in ensuring the Royal Docks is a sustainable, healthy and inclusive place, and one that meets the needs of the community and creates a unique place in London.

The Royal Docks Public Realm Framework, published in March 2020, sets out the vision and strategy to ensure the delivery of the Royal Docks' public realm is comprehensive, coherent and connected, while also ensuring a diverse approach. Achieving this vision relies on working closely with a number of stakeholders and partners, so it is important that the principles of the Framework are translated into clear guidance for delivery.

This is why the Royal Docks Team has developed a series of Design Guides, by working with local stakeholders and communities to adopt a user-centred approach. These Guides set out how the design principles of the Public Realm Framework should be applied across the Royal Docks.

The Design Guides support the Mayor of London's Good Growth by Design agenda and the London Borough of Newham's Community Wealth Building agenda. The Guides contribute towards the creation of thriving "15-minute neighbourhoods" that connect communities to critical services and social and civic amenities, supporting the health, wellbeing and prosperity of everyone who lives and works here. The Guides focus on equalising access to public space and prioritising sustainable travel modes through inclusive design principles; and they help fulfil air quality and climate change adaptation commitments.

Three thematic Guides have been created: the Wayfinding, Lighting and Landscaping Guides enhance the character and legibility of the place. They focus on several fundamental and cross-cutting principles, including;

- Creating places that are inclusive and accessible.
- Increasing access to green spaces and local amenities.
- Improving connectivity across the Royal Docks.
- Enhancing access to the water.
- Celebrating the heritage and culture of the Royal Docks.
- Creating a welcoming and safe environment.
- Promoting healthier lifestyles.
- Promoting community participation and co-design.
- Encouraging community stewardship of public spaces.

An Inclusive Design Guide will accompany and support the other three thematic Guides, setting out how national legislation and best practice should be applied to the specific accessibility challenges characterising the Royal Docks' open spaces, so that we can ensure equitable access for all.

The Design Guides constitute an essential resource for anyone who intends to commission design work and public realm projects in the Royal Docks, including public sector organisations, developers, landowners, local businesses and community organisations.

The Guides are intended to sit alongside and support the vision and principles of other strategies, including the Royal Docks Economic Purpose and the Royal Docks Cultural Placemaking Strategy, which are key to shaping the regeneration of the Royal Docks. Taken together, the principles will ensure the Royal Docks becomes a testbed for new ideas and innovation, and a unique place that benefits communities, businesses and visitors alike.

1. Introduction

The design guides

In 2019 the Royal Docks Team worked with 5th Studio to produce the Royal Docks Public Realm Framework (the Framework), which was endorsed by the Enterprise Zone Programme Board in March 2020. The Framework sets out the key principles for future interventions and investment in the area's open spaces.

The Design Guides are the next phase of this project, establishing a unified design code for wayfinding, lighting and landscape elements in the area.

These guides are intended to support the delivery of a coherent, clear and socially inclusive public realm across the Royal Docks. The ambition for the transformation of the Royal Docks is set out in the Royal Docks Public Realm Framework, which was publicly consulted on in 2019 and published in March 2020.

The following pages summarise the key ambitions for the public realm and should be read in conjunction with the more detailed findings set out in the Framework. The summary of engagement, and a 'How to use this Guide' section, are also included here.

Purpose of the Guides

The aim of the Design Guides is to provide a coordinated approach to landscape, lighting, wayfinding and inclusivity and access for the Royal Docks. As set out in the Framework, it is essential that interventions in the area are working towards similar goals and draw from a similar design language. The Design Guides will serve as a common resource to achieve this goal.

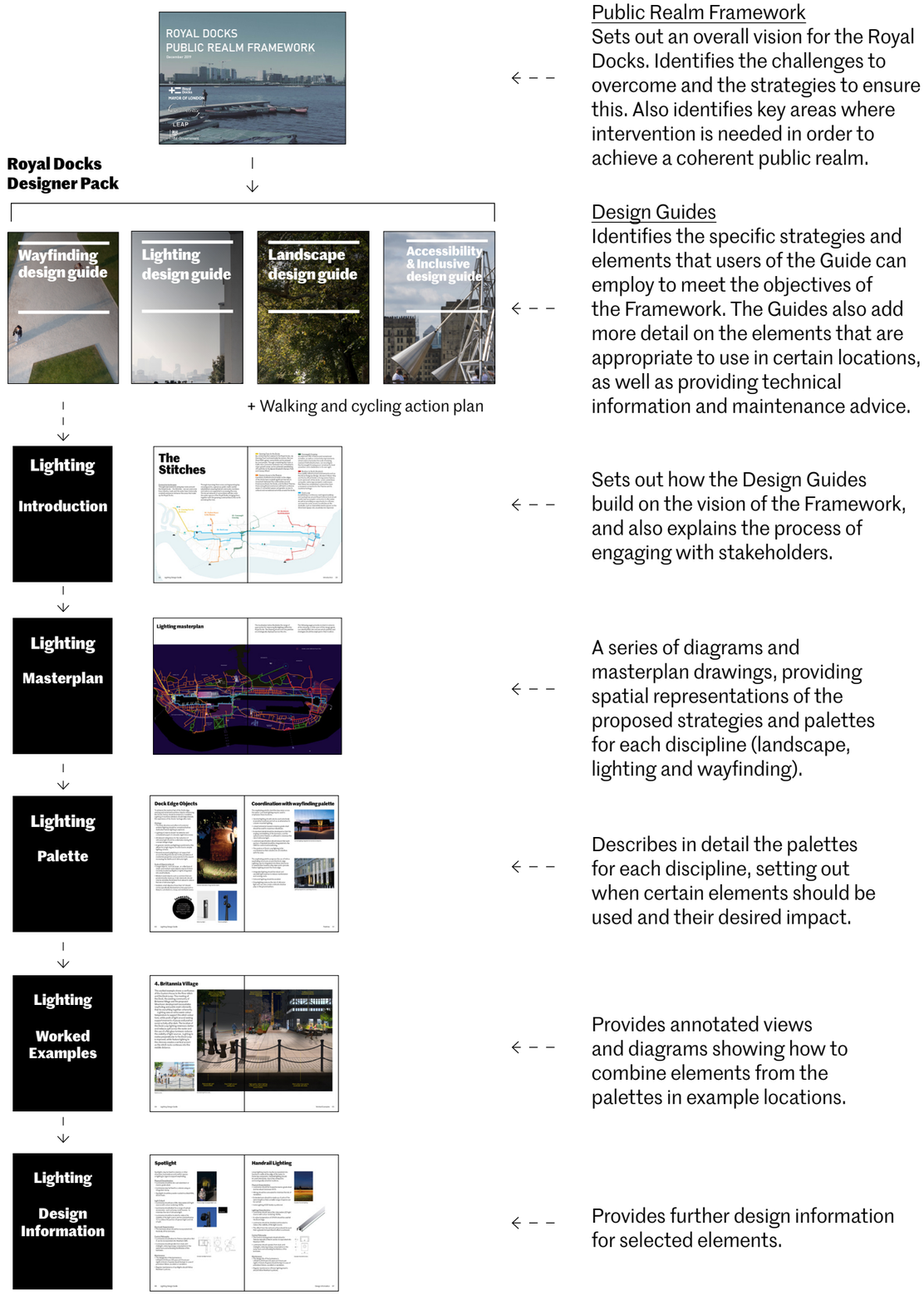
Who are the Guides for?

The Design Guides are primarily for anyone who is thinking of commissioning or designing a project within the Royal Docks. As new development impacts everyone in the area, both existing and future communities, the Design Guides also provide a record of how community groups and key stakeholders have participated in and influenced the process.

Structure of the Guides

The structure of the Design Guides will allow stakeholders, designers and local authorities to understand the vision for the area as a whole, as well as use the specific guidance within the Guides for different areas and conditions. An understanding of the broader picture is vital to all work conducted in the Royal Docks - even if the smaller projects are individual in nature, the value of these individual interventions can be diminished if the spirit of the overall area plan is not taken into account.

At the end of this chapter, a 'How to use this Guide' spread is included to ensure that the Design Guides are used effectively.



Public Realm Framework
Sets out an overall vision for the Royal Docks. Identifies the challenges to overcome and the strategies to ensure this. Also identifies key areas where intervention is needed in order to achieve a coherent public realm.

Design Guides
Identifies the specific strategies and elements that users of the Guide can employ to meet the objectives of the Framework. The Guides also add more detail on the elements that are appropriate to use in certain locations, as well as providing technical information and maintenance advice.

Sets out how the Design Guides build on the vision of the Framework, and also explains the process of engaging with stakeholders.

A series of diagrams and masterplan drawings, providing spatial representations of the proposed strategies and palettes for each discipline (landscape, lighting and wayfinding).

Describes in detail the palettes for each discipline, setting out when certain elements should be used and their desired impact.

Provides annotated views and diagrams showing how to combine elements from the palettes in example locations.

Provides further design information for selected elements.

Stakeholder and Community Engagement Methodology

Royal Docks stakeholders and communities are the people who will use, apply and benefit from the Design Guides, as well as the resulting public realm. This is why their involvement has been critical to developing the Design Guides.

Stakeholders
Landowners, developers, businesses, authorities and communities will use and apply the directions from these Guides in any public realm schemes they implement. Securing the input from these groups means the Guides respect key infrastructure, building or land requirements and restrictions, and this collaborative approach also secures long-term usability of the Guides.

Communities
Local civil society groups, residents and workers are primary users of the public realm. Their input aimed to ensure the Guides were developed in response to people's everyday experiences and needs, as well as considering the needs of a diverse community.

The active participation of stakeholders and communities in the area's regeneration is central to the Royal Docks Delivery Plan and its Communities Strategy. One of our key goals is continuous involvement, which strengthens the existing assets of the area and ensures that people feel invested in and commited to building on the community's resilience for the long term.

As such, this initiative was conceived as part of an on-going process to involve stakeholders and communities in the design and delivery of public realm across the Royal Docks. These Guides build on previous dialogue, with the goal of strengthening relationships and preparing the ground for future collaboration.

A preliminary phase collated and analysed information from previous engagement initiatives since 2018, including the initial 2019 Royal Docks public consultation that contributed to development of the Public Realm Framework. These findings informed the first drafts of the masterplans and fed into the design of how we should approach engagement.

The Design Guides were developed in stages, based on stakeholder and community input:

Phase 1: Strategy, Principles and Masterplans
Drawing on input from stakeholders and communities, we shaped the strategic approach of the Design Guides, their overarching principles and the masterplans for lighting, landscape and wayfinding.

Phase 2: Palettes
Input from Phase 1 and the resulting principles and masterplans were used to develop the approach to Phase 2, key locations and initial Palette proposals.

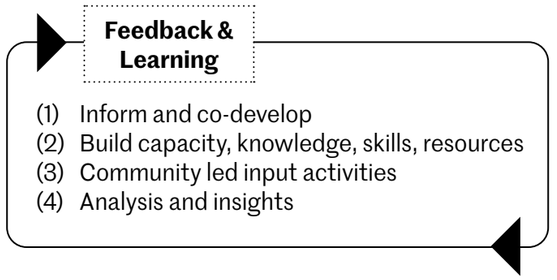
Stakeholders
For Phase 1, we held large multi-stakeholder group discussions to collectively review existing design guidance and the Masterplan proposals, and this enabled us to identify key needs and issues. For Phase 2, we moved to smaller, more focussed sessions to gain recommendations for implementation, as well as drawing on particular perspectives or expertise for how to best manage specific locations and elements of Masterplans and Palettes.

Communities
In order to draw out the wishes, requirements, and relevant expertise of the communities, we used an iterative process that incorporated feedback and learning loops to address gaps and meet changing needs. The process helped communities gain skills and the confidence required to lead their own activities. This created informed and safe spaces for user-centred feedback that drew from groups' own networks, encouraging participation and creative input from diverse sources.

Phase 1
Questions were designed to enable personal and social reaction, so we could capture lived experience and overall attitudes to public space. We also wanted to reflect the impact of Covid-19, as well as to gain specific location-based feedback on the Design Guide disciplines to inform the strategies and masterplans.

The questions were adapted for different engagement formats. We worked with community organisations to fit their programmes, including an online survey, befriending calls, a video, and online walking tours along the four Stitches in focus groups. Briefing sessions and facilitator packs, including maps and visuals, were developed to enable communities to lead their own activities.

Phase 2
Artist-facilitated creative activities were organised so we could glean specific design input, and use these to shape, adapt and add detail to the proposed palettes for each Design Guide. Sketches of Worked Examples enabled communities to imagine how elements of wayfinding, lighting and landscaping would come to together in a particular place, equipping them to make specific suggestions.



Left: The diagram shows how the involvement of stakeholder and communities followed different streams and used different approaches in order to meet the input and engagement objectives specific to each group.

Right: Creative activities resulted in a wide range of materials

Stakeholder and Community Engagement Outcomes

Summary of stakeholder engagement outcomes
The following points summarise the feedback from stakeholder workshops:

Overall approach
- The proposed structure of the Guides is helpful to navigate and will be a useful resource to work across different landownerships.
- The Guides should establish overall principles, but be flexible and allow for local adaptation and interpretation in specific sites.
- Prioritise accessibility and inclusivity in the guides – they are key in promoting a diverse and connected environment in the Docks.
- Making the place more interesting and attractive is key to encourage more cycling and walking.
- Integrate heritage across the guides, from up-lighting to wayfinding and street furniture.

Locations
- Sites for the Worked Examples were suggested Area-based sessions provided localised suggestions across the three thematic guides.

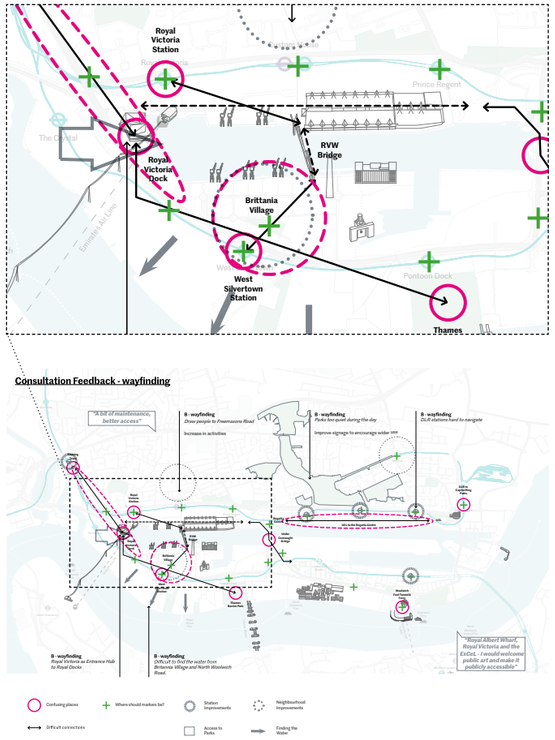
Wayfinding
- Provide a more creative and integrated approach to wayfinding that is embedded in a wider narrative of the Docks as a place. While specific sites may have an internal signage approach, this should be clearly guided by common overarching principles.
- Prioritise navigation from public transport hubs and provide coherent signage between places and amenities.Stakeholders with large wall space are open to conversations about displaying public art and creative wayfinding.

Landscape
- Provide a consistent approach to Dock edge protection, while encouraging the public to get close to the water.
- Set out guidelines for planting and appropriate species in light of local restrictions.
- Integrate elements to counter pollution such as environmental walls. Hard landscaping should provide smooth surfaces to support accessibility for less mobile people, buggies and active travel.
- Guidance around maintenance and use of resources should be an integral part of the Landscape Guide.

Lighting
- Create a consistent approach to lighting to reinforce the stitches and a hierarchy of routes.
- Lighting design should incorporate flexibility to cater for different uses at different times while recognising conflict.

Cross-cutting
- Acknowledge sustainability issues around technological implementation. Explore institutional partnerships for developing innovative solutions.
- Optimise access to the Water for multiple uses.

Community engagement analysis framework
An analysis framework was developed to collect, process and analyse the responses. This incorporated thematic analysis (Braun & Clarke, 2006), and human centred design analysis such as user stories. The framework also incorporated spatial analysis in the form of Landscape, Lighting and Wayfinding Feedback Maps, which plotted key themes along the Stitches to inform their treatment.



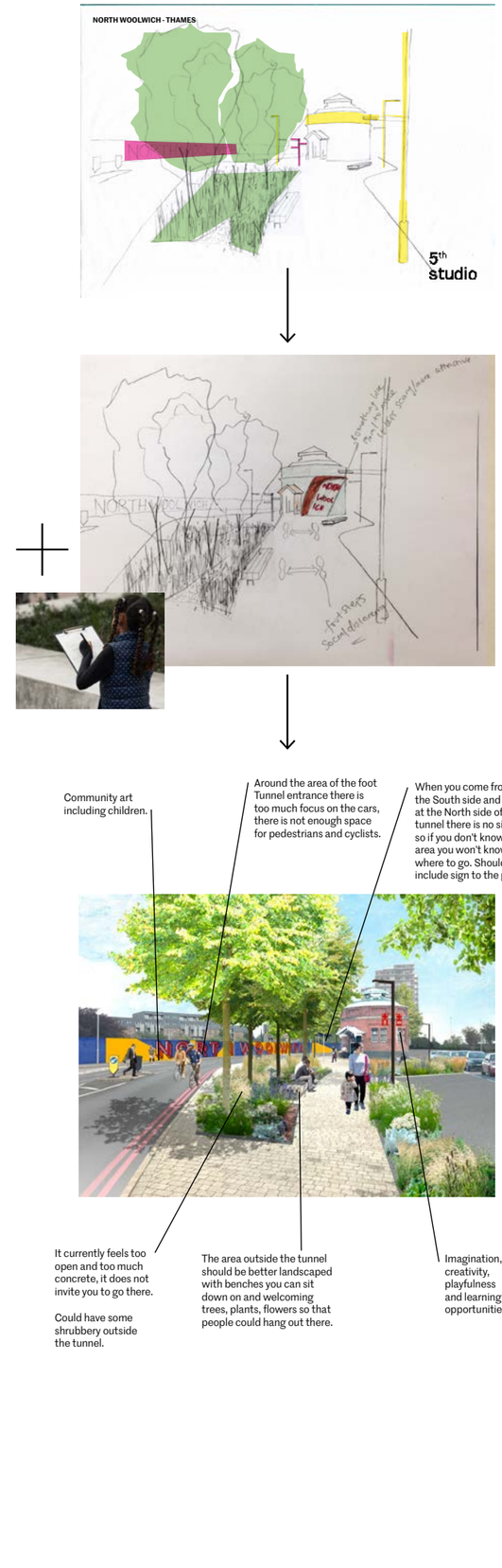
Mapping feedback relating to wayfinding

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3, 77–101.

Summary of community engagement outcomes
Survey responses, verbal feedback, annotated maps, drawings, photos, video created a rich feedback picture. Analysis of personal and hyper-local experience was brought into the conversation in the form of area-wide challenges and opportunities to inform multi-scaler strategies for Wayfinding, Landscaping and Lighting.

Community feedback highlighted hot-spots of multiple activity outside the Stitches, demonstrating how different strategies work together. This informed the Worked Examples for Phase 2: defining locations and combinations of palette elements to test the viability of approaches amongst stakeholders and communities.

Below are a few examples showing how community feedback analysis informed Strategies, Masterplans and Palettes at different scales and levels.



Landscape
- Priority locations for seating and furniture, proposed location for a community garden included in Masterplan, proposals for community noticeboards or moveable meanwhile planters.
- The principle of Play for all ages integrated into Landscape elements supported by functional Lighting and Wayfinding.
- Threshold mats to gather street furniture and support dock edge wayfinding to encourage different uses and enjoyment of the water.

Lighting
- Different, complimentary lighting solutions through a baseline and accent palette to meet different needs at different times for example to encourage activity or safety at night, while preserving tranquillity and avoiding light pollution.
- Strategy for consistent lighting around dock edge with feature lighting to key objects and buildings.

Wayfinding
- Proposals for interactive maps and information boards. Local locations of severance between amenities, and for signage improvements.
- The application of colour to the Stitches and incorporating sensory elements into Wayfinding to enhance the experience of different places.
- The principle: 'Inclusive' includes key moves to design with the input of communities to optimise mobility and access to amenities.

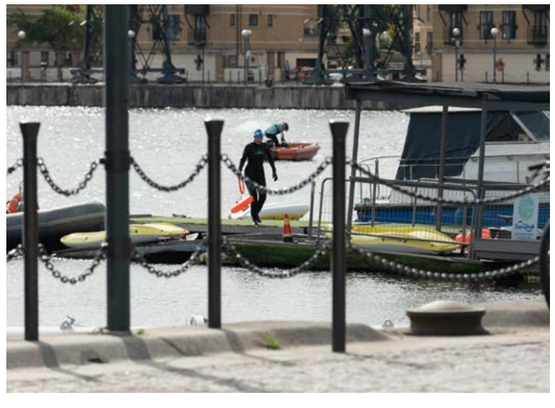
Stakeholder and Community Engagement
Outcomes

Community design principles
The Draft Community Design Principles outlined on this page summarise the analysis of communities' input. By doing so under broad themes, they can be used to support a consistent experience for all Royal Docks locals and visitors, and to promote an accessible and inclusive public realm. The intention is for these principles to be applied across the Design Guides and used by all stakeholders to inform their approach to Public Realm design and delivery.

The next steps will be to work with communities and stakeholders to consolidate these principles, plan ways to put them into action and build accountability around them. This may include community design review panels or other occasions when evidence of a process and an adherence to design principles might be required.

Two interconnected values underpin the principles, reflecting Newham and London's current policy approaches. These are repeatedly evidenced through community feedback:

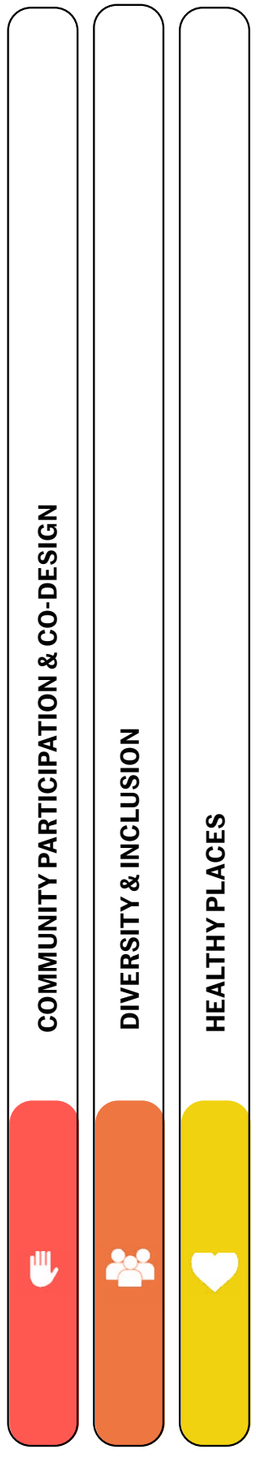
Community participation and co-design
This is a cross-cutting principle which should be applied alongside other principles. The appropriate level (from information and consultation through to co-design) and form of participation should be planned with communities well in advance of any project, with clear objectives and proper resources. Ensuring a multi-stakeholder commitment to this longer-term process, leaving room to flex and evolve, can yield greater place-making outcomes for all.



Diversity and Inclusion
The Royal Docks Public Realm aims for inclusive environments that can be enjoyed by everyone: existing and new residents, people of any ability, age, gender, sexual orientation, race or faith. High levels of public access and varied uses by diverse groups at different times aim to promote integration. The Inclusivity and Access Design Guide provides technical guidance on these issues.

Healthy places
Public Realm can promote physical and mental health, and general well-being. When a variety of inter-connecting principles are applied to place-making, it can ensure that the projects enable social connection, leisure and relaxation; facilitate mobility and active travel; enhance community care and safety; connect to amenities and economic opportunity; and are clean, well maintained and ecologically sensitive.

Community Design Principles



Ecology
Promote nature-based solutions and low-carbon communities that reduce pollution and waste. Encourage biodiversity, be climate change adaptive, promote people-nature connections.

Play and active design
Integrate play and physical activity opportunities into the public realm for people of all ages with formal, informal and creative measures. Support active travel, to ensure accessibility and awareness.

Sensory design
Incorporate pleasant sensory experiences (sight, sound, smell, touch) throughout the public realm, including art and creative elements to enhance tranquillity, attractiveness, imagination and interconnection with the surroundings.

Living heritage
Bring the area's industrial, maritime and socio-cultural history and infrastructure into play in the public realm to inspire curiosity and feelings of belonging at a human scale by creating inviting spaces and learning opportunities.

Water connection
Consider water as public space, enhancing access for different users with different needs. Encourage views and wayfinding, and support its role in ecology and climate resilience.

Flexible use: multi-functional and adaptive
Maximise opportunities to enable the free use of space by the public. Consider the increased and multiple use of space for social and livelihood activities at different times of day by building in adaptivity across strategies.

High streets and amenity centres
Multiply civic links to local centres with accessible high streets which support daily needs and livelihoods and provide opportunities to meet, talk and celebrate.

Hyper-local networks
Enable and enhance existing networks of care, socio-spatial connections, local mobility, and the exchanges of goods, services, support and knowledge.

Community stewardship
Emphasise and encourage community knowledge and action to maintain and curate public and green space; to drive low carbon solutions, ecological stewardship and local strategies for community resilience.

Innovation at the Royal Docks

With so much unconstrained space, and a blend of public and private sector investment, the Royal Docks are ideally positioned as an urban proving ground, as a site of innovation and experimentation for London. This was identified in the 'Economic Purpose for Newham' report, 2019:

“The Royal Docks Economic Purpose is proposed as a nationally significant hub of enterprise, employment and culture, recognised as a testbed for social, environmental and technological innovation”

This is why we want to work to establish the Royal Docks as a place where innovation is encouraged, and as a place that provides learning for policy makers, practitioners, and communities across London and beyond.

The Public Realm Design Guide has set out key opportunities for this innovative culture, from Smart City investment for creating Healthy Streets, to emerging thinking on new economies, energy and environmental sustainability. The approach supports The Mayor of London's 'Good Growth' approach and the London Borough of Newham’s focus on Community Wealth Building.

Why?

There is a growing demand for urban innovation in cities. In the Royal Docks we have an opportunity to use new technologies and innovative design approaches to the public realm to address challenges such as environmental change, infrastructure provision and the impacts of growing population density and inequality. Some of these are listed opportunities are listed below.

Climate change

The biggest current challenge facing cities is how to mitigate the impact of climate change. This includes how to address flooding risks, provide shade and shelter to improve comfort levels in extreme weather (urban heat island effects) and to address biodiversity loss.

Infrastructure provision

- Provide renewable energy sources.
- Encourage the use of active travel modes.
- Circular economies.

Innovation

Refer to these markers throughout the Design Guides for references relating to innovation, precedent projects and references.

How?

All stakeholders, including Public Realm Designers, have the potential to create new solutions and to use existing infrastructure in new combinations to address these challenges.

Engagement with communities, other innovators, institutions, and research projects, could create funding opportunities and capitalise on knowledge and skills to create innovative solutions. The UK has a strong research base and world-class higher education institutions as well as capabilities across business sectors for urban innovation.

Tactics include utilising digital technology, testing/prototyping, spatial design (including co-design) and physical infrastructure:

Digital technology

- Engaging local communities by using data, for example by monitoring air quality, and providing visual data to illustrate how contaminated groundwater is being monitored.
- Data collection in the public realm, from sensors, digital street furniture, advertising and other new technologies embedded into street furniture.
- Co-design/community feedback loops using community media, audio-visuals and social media.
- Digital signage with real-time information across the area providing live data on transit arrival and departure times, walking times, nearby transit routes, and the availability of shared bikes, cars and scooters, all making it easier for people to navigate their sustainable transport options.
- Mobile infrastructure - small cell data integrated into street furniture.

Testing/prototyping

- Learning lessons from similar projects in other locations, testing approaches that can in turn be rolled out elsewhere in London and using demonstration sites to trial new urban solutions.

Spatial design

- Dockside parks and proving grounds - Temporary landscapes and innovation expos providing places for testing resilience, species, management - a Landscape Laboratory.
- Sustainable Urban Living & Low Carbon Neighbourhoods - Cycle parks, market squares for stalls selling locally produced food and goods by local creatives.
- Urban Ecology/ Food production - Grow and produce food, providing access to locally grown food and a means of bringing the public closer to how food grows and familiarising them with regionality and seasonality. There are also opportunities for farm to table enterprises which can sell either to restaurants or to the public at a farmers market.
- Sustainable urban green spaces - Restored green spaces from brownfield sites, soils and bioremediation and the recovery of contaminated sites by understanding interactions between soil conditions, wasteland vegetation, pollutants, and their exposure and toxicity to animals and people.
- Living Water City - Floating Ecosystems and islands provide refuges for nature and wildlife. ‘Active islands’ can treat urban waste water and run-off. Soil-less agriculture, floating polytunnels, aquaponics, flora that is planted (reeds, lilies, floating forests), growing (greenhouses heated by thermal rays), or oxygenating the water (aquatics, emergents, marginals).
- Shade and cooling - Mitigating the urban heat island effect through technology and the use of landscape interventions. Urban greening through vertical planting, urban trees, green roofs and rain gardens helps reflect light and evaporate moisture, in turn reducing ambient temperature of local microclimates. Cooling and permeable paving solutions, with lighter pigments and aggregates in materials, reflect more sunlight.
- Water management - Sustainable Drainage Systems (SUDS)/surface water run-off, access water and energy consumption data. A strategic approach to SUDS is vital for managing surface water-run off volumes and flow rates, mitigating flooding and improving air quality. SUDS can enhance biodiversity, and create diverse and engaging places for people through integrating social functionality with street furniture and playable public realm elements and wildlife. Areas of reed beds introduced at the dock edge takes surface run-off water and cleans it prior to its entry into the dock basin.

Physical infrastructure

- Streets - Electric charging, wireless electric charging technology for buses and utilities.
- Future Shipping - The Thames and its Docklands have a great history of shipbuilding and marine innovation. There is huge potential for research and development of new forms of zero carbon shipping, powered by wind, hydrogen, and the water itself.
- Airport - Re-wilded infrastructure. Tree planting at London City Airport using robust and non-bird harbouring tree species such as, establishing a birch forest.
- Lighting - Central control system. Granular control, reducing lighting levels, control for events, Internet of Things (IoT) integration. Incorporating advanced lighting sensors to account for ambient / spill lighting from private sources.
- Structures - Integrating technology into lighting columns; power/water/wifi/electric vehicle charging.
- Power generation - Kinetic pavements and on-grid solar lamp columns might be considered: large open areas, such as the ExCeL car parks, could be pilots for solar columns. Using the dock water as an energy source, this could power a circulation system to keep the water in Victoria Dock oxygenated and fresh.
- Encourage economic growth - Empower local businesses and connect communities. Attract hubs for innovation and technology by providing vibrant outdoor environments and removing the need to use cars. Create socio-economic opportunities for job and skill creation particularly around digital upskilling.

The design guide proposals put innovation at the centre of public realm improvements. The dock edge worked example above illustrates network infrastructure integrated with wayfinding elements, biodiverse urban planting in the basin, a lighting environment controlled by a 'central management system' and the physical and cultural activities made possible by providing greater access to the water.

Building on the Framework

The Framework, published in Spring 2020, sets out the vision for the public realm within the Royal Docks. This vision is based on an overall philosophy - Occupy the Docks - as well a series of guiding principles focused on places, the water, movement and landscape.

Occupy the Docks

The overarching principle, 'Occupy the Docks' refers to an ambition to make the Royal Docks a more varied, rich, and well connected place - a successful piece of city.

The Framework identifies two key tactics that should be employed in order to achieve this:

The Framework

Above: A series of pontoons in Amsterdam North create a more sheltered and welcoming environment to encourage access to the water space of the docks.

Above: Similar investment in the Isle de Nantes, France have established this former dockland as a centre of excellence for animatronics and cultural event structures.

1 - Transform infrastructure into city!

For the Royal Docks to be successful as part of the diverse and international fabric of Newham it needs to be stitched in and connected. The intervention proposals within the framework are essential to bind this place together successfully.

The high level proposals within the Framework set out a path to ensure that the Royal Docks flourishes. They guide how historic infrastructure barriers can be overcome to develop as a new multi-layered joined up part of London: distinctive, active and inclusive.

2 - Foster a culture of innovation!

With a range of spaces that (compared to other places in London) are relatively unconstrained, and a blend of public and private sector investment, the Royal Docks is ideally positioned as an urban test bed - as a site of innovation and experimentation for London.

The Framework sets out some key opportunities for this innovative culture to create Healthy Streets, to accommodating emerging thinking on new economies, energy and environmental sustainability.

Key issues identified within the Framework

Access to green open space
The area suffers from poor access to green open spaces. The provision of new green spaces, as well as improving access to existing spaces, is an underpinning strategy of the framework.

Inconsistent approaches to lighting and wayfinding
The presence of a number of redundant elements across the docks severely hampers effective lighting and wayfinding, as well as creating a cluttered street scene. At night a number of key spaces and landmarks are not adequately lit.

Under-use of the dock water
Using the water for recreational use is currently difficult, due to a number of restrictions. There is also a lack of structures that bring you to the water.

Poor connectivity and local severances
The urban structure is dominated by east-west movement (along road corridors like North Woolwich Road and Royal Albert Way, and the DLR lines). There are significant severances due to large impermeable areas like the docks, airport, rail corridors, and industrial sites.

The following pages set out the Framework's 'Guiding Principles' that respond to the issues listed here. These principles set out the strategic moves that should be taken to overcome the issues in the Docks to make it a successful and integrated piece of the city.

Water and public spaces

Accessible and sustainable spaces
The unique water spaces of the Royal Docks are the area's biggest asset and main characterising element. The water will provide a focus for the development of the area. The role of the dock water should be re-imagined in order to activate the dock edges and bring the water space into public use.

Active Water Uses
Active water uses, ranging from destination experiences to club sports, should be encouraged while also maintaining moments for the public to get close to the water, pause, and freely enjoy this expansive and unique natural feature.

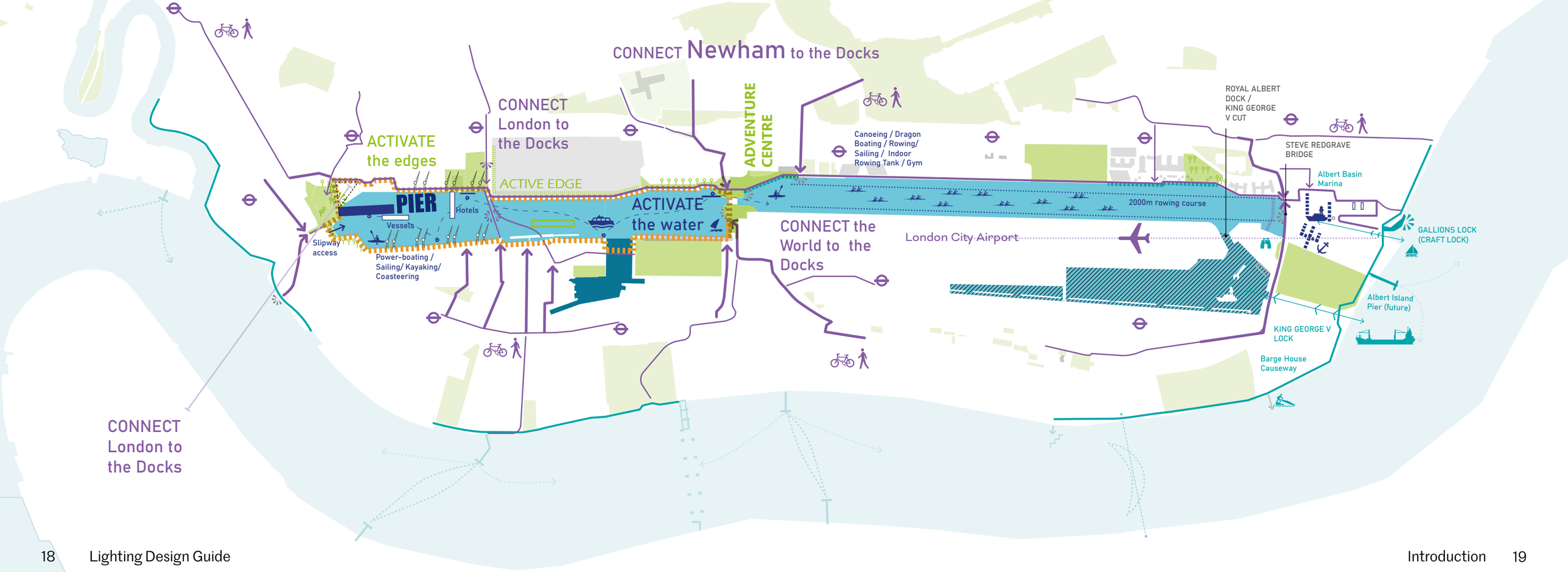
A Publicly Accessible Dock Edge
A publicly accessible dock edge should be developed in a manner which is coherent and clear across the various land ownerships that the dock edges sit within. Access to the dock edge should be supported by a network of routes with utility and recreational value – connecting communities and green spaces.

At the dock edge there should be a focus on evidence of the area's cultural heritage, embracing the unique cultural and heritage setting of the Royal Docks, including visible maritime objects, and projects such as illuminating the dockside cranes.

New Routes
New routes including a continuous route around Royal Victoria Dock, would release the potential for the Royal Docks to become an amenity for local communities. Improved access to the dock edges with walking and cycling routes could provide health and social benefits.

Creation of Safe, Active, Popular and Inclusive Spaces
The Public Realm Framework supports the creation of active, popular and inclusive spaces in and around the Royal Docks which can generate revenue, all the while supporting the broader business case for investing in the public realm. Uses around the dock edges should cement the reputation of the Royal Docks as a place which is enterprising and industrious, supporting education and training for Newham residents.

Enhancing the Dock Landscape
The blue landscape should be adjusted to embed climate adaptation solutions. Examples include the Solar Farm on the Queen Elizabeth II reservoir, which is Europe's largest solar panel installation on water, and the Dobberend Bos (Floating Forest) in Rotterdam South.



Places

Active, diverse places

The Royal Docks is home to a diverse range of places, each with their own distinctive activities and uses. Celebrating this diversity within a coherent, well-designed public realm will be key to the success of this area.

The Public Realm Framework identified a series of distinctive places around the Royal Docks which are characterised by current or future proposed activity. These places have a particular economic or cultural offer operating at global, national and local scales.

Proposed new spaces should be designed to meet the requirements of the area and be designed to support a range of uses – for example to meet anticipated cultural programming. They should be ambitious, relating to the acknowledgment that there is difference across the Royal Docks – the area is made up of a set of 'distinctive places'.

Royal Victoria Dock West - A Destination

The western end of the Royal Docks offers a series of visitor attractions and public spaces that sit within the wider sub-regional scale of East London.

This place is a focal point for the regional visitor economy within the Royal Docks with the potential for new interpretation and cultural spaces. Public spaces around Royal Victoria Dock West should be designed to accommodate large numbers of people to allow for the proposed cultural programming in this location.

Royal Albert Dock - International Enterprise

Royal Albert Dock is a centre for international business and enterprise capitalising on its proximity to London City Airport. Significant change is proposed here, the first phase of commercial space within Royal Albert Dock provides 460,000 sq ft of office space.

North Woolwich/ Canning Town/ Custom House/ Beckton - Local Communities

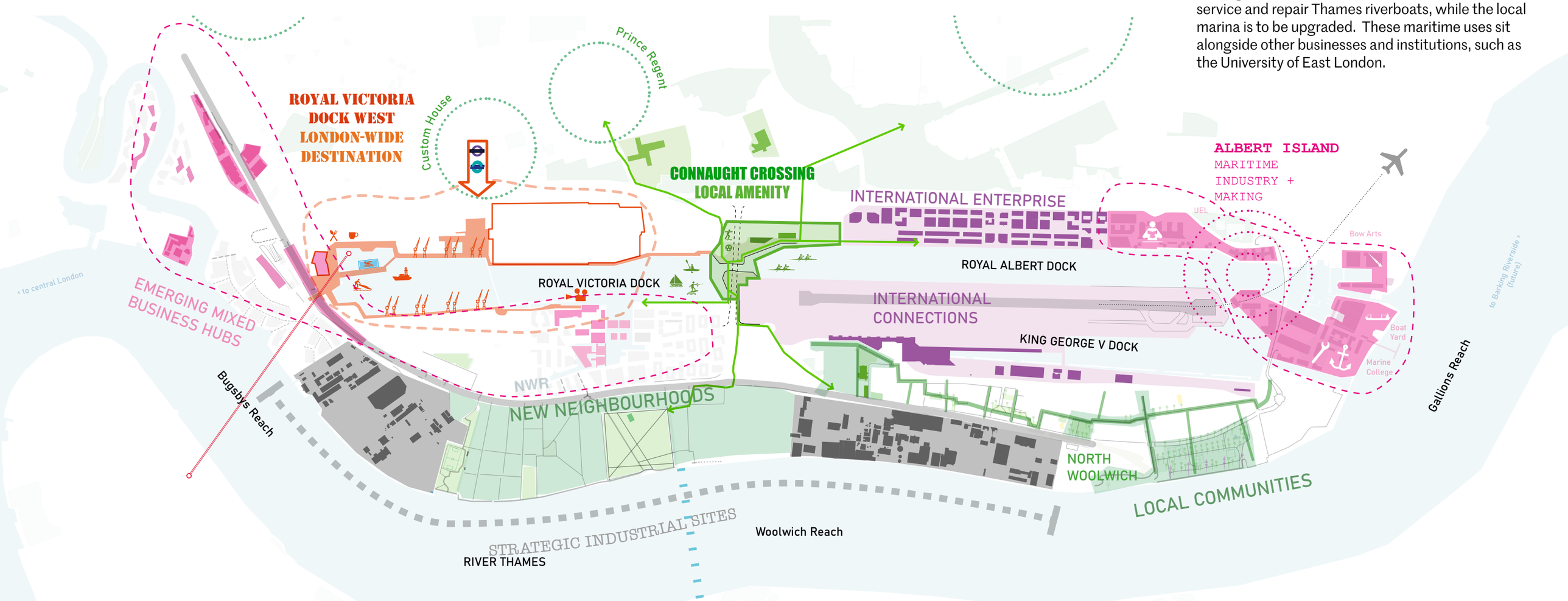
New residential developments in the Royal Docks will create new communities sitting alongside the established communities in North Woolwich, Canning Town, Custom House and Beckton. Activity to support local people in these locations must be physically, economically and socially connected.

Connaught Crossing - Local Amenity

Connaught Crossing is one of the few places where you can cross the Royal Docks from north to south, connecting Newham, via the 'green bridge' over Royal Albert Way down to North Woolwich to the south. This axis supports local community activity in spaces including the Asta Community Hub and the Royal Docks Academy.

Albert Island - Maritime Industry and Making

Albert Island at the very eastern edge of the Royal Docks is a place with a focus on industry and making. A new shipyard is proposed which will service and repair Thames riverboats, while the local marina is to be upgraded. These maritime uses sit alongside other businesses and institutions, such as the University of East London.



The Stitches

Connective landscapes
Through improvements along key routes around the Royal Docks – the Stitches – we can overcome how industry, roads and the water have historically created severances between the areas that make up the Royal Docks.

Through improving these areas and signposting key crossing points, a generous public realm can be established, ensuring that all community members and visitors are supported in accessing the area. This broad network of connections will also unite the water spaces of the Royal Docks, bringing them together with the growing communities to the north and along the river.

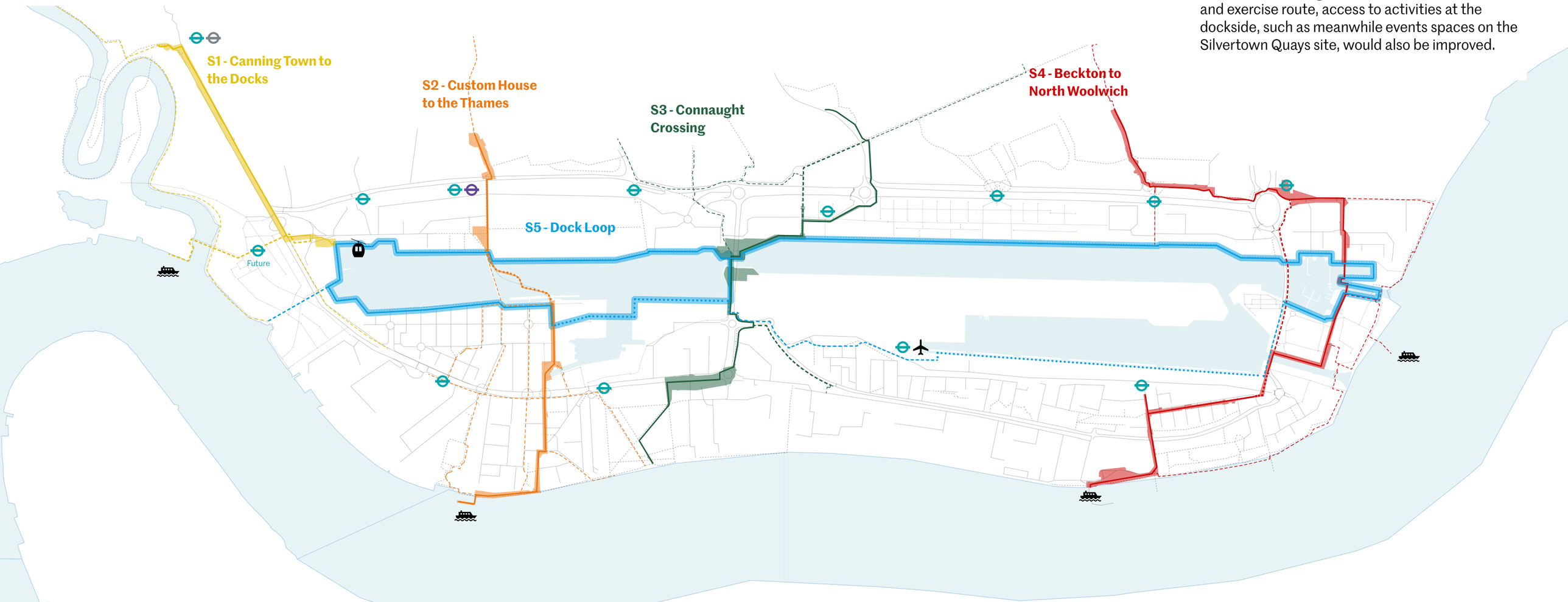
Canning Town to the Docks
By connecting the Leaway to the Royal Docks, via Canning Town and eventually the Limmo, the Lea River Park's green connections can be enjoyed by more people. Through completing this route, a traffic-free connection between two of Newham's major growth areas can be achieved, establishing off-road links to the Queen Elizabeth Olympic Park and Canary Wharf.

Custom House to the Thames
Centuries of infrastructural works at the edges of the docks have created significant barriers to movement between the communities around Freemasons Road, the Docks, and the River Thames. Overcoming these severances will lead to a diverse series of connected spaces and greater access to cultural and recreational activities around the docks.

Connaught Crossing
An improved offer of leisure and recreational activities, as well as connectivity improvements which seek to humanise the scale of existing road and DLR infrastructure, can reconfigure the Connaught Crossing as an 'armature for local amenities' and a destination in its own right.

Beckton to North Woolwich
Poor quality infrastructural environments such as the Steve Redgrave Bridge, Woolwich Manor Way and Factory Road hinder a strong sense of place, north and south of the docks. Local connections and public realm improvements could ensure that these two established communities have a renewed connection to the Thames and its maritime heritage.

Dock Loop
Establishing a continuous, well-signed walking and cycling loop around Royal Victoria Dock would vastly improve people's connection to the water. As well as providing an opportunity for a fitness and exercise route, access to activities at the dockside, such as meanwhile events spaces on the Silvertown Quays site, would also be improved.



Character areas

Biodiverse landscapes
The landscapes of the Royal Docks are heavily informed by the area's history. Across this vast area, underlying latent landscapes can be revealed and celebrated in order to improve cohesion and identity, as well as providing high quality public spaces.

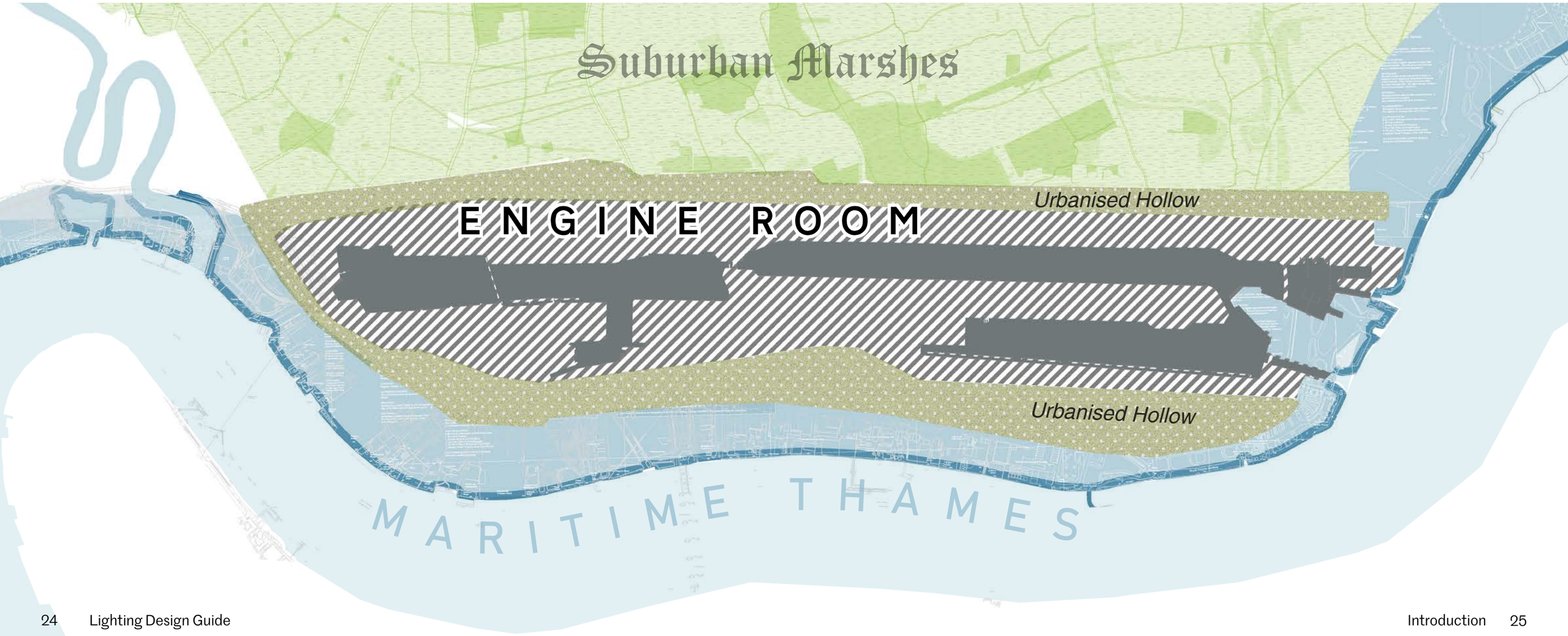
These historic characteristics can inform how new and existing public realm and landscapes can evolve or be adapted. These hints back to history are a tool to support a coherent landscape attitude across the Royal Docks, and helps us create a common atmosphere that is scalable and rooted in place.

Suburban Marshes
This landscape area is defined by the former Plaistow and East Ham Levels: large expanses of former marshland which were drained and managed originally to create arable land, and from the early 19th century, a sequence of residential areas. Despite the distinctly suburban developments of the 20th century, the remnant traces of the former marshlands are still evident. Green spaces, drainage channels, allotments, and mature trees provide a unifying character.

Urbanised Hollow
The embankment of the docks and the raising of the river edge against flooding has created a low point or 'hollow' between the Thames and the dock basins and again north of the dock basin on the boundary of the residential area.

Engine Room
Developed through the 19th and early 20th Century, the Royal Victoria, Royal Albert and King George V docks are the largest area of man-made impounded water in the country. As such the docks themselves are a singular and purposeful landscape, equivalent to approximately the area of Heathrow.

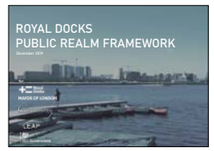
Maritime Thames
The Thames edge suffers from a common condition seen across London, where the need to ensure valuable wharves and riverside warehouses are kept secure has physically prevented the public from accessing the riverside. Access is generally halted one block back from the riverside, and tantalising glimpses of the Thames are given occasionally between buildings that front the water. The character of the Thames edge is defined by its exposure to the river, creating a strong tie to the changing tides, weather, wildlife and long views out to wider London.



How to use this Guide

This guide is structured to give users a broad range of information to assist them with designing public realm in the Royal Docks. The diagram opposite shows how users can engage with the guides in a simple and effective manner.

Using the Design Guides



Lighting design guide

Lighting Introduction

What is the overall vision for public realm?

What is the vision for my area?

What key principles should I consider when producing designs for my site?

By first referring to the **Public Realm Framework**, users can understand the overarching vision for transforming the Royal Docks. The **Design Guide Introduction** then presents a refined set of principles which should be used when designing in the area.

* refer to **Accessible Design Standards** and **Walking and Cycling Action Plan**

Lighting Masterplan

Lighting Palette

How do I know which palette(s) to use on my site?

What elements make up each palette?

The **Masterplan** chapter provides a spatial overview of the proposed palettes, as well as other key considerations. Users will be able to quickly locate their site, and then refer to the **Palette** chapter to view the range of suggested elements for their specific location.

Lighting Worked Examples

How do I use multiple elements from the palettes together?

How would they look on site?

The **Worked Examples** chapter will demonstrate how the palette elements can come together, using annotated rendered views from diverse locations across the Docks.

Lighting Design Information

What are the technical specifications for certain elements?

How will I maintain certain elements?

Maintenance advice and technical specifications for key elements from the **Palette** chapter will be documented in the **Design Information** chapter.

Accessibility and Inclusive Design Guide

Walking and cycling action plan

*to be published after the Design Guides

What are the accessibility standards?

What are the planned improvements for cycling and walking?

The **Accessibility and Inclusive Design Guide** will set the benchmark for accessible design across the Docks. Specific interventions to assist walking and cycling will be documented in the **Walking and Cycling Action Plan**.

The following chapter describes the lighting masterplan split into two parts; a series of lighting design principles and the overarching lighting masterplan.

The **lighting design principles** highlight the thematic opportunities present across the Royal Docks. The detailed design of all interventions should be developed with reference to current best practice and these design principles.

The **lighting masterplan** has been developed to:

- Emphasise the unique positive characteristics of the docks' culture and heritage.
- Steer the delivery of a coherent public realm across the Royal Docks.
- Reinforce the legibility and utility of the stitches which connect the area's communities.

This chapter should be read in conjunction with the accompanying wayfinding and landscape design guides which make up the Royal Docks public realm designers' pack. Illustrative examples of how the masterplans inter-relate are illustrated in chapter 4.

2. Lighting Masterplan

Design principles

1 A 24hr Environment

Lighting should help enhance the welcoming environment of the Docks through the development of an active and resilient 24hr landscape that draws communities towards the Royal Docks after dark.

Lighting should help enhance the welcome of the Docks, offer safe and vibrant places to socialise freely, create an ambience where retail, hospitality and other businesses can thrive, support events and mark out the area's unique built heritage.

Key Moves

- Establish a strategic framework for the consistent lighting of roads, streets, paths and spaces that can be monitored and controlled as a single lighting system.
- Rebalance and rescale general lighting provision to promote pedestrian and cyclist use.
- Instigate a design approach that sensitively balances general, feature and commercial lighting elements.
- Identify opportunities for special schemes that illuminate landmarks, bridges, buildings and artwork.
- Outline methods that support sensitive, atmospheric lighting that speaks to the post-industrial character of the area.
- Use lighting to promote and support events.
- Establish a Royal Docks Lighting Review Panel to advise and scrutinise future lighting proposals.

2 Enjoyment of Darkness

At the centre of the area, and one of its defining features, are the vast bodies of water that make up the Royal Docks.

The Docks have the potential to form a significant dark asset, helping to form bridges between adjacent habitats, green spaces and the river systems beyond, and a unique setting for the developments lining its perimeter.

Key Moves

- Identify the key environmental zones across the Royal Docks.
- Establish a darkness plan that recognises and protects existing areas of darkness.
- Consider people with specific visual needs, such as blind or partially-sighted people, in the development of schemes by minimising obtrusive light, reducing contrast and improving uniformity across horizontal surfaces.
- Avoid the use of blanket floodlighting and over-lighting.

3 Safety

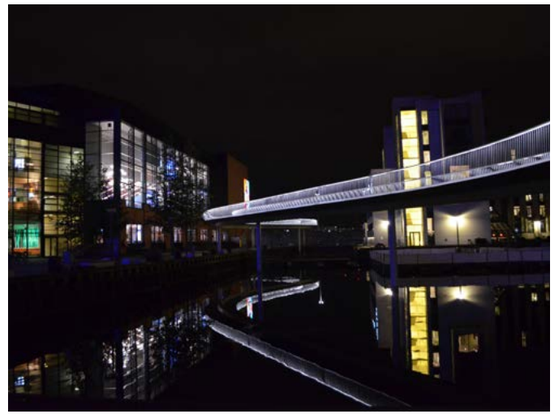
Two central roles of artificial lighting are to help every person to navigate a space after dark and identify hazards, thereby reducing the risk of accidents.

Lighting should also promote accessibility and the perception of safety and security through the use of enhanced lighting on key night-time routes.

Key Moves

- Develop illuminance level, colour temperature and mounting height strategies across the area to provide a consistent, high quality lit environment.
- Establish a framework for incorporating all public realm lighting across the Docks into a single lighting system that allows for the granular control of lighting levels.
- Provide guidance for lighting of active and passive wayfinding objects such as signs, narrative boards and doorways, landmarks and key structures to help people make directional decisions in the public realm.
- Meet the illuminance requirements for current CCTV technologies.
- Consider people with specific visual needs - such as blind or partially-sighted people - in the development of schemes by minimising obtrusive light, reducing contrast and improving uniformity across horizontal surfaces.
- Provide deliberate illumination of steps and ramps to support use by partially-sighted people.
- Mitigate against risks of artificial lighting to people with conditions such as epilepsy by minimising bright direct-view luminaires and dynamic or strobing feature lighting effects.
- Consider how lighting can improve the public realm experience of people with mental health or neurological issue.

A



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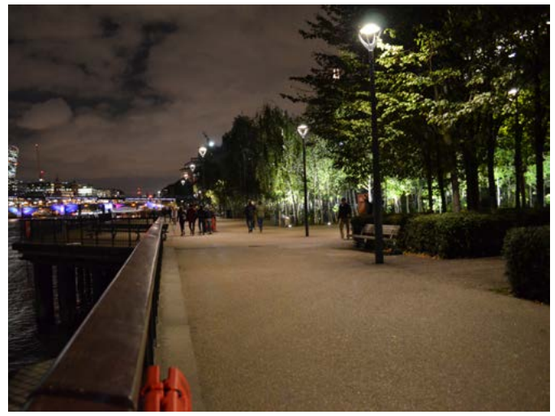

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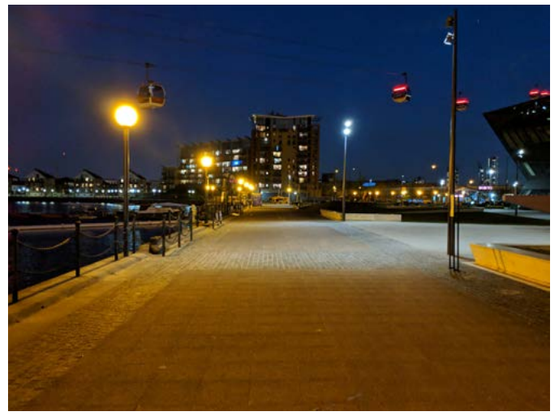


E

A Southbank, London
B Kalvebod Brygge, Copenhagen
C Akker Brygge, Oslo
D Port Crane, Dublin
E Existing lighting, Royal Docks

Lighting masterplan

The masterplan is split into three lighting palettes - illustrated in the diagram opposite - which act as a series of balanced layers. Firstly a baseline lighting palette initiates a consistent approach to key lighting criteria. Secondly, a wayfinding lighting palette supports the connective ‘stitches’ after dark. Thirdly, a feature lighting palette emphasises and celebrates the distinctive qualities of the Royal Docks.

Accent Lighting Palette
Creating 24hr connective stitches
Lighting infrastructure and lit elements offer significant potential to help realise the broader wayfinding strategies included in the public realm masterplan at all times of the day and night. This will require co-ordination across multiple stakeholders and land owners, but will be essential to enhancing the legibility and inclusivity of the key routes across the Royal Docks.

The accent lighting palette sets out the opportunities for using lighting equipment design including materials and colour finishes, column accessories and signage, lit effects, brightness, contrast and the colour of light to identify the distinct stitches and further strengthen their identities.

Baseline Lighting Palette
A coherent street and public space lighting strategy
Across the Royal Docks there is the ambition to create a more coherent look and feel to the public realm. A strategic approach to general street and public realm lighting is key to that development.

The baseline lighting palette sets out a strategic approach to general lighting, establishing a hierarchy of routes and spaces that informs illuminance levels, colour temperatures and mounting heights. The palette also describes the approach to a range of street and public space typologies – determined by their underlying or developing characteristics – and provides guidance on equipment typologies or other design criteria.

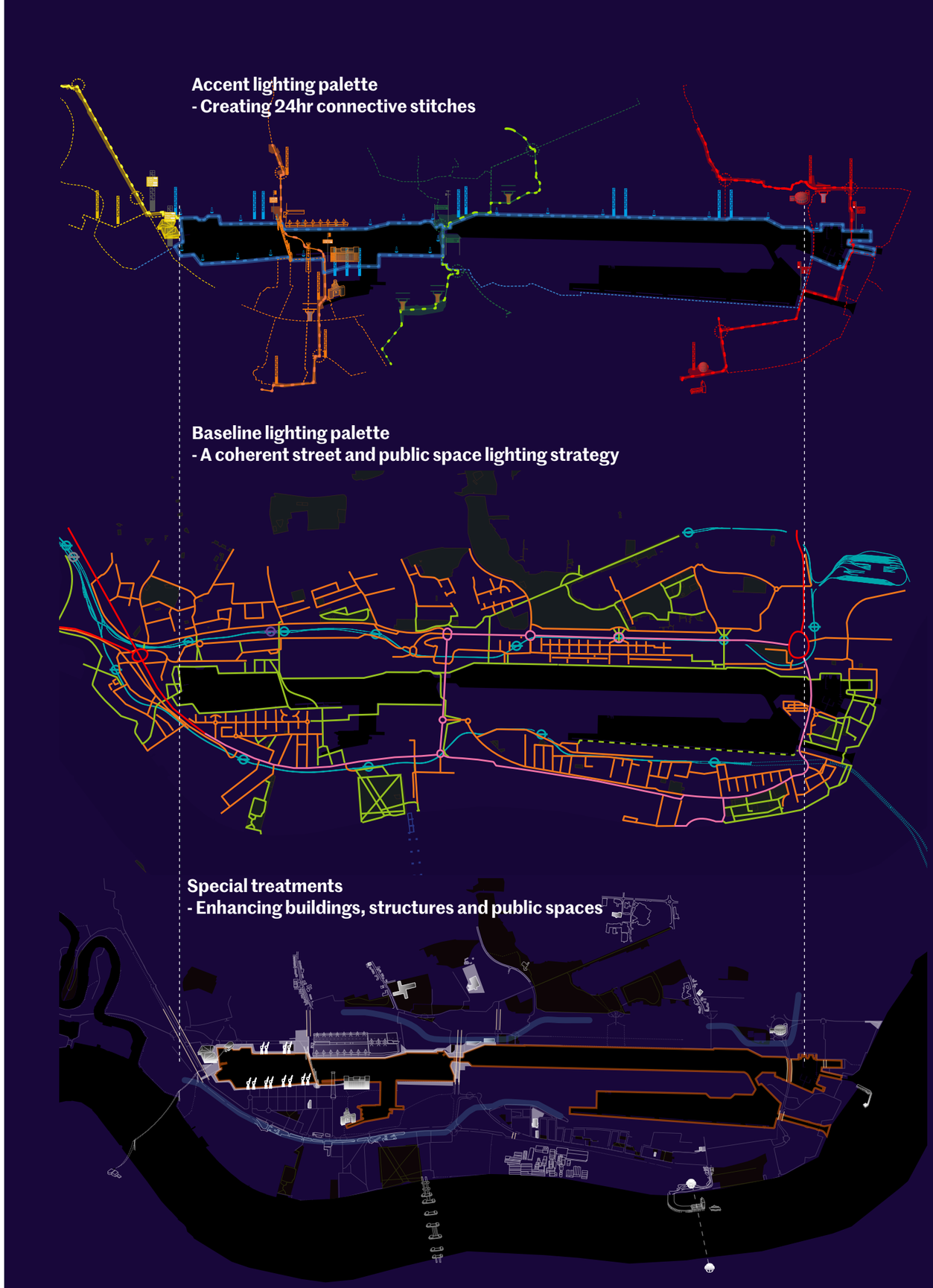
Special treatments
Enhancing buildings, structures and public spaces
There are many local landmarks around the Royal Docks, ranging from built heritage to more recent infrastructure, from exhibition halls to community centres, and from large bodies of water to small green spaces. During the day these act as useful landmarks for navigating the area but that value is lost as they recede from view after dark. These landmarks also offer the opportunity to create points of celebration and orientation for the communities around them.

The development of lighting designs should be rooted in the recognition of these diverse places and in appropriate community engagement strategies. The detailing of those schemes should support the promotion of cultural programmes and the staging of local, regional and international events.

Each strategy is further illustrated on the following pages.

Refer to the palette section for detailed guidance on the masterplan strategies >

Refer to the detailed appendices for the locations of the character areas and stitch routes >



Lighting masterplan

The masterplan below illustrates the range of approaches for improving the lighting within the Royal Docks. The drawing shows how the palettes are strategically deployed across the site.

The following pages provide zoomed-in versions of this drawing, so that users of this design guide can identify their site and see which palettes and strategies should be employed in their location.

Lighting masterplan

Area description

A number of key stitches bisect the docks, with connections to the rivers Thames and Lea, the local centre at Custom House and the existing and emerging communities to the south of the dock water. Many grand historic structures and spaces characterise the area, while forthcoming large-scale developments will open up areas that have been ‘off-limits’ for decades.

Masterplan key:

Accent lighting palette -
Creating legible 24hr connective stitches

The accent lighting palette establishes a lighting identity to key routes within the Docks, the ‘stitches’, after dark. User’s of this design guide should refer to the wayfinding lighting palette section if their site is located on one of the following stitches:

- Stitch 1: Leaway to the Docks
  Stitch lighting refocusses on pedestrian environment
- Stitch 2: Freemasons Road to the Thames
  Stitch lighting creates pools of light in key locations
- Stitch 3: Connaught Crossings
  Stitch lighting incorporates playful coloured lighting to infrastructure
- Stitch 4: Beckton to North Woolwich
  Stitch lighting uses light touch approach to improve existing features
- Stitch 5: Dock Loop
  Stitch lighting assists wayfinding while also allowing unobstructed views over the water

Accent lighting palette -
Lighting supporting wayfinding

- Maritime objects lighting
  Low level lighting to dock edge objects
- Public space beacons
  Lighting columns installed at public spaces along stitches
- Area signs
  Lighted beacons installed at intersection of Dock Loop and the stitches
- Projected lighting
  Additional feature lighting along stitches
- Uplighting DLR viaduct piers
  Lighting to aid in wayfinding along stitches

Baseline lighting palette -
A coherent lighting strategy

The baseline lighting palette sets out the lighting design parameters for the Royal Docks route network. User’s of this design guide should refer to the guidance for the different route types below within the baseline lighting palette:

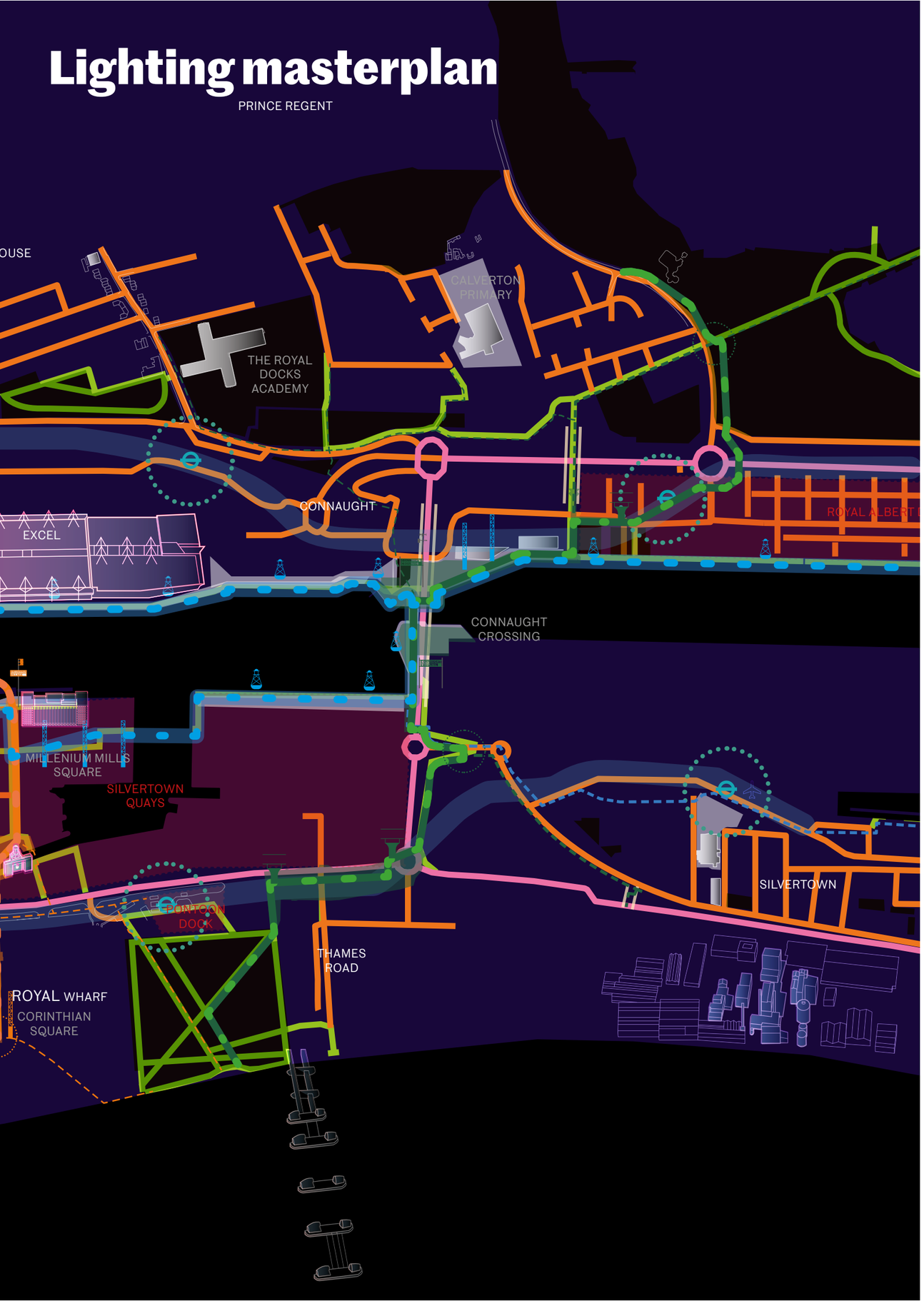
- Major road
- Major road (to be downgraded)
- Local road
- Pedestrian and cycle route
- Station lighting

Special treatments -
Enhancing buildings, structures and public spaces

Users of this design guide should exploit opportunities for feature lighting of existing buildings, structures and public spaces within the Docks, as well as preserving special areas of darkness:

- Feature lighting to buildings and structures
- Feature lighting to public spaces
- Areas of darkness

Lighting masterplan



Area description

The key north-south connection provided by the Connaught Crossing characterises this area, providing links to the historic marshland of Beckon Park, as well as to existing communities around Prince Regent, Silvertown and Thames Barrier Park. The hulking presence of the Tate and Lyle refinery, as well as the airport and the views across vast expanses of dock water, give this area a super-scaled quality, reminiscent of the scale of operations that used to exist in the docks.

Masterplan key:

Accent lighting palette - Creating legible 24hr connective stitches

The accent lighting palette establishes a lighting identity to key routes within the Docks, the 'stitches', after dark. User's of this design guide should refer to the wayfinding lighting palette section if their site is located on one of the following stitches:

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Accent lighting palette - Lighting supporting wayfinding

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- Station lighting

Special treatments - Enhancing buildings, structures and public spaces

Users of this design guide should exploit opportunities for feature lighting of existing buildings, structures and public spaces within the Docks, as well as preserving special areas of darkness:

- Feature lighting to buildings and structures
- Feature lighting to public spaces
- Areas of darkness

Lighting masterplan

Area description

To the north and south of the dock water lie two very different conditions. To the north, the new development along Royal Albert Dock will establish a new urban condition on a currently vast and empty space – opening up the dock edge as well as connections to Beckton Park. To the south, the existing communities of Silvertown and North Woolwich lie between a working industrial Thames edge and the airport.

Masterplan key:

Accent lighting palette -
Creating legible 24hr connective stitches

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Lighting supporting wayfinding

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- Station lighting

Special treatments -
Enhancing buildings, structures and public spaces

Users of this design guide should exploit opportunities for feature lighting of existing buildings, structures and public spaces within the Docks, as well as preserving special areas of darkness:

- Feature lighting to buildings and structures
- Feature lighting to public spaces
- Areas of darkness

Lighting masterplan

Area description

This area is characterised by its connection to the Thames, with the emerging Gallions communities to the north with their proximity to the dock edge, the planned development on Royal Albert island establishing a strong maritime presence on the Thames, and the historic area of North Woolwich, with its ferry, pier and pleasure gardens.

Masterplan key:

Accent lighting palette -
Creating legible 24hr connective stitches

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Special treatments -
Enhancing buildings, structures and public spaces

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- Feature lighting to buildings and structures
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- Areas of darkness

The following chapter describes the lighting palette. This consists of a **site wide approach**, a **baseline palette** and an **accent palette**, alongside the guidelines for **special treatments** to existing assets.

A **site wide approach** ensures consistency and coherence of lighting across the Docks.

The **lighting baseline palette** outlines a set of 'best' practice responses.

The **lighting accent palette** outlines feature lighting supporting the stitches.

Special treatments recognises the important existing structures and how these can be treated to aid in the wayfinding strategy.

The lighting palette has been developed to:

- Create a 24 hour public realm
- Enhance the Docks' unique heritage and landscape
- Establish a safe and inclusive environment after dark

This chapter should be read in conjunction with the accompanying wayfinding, landscape and inclusivity and access design guides which make up the Royal Docks public realm designers' pack. Illustrative views of how the palettes inter-relate are illustrated in chapter 4, Worked Examples.

3. Lighting Palette

Palette structure and how to use

The lighting palette has been designed to work with the accompanying wayfinding and landscape palettes. This page illustrates the content of the palettes across the three public realm design guides, and how they should be used.

Palettes structure
The table to the right shows the range of palette components across the wayfinding, landscape and lighting design guides, breaking them down into the four approaches; site wide, baseline, accent and special treatments.

How to use
The stages below illustrate how users of this guide should access the palette sections, showing how the Masterplans (chapter 2), Palettes (chapter 3), Worked Examples (chapter 4) and Design Information (chapter 5) combine to provide a detailed approach to public realm improvements in the Royal Docks.

<u>Masterplan</u>
Use the masterplan to identify where your site is located in the Royal Docks. The key indicates which palette section to refer to. Detailed masterplans can be found in the appendices.

<u>Palettes</u>
Read through the relevant palette sections to determine what public realm treatments should be applied to your site.

<u>Worked examples</u>
Refer to the worked examples, using the view with similar characteristics to your site, to see how the individual palette elements come together in the public realm.

<u>Design Information</u>
Find more detailed information on the public realm components outlined for your site based on the masterplans and palettes.

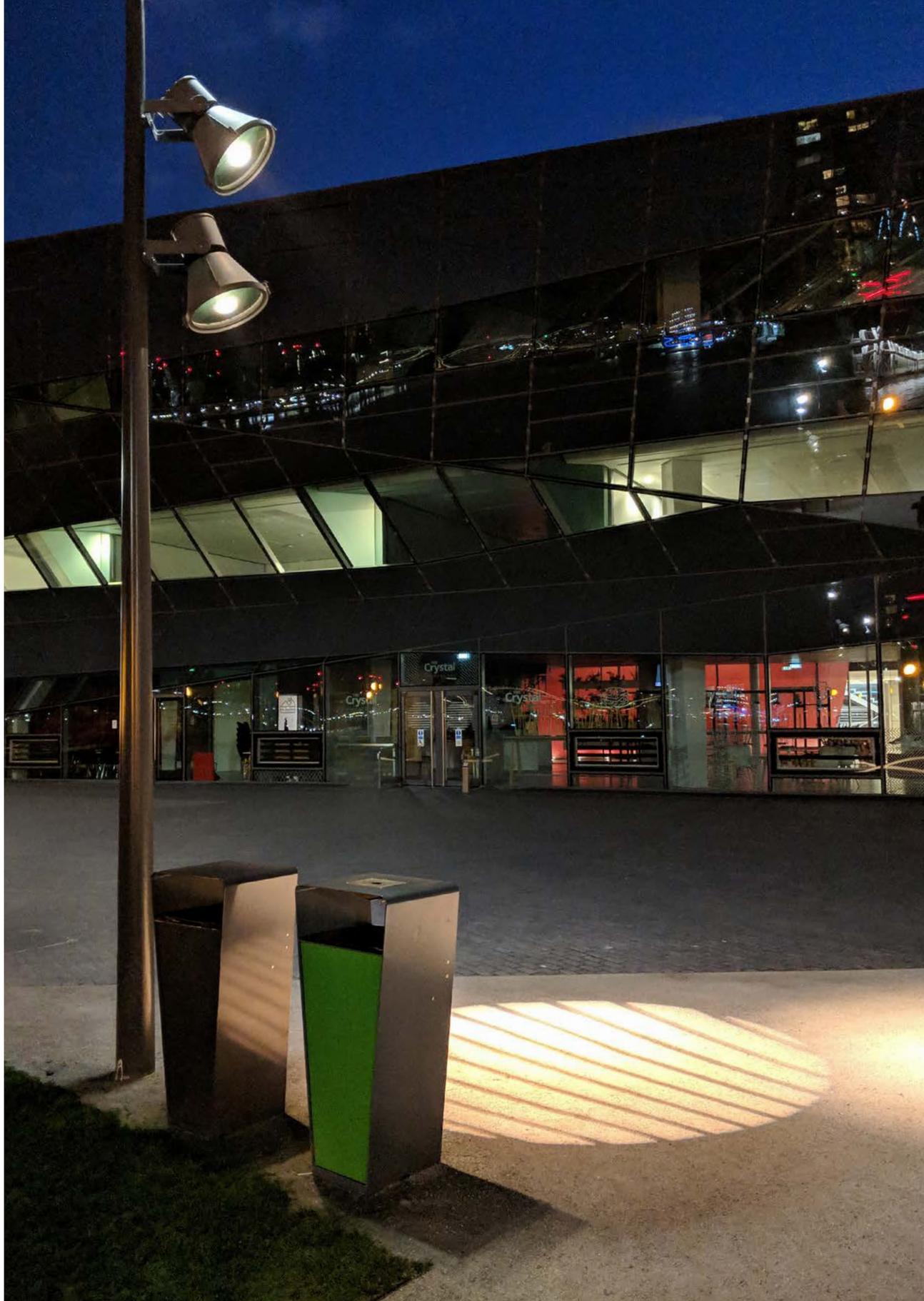
	Site wide approach	Baseline palette	Accent palette	Special treatments
Wayfinding	▪ Street signs ▪ Information boards ▪ Temporary signs for events	▪ Directional signage	▪ The Stitches ▪ The Dock Loop ▪ Stitch markers ▪ Area signs ▪ Public space beacons	▪ Landmarks ▪ Views ▪ Co-opting existing structures ▪ Public art
Landscape	▪ Hard surfacing ▪ Seating ▪ Street furniture ▪ Green Infrastructure ▪ 'Green Moves' ▪ Trees ▪ Planting ▪ Airport safeguarding	▪ Hard surfacing ▪ Play ▪ Trees ▪ Planting	▪ The Stitches ▪ Trees ▪ Planting ▪ Hard surfacing ▪ Street furniture	▪ Water's edge boundary ▪ Planting in the basins ▪ Exposure ▪ Shelter ▪ Wildness ▪ Playfulness ▪ Cultivation ▪ Colonisation
Lighting		▪ Public routes ▪ Local roads ▪ Major roads	▪ The Stitches ▪ The dock edge ▪ Dock edge objects ▪ Coordination with wayfinding palette	▪ Diverse places ▪ Buildings and structures ▪ Public spaces ▪ Darkness

Site wide approach

All public realm lighting schemes should be designed by a lighting professional with relevant experience. With reference to this Design Guide, that professional should ensure the scheme is consistent with the following site wide approach that underpins the three lighting palettes.

- Develop a framework for simplifying and standardising lighting to the network of routes and spaces that support the sense of the Royal Docks as a coherent place rather than a series of discrete campuses.
- Incorporate all public realm general lighting across the Royal Docks within LB Newham's Central Management System (CMS), allowing for the remote monitoring and granular control of each item of lighting equipment to improve maintenance regimes and increase the flexibility of lighting.
- Consider lighting equipment as a potential part of an interoperable Smart City infrastructure that may include inputs such as air quality and traffic monitoring, bin maintenance and CCTV.
- Use lighting equipment and lit effects to improve legibility after dark, especially along 'stitch' routes that link in to the broader wayfinding strategy. The aim should be to enhance the character of each stitch after dark to help create a more legible night-time environment.
- Work within the wider night-time scenography of the Royal Docks in the development of lighting schemes, responding to the unique landscape through selective lighting to key buildings and structures and open spaces, and the protection of dark spaces as a part of the inherent character of the Dock.

This Guide also recommends the formation of a Royal Docks Lighting Review Panel (RDLRP) - including representatives from The Royal Docks Management Authority (RoDMA), LB Newham, the Estates Forum and independent lighting design professionals - to provide guidance and review lighting proposals in accordance with this Design Guide, national standards and professional best practice.

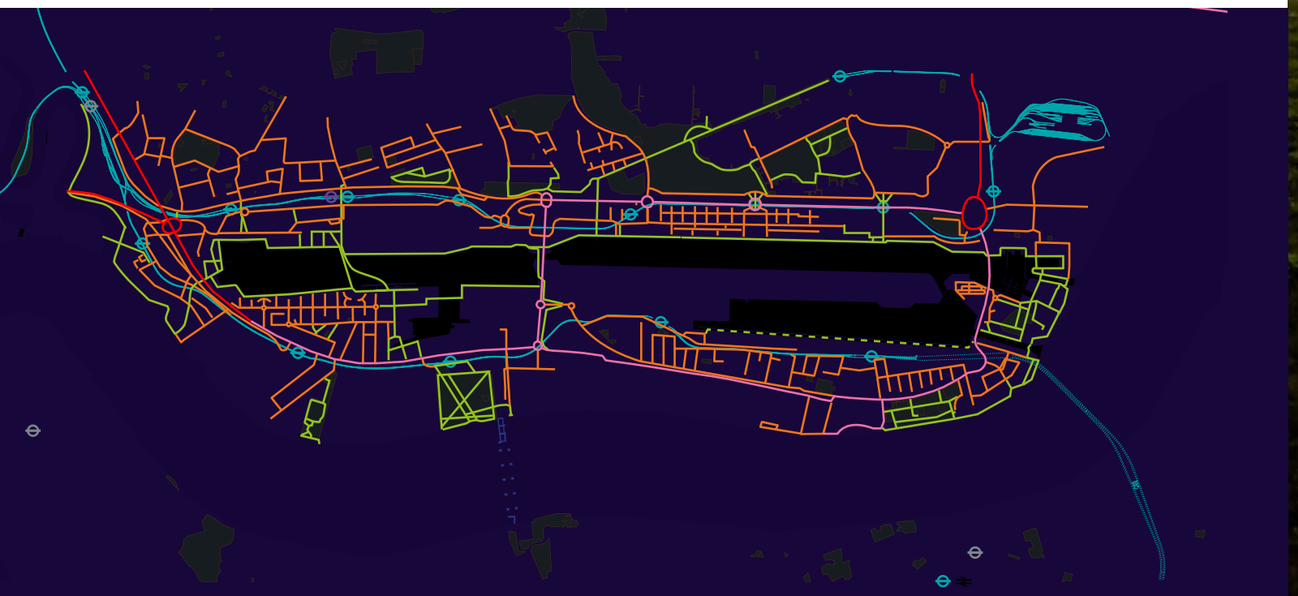


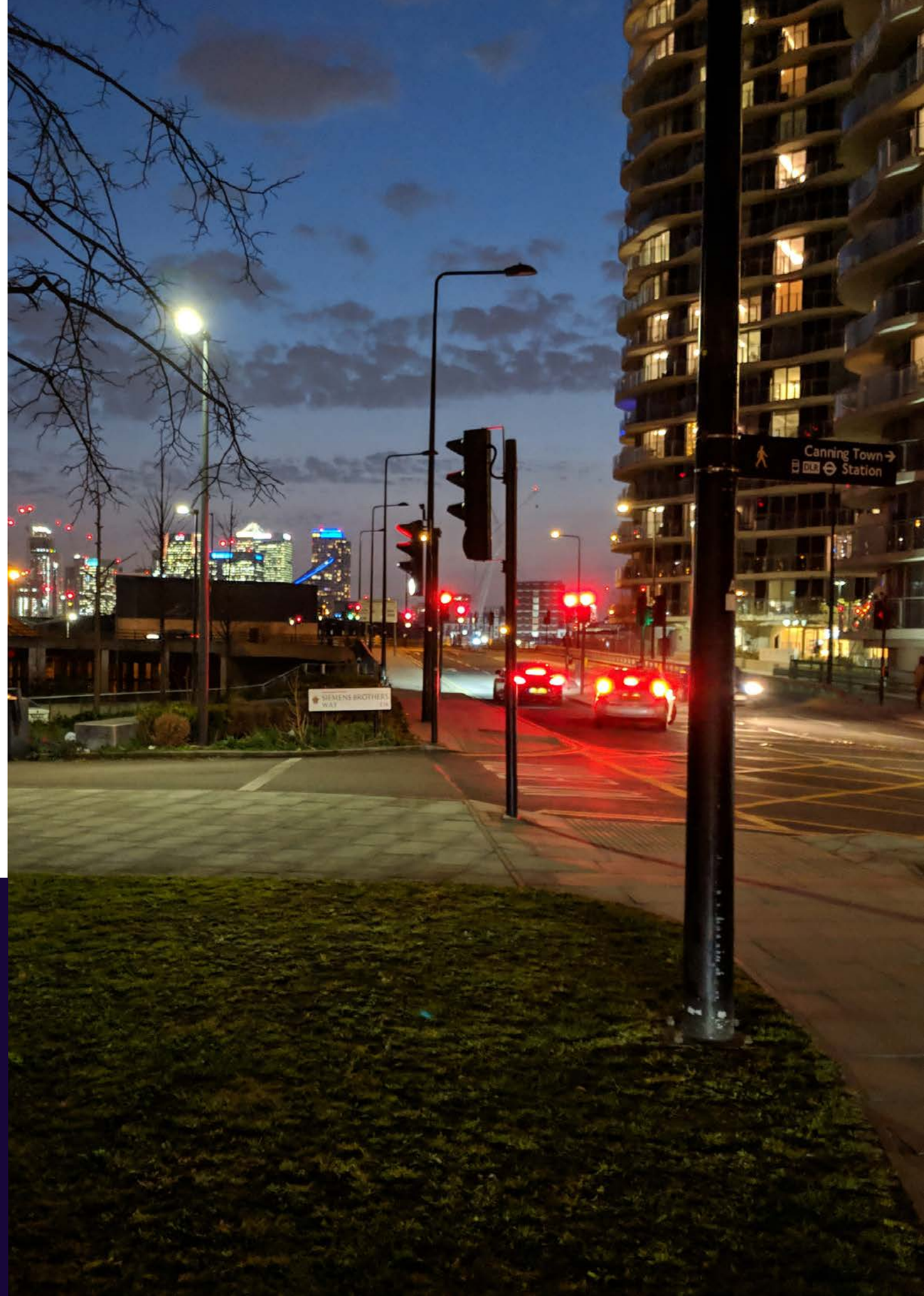
Baseline palette

The lighting 'baseline palette' supports the adoption of a best practice approach to illuminance levels, colour temperatures and the mounting heights of light fittings.

The network illustrated in the lighting baseline materplan identifies the hierarchy of lighting environments that require different lighting parameters, outlined in the following pages.

Lighting baseline masterplan





Baseline Lighting palette

The Baseline Lighting Palette applies to public routes and sets out the basic provision of lighting so that drivers, pedestrians and cyclists can safely navigate the streets after dark. The ambition is to streamline the basic street lighting provision across the Royal Docks and create a sense of consistency across the public realm.

Night-Time Character
Although the planning of street lighting is a technical exercise, the user of this Guide should take measures to ensure that the lighting scheme is appropriate to the night-time character of the area, be it town centre, residential, industrial or suburban.

Baseline Lighting Apparatus
Lighting apparatus should conform to consistent technical and visual parameters so that the inventory can become a familiar, neutral part of the public realm. Equally, coordination with the standard lighting equipment used across the rest of Newham is essential to enhance the sense of a coherent network of routes and spaces.

Strategy
The Baseline Lighting Palette should support the emerging hierarchy of routes across the Royal Docks. Illuminance levels and uniformity, colour temperature and mounting height should be consistent across the route types. These criteria are set out in the diagram and table opposite.

Delivery
The scheme coordinator is responsible for raising funding for installing new lighting equipment and ensuring conformity with the Baseline Lighting Palette. As part of the planning approval process, a lighting professional should be appointed to prepare a Lighting Statement to demonstrate adherence to the scheme. The scheme should be reviewed by the new Royal Docks Lighting Review Panel (RDLRP).

Innovation

Central control system. Granular control, reducing lighting levels, control for events, IoT integration.

Lighting Apparatus

Archetypal column-mounted street lighting luminaire.

Innovation

Large exposed open spaces could host columns with solar PVs or turbines to reduce net energy consumption.

Colour Temperature

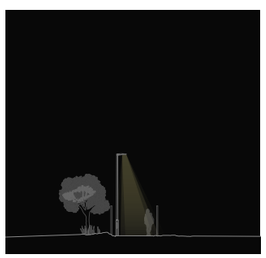
Warm white light (3000K).

Extra Warm white light (2700K).

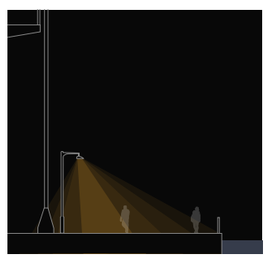
Mounting Height

10-12m mounting height.

6m mounting height.



4-5m mounting height.



Dock Edge.

Plan showing baseline lighting characteristics for hierarchy of route.

Diagram Key	Type of Route	Standard Illuminance	Off-Peak Illuminance	Uniformity	Colour Temperature	Mounting Height
	Major Road.	20lx	10lx	0.4-0.2	3000K	8m-12m.
	Local Road.	7.5lx	5lx	0.2	3000K	6m.
	Pedestrian and Cycle Route.	5lx	2lx	0.2	2700K	4m-5m.

Table showing baseline lighting characteristics for hierarchy of routes.

Management
For adoptable public highways, maintenance is the responsibility of the London Borough of Newham lighting department. Maintenance of lighting equipment to routes within private developments should be arranged by a management team appointed by the developer.

For routes maintained by the Royal Docks Management Authority (RoDMA), the scheme should be managed under a central management system (CMS) that enables the control of all general lighting across the Royal Docks. The scheme designer should ensure that all general lighting equipment is compatible with the CMS by liaising with the RDLRP.

Open Spaces
Lighting for Open Spaces is dealt with in detail in chapter 3, palettes, in the Special Treatments section. Nonetheless it should be noted that lighting should focus on planned routes through the Open Space, and that the lighting parameters identified above should only be applied to those routes. Additional feature lighting may be used to create a welcoming night-time scene.

Renewables
Exposed locations and open spaces where taller columns are used - such car parks - may host solar or turbine columns to reduce net energy consumption. A detailed feasibility and cost-benefit analysis of the use of integrated renewable power sources should be developed on a scheme-by-scheme basis.

Docklands Light Railway (DLR) Station Approaches
Lighting for DLR Station Approaches should meet the parameters set out in the relevant industry standards for railway stations. Nonetheless, a degree of coordination between the lighting of the station approaches and adjacent streets would achieve a coherent night-time character.

New Developments
This Design Guide expects the majority of routes within new developments to fall within the Local Road and Pedestrian and Cycle Route types. Additional requirements should be reviewed on a scheme-by-scheme basis.

Accent palette

The lighting ‘accent palette’ sets out principles for supplementary lighting to support wayfinding along stitch routes. The aim is for selected accent lighting elements to provide guidance at key locations along each stitch. The stitches are illustrated in the plan below.

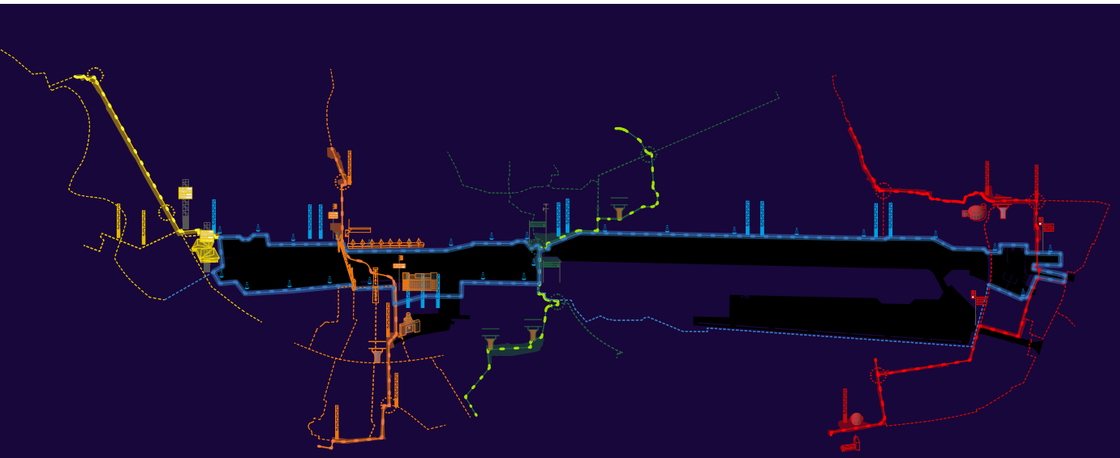
The method of accent lighting is consistent for each stitch and should be subtle, providing visual triggers and motifs. These accents respond to the particular character and ambition for each stitch, and should contribute to the sense of an augmented night-time scene.

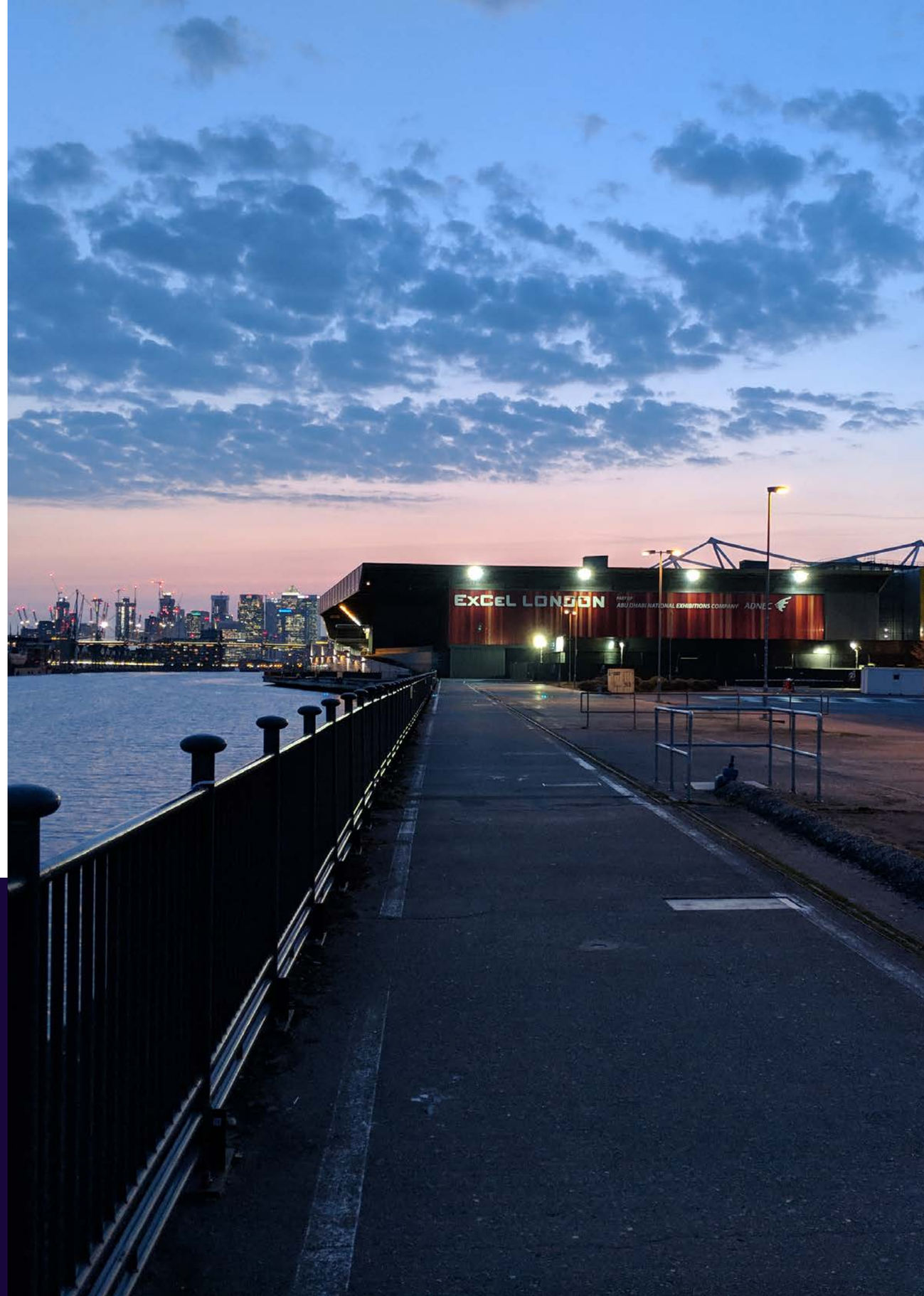
A series of bespoke lighting elements are deployed along all the stitches. They may be used to mark gateways, intersections and key routes and spaces.

Innovation

Incorporating advanced lighting sensors to account for ambient / spill lighting from private sources.

Lighting accent masterplan





The Stitches

In order to support the identity of each stitch, the lighting accent palette provides guidance on individual approaches to be employed along the stitch routes. Refer to the landscape and wayfinding design guides for additional accent palettes / stitch treatments.

1 - Canning Town to the Docks

Lighting to refocus on pedestrian and cycle routes, reducing the sense of a vehicle-dominated environment. Warmer colour tone to street lighting.

- Realignment of street lighting columns should be investigated where road enhancements allow.
- Independently-controlled secondary luminaires to foot- and cycle paths adjacent to carriageways may be used to provide dedicated pedestrian-scaled lighting where required.
- Lighting to routes around the Leamouth peninsula improved to enhance ease of access for pedestrians, while reducing ecological impact.
- Lighting column heights reduced where possible to bring in line with pedestrians and minimise obtrusive light, especially around elevated routes.

2 - Custom House to the Thames

Pools of accent lighting at key locations, creating a warm and sociable scene and identifying key landscape features.

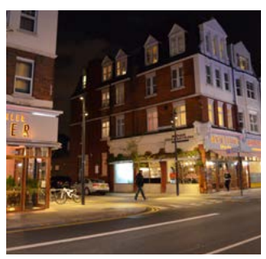
- Pools of light should supplement the existing street lighting provision.
- Extra warm white light (<2700K) should be used to correspond to the overall stitches colour strategy.
- General lighting equipment should be used, but dedicated spotlights may also be fixed to existing lighting columns or new street furniture.
- The location and aiming of luminaires should ensure only the intended area is lit. Where necessary, accessories such as louvres, shields and baffles should be fitted to the luminaire to eliminate the risk of obtrusive light.

Stitch 1 at Silvertown Way

Stitch 2 at Britannia Village

Split lamp columns on major roads

Dedicated lighting for pedestrians



Pools of light at key points

Spotlighting accentuates landscape

3 - Connaught Crossing

Accent lighting incorporates playful coloured lighting to infrastructure, highlighting gateways and edges on the route between Beckton Park and the Thames.

- The suitability of infrastructural elements for lighting treatments should be assessed on the basis of their appearance and condition.
- Any design should be considered scenographically from close and distant viewpoints to establish the appropriate scale of the lighting design.
- The colour of light used should correspond to the overall stitches colour strategy.
- The latest guidance on obtrusive light and sensitive lighting for habitats should be embedded in the design process.

4 - Beckton to North Woolwich

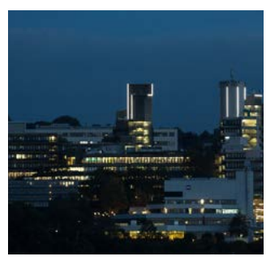
Light-touch improvements enhance the existing street lighting to make more welcoming, usable spaces after dark.

- New lighting should use warm white LED light sources with high colour rendering characteristics to make the night-time environment feel safer and more welcoming.
- Vertical lighting and facial modelling should be considered throughout the design process to enhance the sense of safe, connected spaces.
- In landscaped areas, lighting should be placed in line with trees to produce an attractive moonlighting effect, and bench lighting should be added to emphasise these social spaces.
- Parks and play areas along the stitch should be illuminated in the early evening to encourage play and after-school use during the darker winter months.

Stitch 3 at Connaught Crossing

Stitch 4 at Thames Edge

Underbridge lighting



Direct view lighting to landmarks

Moonlighting effect

Playful lighting in open spaces

Dock Edge

A new standard lighting assembly should be used along the Dock Edge.

Design Objectives

- Establish a consistent identity along the Dock edge that supports wayfinding strategies and creates a visual link with the industrial heritage of the Royal Docks.
- Enhance the character of the space after dark through the use of modern high-quality LEDs and optical control.
- Reduce the level of obtrusive light produced by the existing Dock Edge scheme, particularly in terms of glare and upward light.
- Minimise the amount of disruption to the Dock Edge and waste by re-using existing columns and positions where conditions allow.
- Use a dimmable luminaire that is compatible with a control system that will allow for the granular control of light levels.
- Columns should be located to reduce clutter on the Dock edge in the bands indicated in the plan opposite.

Specification

The proposed assembly is a contemporary interpretation of historic lighting used at the Royal Docks. The assembly consists of the following elements:

- Flat-glass LED luminaire in marine-grade die-cast aluminium. Range of optics to suit open areas and linear routes.
- Cylindrical horizontal outreach bracket with spigot to fit onto existing columns where possible. Twin brackets may be used for wider paths.
- New columns should be 4m-5m steel columns with horizontal stepped base. May be root or flange-mounted to suit underground conditions. Hinged bases should be used to ease maintenance.
- The whole assembly should be in a dark grey (RAL 7012) matt finish. Brackets and column should be wet-painted to allow for re-touching as required.

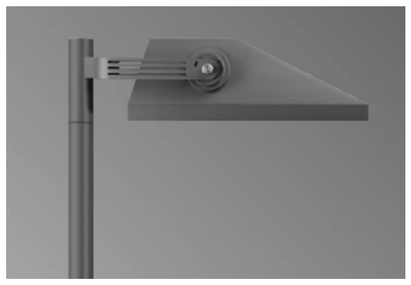
Delivery

The new lighting scheme will be delivered incrementally by The Royal Docks Management Authority (RoDMA). A phasing strategy should ensure a managed installation process that minimises disruption. Where existing lamp columns can be used, installation may be carried out independently of public realm works as a tangible 'quick win' project. This may also allow for a quantity of brackets and luminaires to be procured at one time.

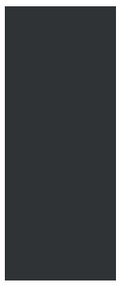
Management

The Dock Edge scheme should be managed under LB Newham's Telensa central management system (CMS). The scheme designer is responsible for ensuring that all general lighting equipment is compatible with the CMS.

Visualisation showing proposed Dock Edge lighting.

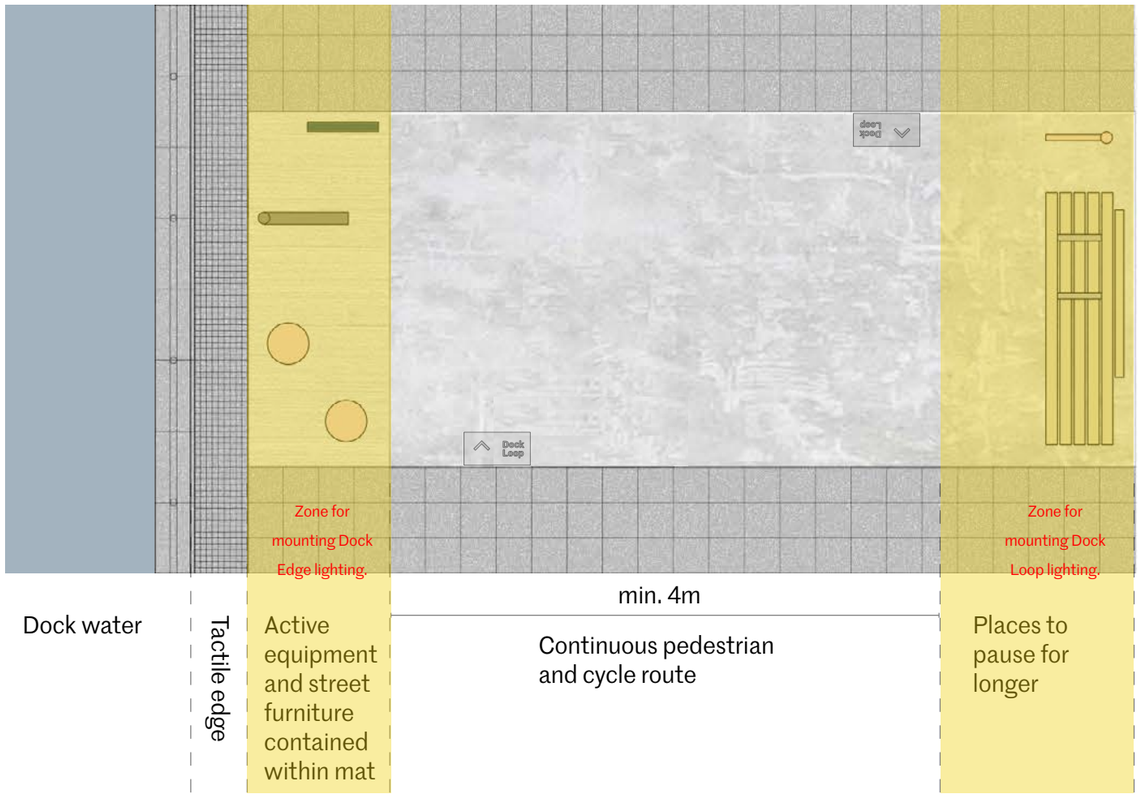


Dock Edge luminaire.



RAL 7012.

Layout plan of typical Dock Edge



Luminaire, bracket and column assembly.

Historic image of lighting at Royal Docks.

Innovation

Central control system. Granular control, reducing lighting levels, control for events, IoT integration.

Dock Edge Objects

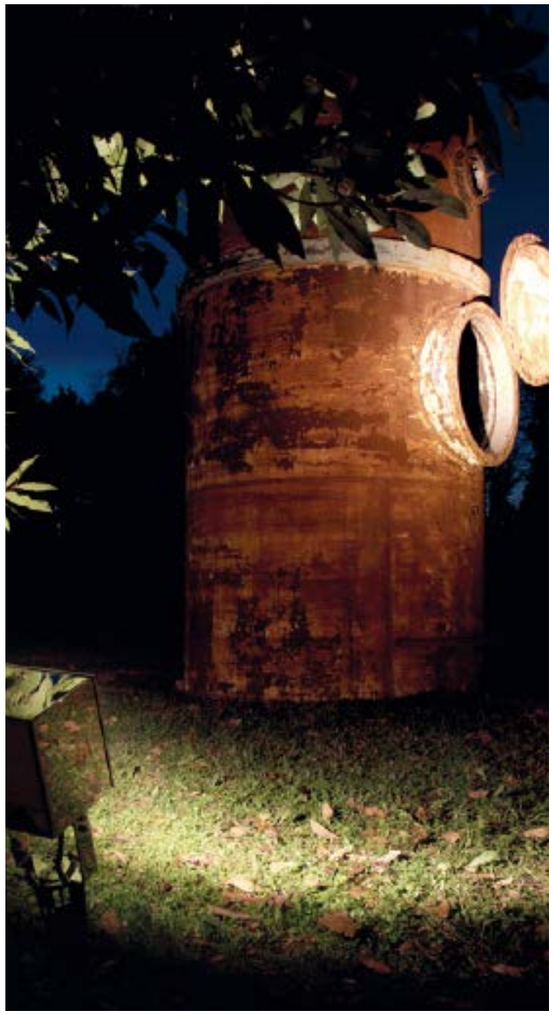
To enhance the nautical feel of the Dock edge, existing and reclaimed maritime objects referencing the Docks' history should be retained or installed. Lighting of maritime artefacts should help intensify the experience of the Docks' heritage after dark.

Strategy

- The level, direction and effect of incidental ambient lighting should be considered before dedicated feature lighting is explored.
- Lighting of objects should be selective and considered as part of a broader night-time scene.
- All relevant mitigations for the reduction of obtrusive light should be undertaken during the concept design stage.
- In general, remote spotlighting is preferred as this allows for a high degree of control and a simpler lighting scheme.
- Ground recessed uplighting is not supported around the Royal Docks due to the prevalence of residential properties and proximity to the airport increasing the likelihood of obtrusive light.

Scale of Objects to be Lit

- Larger objects - such as buoys - or collections of small- and medium-sized objects may be lit from remotely located spotlights or lights integrated into small bollards.
- Medium sized objects such as anchors that are predominantly made up of slim elements should only be remotely illuminated from above to reduce the risk of obtrusive light.
- Isolated, small objects of less than $1m^3$ should not be specifically illuminated as this approach is likely to contribute to a fussy and cluttered scene.



Dramatic illumination of large maritime object.

Innovation

Incorporating advanced lighting sensors to account for ambient / spill lighting from private sources.

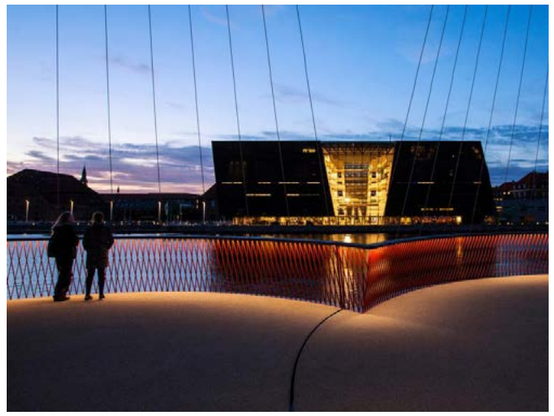
Bollard spotlight .

Remote spotlights.

Coordination with wayfinding palette

The wayfinding palette identifies key views across the water. Low level lighting may be used to emphasise these locations.

- Handrail lighting should only be used selectively in sensitive locations and not as an alternative to column mounted lighting.
- Linear luminaires housed in marine-grade steel should be used to maximise robustness.
- A standard detail should be developed so that the angling and shielding of the luminaire, and the optical control therein, is sufficient to minimise the risk of obtrusive light.
- Luminaire specification should ensure that each section of handrail should be integrated into the CMS for control and monitoring.
- The position of Dock Loop lighting to be coordinated so that columns do not interfere with the view.



Low level lighting integrated into handrail at viewpoints.

The wayfinding palette proposes the use of lattice wayfinding structures around the Dock edge. Lighting may be integrated into these structures to extend their function after dark and to provide feature lighting around the Dock edge.

- Integrated lighting should be robust and use LED light sources to reduce maintenance and running costs.
- Coloured lighting should be avoided.
- Downlighting reduces the risk of obtrusive light and can also create a delicate shadow play on the ground surface.

Lighting integrated into wayfinding structures.

Coordination with wayfinding palette

Area Signs
Eight area signs are to be located where the Stitches intersect with the Dock edge and are to be of a site-specific scale and design. Their positions at key locations mean they should play a significant role in wayfinding after dark.

Strategy
The lighting of area signs should be determined on a site-by-site survey of existing lighting conditions, so that the ambient lighting levels, and the likely amount of incidental lighting that will strike the legible surface of the sign, can be determined and taken into account. Two options should be considered in order:

- No specific lighting. Incidental lighting of the sign from existing general lighting is sufficient.
- Additional lighting. Remote washlights used to provide subtle illumination of signage.

Integrated lighting should not be used, because the logistical and visual complications of cabling and the lights themselves would likely be unattractive. In addition, close-offset lit effect and maintenance regime is likely to compromise the aesthetic of the sign.

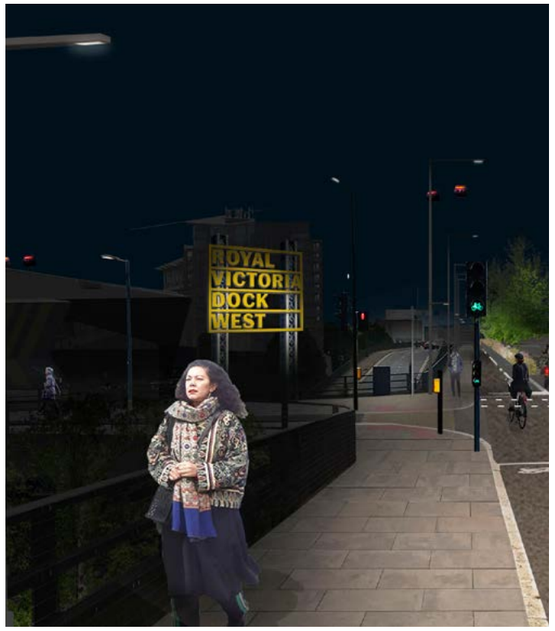
Lighting that is placed close to the wall is also likely to require a heavier maintenance regime. If additional lighting is required, the site survey should identify potential locations where lights can be added. The requirement for lighting should also be considered when selecting the final position and orientation of the sign itself. Adding new dedicated street furniture should be avoided. Coordination of accent lighting with existing or proposed lighting columns or structures is proposed.

All designs should allow for on-site dimming so that appropriate lighting levels can be set at the time of installation, and adjusted during the period of operation if required. A curfew of midnight should be set for the operation of the lighting.

Where necessary, all measures for minimising the risk of obtrusive light - including, but not limited to, the use of luminaire accessories such as shields, louvres etc. - should be considered.

The design should follow professional guidance on the design of signage lighting provided by the Institute of Lighting Professionals (ILP).

Indicative luminaire.



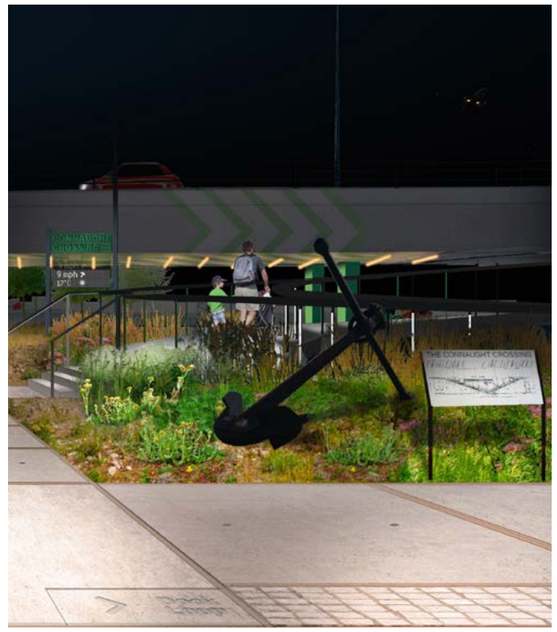
Dedicated lighting of an area sign.

Stitch Markers, Post-Mounted Signs and Banners
The Wayfinding Palette proposes a range of permanent and temporary signage that may be fixed to lighting columns. Fixings to lighting columns should conform to the relevant national standards. All proposed signs that are to be fitted to lamp columns should be approved by the Newham lighting department.

The weight and windage of signs and mounting accessories should be calculated and the structural tolerances of each lighting column considered when deciding where to use which signage in each location.

Narrative / Information Boards
Lighting to narrative and information boards should be provided indirectly from carefully located general lighting equipment. Integrated or close-in lighting of boards is to be avoided, as they may be a target for vandalism and contribute to an over-complicated lighting scene.

If incidental lighting is not sufficient, and lighting the board is judged essential, remote spotlighting from an existing structure may be considered. However, care should be taken to reduce the impact of glare and self-shadowing.



Incidental lighting of a information board.

Digital illuminated signs
Digital illuminated signs are part of the wayfinding strategy. Care should be taken in the specification of such signs that the total lumen output of the sign does not have a dominant or obtrusive impact on the night-time scene. Modern signs can be sensitive to ambient light levels, meaning they dim after dark.

Dimming digital illuminated information displays.

Special treatments

The Royal Docks incorporates a uniquely wide range of different night-time environments. While the baseline and accent palettes emphasise continuity, users of this guide should recognise and seek to elevate the distinctiveness of the Royal Docks in the development of new lighting schemes.

This can be realised in the use of the ‘special treatments’ palette, through two main channels: feature lighting to buildings and structures and to public spaces.

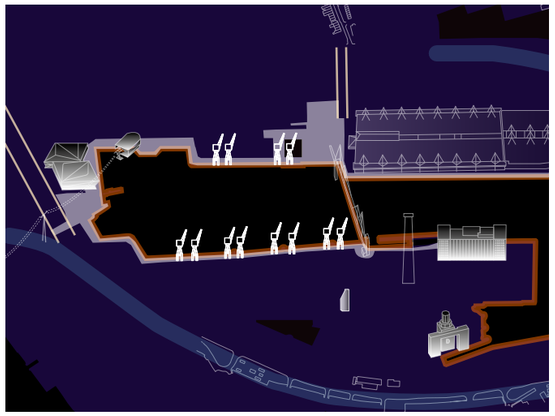
Special treatments masterplan

Diverse Places

The Royal Docks has a wealth of recognisable landmark buildings and structures that aid in navigating the place and lend the area its distinctive quality. High-quality architectural lighting should be used to enhance the character of the place, celebrate the Docks' heritage and support the wayfinding strategy.

Public spaces across the Royal Docks also serve to knit together disparate character areas and serve as a common ground within communities. Extending the use and flexibility of these places after dark - especially in the winter months - has clear economic, cultural and social advantages. Further by encouraging activity, self-policing and a shared perception of safety and security can be realised.

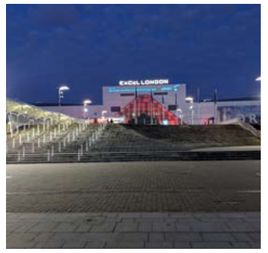
A defining part of the Royal Docks' character are the bodies of water - inherently dark - at the heart of the area. Lighting schemes should aim to protect this quality through sensitive design strategies that promote the area's unique "darkness assets".



Landmark structures and public spaces around Royal Victoria Dock

Darkness of the River Thames and Dock basin, and larger parks such as Royal Victoria Gardens

Buildings



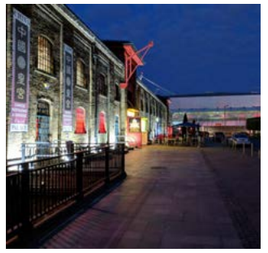
ExCeL Centre

The Crystal

Millennium Mills

Royal Victoria Place

Heritage



Warehouse K

The Compressor House

Cranes

Warehouse W

Infrastructure

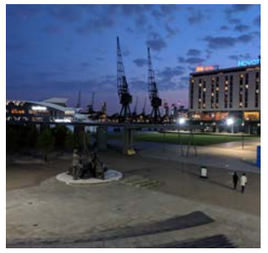
DLR Viaduct, West Silvertown

DLR Viaduct, Royal Albert Station

Royal Victoria Bridge

Royal Victoria DLR Station

Open Spaces



Royal Victoria Square

Western Gateway

Dockside Road

ExCeL Car Park

Buildings and Structures

Dock Infrastructure
Schemes should be sensitive to the unique background provided by the water.

- Lighting should allow for the dark character of the water to be maintained.
- Lit elements alongside the water should be carefully selected as they count for double through their reflections in the water.
- Lighting can help form a visual link between past and future. Atmospheric white lighting respects the significance of historic structures and their material qualities and is preferred to colourful, dynamic 'attraction' lighting that may obscure it.

Dramatic lighting of historic elements

Architectural Details
Historic buildings are often composed of a sequence of architectural details.

- The whole building need not always be illuminated to create an impact.
- Finding an appropriate composition of elements, or emphasising a specific sequence, may be the best way to reveal a building's significance.
- Brightness of different elements should be modulated to emphasise the visual hierarchy of the structure or facade.

Lighting to a collection of architectural details

Groupings
Former industrial buildings and structures are often grouped together, retaining a sense of a complex linked by their former function.

- A small, complementary set of lighting methods should be used to emphasise the common elements of the group.
- These common elements lit in unison means that less light may be needed to create the desired lit effect.
- The rhythm of the buildings - often related to their function - should be emphasised. For example, a series of low warehouses terminated by a chimney or a row of cranes.
- Many of the contemporary buildings in the Royal Docks have primarily glazed facades, and do not require illumination.

Sensitive lighting of collection of buildings

Crossings, Viaducts and Piers
Lighting may be used to celebrate major, highly visible structures and their roles as markers and gateways.

- Schemes should consider the key structure elements that are visible from key viewpoints.
- Structures may be illuminated individually, or as a sequence that may support wayfinding.
- Colour should be used sensitively, to accentuate the material or theme.
- Lighting near the water should be sensitive to the dark character of the Docks and the River beyond.
- The areas around a bridge's landfall are often accessible so should also be lit with the aim of enhancing safety and security.

Lighting underside of a crossing

Tall and Long Buildings
The graphic use of light on large surfaces can help create subtle accents in the night-time scene.

- Direct-view or close-offset grazed lighting can help give a subtle accent while reducing the risk of light pollution.
- The use of coloured lighting may support temporary events and festivals.
- Reflective or luminescent elements or finishes should be considered as alternative, sustainable lighting treatments.

Impactful direct-view lighting

Commercial Lighting
Commercial lighting has a significant impact on the night-time scene, is typically ad hoc and inherently competitive.

- An interior building and signage lighting control system can be beneficial in reducing energy use and help to balance the exterior lit appearance of the building.
- The use of floodlighting and large box-signs should be avoided to reduce the risk of obtrusive light.
- Signage should be back-lit or channel lettering to increase legibility.
- RGB, dynamic or multi-chromatic lighting should be avoided to maintain a high-quality street scene.
- The visual impact and energy consumption of out-of-hours lighting should be considered.
- The use of window coverings should be limited to maximise the sense of an active street scene.

High quality commercial lighting for an active street.

Public Spaces

Social Moments

- A well lit public realm should look more welcoming and attractive, drawing people out in the evenings, increasing footfall and promoting self-policing.
- Not lighting a space should not be seen as a deterrent to people gathering or to anti-social behaviour.
- High quality public realm lighting also offers an enhanced sense of permanence and reinforces community safety so that antisocial behaviour will be deterred.
- Low level lighting integrated into furniture or planters may be used to vary the scale of the night-time scene.
- Pools of light around seating areas promotes the sense of being welcome in the public realm.
- The provision of high-quality lighting should enhance the sense of safety and security.

Lighting supports social places after dark

Temporary Lighting

- The control of lighting should be responsive and flexible so that it can support evolving patterns of use.
- Additional power supplies, mounting positions and accessories may be included in lighting designs to allow for additional lighting for festivals, events and performances.
- Some input from the local community in the selection of events and festivals, and even in the design of temporary lighting would increase the sense of participation in the public realm.

Temporary lighting engaging people in a space and performance

Framing Views

- At selected viewpoints, low level lighting may be integrated into linear structures at the Dock edge to provide a lit frame to unobstructed views across the water.
- High quality luminaires with a long design life should be specified. Parts should be replaceable to reduce the whole-life impact and units should be able to be broken down and recycled at the end of their design life.
- The specification, mounting and detailing of luminaires should be robust so that the risk of vandalism and accidental damage is mitigated. Appropriate impact and ingress protections for all luminaires should be observed.

Emphasising views and legitimising moments of solitude

Open Spaces

- Lighting to open spaces should respond to the character of the space and allow for an evolving range of uses.
- Lighting should cater for both the ‘extraordinary’ and the ‘everyday’ qualities of the public realm, allowing for different scenes to be set for different times of the week.
- The daytime and night-time appearance of the whole lighting scheme - including luminaires, mountings and cable routes - should complement the character of the proposed public realm and surrounding buildings.
- The detailing of lighting equipment should minimise visual clutter and find a balance between different locations for lighting equipment.

Area lighting that helps create a vibrant, flexible open space

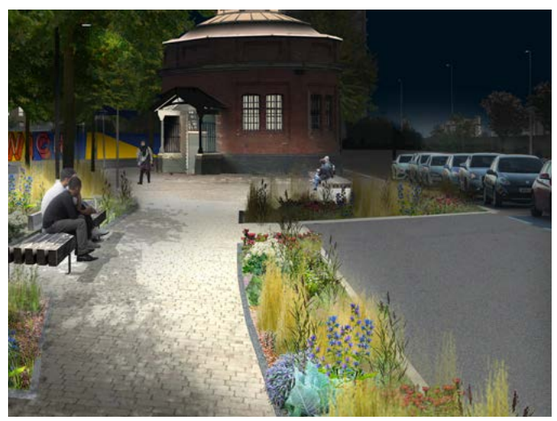
Event Infrastructure

- Lighting equipment in selected event spaces may be coordinated with other facilities, such as metered power, wifi, CCTV and public address (PA) systems to extend the use of space for events.
- Lamp columns should be detailed to include fixings, power supplies and banner arms to support events and festive lighting.
- Coordination with Police and CCTV provision should be considered to minimise any impact of temporary lighting on illuminance levels, coverage and quality of surveillance.
- Refer to the current Royal Docks Guide to Holding Events document for detailed information on coordinating lighting and events infrastructure.

Lighting coordinated with events infrastructure

Car Parks

- There are a number of large spaces - such as car parks and waiting areas - across the Royal Docks where blanket area lighting has a significant effect on the night-time character.
- Lighting to these areas should be upgraded so that a control protocol may be introduced, reducing the amount of redundancy in their use.
- Luminaires may be added to the LB Newham CMS to ensure coordination with connecting routes at busy times.
- At quiet times, the illuminance levels may be reduced significantly.
- Terms and timings of the control protocol should be developed with the proposed Royal Docks Design Review Panel.



Controlled off-lighting for large open spaces

Darkness

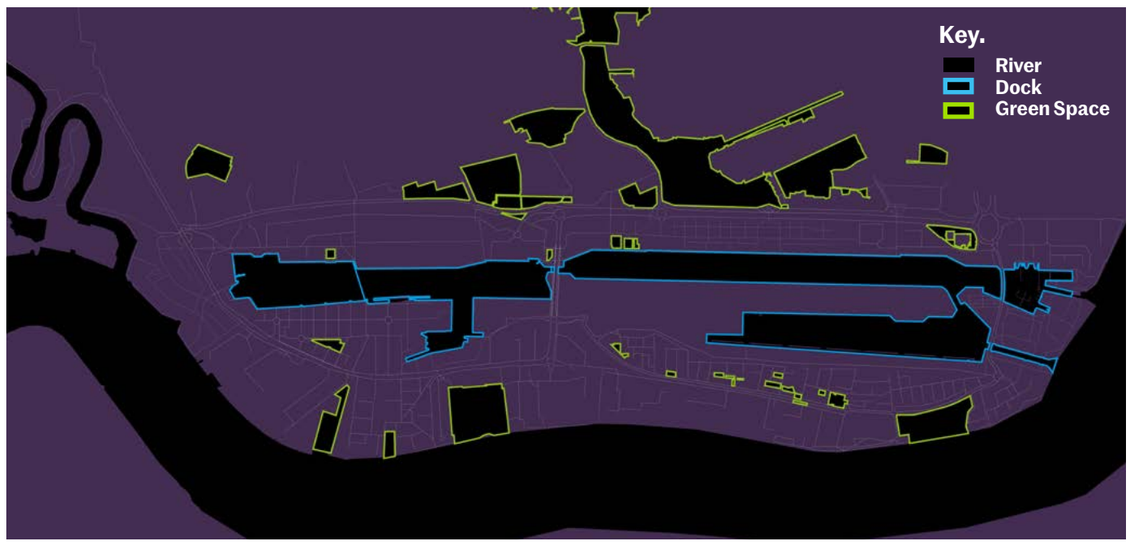
Darkness Strategy
A darkness strategy should enhance the character of the place, but respecting diurnal light rhythms by allowing appropriate darkness also has demonstrable benefits for the well-being of residents and local ecologies. The following measures should be considered:

- New lighting schemes around the Dock edge is an opportunity to implement latest light pollution guidance more suited to the range of conditions around the Docks.
- Existing lighting is multiplied through reflection - one luminaire becomes two across the water - so calibrating the impact of each light source is essential to reducing the impact of each scheme.
- Low level lighting and shielded, dark-sky luminaires can help reduce the risk of light spill and glare across the water.
- Commercial lighting should be controlled according to agreed curfews - for example, out-of-hours lighting switched off at 9pm, signage switched off at midnight.

Sensitive lighting of structures around a dock edge

Sensitive lighting at Dock Edge respects the water

Darkness plan



Lighting tactics to preserve darkness
The preservation of darkness may also be promoted through active lighting design measures.
The impact of interior lighting should be considered when developing public realm lighting scenes, so that street lighting levels in busy evening areas may be increased after hours.

- The use of granular lighting control and advanced low level photocells may be used to balance the relative impact of light sources within a streetscene.
- Motion sensors and low level solar guidance lights may be considered as an alternative to conventional dusk-dawn street lighting on remote paths.
- Close offset architectural lighting reduces the scope and risk of obtrusive light, and can reduce the overall luminance of a lit facade.
- The use of shielding light sources and lower mounting heights reduces the visibility of light sources.
- Innovative use of technologies - such as micro-prism strips and bio-lumenescent paint - to substitute for feature lighting in sensitive locations.

Coordinated lighting of interiors

Use of guidance lights for remote paths

Close offset lighting reduces spill

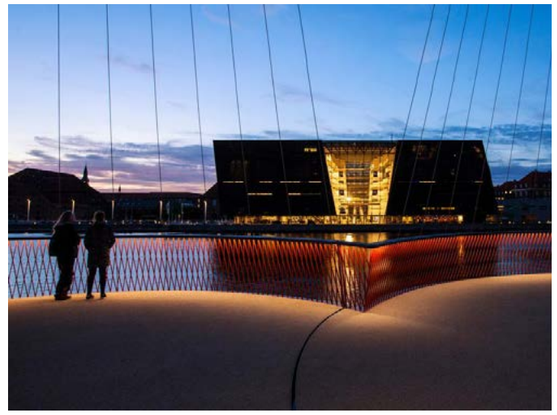
Shielded low level lighting

Reflective strips for accent lighting

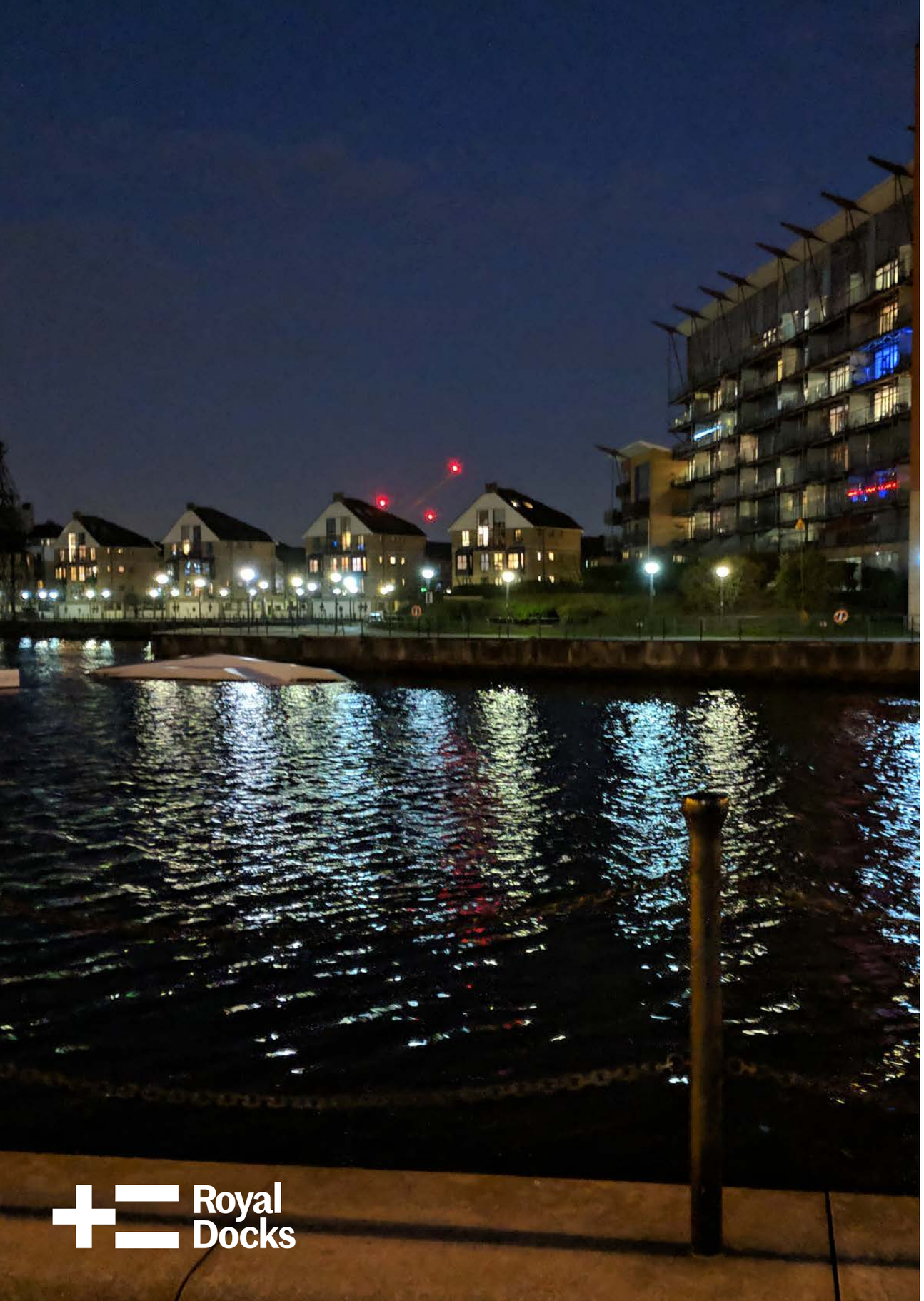
Shielded lighting along a route

Handrail lighting
The wayfinding palette identifies key views across the water. Low level lighting may be used to emphasise these locations.

- Handrail lighting should only be used selectively in sensitive locations and not as an alternative to column mounted lighting.
- Linear luminaires housed in marine-grade steel should be used to maximise robustness.
- A standard detail should be developed so that the angling and shielding of the luminaire, and the optical control therein, is sufficient to minimise the risk of obtrusive light.
- Luminaire specification should ensure that each section of handrail should be integrated into the CMS for control and monitoring.
- The position of Dock Loop lighting to be coordinated so that columns do not interfere with the view.



Low level lighting integrated into handrail at viewpoints.



The following chapter describes the lighting proposals in six worked examples taken from across the Royal Docks. Each worked example has been masked to reveal the public realm elements applicable to the lighting treatments outlined in the palette section.

The worked examples are indicative of how the palettes combine to create a 24hr, enjoyable and safe pubic realm after dark. Users of this guide should use the worked examples as references for how the palette components could be deployed on their site.

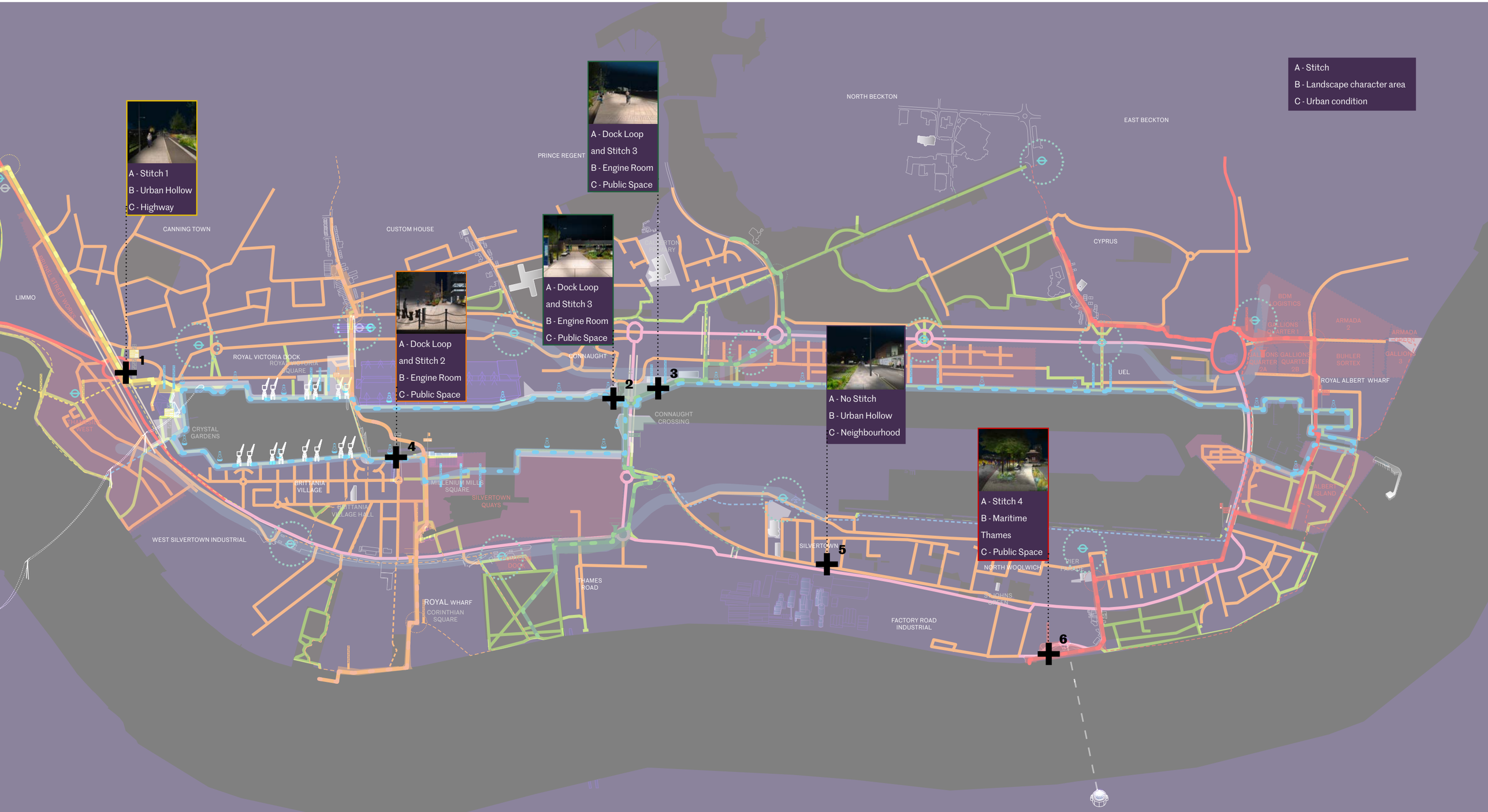
This chapter should be read in conjunction with the accompanying wayfinding, landscape and inclusivity and access design guides which make up the Royal Docks public realm designers' pack.

4. Worked examples

Worked examples

The worked examples have been taken from a cross section of locations across the Royal Docks that best illustrate the range of public realm approaches proposed in the design guides. User's of this design guide should refer to the worked examples as illustrative views of how the palettes might be applied.

The following pages provide detailed worked examples of six locations, showcasing the range of public realm proposals with specific focus on the lighting elements. Please refer to the landscape and wayfinding design guide for further information on the respective approaches.



1. Silvertown Way

This stretch of the Silvertown Viaduct sits on the Canning Town to the Royal Victoria Dock stitch, and is characterised by its elevation above its surroundings. As part of the reconfiguration of North Woolwich Road / Silvertown Way, the viaduct will be rebalanced to become far more hospitable to pedestrians and cyclists.

The lighting should refocus priority to pedestrians and cyclists. Columns may be realigning to planted reservations dividing the paths and carriageway if road layout allows, or by providing secondary luminaires at a more pedestrian scale if necessary. Such lower luminaires should be independently controlled to allow for varying pedestrian and cycle traffic levels during the hours of darkness. The light source is upgraded to LED with a warm white colour tone to re-affirm the stitch colour tone. Decluttering is continued by combining traffic signals, signs and lamp columns where possible.

Daytime scene.

Annotated night-time scene.

2. Dock Edge

This stretch of dock edge, located by Royal Albert Dock, can be reconfigured to provide greater access to the water as well as making better use of its large empty spaces. The central lighting move is to introduce new lighting along the water to help upgrade and streamline the equipment used in the area, improve the lit effect around the dock edge, and to reduce existing obtrusive light. Dock Edge Beacons - lattice columns with wayfinding attachments that mark key open spaces and intersections across the Dock Loop - may be illuminated internally to accentuate the vertical elements and create decorative shadow play on the ground surface. Improved lighting supports increased night-time activity and opportunities to sit and look across the water.

Daytime scene.

Annotated night-time scene.

3. Connaught Crossing

Wayfinding and landscape interventions where the Connaught Crossing stitch and the Dock Loop meets will help people navigate north to south, and respond to the open and windswept character of the place. Use of the Dock Loop luminaire assembly is continued and coordinated with bespoke wayfinding elements. Narrative boards, signs and Legible London wayfinding signs known as midiliths are illuminated incidentally using general lighting that also contributes to a greater sense of safety and security. Feature lighting of marine artefacts is selective, with some allowed to fall into darkness. A new lighting scheme to the underside of the Connaught Crossing links the two landings, and creates a safe, covered, usable space. New lighting to the footbridge supports improved accessibility across the water.

Daytime scene.

Annotated night-time scene.

4. Britannia Village

This worked example shows a confluence of the Custom House to the River stitch and the Dock Loop. This meeting of the Dock, the existing community of Britannia Village and the proposed Silvertown development necessitates wayfinding and public realm elements that tie everything together coherently.

Lighting uses an extra warm colour temperature to support the stitch colour tone, while pools of light around seating support moments of pause and positive social activity after dark. The location of the Dock Loop lighting minimises clutter and reduces spill across the water and the use of a flat-glass luminaire reduces the visibility of light sources. Lighting to routes perpendicular to the Dock Loop is improved, while feature lighting to the chimney creates a vertical accent as the stitch route continues into the middle distance.

Daytime scene.

Annotated night-time scene.

5. Albert Road

Albert Road does not lie on a stitch, however there are well established communities and well-used public spaces in the area. Public realm opportunities are more focused on providing amenity and character to these rejuvenated spaces. Community notice boards, murals and characterful interventions to existing structures such as the railway wall and the Tate and Lyle refinery all serve to enhance the identity of this area.

A secondary luminaire added to the existing column provides illumination to the edge of the green space, increasing visibility at the edge of the footpath. The path is decluttered by combining Belisha beacons on the existing lamp column. Street lighting is allowed to spill onto the vertical surface of the wall, increasing the sense of a well-lit edge, making the mural legible after dark and softly complimenting the seasonal tones of the new climbing foliage. Cycle parking is located to take advantage of existing lighting.

Daytime scene.

Annotated night-time scene.

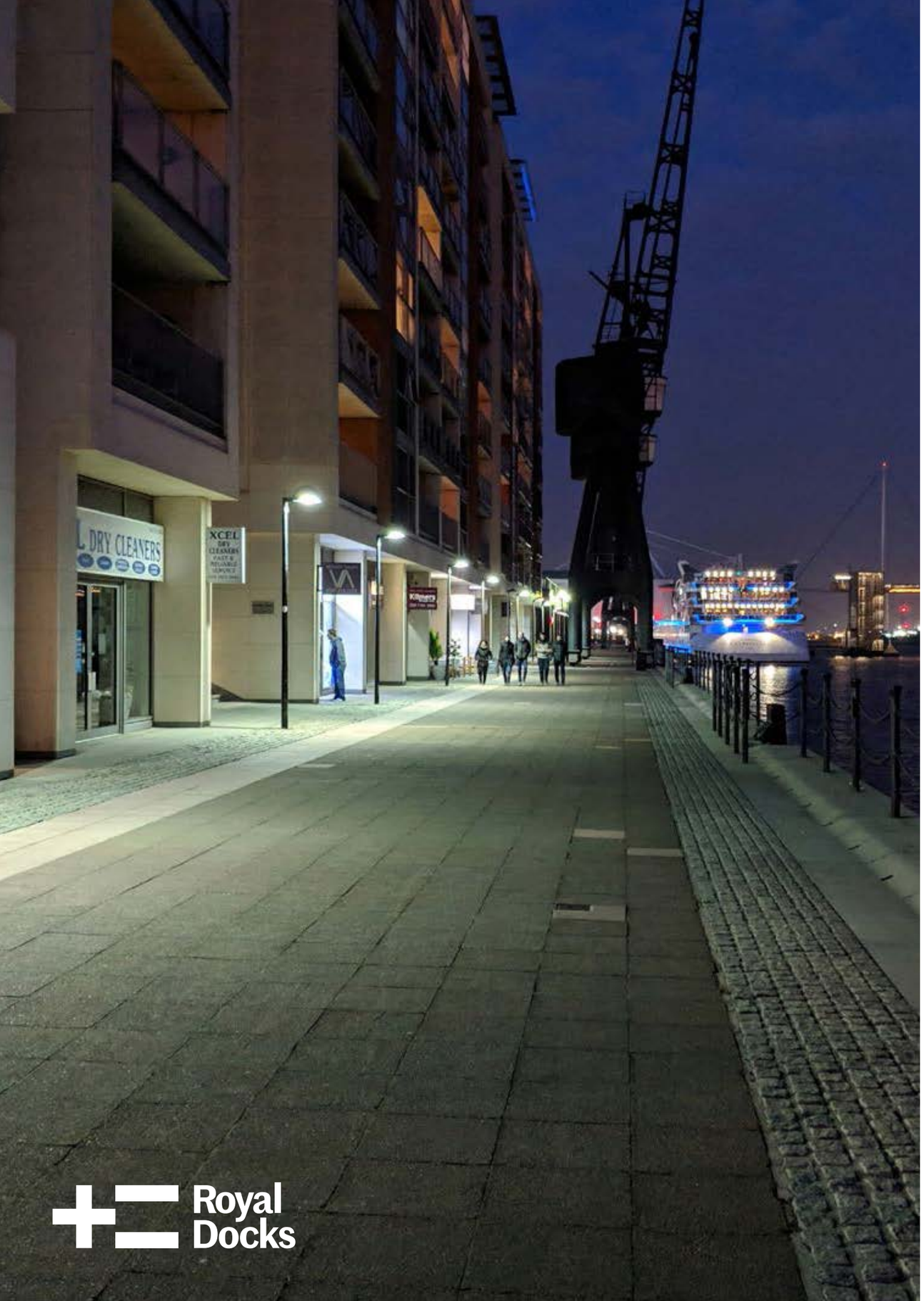
6. Thames Edge

The approach to the Woolwich foot tunnel and ferry is an important location for continuing journeys over the Thames, one of only two crossing points in the Royal Docks - the other being the Emirates Airline.

Lighting to the pier waiting zone is controlled to reduce the redundant illumination outside sailing times, while upgraded street lighting incidentally washes the colourful mural. New lighting columns are provided to the foot tunnel approach - located amongst the trees they produce an attractive moonlighting effect without compromising desire lines. The roof of the foot-tunnel tower is subtly lit, celebrating the structure and local significance of the connection to South of the River.

Daytime scene.

Annotated night-time scene.



The following chapter provides more detailed design information on selected components from the lighting palette. The design information contains useful guidance on the design, management and maintenance of the selected components.

This chapter should be read in conjunction with the accompanying wayfinding, landscape and inclusivity and access design guides which make up the Royal Docks public realm designers' pack.

5. Design Information

Baseline Lighting Palette

Baseline lighting to vehicle, pedestrian and cycle routes is to be provided using column-mounted LED luminaires. All lighting should be designed to a standard to allow for adoption by London Borough of Newham.

Column and Brackets

- Column heights should be selected according to the route typology identified in the Baseline Lighting palette.
- Post-top mounting is preferred to maintain a simple and consistent silhouette, but outreach brackets may be used if the street geometry demands.
- Refer to the Newham lighting department for details of door location and numbering.
- Mallatite is the preferred supplier of columns and brackets.
- Heavy duty columns with a swaged base and twin doors (with mouse-hole and different access keys to incorporate IP-rated power supplies) should be used where required. Indicative details are provided opposite.
- Columns and brackets should be wet painted in a black RAL 9005 finish to allow for touching up superficial damage.

Photomontage showing baseline palette luminaires.

Archetypal column-mounted street lighting luminaire.

Luminaire

- LED luminaires with a neutral, rectilinear form should be used. Luminaires from CU Phosco's P850/1/2 family or similar approved should be used.
- The luminaire housing should be constructed using die-cast aluminium to minimise the risk of corrosion.
- High-quality PMMA optical covers should be used.
- The efficiency of the luminaire should be at least 100lm/W.
- LED array and driver should be thermally separate to maximise the operational lifetime of the luminaire.
- Luminaires must be compatible with Newham's Telensa CMS.
- Luminaire should be programmed for Constant Light Output (CLO) to reduce the risk of over-lighting early in its design life.
- Colour temperatures should be 3000K with a minimum colour rendering index (CRI) value of 70Ra.

Scheme design

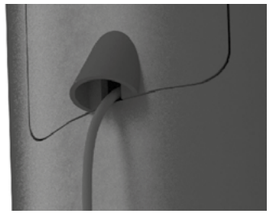
- Street lighting schemes should be designed to meet the parameters set out in the Baseline lighting palette.
- Columns should be located at the front of the footway with a minimum clearance from the kerb of 800mm.
- Where carriageway and foot- and cycle-paths are separated, the column should be located in the planted reservation.
- Where the footway is especially wide (>3m), or where a reservation is in place, a secondary luminaire mounted at 6m serving the foot- or cycle-paths may be used. The secondary luminaire should be independently controllable.

Electrical Characteristics

- Electrical design should be undertaken by a qualified engineer and conform to Newham standard detail.
- Outdoor power supplies should be provided at the top of columns where necessary to support festive and event lighting. Standard detail for covers is provided opposite.

Welded Eye-bolt detail.

Outdoor power supply cover detail.



Door with mouse-hole detail.

Accessories

- Opportunities to consolidate road and wayfinding signs, traffic signals and belisha beacons should be taken into account when specifying new columns.
- Weight and windage tolerances of new and existing columns should be considered prior to the use of banners and festive decorations and approved by Newham lighting department.
- Specification of banners and signs should be standardised. Brackets and fixings should be steel and painted to match the colour of the column.
- Eye-bolts should be welded onto columns where there's an opportunity to catenary-mount festive decorations.

Control Philosophy

- New street lighting equipment should be compatible with Newham's Telensa Central Management System.
- Dimming the lighting during off-peak periods may be trialled in selected areas agreed with LB Newham lighting department. Illuminance parameters are set out in the Baseline Lighting palette.

Maintenance

- The design life of street lighting luminaires should be at least L90@100,000hours (22 years at 12 hours per night). A stock of spares should be kept in case of premature failure, accident or vandalism.
- Regular maintenance of street lighting equipment should follow Newham's current maintenance protocols.

Accent Lighting Palette Dock Loop

All new general lighting around the Dock Loop is to be provided using a standard assembly consisting of columns, bracket arm and luminaire.

Columns and Brackets

- New columns and brackets should be constructed using marine-grade steel.
- Columns and brackets should be finished using wet-paint to ensure superficial damage can be easily touched up. Paint should be RAL7012.
- The scaling of the column and bracket is set out opposite.
- Where existing columns are to be used, a structural survey should be undertaken to establish the current condition, weight and windage tolerances.
- New columns should be installed where existing columns are not suitable. Hinged bases should be used to ease maintenance.
- The proposed use of banners should be considered in the calculation of weight and windage tolerances.

Lighting Specification

- We-ef's FLA470 luminaire family should be used.
- Lumen output and optics should be selected according to the specific scheme geometries.
- Lighting parameters for footpaths are provided in the Palette section of this design guide.
- Colour temperature should be 2700K.

Electrical Design

- Electrical design should be undertaken by a qualified engineer and conform to Newham standard detail.
- Outdoor power supplies may be provided in the base of the column. Standard door detail is provided opposite.

Accessories

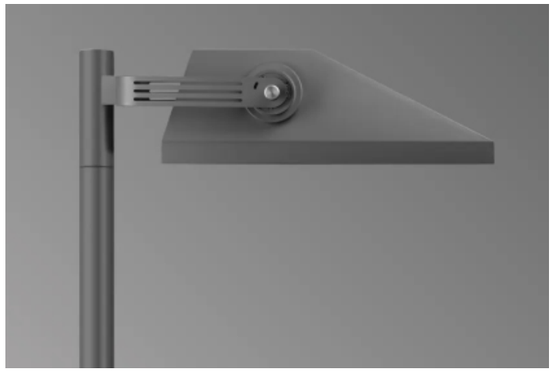
- Banners may be fixed to columns. Refer to the Wayfinding Design Guide for details of banner fixings.
- The weight and windage tolerances of the columns should be confirmed prior to installation of banners.

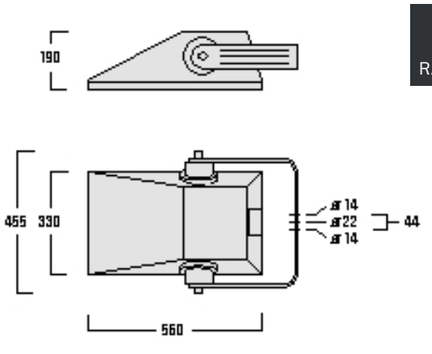
Control Philosophy

- New Dock Loop lighting equipment should be compatible with Newham's Telensa Central Management System.
- Once completed, dimming the lighting during off-peak periods should be trialled in selected areas.

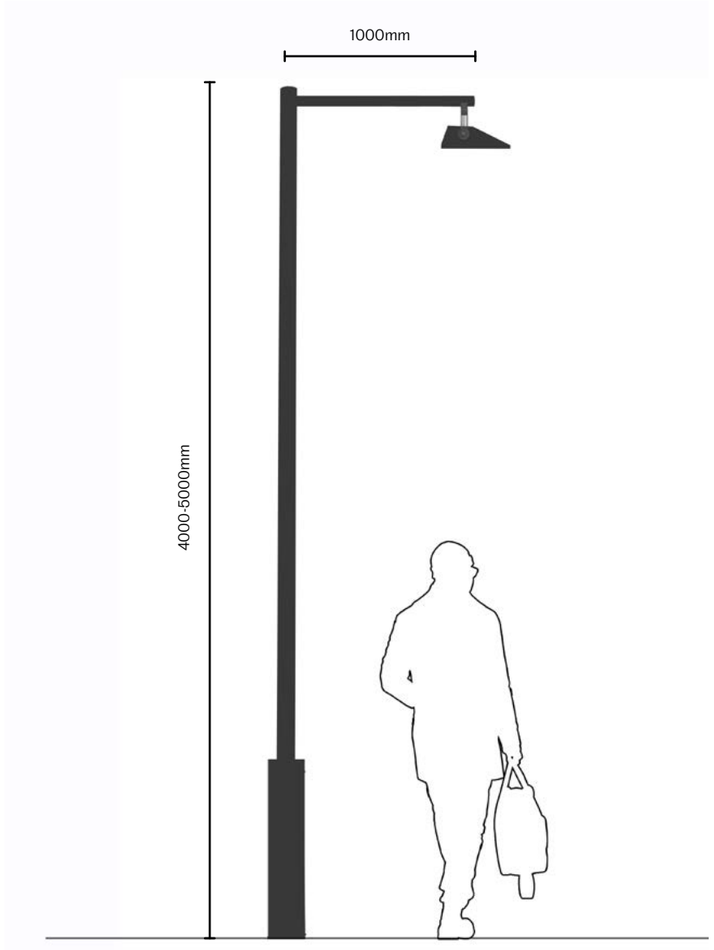
Maintenance

- The design life of the luminaires is L80@50,000hours (11 years at 12 hours per night). A stock of spares should be kept in case of premature failure, accident or vandalism.
- Regular maintenance of new Dock Loop lighting equipment should follow Newham's maintenance protocols.



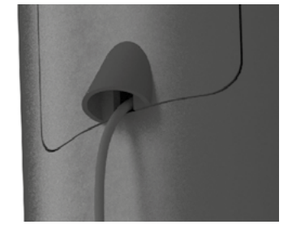


Preferred Dock Loop luminaire.



Dock Loop Column.

Photomontage showing Dock Loop assembly in use.



Door with mouse-hole detail.

Spotlight

Spotlights may be fixed to columns or other structures to provide accents within spaces or lighting to signs to support wayfinding.

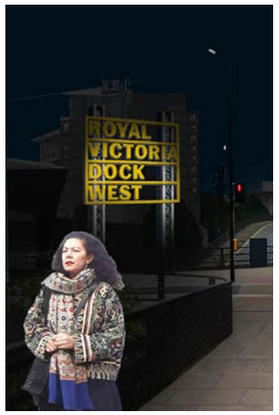
Physical Characteristics
- Luminaires should be die-cast aluminium or marine grade steel.
- Luminaires may be fixed to a column using an integrated clamp.
- Spotlight should be powder-coated in a black RAL 9005 finish.

Light Output
- Luminaires should use a DALI dimmable LED light source with colour rendering >90Ra.
- Luminaires should allow for a range of optical accessories - such as honey comb louvres - to minimise the risk of obtrusive light.
- Luminaires should be located to reduce the visibility of the light source and be oriented below 70' to reduce the portion of upward light and risk of spill.

Electrical Characteristics
- The luminaire driver should be incorporated into the body of the luminaire.

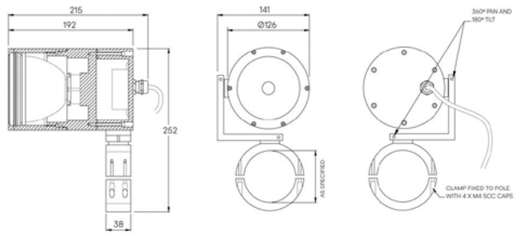
Control Philosophy
- Luminaires should allow for Telensa telecell so that it can be incorporated into Newham CMS.
- Luminaires should operate from dusk until midnight, reducing energy consumption in the early hours and extending the lifetime of the luminaire.

Maintenance
- The design life of the luminaires is L80@50,000hours (22 years at 6 hours per night). A stock of spares should be kept in case of premature failure, accident or vandalism.
- Regular maintenance of spotlights should follow Newham's policies.



Photomontage showing spotlight in use.

RAL9005



Exemplar Spotlight luminaire.

Handrail Lighting

Linear lighting inserts may be incorporated into handrail or walls at the edge of the water to frame key viewpoints. Handrail lighting should be used selectively, only at key viewpoints and ecologically sensitive locations.

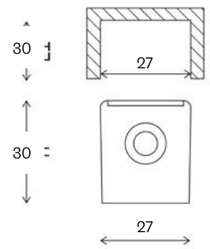
Physical Characteristics
- Luminaires should be housed in marine grade steel and be robust (minimum IK10).
- Wiring should be concealed to minimise the risk of vandalism.
- Extended runs should be made up of units of the same length so that a smaller range of spares can be carried.
- Insta Lighting 4020 family is preferred.

Lighting Characteristics
- Luminaires should use a DALI dimmable LED light source with colour rendering >80Ra.
- A colour temperature of 2700K should be used at the Dock Edge.
- Luminaires should be shielded and located to reduce the visibility of the light source.
- The offset from the vertical surface should be such that a grazed, hot-spot free lit effect is achieved.

Control Philosophy
- The Control arrangement should allow for Telensa telecell so that it can be incorporated into Newham CMS.
- Luminaires should operate from dusk until midnight, reducing energy consumption in the early hours and extending the lifetime of the luminaire.

Maintenance
- The design life of the luminaires is L80@50,000hours (22 years at 6 hours per night). A stock of spares should be kept in case of premature failure, accident or vandalism.
- Regular maintenance of linear lighting inserts should follow Newham's policies.


Example of handrail lighting.



Exemplar Handrail luminaire.

Darkness

Darkness is a key characteristic of the Royal Docks during the night-time hours. The provision of artificial lighting should be balanced with the protection of inherently dark areas and the provision of appropriate darkness within lighting schemes (contrast).

When setting out to produce a lighting design, users of this guide should consider the following: Is it necessary?
What effect could it have on others? Has it the potential to cause a nuisance? How can you mitigate and manage any potential adverse effects from your lighting installation?

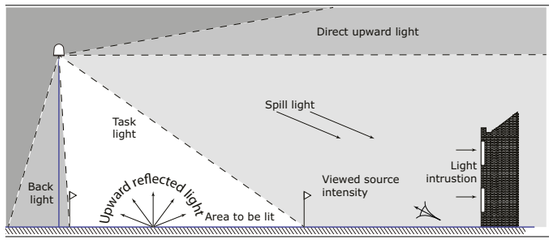
Environmental Zones

The range of different conditions across the Royal Docks means that it is not practicable to set specific parameters within this document. The Institute of Lighting Professionals' (ILP) Guidance Note on the Reduction of Obtrusive Light gives detailed guidance on the design of sensitive lighting schemes.

The ILP Guidance Note is a technical document that sets out the qualitative parameters for minimising the four types of obtrusive light: sky glow, light spill, glare and light nuisance. These parameters are set according to the developments location within an Environmental Zone. The table and plan on the right identifies the Environmental Zones for development areas across the Royal Docks. These should be observed in the design of new lighting schemes.

Lighting Design

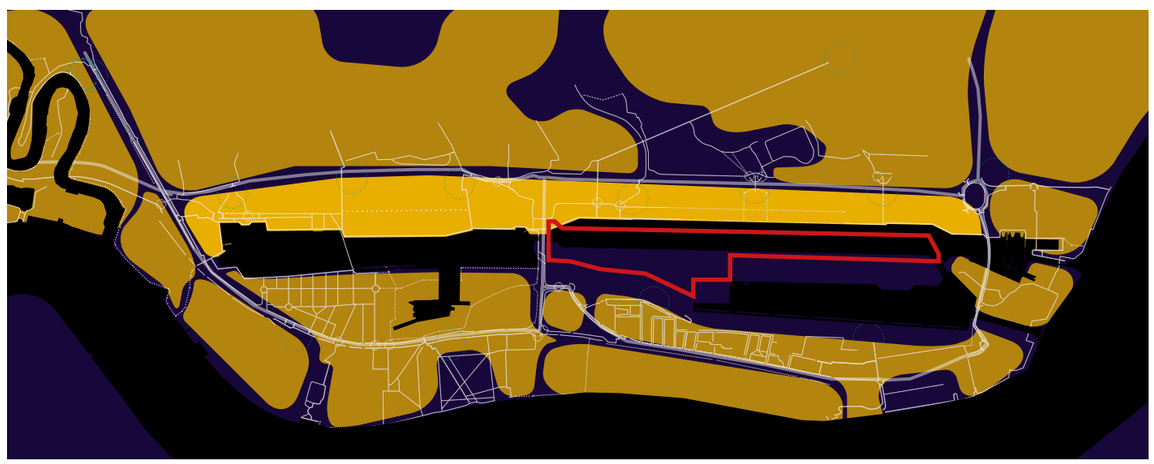
A key recommendation of the ILP Guidance is that developers should "employ a competent lighting designer with proven experience in the lighting application being considered [who] will provide a suitable lighting installation where all obtrusive lighting aspects are mitigated". This advice should be followed for all new public realm lighting schemes across the Royal Docks.



Types of Obtrusive Lighting,
Extract from ILP Guidance Note on the Reduction of Obtrusive Light (2020).

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

Types of Obtrusive Lighting,
Extract from ILP Guidance Note on the Reduction of Obtrusive Light (2020).



Environmental Zones of development areas across the Royal Docks.

Central management system

A key ambition of this Design Guide is to realise a single system for general lighting across the Royal Docks area through the use of a Central Management System (CMS).

Through consultation with the Street Lighting Department of the London Borough of Newham, all new general lighting apparatus should be compatible with the local authority's Telensa CMS.

Control Philosophy

- Telensa allows for the granular control of each item of street lighting apparatus through a wireless Ultra Narrow Band (UNB) system.
- Use of Telensa CMS is based on existing adoption by LB Newham and the ambition to simplify and coordinate lighting and control infrastructure while minimising potential conflict, redundancy and capital costs of different systems.
- The lighting system is managed through a cloud-based, control programme with a map interface.
- Lighting protocols can be set at a district level, meaning that street lighting levels can be set to respond to the different demands of residential, industrial, urban and ecologically sensitive areas.
- User access may be set at a local level to allow for estate maintenance and control of specific luminaires or groups of luminaires.

Physical Characteristics

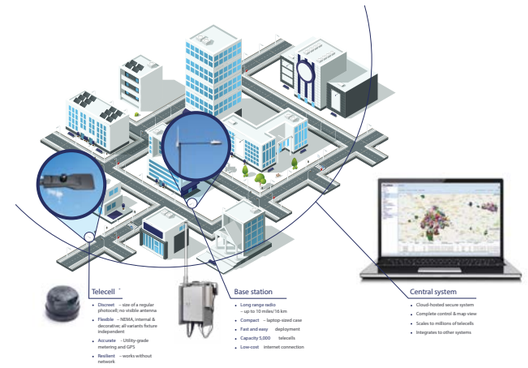
- Each item of lighting equipment should be fitted with a wireless Telecell. A range of connection options - including NEMA, internal or decorative telecells - are available, giving a degree of flexibility in the specification of luminaires.
- 7-pin NEMA sockets are currently the standard connection in Newham, but ZHAGA connectors should be considered as the connector is future-proofed, more adaptable and has a much smaller profile that is more suited to a wider range of smaller luminaires, including architectural lighting.
- Nodes are connected wirelessly to a local base-station that has capacity for up to 5000 telecells. The base-station is the size of a laptop PC.

Connectivity

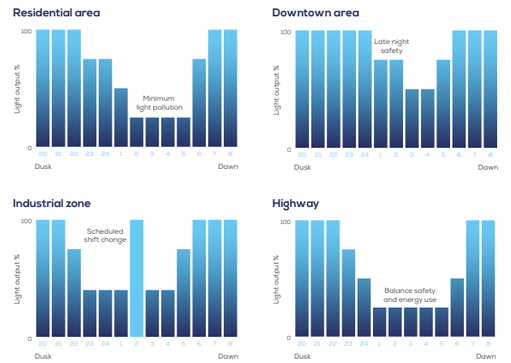
- The Telensa system can be augmented with a range of third-party sensors, meaning that the lighting CMS can form the basis of a wider evolving smart-city infrastructure that could include traffic analysis, waste analytics, drainage and air-quality.

Installation and Maintenance

- Users of this guide should liaise with the Royal Docks Lighting Review Panel on the details of the installation and maintenance of lighting apparatus.



CMS Schematic (Telensa).



Example of district dimming protocols (Telensa).

Telecell fitted to a standard LED street light.

Retail Lighting

Example of a simple design sheet to provide basic lighting design guidance for the exterior of retail fronts.

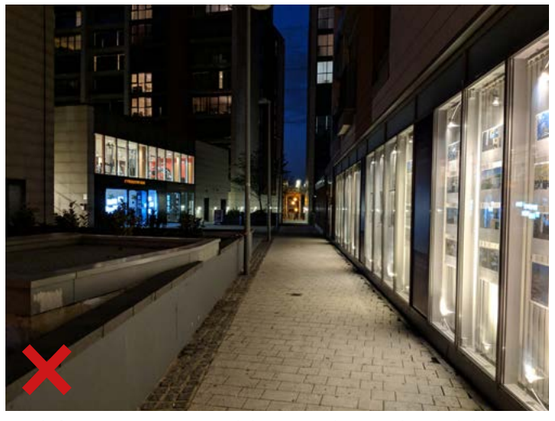
Illuminated signage should use subtle and legible backlighting or channel lettering

Box signage and spot lighting should be avoided to improve legibility

Sensitive white lighting creates an attractive, high quality ambience

Dynamic colour-change lighting not in keeping with the character of Royal Docks

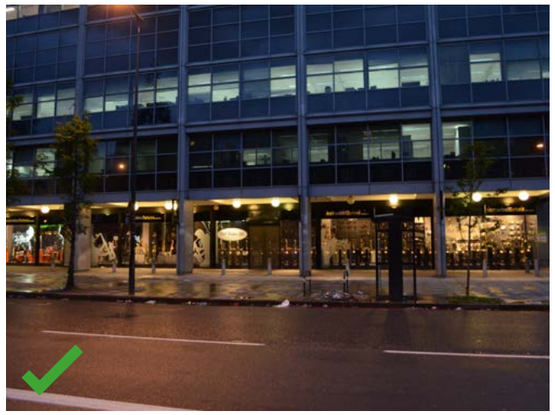
Selective out-of-hours lighting before agreed curfew



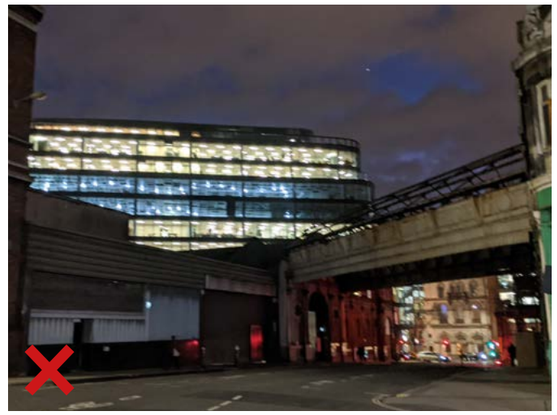
Over-lit frontage wastes money and electricity and creates obtrusive light

Office Lighting

Example of a simple design sheet to provide basic lighting design guidance for the exterior of office buildings.

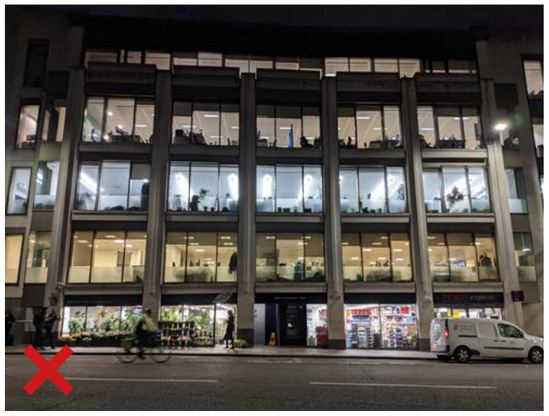


Interior luminaires shielded or positioned to reduce glare



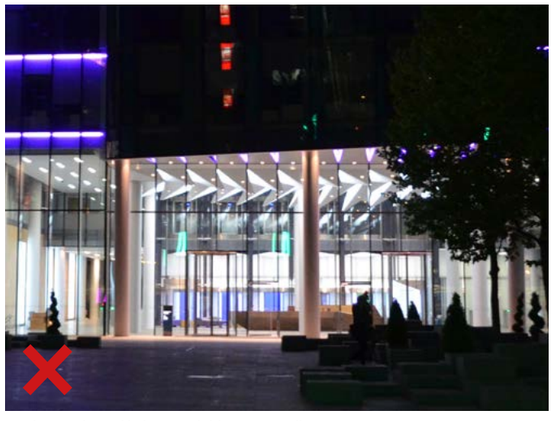
High luminance office dominates skyline

Office lighting turned off out-of-hours



Lighting to under-occupied office waste money and electricity

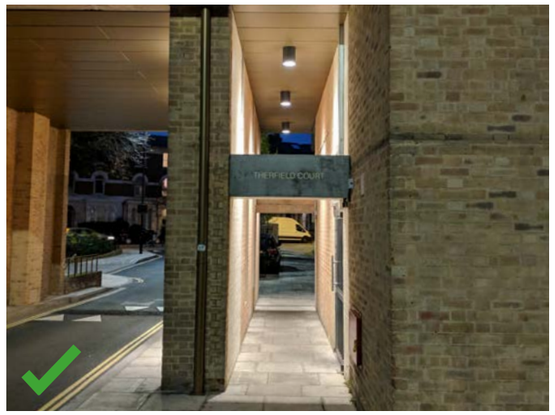
Careful lobby illumination supports character of street



Bright or coloured lighting to lobbies is visually jarring

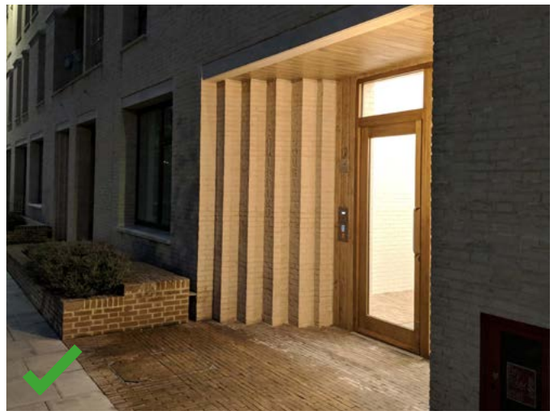
Residential Lighting

Example of a simple design sheet to provide basic lighting design guidance for the exterior of residential buildings.

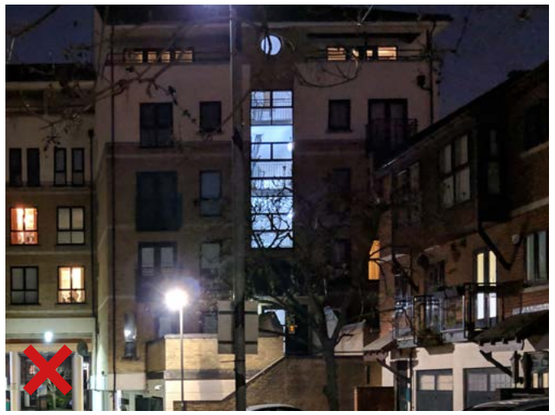


Sensitive low-glare lighting to walkways expresses domestic character

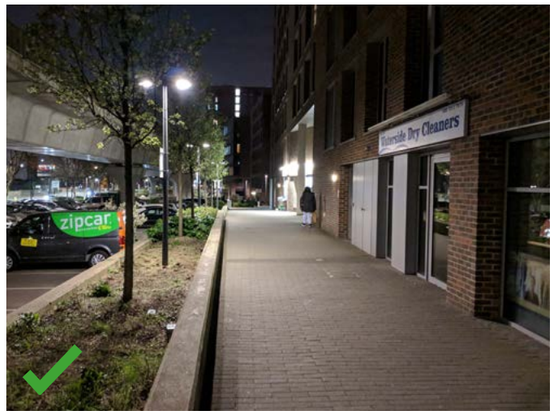
Unsympathetic soffit mounted lighting to walkways creates glare and spill light



Lighting to street entrances and communal spaces supports character of street

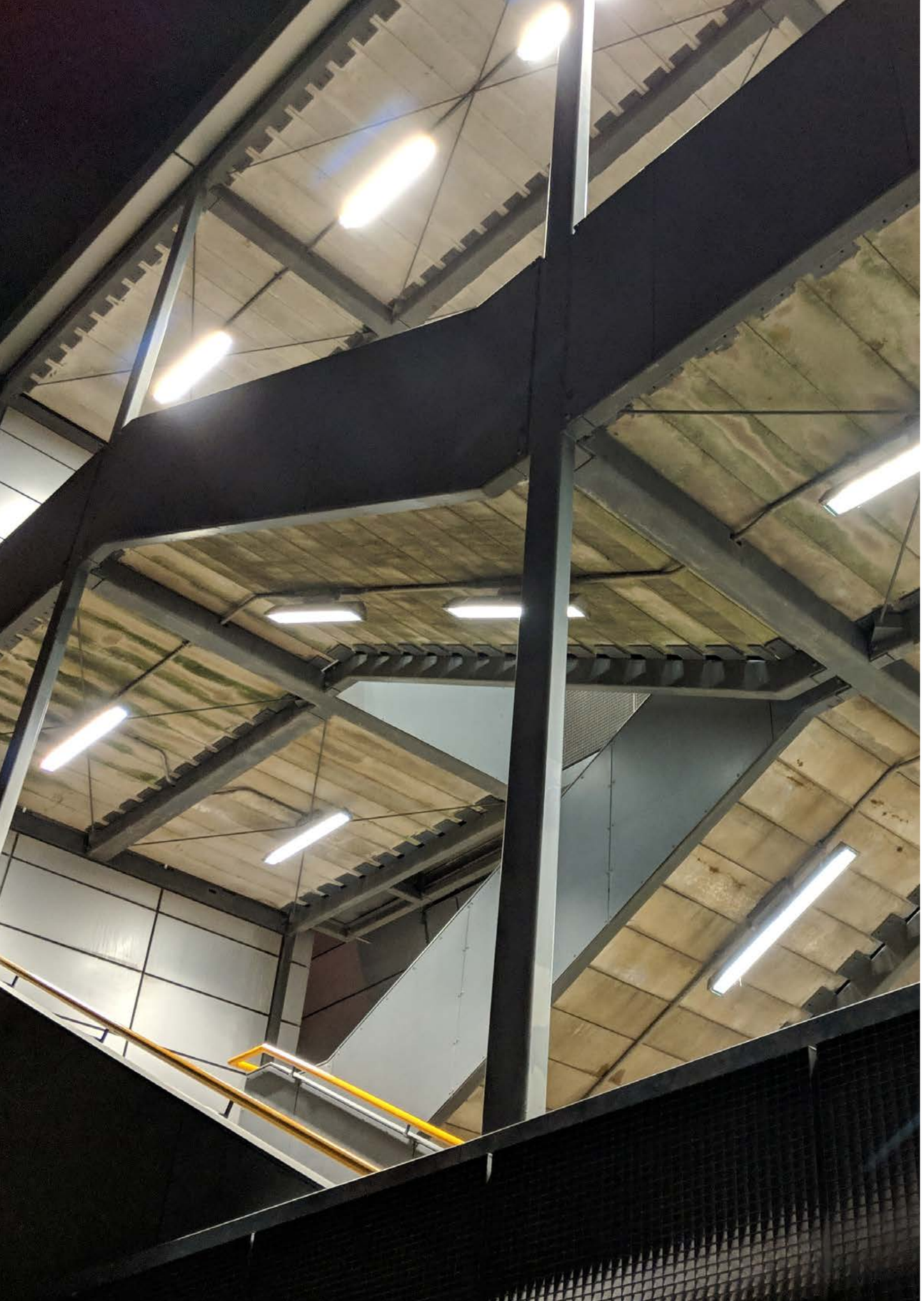


Low quality, unswitched lighting to internal communal spaces



Columns located with landscape to provide clear routes

Cluttered, poorly located lighting increases the risk of vehicle strikes



A. Detailed masterplans

Lighting masterplan - Project codes

The following pages provide detailed plans of the locations of public realm proposals set out in the Lighting Design Guide. The project codes should be read in conjunction with the detailed plans.

For guidance on the public realm proposals, refer to chapter 3, Palettes. For technical guidance on selected palette components, refer to chapter 5, Design Information.

Project Codes

L - Lighting Design Guide

BP - Baseline Palette
AP - Accent Palette
ST - Special Treatments

Project Code	Project Description
L-BP-MR-01	Major road lighting parameters
L-BP-MR-02	Major Road downgrade porject. Local road lighting parameters following downgrade
L-BP-LR-01	Local road lighting parameters
L-BP-PR-01	Public route lighting parameters
L-AP-S1-01	Lighting of wayfinding element outside Canning Town station on Silvertown Way
L-AP-S1-02	Stitch 1 bespoke lighting treatment along route
L-AP-S1-03	Lighting integrated with wayfinding beacon at north west perimeter of Thameside West Development
L-AP-S1-04	Lighting integrated with wayfinding beacon next to future Thameside West DLR station
L-AP-S1-05	Spotlight to Area sign on Silvertown Way at junction with Tidal Basin Road
L-AP-S1-06	Feature lighting to the Crystal
L-AP-S1-07	Spotlight to Area sign on dock path south of the Crystal towards Silvertown Way underpass
L-AP-S2-01	Stitch 2 bespoke lighting treatment along route
L-AP-S2-02	Lighting of wayfinding element on Victoria Dock Road at junction with Freemasons Road
L-AP-S2-03	Lighting integrated with wayfinding beacon on Victoria Dock Road at junction with Freemasons Road
L-AP-S2-04	Spotlight to Area sign outside ExCel eastern entrance
L-AP-S2-05	Spotlight to Area sign west of Millennium Mills at at north west perimeter of Silvertown Quays Development
L-AP-S2-06	Feature lighting to Millennium Mills
L-AP-S2-07	Lighting integrated with wayfinding beacon at south west perimeter of Silvertown Quays Development
L-AP-S2-08	Ligthing supporting wayfinding to viaduct pier on North Woolwich Road at junction with Cunningham Avenue
L-AP-S2-09	Lighting of wayfinding element on Royal Crest Avenue at junction with Cunningham Avenue at Corinthian Square
L-AP-S2-10	Lighting integrated with wayfinding beacon at junction of Royal Wharf Walk and Bonnet Street
L-AP-S3-01	Stitch 3 bespoke lighting treatment along route
L-AP-S3-02	Lighting of wayfinding element at junction of Capital Ring footpath and Stansfield Road
L-AP-S3-03	Ligthing supporting wayfinding to DLR viaduct pier on Dockside Road towards Royal Albert DLR station
L-AP-S3-04	Spotlight to Area sign on north Connaught Bridge at Dockside Road
L-AP-S3-05	Spotlight to Area sign on south Connaught Bridge north of London City Airport
L-AP-S3-06	Lighting of wayfinding element at A112 and Connaught Road roundabout
L-AP-S3-07	Ligthing supporting wayfinding to DLR viaduct pier at south east perimeter of Silvertown Quays Development
L-AP-S3-08	Ligthing supporting wayfinding to DLR viaduct pier on North Woolwich Road at Bramwell Way
L-AP-S4-01	Stitch 4 bespoke lighting treatment along route
L-AP-S4-02	Lighting of wayfinding element on Cyprus Place north of Cyprus DLR station
L-AP-S4-03	Lighting integrated with wayfinding beacon in forecourt of Gallions Reach DLR station
L-AP-S4-04	Feature lighting to Gallions Pump House
L-AP-S4-05	Ligthing supporting wayfinding to DLR viaduct at east perimeter of Gallions Reach Roundabout south of Atlantis Avenue
L-AP-S4-06	Lighting integrated with wayfinding beacon at junction of Armada Way and Gallions Road with Atlantis Ave
L-AP-S4-07	Lighting of wayfinding element at junction of Armada Way and Gallions Road with Atlantis Avenue
L-AP-S4-08	Spotlight to Area sign at turning of Hudson Way to Lockside Way
L-AP-S4-09	Spotlight to Area sign on dock edge at Woolwich Manor Way
L-AP-S4-10	Lighting of wayfinding element at Pier Road junction with Woodman Street
L-AP-S4-11	Supergraphics to Woolwich Foot Tunnel North or boundary walls within the area
L-AP-S4-12	Lighting integrated with wayfinding beacon at Pier Road bus stop/lane east of Woolwich Foot Tunnel North
L-AP-S4-13	North Woolwich Pier and Ferry Terminal
L-AP-S5-01	Lighting integrated with wayfinding beacon on Siemens Brothers Way north of the Crystal
L-AP-S5-02	Dock Loop lighting column to be installed at regular intervals along
L-AP-S5-03	Low level lighting to maritime objects along the dock edge / stitch route
L-AP-S5-04	Lighting integrated with wayfinding beacon in Royal Victoria Square
L-AP-S5-5	Lighting integrated with wayfinding beacon in Millennium Mills Square
L-AP-S5-06	Lighting integrated with wayfinding beacon on dock edge east of north Connaught Bridge
L-AP-S5-07	Lighting integrated with wayfinding beacon on dock edge at Royal Albert Quay south of junction with Royal Albert Dock
L-AP-S5-08	Lighting integrated with wayfinding beacon on dock edge south east of Beckton Park DLR station
L-AP-S5-09	Lighting integrated with wayfinding beacon on dock edge at Capital Ring footpath south east of Cyprus DLR station
L-AP-S5-10	Lighting integrated with wayfinding beacon on dock edge at Capital Ring footpath south west of Cyprus DLR station
L-ST-H-01	Handrail lighting at viewpoint from Silvertown Way viaduct east and west
L-ST-H-02	Handrail lighting at viewpoint from Crystal Gardens east over Royal Victoria Dock
L-ST-H-03	Handrail lighting at viewpoint from Thameside West over the River Thames south-west
L-ST-H-04	Handrail lighting at viewpoint from Royal Victoria Bridge east and west over the Docks' basin
L-ST-H-05	Handrail lighting at viewpoint from Connaught Bridge east and west over the Docks' basin
L-ST-H-06	Handrail lighting at viewpoint from Lyle Park over the River Thames south
L-ST-H-07	Handrail lighting at viewpoint from Royal Wharf Walk over River Thames south
L-ST-H-08	Handrail lighting at viewpoint from Thames Barrier Park over the River Thames and the Thames Barrier
L-ST-H-09	Handrail lighting in Beckton Park
L-ST-H-10	Handrail lighting along dock edge
L-ST-H-11	Handrail lighting at viewpoint from Steve Regrave Bridge
L-ST-H-12	Handrail lighting at viewpoint from Bascule Bridge
L-ST-H-13	Handrail lighting in Royal Victoria Gardens
L-ST-D-01	Royal Victoria Dock area of preserved darkness
L-ST-D-02	Royal Albert Dock area of preserved darkness
L-ST-D-03	Beckton Park area of preserved darkness
L-ST-D-04	River Thames area of preserved darkness
L-ST-D-05	Royal Victoria Gardens area of preserved darkness
W-ST-S-01	Feature lighting to Silvertown Way Viaduct
W-ST-S-02	Feature lighting to Royal Victoria Dock cranes
W-ST-S-03	Feature lighting to West Silvertown chimney
W-ST-S-04	Feature lighting to Millenium Mills
W-ST-S-05	Feature lighting to Silo D
W-ST-S-06	Feature lighting to North Woolwich Road comercial buildings
W-ST-S-07	Feature lighting to West Silvertown chimney
W-ST-S-08	Feature lighting to DLR vaduct and piers
W-ST-S-09	Feature lighting to Connaught Bridge
W-ST-S-10	Feature lighting to Tate & Lyle sugar refinery
W-ST-S-11	Feature lighting to Crossrail wall on Albert Road
W-ST-S-12	Feature lighting to North Woolwich foot tunnel area
W-ST-S-13	Feature lighting to North Woolwich Ferry terminal
W-ST-S-14	Feature lighting to DLR wall on Newland Street
W-ST-S-15	Feature lighting to Steve Redgrave Bridge
W-ST-S-16	Feature lighting to Gallions Pumping Station
W-ST-S-17	Feature lighting to Royal Docks Pumping Station
W-ST-S-18	Feature lighting to Gallions Point slipway
W-ST-P-01	Public space lighting at Western Gateway
W-ST-P-02	Public space lighting at Excel western terrace and Royal Victoria Square
W-ST-P-03	Public space lighting at Crystal Gardens
W-ST-P-04	Public space lighting at Millenium Mills Square
W-ST-P-05	Public space lighting at Connaught Crossing / Royal Docks Adventure Centre
W-ST-P-06	Public space lighting at Royal Albert DLR and Building 1000
W-ST-P-07	Public space lighting at Asta community centre
W-ST-P-08	Public space lighting at Royal Docks Learning and Activity Centre
W-ST-P-09	Public space lighting at Pier Parade
W-ST-P-10	Public space lighting at Gliions Reach DLR forecourt

Lighting baseline palette masterplan

MAP KEY

- Greater London Authority Project Sites
- Stitch Route

PALETTE KEY

- Major road
- Major road (to be downgraded)
- Local road
- Pedestrian and cycle route
- Station lighting

PROJECT CODES

L-BP-MR-XX	Major road *Refer to chapter 3, Palettes, for further guidance*
L-BP-LR-XX	Local road *Refer to chapter 3, Palettes, for further guidance*
L-BP-PR-XX	Public route *Refer to chapter 3, Palettes, for further guidance*
L-BP-SL-XX	Station lighting *Refer to chapter 3, Palettes, for further guidance*

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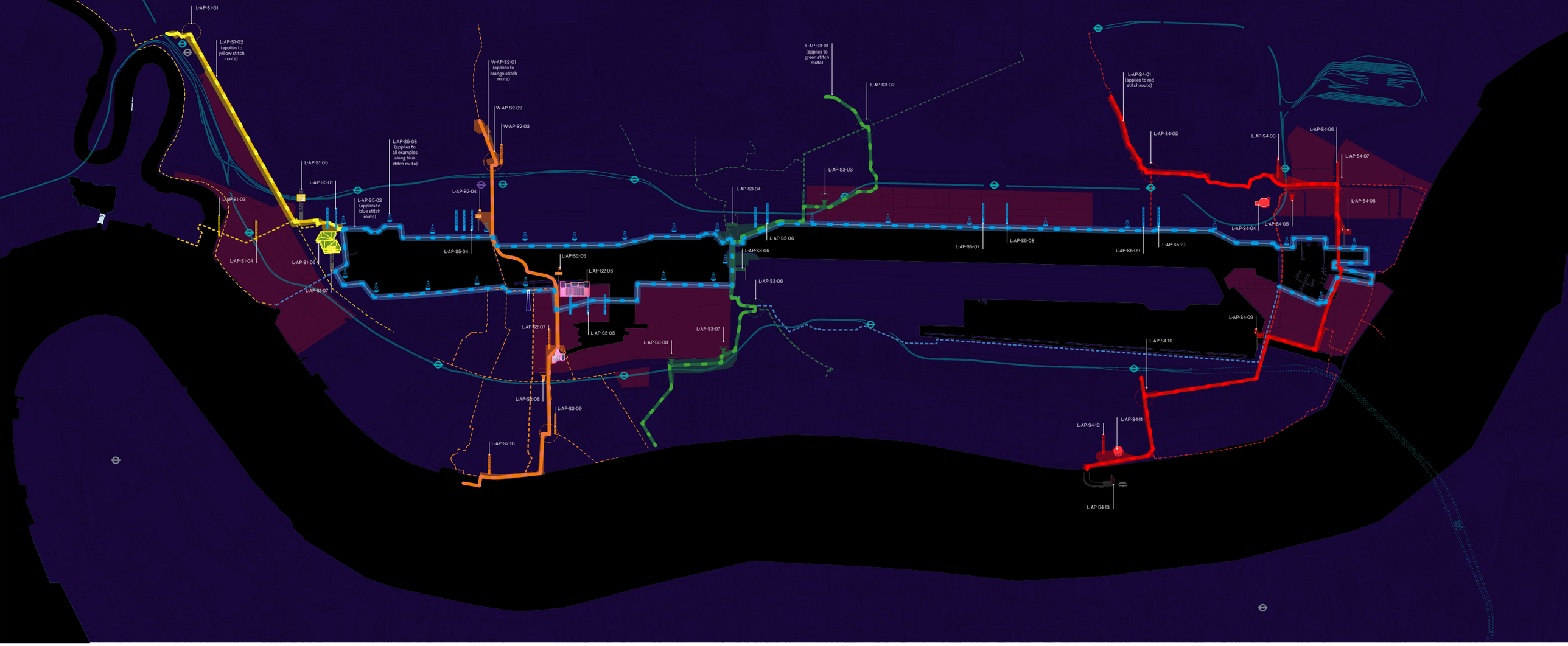
Project:	Royal Docks Public Realm Design Guides
Drawing Title:	Lighting - Baseline Palette
Scale:	1:7500@A1
Status:	S2
Drwg No:	

Job Code	Orlginator	Zone	Level	Type	Role	Number	Rev
ROY- 5TH- XX- XX- DR- A-						0081	P01

Lighting accent palette masterplan



MAP KEY

- Greater London Authority Project Sites

PALETTE KEY

- Stitch 1: Leaway to the Docks
  Stitch lighting refocusses on pedestrian environment
- Stitch 2: Freemasons Road to the Thames
  Stitch lighting creates pools of light in key locations
- Stitch 3: Connaught Crossings
  Stitch lighting incorporates playful coloured lighting to infrastructure
- Stitch 4: Beckton to North Woolwich
  Stitch lighting uses light touch approach to improve existing
- Stitch 5: Dock Loop
  Stitch lighting assists wayfinding whilst also allowing unobstructed views over the water
- Maritime objects lighting
  Low level lighting to dock edge objects
- Public space beacons
  Lighting columns installed at public spaces along stitches
- Area signs
  Lighted beacons installed at intersection of Dock Loop and the stitches
- Projected lighting
  Additional feature lighting along stitches
- Uplighting DLR viaduct piers
  Lighting to aid in wayfinding along stitches

PROJECT CODES

L-AP-S1-XX	Stitch 1 *Refer to chapter 3, Palettes, for further guidance*
L-AP-S2-XX	Stitch 2 *Refer to chapter 3, Palettes, for further guidance*
L-AP-S3-XX	Stitch 3 *Refer to chapter 3, Palettes, for further guidance*
L-AP-S4-XX	Stitch 4 *Refer to chapter 3, Palettes, for further guidance*
L-AP-S5-XX	Stitch 5 *Refer to chapter 3, Palettes, for further guidance*

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Project:	Royal Docks Public Realm Design Guides
Drawing Title:	Lighting - Accent Palette
Scale:	1:7500@A1
Status:	S2
Drwg No:	

Job Code	Orlginator	Zone	Level	Type	Role	Number	Rev
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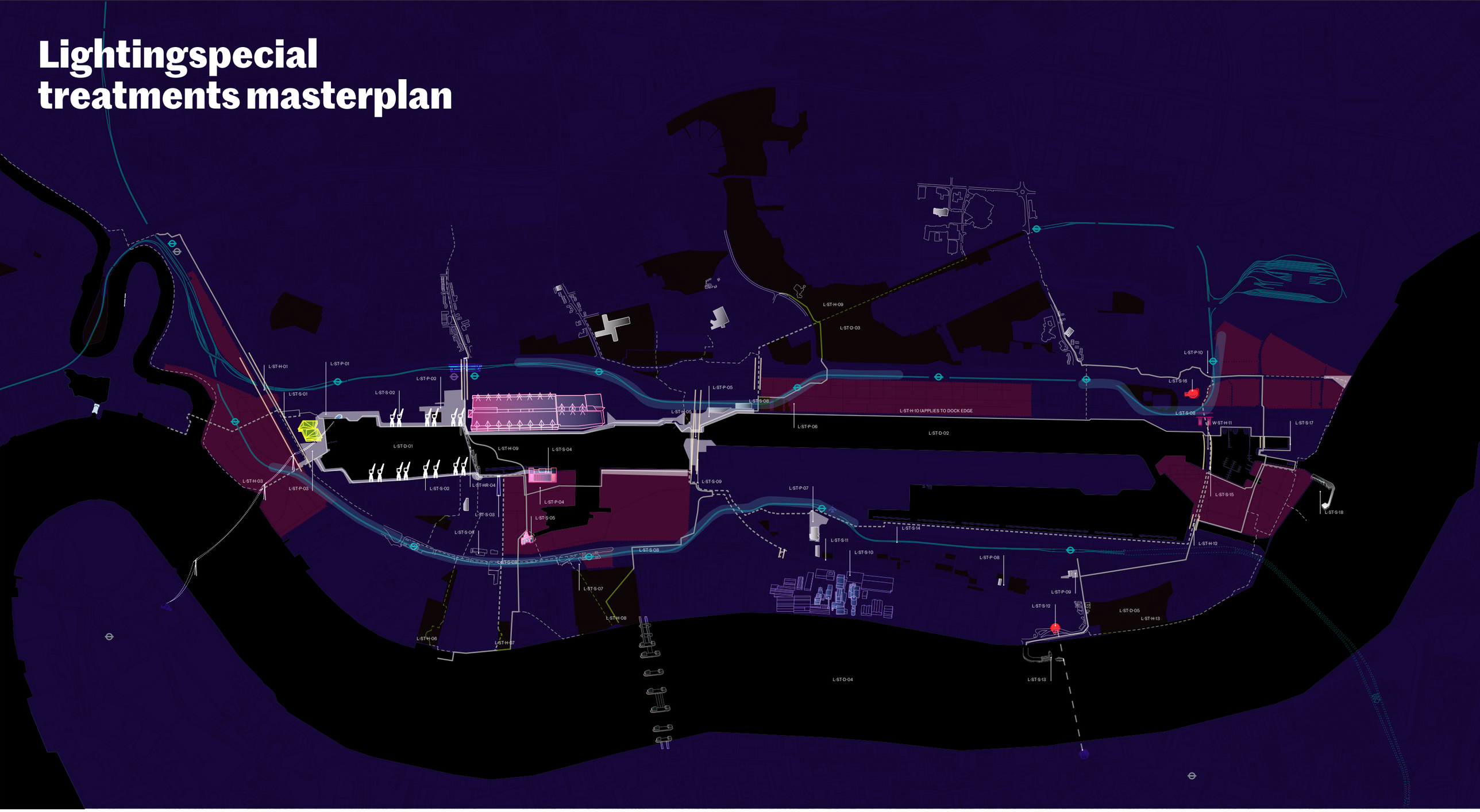
Lightingspecial treatments masterplan



MAP KEY

- Greater London Authority Project Sites
- Stitch Route

PALETTE KEY

- Feature lighting to buildings and structures
- Feature lighting to public spaces
- Areas of darkness

PROJECT CODES

L-ST-H-XX	Handrail lighting framing views *Refer to chapter 3, Palettes, for further guidance*
L-ST-S-XX	Lighting of buildings / structures *Refer to chapter 3, Palettes, for further guidance*
L-ST-P-XX	Lighting of public spaces *Refer to chapter 3, Palettes, for further guidance*
L-ST-D-XX	Areas of preserved darkness *Refer to chapter 3, Palettes, for further guidance*

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Project:	Royal Docks Public Realm Design Guides
Drawing Title:	LIghtIng - Speclal Treatments
Scale:	1:7500@A1
Status:	S2
Drwg No:	

Job Code	Orlglnator	Zone	Level	Type	Role	Number	Rev
ROY-	5TH-	XX-	XX-	DR-	A-	0083	P01

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