



9. Theme 5 - A Well-designed Charlton Riverside

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9.1 Introduction

Charlton Riverside will become a new, mixed use neighbourhood, with the introduction of more than 5,000 (and up to 7,500) new homes. Although large parcels of land will remain in commercial/industrial use, there will be a significant change in land use across the rest of the site to clusters of smaller scale retail, commercial and industrial at ground floor level, with residential above, together with some purely residential blocks. Where possible, and appropriate, a mix of uses (including commercial and employment) will be delivered, integrated both horizontally and vertically within development parcels.

9.2 Centres and Hubs

A new neighbourhood centre, focused on the southern section of Anchor and Hope Lane would be the principal location for retail provision, with a mix of comparison and convenience shopping.

The new centre would be somewhere between a District Centre and a large Local Centre as defined in the Core Strategy. It is intended to provide for local needs and will support the Core Strategy policy that promotes Woolwich as the main Metropolitan Centre in Royal Greenwich. It will complement the proposed (specialist) District Centre at North Greenwich and the Local Centre at Charlton Village. Retail units should be provided in a range of footprints and offer the opportunity of a range of tenants. There should be at least one medium scale food store.



Key

-  Site boundary
-  Neighbourhood centre
-  Local centres

Figure 9.1: Neighbourhood and local centres

In addition to the neighbourhood centre, there will be other locations where smaller retail hubs (or individual units) will be required. The western end of Woolwich Road and points close to and along the River Thames may be capable of supporting small groupings of retail in conjunction with other commercial uses. These opportunities should be actively pursued, particularly close to the river, as they will reinforce the River Thames and the sequence of spaces along the river, as a destination for visitors and residents.

Within the main body of the site, in addition to the neighbourhood and local centres, there will be the opportunity, for local retail which would be embedded within individual development parcels. These small, local shops would help to activate and animate street frontages, introduce non-residential uses at ground floor and provide for the day-to-day needs of resident and working populations in the immediate vicinity.



Figure 9.2: Neighbourhood Centre/High Street

9.3 Other Commercial Activities

There is relatively little in the way of food and drink provision at Charlton Riverside, with a couple of pubs and cafés scattered across the site. With the introduction of a new resident population and an existing, and potentially greater, employee population, there will clearly be both a demand and an opportunity to dramatically increase the level, mix and quality of food and drink provision. In addition, the existing provision, wherever possible, should be retained and enhanced, for example, with public realm improvements and better access.

Much of the new provision will be commercial, but there should, as far as possible, be a balance between local enterprises and regional and national providers. There is also an opportunity for provision to be made in community facilities, reinforcing these as hubs for social interaction and community cohesion.

The neighbourhood centre is an obvious location for some of these activities, as are the local centres and these might provide a mix ranging from sandwich shops through to higher end restaurants. There is also scope for occasional provision embedded within development parcels, potentially in conjunction with the locally focused retail, and this might include uses such as gyms, laundrettes, music and theatre or other services or amenities. There is also a very clear opportunity to deliver food and drink outlets close to and along the banks of the River Thames. With the potential to create more of a destination at key points along the river, it is essential that there should be a mix of commercial activity, including retail, but with a focus on opportunities for people to stop, eat and take their leisure.



Key

-  Site boundary
-  Primary A class uses locations, including retail.
-  Secondary local retail and facilities
-  Riverside Wharf

Figure 9.3: Retail and commercial uses

9.4 Heritage Assets

The Bowater Road area presents the substantial remains of an important industrial site - developed by the first multinational business in the UK, operating at the forefront of the telegraph and telephone industries. These technologies were central to the development of Britain's overseas interests at the end of the Nineteenth Century and are thus of international significance. The contribution of Siemens, amongst other local firms, to both First and Second World War efforts significantly advanced developments in communications and supply lines, most particularly with the PLUTO pipeline, and after the war telecommunications continued to be an important industrial activity on the down-river Thames until the 1960s.

Aside from the intrinsic attraction of the waterside location, with its views across, up and down the river, the Charlton Riverside is significant for its former role as a transport and communications artery, serving riverside industries as well as the hinterland of Charlton and beyond. A number of structures and heritage features contribute to the narrative of the area's development; from west to east these are:

- Angerstein & Murphy's Wharfs
- Christie's Wharf
- Corys Barge Works
- Durham Wharf
- Anchor & Hope Foreshore
- Maybanks Jetty
- Thames Wharf & Flint Glass Jetty
- Longs Wharf

- Thames Barrier
- Steam Factory (outside the masterplan boundary)

A strong planning and design rationale will be required for any proposals which result in the removal of buildings deemed to be heritage assets and planning applicants are encouraged to engage early in the planning process with the Royal Borough on such sites.

To help inform the planning rationale for heritage assets within the SPD study area, the Heritage Study proposes a number of interventions to protect and enhance the existing built heritage.

These proposals include:

- Engage with Historic England and the Environment Agency to explore the possibility of conferring listed status for the Thames Barrier and its curtilage (there is a recognition that such a designation may have consequences for ongoing operations and this would be a key consideration in any discussions);
- Seeking listed status for nos 18, 20 and 26 Bowater Road;
- Seeking locally listed status for a number of other buildings, including the remaining Siemens buildings, Howick Arms, Howick Mansions, Windrush School, the Hope and Anchor public house and Cory's bargeworks;
- Designation of a conservation area encompassing the Thames Barrier, the Siemens buildings and Bowater Road,



Industrial heritage, 17-19 Bowater Road



Former Siemens works, Bowater Road

Windrush School and the easternmost section of the Woolwich Road within the SPD and extending across to the Commonwealth buildings (Steam Factory) to the west of Warspite Road, and

- Designate a second Conservation Area encompassing Cory's Wharf, Vaizey's Wharf, the Hope and Anchor and Atlas and Derrick Gardens.

Further detail on the assessment and its conclusions and recommendations is set out in the Charlton Riverside Employment Activities and Heritage Study.

The photos, opposite, show some of the key heritage assets identified by the Charlton Riverside Employment Activities and Heritage Study.



Cory's buildings, Riverside



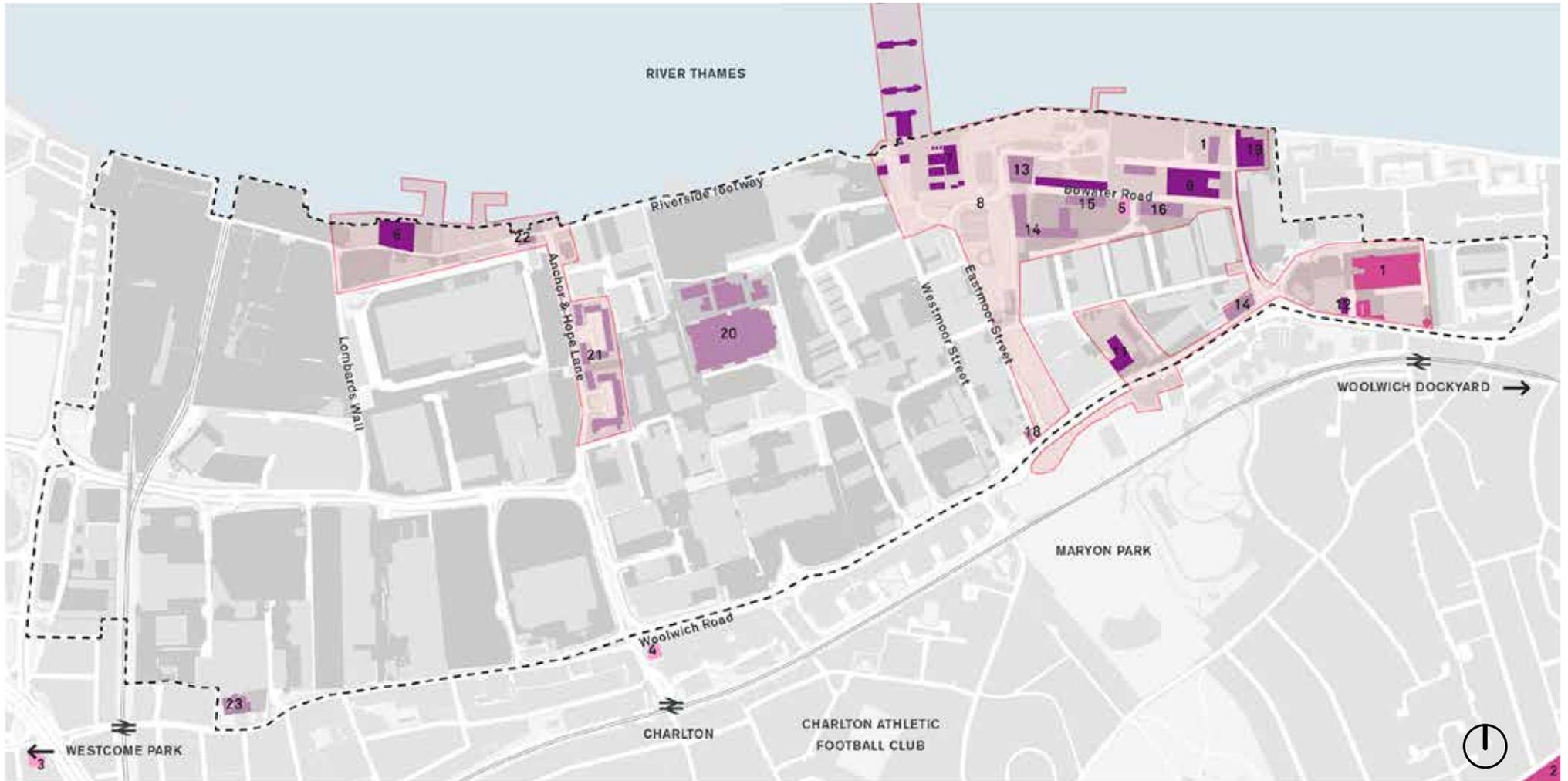
Former public house, now a vet's surgery



Thames Barrier, including the land based facilities



Workers cottages at Atlas and Derrick Gardens



Key		Existing historic assets	
	Study area boundary (for Heritage Asset Study)		Proposed nationally listed heritage asset
	Nationally listed heritage asset		Proposed locally listed heritage asset
	Locally listed heritage asset		Proposed Conservation Area
		1.	Commonwealth buildings (inc. former steam factory)
		2.	Repository Woods
		3.	Angerstein Arms
		4.	The Antigallican
		5.	17-19 Bowater Road
		6.	Cory's
		7.	Thames Barrier complex
		8.	26, 20, 18 Bowater Road
		9.	8-10 Bowater Road & Mellish House
		10.	GPO Cable building
		11.	Windrush Primary School
		12.	Former Apprentice School
		13.	34 Bowater Road
		14.	37 Bowater Road
		15.	25 Bowater Road
		16.	15 Bowater Road
		17.	Trinity Wharf
		18.	Howick Pub & Howick Mansions
		19.	Victoria Inn
		20.	Stone Foundry (Jubilee Foundry)
		21.	Atlas & Derrick Gardens
		22.	Anchor & Hope Pub
		23.	East Greenwich Fire Station
		24.	Thames Barrier & Bowater Road Conservation Area
		25.	Riverside Conservation Area

Figure 9.4: Historic assets map (from the Charlton Riverside Employment and Heritage Study, 2017)

9.5 Residential

The Royal Borough of Greenwich is committed to 50% family housing delivered in a low-to-medium rise, high density form. Family dwellings might be individual houses (typically town houses over three floors), maisonettes or duplexes and larger apartments. These might be delivered in combination, with groupings of town houses or maisonettes with apartments above. Smaller apartments will also comprise part of the mix, as will assisted and sheltered accommodation and student accommodation. Design standards for all residential development should have reference to the London Housing Design Guide and the Housing SPG, and any future revisions of these documents will apply.

Residential density will be calculated with reference to the London Plan Density Matrix, bearing in mind that Charlton Riverside is not a central location and that PTAL is, typically, between 2 and 4 across much of the site. Should there be a significant change in transport infrastructure (e.g., new Underground or DLR connection), then Royal Greenwich will review the effect this has on the structure of the masterplan area.

Charlton Riverside is almost entirely located within zones of flood risk, both fluvial and surface water. Housing proposals will have to make reference to this risk and show how it has been mitigated by detailed design. The Environment Agency provides guidance in this matter and has advised that although the site is protected by both the Thames Barrier and river defences that

will, eventually, be enhanced, the level of risk is such that certain measures must be incorporated into housing design. These include:

- No habitable rooms at ground floor level;
- Consider raising slab levels to provide ground floors with an element of free board relative to flood levels;
- Avoid any development space in basements or semi-basements, and
- Provide refuge spaces and safe means of escape from dwellings in a flood event.



Contemporary housing using traditional materials



Housing designed with private and communal outdoor space

9.6 Housing Design

The provision of dual aspect dwellings should be maximised and, where single aspect dwellings are provided, they should not be north facing.

Rear boundaries of properties should not back onto streets. Dwellings should have access to private individual or communal open space, as appropriate, sufficient for the needs of residents, accessible and well-managed.

Development should meet the requirements of the Greener Greenwich SPD in terms of waste and refuse management, and also consider alternative, innovative approaches to managing waste/recycling.

Development should incorporate, at the building and block level, those measures necessary to achieve high performance in terms of energy efficiency, water efficiency, heating, cooling and insulation.

Residential development should be delivered in line with the provision of the Core Strategy in respect of noise, light, air quality and vibration issues. These are particularly important when considering the design of housing within mixed use parcels or adjacent to existing or new non-residential uses (see Core Strategy Policy H5 and supporting text).

9.7 Parking

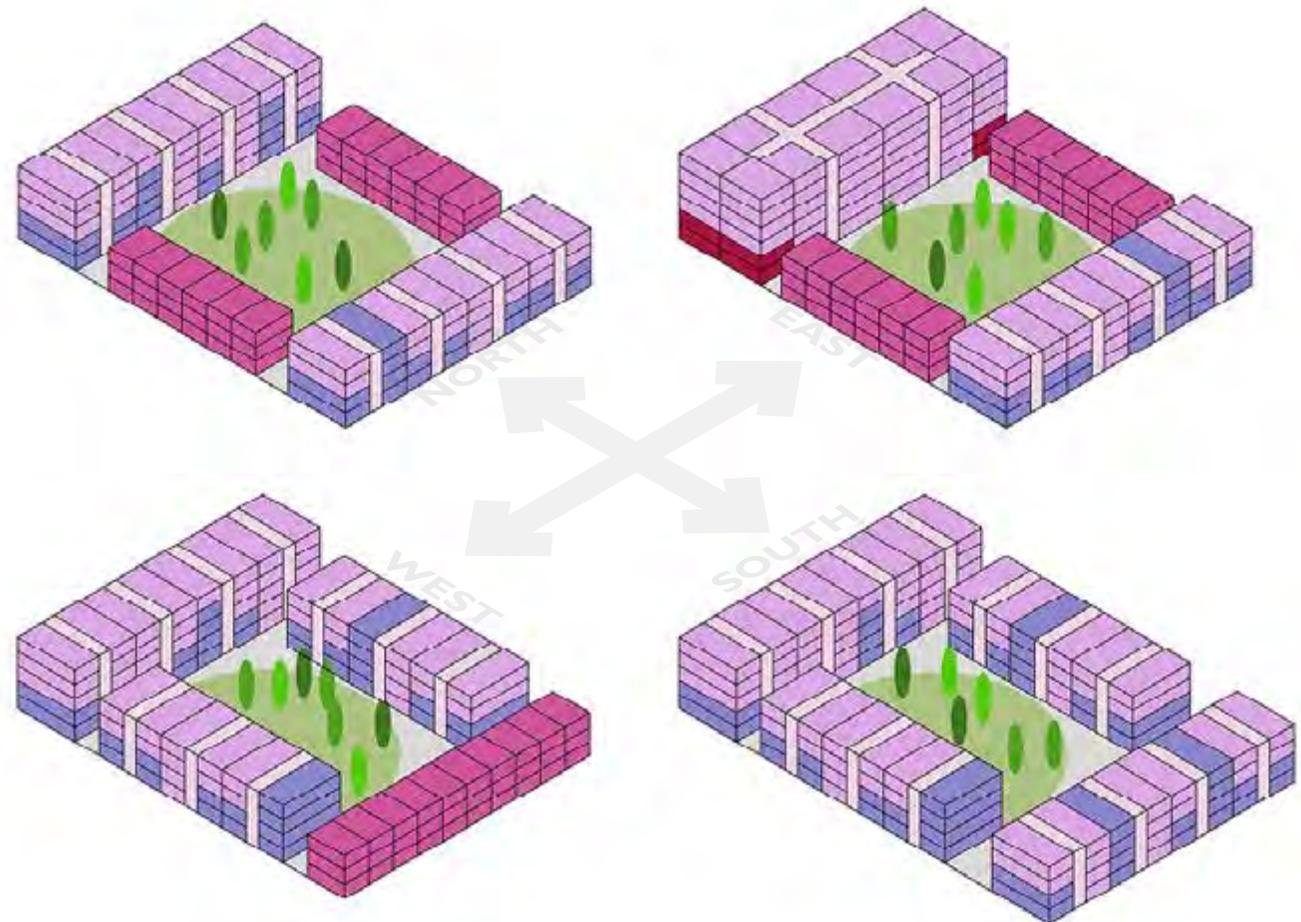
Parking provision will have reference to the relevant Royal Borough of Greenwich and London Plan standards (Parking Standards: Minor Alterations to the London Plan, 2016, GLA). Development proposals will deliver the minimum required in terms of vehicular parking and maximise cycle parking. The planning and design of high quality parking facilities for all cycle users will provide fit-for-purpose, secure, well-located cycle parking, which is essential for supporting the development of cycling as a practical transport choice. Design of cycle parking will have reference to the provisions set out in the London Cycle Design Network Guidance.

There will be a variety of parking solutions, including on-street, on plot/integral to individual buildings, in undercrofts and full and half-basements. Parking solutions should avoid creating dead frontages or structures that are out of scale with the surrounding development and should not interfere with the operations of ground floor, non-residential uses.

Housing should be well-designed, attractive, distinctive and use a palette of materials that reflect local context and are durable, sustainably sourced and of high quality.

9.8 Residential Development Parcels

Typically, development blocks that comprise residential or residential led, mixed-use development will take the form of perimeter blocks with buildings aligned parallel to the street, resulting in a relatively high degree of continuity of frontage and enclosure of the street. This arrangement is best suited to managing the tensions between public and private space. In some locations, notably along the River Thames, a more open block structure will provide better physical access to the river and maximise views from residential properties. Buildings immediately adjacent to the Thames should sit perpendicular to the river, with buildings to the rear of the plot aligned parallel to both the river and the grid of streets. This arrangement will often result in the semi-public spaces within blocks, the management of which will need to be given careful consideration, particularly in terms of the relationships between these spaces and the Thames Path and any commercial uses fronting onto the river.



Key

	Non-residential
	Townhouse
	Apartments
	Maisonette
	Circulation/core

Figure 9.5: Block structure

9.9 Residential Building Typologies

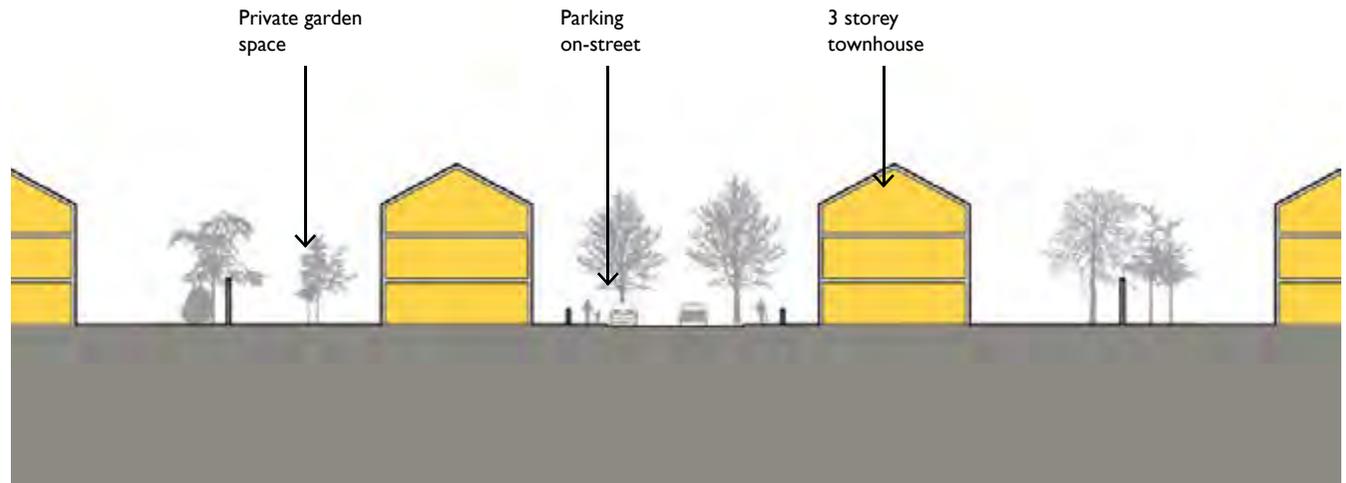
All residential proposals should have reference to the London Housing Design Guide (GLA, 2010) and Housing Supplementary Planning Guidance (GLA, 2016). Typically, residential development will take the form of townhouses, apartments and maisonettes, in single and dual aspect form. As noted elsewhere, much of the existing built form at Charlton Riverside comprises purpose built commercial or industrial buildings. Some of the more historic buildings, such as those which previously formed part of the Siemens Works, have an internal layout that is relatively robust and flexible, capable of re-modelling for other uses and, consequently, should be retained and integrated into any development proposals.

Townhouse

Following on from the Royal Borough's objective to deliver 50% family homes at Charlton Riverside, it is clear that a significant proportion of any new housing built will be in the form of individual family homes. Given the need to balance the delivery of family homes with the efficient use of land and an appropriate density of development, it is proposed that individual family homes should take the form of three storey town houses, typically providing a minimum of three bedrooms.

There is scope for additional storeys above, to accommodate apartments, in some instances, although this will require careful consideration to meet access and design standards.

Figure 9.6: Townhouse typology



Townhouses



Townhouses with apartments above

The detailed design of the townhouse typology, in terms of building heights, roof lines, plot width, parking provision, relationship with plot line and street and size and form of private garden space are matters for discussion at the pre-application and planning application stages.

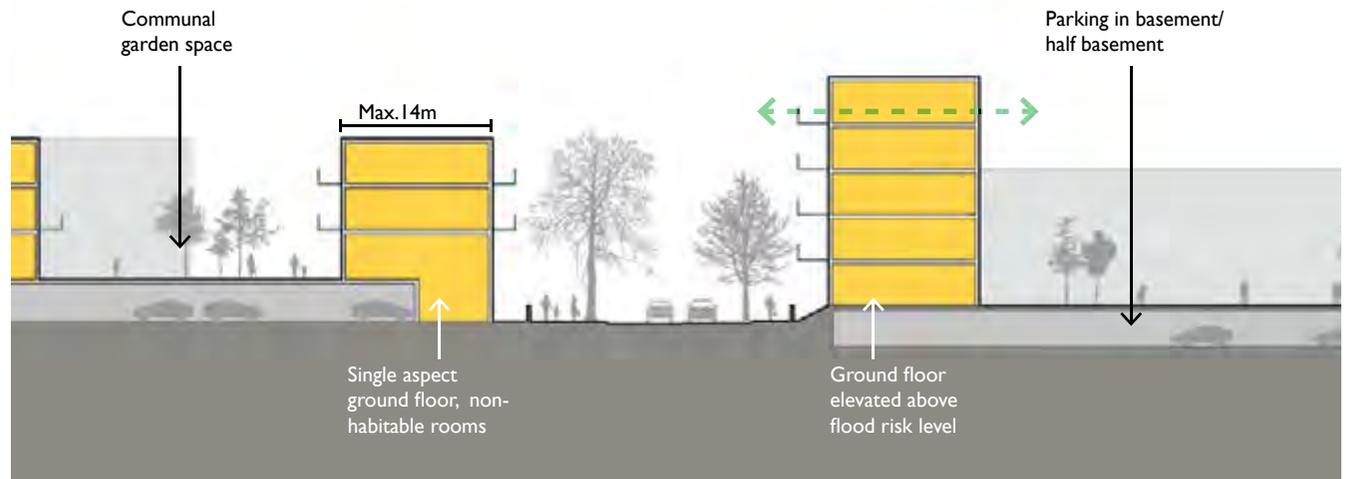
Dual Aspect Maisonettes/Apartments

The London Housing Design Guide advises that all new developments proposals should, in the first instance, consider how they might deliver dual aspect housing. The benefits of dual aspect housing include increased daylight/direct sunlight, cross ventilation, better views and greater flexibility of in the use of internal space.

For this reason, the second housing typology proposed for Charlton Riverside is dual aspect housing, usually comprising a mix of maisonettes or apartments. These units will focus on providing family housing (minimum of three bedrooms) interspersed with 2 bed and, to a lesser degree, 1 bed flats.

Dual aspect dwellings can be used where the building has both an east-west or north-south axis. Typically, the building depth would be no more than 14 metres (excluding balconies), after which benefits of cross ventilation and sunlight penetration begin to decrease. A building or apartment depth of greater than 14 metres is likely to require artificial lighting in the centre of the building during daytime use, and is also difficult to naturally ventilate. Whilst dual aspect dwellings with a depth of more than 14 metres could be artificially lit and ventilated, there are significant benefits to natural daylighting and ventilation in terms of health and well-being of residents, operational costs and maintenance.

Figure 9.7: Dual aspect apartment/maisonette typology



Dual aspect apartments



Mix of dual and single aspect apartments

Building depth and orientation of units within the block will be a matter for detailed design.

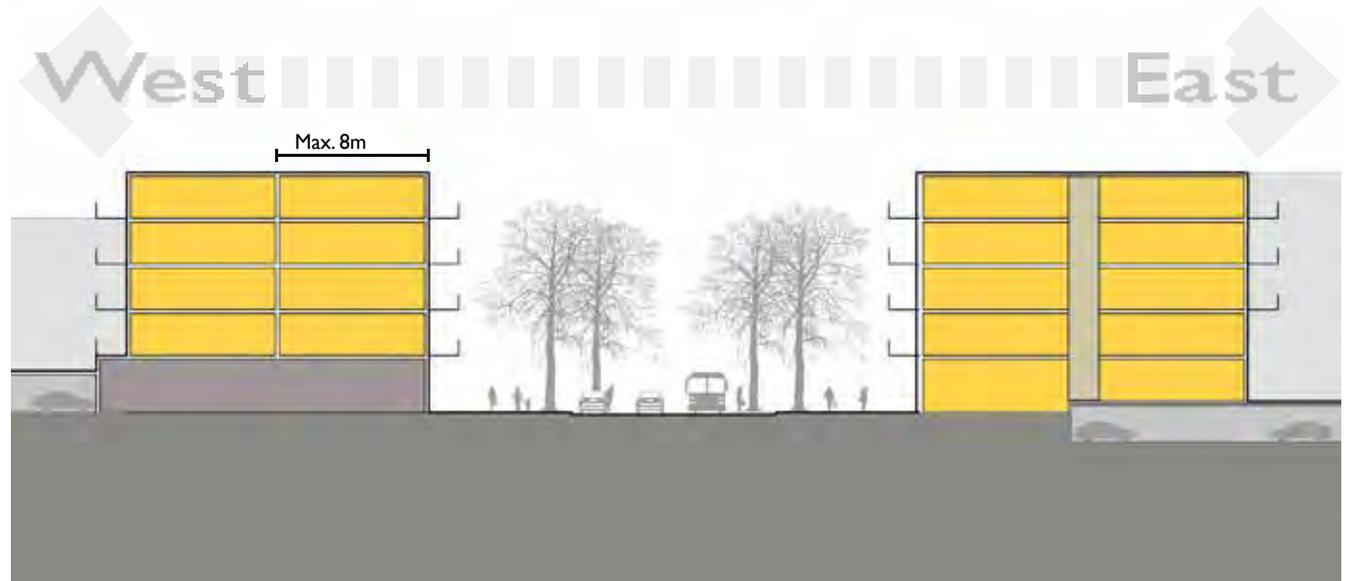
There may be some instances where buildings have integral parking in a deck or semi-basement arrangement in the centre of the block. In these instances, ground floor maisonettes might be single aspect on the ground floor and dual above.

Single Aspect Apartments

There will be instances where blocks with a predominance of single aspect apartments might be required (albeit, perhaps, with dual aspect units on the corners). This might be for reasons of efficient use of land or awkward plot size and arrangement. Where single aspect dwellings are proposed, care must be taken to ensure that they avoid having north-facing principal façades.

It may also be necessary to consider single aspect development in the vicinity of Riverside Wharf, in combination with building setbacks, to minimise potential conflicts between residential and industrial uses. Single aspect residential blocks might comprise a mix of apartments and maisonettes, and would typically comprise 1 and 2 bedroom units. As with dual aspect residential blocks, the detail in terms of dimensions and orientation would be dealt with at the appropriate stage in the design and planning process, however, it is proposed that single aspect dwellings should not be greater than 8 metres in depth (excluding balconies) and more generous floor to ceiling heights might be considered to allow for greater sunlight penetration, especially at lower levels.

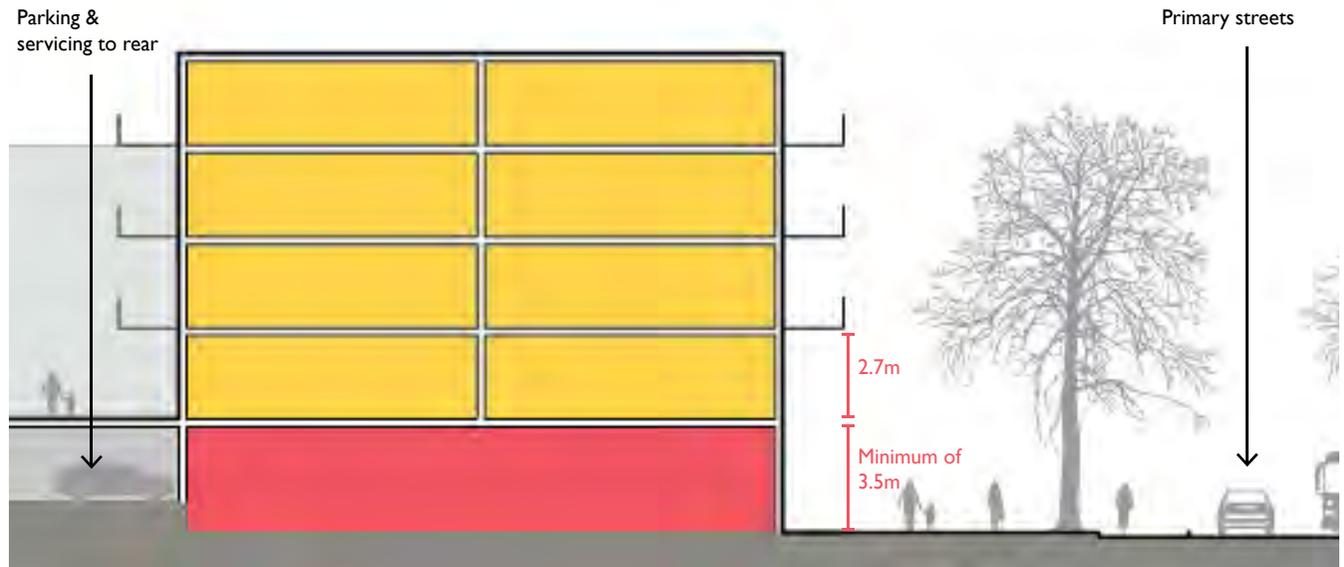
Figure 9.8: Single aspect typology



9.10 Ground Floor Uses

The ground floor of buildings fronting onto primary routes and key nodes will have more generous floor to ceiling heights and servicing options that allow for both residential and non-residential uses. For example, the London Housing Design Guide (section 5.4), proposes a minimum floor to ceiling height of 2.6m at ground floor, to allow for better light penetration. Although office space can be delivered with ceiling heights in the order of 2.7m, the SPD aims at a more varied mix of uses at ground floor. Consequently, for buildings on primary routes and key nodes, a minimum floor to ceiling height of 3.5m is proposed, to allow for flexibility of use, over time.

Figure 9.9: Ground floor, mixed use ceiling heights



Commercial premises, ground and first floor, apartments above



Mixed commercial premises below, apartments above

9.11 Active Frontages

Active frontages are essential to successful place-making, given their capacity to create character and foster community by providing the opportunity for people to meet and engage in exchange (be it social or commercial). At Charlton Riverside, the scale of development is such that it will not be possible for every street frontage to be activated, at ground floor level, with non-residential uses. It is, therefore, important that the nature and location of non-residential ground floor uses is carefully planned to achieve maximum effect, with appropriately scaled and located clusters of activity balanced with the occasional standalone uses, again in the right location and with the right relationship with surrounding residential uses.



Key

- | | | | |
|---|---------------------|---|--------------------------|
|  | Site boundary |  | Frontage onto open space |
|  | Development parcels |  | Riverside Wharf |
|  | Primary Frontage | | |
|  | Secondary frontage | | |

Figure 9.10: Active frontages

The main areas of active frontage will be where there is the greatest mix of non-residential uses at ground floor. This is concentrated within the neighbourhood centre along Anchor and Hope Lane, and the riverfront blocks. Secondary frontages will tend to be primarily residential, albeit with opportunities for localised commercial, retail and community uses creating hubs of activity. There is also considerable frontage onto open space and it is expected that where buildings have an immediate relationship with parks, sports pitches, etc., there will be an opportunity to create frontage that is more characterful, memorable and with a strong interface between built development and open space.



Active frontages, where people meet and interact, are at the heart of any place-making strategy

9.12 Urban Grain

The plan opposite (Figure 9.11) illustrates how the buildings within development parcels (parallel to the line of the road and with a public face onto the street) might be arranged. This pattern of development parcels and blocks is called the urban grain. At Charlton Riverside it is proposed that this 'grain' of development is relatively fine, meaning that there is parcels are smaller, with more frequent junctions of streets. This creates a greater opportunity for street frontage, on the one hand, and a more permeable and accessible development, on the other.



Key

-  Site boundary
-  Proposed building footprints
-  Proposed Green Infrastructure

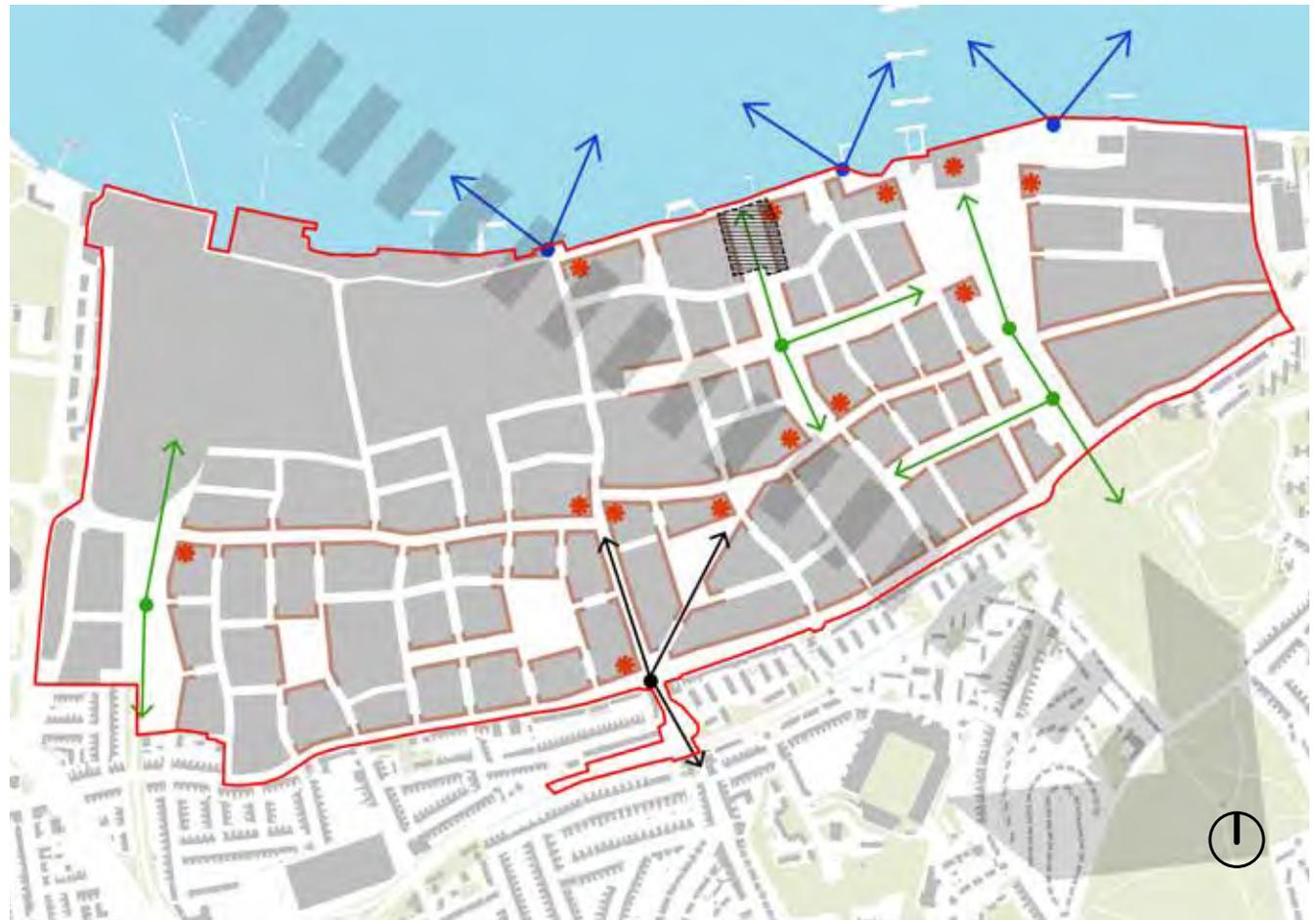
Figure 9.11: Urban grain

9.13 Views and Vistas

There is considerable opportunity to create long and middle-distance views into, across and out of Charlton Riverside, and development proposals must show how these are captured, framed and protected. This approach is in line with the provisions of Core Strategy Policy DH1, which identifies the importance of design proposals respecting existing townscapes, local landmarks, views and skylines and includes reference to topography, landscape setting, ridges and natural features. The Thames waterfront is important in that it affords broad views along the sweep of the river, out over the Thames Barrier and across to the Royal Docks. Views to the site, from either side along the south bank and from the north bank of the Thames are also important, and not only because of the potential for development to act as a visual stop along the waterfront.

Long views across Charlton Riverside and beyond, to the higher land to the south and east, are an important aspect of the character of this part of London and development proposals will be required to respect the existing relationship between built form and the topography/landscape.

Within the site, the creation of linear open spaces, flanked on either side by built form will provide the opportunity to create both interesting long and middle-distance views towards important visual stops (such as Thames Barrier, new and existing schools and commercial buildings, etc.) and also attractive assemblages of townscape and open space.



Key

- | | | | |
|---|--|---|--|
|  | Site boundary |  | Important townscape views |
|  | Development parcels |  | Important views to and from open space |
|  | Key townscape frontages |  | Important views across Thames |
|  | Key townscape nodes/landmark buildings |  | Important views into and across the site from the north and west (towards higher land at Charlton) |
| | |  | Riverside Wharf |

Figure 9.12: Views and vistas

9.14 Development along the Thames

Development along the River Thames should seek to maximise access to the river, via routes through public and semi-public spaces. It should also seek to maximise river use for freight and passenger transport, wherever possible. Views out onto the river from residential and mixed use development should be maximised, therefore, it is preferred that buildings should be arrayed perpendicular to the river, where possible. This arrangement will also help with daylight and shading, as continuous frontage along the north-facing facade of development blocks would create a less attractive and comfortable environment for pedestrians.

As noted above, development will be set back from the river defence line by a minimum of 16 metres (including projections and any private/semi-private garden or service space), allowing a generous pedestrian/cycle space, which should be well overlooked by adjacent property. Encroachment into the river by non-river-related activities will not be allowed, and all development proposals must have reference to the relevant policy and guidance in respect of encroachment (e.g., Blue Ribbon Network policy in the London Plan).

There is potential for some additional height along the river front, with potential for buildings up to 10 storeys. The images on the following page illustrate a variety of different approaches that might be adopted when designing and re-configuring the river defences.

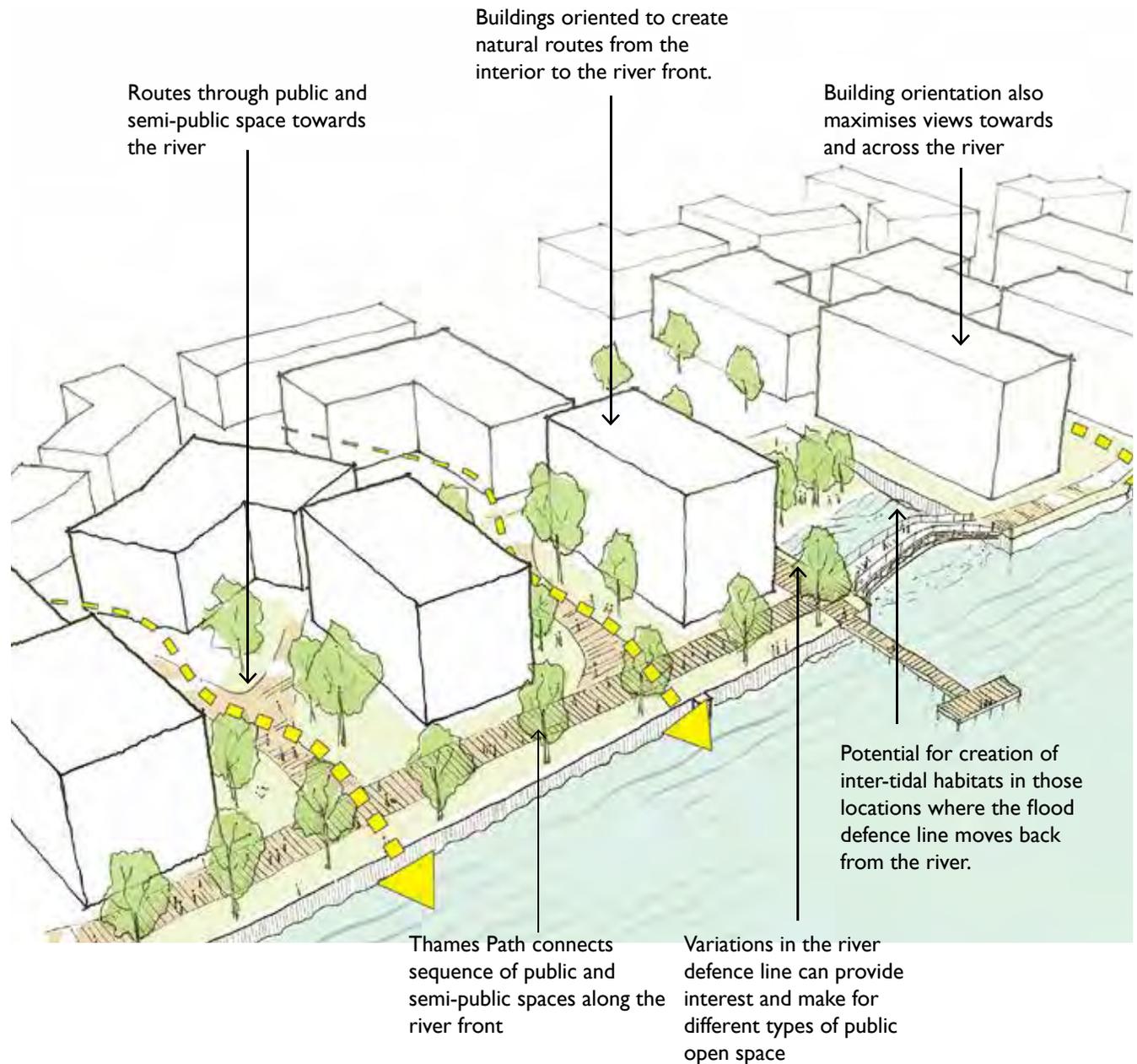


Figure 9.13: Development adjacent to the River Thames



A harder urban edge, with commercial activities along the river



A sculpted, formal landscape leading down to the river



Water based leisure and events



A softer, ecological interface between development and the river

9.15 Streetscape and Public Realm

The public realm, comprising the streets and spaces between development parcels is a key component in creating development of quality and character. While all public spaces will be designed with the aim of creating attractive, accessible and safe spaces, there are some parts of the public realm which have the potential to make a greater contribution to the sense of place and success of new development at Charlton Riverside. Figure 9.14 identifies these key spaces and routes.

Woolwich Road

As noted elsewhere in this SPD, the Woolwich Road is an important strategic route and a key public space/interface between Charlton Riverside and the neighbourhoods to the south. Works to improve the Woolwich Road will be undertaken in as part of the delivery phase, following adoption of the SPD.

Anchor and Hope Lane

The route from the Anchor and Hope Pub Lane down to Charlton Station, via the Antigallican Junction, is a key space, providing connectivity north to south and links between some of the most important components of the development proposals (Charlton Station-the Neighbourhood Centre-Thames Clipper Pier). Given its length, and the varying character and mix of uses, there will be a range of treatments at different points along Anchor and Hope Lane. The southern end, running through the Neighbourhood Centre, will be more civic and will be designed to accommodate significant transport infrastructure. The



Key

- | | | | |
|---|----------------------------------|---|---|
|  | Site boundary |  | Key public realm spaces and intersections |
|  | Woolwich Road enhancement scheme |  | Pedestrian connections across Woolwich Road |
|  | Anchor and Hope Lane | | |
|  | Bugsby's Way and East-west Link | | |
|  | Thames Path | | |

Figure 9.14: Key public realm

stretch to the north, from the junction with Bugsby's Way to the river, will be more subdued and offer a more relaxed space leading to the Thames Path.

Bugsby's Way and the East-west Link

The new east-west link will need to be designed in such a way as to support key public transport infrastructure, set within a space whose character and quality reflect its location in the heart of a mixed use neighbourhood with significant residential development. While the movement component of the space is important, the social component, i.e, the spaces where people linger meet, and conduct their daily business is an important aspect of the east-west route. Bugsby's Way, while retaining its importance as a strategic connection to the river crossings, will be reconfigured to share some of the character and quality of the east-west link, with a shared palette of materials and design approach.

Thames Path

The Thames Path is addressed, in detail, elsewhere in this document. It is a key movement route, providing strategic access to and along the River Thames, but it is also a place within Charlton Riverside, a linear park or promenade that brings life and vitality to adjacent development and allows residents access to the river. The requirements of TE2100 mean that the Thames Path will be upgraded at some point in the future, and the opportunity exists to marry



Tree lined streets, with development framing the public realm



Streets which balance the movement and social functions



Clear, accessible way finding and signage



Well lit streets, with clear lines of site and good visibility

those improvements to the riverside proposals, to create a high quality environment that brings benefit to the new development, but which also derives benefit from the new commercial and leisure uses.

The public realm at Charlton Riverside should:

- Have a distinctive character, reflecting the heritage of the area, and create a sense of place;
- Be overlooked by the fronts of buildings;
- Have views along streets and through spaces that unfold as pedestrians walk along them;
- Incorporate careful design where there are changes in level to provide access for all;
- Provide diversity of uses balanced with consistent use of materials and appearance;
- Connect to other streets and spaces, so that people have a choice of convenient routes;
- Provide pedestrians with enough space to move around, with pavements of an adequate width and avoiding clutter;
- Link routes with green spaces, to encourage pedestrians and cyclists;
- Accommodate natural desire lines across spaces;
- Form part of a clear hierarchy of different routes;
- Use durable materials, sourced from sustainable sources, where possible;
- Design for water conservation and protection of water systems, and
- Have tree planting and street greening that provides character whilst also promoting local biodiversity, improving air quality, filtering noise, screening roads and cooling adjacent buildings.



Civic spaces, where people can gather and interact



Spaces which are interesting and stimulating



Co-ordinated use of good quality, appropriate materials



Spaces which are accessible, attractive and usable all day



Thames Flood Barrier Charlton Riverside



10. Theme 6 - A Sustainable and Resilient Charlton Riverside

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10.1 Introduction

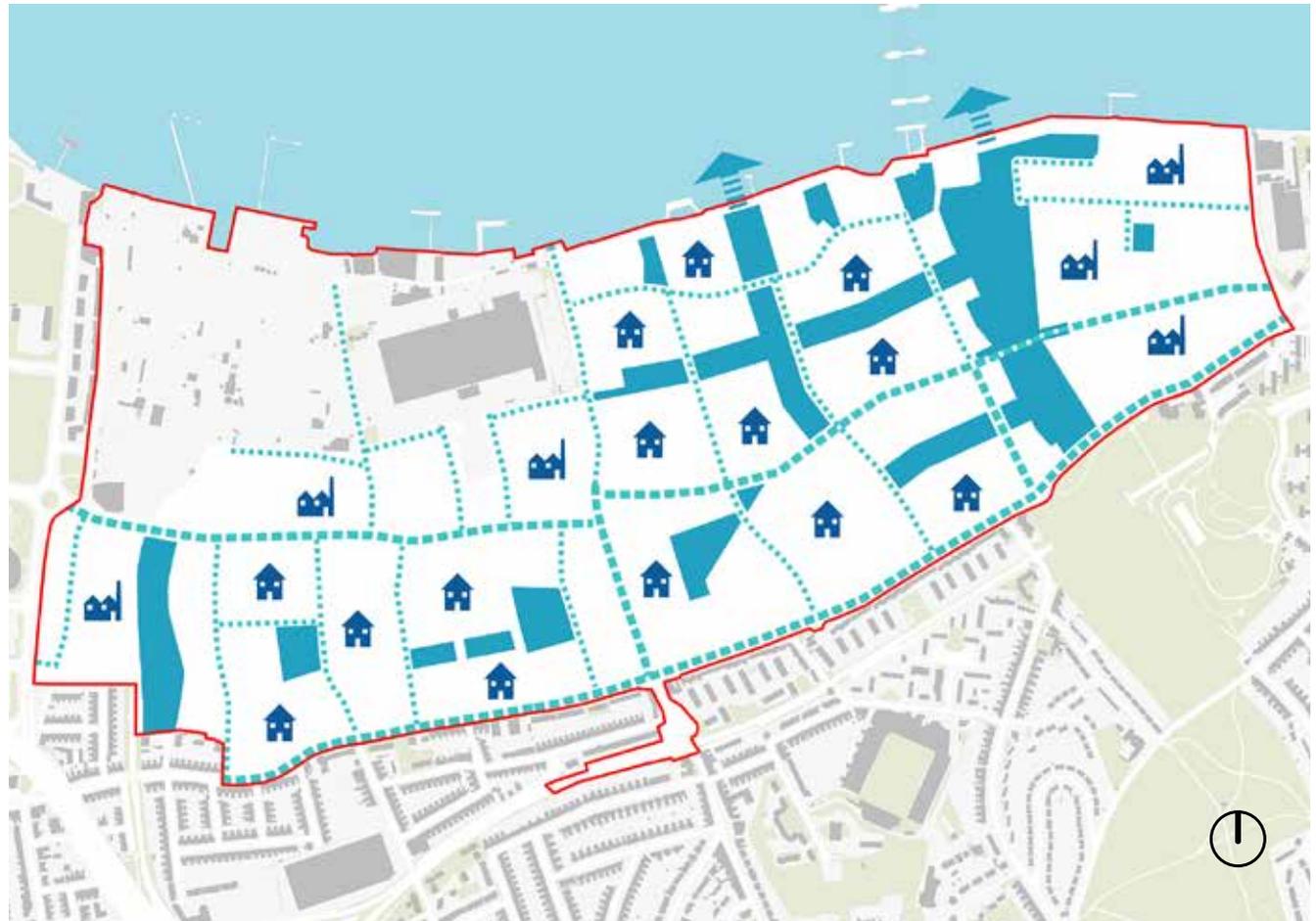
The proposed approach to achieving a sustainable and resilient Charlton Riverside, capable of adapting to change, is based on achieving an objective balance between environmental, social and economic issues, mitigating adverse effects and maximising positive outcomes. The approach is based on three strands comprising:

- Established standards – building on existing policies and targets;
- Going further – not necessarily piloting new technologies but being aware of emerging opportunities which can be capitalised upon; and
- Future proofing – looking ahead to emerging opportunities and building in flexibility to respond to change.

10.2 Water Management Strategy

The potential impact of new development on demand, supply and disposal of water will extend beyond the boundary of the masterplan. The Greater London Authority has commissioned an Integrated Water Management Study (IWMS) for the four Opportunity Areas (OAs) Charlton Riverside, Woolwich, Thamesmead and Abbey Wood, and Bexley Riverside.

The IWMS recommends a range of potential interventions at different scales, the aim being to enable strategic development sites to actively manage the water cycle and, especially, flood risk within their boundaries.



Key

- | | | | |
|---|---|---|---|
|  | Site boundary |  | Demand management/treatment within residential-led, mixed use development |
|  | SUDS and water management within open space |  | Demand management/treatment within commercial and industrial-led, mixed use development |
|  | Potential outflows to the River Thames | | |
|  | SUDS within streets, public realm (extent to be confirmed through the design process) | | |

Figure 10.1: Water cycle management

Potential water management measures include:

- demand management;
- blue and green roofs;
- roof water recycling;
- grey water recycling;
- green source control measures;
- below ground storage;
- establishment of strategic SUDS networks;
- recharging groundwater;
- managing tidal and fluvial discharge;
- downstream stormwater retention ponds or wetlands, and
- stormwater and wastewater recycling.

The majority of Charlton Riverside is located within Flood Zone 3. Widespread areas have been identified as susceptible to surface water flooding, due to low lying land. The area is topographically fragmented, which may present constraints for gravitational conveyance of surface water. The expected density of development may also create spatial challenges for locating surface water conveyance, attenuation and treatment systems. However, the allocation of strategic open space within Charlton Riverside may be harnessed for these systems. Charlton Riverside's location adjacent to the River Thames also affords an opportunity for tidal discharge of surface water.

The IWMS suggests that there are opportunities for local source control infiltration techniques, as a consequence of the prevailing geography, although this will be limited in several locations by potential contaminated land and made ground.

There is an opportunity and, almost certainly, a need to reduce surface water outflows to the combined sewer system, to off-set the increase in foul flows from the increase in development scale and density. A number of site-wide approaches are proposed. Charlton Riverside is underlain by a chalk aquifer, which is de-watered and likely to have sufficient capacity to accept the estimated rate of 10 Megalitres a day (Ml/d) surface water runoff from the local area via injection. This would be beneficial to groundwater resources within London, and also assist in locally raising the water table to minimise saline intrusion, due to ingress of water from the Thames estuary.



Water management in open spaces



Sustainable drainage in the public realm (streets)

10.3 Flood Risk Management

River defences for the Thames are subject to the requirements of the TE2100 Plan (Environment Agency, 2012). The Charlton Riverside site lies within the Greenwich Policy unit of the TE2100 Plan, with the majority of the site upriver of the Thames Barrier. TE2100 anticipates river defences being raised during the period to 2100, to manage expected sea level change to 2135. Increased crest levels are, potentially, subject to change as modelling is updated and developers will be required to liaise with the Environment Agency to confirm the future crest levels in any given location.

It is expected that those development parcels immediately adjacent to the river will be responsible for the improvements to the river defences, in line with TE2100 requirements. Rather than simply raise the flood defence level in the form of a solid barrier, development proposals must maintain the current level of accessibility to the river and, where possible, provide additional opportunities to access the Thames. Raising ground levels adjacent to development parcels with railings along the river edge is the preferred approach, as a minimum.

It will also be possible for developers to vary the line of the flood defences, creating step backs and graded access to the river in some locations, while maintaining the TE2100 flood defence level. Such events could incorporate planting and create habitat which might be incorporated into open space along the river's edge.

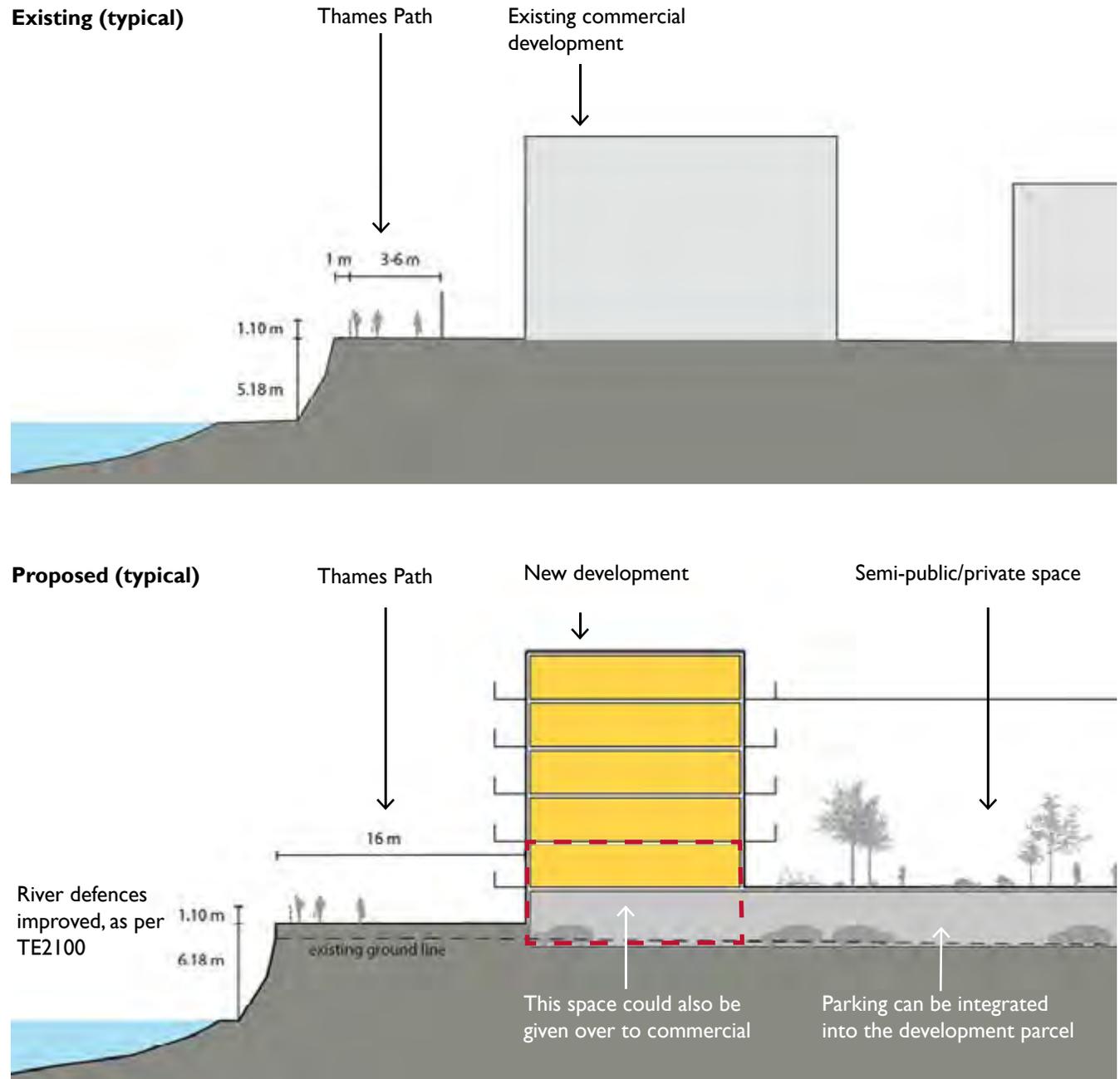


Figure 10.2: Integrating development with flood defences, for the stretch of riverfront above the Thames Barrier

10.4 Urban Greening

Wherever possible, there will be a requirement to protect existing and introduce new street tree planting, create incidental open space and use roof space and wall space to introduce planting. Even with the creation of significant new open space, Charlton Riverside will still be a very urban environment, one that is subject to the ongoing impacts of climate change and the urban heat island effect. Given the industrial nature of much of the site, there is considerable scope for a significant increase in tree cover. The benefits of tree planting, in an urban environment, are well documented, including reductions in pollution levels, shade and cooling in summer, improved mental health and reduced stress and sheltering of buildings with concomitant reductions in energy usage and cost.



Tree planting in public spaces for shade and cooling



Incidental green space close to homes and places of work or leisure



Green walls and roofs on buildings



Water features in public spaces

10.5 Energy

The Greener Greenwich SPD (2014) sets out a strategy showing how new development at Charlton Riverside can reduce its energy consumption and carbon footprint.

The strategy is predicated on the following objectives:

- Be lean (use less energy)
- Be clean (supply energy efficiently)
- Be green (use renewable energy)

Be Lean

This objective requires new energy strategies for new development to begin with the building fabric and focus on the following:

- Passive solar design;
- Improved insulation/ventilation, and
- Energy efficient fixtures, fittings and appliances (including lighting) to A+ standard.

It is expected that refurbishment of existing buildings should adopt a similar approach, and there is guidance on how to manage the competing demands of heritage asset management and energy efficiency.

Be Clean

This objective focuses on delivery systems, including the potential for district heat and power and combined heating and cooling systems. There is scope at Charlton Riverside, given the proposed development form and densities for a range of delivery systems to be introduced.

Be Green

This last objective focuses on the use of renewable energy technologies. A variety of technologies are available and appropriate for Charlton Riverside (photo voltaic panels, solar hot water panels, biomass used in district heating, wind power, ground and air source heat pumps). Developers will be required to demonstrate how they propose to integrate these technologies into the built fabric of new and existing buildings in such a way as to meet the relevant Building Regulations requirements and the Royal Borough's targets and aspirations for renewables.



District heating power plant

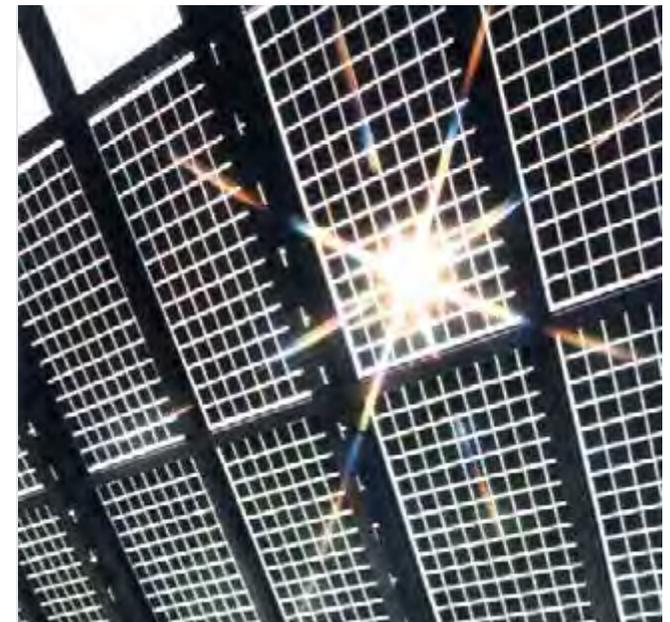


Photo voltaic cells

10.6 Adaptability

Ensuring that Charlton Riverside can adapt with changing demands of its population, climate change and new technologies will be important for its longevity by:

- Designing layout and size of development blocks to allow for adaptation over time to meet changing demands;
- Designing 'long life loose fit' buildings that facilitate future adaptation to meet changing demands, including the changing climate (e.g. by providing flexible and generous layouts; by over-sizing gutters and downpipes to cope with higher intensity rainfall);
- Providing utility corridors ('pipe subways') allowing the placing of utility services (e.g. electricity, gas, water, heat, tele-communications) in structures that can be accessed without the need for excavation, avoiding traffic and pedestrian disruption and improving accessibility/adaptability, and
- Ensuring that if an energy centre for a decentralised energy network is provided that there is flexibility to expand this in future (e.g. to supply more neighbouring developments).

THAMES HEAD



HERE THE THAMES PATH NATIONAL TRAIL BEGINS OR EN

Inscription on Thames River Defence Wall, Charlton Riverside

11. Theme 7 - A Viable and Deliverable Charlton Riverside

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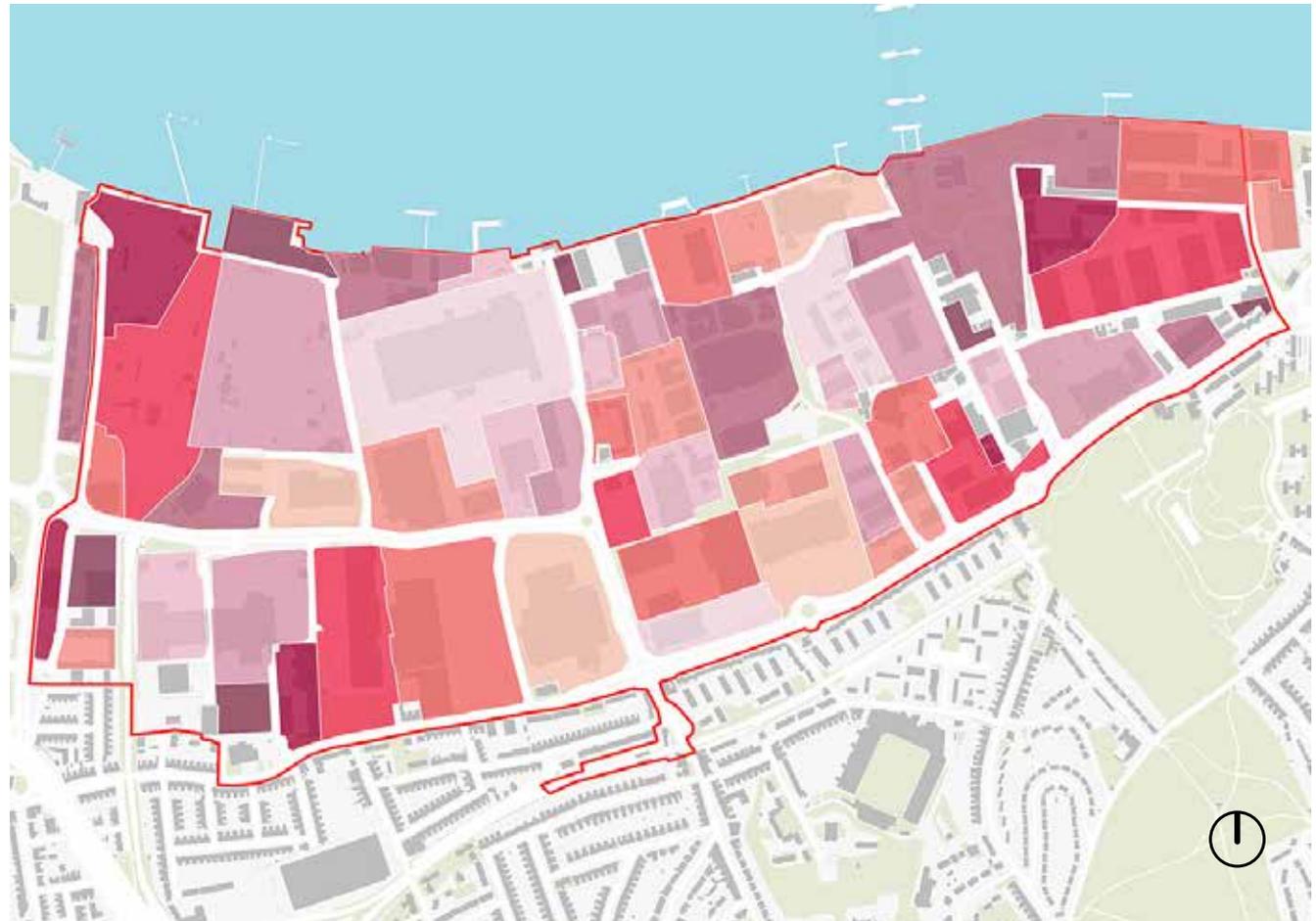
11.1 Introduction

This section sets out how the policies in Themes 1-6 will be delivered. The Royal Borough is a key landowner in Charlton Riverside, which offers the opportunity for a number of delivery options.

11.2 Land Ownership

The multiplicity of different ownerships varies by type as well as scale. There are a number of parcels in the ownership of (or optioned by) developers who are intent on delivering some form of development in the near future. Other parcels are in the ownership of investors and institutions whose approach to their land-holdings is typically long-term and driven by a model of rental returns, albeit with the flexibility to re-appraise that approach as opportunities arise. There are also parcels owned by companies which operate in Charlton Riverside, and they are committed to remaining in the medium- to long-term, e.g., Angerstein and Murphy's Wharves. Finally, there are a number of parcels in the ownership of smaller commercial entities, some of whom have bought land speculatively with a view its development, while others have acquired land for their base of commercial operations.

Figure 11.1 shows the distribution of land ownership as at November 2016. There are a number of landowners with more than one parcel (including the Royal Borough) although, given the potential for the pattern of ownership to change rapidly, the plan does not identify individual owners. It is simply a snapshot to illustrate the potential complexity of delivery.



Key

 Site boundary

The revised PTAL scores shown in this plan illustrates the large number of ownerships across the Masterplan SPD area. There are a number of landowners with more than one land holding, but there are also many single, small landownerships that make for a complex and challenging task in terms of land assembly and delivery.

Figure 11.1: Land ownerships (as of November 2016)

11.3 Phasing

Figure 11.2 illustrates the anticipated phases of development, based on a combination of factors, including:

- Availability and suitability of the site;
- Landowner aspirations (where known), and
- Neighbouring uses.

Phase 1 (High St, East Village, Charlton Park, Riverside and Westminster Estate character areas)

This includes the Westminster Estate, all of the land between Barrier Park and Anchor and Hope Lane, and the parcel to the west of Anchor and Hope Lane and south of Bugsby's Way. Phase 1 will deliver employment clusters at Westminster Industrial Estate (Phase 1A) and Stone Foundries (Phase 1B), and the High Street district centre (Phase 1C). Figure 11.3 shows potential early delivery sites.

Phase 2 (West Village)

This relates to the mix of retail development to the south of Bugsby's Way. It is anticipated that intensification of employment uses will retain or generate around 2,000 jobs, as well as accommodating approximately 1,600 homes. The retail development is relatively recent, and it is unlikely that this phase will be delivered within the current plan period.

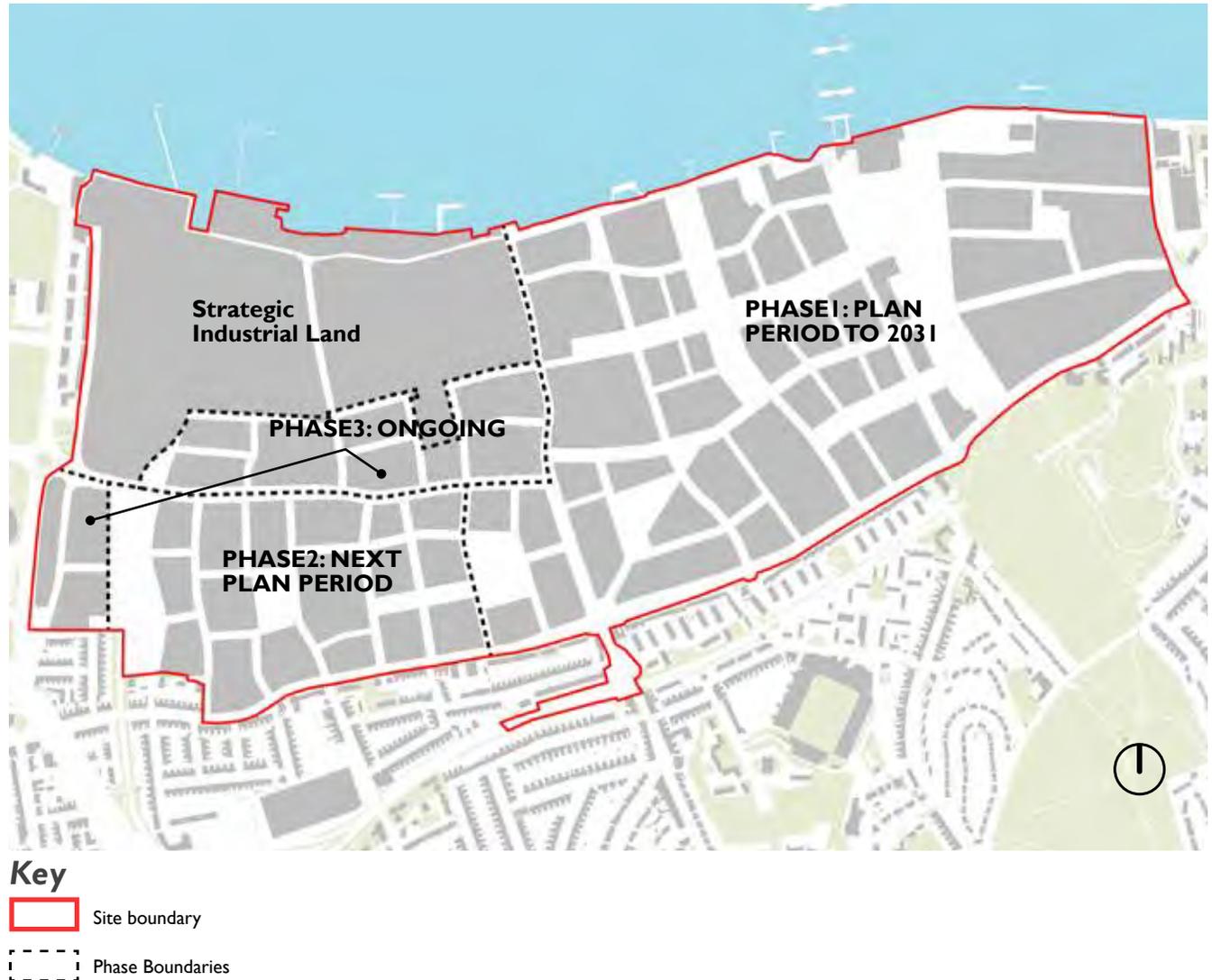


Figure 11.2: High level phasing

Phase 3 (Bugsby's Industrial)

Phase 3 comprises the land immediately north of Bugsby's Way, to either side of the southern extent of Lombard Wall (excluding the Sainsbury's logistics site and the minerals wharves). There is scope for intensification of employment uses, which could be achieved in parallel with development of Phase 1 and Phase 2.

There are a number of land parcels in Phase 1 with the potential for delivery at an early stage of the process (Figure 11.3). The Royal Borough owns land in some of these parcels, while others belong to landowners who have indicated a willingness to bring forward development proposals quickly. This would help create a real sense of momentum in Phase 1 and is likely to trigger other landowners to consider redevelopment.



Key

	Site boundary		No change anticipated (Phase 1) or outside current Plan period (Phase 2 and later)
	Potentially early deliver		Employment Hubs
	Delivery in medium term		Riverside Wharf
	Delivery towards the end of the plan period		

Figure 11.3: Potential early delivery sites

11.4 Infrastructure Delivery

A range of infrastructure will be required to support the delivery of 5,000-7,500 new homes and an increase in employment space to support 4,000 new jobs in Charlton Riverside, and this is summarised in Table 11A, below.

Key projects include:

- A new east-west link road, to improve internal access to parcels of land in Phase I to allow both access and act as the first part of a sustainable transport route through the site. Ideally, the eastwest route needs to be built prior to the redevelopment and intensification of the area, but this is dependent on the timing of redevelopment of sites;
- Flood alleviation;
- Primary and secondary schools;
- A major polyclinic will be located in the neighbourhood centre to be delivered by the end of the first development phase and this will allow for flexible health and community care provision. One delivery option, to be considered, is to create a community development trust through endowment and community asset ownership;
- Public open space (continuing the link to Maryon Park) and the possibility of a green link or bridge connecting Eastmoor Street Park to Maryon Park;
- Improvements to the Thames path;
- A new Thames 'Clipper' pier, and
- A new, civic waste facility (which may be located in the SPD are or outside its boundary).

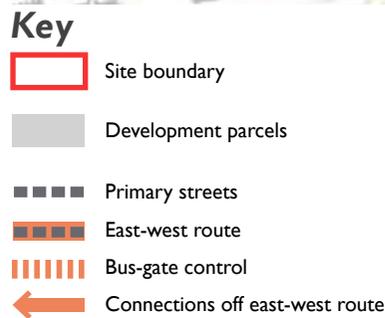
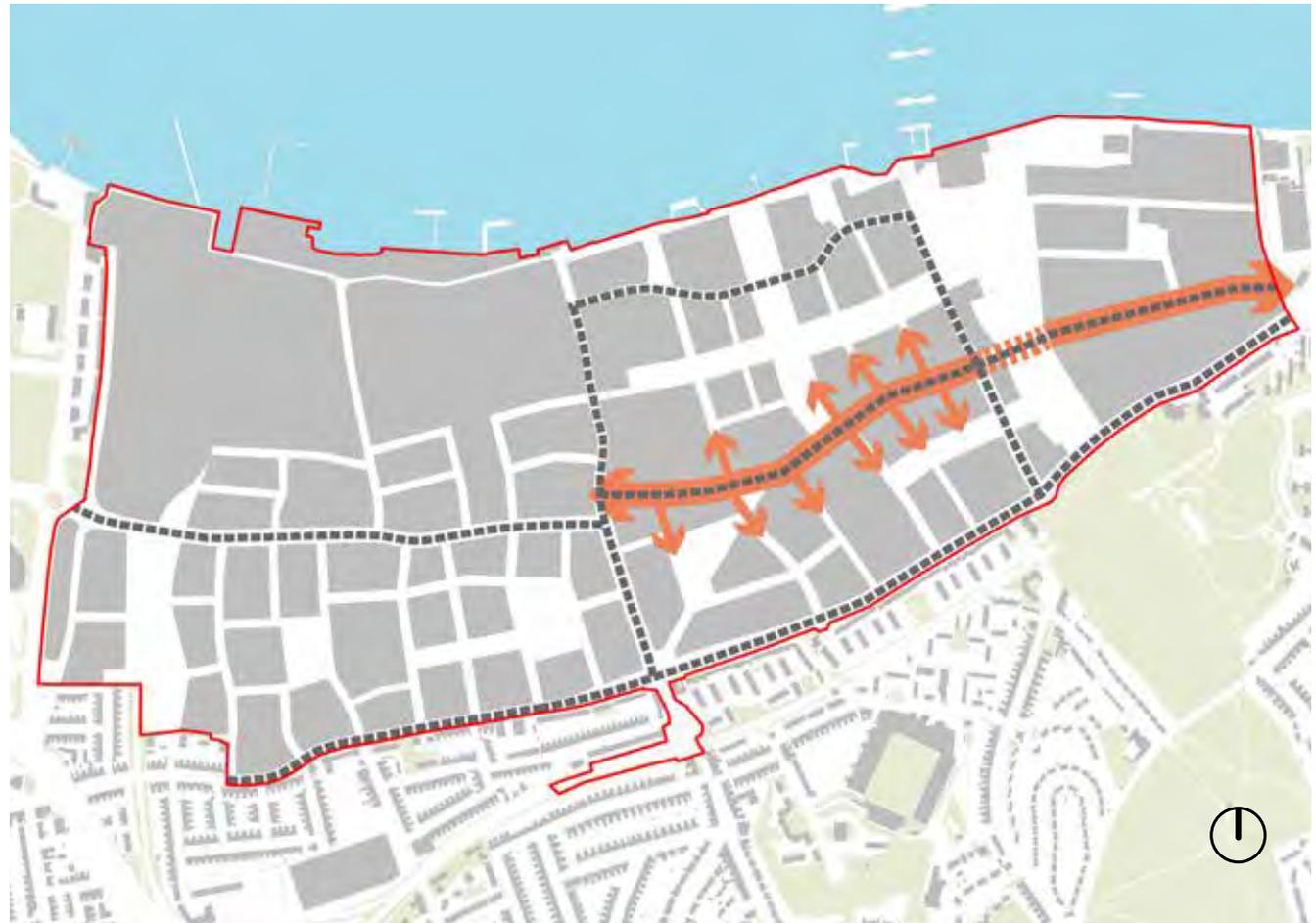


Figure 11.4: Importance of the east-west route

A good example of the major infrastructure required to support and enable development at Charlton Riverside is the proposed East-west route through the centre of the site. This new route will serve to open up the land to the east of Anchor and Hope Lane, providing a primary movement corridor along which public transport might run, and activating potential development parcels to either side. Where possible, the new route will use existing roads and routes, but it will be necessary for some sections to run along the edges of proposed development parcels.

A bus-gate will be introduced, as shown on Figure 11.4 allowing access for public transport, cyclists and emergency vehicles, at the eastern end of the new link (where it passes through an expanded Charlton Riverside Park). This will help ensure that this new route is perceived, and used, as an access road, rather than an alternative to the strategic route along Woolwich Road.

The east-west route is critical to delivering comprehensive at Charlton Riverside. In addition to creating a new link between Bugsby's Way and Warspite Road, it provides connections to north and south, opening up potential development pots and creating connections throughout the core part of the site (Phase 1B). It is, therefore, essential that the east-west route is planned and delivered early in the overall development programme. More detailed consideration of funding and delivery will be undertaken as part of a separate SPD-wide delivery study.

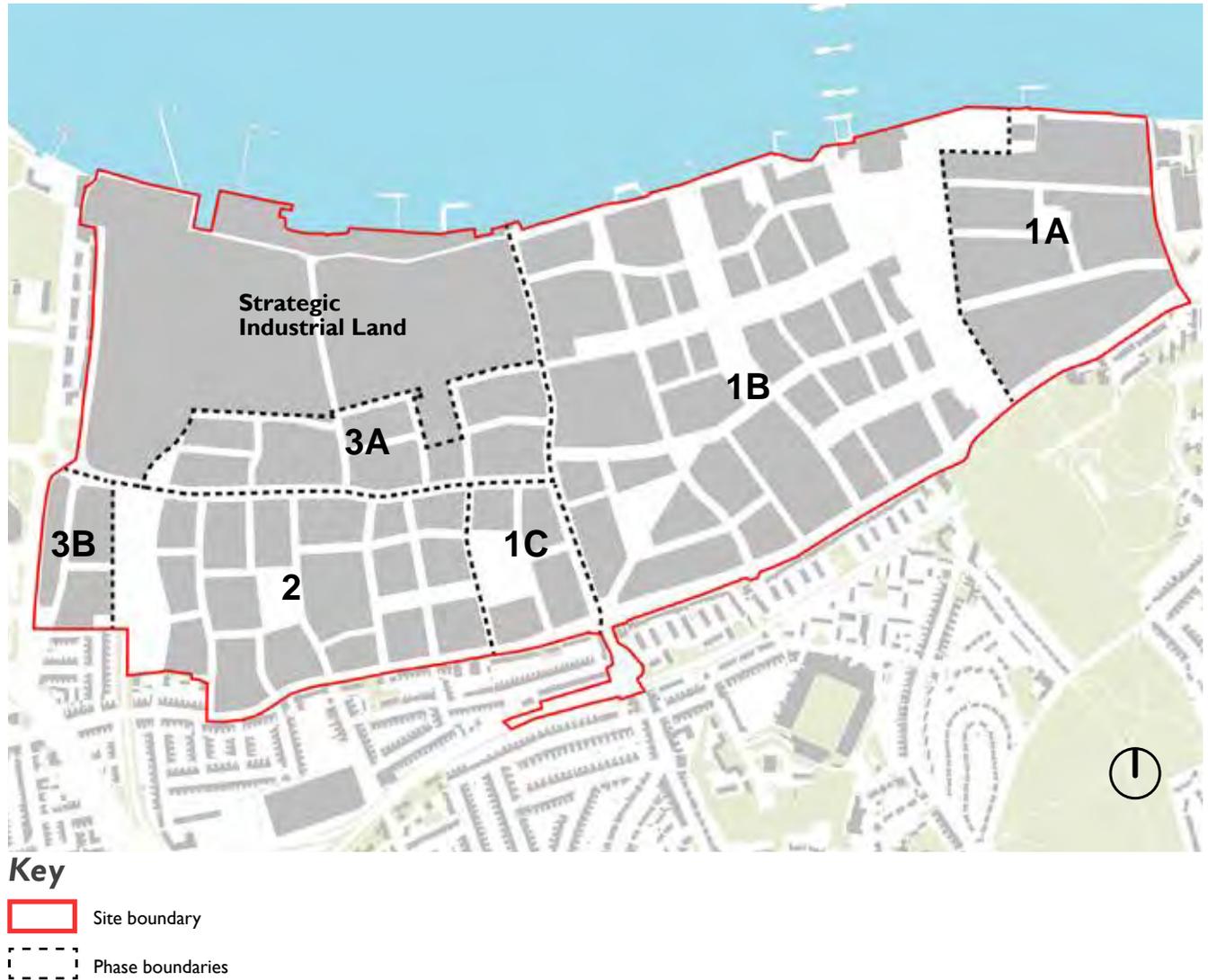


Figure 11.5: Phasing and delivery

Phase	Housing	Employment	Education	Health	Open Space	Infrastructure
1A	• 200 homes (approx)	• 2,000 jobs (approx)	<ul style="list-style-type: none"> • 1 x 8FE (form entry) secondary school (potentially a 'Through School' for ages 3-18) • 1-2 x 2FE primary school • 10 nursery/pre-school facilities 	<ul style="list-style-type: none"> • 1 major polyclinic (up to 2,000 m², subject to detailed service modelling and space planning), potentially to provide: (in Phase 1) <ul style="list-style-type: none"> - 8 GPs - 8 dentists - support staff • Contributions to hospital places, mental health care provision, nursing home and extra care 	<ul style="list-style-type: none"> • Enhanced public realm (Bowater Road and surrounding streets) • 600m improved Thames Path (almost 1 ha of land) • 11ha of new or improved open space, including the creation of Charlton Riverside Park 	• Improvements to Woolwich Road
1B	• 4,800 homes (approx)	• 3,450 jobs (approx)				• Delivery of a new east-west route connecting Bugsby's Way with Warspite Road
1C	• 1,000 homes (approx)	• 1,500 jobs (approx)				• Improvements to Woolwich Road
2	• 1,500 homes (approx)	• 1,500 jobs (approx)	<ul style="list-style-type: none"> • 1-2FE primary schools • 3 nursery/pre-school facilities 	<ul style="list-style-type: none"> • Either in polyclinic, above, or in a new facility: <ul style="list-style-type: none"> - 2 GPs - 2 dentists - Support staff 	• 2.5ha new open space	<ul style="list-style-type: none"> • Improvements to Bugsby's Way • Improvements to Woolwich Road
3A		• 450 jobs (approx)				
3B		• 900 jobs (approx)				• Improvements to Bugsby's Way
Strategic Industrial Land		• 200 jobs (approx)				
Total	7,500 homes	10,000 ^a jobs	1 new secondary school 2-3 new primary schools 11 nursery/pre-school facilities	1 primary care facility 10 GPs 10 dentists Healthcare contributions	14.5ha open space	New east-west link Improved Woolwich Road Enhanced flood defences

a) The Charlton Riverside Employment and Heritage Study (2016) states that, as of December 2016, there are approximately 5,600 jobs at Charlton Riverside. The figure for employment in this table allows for retention/substitution of some of the existing number of jobs, therefore, the potential uplift is, approximately, 4,400.

Table 11A: Phased delivery of homes, jobs and infrastructure

11.5 Approach to Delivery

There are a number of delivery options open to the Royal Borough:

- Development is delivered by the market, with control through the planning system;
- The Council procures a master developer to deliver the whole site;
- The Council and developer/s form a Joint Venture Company/Special Purpose Vehicle;
- The Council decides to secure further land (voluntarily and via CPO), forward funds the necessary infrastructure and then sells parcels of land to sub-developers, and
- The Council could enter into a limited number of strategic partnerships through voluntary landowner agreements, with a land equalization mechanism

Different approaches could be applied to different parts of the site. Once this document is adopted as an SPD, the delivery approach will be reviewed. A secondary Charlton Riverside Delivery Project will commence as part of this the details of the delivery approach will be finalised. The Delivery Project will include more detailed evidence regarding the major infrastructure delivery, community infrastructure delivery vehicle, the waste provision, school site provision, business retention, business relocation strategy, parking requirements and district heat network provision.

11.6 Funding Sources

Currently, the Royal Borough has a relatively low Community Infrastructure Levy (CIL) rate for Charlton Riverside, which would probably not generate enough funds to pay for this important infrastructure, especially early in the delivery period. As a consequence, one option for Royal Greenwich would be to review the current CIL rate and set it at a level that would balance income to pay for infrastructure and viability, to maintain developer interest and activity.

Section 106 is also an option for the Royal Borough, but its use is potentially limited because of the constraint on the number of sites which can pool their S106 money to pay for infrastructure (hence the proposal for a joint venture approach). Figure 11.6, opposite, suggests one way of approaching the use of S106 to fund key infrastructure. In this scenario, a number of joint ventures or partnerships have their S106 contributions directed towards the delivery of specific infrastructure, such as the east-west link, river defences, or the acquisition of land for Charlton Riverside Park. There would still be a requirement to contribute towards other types of infrastructure, such as schools, open space, etc., but there would be a reconciliation against contributions towards the key items relating to each development 'parcel'.

Another route to delivering this infrastructure might be to secure some form of loan from either central or regional government (either the

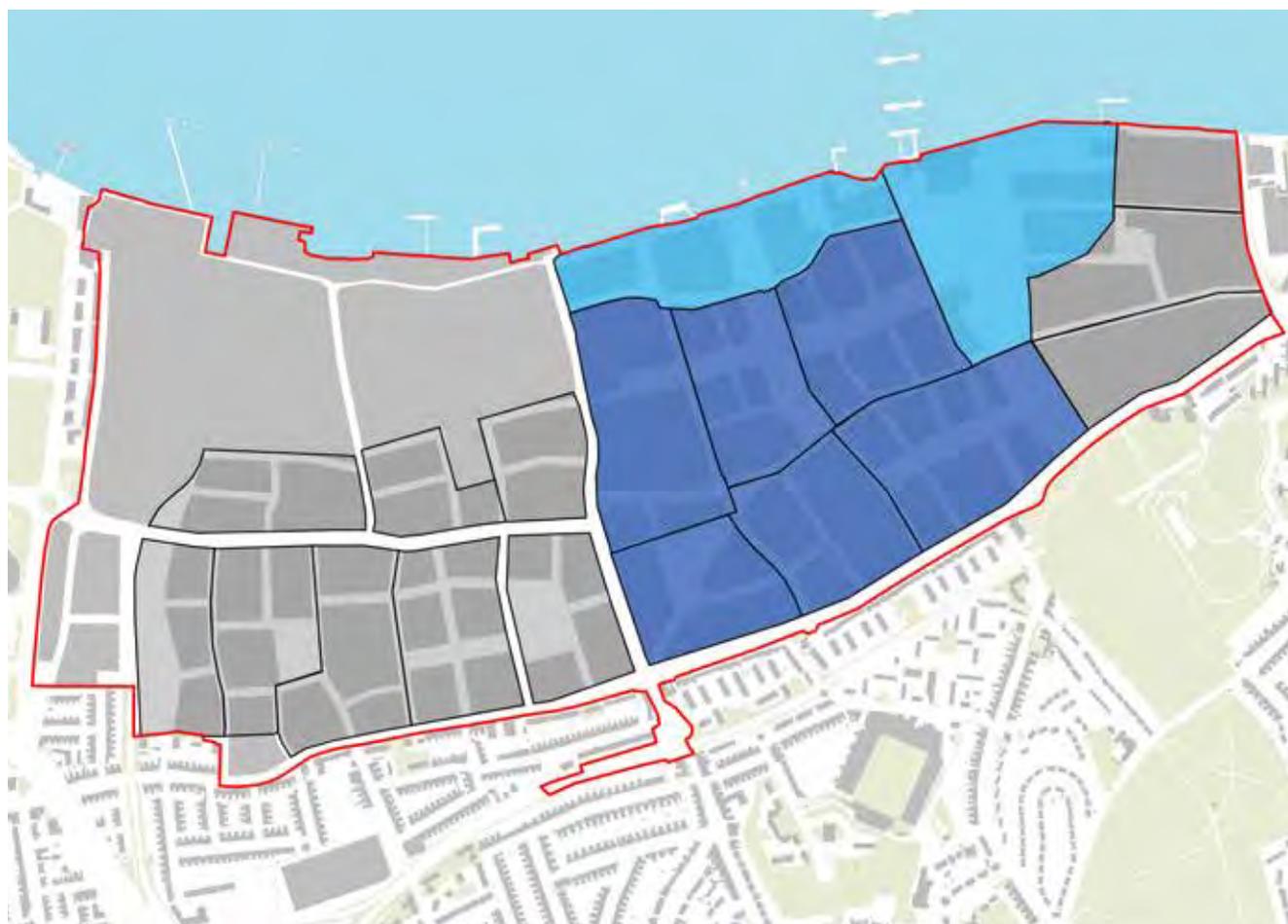
GLA or TfL, as appropriate), which would help to unlock the wider development opportunity by forward funding investment in infrastructure. This initial investment would then be recovered over the course of the Plan period, as development comes forward.

The initial loan could either be re-paid, as soon as the Royal Borough is in funds, or re-invested, functioning almost as a rolling investment fund, which would only be repaid at a point in time when a significant amount of the site had been developed.

The Royal Borough would also be willing to use CPO powers with appropriate CPO indemnity agreements from developers to secure infrastructure required. Royal Greenwich would also be willing to support developers in applying for funding to Large Sites Infrastructure Fund, etc.

Royal Greenwich might also consider prudential borrowing against its assets and, again, the intention would be to recover the cost of investing early in crucial infrastructure as developers bring their land to market.

Selected Infrastructure Requirements	Approximate cost
New Primary Road infrastructure, including upgrades and improvements to Woolwich Road and the delivery of the East west Route	£10.5 million
Flood defence improvements, as per TE2100 document, including an enhanced Thames Path	£7 million
Education provision, including 2 new primary schools and 2 secondary schools	£105 million
Green infrastructure	£26 million
Green connection between Maryon Park and Charlton Riverside Park	£0.75-12 million
New Thames Clipper Pier	£3 million
Utilities, including off-site reinforcement of the networks	£54 million
Drainage, including surface water and foul	£14 million
Community investment, including health provision, sports and leisure (other than general GI), early years' education, waste management	£98 million



Key

- Site boundary
- Contributions to the East-west route*
- Contributions to flood defences*
- General contributions, e.g., open space, education, health, affordable housing etc.

* In addition to general contributions, rate/proportion to be agreed with the Royal Borough

This plan is indicative only, and has been prepared to demonstrate the potential for joint ventures to deliver development at Charlton Riverside in such a way as to balance out contributions towards key infrastructure.

Table 11B: Selected infrastructure costs

Figure 11.6: Contributions by development parcels



Charlton Riverside, 2017

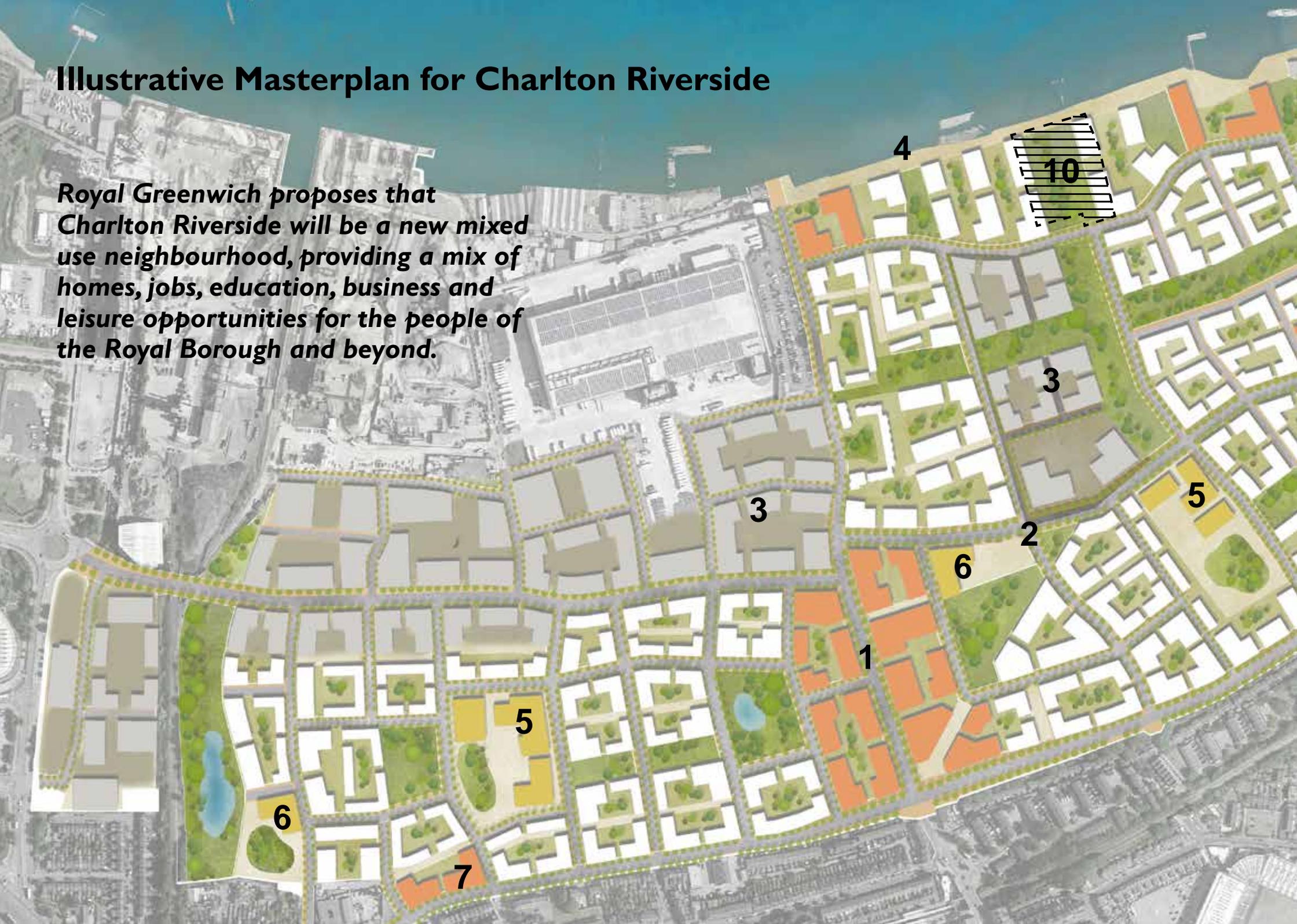


I2. Illustrative Masterplan

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Illustrative Masterplan for Charlton Riverside

Royal Greenwich proposes that Charlton Riverside will be a new mixed use neighbourhood, providing a mix of homes, jobs, education, business and leisure opportunities for the people of the Royal Borough and beyond.





- 1. Neighbourhood Centre**
- 2. East-west route**
- 3. Employment hub**
- 4. Thames Path**
- 5. Secondary/through school**
- 6. Primary schools**
- 7. Local centres**
- 8. Westminster Estate**
- 9. Charlton Riverside Park**
- 10. Riverside Wharf**

Figure 12.1: Illustrative masterplan for Charlton Riverside



12.1 Introduction

Following on from the Development Concept and Design Principles, set out above, it is helpful to show how development might be arranged, the key development components and their spatial arrangement. The Illustrative Masterplan, opposite, suggests how Charlton Riverside might look if the full extent of development opportunity is realised.

12.2 Illustrative Masterplan

The Illustrative Masterplan is not a detailed development proposal. It is intended to suggest how development might be delivered in a manner that is in keeping with the Design Principles and Vision for Charlton Riverside. It is recognised that detailed development proposals will be prepared by individual land owners or groups of developers working together and that, over time, the context in which these proposals come forward will have changed. However, the Royal Borough is a significant landowner at Charlton Riverside and anticipates working with different parties to deliver development. Whether it is a party to a specific proposal or the planning authority responsible for making a planning decision, the Vision for Charlton Riverside, Design Principles and Illustrative Masterplan will inform the Royal Borough's approach to development at Charlton Riverside.

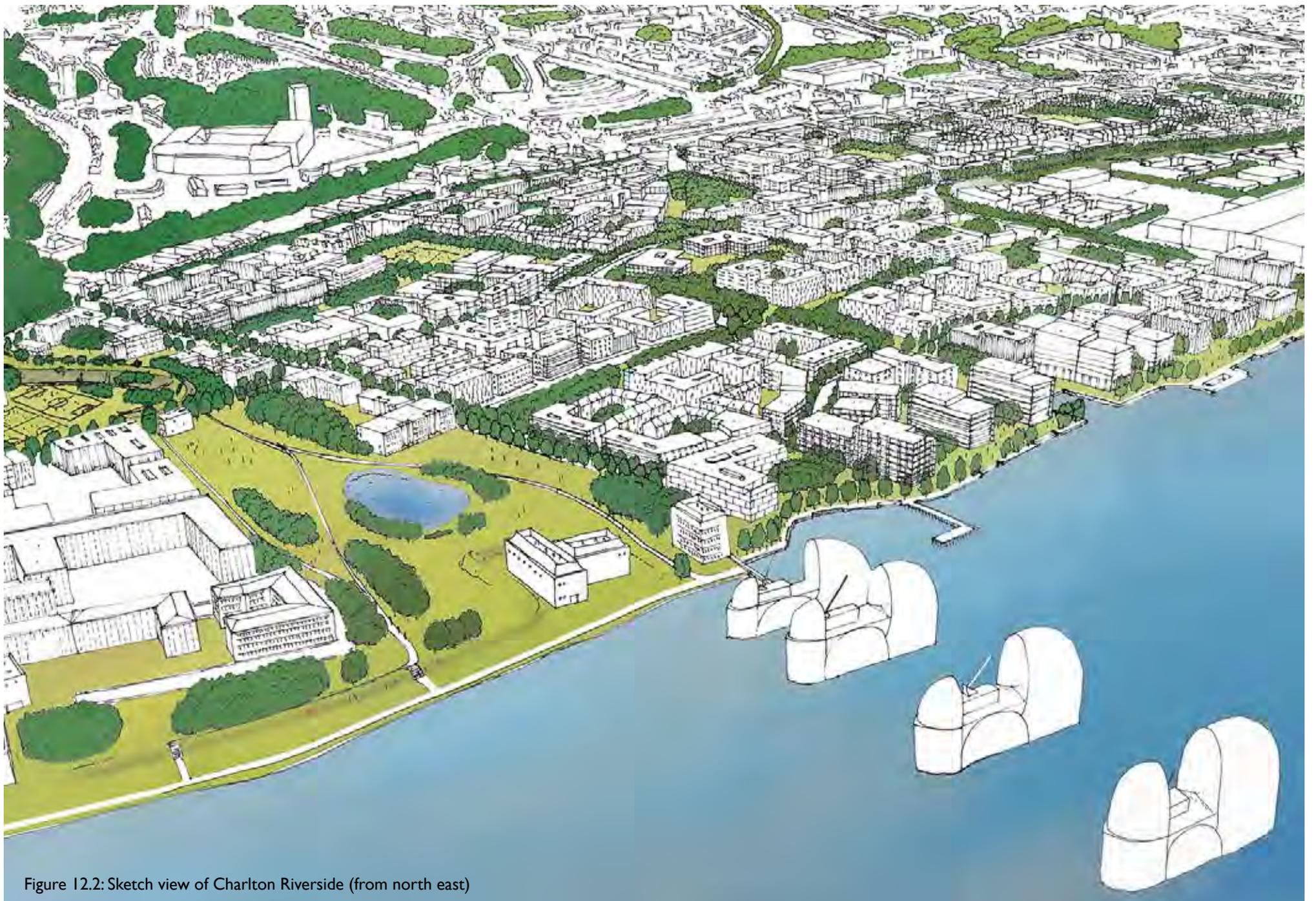


Figure 12.2: Sketch view of Charlton Riverside (from north east)

12.3 Vision for Charlton Riverside

The Royal Borough proposes that Charlton Riverside will be a new mixed use neighbourhood, providing a mix of homes, jobs, education and leisure opportunities for the people of Royal Greenwich and beyond. The sketch view, opposite, is graphic representation of that vision and how the site might look as the vision, and its key objectives, are realised.

The new neighbourhood will have a sizeable component of family housing, which means three bed dwellings and above. Given the character and composition of nearby developments at Greenwich Peninsula and Woolwich Arsenal, the Royal Borough is keen to see a different model of development, one that is focused more on larger, family dwellings set within a different type of urban environment. For that reason, the Royal Borough is promoting low to medium rise, high density development at Charlton Riverside, a model of development that is common in many parts of London.

The sketch view, opposite, gives a flavour of how such a model of development might be delivered. Low to medium rise, residential led, mixed use development blocks sit within an expanded matrix of open space which in its turn focuses on the River Thames,

Embedded within this mixed land use framework, existing and new commercial and industrial enterprises will help maintain Charlton

Riverside's importance as an economic driver for the Royal Borough and the wider south eastern London sub-region.

The Vision aspires to Charlton Riverside being a location of choice for people who want to live and work in the Royal Borough, with the emphasis on it being a place where people choose to bring up their families.

It is also an aspiration of the Royal Borough that Charlton Riverside is not a separate entity or a gated community, but a new neighbourhood that is firmly integrated into its surroundings with linkages at every level to Charlton, the Peninsula and Woolwich.

To that end, Charlton Riverside is not intended to be a 'riverside' development in the usual sense. It will, obviously, be a place that reflects its location next to the Thames, and celebrates that connection. However, it is also intended to be a real London neighbourhood, with a form of development, a mix of land uses and a range of opportunity for its residents that clearly locates it in London and, specifically, the Royal Borough of Greenwich.



Thames Barrier Control Tower, Charlton Riverside