

Chadwell Heath Transformation Area Masterplan SPD



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View of typical industrial unit within Chadwell Heath industrial estate



1. Introduction

About the Project

Chadwell Heath is one of the largest remaining regeneration opportunities at a Crossrail station and it is identified within the London Borough of Barking & Dagenham's ('LBBd') new Local Plan as a Transformation Area. This masterplan is a Supplementary Planning Document (SPD) to the Local Plan, setting out further details and policy guidance as to how LBBd foresees, in line with the relevant planning policy context, the Chadwell Heath industrial area being comprehensively redeveloped to provide new homes, as well as improved and intensified commercial space for industrial activities, alongside new services and social infrastructure, improvements to local transport and a renewed public realm.

Delivery and implementation

This SPD seeks the comprehensive regeneration of the Chadwell Heath industrial area and is a material consideration for relevant planning applications. It is intended that regeneration will be delivered through a combination, either in part or entirely, of the following:

- LBBd working as a major landowner in the area, developing its own landholdings;
- LBBd procuring and working with development partner(s);
- Major landowners and third party developers delivering strategic sites where the proposals facilitate and achieve the objectives set out in this SPD;
- LBBd using its statutory powers, including compulsory purchase powers, to facilitate comprehensive development and delivery of the sites.

All development proposals will be required to demonstrate that they facilitate and contribute to the delivery of the wider regeneration objectives set out within this SPD and that they do not prejudice their delivery. Planning applications will also need to demonstrate provision for key priorities towards affordable housing, education, transport access and place-making.



Proposed illustrative masterplan



Residential
3,500+ units



Employment
146,400m2
(Industrial units included)



Community
including multi-faith centres



School
2 x 3FE Primary &
1 x 8FE Secondary schools



Retail/Leisure



Energy Centre



Open spaces
(public and private)

2. Site Introduction



2. Site Introduction



Chadwell Heath

Chadwell Heath is a suburban area in north Dagenham and east Ilford in east London, England. The site sits on the boundary with Redbridge Council to the west and Havering Council to the east. The site is around 2 miles (3.2 km) west of Romford and 4 miles (6.4 km) east of Ilford town centres, and 12 miles (19 km) north-east of Charing Cross.

Chadwell Heath Station is situated on the west of the site and is part of the Crossrail route. With significantly reduced journey times from Chadwell Heath Station to Tottenham Court Road, the station creates strong connection links to central London and acts as a catalyst for regeneration of the area around the station and the wider region.

Regional Context

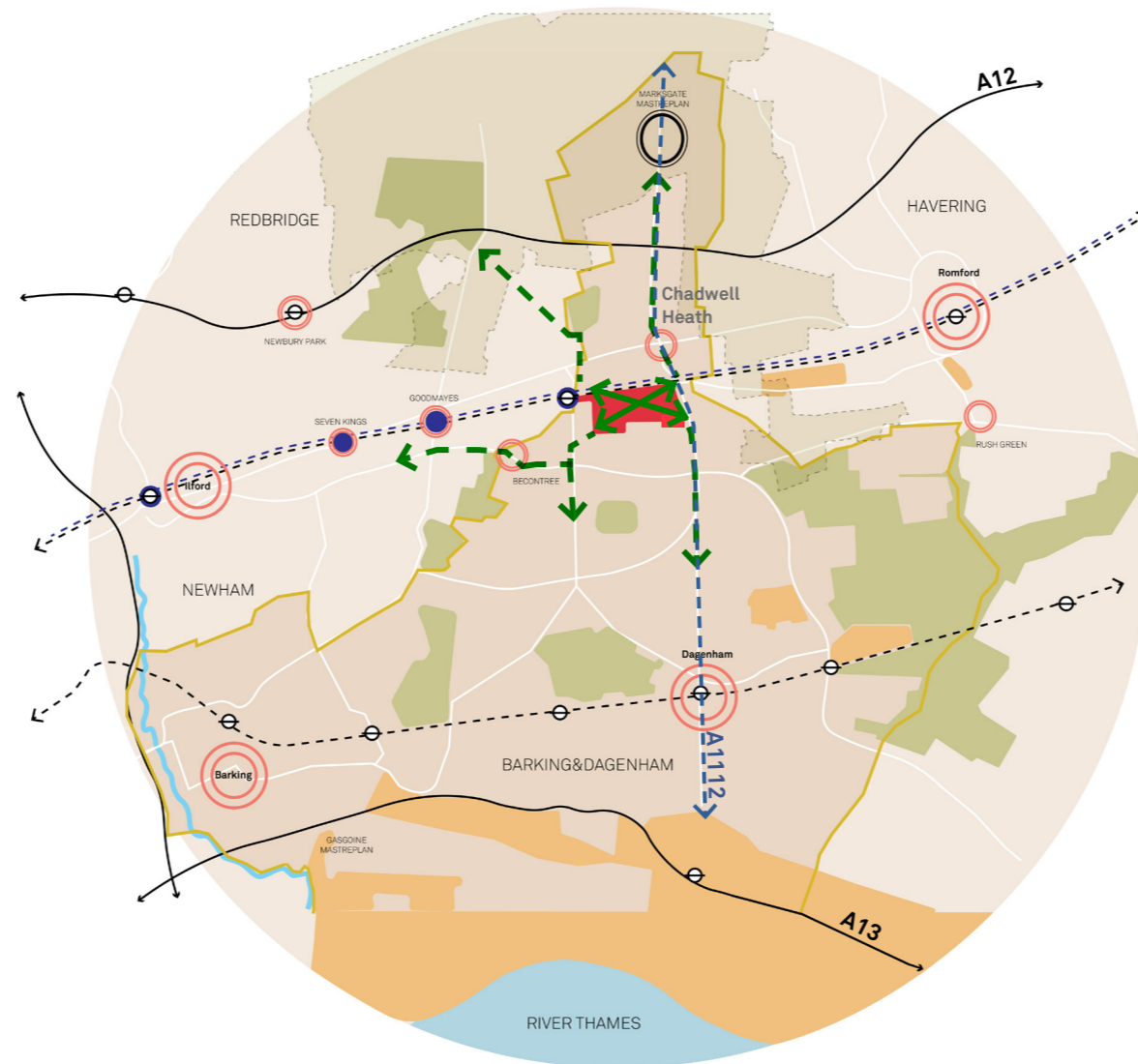
The Chadwell Heath Industrial estate sits within mainly a suburban context, with some industrial to the east and south-east; but the majority located to the south along the river. The site has proximity to the green belt in the northeast and there are some green spaces and amenities around the site.

The site has notable proximity to Chadwell Heath urban centre to the north and Becontree / Redbridge on the west.

Strategic goals

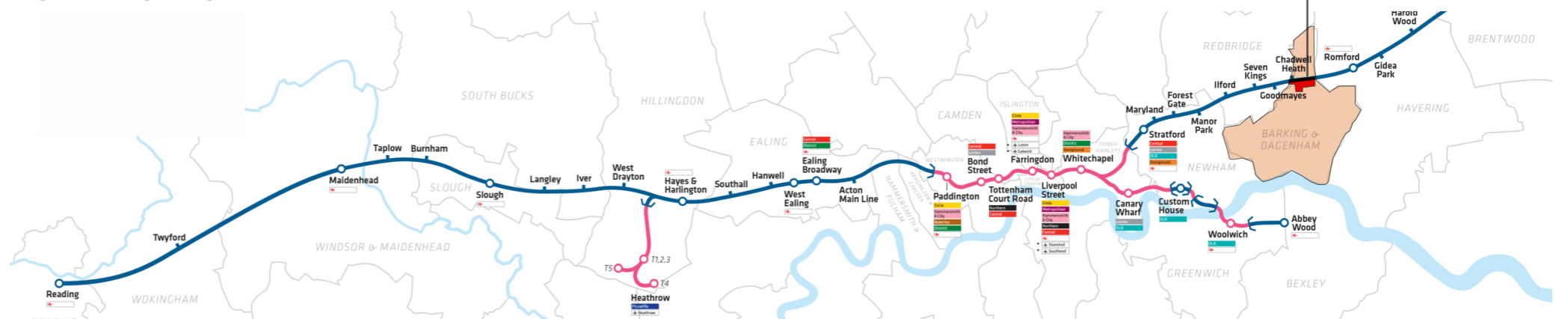
Regeneration of the industrial area should be appropriately stitched together with existing residential neighbourhoods. There is an opportunity for the site to enable new and enhanced connections to the east and west as well as to the south and north over the railway and to the neighbouring high street. This can manifest in the form of diagonal green pedestrian and cycle spines that can weave through the site with active frontages and public amenities.

It will be critical to add new services and social infrastructure and amenities alongside improvements in local transport (including buses, walking and cycling) and the public realm.



- Chadwell Heath Transformation Area
- Primary Road
- - - Railway
- Residential
- Industrial
- Green open spaces
- ↔ A1112
- - - Crossrail Line
- Crossrail Stations
- Centres
- New developments
- Green Belt of London
- ➔ Key Movement

Diagram showing strategic connectivity



Crossrail map with Chadwell Heath Station

2. Site Introduction



Site boundaries

The overall masterplan site is comprised of three zones which together form the site boundary for the Chadwell Heath transformation masterplan:

1. Chadwell Heath Industrial Estate (noted in red) is the largest component measuring 32 hectares and almost 1km across the length in the longest dimension. It predominantly comprises industrial uses of varying size units as well as one residential block and some small religious centres. Freshwater road and Selinas lane is the primary vehicular route.

It sits south of the railway and is surrounded by residential, low-density housing. To the east of the site is the busy Whalebone lane which provides access to the A12 and is predominately where most of the goods vehicles enter the site. To the west, the site is typically bounded by private residential gardens and steps in a plan to also form an adjacency to the existing Chadwell Heath station. To the south is mainly terrace housing as well as a recently completed secondary school, Robert Clark School of Science.

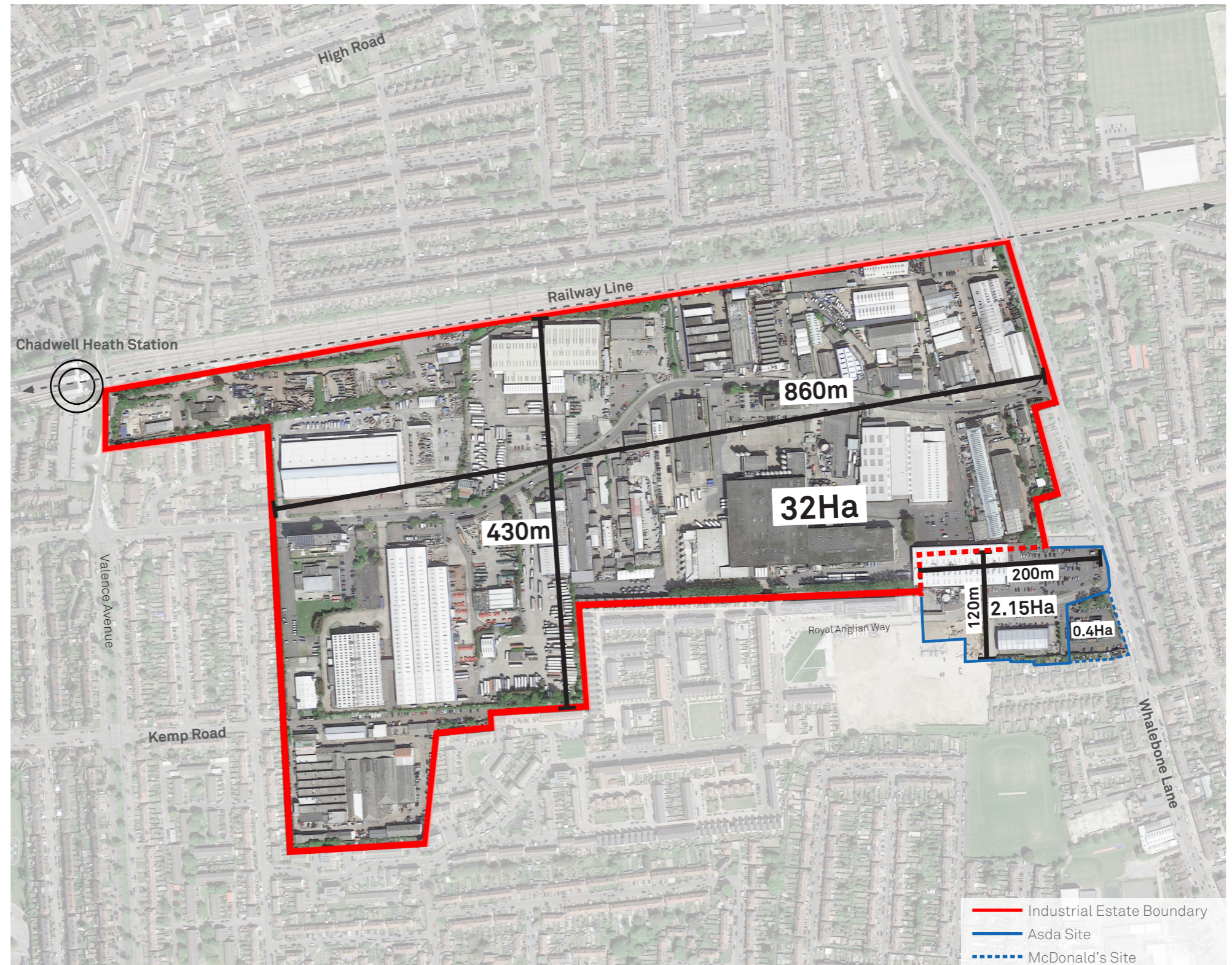
2. The second component is the ASDA and B&M retail store with a shared access road from Whalebone lane. The site (noted in blue) is 2.15 hectares.

3. The third and smallest component (noted in dotted blue) measuring 0.4 hectares is the McDonald's site which is fronting Whalebone lane to the East and adjacent to B&M and ASDA site.

The ASDA and McDonald's site boundaries are differentiated from the main boundary line as they are outside of the main industrial transformation area; however, they provide future opportunities for development.



Site Context



Site Dimensions

2. Site Introduction

Site History and strategic routes

The industrial estate was developed during the mid-20th century. It was assumed that the railway branch line was then used to deliver landfills, the remnants of bombed London, to infill the quarry after the Second World War prior to the area being developed further as an industrial estate.

The adjacent maps show a strong north-south connection via a footbridge, which was gradually reduced in importance. Also, notable and meandering/diagonal smaller paths cut through the site and provide diagonal connections across the site. There are opportunities in the proposed masterplan to re-introduce these linear and diagonal historic links in the masterplan and thereby strengthen the wider connections.

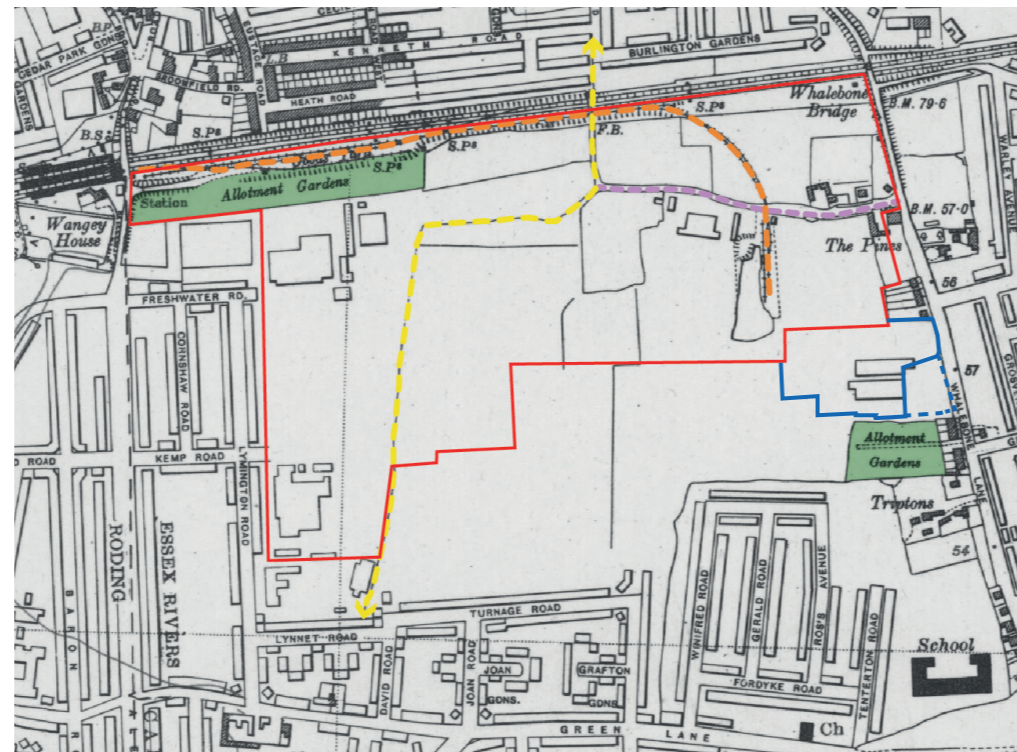
Notable Industries

Within the site were notable industries including the Leather Works factory and the Berger Paint Factory constructed in 1934 as an extension of the factory in Homerton. On the south-west corner was W. J. Barton Ltd Bakery on Kemp Road 1948, whilst further north, J. Burns of Wangye Works was a large factory in Chadwell Heath that created vulcanized fibre.

Typical of the factories in east London, there was a large vibrant residential community that lived adjacent to the factories and also supported smaller industries that coexisted next to or underneath residential units. The proposed masterplan looks to re-introduce this vibrant mix of industrial and residential within a cleaner and safer environment.

Site Ecology

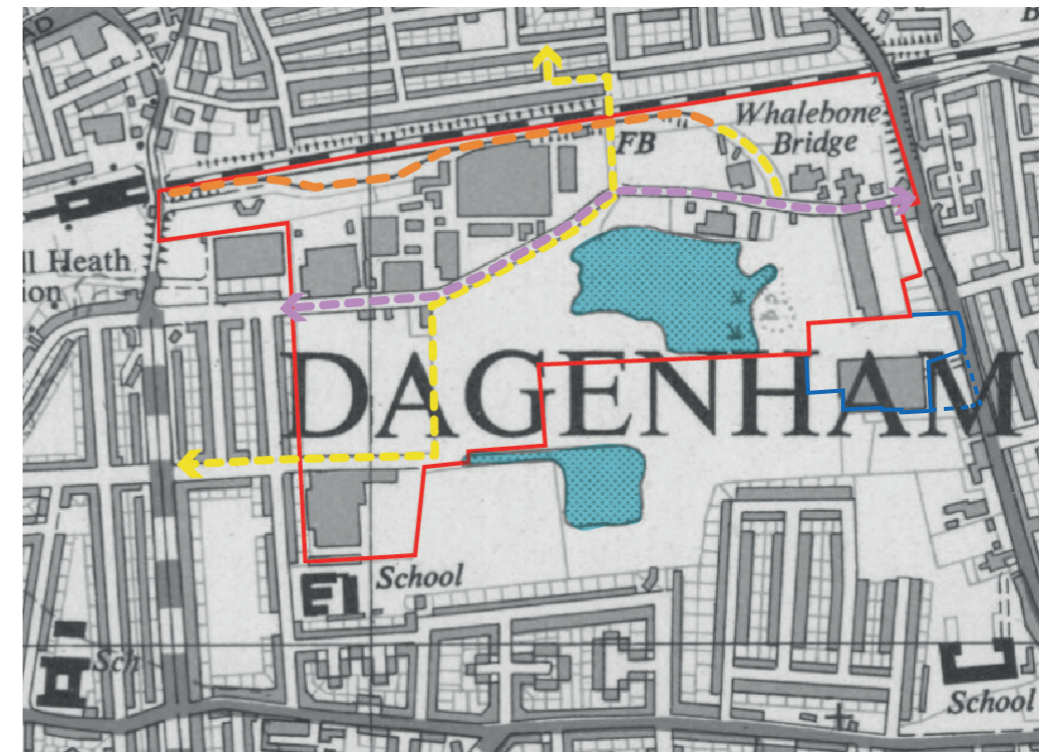
The adjacent photographs from 1952 show the extent of green open space and a series of lake bodies occupying the site, the largest central one is believed to be an old flooded quarry. This rich variety of green space and ecology has been lost to industry over the years and there is currently only a thin protected ecology zone along the railway. There is an opportunity to re-introduce these green and blue ecological features, thus increasing biodiversity and healthy, green streets.



1938 map



Photograph from 1952 (taken from the north)



1989 map



W.J. Barton Bakery on Kemp Road

2. Site Introduction

Site Photographs

The following site photographs are taken at the key site access thresholds with its wider context, namely Selinas road and Whalebone lane junction to the east which forms the primary access point for industrial vehicles, Freshwater road to the west, the vehicular access service road from station road to the north-west providing access to the existing pedestrian footbridge over the railway centrally within the site.

There are also site photographs taken within parts of the site to show the character of the site, building morphology and range of uses. As noted further in the analysis, the existing industrial buildings vary in scale, character and use. Much of the building fabric is dated, both for the smaller units and larger sheds.



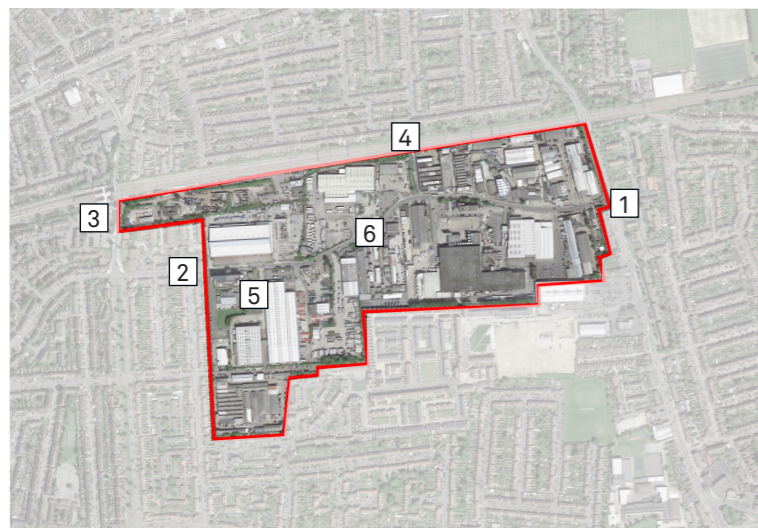
1. View from Whalebone lane junction (east)



2. View from Freshwater road junction (west)



3. View from north-west corner, access to Network rail (north-west)



Site context



4. View from Footbridge (north)



5. Dilapidated buildings with residential building in background



6. Existing building fabric of many units is dated

3. Site Analysis and Constraints



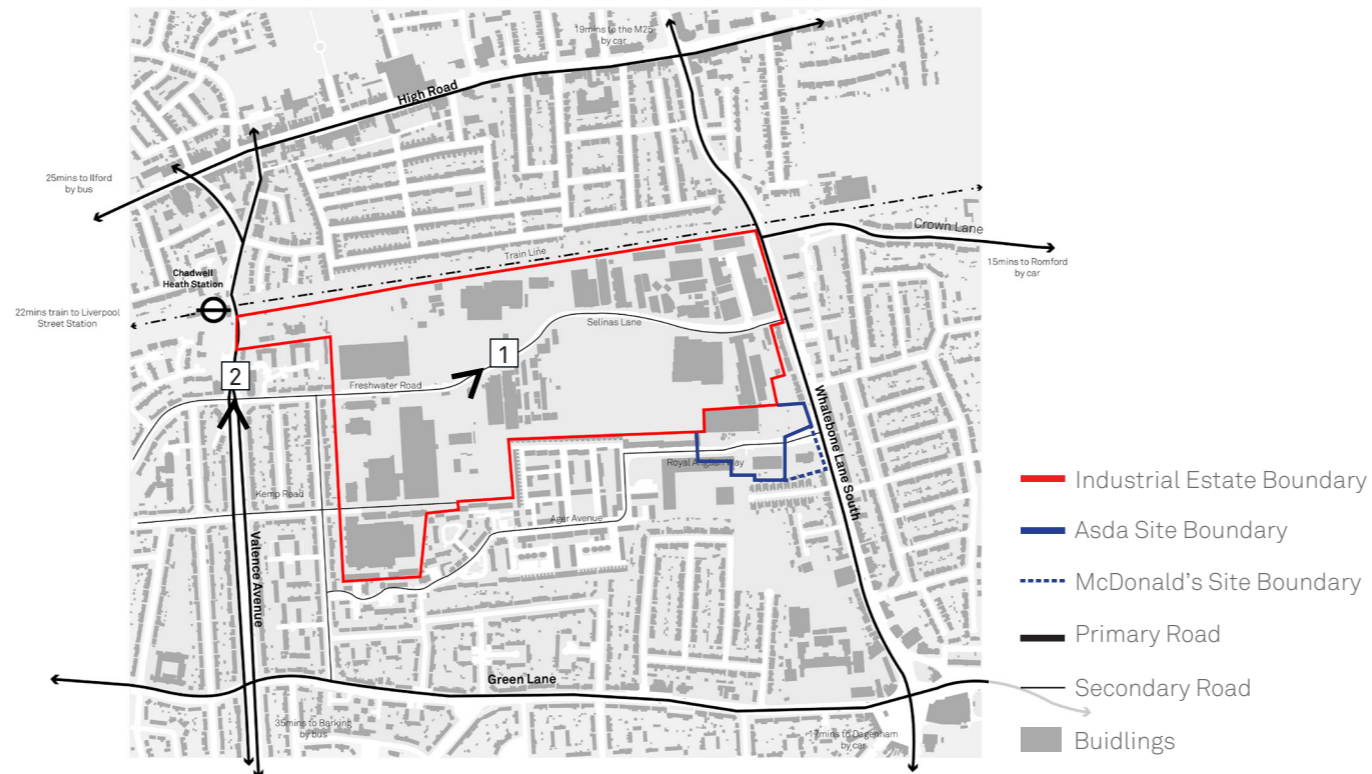
3. Site Analysis and Constraints

3.1. Analysis

Street network

There are four primary roads that form a perimeter around the site:

- The high road to the north which contains the high-street.
- Green Lane to the south connects Becontree to Central Park on the east.
- Whalebone Lane on the east running north/south enabling a connection to Marks Gate and A12 to the north and amenities to the south
- Valence avenue connects the site to Chadwell Heath station, the High Road and veering north-west to Little Heath.
- Freshwater lane / Selinas lane runs through the site and is mainly used for industrial access. On the west, the road continues to Becontree, thus forming a key axis and therefore a significant connection artery
- Similarly, Kemp road terminates on the site but runs through to Becontree to the west.



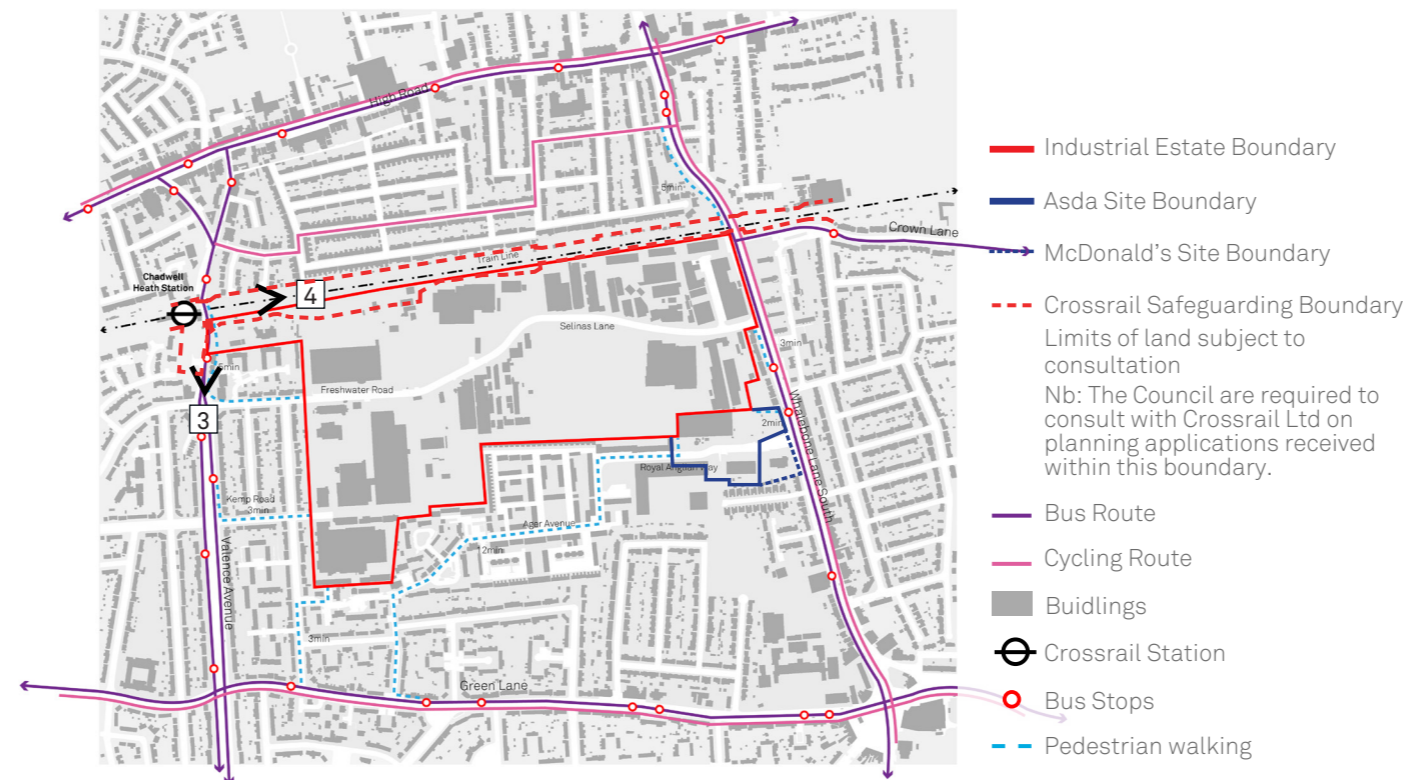
Public transport

The site is well connected to public transport, 0.5km from Chadwell Heath train station. Chadwell Heath is part of the Crossrail route, connecting Stratford and central London.

There are bus stops on either side at Station road and Whalebone lane. There is a shortage of car-parking provisions resulting in on-street parking. There are no bus routes within the site.

Walking or cycling within the site is not intuitive within the meandering road which has heavy lorry traffic.

There is a cycling route identified north of the site within the residential area and also to the east along Crow lane. There is an opportunity to enable a connection to both of these existing routes by enabling a cycle route along the railway and improved/enhanced bridge links over the railway to the north.



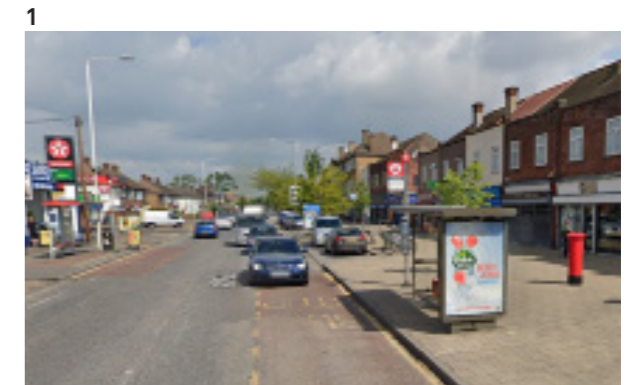
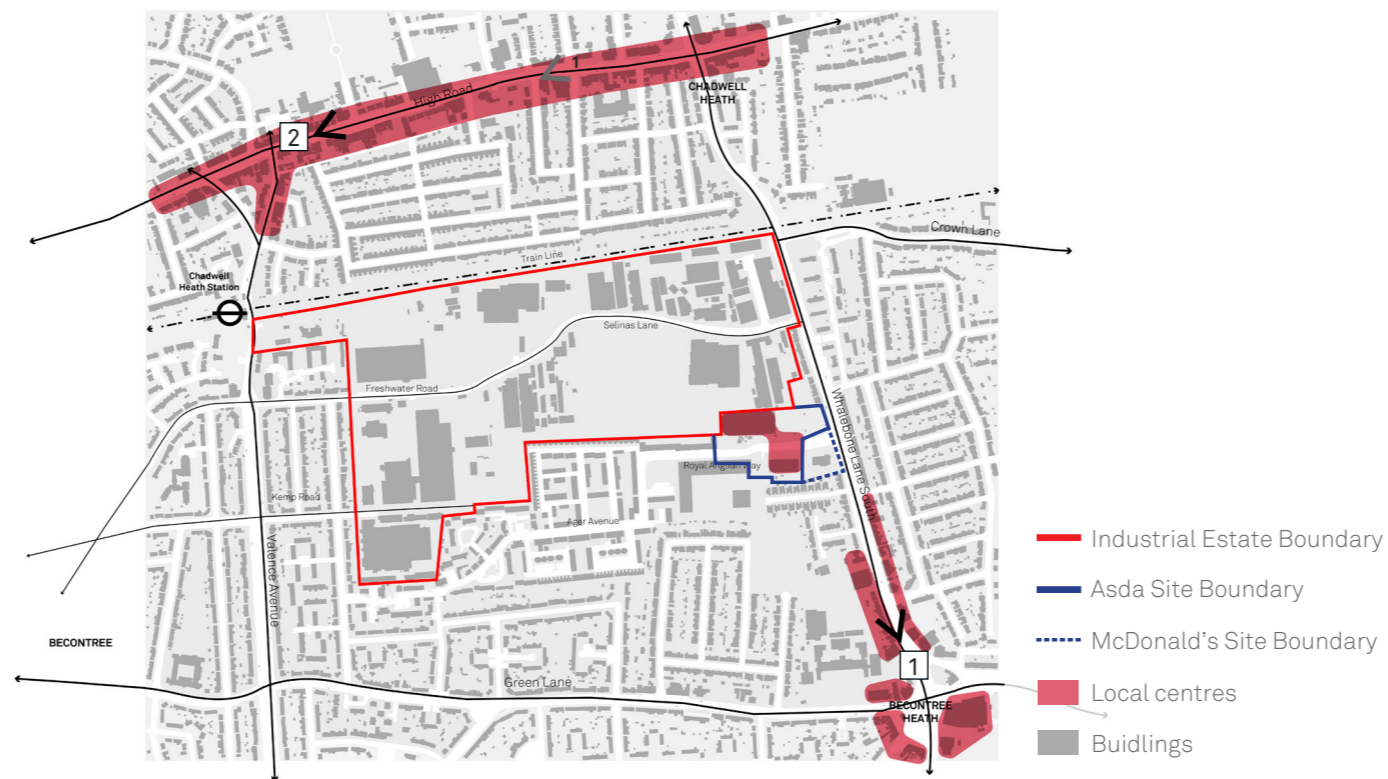


3.1. Analysis

Local centres

The site is located in the centre of a triangle formed by three local centres: the high street to the north, Becontree to the south-west and the Becontree Heath junction to the south-east which contains shops and community centres. The proposed masterplan should look to form links to these centres with new and improved bridges over the railway and improved pedestrian links to the south-east and north-west corners of the site.

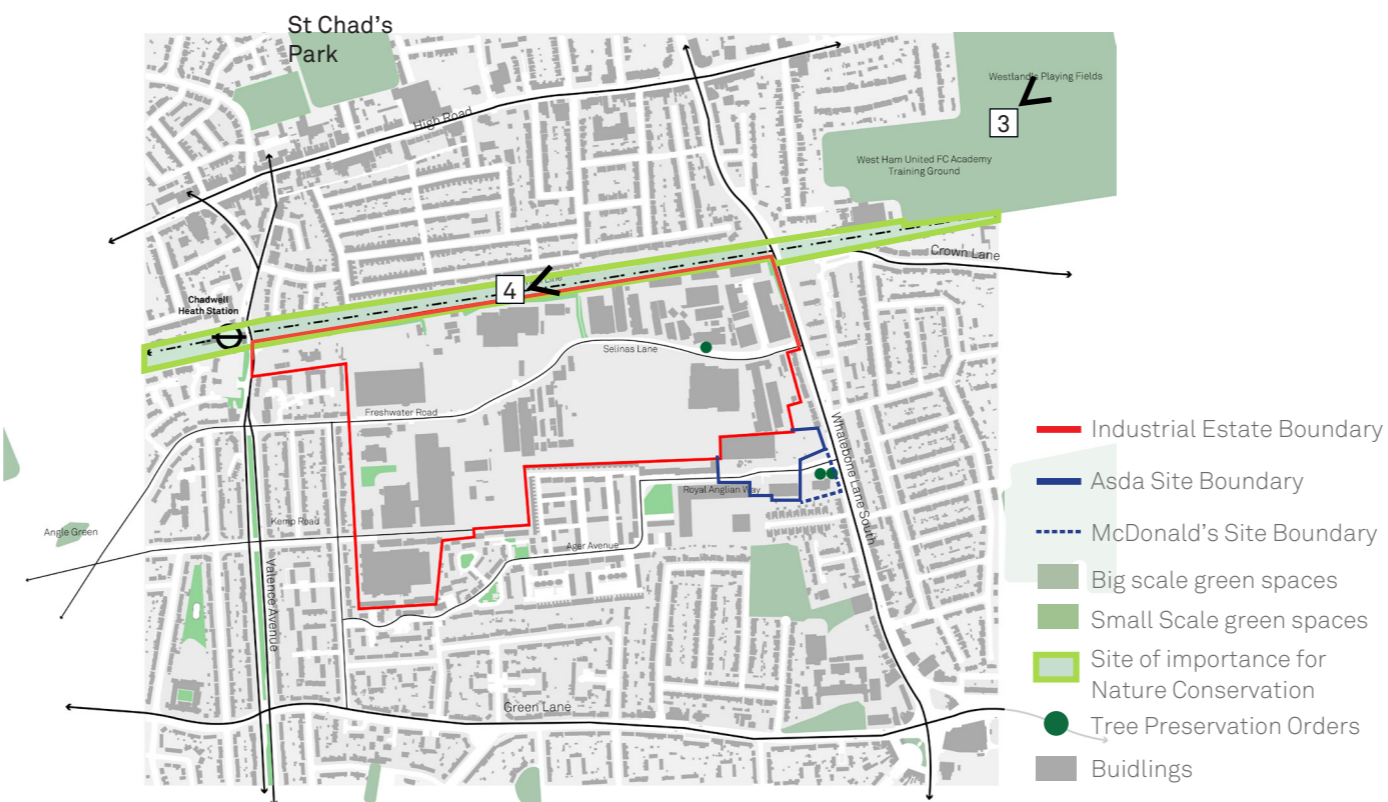
The local ASDA store, B&M store and McDonald's fast-food restaurant on the south-east corner of the site have a significant presence but their outlook and sense of place are generally poor dominated by the large car parking. There can be opportunities for improvement and consolidation of the ASDA store within the masterplan. Within the site, there are small cafes that are providing amenities for people working on the site.



Local green spaces

There are some parks around the site, namely St Chad's Park, north of the site, Valence Park to the south and Central Park to the east; however, these are 15 – 25min walk from the centre of the site. LBBDD's Parks and Open Spaces Strategy acknowledges a deficiency in outdoor play provision in the area, and a local and district park deficiency in the north of the Borough. The masterplan aims to address this by introducing a variety of parks and open spaces including a new local park, green links, pocket parks and squares.

There is a tree within the site that has a Tree Preservation Order. Whilst the area to the north of the site abutting the railway has been identified as a 'Site of Importance for Nature Conservation', in recent times this area appears to have been occupied by mostly hardstanding, however, there is a more significant part to the north-west of the site that should be maintained.





3.1. Analysis

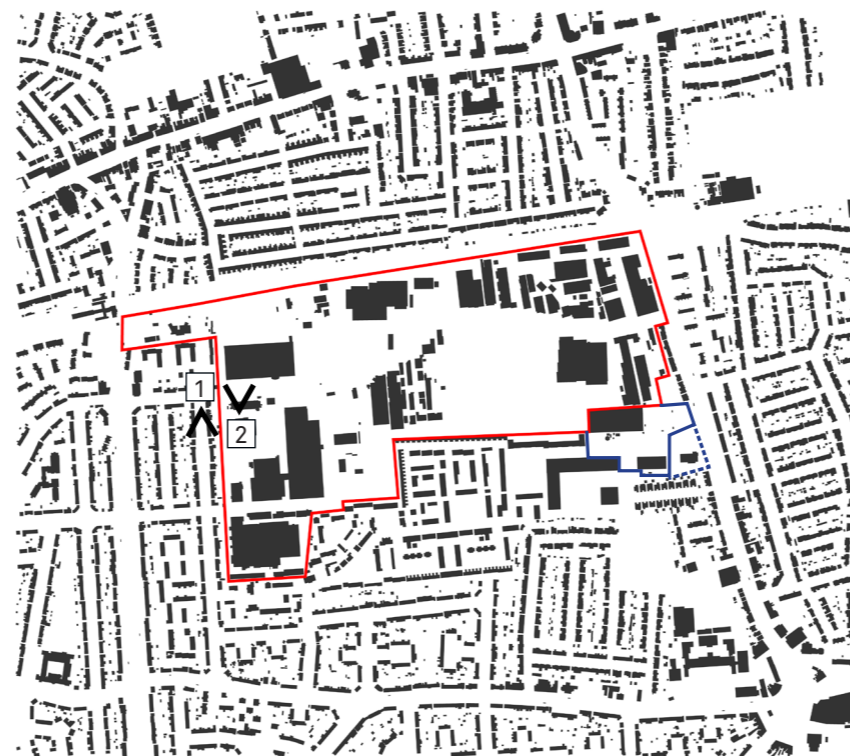
Urban grain

Around the site, there are mainly two-storey residential terraces fronting the streets with back-to-back private gardens. The orientation of the terraces varies but is mainly working along the east/west or north/south, although the grain does break to the south of the site.

There are some larger buildings along the high street to the north and the south of the site, for example the ASDA store and the recently built Robert Clark school of Science.

The southern and western boundaries of the site are abutted with a line of terraces, historic ones and recently completed.

Within the site, the industrial sheds have a large footprint that is quite contrasting to the scale and character of the residential buildings. The smaller units are mainly concentrated in the north-east corner and centrally.



- Industrial Estate Boundary
- Asda Site Boundary
- - - McDonald's Site Boundary
- Urban Grain



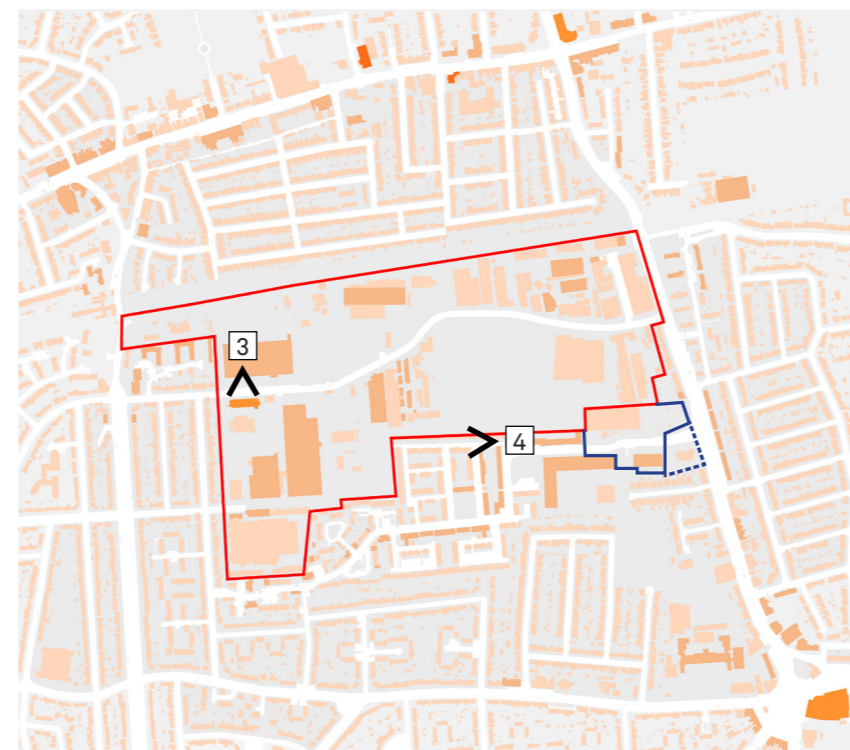
Building heights

Within the industrial site, there is a variety of building typologies and respective building heights, ranging from typical pitched roof warehouse units and industrial silos to more unique expressive structures.

Within the wider context, the surrounding housing is mainly two-storey brick or rendered terraces and semi-detached units.

There are also some larger and taller residential units such as the seven-storey Spectrum building and the three-storey Anglia Court estate.

The site is fairly flat with notable local increases in height on the north-east and north-west corners due to the rail bridges. The masterplan looks to capitalise on these level differences, particularly on the north-east corner where the industrial uses can be consolidated.



- Industrial Estate Boundary
- Asda Site Boundary
- - - McDonald's Site Boundary
- 1 - 2 stories
- 3 - 6 stories
- 7 - 10 stories
- 11+ stories





3.1. Analysis

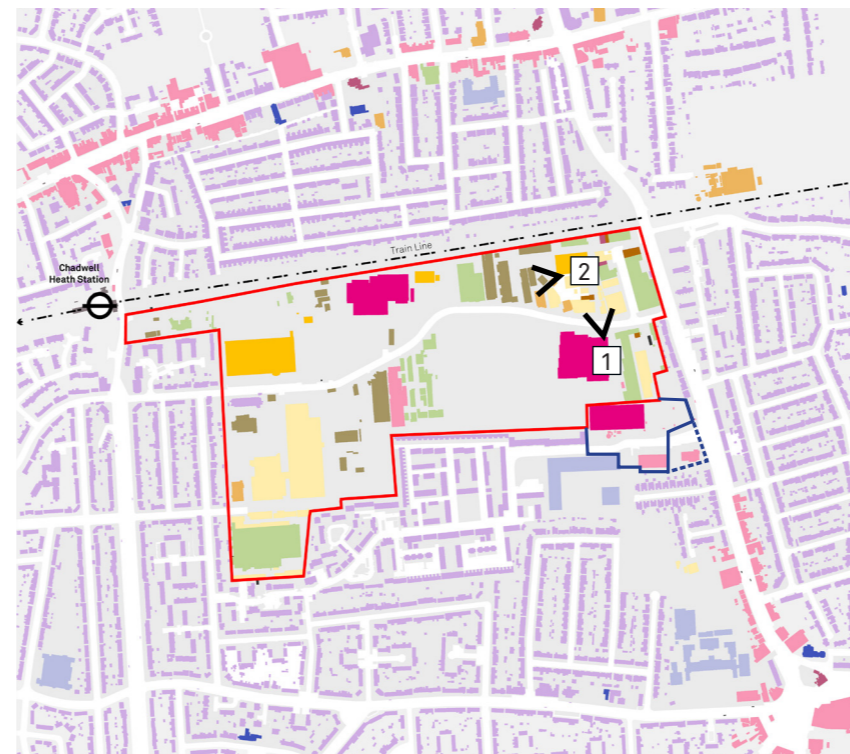
Land uses

There is a variety of industrial and commercial uses within the site, ranging from warehouse depots to small workshops and car repair shops.

There are also supporting cafes and some religious and community buildings that are open on specific days.

Around the site is mainly residential, with the retail local centres to the north and south. The ASDA, B&M store and McDonald's restaurant are situated on the south-east corner.

The recently completed Robert Clark school on the south-east corner of the site is significant addition with regards to access to and within the site.



- Industrial Estate Boundary
- Asda Site Boundary
- - - McDonald's Site Boundary
- Residential
- Retail
- Light Industry
- Education
- Community
- Industrial; retail related
- Builders yard
- Automotive
- Other

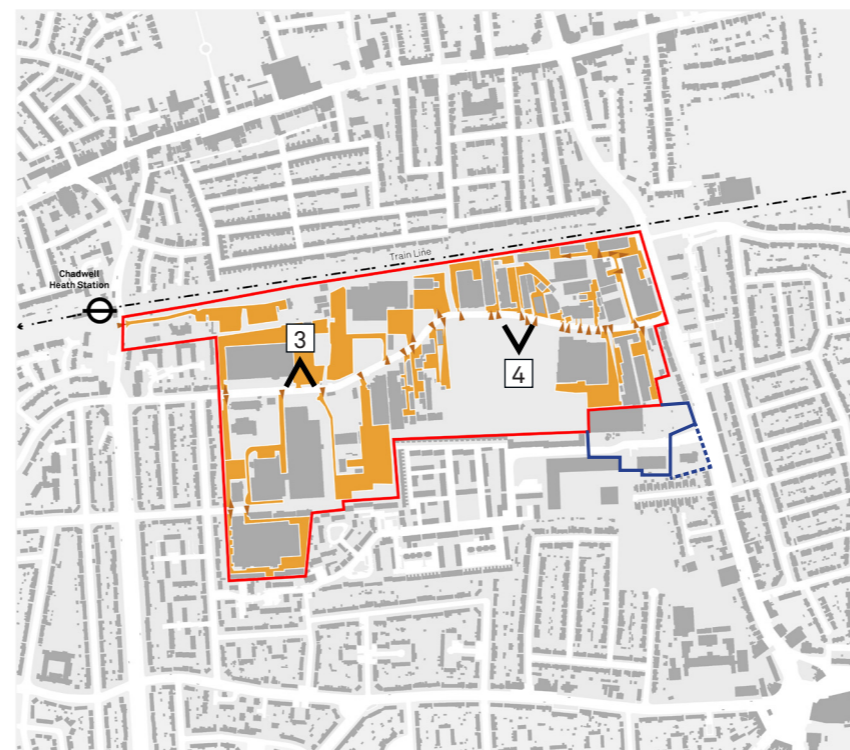


Industrial yard access

There are various warehouse yards within the site, mainly accessed via Freshwater / Selinas Lane and Kemp road further south.

The diagram highlights the frequency of the access points from the primary road and the inefficiency of their arrangement and extensive footprint.

The masterplan looks to consolidate and optimise the yards and service access in order to unlock opportunities for development.



- Industrial Estate Boundary
- Asda Site Boundary
- - - McDonald's Site Boundary
- Industrial yards
- Vehicular access to the yards





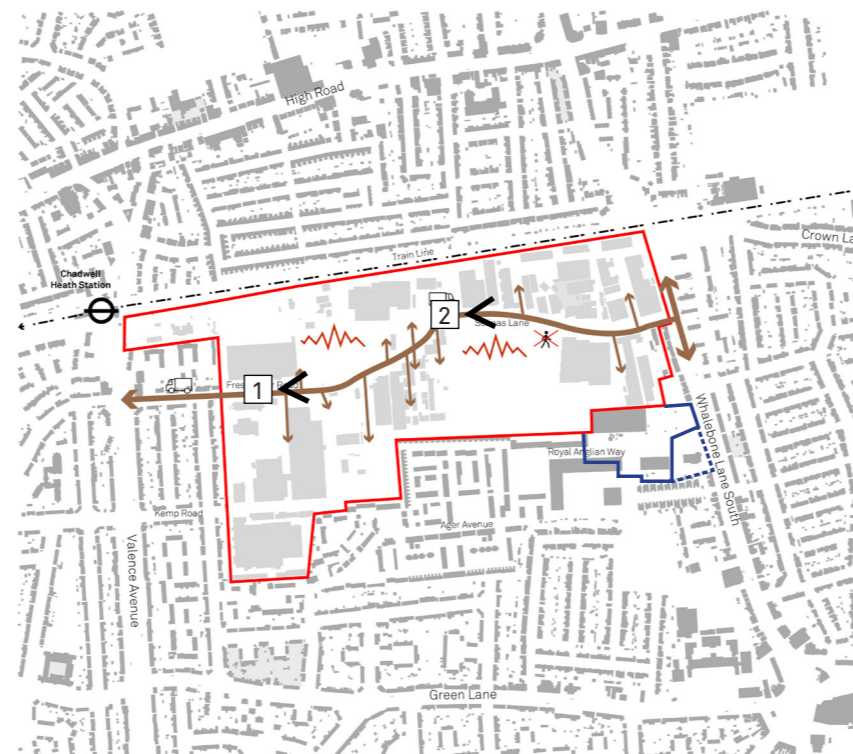
3.2. Constraints

Freshwater Road/ Selinas Lane

Freshwater road / Selinas road is a meandering road through the site that is mainly used for lorry access; with primary access to the industry from the east along Whalebone lane which is connected to the A12.

The current streetscape is noisy and unsafe for pedestrians with narrow pavements that start/stop to accommodate the frequent lorry entries to industrial sites. Pavements are often obstructed by cars.

The proposed masterplan looks to improve the existing road infrastructure by widening and greening the existing pavement and also forming green spines, cycle routes and pedestrian links that look to segregate pedestrians and cyclists from heavy lorries within the site.



Freshwater Road / Selinas Lane

- Industrial Estate Boundary
- Asda Site Boundary
- McDonald's Site Boundary
- Industrial Arterial Road
- ➔ Vehicular and Serving access
- Building plots



Severances

The site is severed from the immediate context by a variety of boundaries, which the masterplan looks to address and overcome, namely:

Railway

The railway running east-west creates a significant hard boundary to the site with only 1 small uninviting footbridge in the centre of the site, connecting across to a small street.

Private Housing

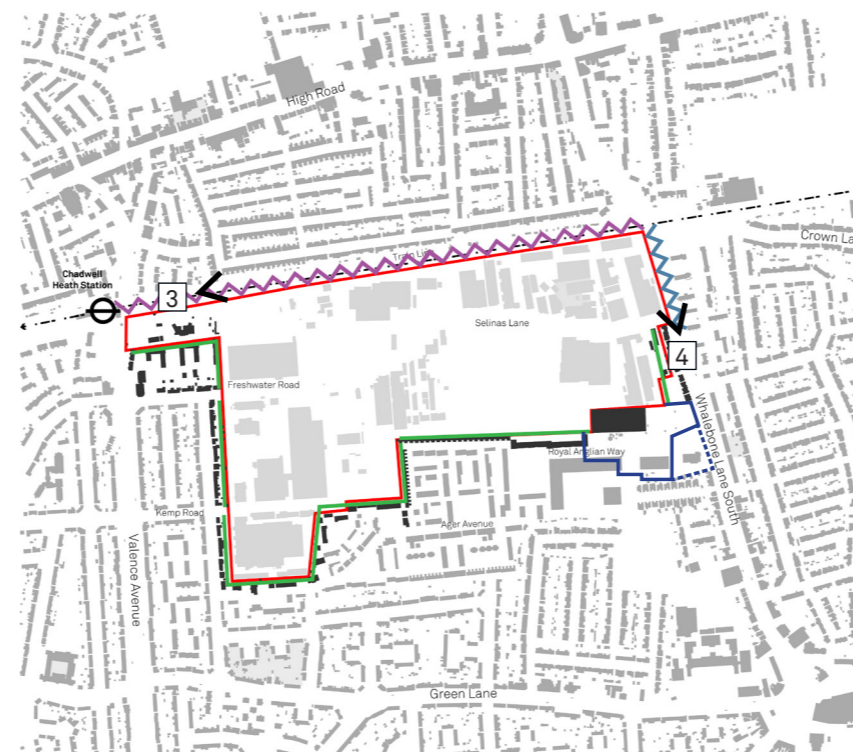
Residential housing is mainly on the west and south, with private gardens abutting the site boundary line. These are interrupted at only small intervals.

ASDA

The store creates a sharp boundary at the south-east corner of the site with limited through access.

Topography

The change of level on the north-east of the site creates a significant boundary.



Severances

- Industrial Estate Boundary
- Asda Site Boundary
- McDonald's Site Boundary
- Severance caused by rail
- Severance caused by height difference
- Severance caused by private residential boundary
- Severance caused by buildings
- Building plots





3.2. Constraints

Permeability

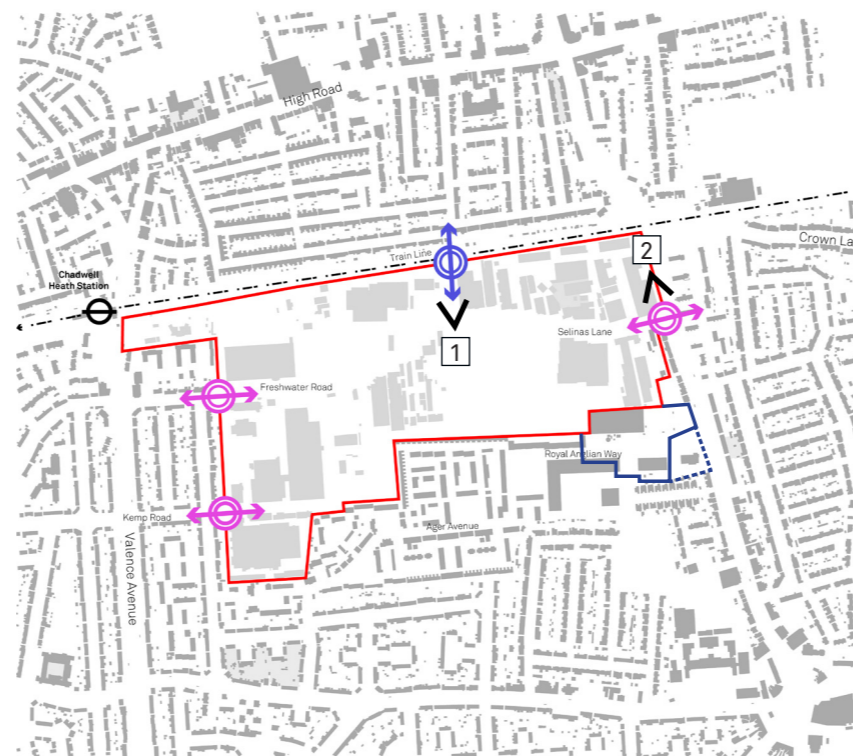
There are currently only a few existing entry points within the site:

Freshwater road / Selinas lane and Kemp road, where the pavement and existing road do not offer intuitive pedestrian or cycle movement.

The existing footbridge to the North is not very visible or friendly and terminates awkwardly to the north.

The masterplan should look to enhance existing entry points to the site and identify new ones where there are opportunities.

These enhanced and new entry points to the site can become clear physical and visual axes through the site and offer improved wayfinding to make walking and cycling trips more legible and pleasant.



Permeability

- Industrial Estate Boundary
- Asda Site Boundary
- - - McDonald's Site Boundary
- ⊕ Links to primary and secondary roads
- ⊕ Footbridge

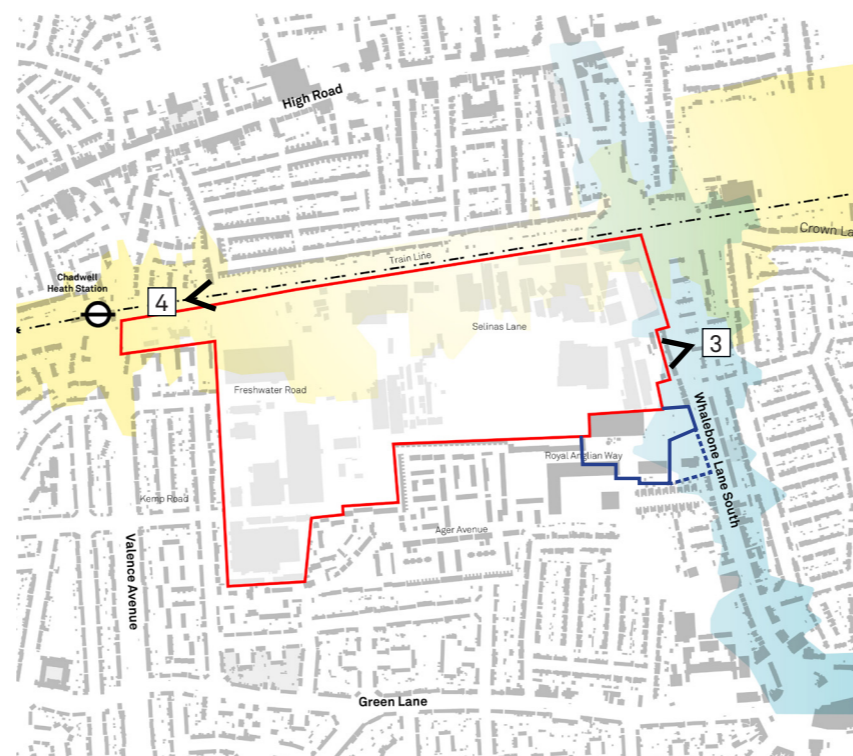


Traffic Noise

The proposed Chadwell Heath masterplan is seen to be located in a location with the potential for acoustic impacts from both road and rail.

The railway line poses a direct acoustic risk to the northern portion of the masterplan site. Furthermore, the Crossrail (Elizabeth Line) project and services will increase the expected capacity of the Chadwell Heath Station. The masterplan looks to place mainly industrial units to the boundary and any residential units are to be offset with a significant green landscape buffer introduced.

In addition, Whalebone lane to the east is of main concern. This urban A-road has a dual carriageway capacity and an average speed restriction of 30mph, in particular along the north-east corner. The volume of cars using this stretch of road between the Becontree Heath Leisure Centre to the south and the Chadwell Heath Crossing is substantial. The adjacent diagram illustrates the traffic noise map.



Traffic noise

- Industrial Estate Boundary
- Asda Site Boundary
- - - McDonald's Site Boundary
- Road traffic noise
- Rail traffic noise



3.3. Planning

Planning Policy Context

The Chadwell Heath Masterplan SPD is supplementary to LBBD's Local Plan. This SPD document provides additional guidance to developers, land-owners, businesses and other stakeholders as to how to interpret relevant planning policies in the context of the Chadwell Heath transformation area, as well as setting out how these policies might be implemented. This SPD is also a material consideration for the purposes of making decisions on planning applications.

The aim to transform the Chadwell Heath Industrial Area is a local policy decision by the London Borough of Barking and Dagenham, which is supported by London-wide objectives and those set out nationally. The Chadwell Heath Masterplan demonstrates a framework for change across a comprehensive area. It sets out possible opportunities for development across the area, taking advantage of planned infrastructure changes and land availability.

The Masterplan is visionary and aspirational, but it is also realistic and takes account of local market conditions. Flexibility is needed so that it does not place unsustainable or unsupportable burdens on development, landowners and developers. The aim is to transform the location into a mixed-use community delivering jobs and housing and creating a high-quality place for the residents of the borough. This Masterplan also notes the strong industrial context of the area and places an emphasis on the use of innovative typologies to intensify the amount of industrial floor space within the Chadwell Heath transformation area. Industrial floorspace should be maximised in line with the proposals within this document, and the relevant policies in both the emerging Local Plan 2037 and London Plan 2021.

The National Planning Policy Framework (NPPF) (2021) sets out the Government's planning policies for England and how these should be applied. The Framework states that the purpose of the planning system is to contribute to the achievement of sustainable development, to which there are three objectives:

- an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
- a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- an environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

This Masterplan has been framed to meet these objectives. This Masterplan and the new Local Plan will present the context for decision-making at Chadwell Heath.



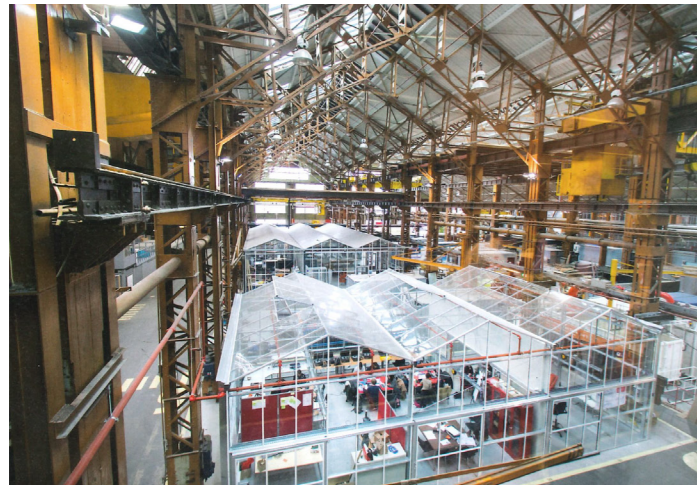
— Industrial Estate Boundary
 — Asda Site
 McDonald's Site

4. A Vision for a new Neighbourhood



4. A Vision for a new Neighbourhood

A number of 'Guiding Principles' set out overarching design drivers against which strategies and development proposals should be tested. At both a local scale and a wider regional scale, these principles form the backbone of the Masterplan drivers for the Chadwell Heath Transformation Area Masterplan:



Principle 1:

Intensification and delivery of an ambitious mix of industrial uses



Principle 2:

Develop a growing, diverse and circular economy



Principle 3:

Deliver new homes



Principle 4:

Create open space and amenities



Principle 5:

Connect local neighbourhoods by addressing severances



Principle 6:

Improve transport and keep the site working



Principle 7:

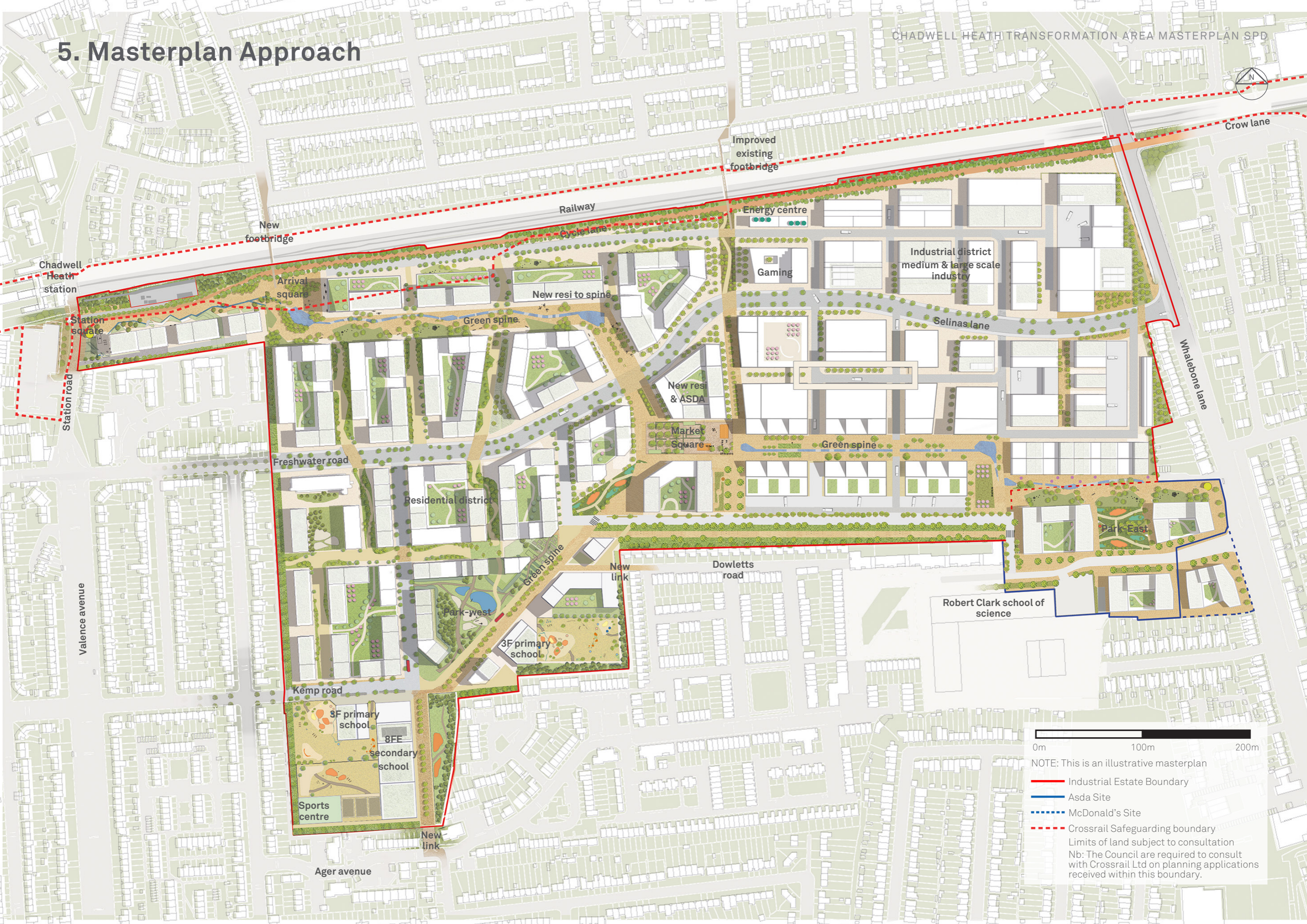
Create a legible identity for Chadwell Heath with a sense of place



Principle 8:

Create an exemplary vision for Barking & Dagenham

5. Masterplan Approach



NOTE: This is an illustrative masterplan

- Industrial Estate Boundary
- Asda Site
- - - McDonald's Site
- - - Crossrail Safeguarding boundary

Limits of land subject to consultation
 Nb: The Council are required to consult with Crossrail Ltd on planning applications received within this boundary.

5.1. Overview



- Industrial Estate Boundary
- Asda Site
- McDonald's Site

5.2. Spatial Principles

1. Improved permeability

The masterplan looks to improve the vehicular routes through the site and introduce seven new pedestrian and cycle-friendly routes. These include a new connection to the west opposite Chadwell Heath station, a connection to the east-facing Whalebone lane, three smaller pedestrian links to the south, improvement to the existing footbridge and a new footbridge further west. In addition, a cycle route is proposed to the north-east linking to the existing Crown lane cycle lane.

2. Green spine and open spaces

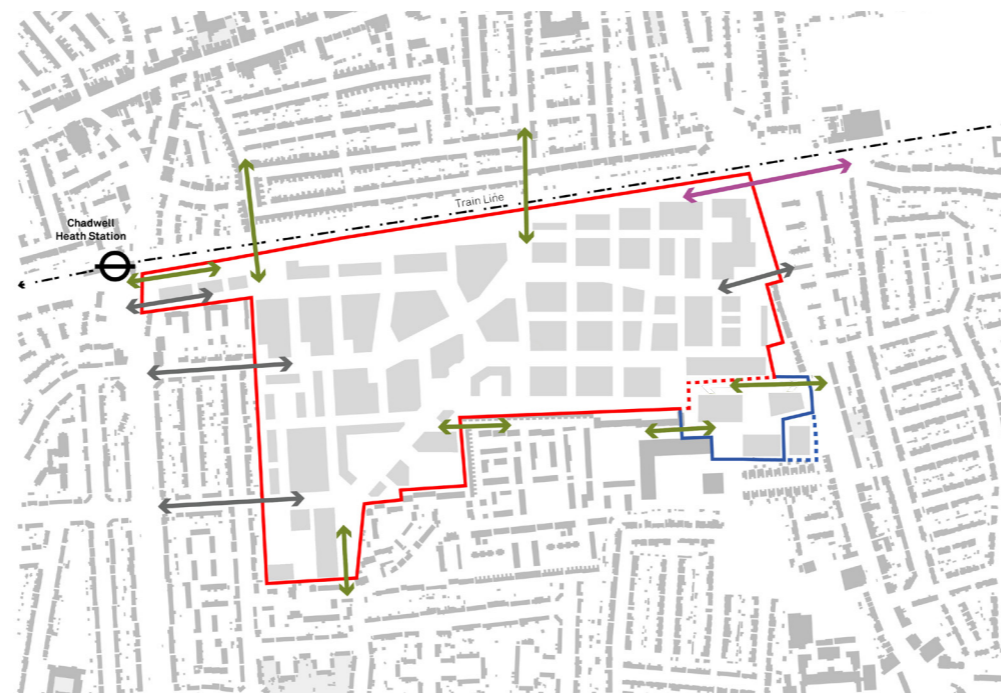
The masterplan looks to introduce a new pedestrian and cycle-friendly green spine through the site working diagonally and connecting the masterplan to the wider context. Linked within this green spine are a variety of landscaped amenities, including a series of green parks located within the new residential district and a network of public programmable flexible squares across the site, including the station square, the arrival square and market square.

3. Industrial and mixed-use split

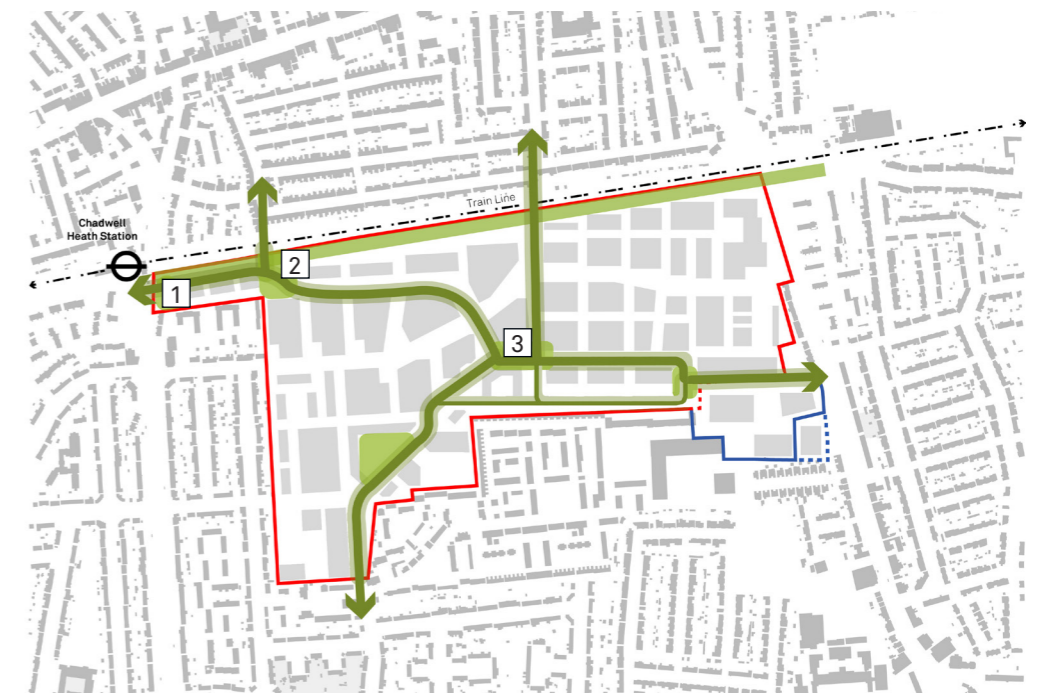
The masterplan looks to split the site effectively into 2 parts. On the east will be primarily industrial uses; taking advantage of the proximity to Whalebone lane and the A12 to the north and the level change on the north-east corner of the site thus enabling larger sheds to be accommodated. To the west will be mainly residential and mixed uses tying in with the immediate residential uses and Chadwell Heath station. There are also opportunities for residential units stacked on industrial ground-floor units to be introduced on either side and along the green spine.

4. Pedestrian-friendly transport system

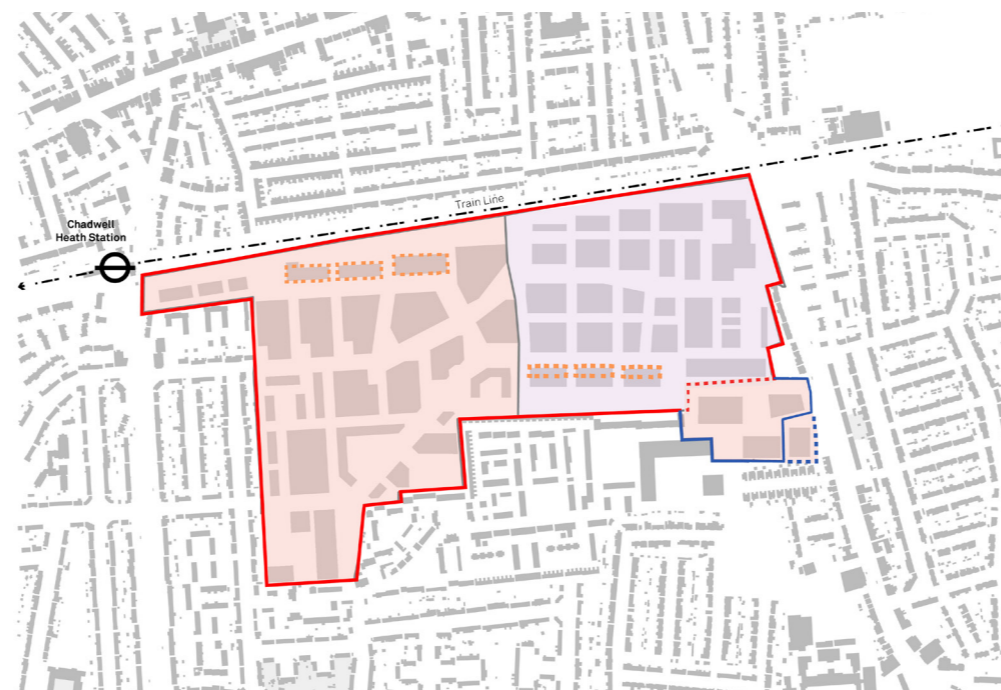
The proposed movement network and road hierarchy provide a clear route strategy which builds on the strong masterplan principles. Pedestrian and cycle movements are prioritised over vehicular circulation. Heavy goods vehicles accessing the industrial zone routes are restricted to the eastern part of the site away from the residential areas. The primary route through the site follows the existing Freshwater Road and Selinas Lane running east to west, whilst new secondary and tertiary routes providing access to residential units are minimised.



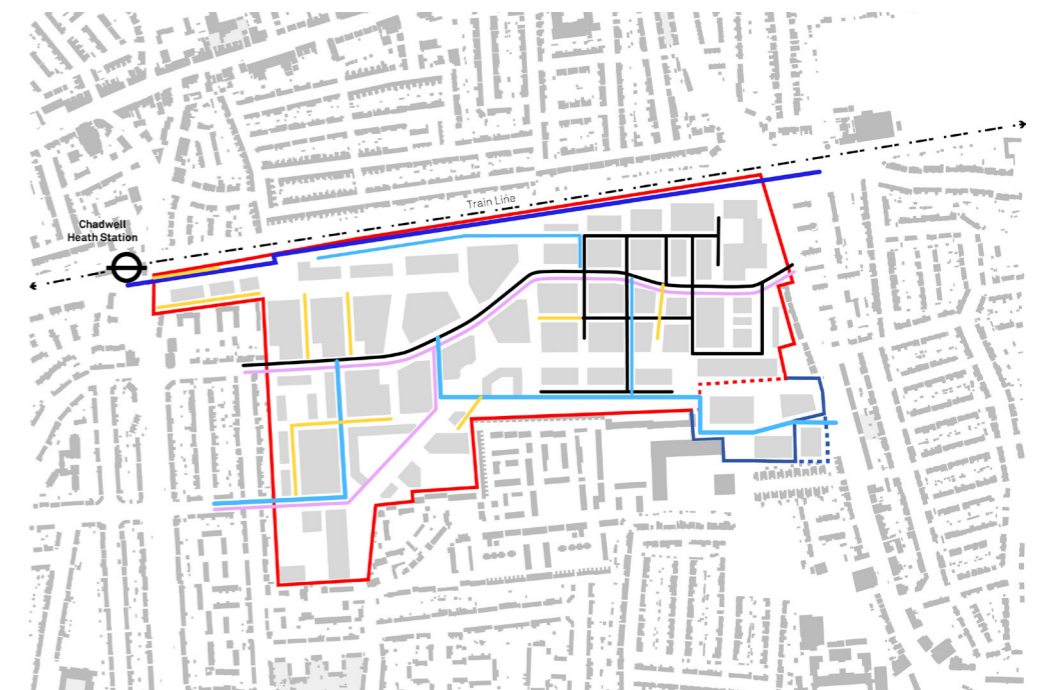
1. Improved permeability
 ↔ Vehicular ↔ Pedestrian ↔ Cycle



2. Green spine and open spaces
 ↔ Green Spine 1 Station square 2 Arrival square 3 Market square



3. Industrial and mixed-use split
 Mixed use Industry Opportunity for industrial with stacked residential



4. Pedestrian-friendly transport system
 Industrial Bus Secondary Tertiary Cycle

5.2. Spatial Principles

5. Industrial provision

The masterplan sets out provision for 146,400m² of industrial floorspace, intensified and located within the eastern part of the site in close proximity to the primary Whalebone lane. The strategy assumes a stacked arrangement of industrial uses with larger shed units at the base and smaller units at the top including workshops and supporting employment uses accessed via lifts. At grade, the masterplan proposes sharing of the yard and designated industrial access roads, whilst the front-of-house spaces including showcase vitrines will open out to the green spines.

6. New school provision

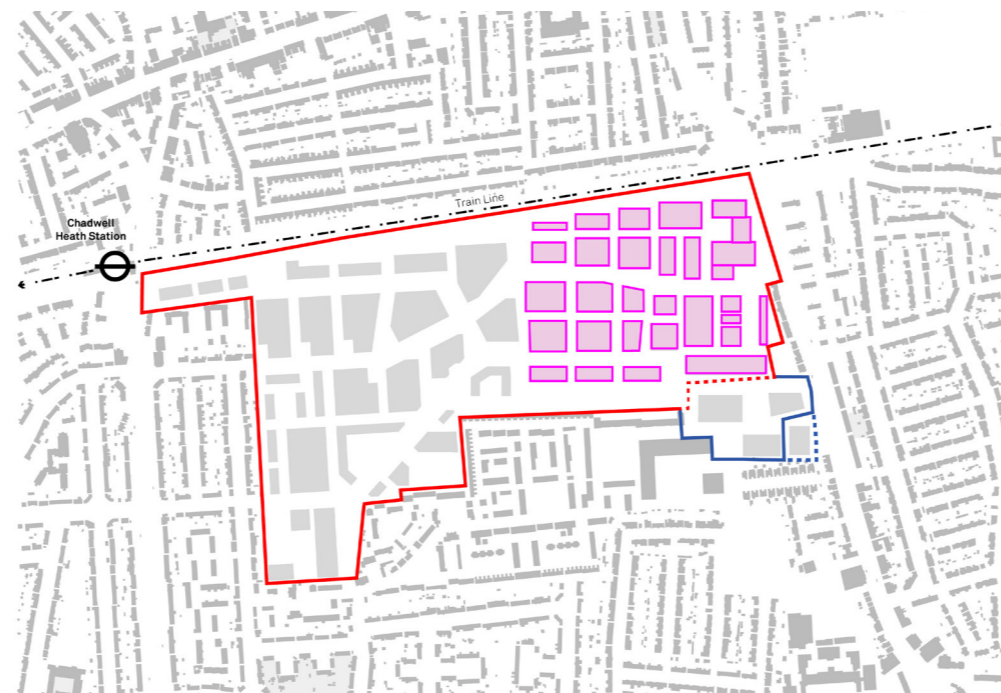
The masterplan proposes 3 new schools including two 3 form entry primary schools and one 8 forms entry secondary school. These are strategically located on the south-west corner of the site in close proximity to the residential quarter with easy access to the new bus route and secondary road access and within walking distance to Chadwell Heath station. The schools are also adjacent to the green spine, the Park West and two pockets of parks for co-sharing of facilities.

7. Active frontages and retail opportunities

The green spines and squares are activated by a range of uses, including retail, food and beverage and cultural; these are typically arranged at grade level below the residential units. In addition, light and medium industrial uses showcase produce through marketing suites and front-of-house ancillary spaces. At the heart of the masterplan a food hall or large supermarket is envisioned opening out to the market square whilst further north near footbridge there is an opportunity for a gaming centre.

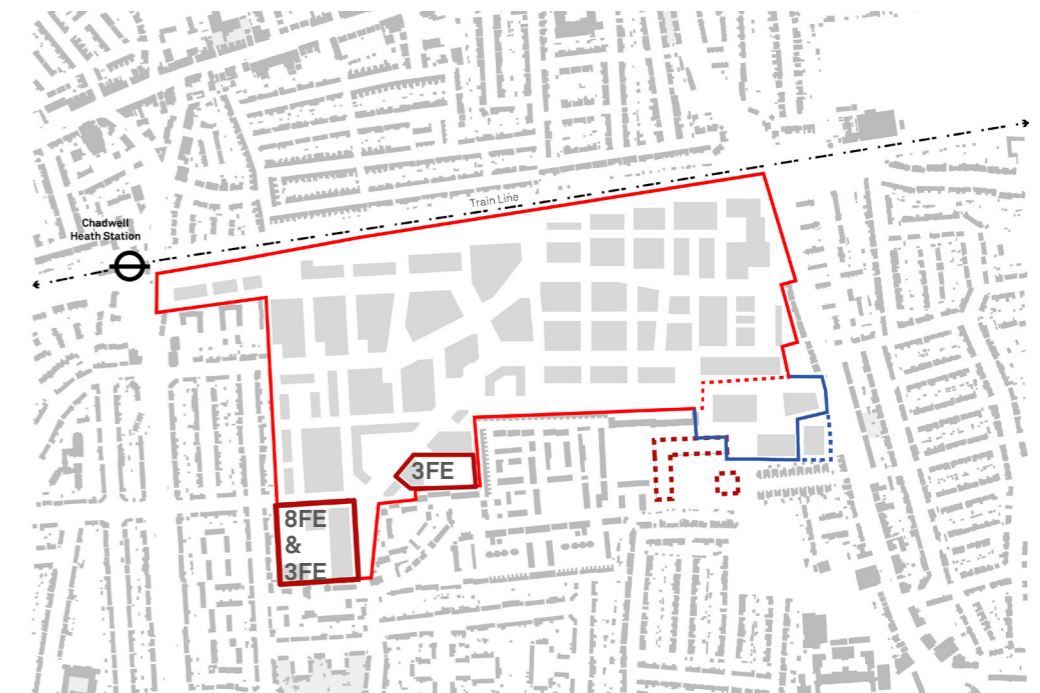
8. Adaptive massing strategy

The masterplan proposes an adaptive massing strategy which is sensitive to the surrounding context in particular the terrace housing to the south and west. The proposed buildings grow progressively and organically as you get towards the centre with landmark buildings fronting the key squares as a way of forming intuitive way-finding through the site. Similarly, the industrial units to the east stack in height towards the centre and face the market square.



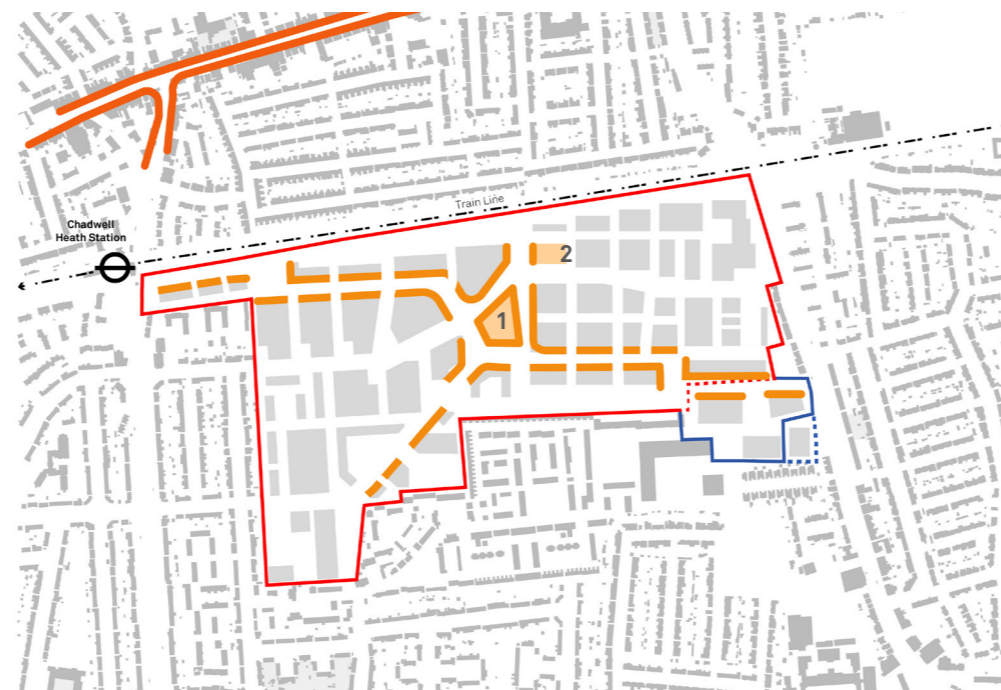
5. Industrial provision

Industrial unit



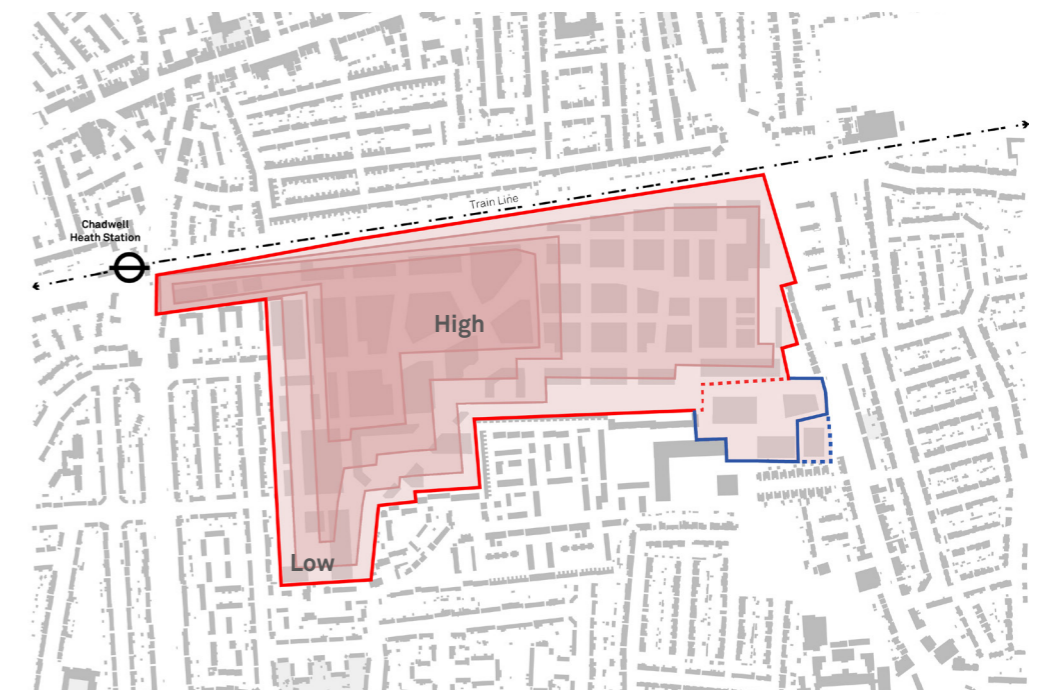
6. New school provision

Proposed School locations Existing School



7. Active frontages

Active frontages Existing high street Large retail unit
1. Food hall
2. Gaming opportunity



8. Adaptive masterplan heights

5.3 Massing considerations

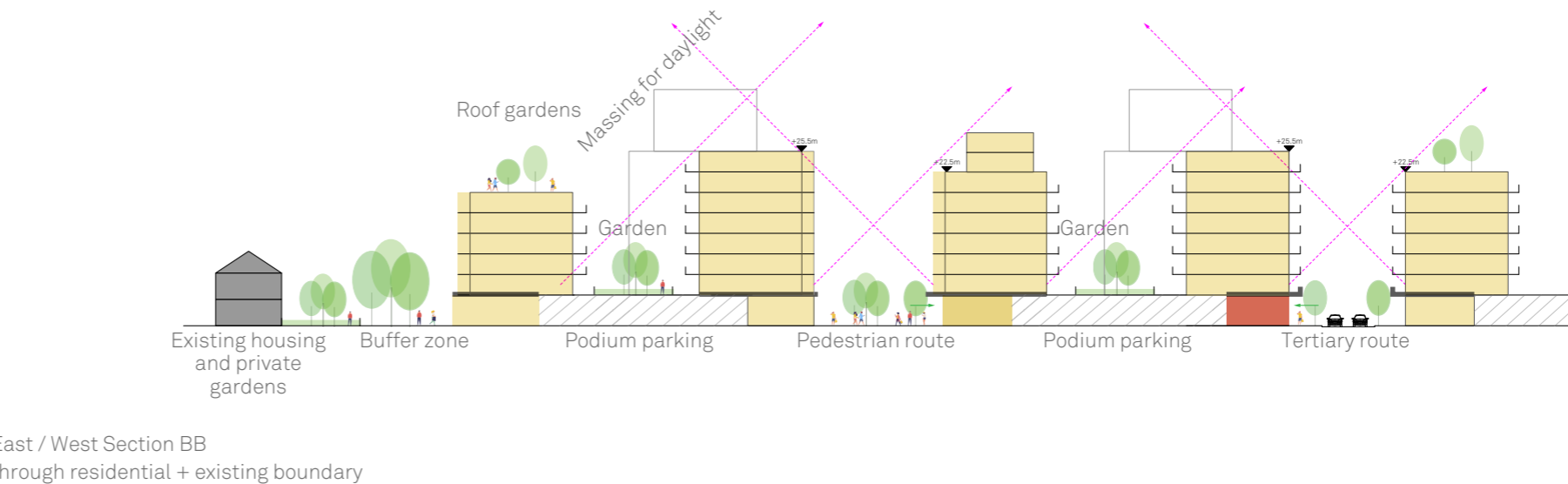
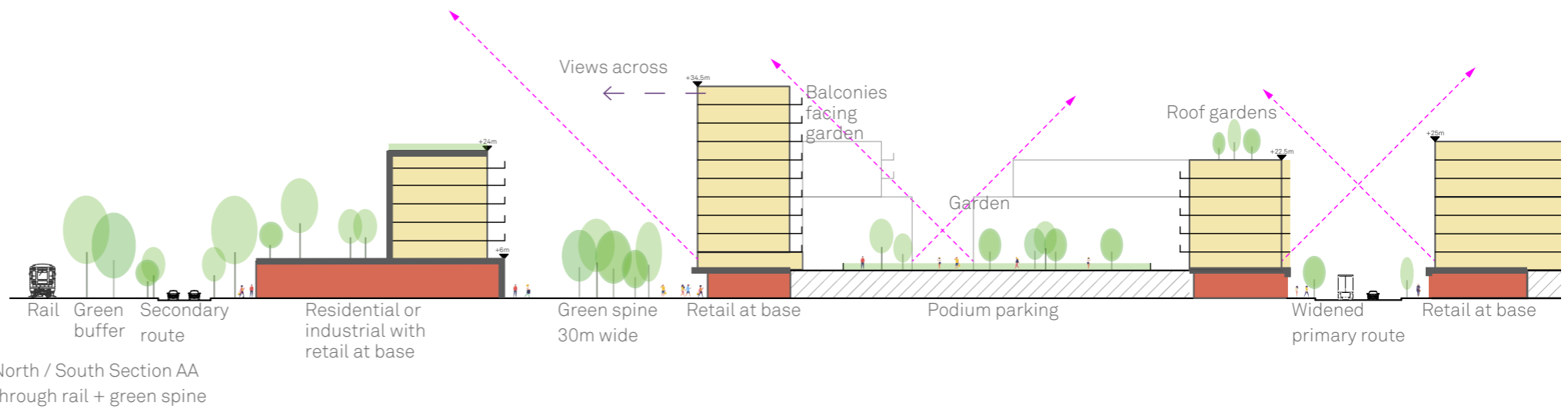
Chadwell Heath Masterplan Massing strategy

The adjacent sections illustrate the massing principles, namely smaller massing and reduced height at the southern and western perimeter to respect the context (2-3 storeys) with a gradual increase in mass and height towards the centre (typically 8-12 storeys).

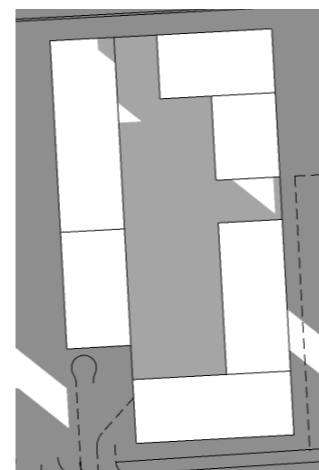
The residential units located to the west of the site are proposed as a mix of rectangular blocks with shared gardens at grade and podium courtyard buildings with car parking and retail at the base activating the green spines, pedestrian and tertiary streets. To the north, the units are stepped back from the railway with generous green buffers and podium gardens to offer protection from the railway noise.

Their footprint and massing are arranged in order to enable adequate daylight into the flats units, the amenities and the green spines and streets below. The BRE states that for an amenity space to “appear adequately sunlit throughout the year, at least half of the area should receive at least 2 hours of sunlight on 21 March”.

The transient shadows in the typical courtyard below show that it is likely that the space will meet the BRE criteria from 11:00 to 13:00 with half of the space receiving at least 2 hours of sunlight. This can be improved by opening up gaps to the south in the courtyards. Similarly, the pedestrian street will be adequately sunlit on the 21st of March as it is a north-south road.



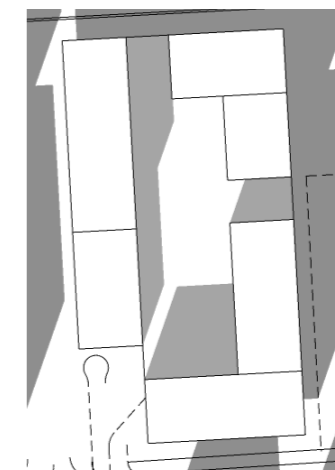
Typical Courtyard Sunlight Study



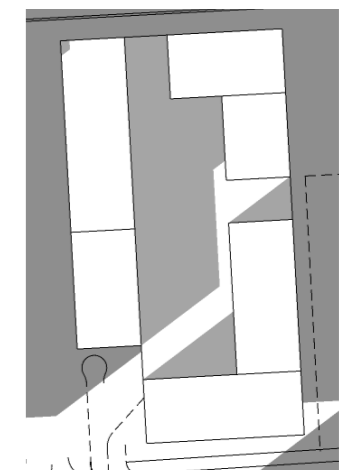
09:00



11:00



13:00



15:00

6. Masterplan Infrastructure





6. Masterplan Infrastructure

6.1. Sustainable Travel

To meet the needs of the proposed housing delivery in Chadwell Heath, a range of infrastructure is required. The London Borough of Barking and Dagenham Infrastructure Delivery Plan 2020 provides an overview of both current and future infrastructure requirements in the Borough. This masterplan sets out required/proposed future provisions for the Chadwell Heath area in greater detail. Where required, developer contributions will be sought to provide for and/or enhance the relevant infrastructure.

Transport Strategic Context

Chadwell Heath is one of the Transformation Areas listed in the Barking and Dagenham Borough Wide Transport Priorities 2021-37. This report recognises the existing challenges around congestion and public transport accessibility and the need to prioritise cycling and walking in the area. The Borough has identified the following strategic schemes to improve connections and provide sustainable travel options to supplement the masterplan scheme.

- A118 High Road cycle link and high street improvement scheme
- Valance Avenue – Healthy Streets corridor
- Chadwell Heath Cycle Network improvements
- Bus Priority and junction improvements at A118/St Chads Road and A118/Whalebone Lane
- Improved walking links from Chadwell Heath station to the Transformation area

Sustainable Travel

The need to improve travel connectivity for residents within Barking and Dagenham goes hand in hand with the Council's commitment to creating a clean, green and sustainable borough. A network of primary and secondary streets has been developed with a strong emphasis on TfL's Healthy Streets indicators putting people before vehicles. The adjacent diagrams indicate the nature of the primary, secondary and tertiary road layouts. Additionally, the Masterplan proposes to improve accessibility to other areas of the Borough by bus, with a new route proposed to run through the Chadwell Heath Transformation Area (see adjacent diagram, with bus route indicated in pink).

In line with LBBD Local Plan Transport Chapter 10 and Mayor's Transport Strategy 2018, the creation of more sustainable living and working opportunities are to be reflected in the Chadwell Heath Masterplan area.

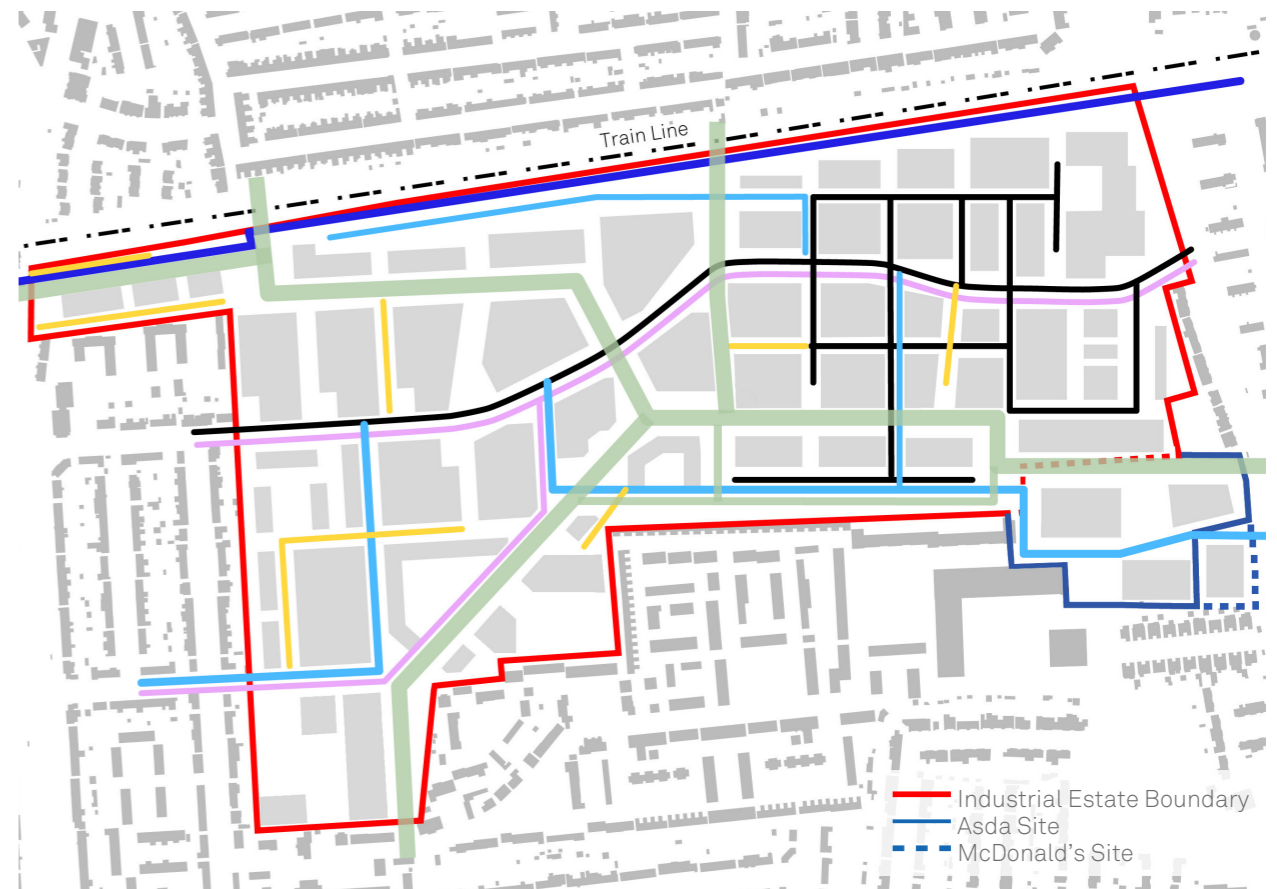
All developments will be required to demonstrate how they contribute to promoting sustainable modes of travel and reducing car use by adopting the maximum London Plan car parking standards.

Car Parking – New Residential developments are to be made car-free developments with no parking spaces provided on-site and the occupiers will not be eligible to apply for on-street parking permits from the Council. The only provision will be for disabled and electric vehicle parking spaces in line with the Local and The New London Plan requirements. On-street parking will be removed or greatly reduced on Selinas Lane and Freshwater Road with new parking restrictions applied. Car Clubs bays will also be provided where appropriate and developer contributions will be used to deliver this.

Case by case assessment will be required for industrial developments which may require servicing and deliveries frequently. The masterplan proposes to strike a balance between such industrial servicing requirements and an improved pedestrian/cycling experience.

Pedestrian and Cycle Routes – Major focus will be on Pedestrian and Cycling routes to support the key connection to local destinations. The provision of segregated cycle lanes within development proposals is strongly encouraged. These designated cycle lanes should link with existing cycle lanes on Whalebone Lane South. Cycle parking facilities and access will be designed in accordance with the London Cycle Design Standards. All new elements of the masterplan will be wheelchair accessible at ground level, with lifts providing connections to all other floors.

Travel Plan – All developments which are likely to have an impact on the Borough's transport network will be required to submit a Travel Plan Statement or Full Travel Plan according to the size and use class. TPs should include clear, measurable targets with a key focus on ongoing monitoring and evaluation of their effectiveness. Developers will be required to pay the Council Travel Plan Monitoring fees.



— Industrial
— Bus

— Secondary
— Cycle



— Tertiary

— Green Spine

6.2. Education, Healthcare and other Community Facilities

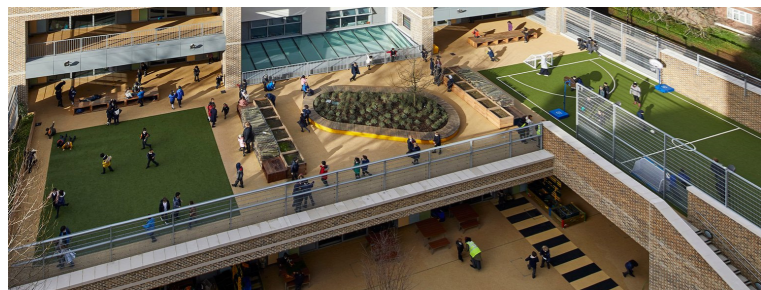
Education

As part of the redevelopment of the Chadwell Heath Industrial Area, and in keeping with the proposed quantum of residential development, Be First (in partnership with the Council) will secure additional primary and secondary provisions to meet the needs of the increased population. This includes the provision of: 1 x 8FE Secondary & 2 x 3FE Primary. The Council will seek to deliver new schools either as an onsite contribution, receipt of a financial contribution or through the collection of CIL receipts. Developers are advised to engage with the Council's education team at the earliest opportunity.

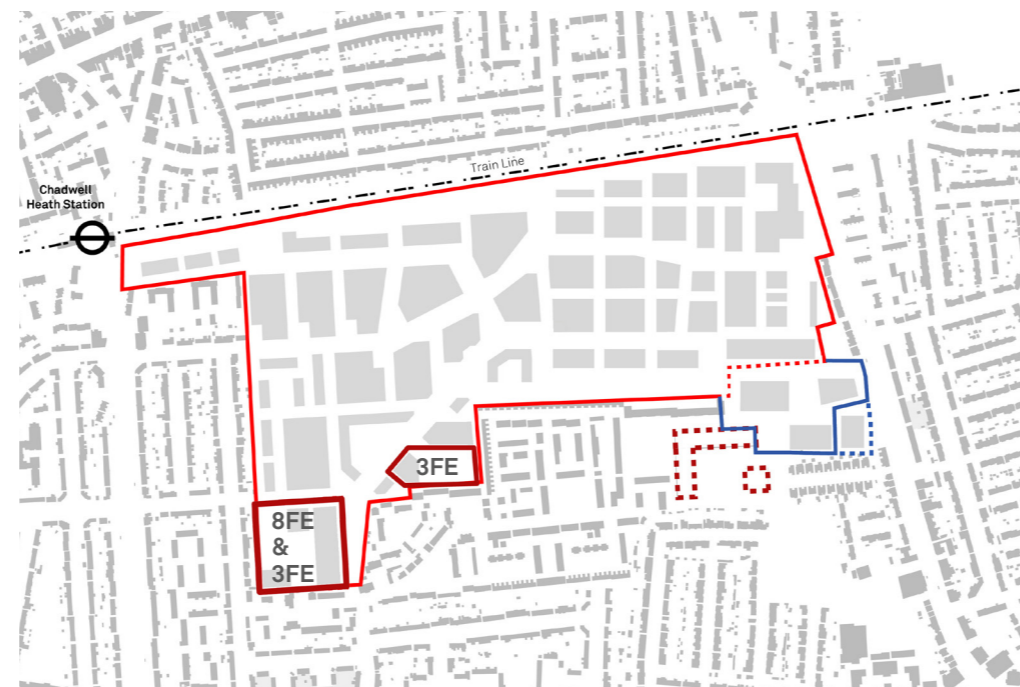
The three schools are strategically located on the south-west corner of the site in close proximity to the residential quarter with easy access to the new bus route and adjacent to the green spine, the Park West and two pocket parks.

The secondary and primary schools are grouped in the southern-west corner. To the north is Kemp road with a new bus route; to the west is the new pedestrian street and a large pocket park whilst to the west and south is a green ecological buffer facing the existing private gardens. There are designated outdoor spaces proposed at grade. The other 3FE primary school is located further north-east, fronting the green spine with a bus stop and the Park West beyond.

In order to maximise the land, the masterplan assumes a multi-story arrangement with the secondary school operating at grade plus 2 storeys whilst the two primary schools at grade plus 1 storey. The schools step progressively to offer south-facing terraces that can be considered as part of the outdoor play space.

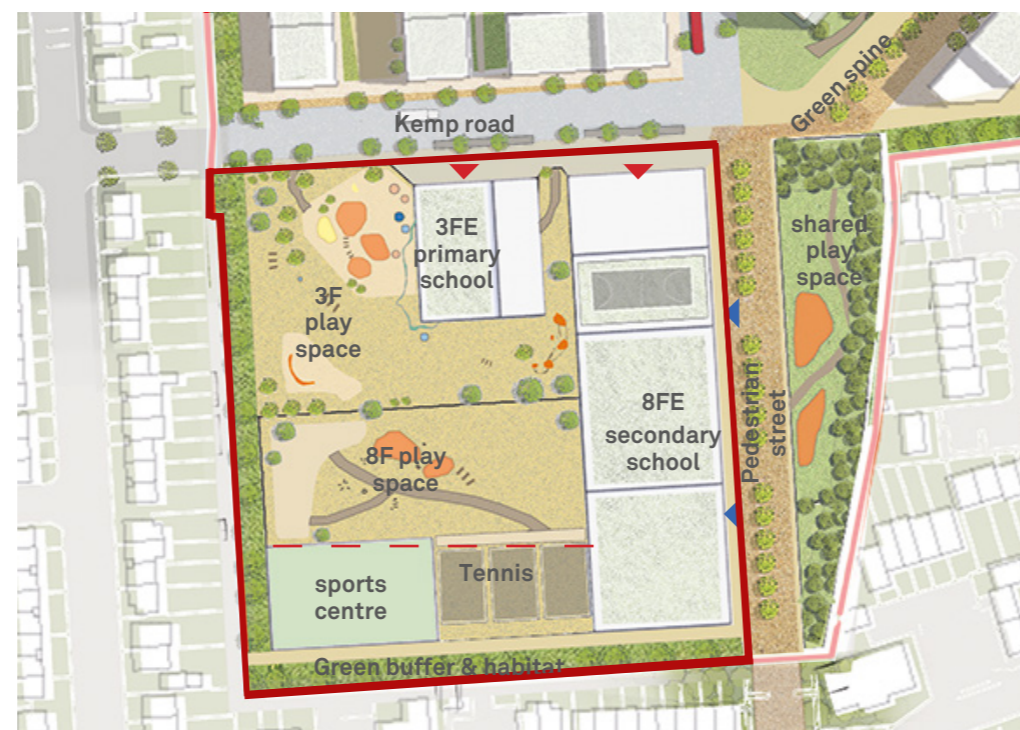


Example of a terraced school; New Marlborough primary school, Chelsea



School provision

Proposed Schools locations Existing School



Primary access
Secondary access
Primary and Secondary Schools Site



Proposed Schools locations



Primary access
Secondary access
Primary School Site



6.2. Education, Healthcare and other Community Facilities

Healthcare Infrastructure

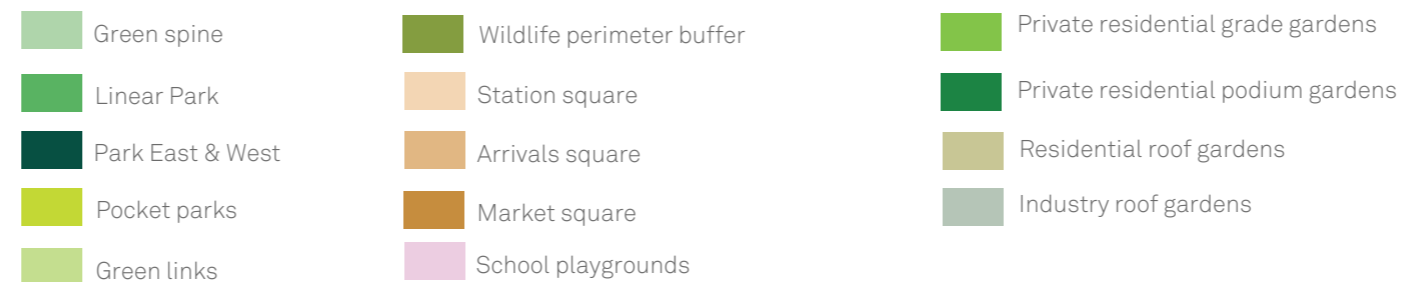
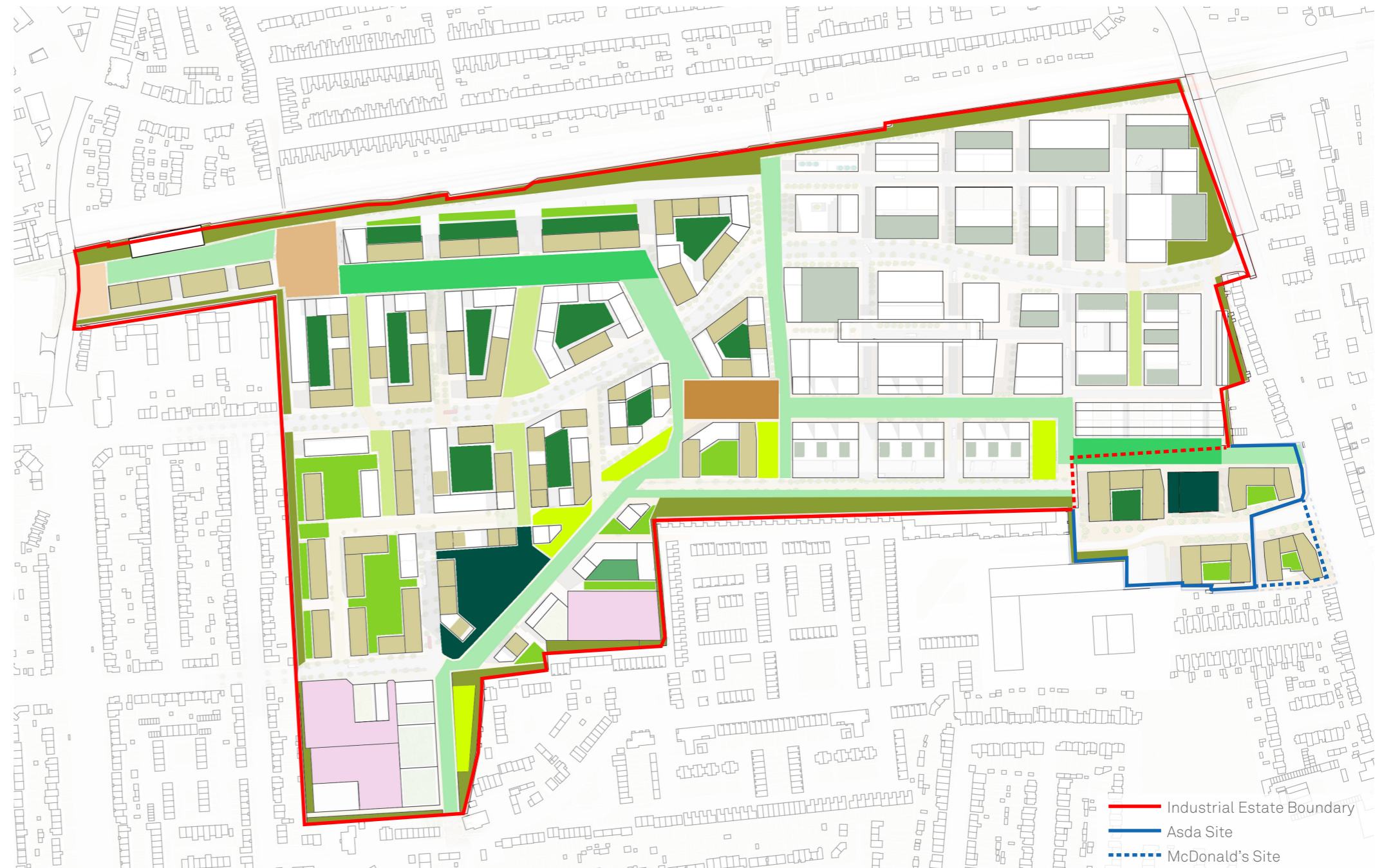
As set out in the emerging Barking and Dagenham Local Plan, the Council will seek to ensure that a range of high-quality social and cultural infrastructure facilities are provided in appropriate locations throughout the borough. The emerging Local Plan sets out criteria for when these will be supported, including where their delivery is in advance of new development, and where there is an undertaking of innovative approaches to the delivery and operation of social infrastructure, for example the creation of multi-functional spaces.

Future healthcare facility proposals are detailed within the Council's current Infrastructure Delivery Plan and will be kept under review.

Urban Realm

The masterplan sets out a rich and diverse urban realm strategy based on health and well-being, biodiversity and sustainability principles. The open spaces hierarchy is as follows:

- Green Spine boulevards form the main pedestrian thoroughfare. These comprise landscaping activated by retail and industrial frontages.
- Linear Park is located in the mixed-use district to the east and residential units to the west facing Whalebone lane. These provide informal amenities adjacent to the residential dwellings, including doorstep play and water bodies.
- The three squares within the site offer lively programmable node points along the green spine. These include the Station square nearby Chadwell Heath station; the Arrival square proposed adjacent to the new link bridge over the railway and the Market square that forms the heart of the site.
- The Park West and Park East are the main public open spaces, both for the existing and future residents.
- Pockets parks are smaller size greens, providing residents with local playable spaces, doorstep play and amenities. A grow garden adjacent to Park West is a community asset creating social and educational opportunities for the residents.
- A wildlife perimeter buffer that looks to protect and augment the existing railway habitat.



Industrial Estate Boundary
 Asda Site
 McDonald's Site

Proposals should ensure they accommodate national and local policy requirements for Urban Greening Factor and children's play space at a minimum.

6.2. Education, Healthcare and other Community Facilities

Semi-private and private amenity

The masterplan allocates generous amounts of semi-private and private amenities both for residents and industrial tenants. Each residential development will need to provide its own on-site public, semi-private and private open space.

Podium resident gardens provide amenities and doorstep play opportunities, whilst the ground floor is dedicated to parking and retail to activate the pedestrian green spines.

The majority of resident's gardens at ground level enjoy a south-facing aspect creating spaces to enjoy and play; linking with the pedestrian green links working north-south. These also include new gardens adjacent to the existing residential block Spectrum tower facing Freshwater road.

There are also opportunities to enjoy the skyline for some residents with roof gardens provided in some locations. Industry building roofs are envisaged as biodiversity roofs to provide a range of habitats.

Urban realm



Green spine



Linear Park



Park East & West



Pocket parks



Green links



Station square



Arrivals square



Market square

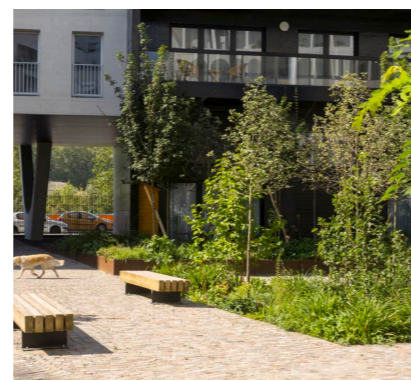


Wildlife perimeter buffer



School playgrounds

Semi private and private amenity



Private residential grade gardens



Private residential podium gardens



Residential roof gardens



Industry roof gardens

6.2. Education, Healthcare and other Community Facilities

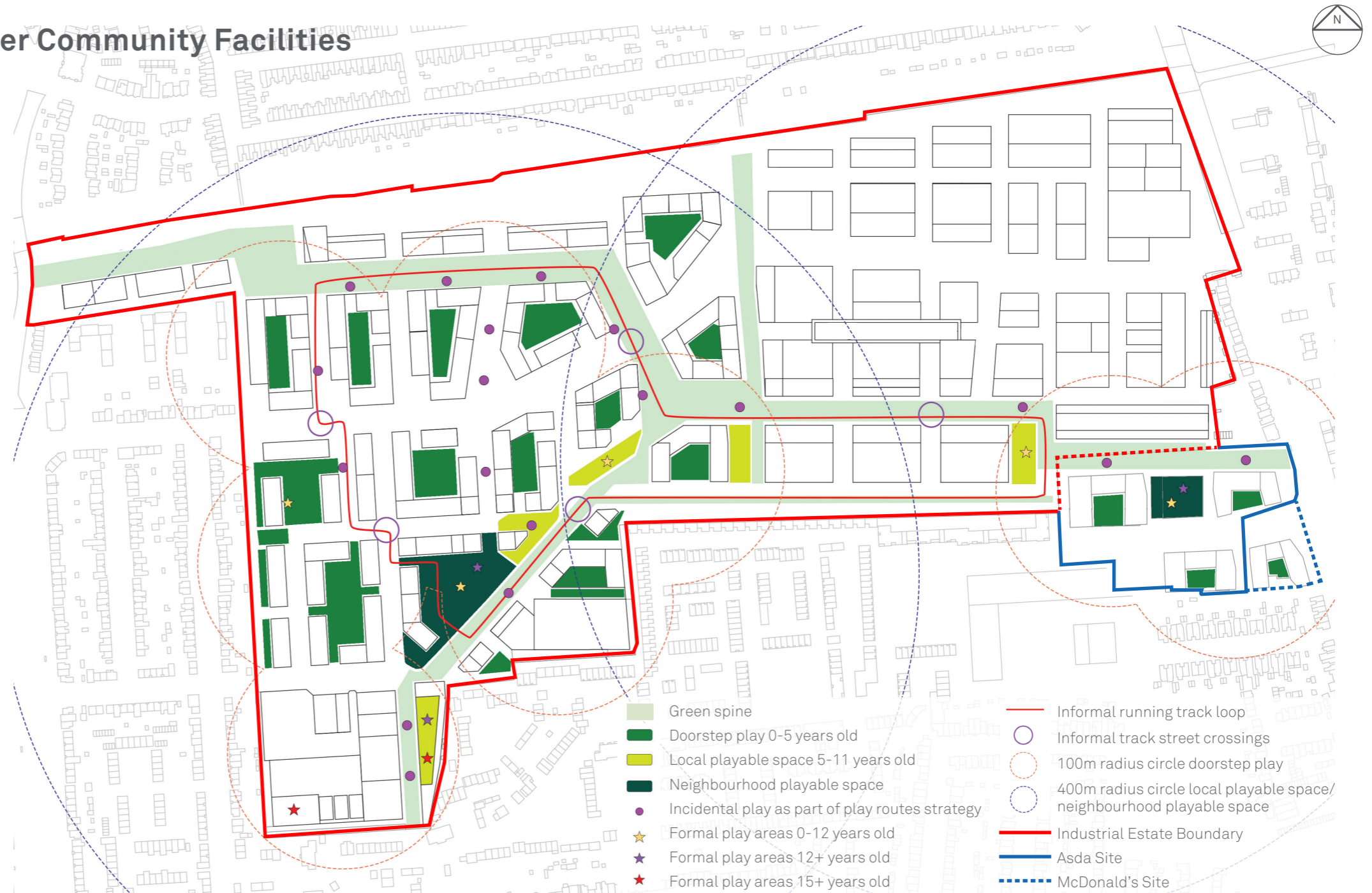
Play and Sports

The ambition of the masterplan is to activate the use of public space to encourage a healthy lifestyle and active life. The masterplan will deliver a network of open spaces that provide a variety of dedicated play areas for different age groups.

The landscape proposals for play are focused on informal play routes as this encourages children to use their imagination and to interact more with their parents, carers and other children, and allowing amenity spaces areas to be multi-functional and flexible.

Play space for children under five will be provided in semi-private amenity spaces within the individual communal residential gardens. Children aged 5 to 11 are provided for in the local playable spaces, pocket parks and within residential boulevard.

Dedicated play space for children over 12's and a Youth sports zone are situated in the main open spaces, The Park West and The Park East. An informal running track loop connects all main public open spaces, which are all accessible via the pedestrian /cycle network. The route crosses the street network, these will be designated crossings as part of the transport strategy.



Neighbouring parks around the estate



Doorstep play - Goldsmith Street, Norwich



Local play - Grow garden play



Neighbourhood play - Natural play at Lloyds Park

6.3. Sustainable Design Principles

Energy hierarchy

The anticipated energy strategy for the proposed masterplan of Chadwell Heat follows the London Plan three-step Energy Hierarchy (Policy 5.2A).

Be Lean - Use Less Energy

The first step addresses the reduction in energy demand, through the adoption of passive and active design measures. The proposed energy efficiency measures will include levels of insulation beyond Building Regulation requirements, low airtightness levels, efficient lighting as well as energy-saving controls for space conditioning and lighting. The efficiency measures by LETI will be implemented where possible.

Be Clean - Supply Energy Efficiently

Following the energy system hierarchy, a communal heating system comprised of a site-wide heat network has been proposed which will be future-proofed to connect to any district heat networks later on.

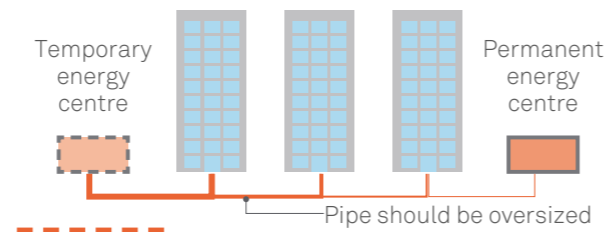
Be Green - Use Renewable Energy

The development will incorporate renewable energy technologies to supply heating and cooling. A centralised energy centre will generate heat with the use of heat pumps and distribute it to the site through a heat network. It is recommended that the centre be located close to the northern part of the site to prevent noise impact and air quality issues. Industrial heat recovery from industrial buildings is proposed. Photovoltaic panels will be maximised to cover 50% of the roof area where possible. Additionally, a fourth step in the energy hierarchy "Be Seen" will require planning applicants to monitor and report on the energy performance of developments for at least five years post-construction.

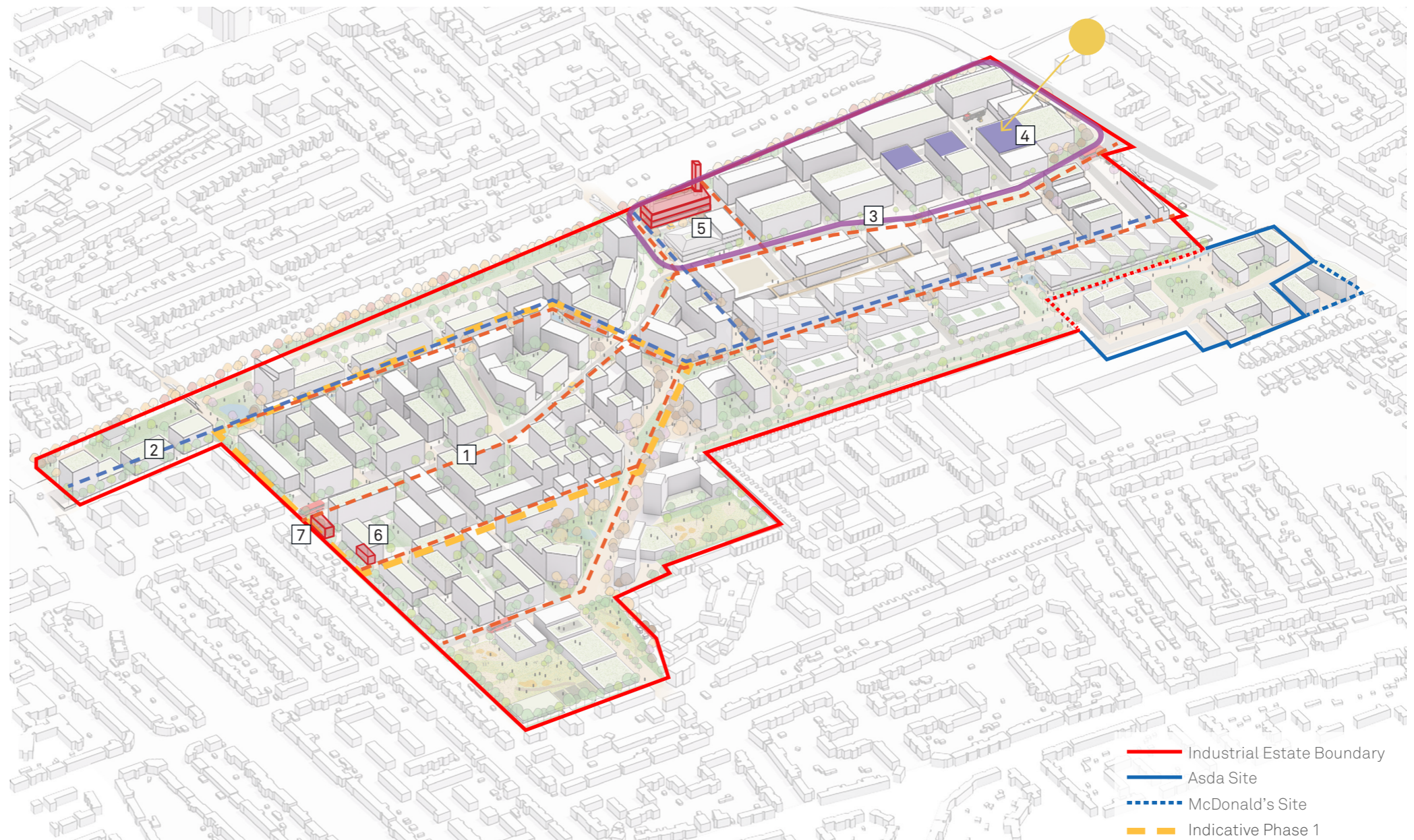
Temporary energy centre

The phasing strategy to supply energy to the initial phases of the site will potentially consider a gas-fuelled temporary energy centre in Phase 1. There are two potential locations for the temporary centre:

1. It can be located within one of the proposed buildings at ground level, OR 2. As a stand-alone temporary facility. The piping for the heat network in the initial phases will have to be sized considering the future connection to the site-wide energy centre to avoid any future replacement.



- 1 Heat network**
Site wide heat network under paving to protect tree roots and greenery. **Oversized piping closer to the permanent energy centre to prevent any replacement**
- 2 Cooling for non-domestic**
Cooling network for retail, commercial and community uses
- 3 Heat recovery**
Industrial uses to provide waste heat to residential and commercial uses
- 4 Renewable energy**
Maximise renewables so that 50% of the roof is covered



5 Centralised energy centre
Energy centres will capture waste heat from industrial buildings and generate heat from heat pumps. Future-proofed to enable connections to future DHN. The energy centre is located to the north of the site close to the industrial sector. It is anticipated an ASHP plant will be required as part of the energy centre. The adjacent images show recent contemporary energy centres within urban settings.



Morris+Company, Energy Hub, Elephant and Castle



Bunhill 2 Energy Centre, Old Street

6 Temporary energy centre (within the building)
Gas-fuelled energy centre within one of the proposed buildings at ground level. The riser can be used for the gas flue. The space can be converted into a commercial space once the temporary energy centre is decommissioned.

7 Temporary energy centre (stand-alone)
Stand-alone gas-fuelled temporary energy centre to be decommissioned once the proposed energy centre gets built. The gas flue would be an issue due to the height of the energy centre.

6.3. Sustainable Design Principles

Wind and microclimate

It is important that good conditions of wind and microclimate are enabled for local residents as these are necessary to create comfortable outdoor spaces. The wind climate in the south of the UK is reasonably consistent, with prevailing winds occurring from the southwest throughout the year. To reduce the impacts a windbreak made of vegetation located at the south-west of the site can be provided to create more comfortable conditions for the external spaces. Additional measures would need to be considered for individual buildings as noted in the adjacent diagrams.

Daylight and sunlight

The proposed masterplan incorporates design principles that will provide future occupants with adequate daylight and sunlight levels throughout the year. The design also includes courtyards in residential blocks which will look to provide good levels of sunlight on the ground and reduce overshadowing for residents to make use of the amenity spaces.

Waste

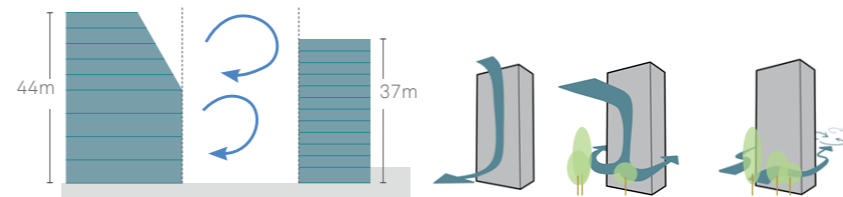
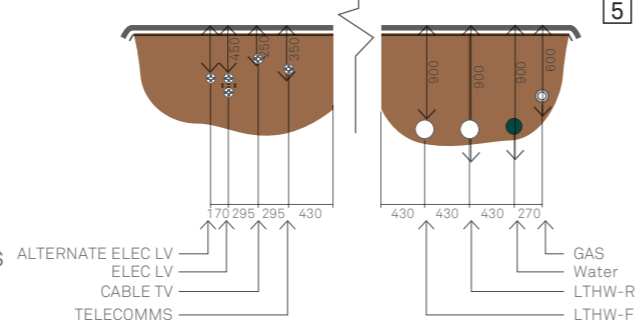
The proposed Chadwell Heath Masterplan looks to incorporate measures to reduce waste across the site. Operational waste can be reduced by providing dedicated space for recyclable materials in addition to general waste areas. Organic waste composting will be encouraged by providing food waste containers. Additionally, community allotments can be part of the design of green spaces in the masterplan to promote composting and healthy living.

Water Efficiency

Water consumption on the site can be reduced by implementing water efficiency measures. To reduce water demand other site-wide strategies can be introduced. Alternative water sources such as rainwater harvesting have been incorporated into the design. Rainwater can be collected and stored to reduce the demand for non-potable water in the site i.e. irrigation and to reduce stormwater runoff.

Below Ground Infrastructure

The adjacent diagram shows the below-ground infrastructure services showing the NJUG requirements and DHW Approximate pipe sizes and spacing between them are also provided.



1 Windbreak

Windbreak at the windward side of the site to reduce the impact of prevailing winds and create more comfortable external space for amenities

2 Downwash effect, Wake effect and Corner Effect

Consider staggering building facades on the windward side to minimise the downwash effect from wind.

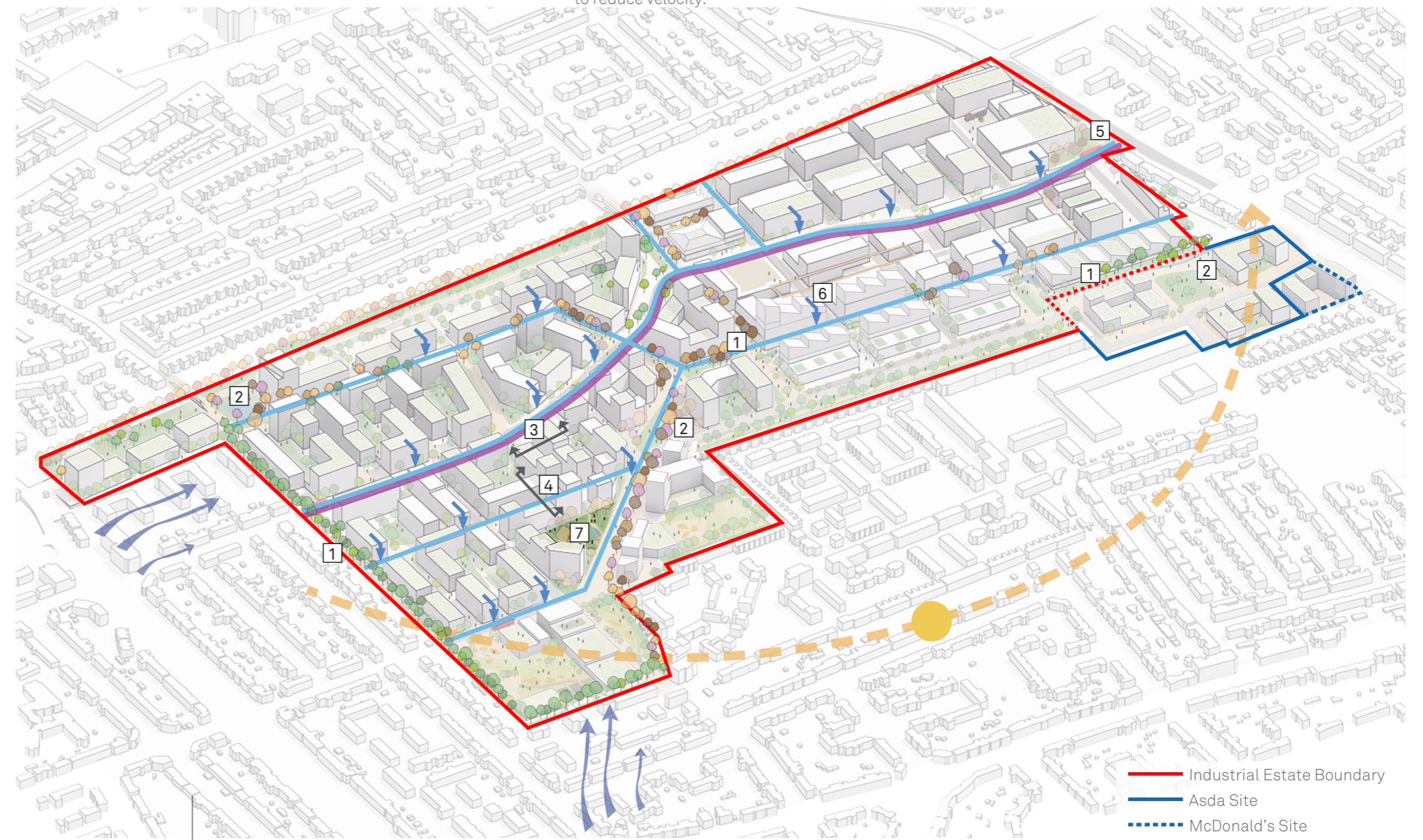
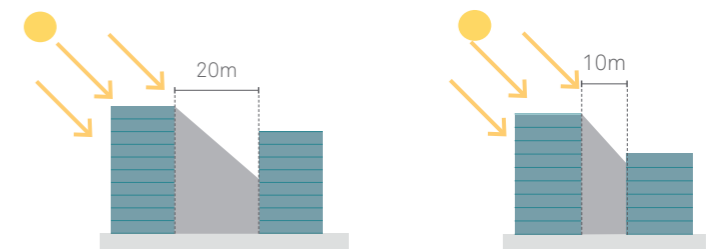
Excessive turbulence can occur on the leeward side of the building causing sudden changes in wind velocity and accumulation of debris. Consider placing landscaping to reduce velocity.

3 N/S vehicular roads

Wider roads will enable more spacing between buildings and provide higher daylight and sunlight levels

4 E/W pedestrian roads

Narrower roads will create more shading between buildings and reduce daylight and sunlight access to the dwellings



5 Primary Route below-ground infrastructure

Indicative section of infrastructure under footway path

6 Rainwater harvesting

Building scale rainwater harvesting systems and minimising hard standing areas to reduce stormwater runoff

7 Allotments and Operational waste

Community allotments to promote composting and healthy living

Include enough waste collection points and reuse of recyclable materials



6.3. Sustainable Design Principles

Flood Risk & Sustainable Urban Drainage Systems (SUDs)

In preparing this Masterplan, a preliminary Flood Risk review has been undertaken. The Environment Agency Flood Risk Map has been consulted and it shows that the proposed Chadwell Heath Masterplan development site is located in Flood Zone 1, an area with a low probability of flooding.

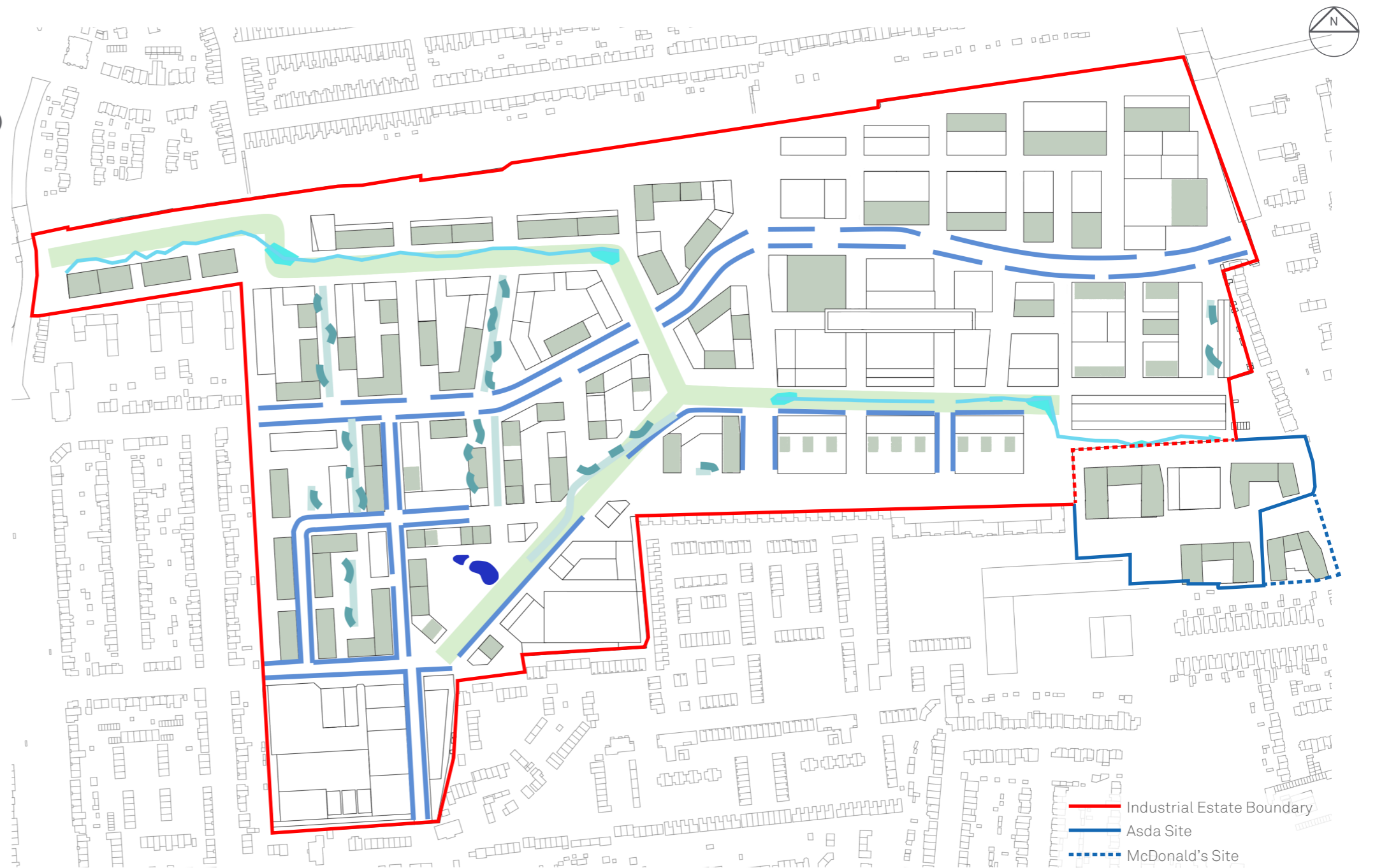
Sustainable Urban Drainage Systems (SUDs) are techniques that help manage surface water run-off to prevent flooding and pollution. SUDs work by utilising the principle of ecosystem services. They are designed to drain developed areas in a more natural way, using the infiltration and storage capacities of semi-natural devices such as infiltration trenches, swales and ponds.

There are a number of both environmental and social benefits that arise from SUDs application including habitat creation, protection and enhancement of water quality and amenity space creation through developing open green spaces. Developments will be required to provide a passive connection to any future network.

A number of SUDs techniques should be incorporated in the development of this area to filter and attenuate floodwaters, as summarised in the adjacent diagram.

Noise Attenuation Strategies

Development proposals should consider noise attenuation strategies within their design. For example, for residential developments, this may mean appropriate design of room arrangements, placing noise-sensitive rooms furthest from the noise source, with less sensitive rooms (e.g. WCs, kitchens and garages) acting as a buffer. Major noise sources that should be considered include, but are not limited to, the railway and primary roads.



Green roofs

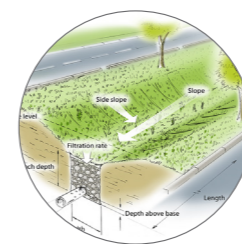
Green roofs, brown roofs, or blue roofs for rainwater treatment, filtration and attenuation



Raingarden



Rills



Swales

Swales in green corridors to reduce runoff and improve groundwater replenishment



Pools



SUDs / pond



Green Spine

Green Spine with permeable paving to increase infiltration and reduce stormwater runoff

6.4. Local Character

It is important that the local character of Chadwell Heath is considered, retained and enhanced as new development is delivered in the area.

Heights

The Chadwell Heath Industrial Estate/Transformation Area falls within one of the proposed tall building zones in the Borough's emerging Local Plan, which means tall buildings may be suitable in this location. As noted previously, proposals for tall buildings in this area will need to demonstrate they are of good quality and design and are not detrimental to the local character of the area.

Heritage

Development proposals should preserve, and where possible enhance local heritage. Proposals should demonstrate how avoidance or minimisation of harm to the local character, heritage assets and their heritage significance, as well as to broader townscape character has been achieved through design and/or mitigation. Development proposals are encouraged to consider signage, wayfinding and ways to commemorate the past.



Plan showing location of view



View of central industrial green spine



6.5. Public Realm Open Space

A rich and varied public realm

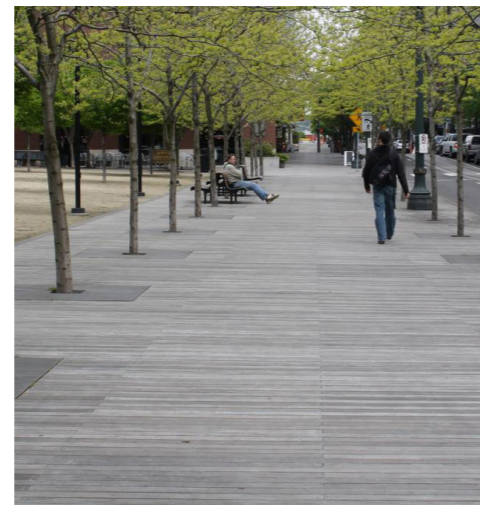
The Chadwell Heath masterplan proposes a rich public realm with a variety of public and private soft and hard landscapes, including pedestrian and cycle-friendly green spines, linear parks, open spaces, public squares, market squares, shared private courtyard gardens and private rear gardens for residential uses. The following pages describe some of the key urban squares and parks within the masterplan. Each development should develop connections within the wider masterplan as a whole, with key pedestrian routes and public open spaces connecting to one another. Where the masterplan shows open space, there will be an expectation for provision in these locations.

Station square

Station Square is envisaged as the main arrival space, which borders Station Road and Chadwell Heath station. The square is fronted by either a residential or commercial building with retail at the base to activate the square. A mobility hub is proposed to enable and promote multimodal and on-demand transport on a local level. A new pedestrian crossing is proposed to link to the green spine.

Linear park

Linear Park is located in a mixed-use zone and is part of the green spine. There are generous planting buffers with trees which create privacy screening for the residential dwellings. Lawns with incidental play opportunities provide informal amenities for the residents. Industry spill out zones border with rills with bridges across. The rills terminate in the formal pond to the east of the linear park as part of the SUDS strategy.



Portland, USA



QE Park, London



Kroyers Plads, Denmark

- 1 New link bridge over railway
- 2 Chadwell Heath station with future opportunity to improve public realm adjacent to new station entrance
- 3 Network Rail maintained land
- 4 Green spine
- 5 Linear park part of green spine
- 6 Cycle lane within green buffer
- 7 Station square comprising mobility hub
- 8 Arrival square with lake
- 9 Pedestrianised green NS links
- 10 Tertiary road
- 11 Secondary road to residential block carparking



Plan showing call-out

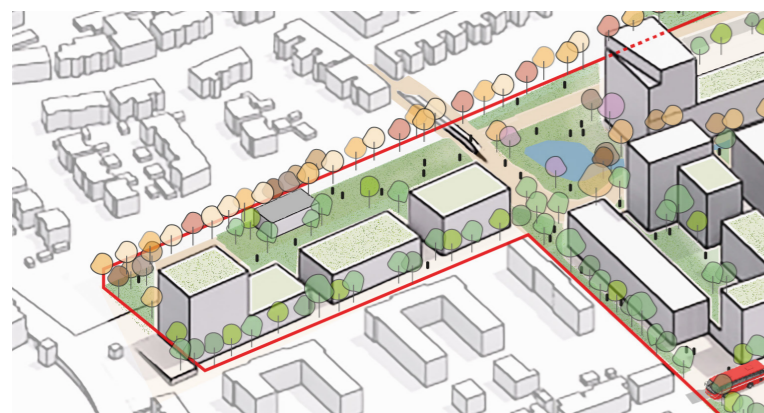
6.5. Public Realm Open Space

Arrival square

Chadwell Heath Transformation Area will deliver an ambitious mix of industrial & employment uses including scope for gaming, media, and other tech industries. A creative industrial intensification strategy, across the 32-hectare site, will provide land for the delivery of new homes, open space, new schools, and local amenities.

The vision rethinks industrial value and the role that industry can play in animating the streets and squares. Residential use sits alongside this industry with small and medium-size businesses that have ‘shop windows’, creating life and space for collaboration. Nowhere is this more apparent than with ‘Saw Mill’ – a major industrial-led workplace, that integrates co-working with sustainable fabrication and educational space. The grand hall spills out on the public square and green spine. This new factory for-the-future could deliver the homes at Chadwell Heath, through modern methods of construction and in turn provide employment and education to the area.

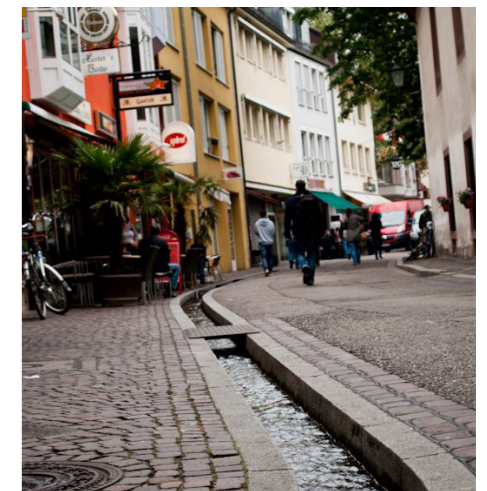
The improved and intensified industrial space at Chadwell Heath will provide a home for London’s future industries – a toolbox for London. It will target young people and young families to create life and vibrancy, with affordable homes and workplaces. To encourage a more naturalistic feel to the area, proposals also include the provision of densely planted trees and a formal pond. Landscape greening in this area will provide a pleasant space for local people to both relax and sustainably travel through.



Axonometric detail of Arrival square



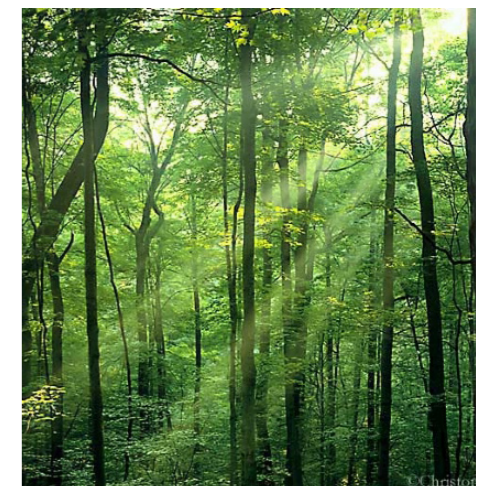
Illustrative view of Arrival square



Reels Freiburg, Germany



Pond, Hampstead Heath



Woodland glade

6.5. Public Realm Open Space

Park West

The Park West will become one of the main open spaces for the existing and future residents and its scale is comparable to a full-sized football pitch. The landscape zones are carefully chosen and relate to the proposed building arrangement and their height, including sun and shade aspects and pedestrians' natural desire lines. The Park West provides a range of opportunities for outdoor recreation and play. The lake is inspired by the memory of the existing lake and marshland that were present when the site was greenfield land. The principal pedestrian paths follow pedestrian's natural desire lines and the bridge across the lake creates a landscape setting to relax and enjoy nature.

Park East

The Park East will be located on the eastern side of the masterplan within the Asda site. Although smaller than Park West, it will offer similar facilities including outdoor recreation, play and rich landscaping, enjoyed by both new and existing residents near Whalebone lane.

The pocket parks

The pocket parks are interspersed within the residential district offering playgrounds and recreation facilities. The community grow garden north of Park West provides residents with opportunities to grow their own food and plants as well as communal dining, storage for garden implements and outdoor cooking.



Park West and Pocket park



Park East



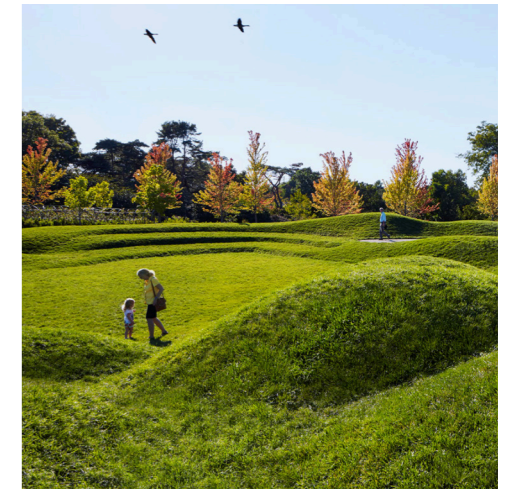
Plan showing call-outs



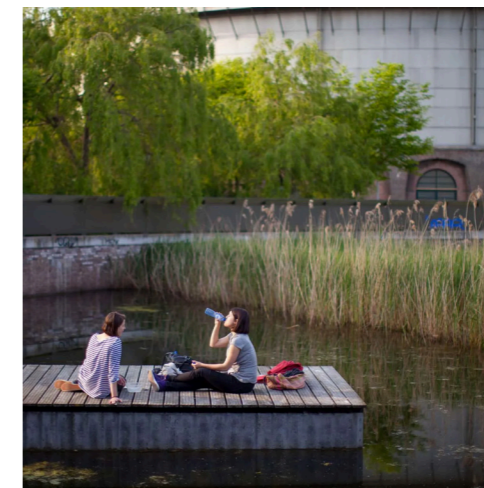
- 1 Woodland planting
- 2 The lake, part of SUDS strategy
- 3 Play area
- 4 Green spine with bus route
- 5 Privacy buffer
- 6 Green spine with rain gardens, rills & tree planting
- 7 Pocket park with allotments and community gardens
- 8 Primary school
- 9 Pocket park
- 10 Secondary route
- 11 Mobility hub



Community gardens example



Land forms at Westergasfabriek park, Holland



Westergasfabriek park, Holland



Natural play area example



6.5. Public Realm Open Space

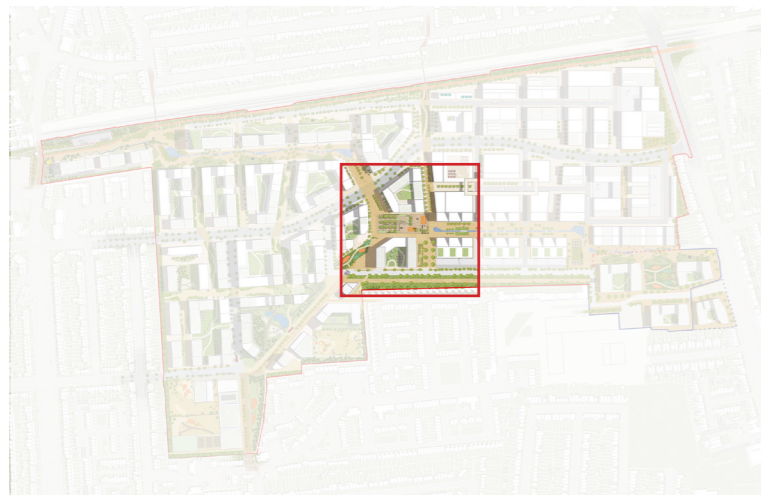
Market square

Wellbeing is at the heart of this placemaking vision and this new transformation will prioritise major green arteries that connect from the surroundings and station, converging on a central Market Square, via new parks and pocket squares. Streets are designed for pedestrian and cycle movement, with a cycle super-highway on the north of the site.

Market Square will become the new neighbourhood centre, with a variety of new homes, alongside new industry, restaurants, cafes and supermarkets. The square will provide flexibility in the way it can be utilised across the year, with a balance of hard- and soft landscaping; playspace, working yard, cafe seating, performance and pop-up. Its scale and proportions are comparable to Granary Square in London.

Formal tree bosquets provide shade and places to relax, enjoy and play. Flexible space in the western section can host local community events and the company showcases or promotions connected to the industry zone. A cafe pavilion on the eastern side of the square will activate the space and provide a social gathering space for the residents and visitors.

A mobility hub is located south of the square in proximity to the secondary route; to enable and promote multimodal and on-demand transport on a local level.



Plan showing call-outs



Illustrative view of Market square



Granary Square, London



Abode, Cambridge



- | | |
|---|--|
| 1 Market square with flexible events space and pavilion cafe | 6 Secondary street |
| 2 Tree bosquets, incidental play and rain garden planting beds | 7 Green Buffer with pedestrian and cycle lanes |
| 3 Green spine | 8 Shared access and yard |
| 4 Freshwater crossing | 9 Industrial rooftops with elevated track |
| 5 Medium size industrial with the front of house and showrooms facing green spine and yard access either side | 10 Industrial crossing |
| | 11 Mobility hub |

