

4.8 STREET HIERARCHY AND ACCESS

The pedestrian routes are simple, distinctive and continuous in design and are formed by the building frontages. A wide pedestrian route is provided connecting the Broadway to the Welsh Harp Reservoir and the development, where the new commercial units are to be located. This will further integrate the development into the wider local community as well as enhance public open space. The pedestrian routes will connect to existing adjacent residential areas providing cross routes, and the layout takes advantage of the topography of the site making it accessible to all levels of ability.

Parking provision is to be located both on street and within the undercrofts and basements of the residential blocks. Accessible parking bays within the undercrofts are located in close proximity to each of the service cores minimising travel distances. Accessible parking provisions on street for the new community centre and commercial units will be developed in accordance with current design standards that will seek to future proof the changes in local population requirements.

The design of the main streets which are parallel to the Welsh Harp and the Broadway have been conceived with varying characters in order to make the transition from the busy Broadway to the waters edge and the SSSI. These are shown on the adjacent diagrams:

The Broadway

The axis of the new pedestrian link to the waterfront has been aligned with the pedestrian footpath on Station Road to allow views for pedestrians walking along this route down to the waterfront.

East Street

This is a formal straight street parallel to the Broadway. The northern end of East Street is completed by a public space serving the community centre.

West Street

The geometry of West Street parallel to the waterfront has evolved into a soft geometry. This is so as to respond to the edge of the SSSI. This creates a varying width of street and allows smaller pockets of spaces with trees and landscape to be incorporated into the street.

York Park

York Park is an informal pedestrian route set back from the waters edge which links into the route across the Silk Stream and over the water at Cool Oak Lane.

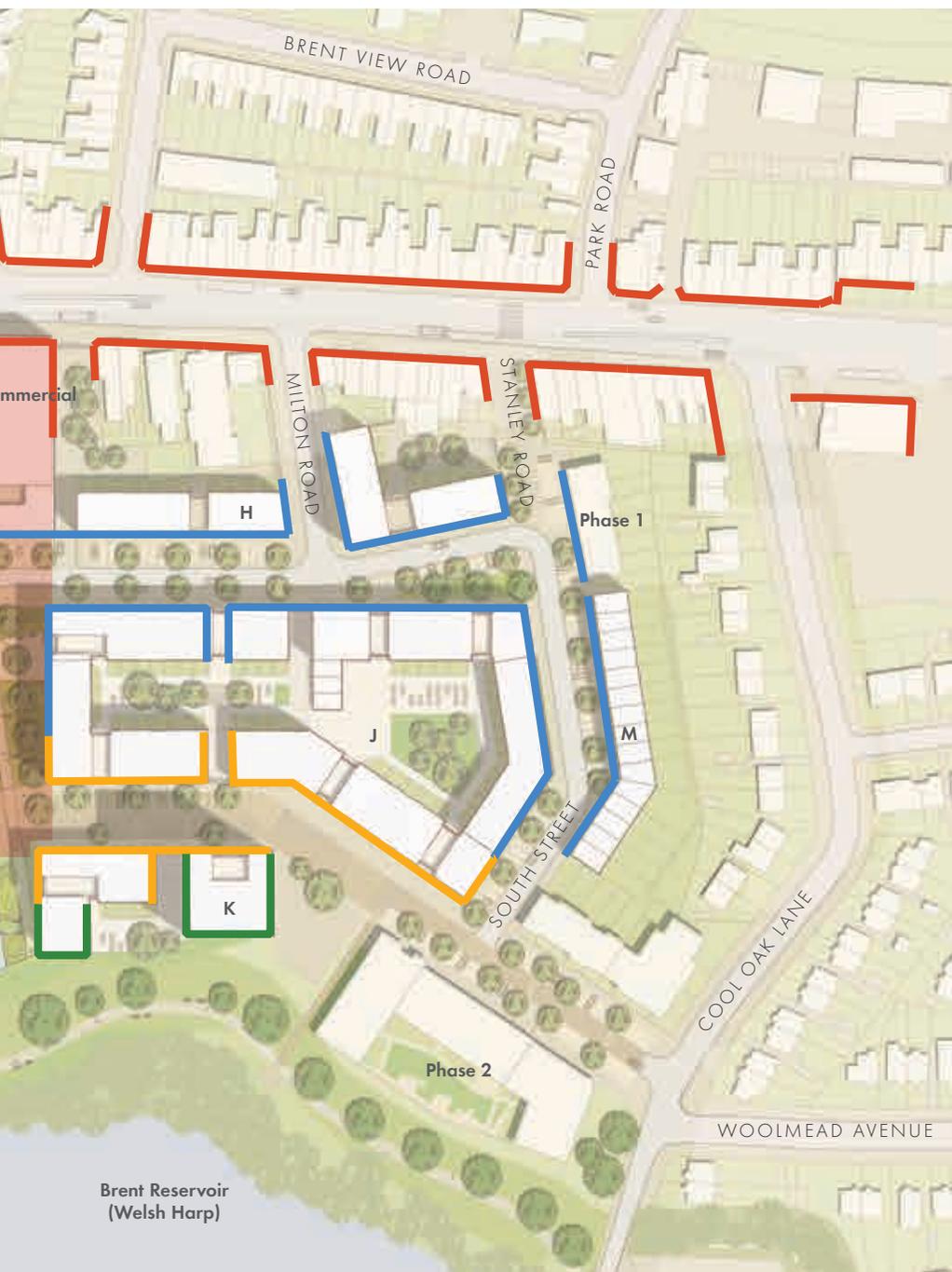


Materials palette across illustrative masterplan

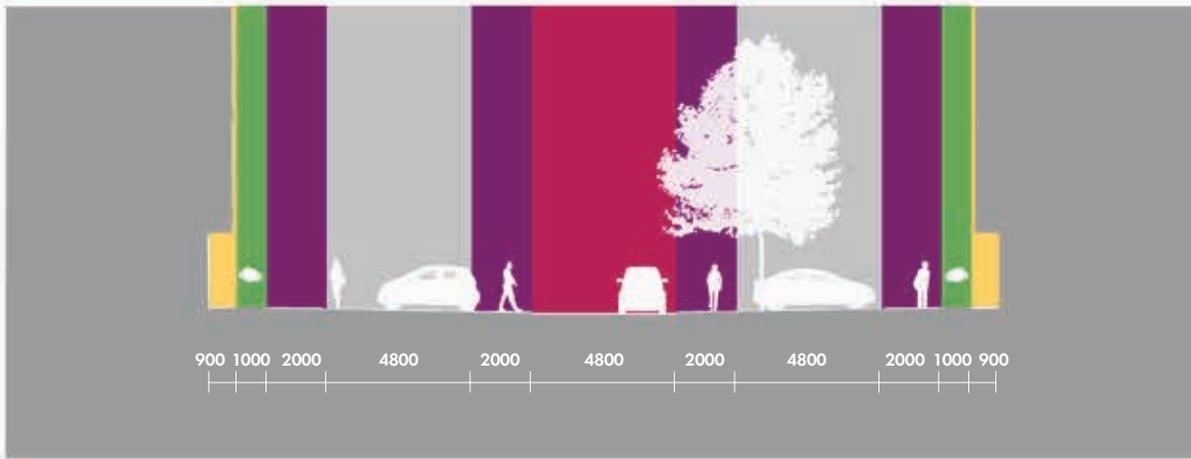
4.9 MATERIALS AND CHARACTER AREAS

The use of materials across the masterplan are described in more detail in the Design Guidelines. A key principle in relation to streets and building frontages is to make a transition from the urban character of the Broadway to the natural setting of the Welsh Harp:

- Broadway and Broadway Place connecting Station Road to East Street. The colour and materials will respond to the context of the existing materials on the Broadway.
- Main Streets running North to South should be of coherent appearance and change in character with East Street being more ordered and urban and West Street becoming more varied adjacent to the Welsh Harp.
- Secondary streets running East to West should be greener with additional landscaping and should allow views through the site to York Park which will visually connect these streets and the town beyond with the landscape along the edge of the Welsh Harp.
- Tall buildings are located on the edge of York Park with a restrained geometric shape as a subtle counterpoint to the natural, landscape and tree line alongside the Welsh Harp.
- Courtyard and buffer spaces between the buildings are light and informal and should express their own, more varied identity.



- phase 3B+C
- Broadway: character response to existing street
- East Street: character linear formal street
- West Street: character informal street
- York Park: character opens out towards the Welsh Harp



East Street section



East Street section



East Street plan

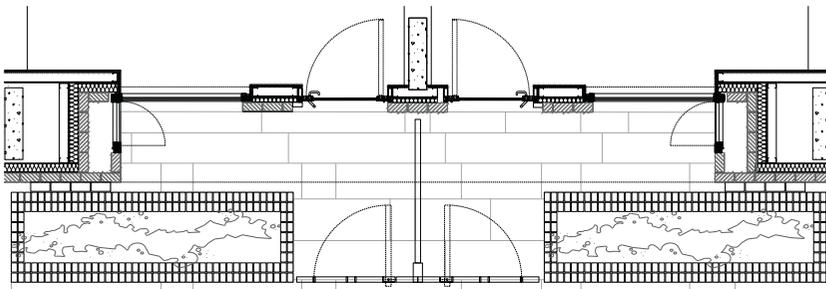
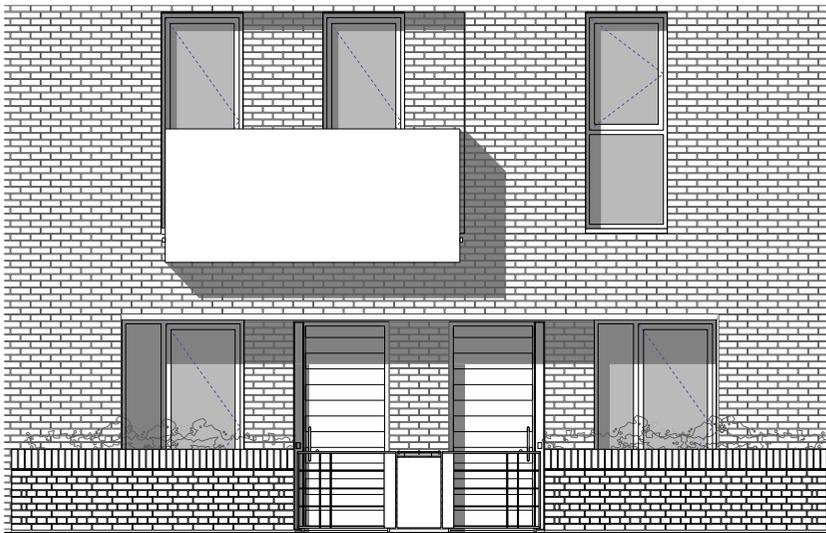
- private space
- defensive space
- pavement
- road
- parking

4.10 STREET CHARACTER

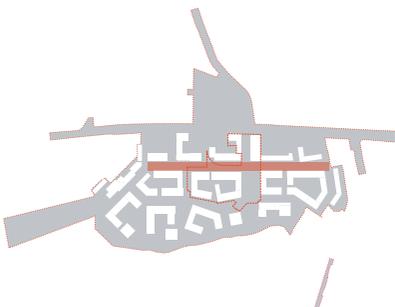
East Street

East Street is a street with a more consistent and even parapet height. It plays an important role as the street which runs parallel to the Broadway. At the northern end of the street the Community Centre visually completes the street. At the southern end of the street a pocket park provides a compact area of informal landscape as a visual contrast to the linear nature of East Street. Where the street crosses over Broadway Place priority is provided to pedestrians walking to and from the Broadway. Parking bays and trees are organised in clusters varying between parallel parking and perpendicular parking to give variation along the length of the street.

East Street will begin to be formed on completion of Phase 3B (Block F).



Bay study of entrances on East Street

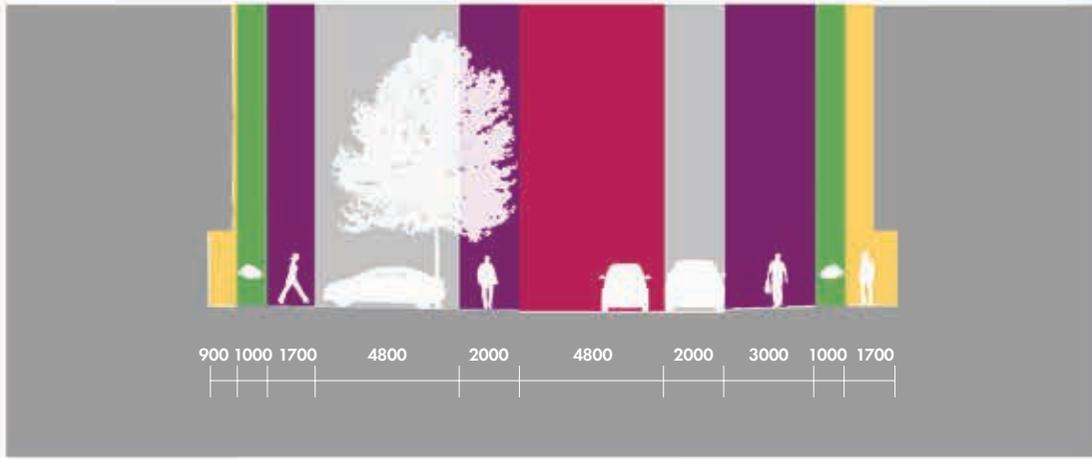


View along East Street



West Hendon





West Street section

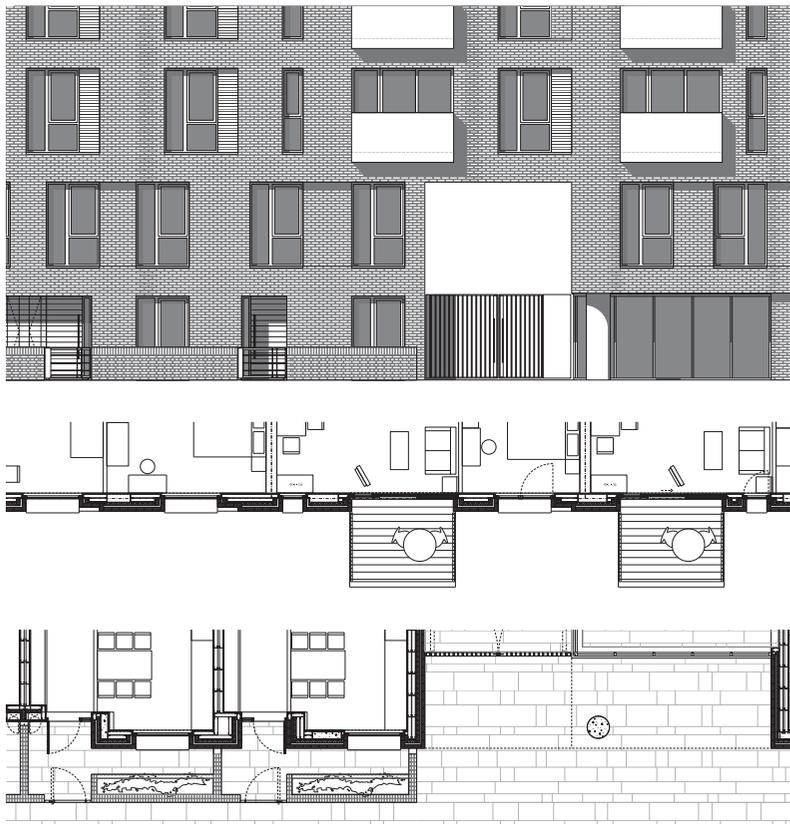


West Street section

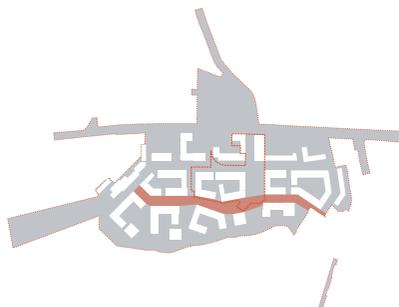


West Street plan

- private space
- defensive space
- pavement
- road
- parking



Bay study of entrances on West Street



West Street

West Street is treated as a shared surface with pedestrian movement, planting and street furniture prioritised. These elements are more loosely arranged compared to East Street, a characteristic which follows through to the buildings. The buildings on the western side of the street are informally placed to respond to the softer, undulating character of the Welsh Harp edge so that the building facades can take advantage of views in various directions. The spaces created between the buildings open up more generous visual links with York Park inviting residents to walk through compared to buildings placed orthogonally adjacent to one another.

West Street will begin to be formed on completion of Phase 3B (Block F).



View along West Street



Bay study of entrances onto York Park



Section study of building levels adjacent to York Park

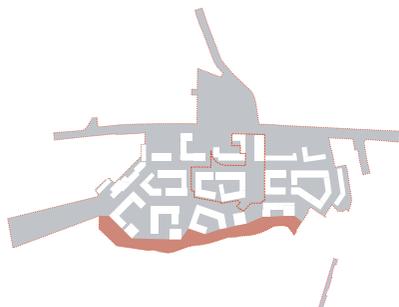


Bay study of entrances onto York Park

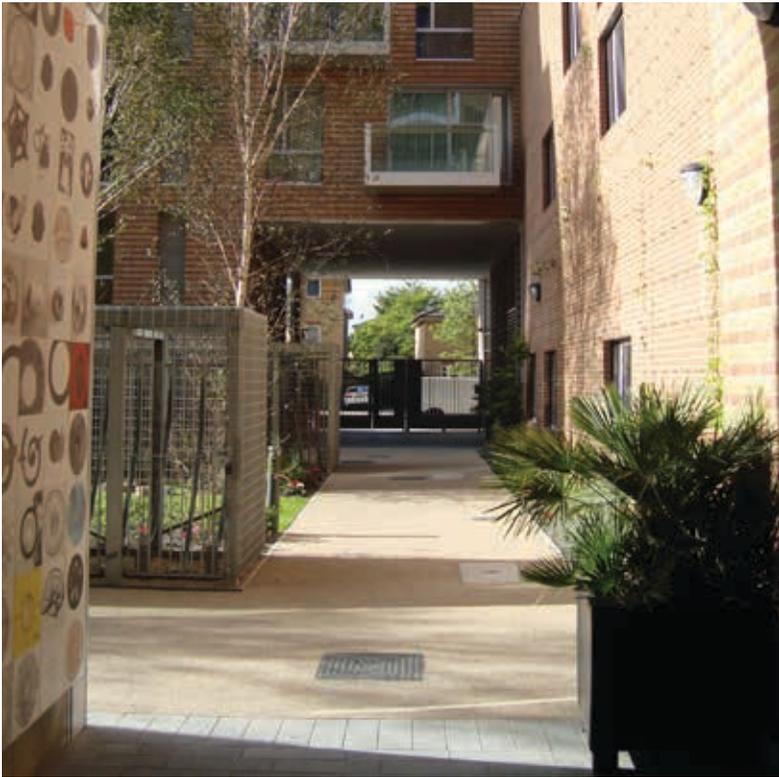
York Park

York Park provides a sociable focus and an ecological corridor linking to other green spaces around the Welsh Harp via a new pedestrian bridge. Residents of the community will have access to a range of types of spaces within the park which will support active and passive use for various age groups and people.

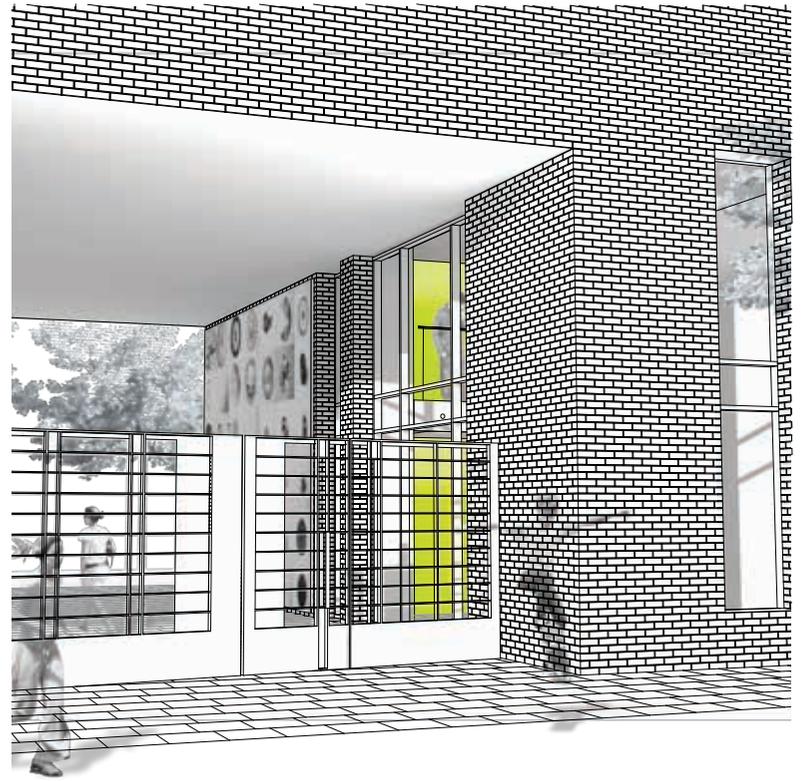
The scale of the space will allow for interaction between individuals, families and community in the neighbourhood. The building facades and communal gardens for the buildings adjacent to York Park will open out in order to make the most of the westerly aspect but also to positively overlook the park. The buildings facades will be more open with wide balconies to act as a subtle backdrop to the space.



View along York Park



Precedent: Courtyard at St Andrews with open portals linking to the street



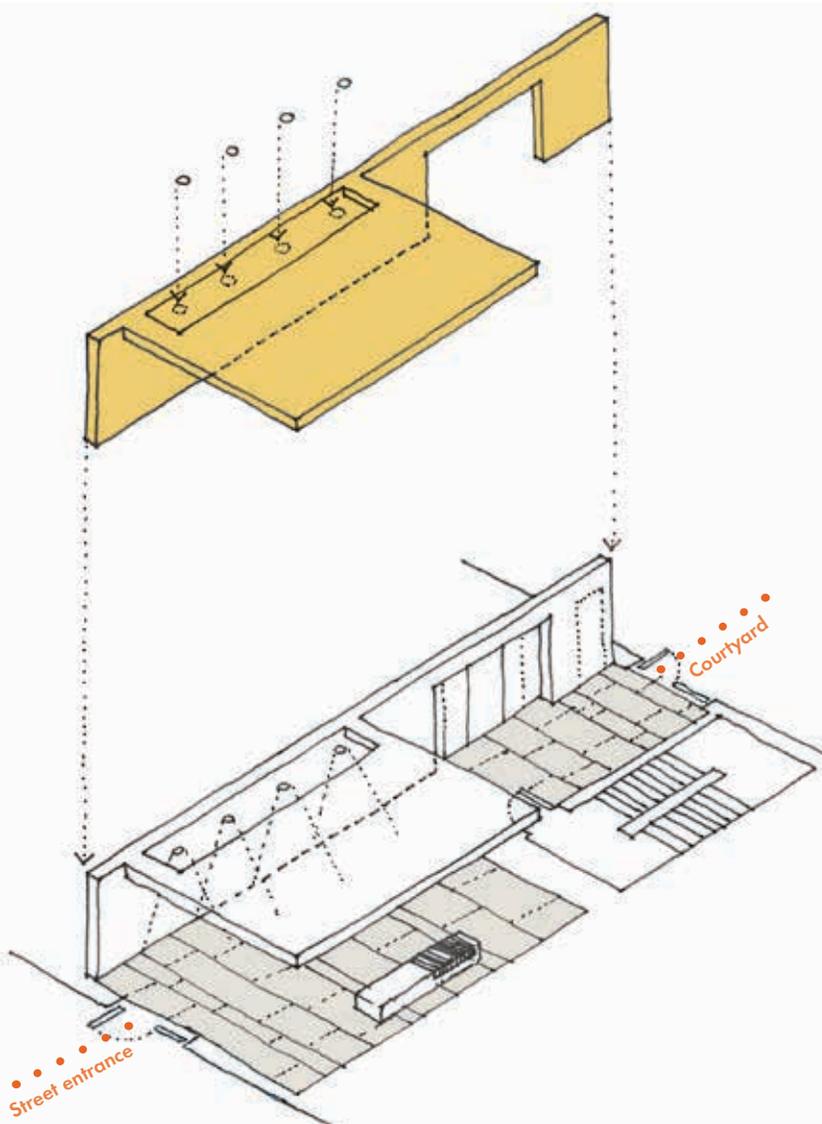
Entrance study with open portal linking courtyard to the street

4.12 ENTRANCES AND COURTYARDS

The entrance areas and lift/stair cores have been designed where possible to give a clear view from the street through the core to the courtyards beyond. In key locations double height open portals are provided to open up the courtyards to the street. This gives residents access to the shared secure courtyards to use in addition to the private amenity space provided. The Landscape section describes these in more detail but these shared courtyards will also provide local play space for younger children where parents can be close by.

There will be different types of amenity space, Amenity space has been considered under the following categories:

- Private Amenity space
- Shared amenity space in secure courtyards
- Public open space



Entrance study with link from street to shared secure courtyard



RESIDENTIAL





June at 10am



June at 12pm



June at 2pm



March at 10am



March at 12pm



March at 2pm

4.13 DAYLIGHT AND SUNLIGHT

Illustrative masterplan

The masterplan design has responded to the potential daylight, sunlight and overshadowing effects that may occur to the existing surrounding properties and existing surrounding amenity spaces. In addition the potential levels of daylight, sunlight and overshadowing to the proposed apartments and amenity spaces have been a consideration in site layout planning.

Overall the design ensures that the vast majority of daylight and sunlight reductions to be experienced by the surrounding residential properties will be within the guidance set out in the BRE guidelines and are unlikely to be noticeable to the occupants. In isolated areas minor adverse reductions are likely to occur but overall the reductions are considered acceptable given the proposed scale and density of the proposed development. The surrounding properties are considered to retain an adequate level of daylight for an urban area.

The daylight, sunlight and overshadowing assessments show that adequate levels of daylight and sunlight are likely to be enjoyed to the proposed apartments and all proposed amenity spaces will enjoy good levels of sunlight.

Phase 3B + C

The results of our daylight assessments show that overall 90% of the proposed habitable rooms will enjoy good levels of daylight in accordance with the BRE guidelines. Overall the daylight results are considered to show a good level of compliance for an urban area and, overall, a better level of compliance than already consented in the approved detailed application for Blocks E & G1/G2.

The sunlight results show that adequate levels of sunlight will be enjoyed given the general orientation of the blocks and urban area. Those windows that receive lower levels of sunlight are typically set back behind balconies where a balance between the provision of the beneficial private amenity space and the slightly lower levels of sunlight within the room needs to be struck.

The overshadowing results to the proposed open amenity space show that good levels of sunlight in accordance with the BRE guidelines should be enjoyed.

A portion of the courtyard to Block G4 will be shady but this is mitigated by providing a roof terrace for residents and merging this courtyard with the larger, existing courtyard of Block G1,2.

NO.	ITEM	RESPONSE	CONFORMITY
1.0	Policy and strategic guidance in support of secured by design	It is the Client's aspiration to meet the principles of the SBD document including full compliance for affordable housing units and 'reasonable endeavours' for the private units	Yes
2.0	Layout of roads and footpaths	Vehicular and pedestrian routes are visually open, direct and well used.	Yes
3.0	Through-roads and cul-de-sacs	The masterplan vehicle road pattern is designed to connect with the existing routes around the site to promote natural surveillance by people using the streets.	Yes
4.0	Footpath design	The footpaths have good lines of site, will be well lit and overlooked by the adjacent apartments which have front doors/windows at street level.	Yes
5.0	Planting next to a footpath	Planting next to footpaths has been designed to be low level so not to hinder natural surveillance.	Yes
6.0	Seating next to footpaths	Seating next to footpaths will be provided.	Yes
7.0	Lighting of footpaths	Footpaths will be lit in accordance BS 5489-1:2003	Yes
8.0	Footpaths on phased developments	Footpaths will be integrated with the existing context for each phase of development.	Yes
9.0	Communal areas	Communal play spaces in courtyards have natural surveillance from residents. The communal areas are secured with gates operated on access control by the residents. Maintenance of the spaces will be undertaken by Barratt Homes management company.	Yes
10.0	Dwelling boundaries	See detailed responses below.	Yes
10.1	Front boundaries	All walls, fences and railings at the front of properties are below 1.0m in height thus ensuring good visibility.	Yes
10.2	Access gates to rear gardens or yards	Access is controlled.	Yes
10.3	Side and rear boundaries	Boundary to Building G with the properties to the Broadway is greater than 2m high with no footholds. Residual access route will be gated.	Yes
10.4	Fencing in high crime vulnerable areas	Generally the buildings or gates to courtyards form the boundaries to properties and communal areas.	n/a
10.5	Sub-divisional boundaries	Refer to 10.1	n/a
11.0	Layout and orientation of dwellings	The buildings within the masterplan have been laid out to ensure natural surveillance and community interaction. Within the masterplan there is mix of dwelling type.	Yes
12.0	Gable end walls	There are no windowless walls within the development.	Yes
13.0	Rear access paths	Refer to 10.3	Yes
14.0	Dwelling identification	The building will have clear identifications at the front door. All the apartment front doors will be numbered.	Yes
15.0	Climbing aids	Boundary walls, fences and balconies have been designed to mitigate climbing.	Yes
16.0	Car parking	Refer to Item 17.0 and on street parking to provide activity and natural surveillance on the streets	n/a
17.0	Underground car parking	Secure automatic entrance gates are provided at entrances. Secure pedestrian routes with access control systems from cores will be provided. Lighting will be installed to BS 5489-1:2003. All walls and ceiling will have light colour finishes.	Yes
18.0	Planting	The planting strategy will be developed to minimise opportunities for crime. Planting next to walkways has been specified to grow a maximum 1.0m in height. Trees have been spaced apart so that they do not hinder natural surveillance.	Yes
19.0	Street lighting	All street lighting to highways and footpaths have been designed to BS 5489-1:2003. The lighting design has been coordinated with the landscape design to ensure that it does not obstruct the light source.	Yes

Notes from Secure-by-Design Consultation on Masterplan (structure of notes based on Secure-by-Design guidelines)

4.13 SECURE-BY-DESIGN CONSULTATION

Masterplan

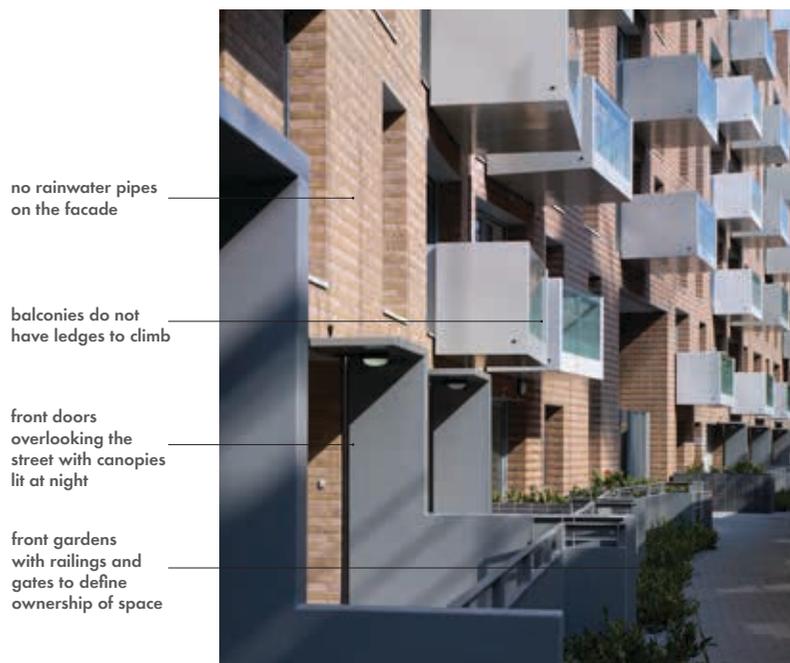
A consultation meeting was held in 2012 with the London Borough of Barnet Secure-by-Design officer to review the principles of the illustrative masterplan. The table on the opposite page was issued following this meeting to summarise the issues discussed and to note the Secure-by-Design principles integrated into the proposals. A further consultation meeting was held to discuss the pedestrian bridge proposals across the Silk Stream on 18 January 2013.

Reserved Matters Application

A further consultation meeting took place with the London Borough of Barnet Secure-by-Design officer on 10th October 2014 to discuss the Reserved Matters application for Phase 3B+C.

A number of issues were discussed and required further consideration during the design process. The notes below highlight some of the issues that were raised and have been considered include:

- Public space lighting to be designed to enable view of approaching faces.
- Entrance lobbies to be designed to be separated from stair/lift core by a secure door.
- If no secondary doors to corridors are installed at upper levels of lift cores, CCTV to be installed in lifts and lift lobbies.
- Ground floor windows and doors to be designed to secure by design standards.
- Stacked balconies to be designed to avoid climbable elements.
- Residential windows to overlook any roof garden if possible, for passive surveillance.
- Wheelchair flats to be designed without winders/Teleflex to open windows.
- Bin stores to include secure by design doors at entrance to core.
- Access to/from carpark to be controlled to ensure access is only given to identified users.
- CCTV required at each core in basement and at bicycle store.
- Bicycle racks to ensure bikes can be locked at both wheels and frame.
- Vehicular and pedestrian gates to car park to ensure no gap between the opening and gate that would allow a person to climb over and into the car park.
- Defensible planting to be installed to all ground floor facades with windows facing onto public realm.



Defensible space strategy for streets

4.14 TRANSPORT AND PARKING

Proposed Transport Infrastructure

A series of transport infrastructure improvements are envisaged as part of the development of the site. In order to facilitate access to the development site, the signalised junction of West Hendon Broadway with North Road and two priority junctions at Milton Road with West Hendon Broadway and West Road with Cool Oak Lane will be created. Some parts of West Hendon Broadway and Cool Oak Lane will be realigned to accommodate these junctions. A number of pedestrian crossings will be created on West Hendon Broadway, Cool Oak Lane and Station Road, all of which are situated at the edges of the development site.

Within the site there will be an integrated approach to design with pedestrian and vehicular movements being considered alongside landscape and on street parking requirements. The desire is to create streets with excellent pedestrian linkages forming

logical routes through the site and connecting out towards local facilities including West Hendon Broadway, Hendon Station to the east and leisure facilities to the west.

Shared surfaces will be created where the main pedestrian routes intersect with internal roads. Traffic will be calmed on the streets throughout the estate principally by means of geometry but with sympathetically detailed traffic calming measures where required, such as the shared surfaces.

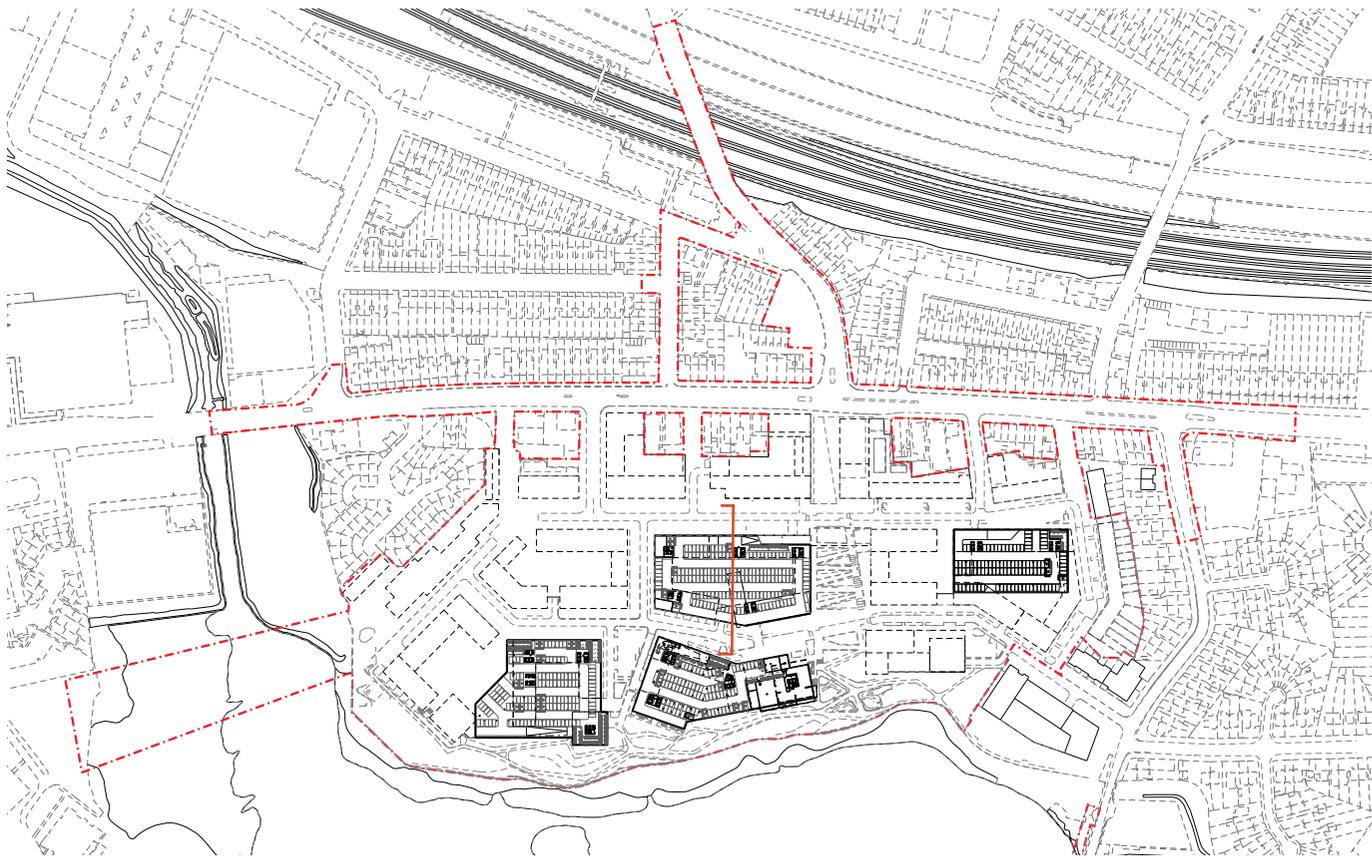
The streets have been designed to accommodate refuse vehicles and other HGV movements for deliveries and a servicing strategy has been established that combine regular refuse pick up points from every building service core and locations where vehicles can park for deliveries without blocking streets or conflicting with on street parking.



Site cross section from the Broadway to the Welsh Harp



Site section showing undercroft and basement parking



EAST STREET

Block F

Outside the site there will be a series of footway improvements along Station Road addressing current shortcomings. Footway improvements to West Hendon Broadway, and bus stop improvements with reference to TfL and accessible bus stop design guidance will also be provided. The provision of the Silkstream Bridge and associated pedestrian links to the north of the site and a new pedestrian bridge adjacent to Cool Oak Lane will also enhance pedestrian connections to the wider context outside the site.

Parking

An overall parking ratio of 0.8 is proposed which amounts to a total of 1600 parking spaces. Parking is expected to be allocated on a long lease to houses and flats on the site.

It is anticipated that one bed flats are likely to take up a generally low level of parking reflecting the practical option for owners of small units to live in locations such as West Hendon without owning a car. However, it is acknowledged that for some households there may be requirements for car ownership and other circumstances where larger units will not require a space hence the parking will be not allocated to specific units.

Suitable parking will also be made available for other modes, namely bicycles, powered two-wheelers as well as charging points for electric vehicles.



WEST STREET



Indicative refuse collection points

4.15 REFUSE AND SERVICING STRATEGY

All residents will be required to take their refuse to either ground level or basement refuse stores. The stores have been designed to the London Borough of Barnet Note on waste management.

A series of euro bins each with a capacity of 1,100 litres and 240l will provide segregated handling for household waste, mixed recycling and organic waste. On collection days the on site management team will collect the bins from any stores that are beyond the reach of Barnet Council bin collection services, store them at a designated collection point and return them following collection.

A separate 'large item' waste storage room has also been provided in Block F for the occasions when residents need to have furniture or bulky items removed from their apartment.

Existing commercial units along the Broadway depend on a mix of rear and on-street servicing. Existing servicing arrangements for units along Hendon Broadway are to be retained as far as practical. This can be achieved by a combination of service points on existing side streets that are to be retained as shared surfaces with limited vehicular access and on street servicing from bays along the Broadway. It is proposed that this should be more tightly controlled than at present with limited period of stay and hours of operation. These could potentially be limited to 20 minute stays outside of peak hours.

The commercial units in Phase 3B+C will have individual waste storage areas within the units.



- phase 3B+C
- binstore outside of 10m wheeling distance
- 10m wheeling distance from collection point
- ▶ existing properties collection within the masterplan
- ▶ existing properties collection off the masterplan via the Broadway



4.16 ACOUSTICS AND NOISE

Following analysis of the acoustic data from the site there are no particular acoustic requirements for communal amenity space. For private outdoor space (balconies/terraces) a 1.5m solid barrier for some balconies/terraces that have an unscreened view to the Broadway is required.

Façade noise attenuation levels are specified within the environmental statement of the 2013 outline/detailed planning documents. Analysis has been undertaken to demonstrate the levels required for noise sensitive rooms, which include bedrooms and living rooms and combined kitchen/dining/living spaces. For non noise-sensitive rooms, such as hallways/stairwells, bathrooms, kitchens (that are just kitchens), the equivalent of standard double glazing is adequate. These apply to the façade as a whole, although glazing units are considered as the weakest element of the façade. Levels of noise attenuation to be achieved by the building fabric from outside to inside have been specified that will result in suitable internal noise levels. These

apply to each external building façade as a whole, although glazing units are the weakest element of a façade. As the noise attenuation relies on closed windows, ventilation is also required to the same level of noise attenuation on each façade to allow suitable internal noise levels to be achieved without the need to open windows for ventilation.

Additionally, noise from the Energy Centre and any other fixed building services (eg air conditioning/commercial ventilation) associated with the commercial units, or with the school, or provided for the residential blocks must be specified so that noise from all units combined does not exceed a noise rating level at all existing and new dwellings. The levels for different areas of the site are specified in Table 7.19 of the ES, the quietest of which is 26dB LAR,t dB.

There is one single aspect unit in Block G4 that faces the Broadway. This apartment is on the third floor and designed with a winter garden to help alleviate any potential noise issues.

4.17 AIR QUALITY

Air quality has been predicted at the development site, taking into account emissions from the proposed Energy Centre and traffic emissions from roads adjacent to the development. The air quality predictions have been compared against national air quality objectives for the protection of human health so that mitigation measures are employed in areas of poor air quality.

Air quality is predicted to meet national objectives across the majority of the development site. In certain locations suitable and appropriate mitigation measures are required for the properties adjacent to West Hendon Broadway. Mitigation measures will be undertaken to improve air quality for residents living in these properties, which will ensure that air quality is acceptable and within national objectives. These measures will include the installation of mechanical ventilation which draws in cleaner air, and the introduction of winter gardens rather than balconies in order to minimise exposure.

4.18 ENERGY AND SUSTAINABILITY STRATEGY

Energy Strategy

The energy strategy for West Hendon has been developed to meet a number of requirements and deliver an efficient, affordable and low carbon solution for residents. Each dwelling will be certified as Code for Sustainable Homes level 4 which entails the achievement of a 25% reduction in carbon emissions beyond 2010 Building Regulations Part L standards. The energy solution also complies with various LBB and GLA policies that encourage the inclusion of community heating networks and renewable generation technologies, while embedding energy efficiency into the fabric and form of each building.

The approach is founded on three principles defined by the Energy Hierarchy: install systems and fabric that ensure energy efficiency and conservation in operation; supply heating and hot water via a community network supplied from an Energy Centre that incorporates combined heating and power and includes photovoltaic arrays on available roof spaces to optimise the contribution of renewable energy suitable for the site.

The result is a low carbon solution that will be straightforward to maintain, and will ensure efficient and resilient energy supply across the scheme. The programme for installing the Energy Centre systems follows the build programme, and contains suitable flexibility to accommodate variations in programme and function.

Sustainability Strategy

Sustainability has been at the core of the design development from the outset. Fundamental to the scheme is how it relates to the Welsh Harp reservoir, and the associated protection of the SSSI habitat, to deliver a suitably compact residential

development set within a verdant environment with green amenity space, excellent access to the public transport network and to the High Street with all the associated facilities this holds. While the scheme is predominantly a residential development, it includes community infrastructure that will ensure a thriving place to live: a two-form entry primary school; community facilities and a number of small retail outlets alongside playgrounds and outdoor amenity spaces.

Code for Sustainable Homes level 4 certification and Lifetime Homes will be achieved for all dwellings, as well as meeting a number of related standards including HCA Housing Quality Indicators, Considerate Constructors Scheme and the LCCP Checklist for Adapting to Climate Change. This embeds very high environmental and social sustainability standards across the scheme, and will help residents to live in an efficient and affordable way that is sensitive to their environment and secures a good quality of life.

The energy and carbon performance of the scheme is founded on the principle of all space heating and hot water supply coming via a district heating network linked to an Energy Centre located in the Basement of Block E2. The Energy Centre uses a combination of gas-CHP and gas-fired boilers to deliver low carbon heat and hot water, and in partnership with an ESCO, will help keep residents energy bills affordable.

Similarly, water efficiency is built into the fabric and fittings of the design with unit water consumption aligned with the Code for Sustainable Homes level 4 using efficient internal sanitary fittings, rainwater harvesting for communal landscape irrigation, and green and brown roofs on the larger blocks that also creates an ecological

habitat.

The scheme has used the Sustainable Design and Construction SPD (LBB, June 2007) as a template to deliver a sustainable scheme, and has sought to comply with as many requirements as practical and feasible. It is acknowledged that the 2007 SPD is in the process of being superseded, and the draft 2012 SPD has been accommodated where possible in the approach presented. The scheme has also adopted the requirements defined in the Sustainable Design and Construction SPG (GLA, May 2006), and is aligned with the standards set out in the National Planning Policy Framework for sustainable



Energy centre location below building E2

4.19 SERVICES STRATEGY

The development will be served with heat generated from a central Energy Centre (heat and power) (located in Building E) and a District Heating pipework system serving the various blocks. All cores will be provided with Heat Interface Sub Stations to provide hydraulic separation for the building from the District Heating Mains.

Electrical power will be provided from a number of Electrical Substations located at lower ground floor in the blocks.

Each Building will be provided with a break tank and booster pump to provide boosted cold water to all apartments.

All blocks over 18 metres in height will have dry risers and fire fighting lifts. Fire fighting lifts will require a secondary power supply. Where a Building or single core is over 30m tall a wet riser will be provided fed from a dedicated storage tank and booster pump set located in the basement of the block. These flats will also be provided with residential sprinklers. The residential sprinklers will be fed off separate branch connections from the wholesome water riser.

Stair and lift cores will be provided with smoke extract ventilation to manage smoke in the stair core in event of a fire. Where this is mechanical extract the fans will require a secondary power supply.

The entrances to each core will be arranged so that a fire tender can be brought to within 18 metres of the entrance. Where this cannot be achieved, alternative arrangements will be agreed with the Fire Brigade. The maximum dead-end street for a fire appliance is 20m before a suitable turning circle or hammerhead is recommended.

Fire hydrants will be provided such that all core entrances will be within 90 metres of a hydrant position.

4.20 PHASING AND DECANT

The phasing and decant strategy is a crucial element within the masterplan proposals. In order to progress with the initial phases of the proposed masterplan as soon as possible, the masterplan has been tailored to allow an initial development phase without the need to secure an early CPO expense or programme delay and whilst also maintaining the local infrastructure network. The previously consented masterplan did not allow for early delivery.

The early phasing for the masterplan is broken down into incremental sub-phases which are located in areas of the site currently vacant. Following on from Phase 1 (Pilot houses) and Phase 2 (Lakeside) consented under the previous masterplan, four further phases have been identified within the 2013 masterplan which are based on a number of factors including:

- number of units per phase to ensure viability
- number of units required for decant
- number of parking spaces per phase required based on a 0.8 parking ratio
- number of units required relative to 'triggers' for improvements required in infrastructure

A further consideration in the location of the initial phases was to provide the new link from the Broadway to the Welsh Harp to create public open space and a sense of place as early as possible. Therefore Phases 3A, 3B and 3C incorporate the public realm and buildings which will provide this link including Broadway Place, The Green and part of York Park.



Strategic phasing plan (Phases 1-6)



Phase 1, 2 and 3A



Phase 3B+C



Phase 4



Phase 5



Phase 6A



Phase 6B



Complete