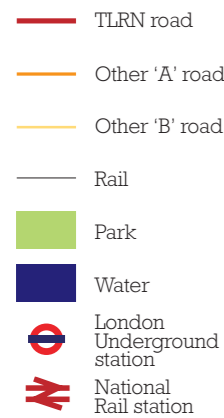


08 Principle 4

Streets that put people first



8.1 Strategic Route Network



8.1 Giving priority to pedestrians

8.1.1

The comprehensive redevelopment of Woodberry Down provides an opportunity to develop a ground up approach to transport and movement planning by applying a sustainable and balanced transport agenda to the Masterplan. Consequently a movement strategy has been developed that alters the balance between pedestrians and traffic in favour of those travelling by foot.

8.1.2

The strategy has four principles at its heart:

1. To create a permeable network of streets and spaces that provide a safe, pleasant and efficient movement network.
2. To balance and, where necessary, redress current conflicts and imbalances, most obviously between pedestrians, cyclists and motorists.
3. To reduce the carriageway of Seven Sisters Road from six to four lanes; retaining the bus lanes in both directions, but providing widened footways and tree planting, restoring its historic boulevard character.
4. To provide variable car parking standards, reflecting accessibility to public transport, and to locate car parking underground, where possible, to enhance the public realm.

8.1.3

To deliver the strategy a series of movement networks have been developed, each focussing on a particular mode of travel but contained within an overarching framework. Furthermore integrated within each travel mode are themes of sustainability, mobility and accessibility.

8.2 The existing route network

8.2.1

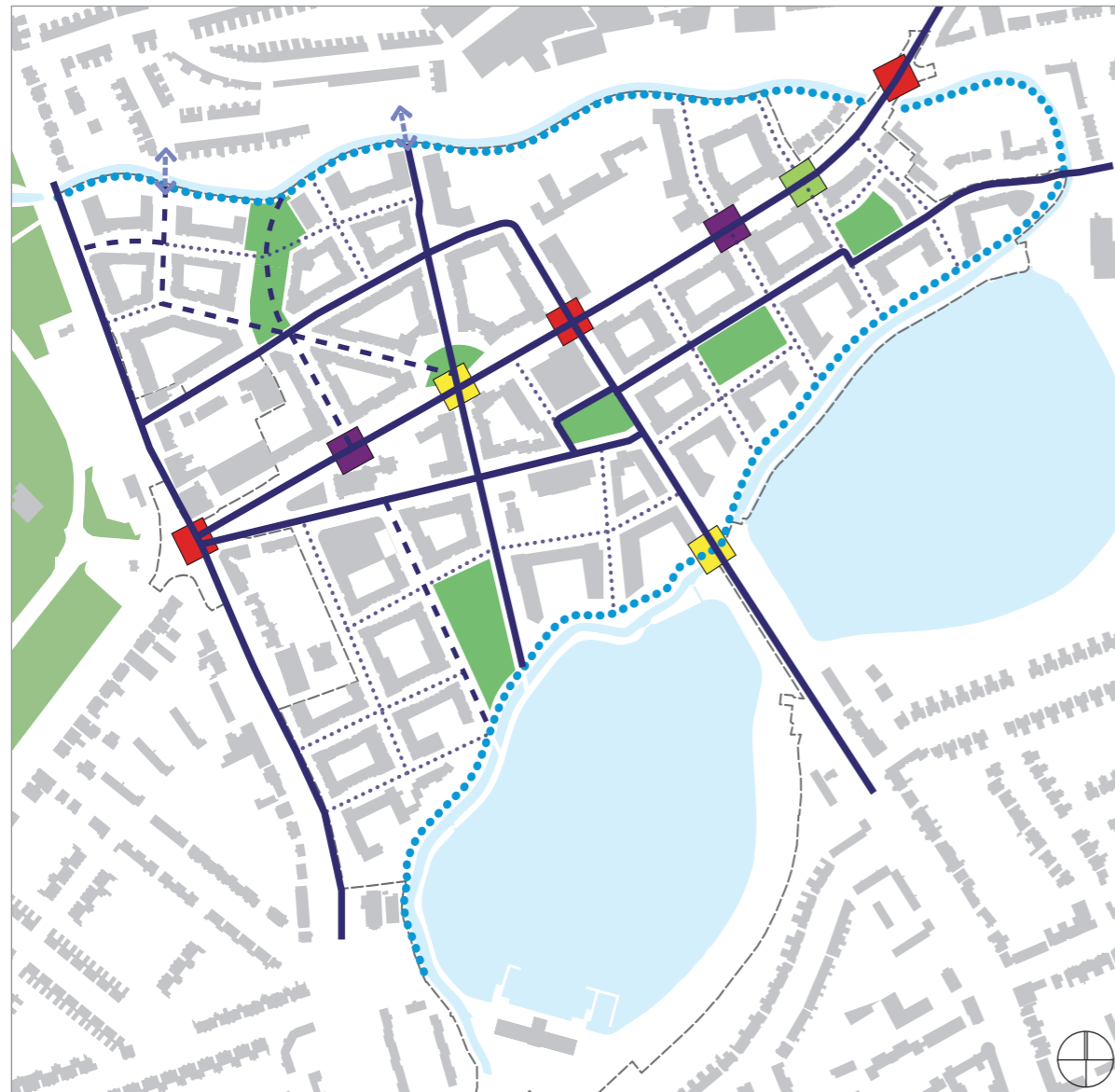
The Woodberry Down estate lies at the crossroads of the A503, Seven Sisters Road, and the A105, Green Lanes, which are both part of the Mayor's Transport for London Route Network (TLRN), as indicated in Figure 8.1. As such the roads are considered strategically important for the Capital - carrying long distance traffic and a higher proportion of heavy goods vehicles than local roads.

8.2.2

In cutting broadly east-west through the site, Seven Sisters Road has an enormous impact on the Woodberry Down community, carrying six lanes of thundering traffic, which has minimal benefit for the people and businesses who live and work on the site. It effectively severs the community in two.

8.2.3

The present estate has a small number of limited access roads serving the existing housing blocks, with one of them, Woodberry Down, unadopted. (Although the road is gated it is never closed and effectively acts as part of the public highway network.) The remainder are either cul-de-sacs or heavily traffic managed with only Woodberry Grove providing any real permeability. The Masterplan fundamentally changes this.



8.2 The pedestrian network

- Traffic signals at junctions with controlled pedestrian crossings
- Toucan crossings for pedestrians and cyclists
- Pelican/Puffin crossings for pedestrians
- Uncontrolled pedestrian crossings
- Main pedestrian movements
- - - Secondary pedestrian movements
- ● ● ● River walk pedestrian movements
- ● ● ● Minor routes
- - -> Proposed pedestrian and cycle bridge to Eade Road

8.3 Walking in comfort

8.3.1

The priority for approach to movement is to significantly improve pedestrian conditions. The existing pedestrian network is very poor with access mainly alongside roads that are often unsupervised by passing traffic or adjacent buildings. Pedestrian pathways are poorly lit and very few controlled crossing opportunities are provided on the busier streets.

8.3.2

A premise of the Masterplan is to design each street to provide a safe and convenient walking environment. Within the hierarchy pedestrian priority routes can be designated to cater for greater pedestrian flows and therefore include wider footways and controlled pedestrian crossing facilities.

8.3.3

Figure 8.2 shows the priority pedestrian route network linking the main focus of pedestrian activity (the underground station, schools, health centre, shops, parks etc) and main entry points to the Woodberry Down area. A much improved riverside walkway will skirt around the perimeter of the area through parkland as part of the wider Hackney 'Green Links' network. Also indicated are the new and improved pedestrian crossings that will be introduced along Seven Sisters Road to overcome or significantly enhance walking conditions.

8.3.4

To improve pedestrian and cycle links between Woodberry Down and Haringey to the north, two combined foot/ cycle bridges are proposed, spanning the New River. This will provide much greater permeability between the two areas, with more convenient links to Eade Road employment and residential areas and beyond to Sainsbury's supermarket (located within the Haringey Arena Retail Park) and Haringey local centre.



The proposed new foot/cycle bridges will improve access to Haringey local centre, north of the study area on Green Lanes



The proposed remodelling of Seven Sisters Road provides opportunities to further improve pedestrian links to Finsbury Park



8.3 The Diagonal: a major new pedestrian and cycle link

8.3.5

A key component of the pedestrian network is 'The Diagonal' which embodies the principle of redressing the imbalance between pedestrians, cyclists and motorists (see Figure 8.3) and cuts a bold new dynamic through the area. Moving from south to north this provides a direct link for walkers and cyclists between the West Reservoir (a focus for watersport recreation), the new Spring Park, Woodberry Down road (a spine of community facilities) and onward to Seven Sisters Road. At this point a direct controlled pedestrian crossing is provided across all four lanes and designed as a major new landscape feature at the hub of a cluster of taller buildings, forming a 'circus', with new bus stops at its heart. From here, it passes northward to Haringey via the new Primary School and cycle/pedestrian bridge.

8.4 Safe and efficient cycle links

8.4.1

All streets are designed to accommodate safe and attractive cycle movements. Within the street network, a series of cycle priority routes have been designated (see Figure 8.4), which will cater for greater cycle flows and therefore include priority facilities and designated lanes where appropriate.

8.4.2

Figure 8.4 shows the existing designated cycle routes on Seven Sisters Road and Green Lanes that will continue to be accommodated, together with a series of additional routes, namely:

- one routing north-south from Stoke Newington along Woodberry Grove, then passing through Rowley Gardens and onward to Haringey via Green Lanes or the new bridges; and
- one passing west-east between Finsbury Park, Woodberry Down (street) and onwards to Newton Close

8.4.3

In addition, routes are to be provided along The Diagonal and alongside New River to the south.

8.4.4

Also indicated are the proposed junction improvements on Seven Sisters Road and Woodberry Grove to overcome the main existing barriers to cycle movement.

8.4.5

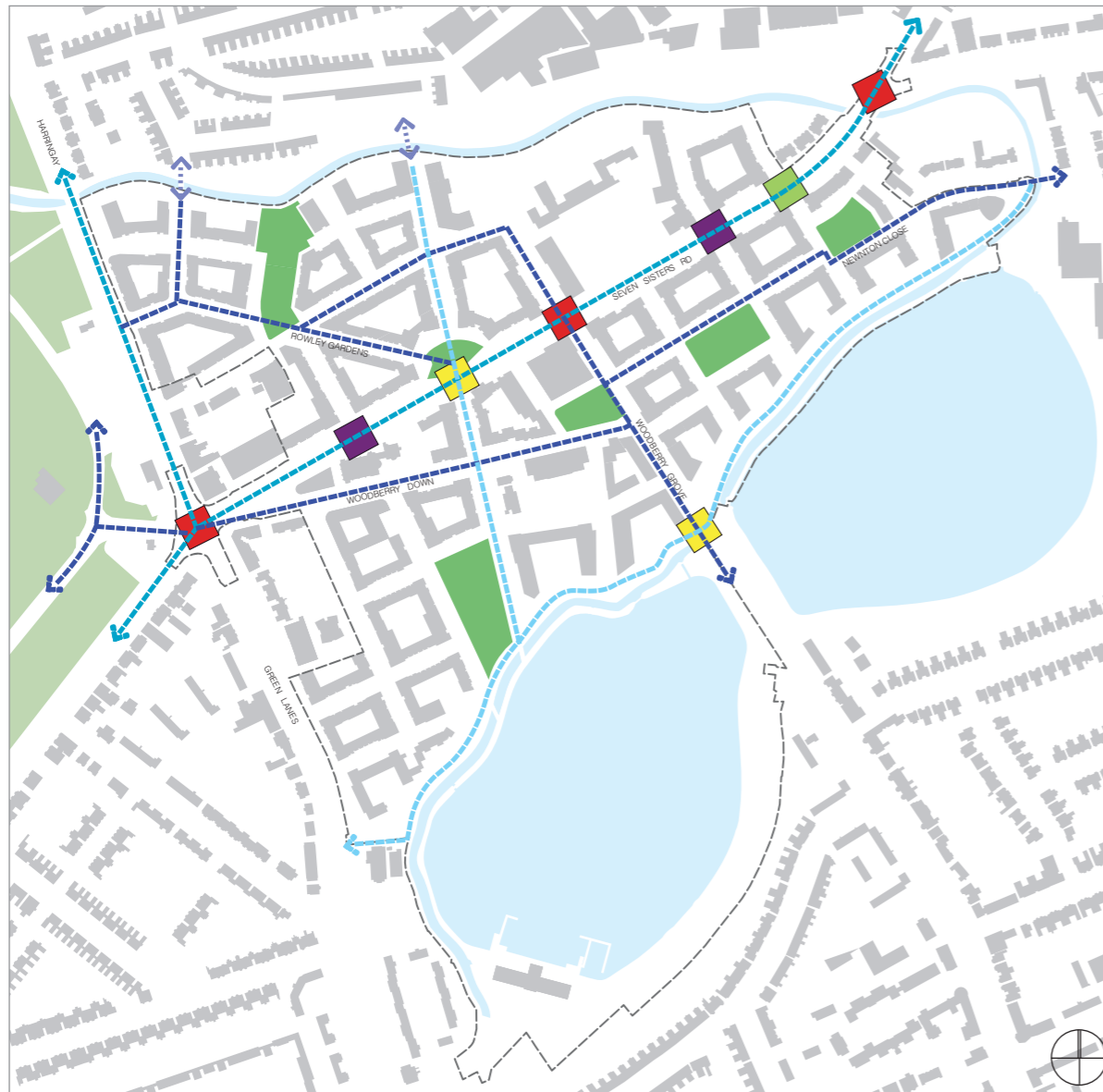
Cyclists on commuting or strategic cycle rides will be signed and encouraged to use Seven Sisters Road, which will be redesigned to incorporate a wider bus lane appropriate for shared use with cyclists. Priority facilities at junctions will be included where appropriate. More local or leisure cyclists will be encouraged to use "quieter" roads, generally shared with vehicular traffic or on wider footways with pedestrians.



Well-landscaped pedestrian crossings spanning a busy road



A major new crossing is envisaged where The Diagonal intersects Seven Sisters Road.



8.4 The cycle network

- Traffic signals at junctions with controlled pedestrian crossings
- Toucan crossings for pedestrians and cyclists
- Pelican/Puffin crossings for pedestrians
- Uncontrolled pedestrian crossings
- Existing cycle routes (designated)
- Proposed cycle routes (designated)
- Proposed cycle routes (quiet streets and riverside)
- Proposed pedestrian and cycle bridge to Eade Road



8.5 Street hierarchy

8.5 Green street network

Street hierarchy

- Type 1 - Boulevard
- Type 2 - Secondary avenue
- Type 3 - Local street
- Type 4 - Lane
- Type 5 - Local access
- Type 6 - Mews

8.5.1

All streets form part of a designated street hierarchy and will be designed to adoptable standards. The hierarchy is defined by street typologies which provide a framework for carriageway and footway widths, parking patterns, designated cycle and public transport links, streetscape design and landscaping. Each is envisaged in three dimensions, so that the height and design treatment of buildings also contributes to a sense of hierarchical structure.

8.5.2

Five different types of streets have been identified, as shown in Figure 8.5, namely:

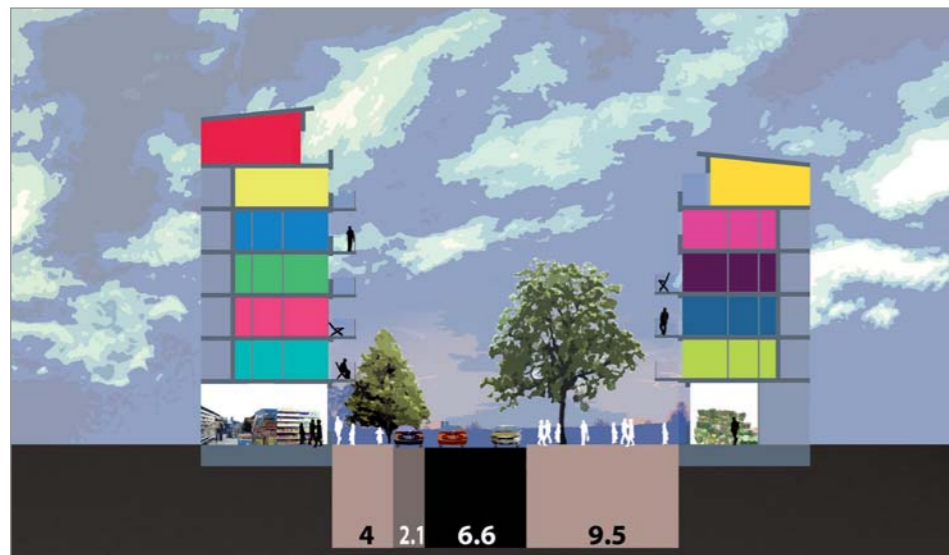
- Primary Boulevard
- Secondary avenue
- Local street
- Lane
- Mews/local access



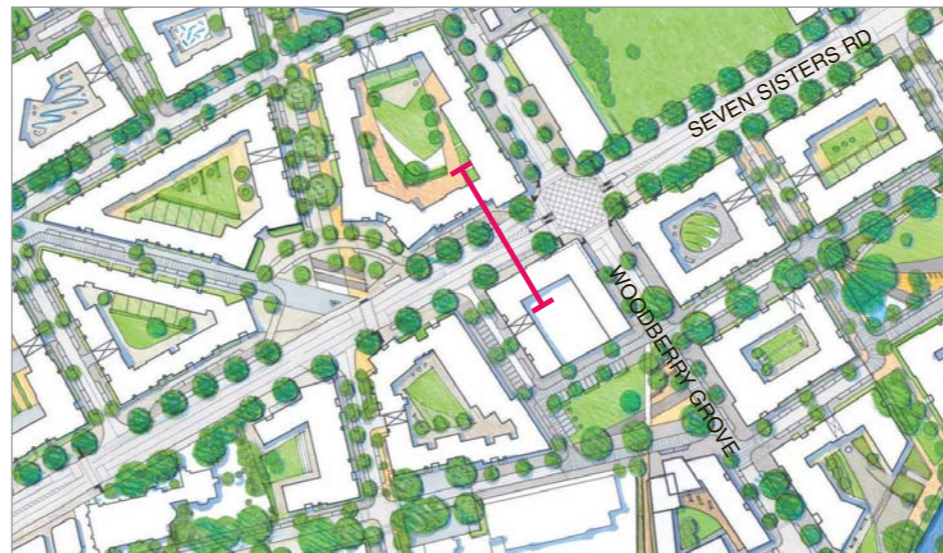
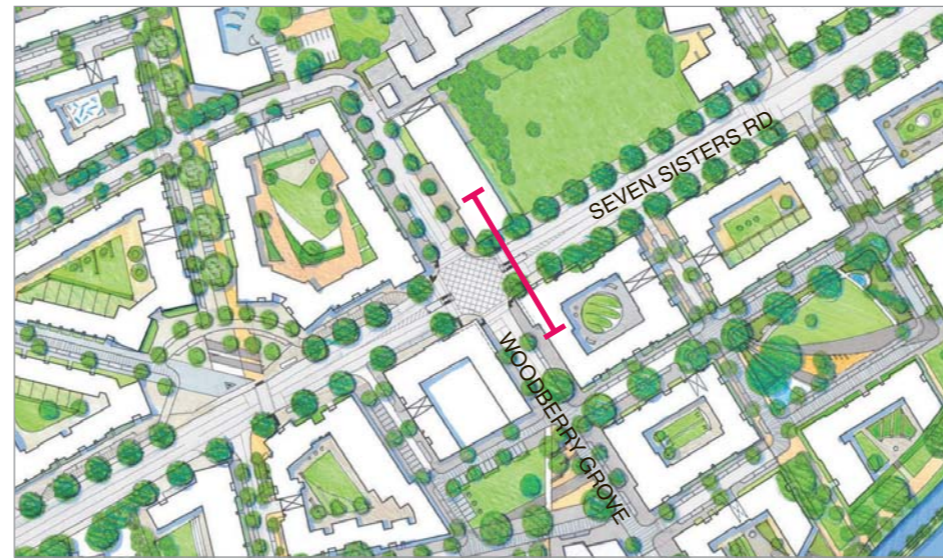
Type 1a: Boulevard



Type 1b: Boulevard with slip road



Type 2: Secondary avenue



8.5.3

It should be borne in mind the terms 'primary', 'secondary', 'local' and 'access' are relative terms used for convenience in describing streets in Woodberry Down only. They do not relate to similar terms used for the borough-wide route hierarchy in Hackney. Each street type is summarised below.

Type I Street: Primary Boulevard
(Seven Sisters Road)

8.5.4

Seven Sisters Road will be reduced in size to accommodate four lanes (see Chapter 8.7 below) – a bus lane and general traffic lane in both directions. A small amount of time-limited off-street parking will be accommodated adjacent to the new supermarket.

8.5.5

It will be designed as a focus for lively activity, passing trade and community life and will typically have significant businesses, apartment blocks or attractions. These routes will be designed to provide for a steady and reliable throughput of vehicular traffic, including buses, but will not create barriers between adjoining areas.

8.5.6

This route will connect a series of focal points and activities, which are clearly signed and evident upon arrival. Along these routes the scale of buildings will reflect the width of the street and its strategic importance, with tall buildings placed at key nodes. Formal street tree planting, wider pavements, seating and strategic feature lighting will be incorporated.

Type II Street: Secondary Avenue
(Example: Woodberry Grove South)

8.5.7

This will be designed with two lane single carriageways, with general traffic lane in both directions, local retail frontage, wide footways and a mix of short stay perpendicular and parallel parking. The design of sheltered parking should be integrated with planting and pedestrian crossing facilities.

8.5.8

Secondary routes integrate pedestrians, cycles and vehicles in a simple, inter-connected network used to serve the local retail centre. The street will be designed to minimise through vehicular traffic.

8.5.9

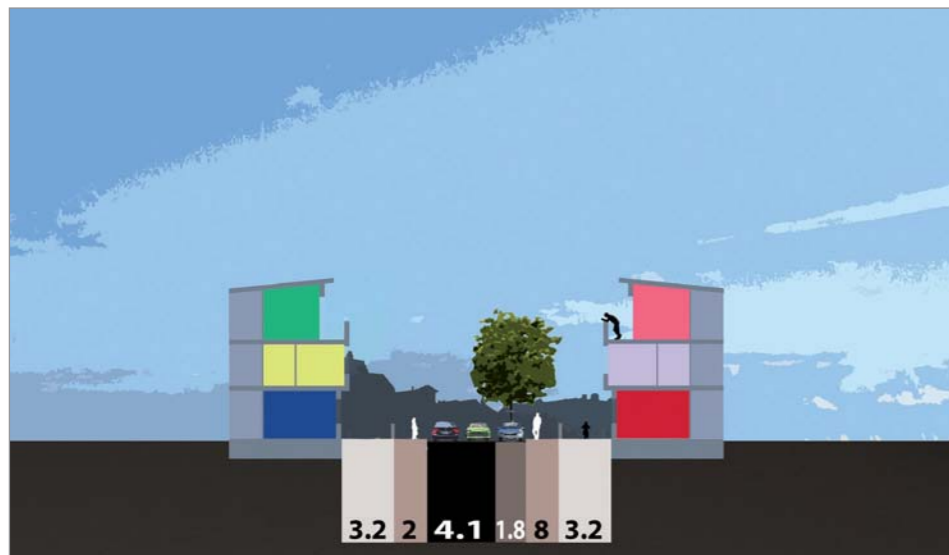
A mix of retail, office and community uses will be accommodated at the ground floor. Buildings will be 6-8 storey in the main, with taller buildings placed at key corners.



Type 3: Local street



Type 4: Lane



Type 5: Mews/local access



Type III Street Local Street (Example: Woodberry Down)

8.5.10

These comprise the principal internal streets, which primarily serve the residential area, but nonetheless make strategic connections, for instance between community facilities (schools, health centre, principal parks etc)

8.5.11

Each is designed as a two lane single carriageway, with general traffic in both directions, parallel parking, and street tree planting integrated with sheltered parking.

8.5.12

Local routes integrate pedestrians, cycles and vehicles in a relatively 'quiet' street environment. Through traffic is discouraged.

Type IV and V Streets: Lane, Mews and Local Access
(Examples: Spring Park Drive, Newton Close)

8.5.13

These minor internal streets are generally identified where traffic flows are light. In particular they are effective:

- on long straights, in order to avoid tempting drivers to drive quickly
- cul-de-sacs, where slower movements are encouraged
- 'play-streets' or other local streets where pedestrians are given priority

8.5.14

Each is designed to accommodate a two lane single carriageway, with general traffic lanes in both directions and integrated traffic calming tending towards shared surface or play-streets.

8.5.15

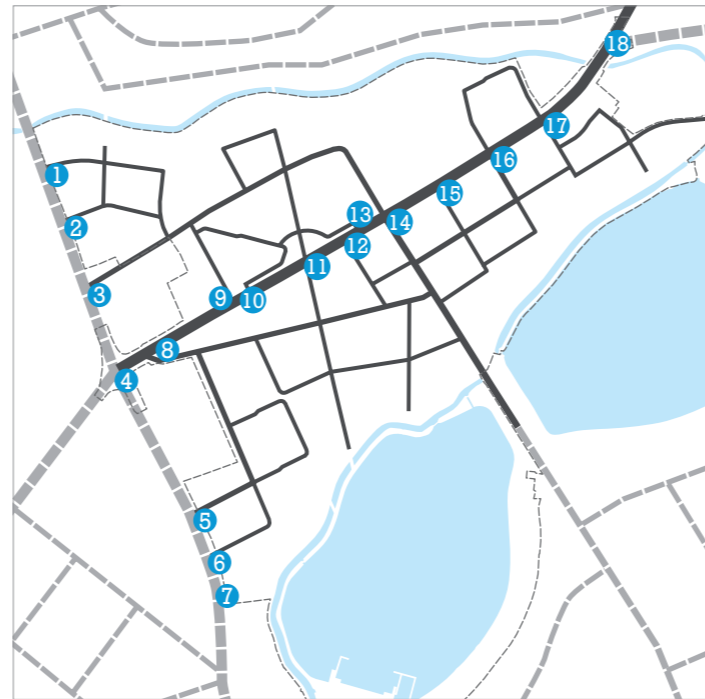
In general terms:

- The highway widths are viewed as maximums
- The footway widths are viewed as minimums
- Parking is included where appropriate and its form (parallel / chevron/ perpendicular) reflects the function and form of the street in which it is situated
- Parking is provided in designated bays with build outs used to emphasise the carriageway's width and aid pedestrian crossings
- Build-outs are used at junctions to tighten turning circles although the highway design should allow vehicular access for refuse vehicles (even if this is accommodated by overrunning the footway)
- Trees are planted where appropriate and the species selected to emphasise the street hierarchy



Table 8.1 Junction proposals (junction references indicated in Figure 8.7)

- Junction 1 Green Lanes / Rowley Garden (north)	Two-way access with give way junction
- Junction 2 Green Lanes / Rowley Garden (middle)	Two-way access with give-way junction
- Junction 3 Green Lanes / Woodberry Grove (north)	Two-way access with give-way junction
- Junction 4 Green Lanes / Seven Sisters Road	TfL has advised that the Manor House crossroads has recently been subject to a modernisation programme and that no further changes are to be made in the short-medium term.
- Junction 5 Green Lanes / new local access	One-way access with ingress only from Green Lanes
- Junction 6 Green Lanes / Spring Park Drive	Two-way access with give-way junction
- Junction 7 Green Lanes / former John Scott Health Centre	Two-way access to underground car park with give-way junction
- Junction 8 Seven Sisters Road / Woodberry Down	One-way bus and emergency only access with egress only to Seven Sisters Road, enforced via introduction of a bus gate / rising bollard
- Junction 9 Seven Sisters Road / new local access (west 1)	Two-way access with give-way junction onto Seven Sisters Road
- Junction 10 Seven Sisters Road / new local access (west 2)	Left-in access only to local one-way minor access route
- Junction 11 Seven Sisters Road / Diagonal	New traffic signals with controlled pedestrian crossings. Left-in, left-out junction only onto Seven Sisters Road
- Junction 12 Seven Sisters Road / new local access (centre 1)	One-way access with give-way junction providing egress onto Seven Sisters Road only
- Junction 13 Seven Sisters Road / new local access (centre 2)	Left-out access only from local one-way minor access route onto Seven Sisters Road
- Junction 14 Seven Sisters Road / Woodberry Grove (north)	Signalised crossroads with pedestrian facilities on all arms. Introduction of dedicated right turn from Woodberry Grove (south) and left turn from Woodberry Grove (north)
- Junction 15 Seven Sisters Road / new local access (east 1)	One-way access with give-way junction, providing egress onto Seven Sisters Road only
- Junction 16 Seven Sisters Road / new local access (east 2)	Crossroads does not facilitate north-south movement. Northern arm provides left-in access only to one-way loop. Southern arm provides left-in access only from Seven Sisters Road to local access
- Junction 17 Seven Sisters Road / new local access (east 3)	Crossroads does not facilitate north-south movement. Northern arm provides left-out access only onto Seven Sisters Road. Southern arm provides left-out access only onto Seven Sisters Road
- Junction 18 Seven Sisters Road / Amhurst Park	New traffic signals introduced, with controlled pedestrian crossings on all arms. Slip lane provided on Seven Sisters Road to facilitate queuing of right-turning traffic into Amhurst Park



8.7 Junction reference plan

8.6 Managing traffic

8.6.1

The street hierarchy sets out the preferred routes that strategic and local traffic should use, and goes some way to deterring rat running traffic. Junction type, design and geometry, road widths, parking location and quantity, opposing traffic movements and surface materials all act in conjunction to slow vehicles, and send the message to the driver that the internal streets are designed for local traffic only.

8.6.2

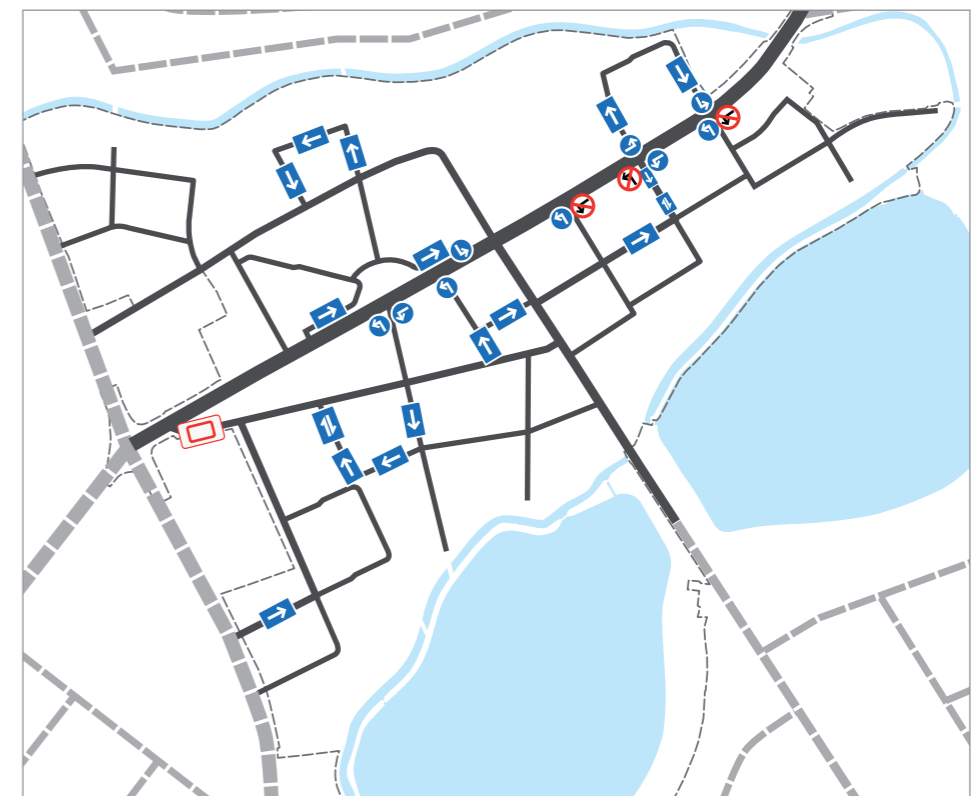
Clearly not all drivers will be deterred and in order to reinforce the route hierarchy, some traffic management may be necessary. There are two approaches to traffic management; either it can be implemented as streets are constructed or it can be delivered if and when a problem is identified.

8.6.3

The Masterplan has been developed with flexibility. Certain traffic management measures have been designed-in from the outset (as indicated in Figure 8.8 and presented in detail in the Transport Assessment), such as localised one-way only loops and left-turn only junctions onto Seven Sisters Road. The grid street network enables further traffic management measures to be applied if considered necessary as the projects built out, delivered via relatively minor signage and road marking changes.

8.6.4

Specific junction proposals are summarised in Table 8.1 opposite. Junction references are indicated in Figure 8.7.



8.8 Access and circulation

Table 8.2

The Benefits of Remodelling Seven Sisters Road

Wider benefits to the masterplan

- Improving connectivity between north and south Woodberry Down
- Breaking barriers to north-south pedestrian and cycle movements
- Breaking dominance of private vehicle
- Greater opportunities for footway treatments and public art

Improving the walking and cycling environment

- Wider footways
- More pedestrian crossing opportunities
- Reduced vehicle speeds (in particular during off peak periods)
- Improved walking during off peak
- Greater accessibility for mobility impaired
- Safer crossing for access to school zone
- Improved landscaping and pedestrian environment
- Safer walking environment at night (wider footways mean fewer blind spots, easier crossing opportunities)
- Dedicated widened bus/ cycle lanes
- Dedicated cycle lanes

Improving the public transport network

- Wider bus lanes
- Safer waiting areas at bus shelters
- Greater access to bus stops (due to easier crossing opportunities)
- Widened footways provide greater space for bus shelters and movement around them
- Greater access to Manor House station (because of easier crossing opportunities), in particular for mobility impaired
- Wider footways provide greater opportunity to include ramps from footways to ticket hall level

Vehicular Traffic

- Reduced vehicle speeds



A much more convivial pedestrian environment is envisaged in the remodelled Seven Sisters Road.

8.7 Transforming Seven Sisters Road

8.7.1

Seven Sisters Road in between Amhurst Park and Green Lanes is an anomaly. It is only on this 800m section of the 3.4 kilometre-long link between the one-way systems at Tottenham and Holloway that the road deviates in character from being a single 2, 3 or 4 lane carriageway to that of a six-lane road more akin to a motorway.

8.7.2

The road is designed to carry large volumes of traffic quickly through the area and effectively acts as a Woodberry Down bypass. Like all strategic routes it does provide some access to the local community, but it is not designed to serve the local community – indeed it severs it in two. To transform the road so that drivers are more respectful of the community through which they pass a major change is needed. Remodelling Seven Sisters Road will provide a wide range of benefits as summarised in Table 8.2.

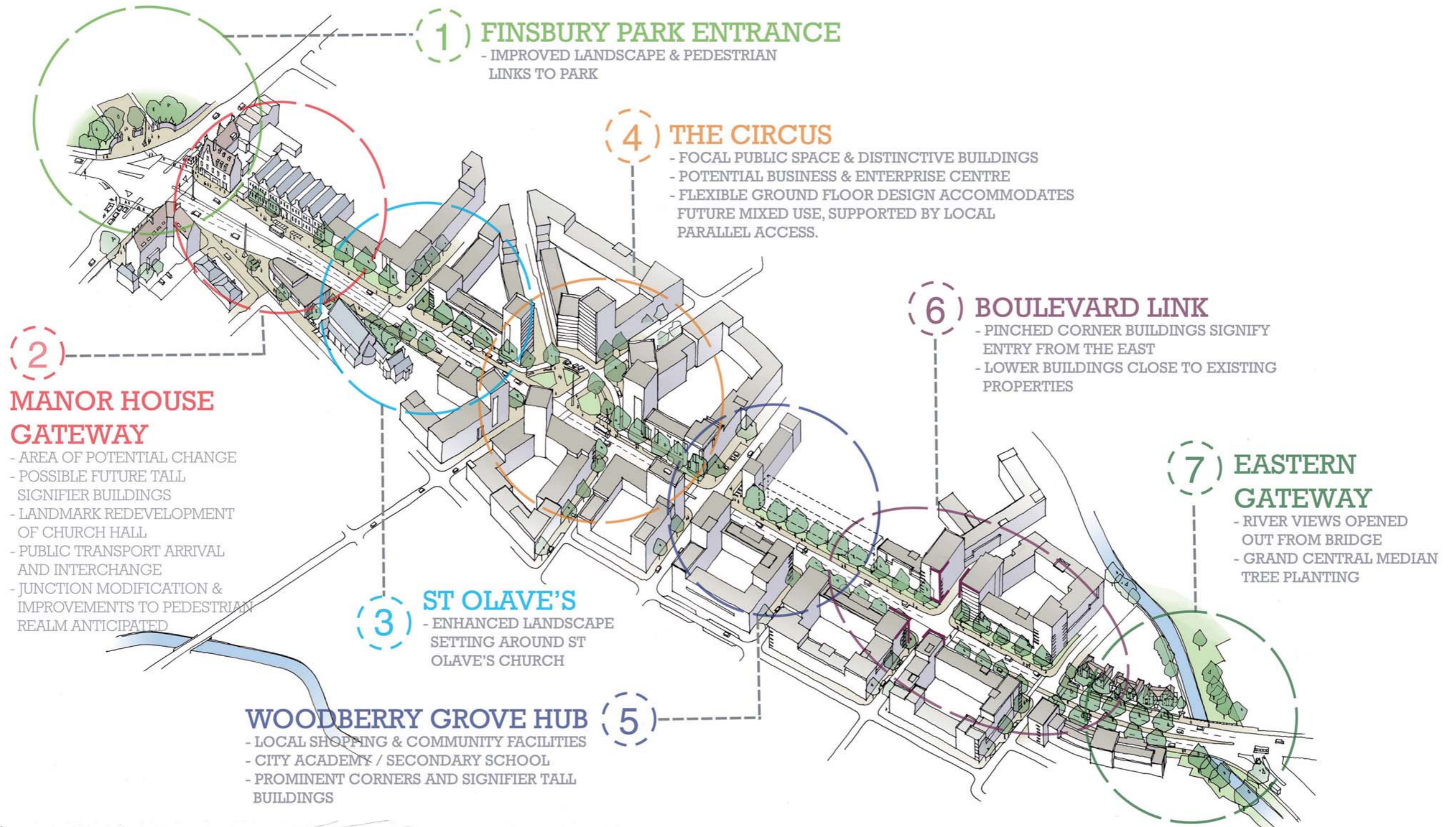
8.7.3

The vision foresees the future Seven Sisters Road as a bustling place, a focus for passing trade and community activity, with adjacent buildings designed to accommodate a mix of uses projecting business, community or retail frontages. A 'boulevard character' is envisaged, with wide footways, frequent pedestrian crossings and the planting of grand trees such as the London Plane. To achieve this, road space is reduced from six lanes to four lanes – with one bus lane and one all purpose lane passing in both directions. The space gained will be used to widen pavements and widen bus lanes appropriate for shared use with cyclists. The road will be designed to provide a steady and reliable throughput of vehicular traffic without creating a barrier to movements across it. The improved north-south pedestrian conditions will become all the more important with the introduction of major sources of pedestrian activity such as the city



At present, Seven Sisters Road is effectively an urban motorway and severs the community in two.

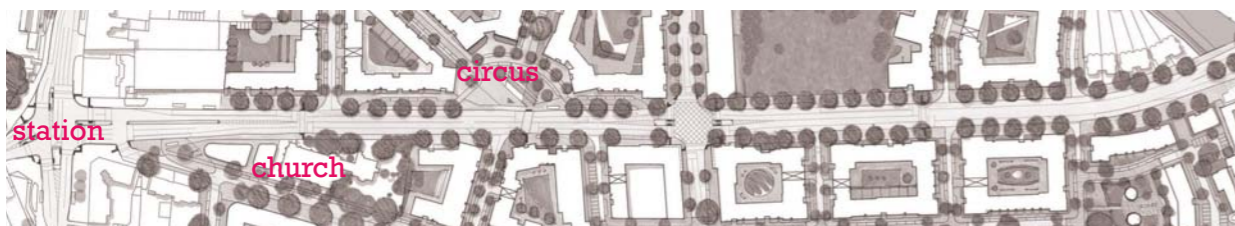




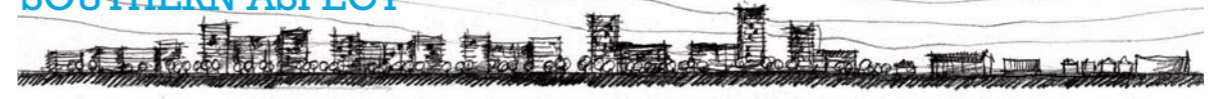
NORTHERN ASPECT



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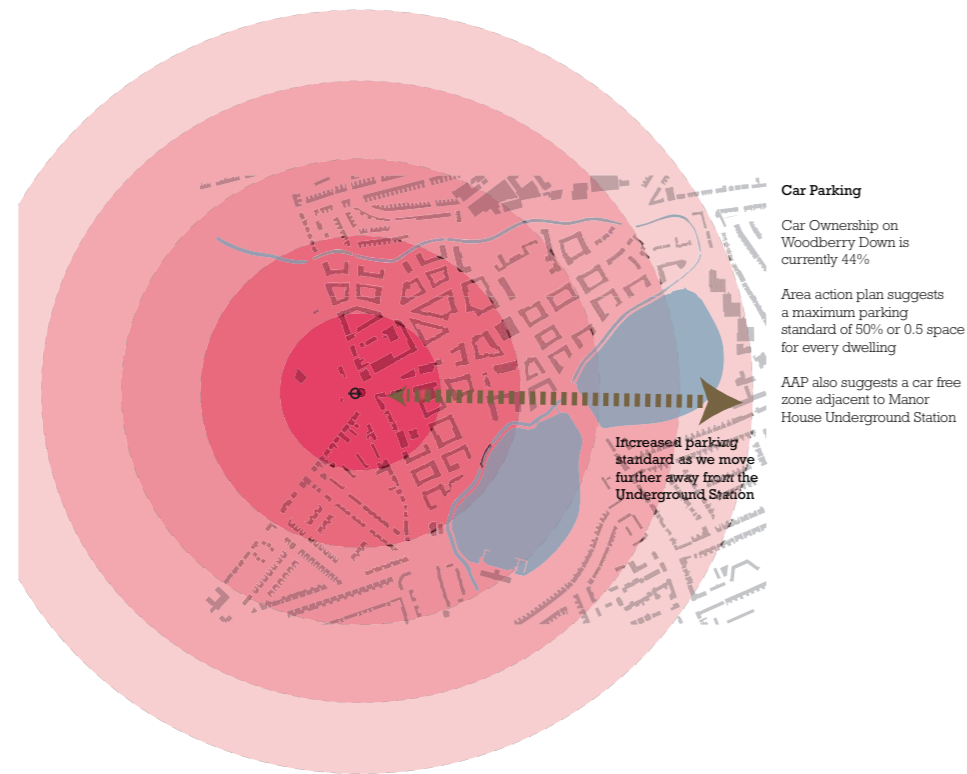
SOUTHERN ASPECT



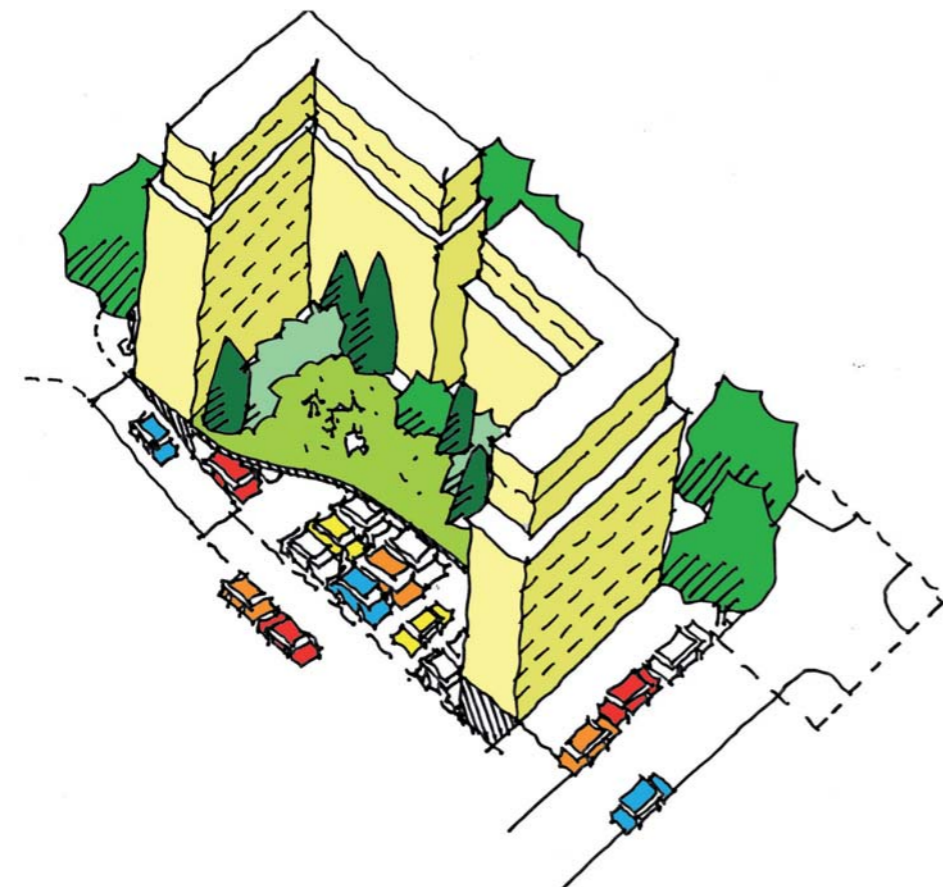
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8.9 The vision for Seven Sisters Road: a series of inter-linked experiences with an overall boulevard character



8.10 Parking strategy



The majority of parking will be in secure underground parking. The remainder will be in designated on-street spaces.

academy, expanded primary school, health centre, business centre and local shops.

8.7.4

In consultation, the community and stakeholders alike have highlighted the need to avoid a uniform 'canyon effect' and with this in mind, the Seven Sisters Road boulevard will be designed as a sequence of seven overlapping links components, as shown in Figure 8.9. The treatment of the road will provide clear arrival points as one approaches from the east and west respectively, with taller marker buildings clustered to form the new Woodberry Circus, a focal point of the Woodberry Down community. The scale of buildings, landscape and highway treatment will emphasise Seven Sisters Road strategic importance.

8.7.5

The scheme provides a number of significant benefits, as summarised in the opposite table. The GLA has a number of policies supporting a shift from private car trips to more sustainable forms of travel, such as promoting car clubs, walking routes and public transport accessibility. In consultation, Transport for London has therefore been supportive of the principles of the highway 'downgrading' scheme and LB Hackney intend to promote this as a potentially superb candidate for the GLA Mayor's 100 Public Spaces Programme.

8.7.6

The technical details and traffic modeling are described in the Transport Assessment that accompanies the outline planning application.

8.8 Parking strategy

8.8.1

Parking on the site is not a dominant factor with car ownership levels in 2001 at 38.4%. Although access to good public transport will play its part in low car ownership levels, socio economic factors are also likely to contribute with car ownership levels generally lower in social housing households.

8.8.2

The percentage of households with access to a car within Woodberry Down in 2001 was 43.7%, which is lower than the average within Hackney at 52.0%, which in turn is lower than the average across the capital at 66.5%. Given the change in housing mix with more private housing on site, it is fair to assume that Woodberry Down car ownership will

move towards the Hackney average.

8.8.3

This trend, left unchecked, would produce a high demand for parking on site. However, there are a number of factors that are likely to have a constraining influences on car ownership such as the impact of:

- car clubs;
- a controlled parking zone;
- public transport improvements;
- government, local and personal initiatives.

8.8.4

Another factor that will influence parking demand is rates of employment. Demographic profiling has indicated employment is likely to rise with more private housing, more local employment opportunities, better education and training.

8.8.5

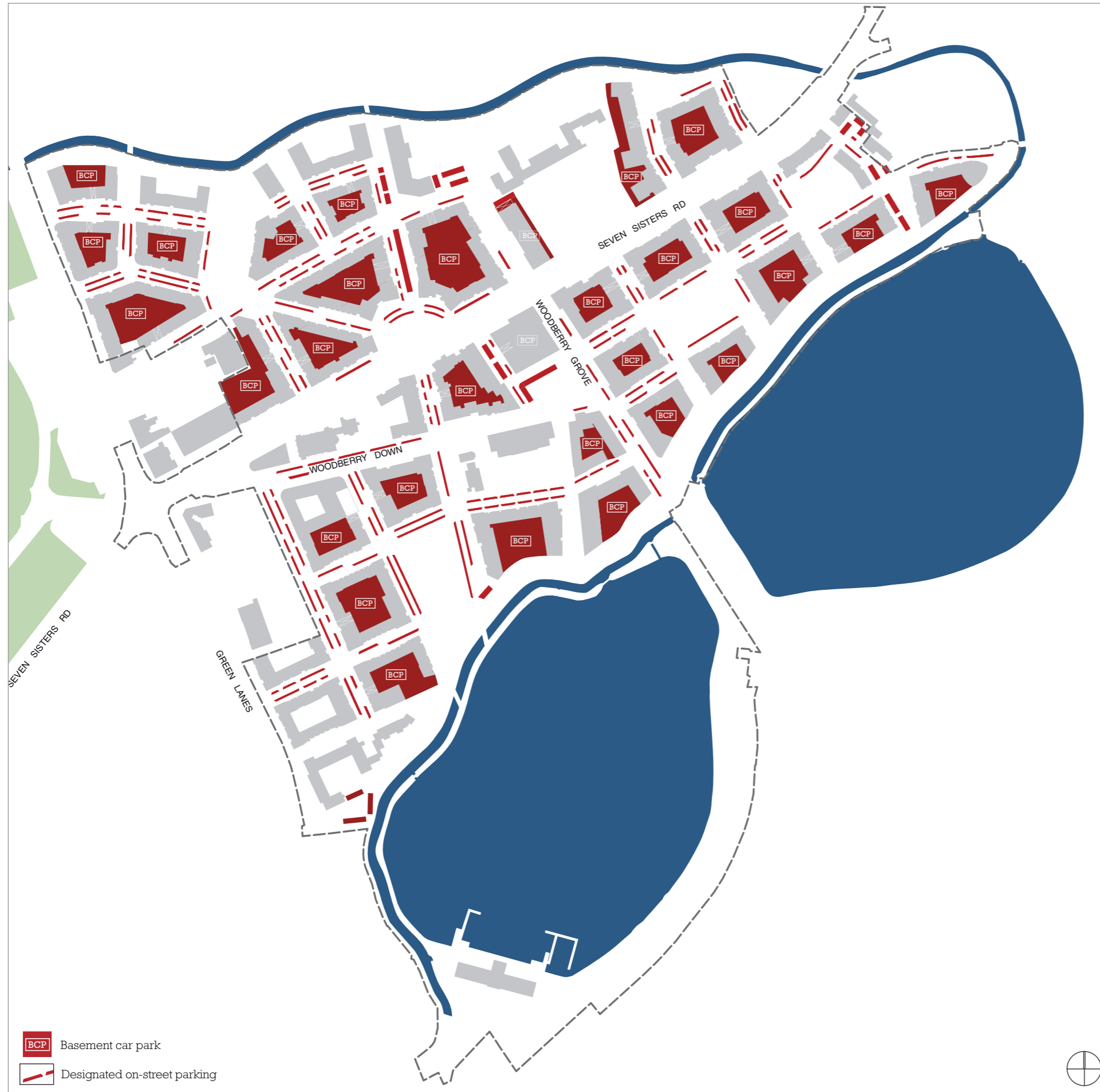
Each factor will have an impact and overall reduce the need for parking as more people use alternative forms of transport or in the case of car clubs, pool cars.

8.8.6

Given the assumptions made above, it is likely that car ownership would be between 40% and 57% and it would be reasonable to accept as a constrained parking scenario a car ownership of 50% with a variable standard across the site based on accessibility to public transport (see Figure 8.10). This accords with the residential parking requirements set out in the Area Action Plan.

8.8.7

Parking on the site is planned to be both on- and off-street. It is important to consider on-street parking spaces as counting as part of the overall parking provision for the development. Whilst controlling on-street parking associated with new development is critical in areas of great parking stress, the nature of the Woodberry Down development is comprehensive and thus requires a different approach.



8.11 Parking plan

8.8.8

The parking plan is illustrated in Figure 8.11. This indicates that the use of on-street parking is maximised where this can be accommodated in an attractive street scene. A Controlled Parking Zone (CPZ) is envisaged to cover the estimated 578 street spaces. On-street parking for Woodberry Down provides a number of other significant advantages:

- it brings life to the street and provides surveillance for pedestrians;
- it adds to the traffic calming impact combined with narrowed streets;
- it provides a rationale for introduction of a CPZ. Without residents parking there would be very few parked vehicles on-street;
- it provides additional parking supply to that within curtilage, creating an opportunity to create better quality secure underground parking leaving at grade spaces for public realm.

8.8.9

Off-street parking will be provided in secure underground car parks under each block and would be designed in accordance with best practice. The number of spaces would reflect the size and land-use mix of the block and the number of on-street spaces available for residents parking.

8.9 Servicing strategy

8.9.1

As part of a Controlled Parking Zone, servicing and deliveries would be planned on-street in short-stay loading and servicing bays and permitted during specific off-peak times during the day. Late night or early morning deliveries would not be permitted.

09
Principle 5

Homes for a diverse and
balanced population



09 Principle 5

Homes for a diverse and balanced population

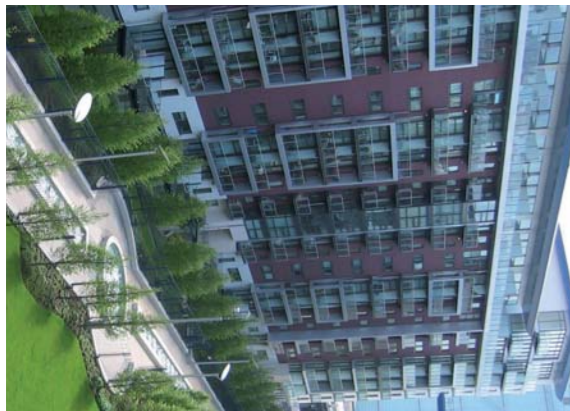
9.1 A community of neighbourhoods

9.1.1

Put simply, sustainable housing should ensure a better quality of life – not just now but for future generations as well. This means bringing together high standards of environmental quality and the sensible use of natural resources, with an approach to development that enables economic growth to flourish and social progress to be advanced. The best neighbourhoods embody each of these principles – they are at ease with their context and are sociable places that provide the basis for people to interact both socially and economically. They look attractive and feel friendly, lively and safe when you walk around. They are inclusive places that embrace people of different backgrounds and provide the basis for them to live harmoniously.

9.1.2

Whilst the physical design of a place cannot guarantee this neighbourliness, it is certainly a major influence on enabling positive social contact to happen. The strategy for the new Woodberry Down is to promote a sense of community that has a range of facilities within easy walking distance, where streets, parks and play grounds are convivial places for strolling, bumping into friends and relaxing. The neighbourhood strategy described in Chapters 5 and 6 is critical to this. Woodberry Down is organised into four different 'character areas' or neighbourhoods, each with a different design 'feel' and focused on local community facilities, parks and play spaces. An expanded Woodberry Grove neighbourhood centre will serve as the heart of the whole community.



9.2 High quality homes

9.2.1

All homes are going to be built to a superior standard. This means building to:

- high environmental standards – a minimum "Very Good" Building Research Establishment Environmental Assessment Method (BREEAM) EcoHomes rating is required, as described in Chapter 10.
- generous internal space standards, particularly in the social sector (replacing the existing Council housing) where a minimum 'Parker Morris Plus 10%' will be required. Figure 9.1 provides some indicative floorplans, which show what this could mean in practice. Typical social rented homes will be substantially larger than existing flats and will tend to be bigger than the private homes. 10% of all tenures (whether social, intermediate or private) will be designed for the needs of wheelchair users.
- all homes with private external amenity space – whether a balcony, terrace or private garden.
- to excellent design standards. As described in Chapter 14, this includes specifying high quality materials for the façade treatment and attending to the landscape design of open spaces.
- designs that are 'tenure blind', with all housing built to high aesthetic and environmental standards irrespective of whether they are in public or private ownership and with a similarity of design to avoid being able to distinguish between tenures.
- a range of community support facilities which, as described in Chapter 6 will: provide a choice of accommodation for Woodberry Down's residents and their families that is flexible enough to cater to changing future needs; improve the health, education and training needs of local people; and house an economically active population able to support thriving local shops and services.

9.2.2

To ensure deliverability, the financial implications of each of these commitments have been factored into the economic viability studies that have proceeded in parallel with the masterplanning exercise.

9.3 Housing mix

9.3.1

The majority of the 1,980 homes on Council-owned land in Woodberry Down constitute social housing in extremely poor condition. Most residents are Council tenants (67%). To finance the regeneration plans, it is clear that significant private investment is needed. The new community will need to be more efficiently planned, with a broader range of tenures available, including homes for sale. There are three influences on the new housing mix:

- the need to re-house existing residents into appropriately sized accommodation, the majority of whom will wish to remain in social rented accommodation;
- wider Borough planning considerations to respond to

local housing need requirements and encourage families to the area, as set out in the Woodberry Down Area Action Plan;

- market demand for private accommodation.

Diversifying housing tenure

9.3.2

The Masterplan has been subject to viability analysis to ensure that the investment needed to secure Woodberry Down's complete regeneration and establish it as a demographically balanced, sustainable community.

9.3.3

The Masterplan accommodates 4,328 new homes on LB Hackney-owned housing (HRA) land and a further 316 in

total on sites owned by others, generating a total of 4,644 homes within the Masterplan area. On the Council-owned land, 2,546 homes for sale will cross subsidise the 1,458 social rented homes needed to re-house existing tenants. A further 312 homes have been identified for intermediate tenures (such as key work or shared ownership). The resulting tenure mix will therefore be 59% private and 41 % affordable (34 % social rented, 7 % intermediate). Further intermediate tenures will be sought on the non-Council owned land should development of these sites be brought forward.



9.1 Indicative comparison between typical existing and proposed social rented flats

Table 9.1 The Woodberry Down Masterplan Housing Mix

Housing Mix	% Mix based on AAP & Housing Need	Housing Units	Building Type	Unit Size		% Family Sized Units 3B+
				Parker Morris (inc storage sqm)	Parker Morris + 10% (sqm)	
1B/2P	27%	395	Flat	47.4	51.8	32%
2B/3P	41%	607	Flat	59.6	65.3	
3B/4P	10%	147	Flat	70.1	76.8	
4B/5P	17%	249	Flat	82.2	90.1	
5B/6P	5%	72	Flat	89.7	98.3	
Totals	100%	1470				

a) Masterplan Social Rented Housing on LBH Housing (HRA) Land

Housing Mix	% Mix based on AAP & Housing Need	Housing Units	% Family Sized Units 3B+
1B/2P	27%	473	32%
2B/3P & 4P	41%	732	
3B/4P & 5P	12%	209	
4B/5P & 6P	15%	280	
5B/6P	5%	88	
Total Social Rented & Intermediate Units		1782	

c) Masterplan Combined Social Rented and Intermediate Housing on LBH Housing (HRA) Land

Housing Mix	% Mix based on AAP	Housing Units	Min unit size (sqm)	% Family Sized Units 3B+
1B/2P	25%	78	47	35%
2B/4P	40%	125	60	
3B/5P	20%	62	75	
4B/6P	10%	31	85	
5B/6P	5%	16	95	
Total Intermediate Units		312		

b) Masterplan Intermediate Housing on LBH Housing (HRA) Land

Housing Mix	% Mix on AAP & Market Demand	Housing Units	Min unit size (sqm)	% Family Sized Units 3B+
Studio	5%	127	35	35%
1B/2P	30%	764	45	
2B/4P	30%	764	65	
3B/5P +	35%	891	Ave. 81	
Total Private Units		2546		

d) Private Housing on LBH Housing (HRA) Land

Housing Mix	% Mix	Housing Units	% Family Sized Units 3B+
studio	3%	127	33%
1B/2P	29%	1237	
2B/4P	35%	1496	
3B/5P	25%	1100	
4B/6P	6%	280	
5B/6P	2%	88	
Total Units		4328	
% Social Rented Units		34%	
% Intermediate Units		7%	
% Private Units		59%	

e) Masterplan total housing on LB Hackney-owned land

Housing Mix	% Mix	Housing Units	% Family Sized Units 3B+
1B/2P	24%	76	45%
2B/4P	31%	98	
3B/5P	33%	105	
4B/6P	7%	22	
5B/6P	5%	15	
Total Units		316	
% Social Rented Units		0%	
% Intermediate Units		52%	
% Private Units		48%	

f) Masterplan total housing on non LB Hackney-owned land

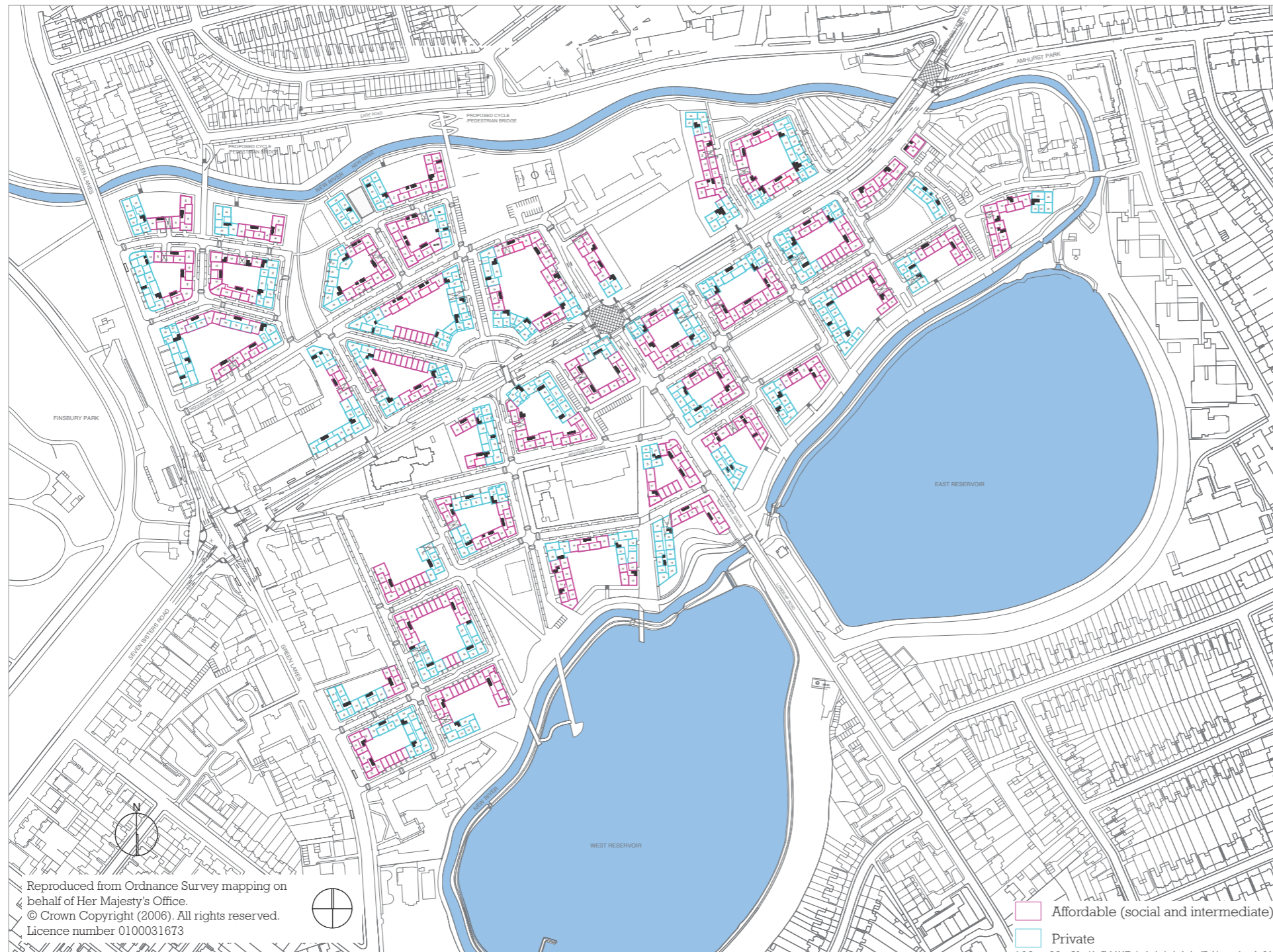
The mix of housing types and sizes

9.3.4

The Area Action Plan suggests 25% 1 bedroom, 40% 2 bedroom, 20% 3 bedrooms, 10% 4 bedrooms and 5% 5 bedrooms across all tenures. The implications of this have been assessed in detail and discussed with LB Hackney Planning officers in relation to the need to ensure that existing residents can be re-housed and that the overall project is economically viable. Tables 9.1 a to g summarise the agreed mix that underpin the Masterplan proposals that blend these considerations together. Approximately 35% of family accommodation (3 bed/4 person units and above) will be provided across all tenures. The majority of these will be flats, though the Masterplan identifies 51 3-storey townhouses to accommodate some of the larger families.

Housing Mix	% Mix	Housing Units	% Family Sized Units 3B+
studio	3%	127	35%
1B/2P	28%	1313	
2B/4P	34%	1594	
3B/5P	26%	1205	
4B/6P	7%	302	
5B/6P	2%	103	
Total Units		4644	
% Social Rented Units		32%	
% Intermediate Units		10%	
% Private Units		58%	

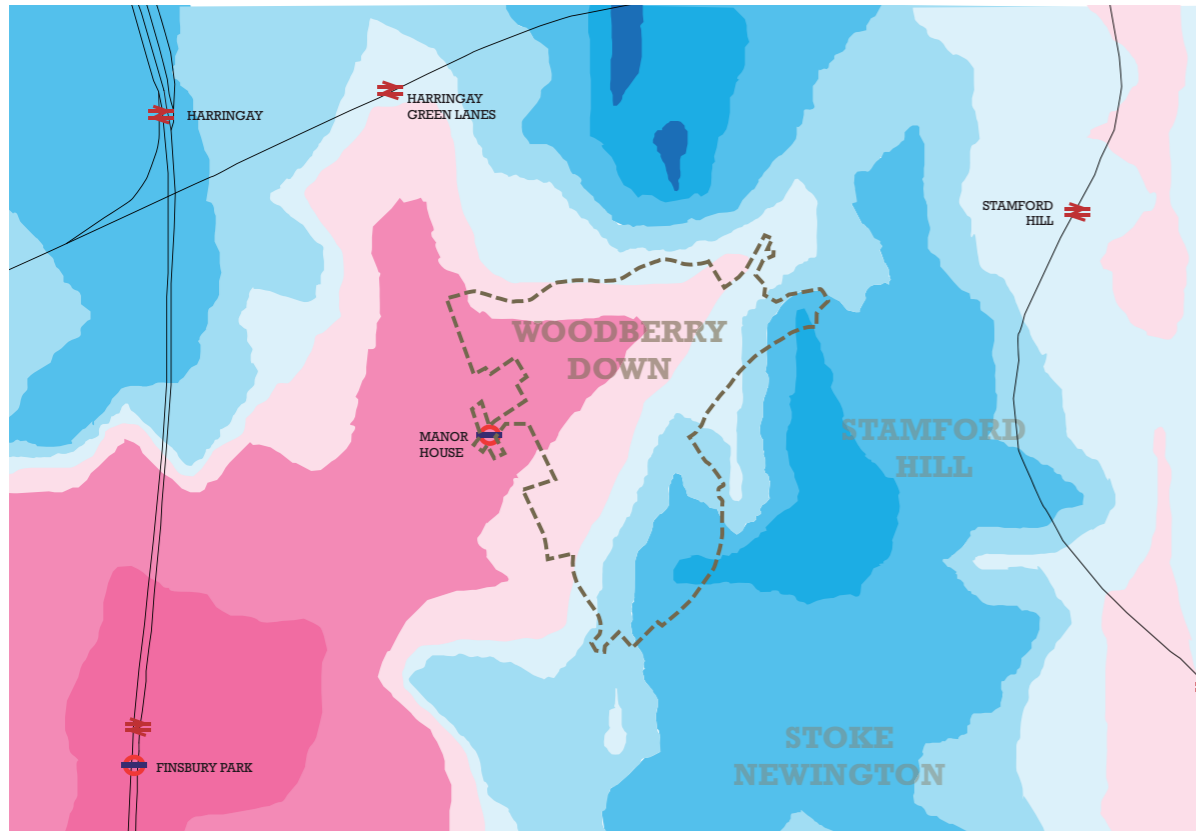
g) Masterplan total for all land



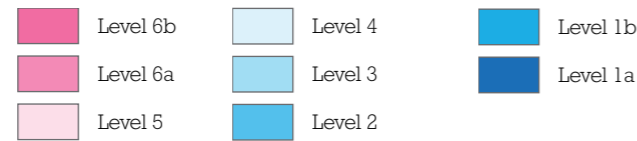
9.2 Indicative tenure mix

9.3.5

Figure 9.2 illustrates how potentially this mix of tenures could be distributed throughout the area. Small groupings of homes in the same tenure will be clustered around communal lift cores / stairwells to ensure clarity of management, though the external appearance of buildings will be tenure blind and be integrated into a cohesive townscape. As the programme develops, there is adequate flexibility in the regeneration programme to explore alternative options, such as blocks targeted at elderly persons, should this wish to be pursued by residents.



9.3 Public Transport Accessibility Levels



Location	Accessibility Index	Setting	High 2 – 1.5 spaces per unit	Moderate 1.5 – 1 space per unit	Low Less than 1 space per unit
Sites within 10 mins walking distance of a town centre	6 to 4	Central	Detached and linked houses	Terraced houses & flats	Mostly flats
		Urban	200 – 450 hr/ ha 55 – 175 u/ha Ave. 3.1hr/u	450 – 700 hr/ h 165 – 275 u/ha Ave. 3.0hr/u	
		Suburban	200 – 300 hr/ ha 50 – 110 u/ha Ave. 3.7hr/u	250 – 350 hr/ ha 80 – 120 u/ha Ave. 3.0hr/u	
Sites along transport corridors & sites close to a town centre	3 to 2	Urban	200 – 300 hr/ ha 50 – 110 u/ha Ave. 3.7hr/ u	300 – 450 hr/ ha 100 – 150 u/ha Ave. 3.0hr/ u	
		Suburban	150 – 200 hr/ha 30 – 65 u/ha Ave. 4.4hr/u	200 – 250hr/ha 50 – 80 u/ha Ave. 3.8hr/u	
Currently remote sites	2 to 1	Suburban	150 – 200 hr/ha 30 – 50 u/ha Ave. 4.6hr/u		

Table 9.2 The GLA density guidelines

9.4 Housing density

9.4.1

Policy 4B.3 of the London Plan establishes how the potential of development sites should be maximised by ensuring that development proposals achieve the highest possible intensity of use compatible with local context, high quality design principles and public transport capacity.

9.4.2

The perimeter block layout depicted in the Masterplan is very efficient in providing urban densities. By applying the GLA 'Public Transport Accessibility Levels' (PTAL) described in Chapter 7 and illustrated in Figure 9.3, the majority of Woodberry Down is afforded an Accessibility Index of 6 to 4 on account of the close proximity of Manor House Station and good bus services. As recommended, the development comprises mostly flats and there is a low parking provision of less than 0.5 space per unit, which gives it a designated 'urban' setting. The appropriate density is therefore identified by the GLA as 450 to 700 habitable rooms per hectare (hr/ha) or 165 to 275 units per hectare (u/ha), as illustrated in Table 9.2.

9.4.3

The total Masterplan 'red line' area is 43.6 hectares, though the net site area is 24.1 hectares, when according to PPS3 requirements, the following are excluded:

- The West Reservoir
- New River
- Metropolitan Open Land (MOL) to the south and both MOL and 'Green Chain' to the north
- The landscape 'buffer strip' to the south of the West Reservoir
- The Beis Chinuch Lebonos Girls School, proposed new primary school and city academy
- The arterial and distributor roads – namely Seven Sisters Road and Woodberry Grove (south)

9.4.4

The proposed 4,644 dwellings therefore generates a "net dwelling density" of 192.7 units per hectare. An average of 3.2 habitable rooms per unit is proposed, generating 14,861 habitable rooms in total or an average 617 hr/ha, which is well within GLA guidelines.

9.5 Managing change

9.5.1

Masterplan proposals have been formulated in a way that minimises disruption to local people. The principle of providing the option of tenants having one move to their new homes wherever possible (rather than being temporarily re-housed) is at the heart of the phasing strategy.

9.5.2

Looking beyond implementation of the physical proposals, a strategic principle of building sustainable neighbourhoods is to move towards local management, providing a means of ensuring that local people have a role in developing and monitoring management and in ensuring that high standards of design are maintained in perpetuity. Other community-based housing management mechanisms will be explored, such as local management boards or a Community Based Housing Association, which involve local resident representatives coming together with housing association and private developer representatives to provide local management, funded via service charges.

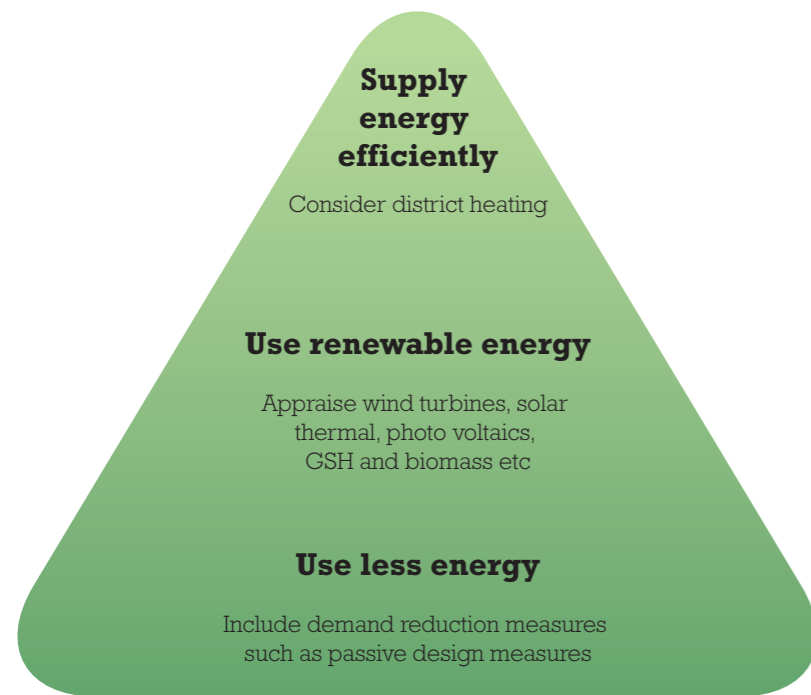
10
Principle 6

A low carbon community

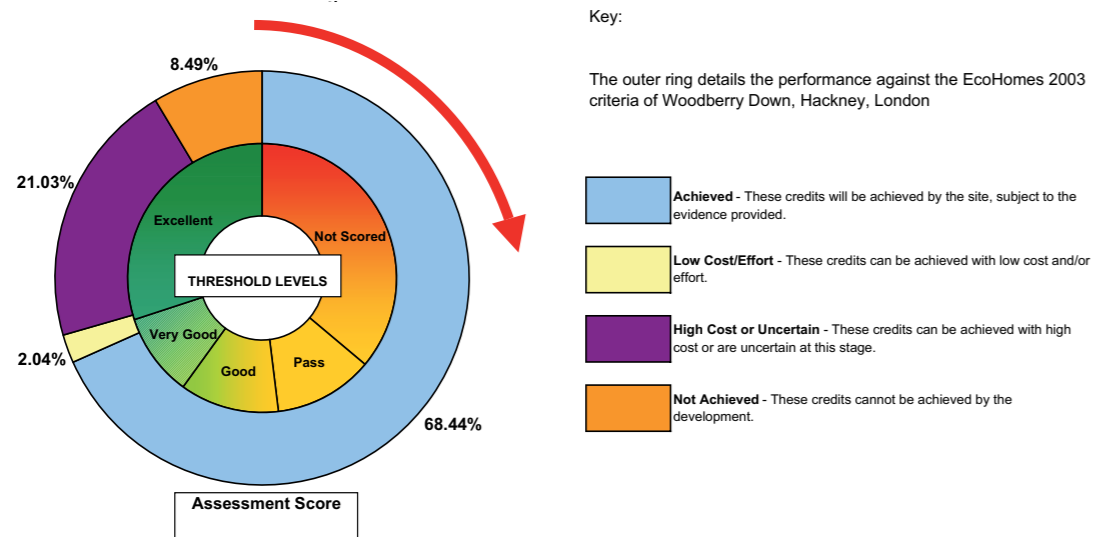


10 Principle 6

A low carbon community



10.1 The Energy Triangle



10.2 Woodberry Down BREEAM EcoHomes Pre-Assessment

10.1 The Woodberry Down Energy Strategy

10.1.1 Sustainability considerations are at the core of the Masterplan, as set out in the Sustainable Design and Construction Strategy, which accompanies the application. A key component of this is the Woodberry Down Energy Strategy.

10.1.2 With greenhouse gas emissions such as carbon dioxide on the rise, generating damaging global warming trends, there is a real need to introduce measures to reduce energy consumption and break our reliance on fossil fuels. What's more with gas bills trebling in recent years and reserves looking ever more precarious, there is a pressing need to devise alternative solutions.

10.1.3 Woodberry Down currently contributes some 3,700 tonnes of carbon dioxide every year. The poor quality buildings, inefficient heating systems and lack of insulation are extremely bad for the environment and expensive for residents.

10.1.4 In seeking to dramatically improve upon this situation, the Woodberry Down energy strategy has been developed in order to meet and in some instances exceed the national, regional and local policies aimed at mitigating the impacts of climate change.

10.1.5 National Government policies are geared to reducing UK carbon emissions by 60% by 2050 and GLA policy sets targets for at least 14% of London's electricity to be provided using renewable energy by 2010. For developments such as Woodberry Down, which are referred to the Mayor for consideration, measures are to be applied to reduce energy consumption as much as possible and to generate at least 10 per cent of the site's power and heat needs from renewable sources.

10.1.6 The Woodberry Down development has set an initial target of reducing carbon emissions by up to 25% below those specified by the Building Regulations through a combination of energy efficiency, use of renewables and increased efficiency of supply. This is to be achieved by applying the principles of the Mayor's 'Energy Hierarchy' as the basis for the methodology which, as identified in Figure 10.1, comprises three aspects:

1. Use less energy (Be lean)
2. Use renewable energy (Be green)
3. Supply energy efficiently (Be clean)

10.1.7 This will be achieved by:

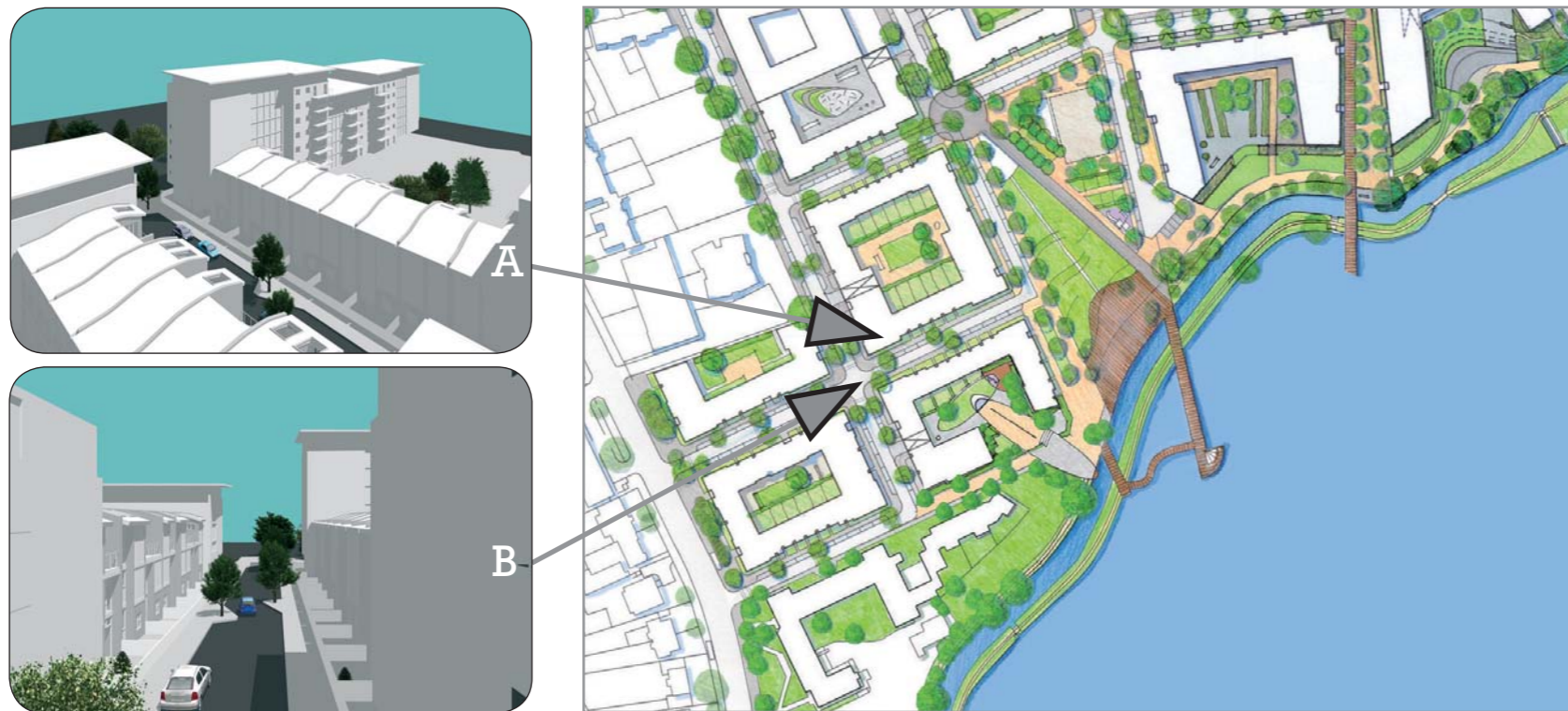
- instigating transport initiatives that lessen the need to travel by car. Land use and transport policy is integrated, with a focus placed on supporting walking, cycling and public transport use (see Chapters 7 and 8)
- applying high energy efficiency building specifications, in terms of insulation for instance and integrating passive design principles
- incorporating a network of energy centres, partially run from renewable energy sources
- minimising light lost to the sky, particularly from street lights

10.1.8 In terms of air quality, pollution to air will predominantly occur during the construction stage where best practice methods will be specified to reduce this as much as possible. Boiler emissions will also be specified to reduce dry NOx emissions and reduce localised pollution.

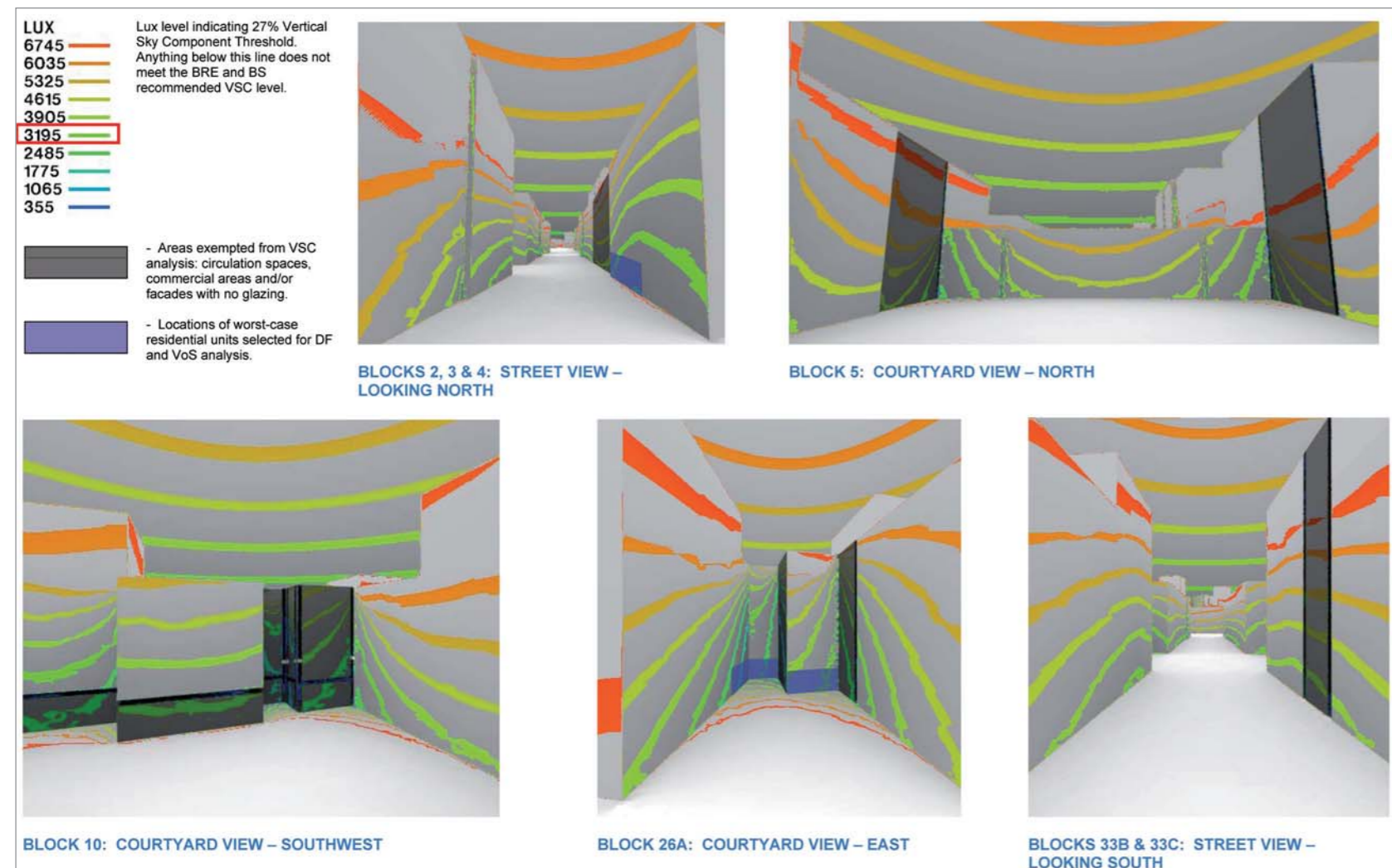
10.1.9 In support of the outline planning application, the energy strategy has been informed by the following studies:

- **An Energy Demand Assessment:** an investigation of energy demand reduction measures and renewable technologies. In summary, the inclusion of higher U-Values for the external envelope and a reduction in the building leakage above mandatory requirements will be incorporated to reduce the energy demand of the design.
- **District Heating Feasibility:** an assessment of the potential for district heating, cooling, combined heat and power and the potential for supply through an Energy Services Contract has been undertaken.
- **Building modelling:** an assessment of thermal and daylight performance for the blocks within the development.
- **Application of relevant BREEAM and EcoHomes criteria** which have been used as guiding principles.
- **Key Performance Indicators and Design Statements of Commitment** aimed at delivering an improved energy performance throughout the design.

10.1.10 During the Masterplan design development stages, a BREEAM EcoHomes pre-assessment was undertaken.



10.3 Passive Solar Design Principles



10.4 Sample VSC daylight studies

Proposals recorded a 68.4% score - less than 2% under the threshold required to achieve an 'Excellent' rating (see Figure 10.2). It was therefore concluded that a 'Very Good' EcoHomes rating would be used to benchmark minimum performance, with an aspiration to increase this to 'excellent' in later phases. The specifications for achieving this standard were fed into the cost planning exercise to ensure viability.

10.2 Using less energy through passive design

10.2.1

The Masterplan layout has been designed to embody passive design principles. Perimeter blocks are utilised and orientated to optimise passive solar gain potential with buildings positioned within 30° of due south where possible. This helps to optimise minimise heat loss in winter and optimise heat gain in summer and subsequently provide greater energy efficiency whilst reducing the need for artificial heating and lighting. The majority of buildings have a shallow plan to maximise opportunities for cross-flow natural ventilation.

10.2.2

As illustrated in Figure 10.3, the site layout has been developed in three-dimensions to ensure that taller terraced buildings will be located to the north of lower buildings to minimise overshadowing. Open courtyards face south where practicable and a series of U-shaped blocks open out to the southern waterfront.

10.3 Ensuring adequate levels of sunlight and daylight

Thermal and daylight modelling

10.3.1

Thermal and daylight modelling has been carried out to understand how the dwellings will achieve daylight factors in line with Building Research Establishment (BRE) standards, at the same time as providing an understanding of how the building fabric will perform thermally and thus maximise the potential for achieving the overall energy efficiency targets.

10.3.2

Modelling has been prepared in accordance with the BRE report, "Site layout planning for daylight and sunlight, a guide to good practice". Vertical Sky Component (VSC) calculations have been undertaken, which assess the potential for daylight by measuring the light available on the outside plane of a window. The BRE report recommends a VSC value of greater than 27% for residential properties. Sample studies are shown opposite in Figure 10.4

10.3.3

Detailed findings are explained in the accompanying Environmental Statement. The entire masterplan has been assessed and overshadowing of adjacent blocks has been taken into account. The results from this analysis were used to understand how all the dwellings will perform in terms of thermal performance.

07:00 21st March / September



13:00 21st March / September



10:00 21st March / September



17:00 21st March / September



Shadow projections for two equinoxes, 21 march/21 september: 11:00

10.5 Sample shadow studies

10.3.4

It is anticipated that thermal and daylight performance is aided with:

- glazing design incorporated into buildings in a way that optimises day lighting levels and achieve a minimum of 2% daylight factor for kitchens and 1.5% for living rooms, in accordance with the BREEAM EcoHomes criteria.
- high insulation levels will minimise heat loss in accordance with the EcoHomes criteria to achieve the maximum credits - 15% above Building Regulations Part L
- exploitation of natural heat sinks such as vegetation and water features throughout the design.

Avoiding overshadowing

10.3.5

Figure 10.5 provides a series of sample shading studies that have been undertaken as part of the Environmental Statement. This illustrates how placement of taller buildings on the northern sides of blocks serves to minimise overshadowing and enable sunlight to penetrate into courtyards. It also shows how the layout of new public open spaces has been designed to exploit a south-facing sunny aspect. It is envisaged, for instance, in the new Woodberry Grove square that restaurant, cafes or bars could be positioned along the northern edge with pavement tables positioned to capture the sun.

10.4 Wind assessment

10.4.1

At Woodberry Down, the prevailing wind blows from the south west throughout the year, with secondary winds blowing from the north easterly direction particularly during springtime. As indicated in the accompanying Wind Microclimate Desk Study report incorporated into the Environmental Statement, within the area the perimeter block layout tends to minimise wind tunnelling effects. The assessment of the proposed building layout and heights identified no constraints on the uses proposed and a comfortable pedestrian experience throughout. In general, the protected middle of the area will have calmer wind conditions. The buildings around the northern and southern edges will be slightly more exposed, though the tree planting strategy (see Chapter 13) will provide substantial shelter. Adjacent to Woodberry Down, the wind microclimate is expected to be broadly similar to the wind conditions that currently exist around the site. There is minimal impact on sailing conditions on the West Reservoir as the site is on the leeward side of the reservoir.

10.5 Using renewable energy

10.5.1

In order to determine how best the GLA's 10% renewable energy generation target is met, an assessment of the technical and economic feasibility of a range of renewable energy technologies has been carried out using data and

Table 10.1 Summary of feasibility of renewable technologies

Technology	Feasibility*			Comments
	H	M	L	
Wind (stand alone)		●		Small scale (6kW) stand alone turbines can be applied throughout. There maybe scope to incorporate 50kW turbines, though the site cannot accommodate turbines larger than this. Local site sensitivity needs to be taken into account particularly in terms of visual impact of turbines. Noise and light-flicker effects require consideration.
Wind (roof mounted)	●			Small roof mounted wind turbines are a possibility with sizes of up to 6kW. Dependant on building geometry a number of these could offset the electrical demand and subsequent emissions of carbon.
Photovoltaics	●			Photovoltaics are a possibility in roof mounted applications although they are believed to be the most expensive technology in terms of a £/kgC reduction.
Solar Hot Water Systems	●			These are most suitable in areas of high hot water demand. In residential areas we have a large hot water demand although it is very transient. Therefore sufficient storage will have to be incorporated to match the demands of the peaks. SHW can be interlinked with the district heating systems.
Biomass Heating	●			Biomass heating will be particularly feasible as part of a district heating scheme. Fuel supply volume and reliability will need to be checked. Frequency of fuel deliveries, the feeding system, storage space and location of heating plant needs to be considered carefully.
Biomass Combined Heat and Power		●		Notes as above for biomass heating. Biomass CHP is still a relatively new technology, particularly at this scale. Biomass fuel consumption will also increase for a CHP unit.
Ground Sourced Heating			●	A high water table suggests ground source heating may be suitable. However, parts of the site are understood to be contaminated and sewers and Underground systems run beneath the site.
Ground Sourced Cooling			●	Demand for cooling is limited to commercial premises only. Ground source cooling may be possible but care would need to be taken on location of boreholes, as outlined above. The two large reservoirs to the south of the site may offer free cooling.

*H – high feasibility; no obvious restrictions;
M – medium feasibility; very significant issues need to be addressed;
L – low feasibility; development site unlikely to support technology.

guidance provided in the Mayor's 'Renewable Energy Toolkit' (see accompanying Energy Demand Assessment report). This focuses on seven renewable energy technologies in particular:

- Wind;
- Photovoltaics (PV);
- Solar hot water systems;
- Biomass heating;
- Biomass combined heat and power;
- Ground sourced heating; and
- Ground sourced cooling.

10.5.2

The feasibility of each of these is summarised in Table 10.1 and briefly review below. Further details are provided in the accompanying Energy Strategy Report.

Wind

10.5.3

Small-scale stand-alone and roof mounted 6 kW wind turbines could be used to decrease electricity demand from the grid and cut the carbon emissions of the site, though their overall contribution to energy requirements would be minimal. However, potential locations for considering larger 50 kW turbines have been considered, but do not form part of this planning application. The feasibility of this should be considered in further detail.

Photovoltaics (PV)

10.5.4

Although feasible, PV solar panel systems are likely to be prohibitively expensive for this development at this stage. However, as the development is phased over 15 years, the cost of PVs is likely to reduce to become more affordable and therefore may be a more attractive option in latter phases.



Certain roofs will combine solar panels with a brown roof habitat for Black Redstarts

Solar hot water systems

10.5.5

Solar hot water can be used and integrated into the District Heating (DH) scheme. Panels can be mounted on the roofs of apartment blocks, providing heated water to individual apartments with top-up heat from the DH scheme.

Biomass heating

10.5.6

Results from the feasibility suggest the use of biomass-based systems could make a considerable contribution to carbon reductions for the development relatively cost effectively. However, such reductions can only be guaranteed if adequate biomass supplies are available within close proximity due to issues associated with vehicular movements.

Biomass combined heat and power

10.5.7

As described in Chapter 10.7, the strategy is to pursue a gas-fired combined heat and power system initially. However, there is the potential to install biomass CHP in the future when the technology is proven.

Ground sourced heating

10.5.8

While ground source heating (GSH) sources are cost effective in terms of carbon savings, their application in this development is unlikely to deliver significant reductions in the magnitude of carbon emissions. They may also not be appropriate for integration into a DH system. However, GSH would be best used for a de-centralised system and the learning campus should be considered in further detail.

Ground sourced cooling

10.5.9

These work in the same manner as GSH but the heat pump is reversed. Reservoir-sourced cooling for the non-residential areas of the development would provide a renewable source of comfort cooling. As with GSH this may not be suitable for incorporating into a centralised DH system.

Combining the potential

10.5.10

Analysis has confirmed that delivering 10% of the energy demand from renewable resources is feasible. The most cost effective method of achieving this is likely to be through using a combination of the most renewable energy technologies – wind turbines, biomass and solar hot water systems. Figure 10.6 illustrates a range of potential scenarios.



10.6 An integrated approach to sustainable building design

10.6.1

In attaining a minimum BREEAM 'very good' standard of environmental design across the whole development, the architectural treatment of each building will be required to introduce measures to:

- reduce CO2 emissions, with solar efficient forms that maximise solar gain to principal habitable rooms and by incorporating high performance insulation;
- use sustainable materials, such as well-managed timber or non-polluting materials;
- minimise waste from construction;
- reduce water consumption, including storm run-off water management systems and by using water saving appliances;
- promote recycling, both in terms of neighbourhood recycling facilities and individual properties designed to accommodate refuse storage large enough to enable sorting and recycling.

Figure 10.6 provides an indicative illustration of how a range of environmental design measures can be applied.

10.7 Supplying energy efficiently

District Heating (DH) and Combined Heat and Power (CHP) Feasibility

10.7.1

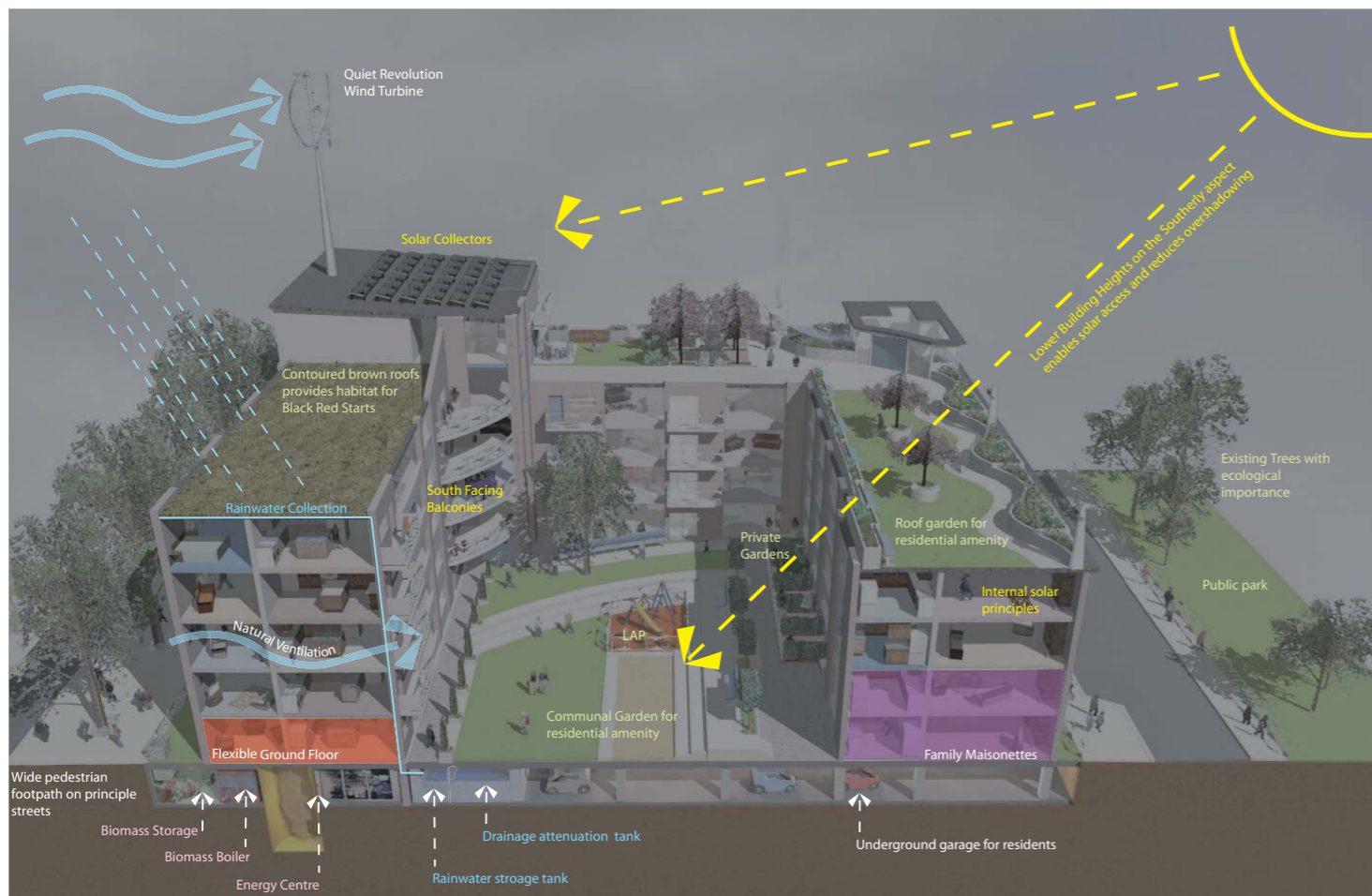
A Feasibility Study for incorporating DH into the Woodberry Down regeneration scheme accompanies the planning application submission and the requirement to seriously consider DH has been emphasised by the GLA.

10.7.2

The key driver is the reduction in baseline carbon emissions. Heat demands are balanced across the site with supply matching the demand, resulting in a reduction in wasted heat. As the heating requirements become less variable, the plant can be sized more precisely to match the heat load at maximum efficiency. This results in energy savings and subsequent reductions in carbon emissions. Use of CHP units also provides the opportunity of generating electricity as well as heat.

10.7.3

The scale of CHP envisaged at Woodberry Down would involve gas-fired generators, which heat water. Electricity generated is distributed within the development via a private wire network. Any shortfall in power can be made up from the grid; any surplus can be sold back.



10.6 An integrated approach to building design

10.7.4

Each home would be fitted with a discreet box (a manifold, heat exchanger unit and metre), and residents would, in the conventional way, be able to regulate heat via radiators, thermostats and timers.

10.7.5

As well as wider environmental benefits, a DH system also provides residents and businesses with:

- Hot water and heating on demand
- Reduced energy bills, lower annual running costs
- Reduced maintenance costs (no boiler to service)
- Increased storage / floor space as individual boilers are not required
- 'feel good factor' of buying into a green development

10.7.6

Renewable electricity generators such as biomass, wind

turbines, solar collectors and ground source can also be integrated into the scheme. This allows electricity to be distributed from one source. Generation of electricity on site means little energy is lost in transmission between the generator and user.

10.7.7

Potentially the CHP boilers can be fed by renewable biomass such as woodchip or wood pellets. Although an attractive option for reducing carbon emissions, supply can be limited and both the amount of storage and number of lorry deliveries required can be significant.

10.7.8

Providing a viable supply of energy efficiently can be achieved through either Combined Heat or Power (CHP) or Combined Cooling, Heat and Power (CCHP) system and can be serviced and delivered by a separate utility or Energy Supply Companies (ESCo's), providing an energy services contract. Several ESCo's have been approached in relation to the Woodberry Down proposals and they have shown an enthusiasm and have indicated a strong preference to integrate renewable generators into a DH system where they are feasible.

10.7.9

Although the phasing of the development adds complexity, the district energy scheme can accommodate this. Temporary boilers may be used for the early and outlying phases until the load grows to suitable levels and the outlying parts are connected to the ring main system.

Potential Energy Centre Locations

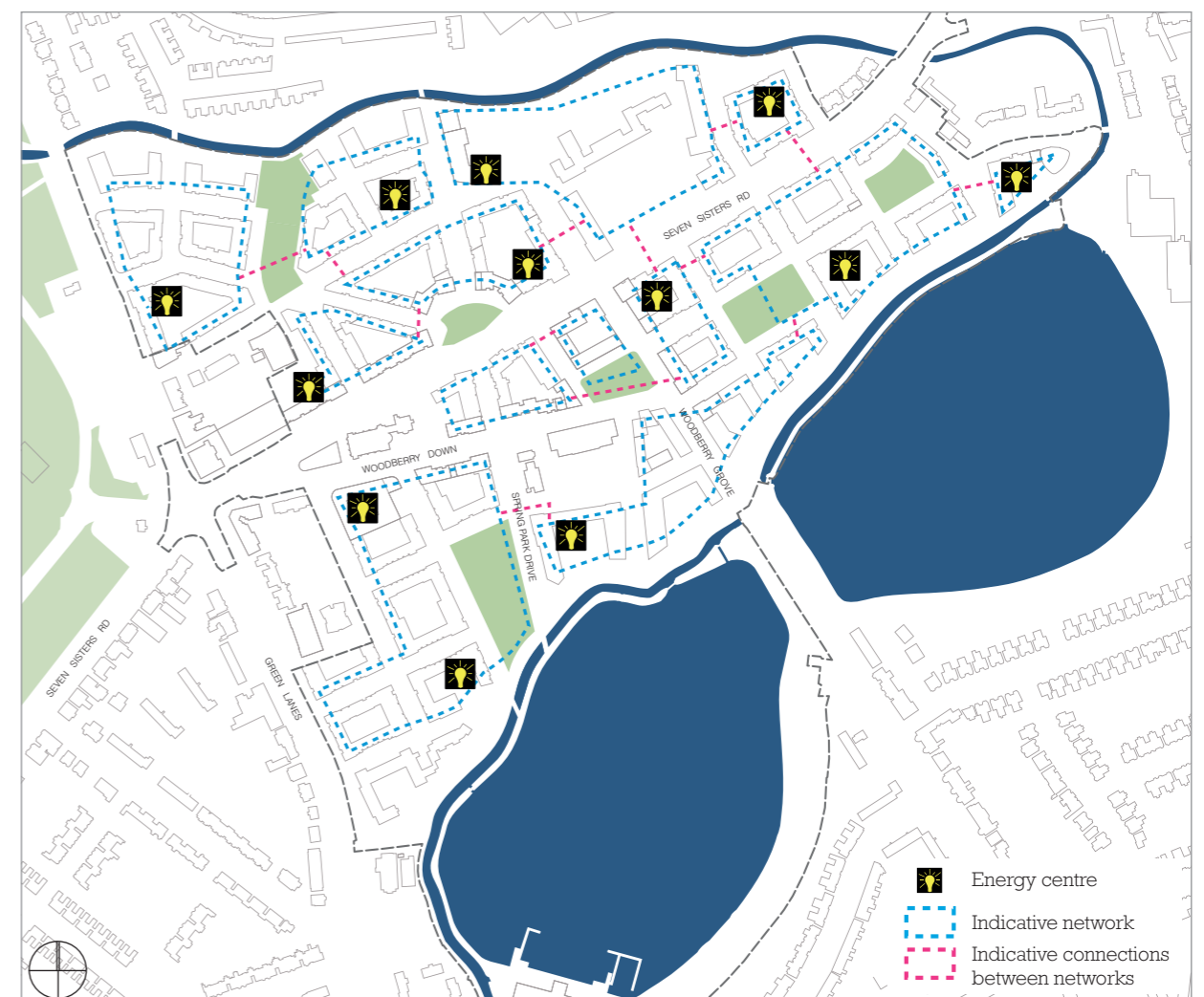
10.7.10

In terms of location, as indicated in Figures 10.7 and 10.8, a network of approximately 13 energy centres is envisaged as potentially providing the way forward (as shown on the plan). These 'distributed' energy centres would initially serve the early phases and then join up to provide a ring main for the whole area (see diagram). In the early years, five potential energy centres are envisaged:

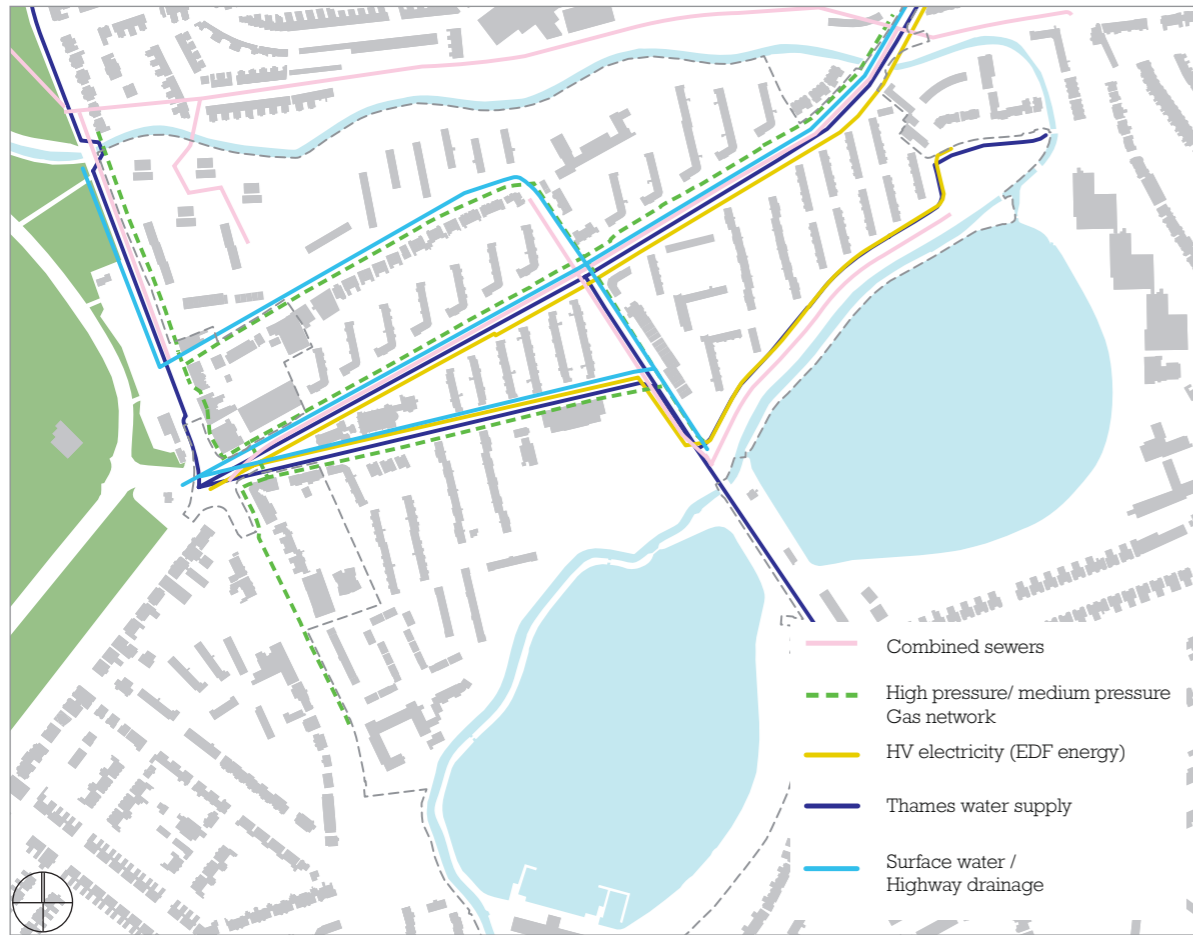
- one in a basement within the learning campus, potentially becoming an educational resource;
- one in the Woodberry Grove (north) kick-start site;
- one in the old school site, serving both kick-start sites



10.7 Potential renewable energy applications



10.8 Potential energy centre locations and networking



10.9 Existing utility services routing



10.10 Proposed utility services routing

flanking Woodberry Grove (south);

- one in the Newnton Close kick-start site; and
- one in the basement of the new health centre.

10.7.11

Each can be discreetly located in a rear courtyard of a residential / mixed-use block, and would be two to three storeys deep under an open space or building.

District Cooling

10.7.12

Non-residential uses such as shops, restaurants, cafes, bars and gyms will also have a cooling requirement during summer. There is the potential to provide cooling through a network similar to the DH system. Chilled water could be generated in the Energy Centre through the use of absorption chillers or cool water could be sourced from the ground or even the reservoirs. Cooled or chilled water could then be pumped to the users to provide comfort cooling. From an economic point of view, ground source cooling would best be coupled with ground source heating if feasible. The West Reservoir could conceivably be used to cool a closed loop of water through a water-to-water heat exchanger. The cool water would then be distributed to the commercial buildings. Warmer water would flow back to the reservoir loop to be cooled.

10.8 Replacement of existing utilities

10.8.1

Many of the existing utilities are in poor condition, particularly the drains, and almost wholesale replacement is envisaged within Woodberry Down, apart from the trunk mains running along Seven Sisters Road, Woodberry Down (road) and Woodberry Grove (see Figure 10.9). As shown in Figure 10.10, all existing principal services routes are to be incorporated into the public highways. This will include the reuse of the existing sub-stations with the provision of at least four new substations, one of which will be required at an early stage of development. The location of the remaining substations will be subject to detail design by the Energy Authority.

10.9 An ambitious programme

10.9.1

Woodberry Down will be developed over the course of 20 years and during this time the statutory requirements, the range of technical solutions and their cost effectiveness are likely to change. Targets set now will have to be adapted for future considerations. Notwithstanding this, the Masterplan incorporates an ambitious energy strategy that early studies indicate is technically robust and economically feasible.

10.9.2

The impact will be extremely significant – the current 1,980 homes on Council-owned land belch out 3,749,000 kg (3,749 tonnes) of carbon every year. Despite more than doubling the number of homes to 4,644, by applying current building regulations alone this comes to 4,985,047 kg. With the energy efficiency and renewable technologies planned, this figure is set to reduce further to 3,480,005 kg (3,480 tonnes), as illustrated in Table 10.2, constituting an 8% reduction in overall carbon emissions compared to those of the existing site.

Calculation Source	Carbon Emissions (kgC/year)
Existing Carbon Emissions at Woodberry Down	
Existing Carbon Emissions Calculated for Woodberry Down as Indicated from Standard Assessment Procedure (SAP)	3,749,000
Proposed Carbon Emissions at Woodberry Down	
Building Regulations Emissions	4,985,047
Anticipated Reduction from Energy Efficiency Measures	914,866 (-18%)
- Estimated Emissions with Energy Efficiency Measures	4,070,181
Carbon Reduction from Use of Renewables	407,018 (-10%)
- Baseline Carbon Emissions	3,663,163
Carbon Reduction through Efficient Energy Supply	183,158 (-5%)
- Residual Carbon Emissions	3,480,005

Table 10.2 Summary of carbon emissions



11
Principle 7

Making the most of water and
minimising waste



The New River and West Reservoir seen from Woodberry Grove bridge



The existing riverfront to the north-west is fenced off and buildings fail to exploit the potential.



Improving connections to the West Reservoir via the riverside is a key consideration



New bridges are proposed to span across the New River to link with Haringey



Along the northern edge of the site to the New River has a utilitarian character

11 Principle 7

Making the most of water and minimising waste

11.1 Overview

11.1.1

The sustainability of a place is ultimately determined by the way people use it, which will be influenced by many of the detailed design characteristics of a building or open space. However, the Masterplan can establish some fundamental principles that will have a major influence. Minimising the consumption of resources, and reusing and recycling them wherever possible are threads that weave through many of the proposals presented in the Masterplan. This chapter considers two inter-twined components relating to the way that water is used for amenity, drainage, household consumption and irrigation as well as the way that waste is minimised through reuse and recycling.

11.2 Making the most of the waterfront

11.2.1

Woodberry Down is blessed with an abundance of water – indeed the existence of water around most of its perimeter is its (as yet unexploited) defining characteristic – a huge asset. The strategy for making the most of water in Woodberry Down has three components: amenity; water conservation and reuse; and ecological value. Each of these is described below. Further detail on proposals to enhance local ecology is provided in Chapter 13.

11.3 The riverside landscape strategy

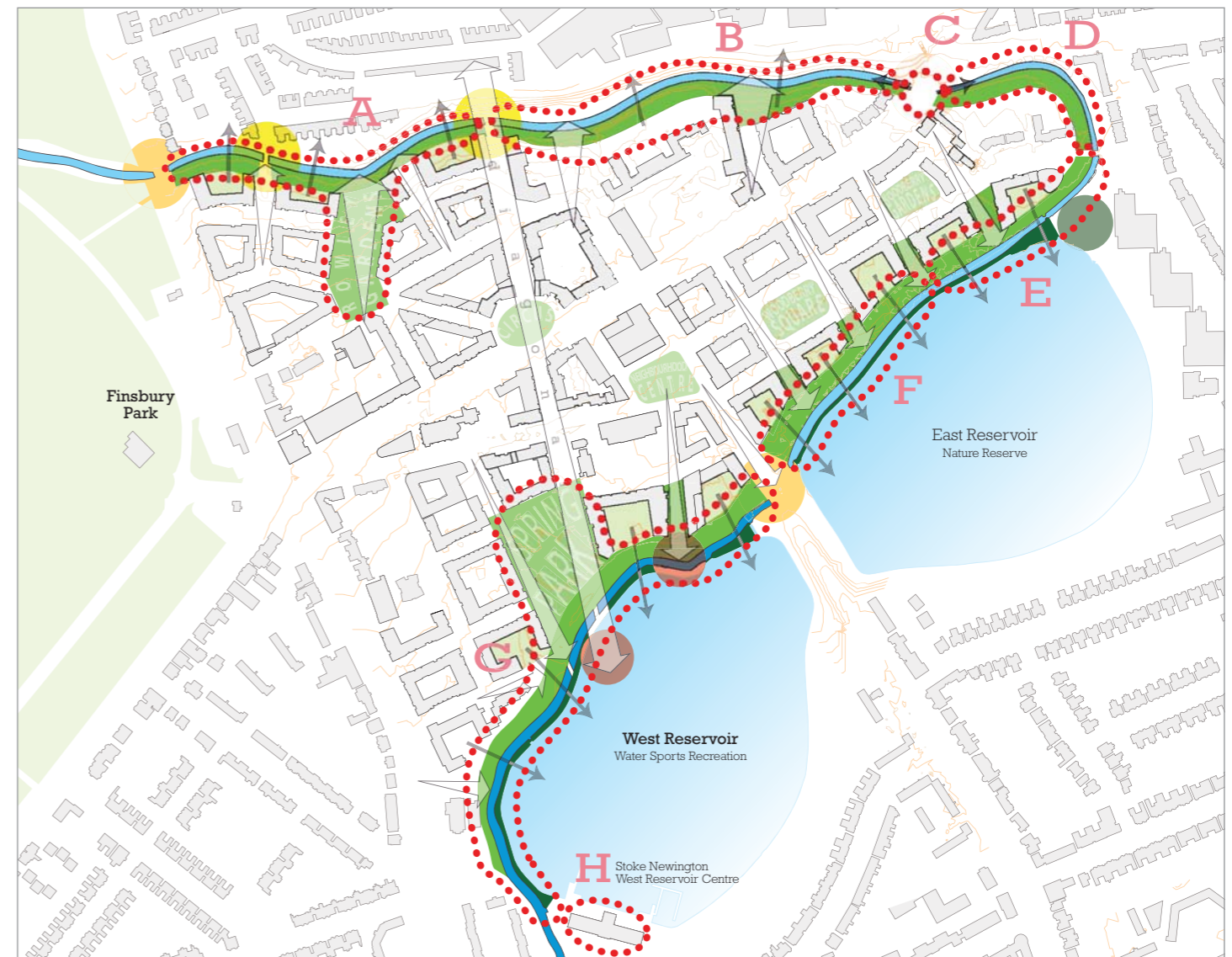
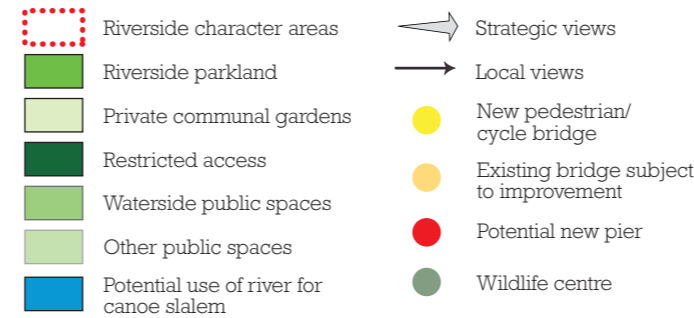
11.3.1

Figure 11.1 provides a diagrammatic representation of the riverside landscape strategy, indicating the way that the development has been designed in relation to the waterfront and the key influences on the riverside treatment. The riverside landscape strategy has three inter-related components: quality and character; definition of open space; and safety at the water's edge.

i) Riverside quality and character

11.3.2

Whilst the riverside provides a superb themed recreational resource in easy reach of all parts of Woodberry Down, with a continuous pathway that connects a variety of different destinations and activities, it has also been designed to provide a continually changing variety of experiences and character. The basis for this approach derives from several existing qualities or features (such as the extensive views) that are currently under-exploited, and it provides the opportunity to create and enhance a variety of different character and activity areas along its route. Chapter 11.4



11.1 Riverside landscape strategy

provides a more detailed review of each of the riverside character areas. In summary these comprise:

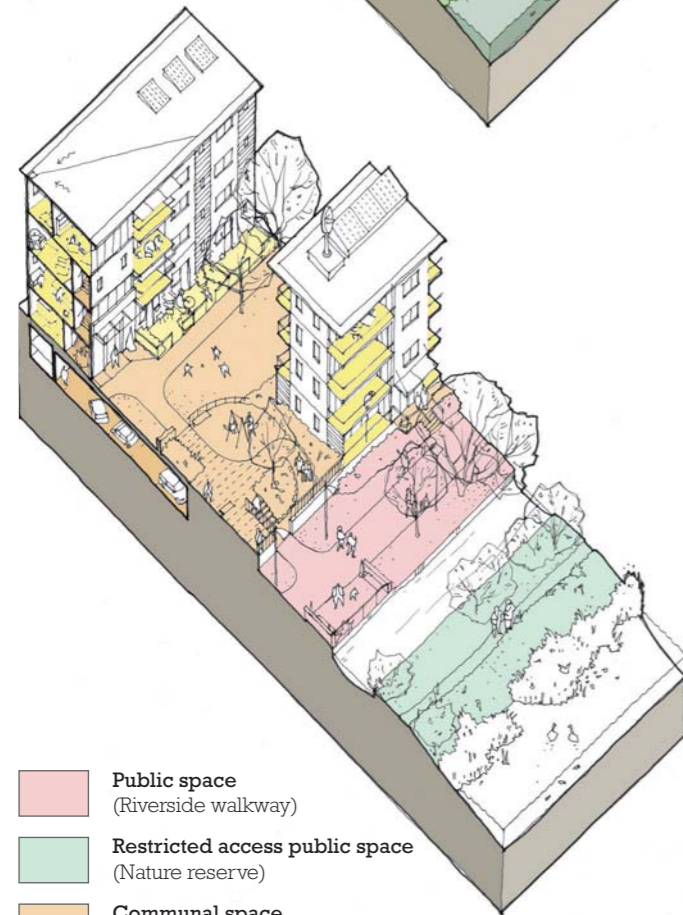
a) The north-west corner, centred on the remodeled Rowley Gardens, comprises landscaped terraces that open up dramatic panoramic views of North London and thematically focuses on children's play.

b) The northern central section, runs alongside the Lifelong Learning Campus and its treatment should reflect this. The new bridge, running alongside the new Primary School entrance, will create a new sculptural landmark at this point.

c) The Seven Sisters Road New River crossing involves modification to the bridge to open out views of the river.

d) The existing riverside route at the eastern end is a narrow densely treed section that contrasts with the open aspect opposite the reservoirs.

e) The eastern section adjoining the East Reservoir wildlife reserve is given a naturalistic approach to planting, with viewing platforms periodically provided for nature interpretation.



- Public space**
(Riverside walkway)
- Restricted access public space**
(Nature reserve)
- Communal space**
(Internal courtyards)
- Private space**
(Small front gardens)
- Internal communal space**
(Circulation cores and car parking)
- Internal private space**
(Flats and maisonettes inc. balconies)

11.2 Clearly defining open space

f) Further south and west the riverside becomes busier, reflected with a wider footpath treatment and more intensive points of interest, flanked by a succession of u-shaped building blocks enclosing attractive garden spaces.

g) East of Woodberry Grove/Lordship Road provides the busiest and most lively part of the riverside and comprises two major new public spaces – the amphitheatre being created in Phase I on the former school site and Spring Park, the area's largest open space opening out to the West Reservoir and its watersports.

11.3.3

Figure 11.1 also indicated how the overall layout and riverside landscape strategy have been influenced by:

- the creation of strategic views of the waterfront;
- building form and massing geared to accentuating local waterfront views;
- potential use of the stretch of river adjacent to the West Reservoir for canoe slalom, creating a direct relationship between the watersports operating out of the Stoke Newington West Reservoir Centre and the new riverside public spaces of Woodberry Down;
- the potential for public spaces and key routes to project into the West Reservoir via lightweight timber piers or pontoons, accentuating the relationship with the water (to be used under controlled circumstances). Two piers are considered – one extending from 'The Diagonal' and the second relating to the new amphitheatre.

Clearly defined open space

11.2.4

As illustrated in Figure 11.2, where U-shaped blocks open out to the waterfront, landscape design measures (a combination of boundary treatment, level changes and planting) will need to be introduced to clearly define public and private realms.

Safety at the water's edge

11.2.5

Concerns for safety at the water's edge have been a key influence on proposals, which led to the Royal Society for the Prevention of Accidents (ROSPA) to be commissioned to prepare a Water Safety Review, a copy of which is submitted as an appendix to the Design and Access Statement accompanying this application. ROSPA have devised a 'banding guide'. Banding defines the degree of risk present at each stretch of waters edge and the appropriate treatment required as a result. The following ROSPA recommendations have been incorporated into the Masterplan:

- The pathway running alongside the New River is to be re-landscaped, so that the pathway will be set back at least one metre from the water's edge. A planted strip will be provided, which provides a 'buffer' from and definitive

identification of the water's edge.

- At key specified points along the pathway, viewing platforms or resting points will be provided that enable pathway users to get closer to the rivers edge. There are two potentially design solutions at these points, either:

a) they will be designed with ROSPA 'band four fencing' (at least a metre high) along the edge of the riverbank, which would stop people accidentally falling into the water and deter deliberate access by children; or

b) a 'stepped approach' to the waters edge using steps of at least 500mm in length with risers of no more than 150mm. This option would allow safe access to the waters edge whilst reducing the depth of the water and the impact of falling into the water.

11.2.6

Following consultation on the proposed approach, in July 2006 ROSPA's Water Safety Consultant wrote to confirm "I have found this to be an innovative design creating good use of the areas of the areas of open water, whilst maintaining the required degree of edge protection where previously identified in the ROSPA site appraisal."

A copy of the letter is included in the design and access statement.

- Band 4 fencing**
Public areas immediately adjacent to water. High activity area. Public park and waterside walkway. Unaccompanied children likely.
- Band 4 fencing**
Bridges, piers and culverts in publicly accessible areas close to water's edge.
- Band 4 fencing**
Occasional local areas of passive recreation adjacent to water's edge that define access points to waterside walkway.
- No fencing** (but warning signs and general overlooking)
Public paths adjacent to water's edge but set back by 2.0m or more
- No fencing but access by permit only**
(Children to be supervised by an adult and all users to be warned of risks)
Nature reserve area.
- No fencing** (area outside study area)
Unfenced path adjacent to water's edge. Restricted waterside space mostly prevents realignment of path.

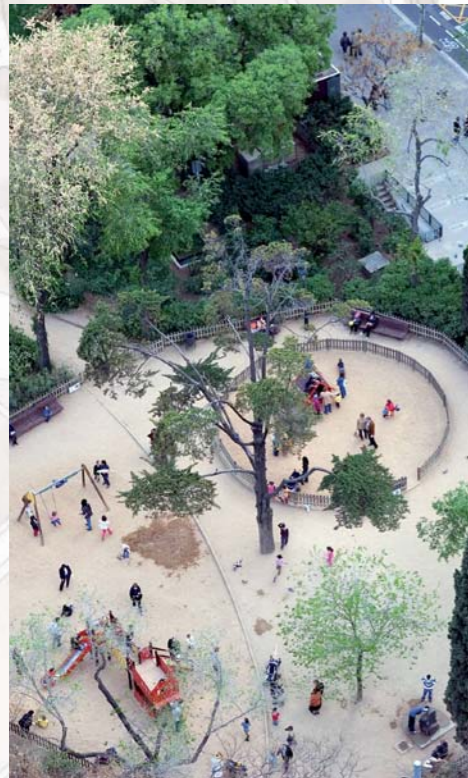


11.3 Waterside safety strategy

11.4 Expressing riverside character

11.4.1

These two pages provide a diagrammatic and written explanation of the way that re-landscaping of the riverside will be undertaken to create a series of connected places and spaces, each with a varying sense of character and points of interest.

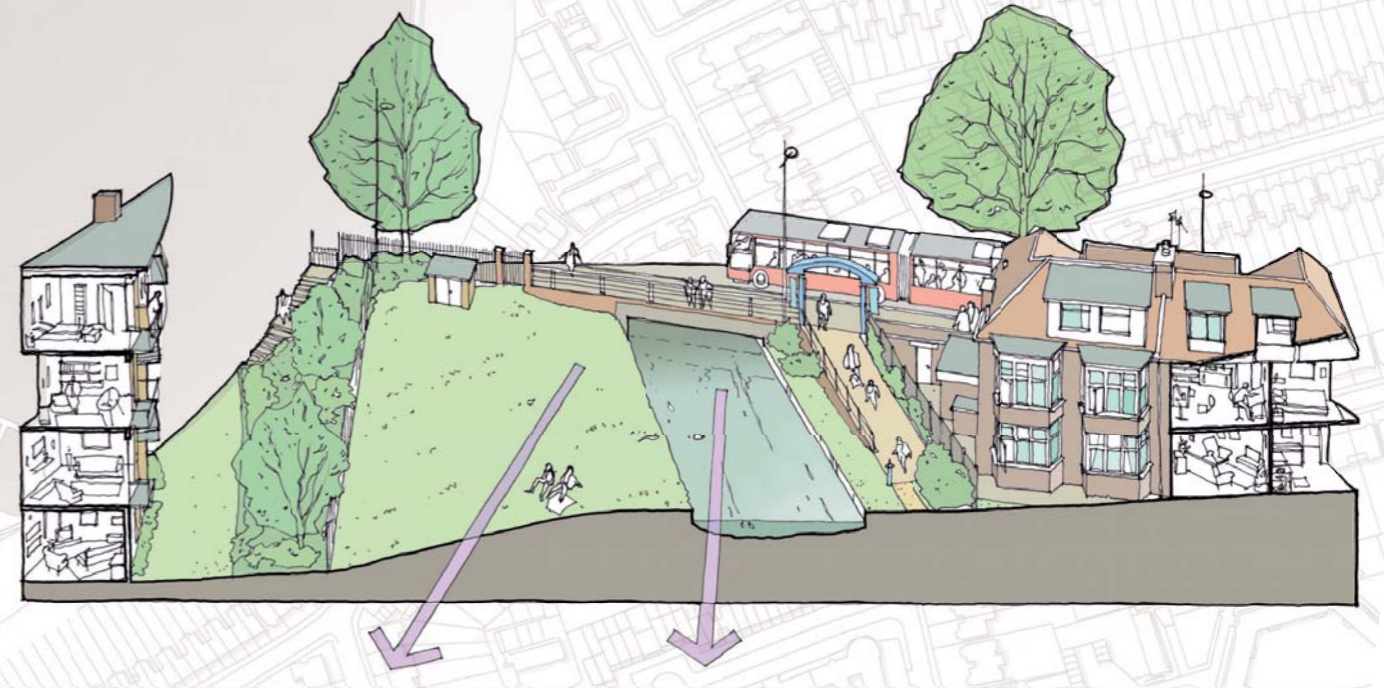


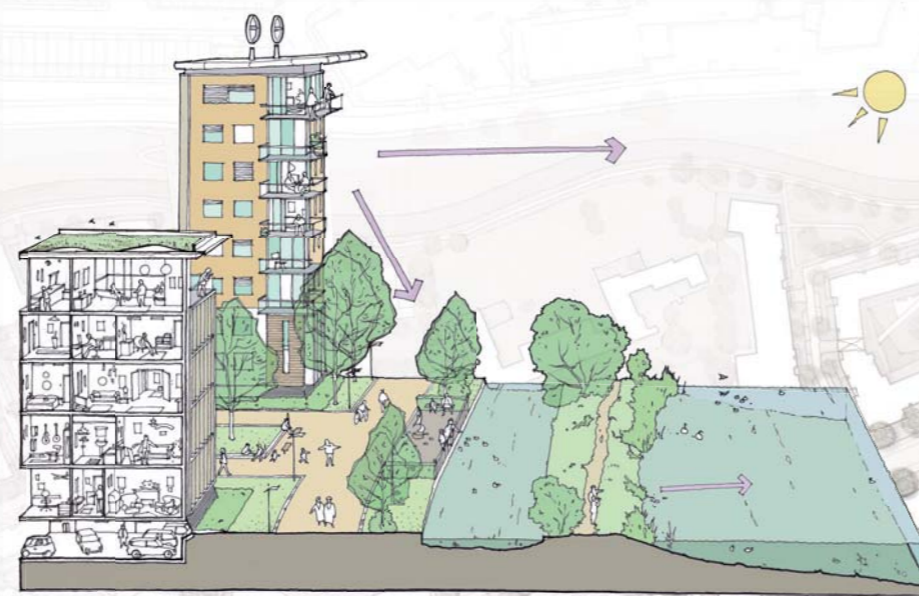
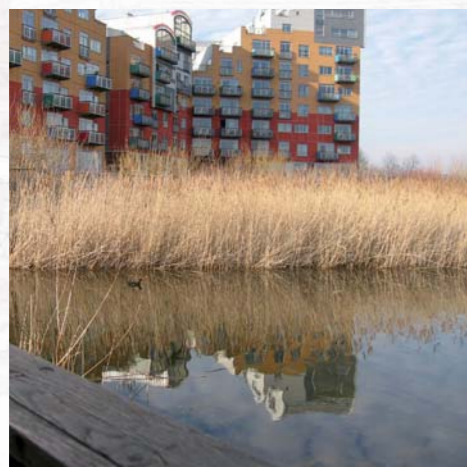
A North-west corner: dramatic views and children's play. A direct link off Green Lanes onto the riverside walkway provides the northern entry point to the Woodberry Down riverside from Finsbury Park. Whilst soft and green in character, it is envisaged that this section of path will be well used both as a recreational route and as a direct route into Woodberry Down and its various facilities from the north-west. Rowley Gardens will be relandscaped as a public open space, with stepped terraces accentuating the drama of panoramic views over North London. Thematically this will focus on children's play, containing active sports facilities within a Multi-Use Games Area.



B Northern central section: a place of lifelong learning, where the route is punctuated by a new bridge over the river that is part of The Diagonal (see 8.3 Walking in comfort) and which provides a new access to the north. The path also connects to the new Primary School in this location and exploits the full extent of panoramic views to the north.

C Seven Sisters Road New River crossing: opening out new views
The lack of any river views from the bridge is currently a huge lost opportunity. Not only are views of the river, its green edge and wider views over North London obscured, but the entrance down to the riverside is discreet and uninviting. The proposed removal of the existing high brick parapet walls on this bridge will not only provide a dramatic and attractive new entrance to Woodberry Down, but the presence and attractiveness of the riverside path can be greatly improved.





E Eastern section adjoining the East Reservoir: a focus on wildlife and ecology. Complementing the wildlife reserve designation of the East reservoir, the treatment along this section of the riverside will be naturalistic, enhancing the existing flora and fauna and planted to support existing local habitats. The new Wildlife Centre proposed beyond the site boundaries at the furthest end of the East Reservoir will provide a valuable local resource base for nature interpretation. Although there will be new development adjacent to the path to the north, as part of the Woodberry Down regeneration proposals, the margin between the New River and the reservoir will remain closed for general public access and additional planting will be introduced as appropriate.

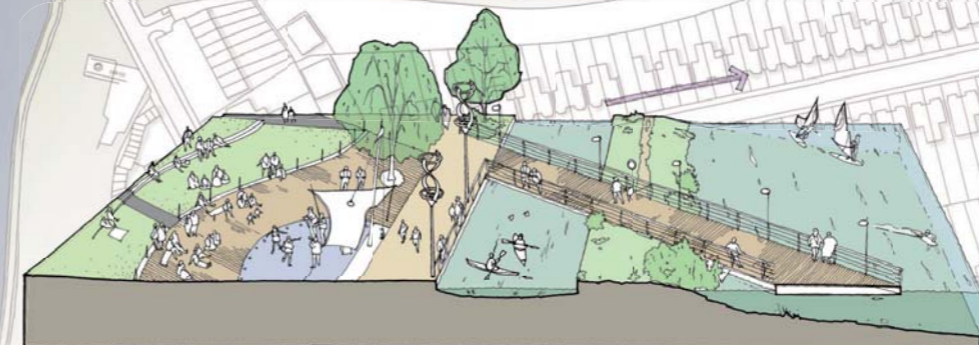
F Further south and west, a more immediate relationship to the riverside
 In this section the riverside becomes busier towards the main centre of population and activity in Woodberry Down, and the design of the route will reflect this in greater width and points of interest. A combined footpath and cycleway (which will be generally set back from river bank elsewhere), will extend up to viewing and seating platforms on the water's edge in purposefully designed spaces at certain points where internal paths connect to the peripheral riverside walk. U-shaped building blocks open out, with attractively landscaped courtyards abutting the riverside public parkland taking full advantage of the attractive and sunny aspect to the south.



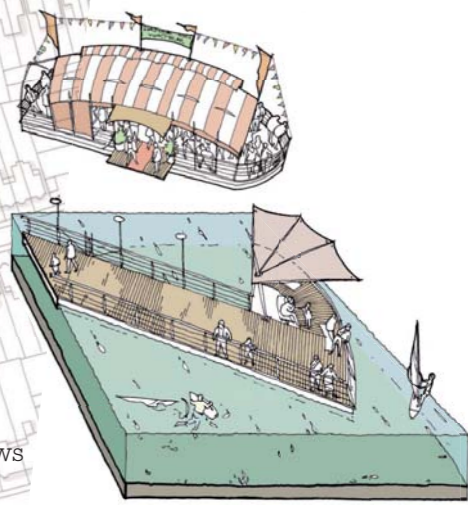
D Existing riverside route: quiet and tree-lined.
 This stretch is narrow and more densely treed, and as such it is seen in marked contrast in character from the adjacent sections with their more open aspects. Under the proposals this will remain a quieter and less well used part of the route, and it is intended that it will remain substantially unchanged with only minor improvements to surface treatment.



H The Stoke Newington West Reservoir Centre: A superb asset on the doorstep of Woodberry Down



G East of Woodberry Grove/Lordship Road: A lively hub of waterfront activities. This is envisaged as the busiest and most lively part of the riverside. In addition to adjacent high density residential development, the path connects to the new Spring Park, with its wide range of public open-air facilities and the new amphitheatre to be created on the former school site (see 12.4 Principal public spaces). Both parks will open out directly onto the riverside, and views over the West Reservoir with its various water sports will be an integral feature of its design, including public events areas and the potential for canoeing to be introduced along this stretch of the New River. Two piers are envisaged to extend across the river to the reservoir – one providing the southern punctuation of The Diagonal, the other relating to the amphitheatre. West of the park, the walkway will continue along the river, connecting both to Green Lanes and the sailing centre to the south.



11.3 Sustainable water management

11.3.1

The effect that climate change is having on water supply, with irregularities in rainfall giving rise to periods of drought followed by periods of flash flooding, requires an imaginative approach to water use and supply. As indicated in Figure 11.4, an integrated approach to water management will be adopted. This combines:

- **Conserving and reusing water.** Measures will be adopted for reducing water demand, such as specifying low consumption sanitary fittings as per BREEAM requirements for commercial buildings and EcoHomes for residential buildings.
- **Rainwater harvesting.** Rainwater will be collected usually from the roof, stored and with virtually no treatment be used for non-potable uses, such as irrigation of landscaped areas. Subterranean tanks are to be located beneath courtyards, and will be used both to attenuate run-off flows and as water storage linked to sprinkler systems. This strategy needs to be considered in detail on a building-by-building basis in relation to, for instance, the use of green roofs which will themselves provide some attenuation.
- **Sustainable drainage** – a Sustainable Urban Drainage System (SUDS) combines permeable paving, storage and green roofs, which are specified to attenuate water run-off by 50% at peak times (see Figure 11.5). However, residual discharge will be required to flow into conventional mains as the East Reservoir is used for drinking water.

11.4 Minimising waste

Minimising waste during construction and demolition

11.4.1

The Environment Statement and Sustainable Design and Construction Statement identify measures for reducing waste during the demolition and construction stages and operational stages of the development. No major land re-profiling is envisaged to realise the Masterplan. It is anticipated that the amount of cut material required to create underground car parks, drainage attenuation tanks and subterranean energy centres for example will, where the material is acceptable, be incorporated to realise some of the landscaping intentions and in order to create terraced platforms for buildings close to the riverfront embankments. Thus the need for imported earth or aggregate and the amount of waste to landfill will be kept to a minimum. Approximately 100,000m³ of material will be removed from the site.

Recycling and reuse

11.4.2

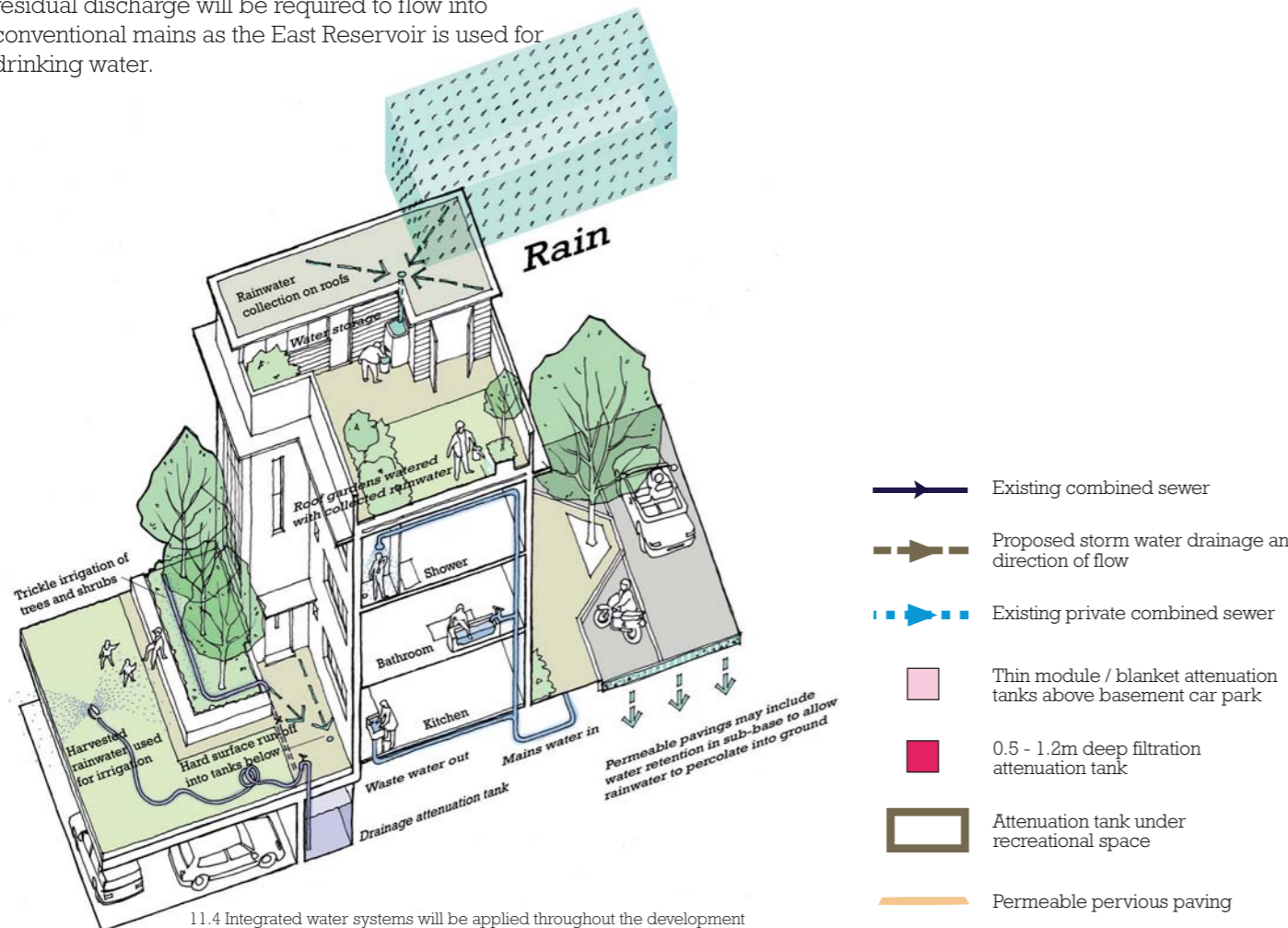
A range of measures will be deployed to reduce the amount of waste generated, encourage reuse as far as possible, and recycle or compost anything that cannot be reused.

11.4.3

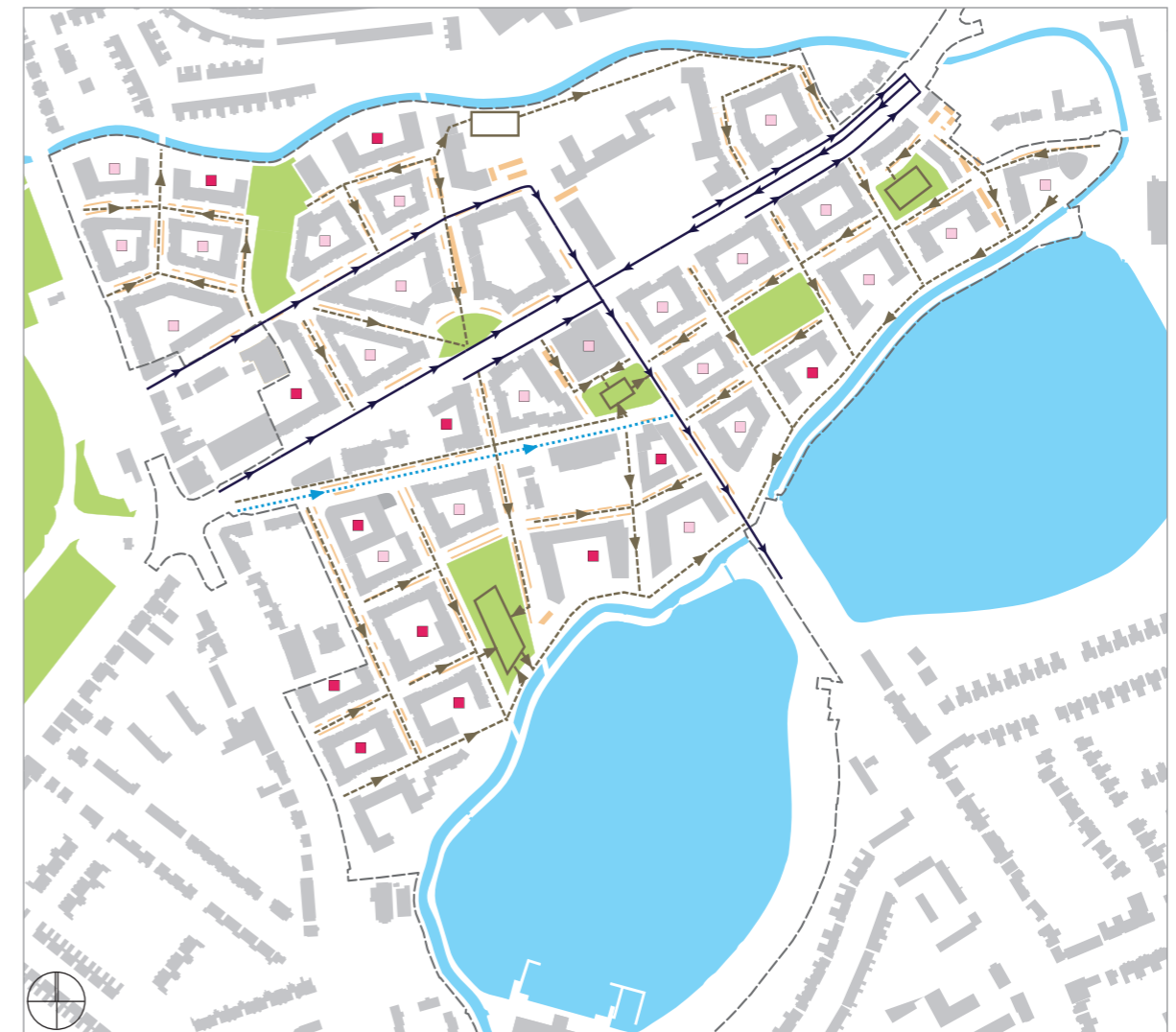
Recycling facilities will be provided for each home as per EcoHomes requirements, with both internal and external recycling facilities provided. Neighbourhood recycling facilities will also be strategically placed at key points such as the Woodberry Grove neighbourhood centre. Remaining household waste can potentially be crushed before being transferred into storage structures, designed as an integral, discreet part of each building.

11.4.4

It is also anticipated that composting facilities are provided in communal gardens. The creation of a community garden in one of the new public spaces (described in Chapter 12), could include demonstration projects on composting and organic gardening.



11.4 Integrated water systems will be applied throughout the development



11.5 Drainage Strategy