

## Inclusive design principles

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Fig.753 Illustrative Masterplan

# Inclusive design provisions

## Open spaces

### A network of accessible open space

A network of green open spaces, connected by pedestrian and cycle friendly routes will promote and encourage active and healthy lifestyles.

The existing open spaces of Jolly's Green, Millennium Green, Leven Road Open Space, and Braithwaite Park will be improved and connected by a pedestrian and cycle friendly 'Healthy Street' along Abbott Road.

The open spaces include:

### Highland Place

Highland Place is a primary open space at the centre of Aberfeldy. It will provide an outdoor amenity to the Residents Hub at Plot B3.

It will have a mix of soft and hard surfaces with areas of seating, play and planting all of which will be inclusively designed to suit a range of users of all abilities and ages.

The proposal is to connect Highland Place to the west of the A12 with a direct connection to Jolly's Green by pedestrianising the existing vehicular underpass and re-purposing it as a safe walking and cycling route and activity space - the Underbridge.

The existing underpass levels would be raised to provide a 10.5m wide path with gently sloping 1:21 gradient approach pathways. Slopes along the route would be utilised to create adventurous play areas, stepped seating for gathering and sloped lawns for relaxation. All would be carefully designed to be inclusive.

- Site boundary
- Enterprise Yard
- Pedestrian/ cycle priority
- Squares/hard surfaces
- High Street
- Green spaces
- Healthy Street

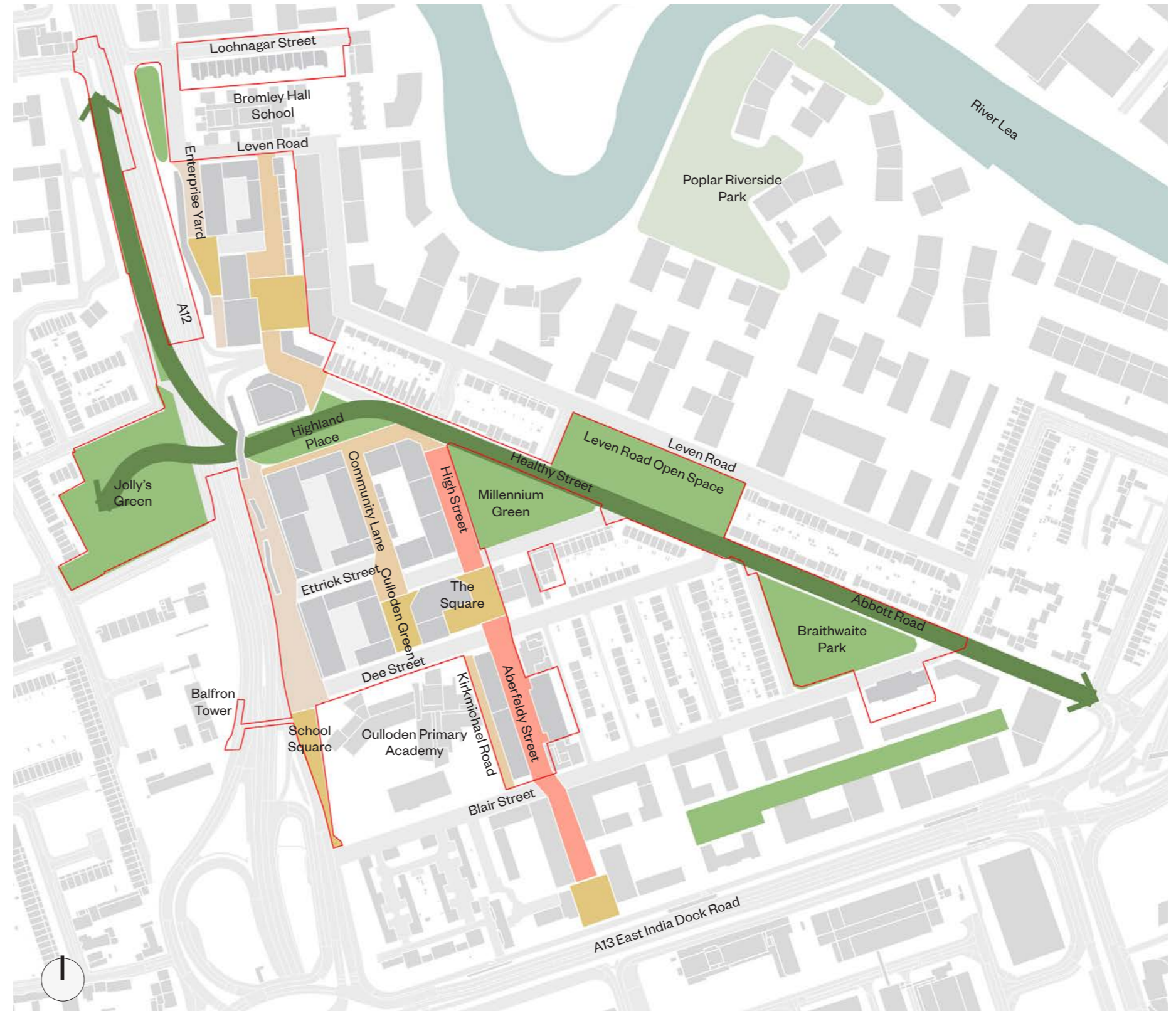


Fig.754 Diagram illustrating the open spaces across the illustrative masterplan

# Inclusive design provisions

## Open spaces

### Town Square

The Town Square is located along the High Street, which is a shopping street that also provides opportunities for outdoor social interaction with seating and shelter.

The Town Square provides an important civic function and will be key to orientation, It is a flexible public space along the High Street providing space for community activities including markets, performances, games, play areas, exhibitions and community gatherings.

Surfaces will be smooth, firm and level and the area will be provided with planting, seating and shelter to insure it is accessible and inclusive to all visitors.

### Community Lane

This is a safe pedestrianised route through the residential area of the masterplan connecting Nairn Street Estate to Blair Street.

It will have informal soft planting and provide private and semi-private social spaces for community activities.

There will be clear sightlines providing a sense of security and along with pedestrian priority and doorstep play, this will create a safe environment that will enable a range of people to occupy and use the street.

### Culloden Green, Nairn Square

Culloden Green and Nairn Square are two small local public spaces along Community Lane. These will allow doorstep play for families and particularly at the main entrance of the existing Culloden Primary Academy. All features and spaces will be child-focused and inclusively designed.

### Kirkmichael Road

This is a play street promoting play on the way and incorporating the existing exit from Culloden Primary Academy.

### Braithwaite Park or 'The Gardens'

Enhancements to the existing Braithwaite Park will improve the biodiversity value of this area, and provide a play space, seating areas and picnic tables for people to relax and socialise. Planting will provide sensory stimulation and orientation for sensory impaired people, improve mental health of users. There will be opportunities for inclusive play. Braithwaite Park is included within Phase A, the Detailed Proposals, of the masterplan.

### Leven Road open space

This is at the centre of Abbott Road and will provide a 'Hub' for inclusive sports activities and play. It is included within Phase A, the Detailed Proposals, of the masterplan.

### Jolly's Green

The new direct connection to Jolly's Green via the underbridge will substantially increase access to this green space. The vision for Jolly's Green will be developed in collaboration with the community, but works to the space could include new play, gym and fitness, social terraces, tree planting and wildflower meadows, new surfacing and furniture.

### Enterprise Yard and Works Square

Enterprise Yard is a pedestrian link improving north-south connectivity away from the A12 while providing outdoor working spaces for local independent businesses.

Enterprise Yard will be provided with an acoustic screen and planting to screen the noise from the A12. It widens into Works Square that provides outdoor working and meeting space and infrastructure, and also opportunity for outdoor events.

### School Square

This open space at the junction of Enterprise Yard and Blair Street provides inclusive play equipment, play-on-the-way elements and seating for parents and children at pick up and drop-off times.

### Millennium Green

Millennium Green is located at the northern end of the High Street, where the High Street meets the Healthy Street. This could be a 'Community Green' at the heart of Aberfeldy; a place for events and fun days as well as an everyday green space for rest and picnics and play.

### The Allotments

Existing allotments will be consolidated into a community garden in front of Bromley Hall School, providing an asset to bring the community together and develop sense of belonging and well-being.

These also offering a flexible spill out space to the neighbouring Poplar Works buildings.

The Allotments are included within Phase A, the Detailed Proposals, of the masterplan

### Podiums and Roof Gardens

Three communal podium spaces will provide accessible and step-free space for a wide range of users, offering important access to nature and the outdoors.

These are located on Plot A, C and E. They will have both lift and stepped access.

Three Roof Garden spaces are located on Plot F, H3 and I, which will similarly provide accessible and step-free outdoor space for a wide range of users.

# Inclusive design provisions: connections

## Connections and access to the development

### Approaches to the Site

The Site is surrounded by major transport infrastructure, including the A12 and A13, two major north-south and east-west routes respectively, DLR and Underground stations and main bus routes.

There is very little access to public transport within the Site itself, only the 309 bus route goes through the Site, connecting it to Canning Town. There are other bus routes along the A12 and A13 connecting to Central London.

All London buses (except 'heritage' routes) are accessible buses that 'kneel' to minimise height differences between the bus floor and pavement and have ramps and space inside for wheelchair and pushchair users.

PTAL scores range from 3-4. The higher scores are as a result of the Site being within 960m of DLR and London Underground stations.

Within 15 minutes walking distance there are a number of DLR stations with trains running regularly to Central London. Despite being in close proximity, the access to these facilities is not obvious and easy.

The Site is very well connected with the wider area, but poorly connected to the immediate context, which has an isolating effect on this neighbourhood.

The masterplan addresses this poor connectivity by a number of interventions to improve walking and cycling access.

- Site boundary
- Traffic free routes
- Pedestrian and two way cycle routes
- Pedestrian and one way cycle routes
- Primary cycle route linking east and west
- Connection into Jolly's Green
- ▶ Access to podiums

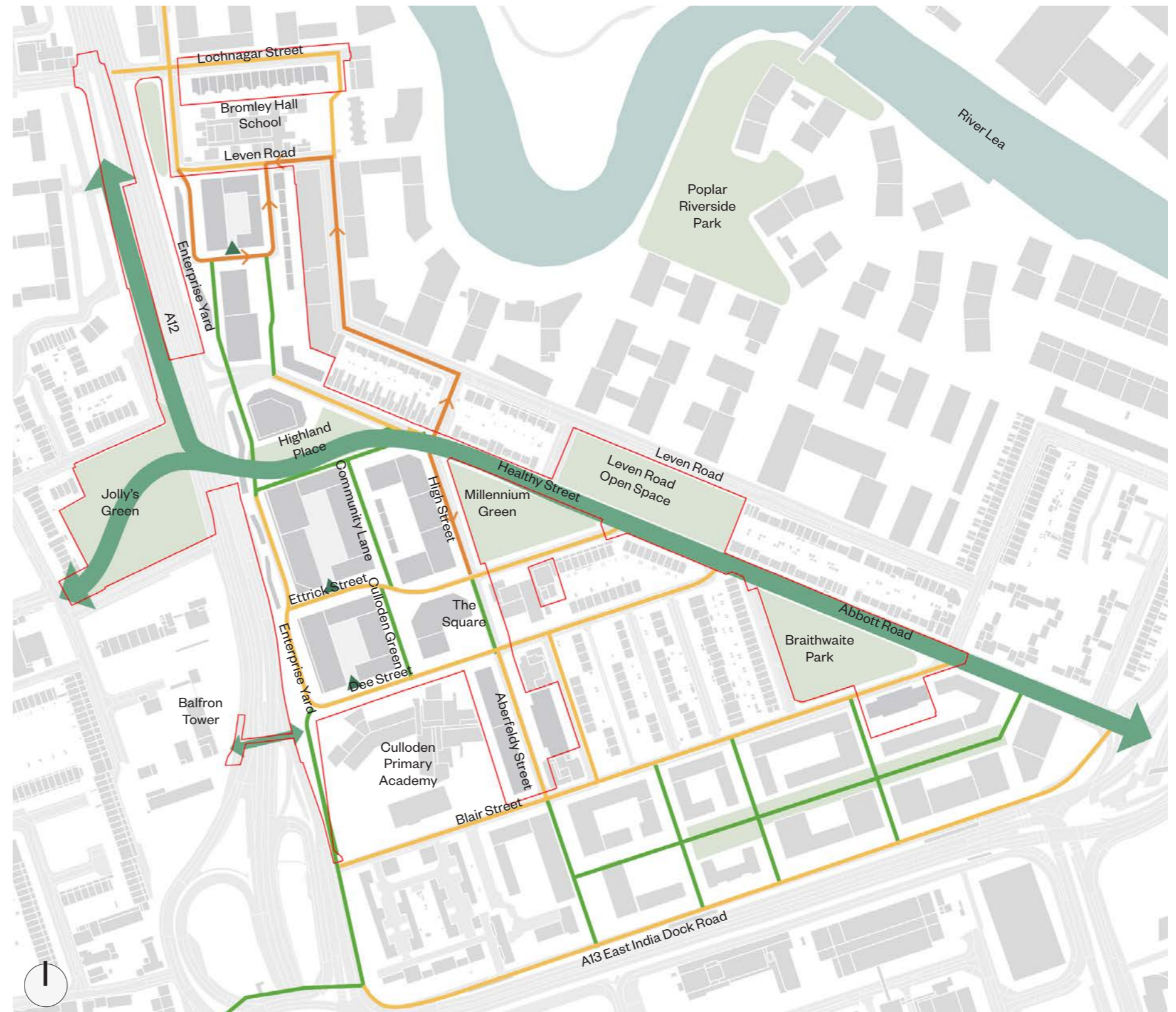


Fig.757 Diagram illustrating the proposed pedestrian and cycle connections on the illustrative masterplan

# Inclusive design provisions: connections

## Connections and access to the development

### Vehicular access

The Site is accessed primarily by Abbott Road which runs through the site connecting the A12 and A13.

A local road network stems off this serving homes directly to the east of the A12.

There are many no-through roads making the area difficult to navigate, whilst also significantly car dominant. Most car parking is on-street.

The main objectives of the vehicular movement strategy include:

- Discouraging through traffic, providing traffic calming along Abbott Road to reduce and slow traffic including improved pedestrian/cyclist crossings.
- Providing good access to public transport network.
- Repurposing the existing vehicular underpass for pedestrians and cyclists as a car free route.
- Accommodating bus services, reusing the existing 309 route throughout Aberfeldy and connecting it with the new at-grade vehicular A12 junction.

### Hierarchy of routes

There is a hierarchy of primary and secondary vehicular routes and cycle and pedestrian routes within the development:

- The primary street is Abbott Road, the key vehicular and 309 bus route through the site. This street will clearly delineate separate zones for pedestrians and vehicles.
- The secondary street network allows vehicular and servicing access through the neighbourhood, whilst also ensuring good connections for pedestrians and cyclists. Important secondary Streets include the east west connections of Dee Street and Ettrick Street.
- Pedestrian and cycle only routes: vehicles will not be permitted along these routes unless identified as emergency routes only. Where access for emergency vehicles is permitted, this is identified in the vehicle movement diagram in Chapter 5 of the Design and Access Statement. The key pedestrian and cycle connection on the masterplan is Community Lane.

### Accessible pedestrian and cycle connections

Connectivity and permeability for pedestrians and cyclists in the area is currently difficult as a result of the street network with many dead ends making it difficult to navigate, along with the severance caused by the A12.

Currently there are no cycle routes within the Aberfeldy Island, and the closest cycle route is the CS3 to the south.

Pedestrian and cycling connections across the A12 are limited and where they do exist they are typically enclosed, tight spaces that are not well overlooked and do not feel safe, and are not safe. The two underpasses to the A12 are in poor condition, unpleasant and considered unsafe.

The proposed masterplan significantly improves pedestrian and cycle connections, ensuring safety and wider network legibility linking Aberfeldy to the wider east west and north south existing and emerging routes.

- Community Lane is the primary pedestrian and cycle route offering a range of open spaces.
- A safe and direct pedestrian and cycle crossing of the A12 has been ensured with the proposals for Highland Place and the improvements to the existing Dee Street pedestrian underpass;
- The connection with Jolly's Green in particular will bring together pedestrian and cycle connections and join the green infrastructure across the A12.

### Connection to open spaces

There are a number of green areas and parks in close proximity to Aberfeldy, including Millennium Green, East India Green, Leven Road Open Space and Braithwaite Park.

The proposed development provides the opportunity to create new green spaces which can connect to the existing green network. New green links provide residents and visitors with the opportunity of gaining access to the river and other existing spaces which previously have been inaccessible.

### Accessible cycle parking

Each building core has its own dedicated cycle store that is easily accessible and closely located to the core main entrances. A number of the cores have more than one cycle store to ensure the size of any given cycle store is kept to a minimum.

Cycle stores within the courtyard buildings with podiums (buildings A, C and E) are provided over two storeys to utilise the upper ground floor of the building plinth. These two storey cycle stores are connected through the communal stairs and are provided with a platform lift to get the cycles safely up to the upper floor.

A proportion of accessible cycle storage will be provided in line with the London Cycle Design Standards which recommends a minimum of 5% of larger spaces for adapted cycles.

### OPA (Illustrative masterplan) cycle parking

Each store allows for:

- 80% double stacked 'josta' type stands;
- 15% Sheffield stands (single stack); and
- 5% Sheffield stands with enlarged clearance providing accessible spaces for oversized bikes used by disabled people.

The non residential uses of the masterplan will be served by a cycle hub in Building C, which is located at the centre of the masterplan and easily accessible to the new workspaces along the Enterprise Yard and the retail units along Aberfeldy Street.

Short stay cycle parking is provided within the public realm throughout the masterplan for visitors.

### Phase A cycle parking

This will provide 5% inclusive and accessible cycle parking to meet TfL's London Cycling Design Standards.



Further information on cycle parking can be found in the **Aberfeldy Village Masterplan Design and Access Statement: Detailed Proposals** prepared by Morris and Company.

### Residential car parking

In line with the London Plan 2021 Policy T6.1, accessible car parking for the residential dwellings is proposed to be provided on site at 3% of the dwellings from the outset with provision made for the remaining 7% of dwellings when required.

The distance between any accessible parking bay and its corresponding dwelling entrance has been minimised as far as possible. If a horizontal distance of more than 50 metres cannot be avoided, then level resting places (for wheelchair users) will be provided along the route.

### Non-residential Blue Badge car parking

An appropriate quantum of non-residential Blue Badge parking bays will be provided across the Masterplan to be developed in line with the Parking Management Plan.



Further information on Blue Badge parking can be found in the **Aberfeldy Village Masterplan: Parking Management Plan**.

# Inclusive design provisions: public realm

## Public realm

### Key inclusive design principles

The design of the public realm is based on site-wide principles, informed by TfL's 'Healthy Streets for London'. These include matters relating to defensible space, wayfinding and access, street furniture, lighting, tree planting and materials.

The public realm has been designed inclusively, with easy-going routes, sufficient surface drainage and lighting, durable materials and suitably designed seating.

All external areas will be designed using the principles of accessibility and inclusive design as the scheme progresses with the key aspects being noted as follows:

- Good connections to public transport, local pedestrian networks, and town centre facilities nearby;
- Legible and logical arrangement of streets and buildings, with hierarchy of streets denoted by various surface treatments and planting;
- Provision of mixed use on the site, reducing travel distance to work, eat and shop which are especially critical for older and disabled people with limited mobility.
- External community amenity areas, including accessible play areas to encourage engagement with children of all abilities.
- Animating street frontages of building to provide interest, passive surveillance, safety and convenience for all users, especially older and disabled people, children and their carers.
- Provision of opportunities for communal activity at lower levels, including spaces to eat, exercise, shop and meet will increase community interaction, opportunities for physical activity and reduce isolation often experienced especially by older and disabled people.
- The public realm has been developed to ensure a simple and unobstructed footway network is promoted and any unavoidable overlap between pedestrians, cycles and vehicles will be minimised and carefully designed.
- Slopes will be gentle with gradients not steeper than 1:20 so as not be designed as ramps.
- Cycle rails will be included in flights of steps where possible.
- Appropriate signage and material changes will be implemented to ensure safe movement of pedestrians and cyclists at all times.
- Pavement widths will provide a high level of pedestrian comfort based on TfL's Pedestrian Comfort Guidance for London.
- All pedestrian access routes on the site will be appropriately graded or level wherever possible within the constraints of the site. The main pedestrian access points into the development lead to a clear and safe pathway layout to ensure ease of access to all the apartment entrances.
- The public realm provides easily identified, legible wayfinding for all.
- The accessibility requirements of partially sighted and disabled people will be a major factor in the determination of surface and edge types, so as to provide a legible and safe environment in conjunction with current accessibility requirements.
- Surface materials have been selected to avoid loose materials that may be difficult for wheelchair users, people with walking aids and cane users. Surface materials that are firm, durable and slip resistant in all weathers have been selected.
- Slots in drainage gratings will be designed to avoid trapping walking aids, canes or wheelchair wheels.
- The use of tactile and hazard warning paving will be provided in compliance with British Standards, Building Regulations and Department for Transport (DfT) guidance.
- A low kerb (minimum 60mm upstand) will be used to delineate between the vehicular/cycle zone and the pedestrian only footway.
- Regular resting places are provided at around 50m intervals on main routes. All street furniture has been placed in a logical and consistent manner to prevent restriction of routes and to become a hazard.
- Ergonomically designed seating with arms and backrests will be provided.
- The lighting of the public realm will be designed with cognisance of the Council's lighting palette and relevant standards. Lighting will be designed to be well distributed without extreme shadows, sudden change in intensity of lighting, glare or reflection.
- Proposed trees and plants will be carefully selected and located to fit around existing retained trees, and to enhance both users experience and the local ecology. Selection of planting using a variety of colours, textures, shapes and scents will provide sensory stimulus and aid wayfinding for visually impaired people and those with neurodiversity and cognitive impairments.

### Orientation and wayfinding

The walking and cycling network provides direct, coherent, permeable networks which will aid orientation and wayfinding.

Signage will be clear and accessible following the principles of the Sign Design Guide.

Each building or character area will be designed to provide a unique sense of identity which will provide orientation for users.

### Security and well-being

Animating street frontages of building as indicated will provide interest, passive surveillance, safety and convenience for all users, especially older and disabled people, children and their carers.

Provision of opportunities for communal activity at lower levels, including places to eat, exercise, shop and meet will increase community interaction, opportunities for physical activity and to reduce isolation often experienced especially by older and disabled people.

Adequate lighting for public realm spaces to increase sense of security and well-being particularly for visually impaired people.

### Hierarchy of routes, crossings and spaces

A network of spaces and routes is provided across the site that is permeable and intuitive to pedestrians, and separates cycles, vehicle and bus movements:

This street will have a min of 60mm high kerb to the footway to be detectable to cane users.

For a more detailed description of the provisions, please refer to the Landscape section of the Design and Access Statement.

### Pedestrian and cycle crossings

All crossings of vehicular streets will meet rigorous inclusive design standards to ensure safety and convenience of those walking and cycling.

Side road crossings of vehicular entrances to the site (including entrances to car parks) will be raised and level with the footway. These will be visually distinguished to highlight the crossing to drivers.

Blister warning paving 800mm deep will be provided to both sides of the crossings, which are treated as informal crossings.

# Inclusive design provisions: public realm

## Public realm

### Child friendly public realm and inclusive play

The development will be inclusive to suit a range of children's needs with increased opportunities for play and informal recreation, enabling children and young people to be independently mobile;

Communal open spaces will be designed with reference to accessible play guidance including the GLA's shaping Neighbourhoods: Play and Informal Recruitment Supplementary Planning Guidance (Play SPG).

Child friendly spaces and play design principles include:

- Car-free environments with playable space;
- Door step play within 100m of homes;
- Good connections with safe crossing points and good sightlines;
- Playable landscape (play-on-the-way);
- Safe, direct and accessible routes for users to move independently within their local neighbourhood;
- Natural surveillance and overlooking from nearby dwellings;
- Variety of play activities and provision to suit a range of user needs.

### Facades, colour and materiality to aid orientation

Façade materials will be used to create distinct visual identities for each building or character area will improve wayfinding, orientation and sense of belonging, all very positive aspects.

Communal entrances will stand out from and be distinguishable on the façade so as to be easily identifiable, especially to visually and cognitively impaired people.

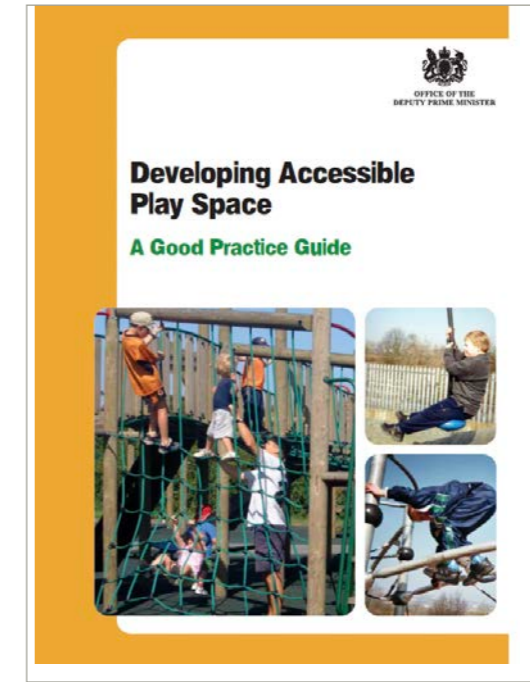
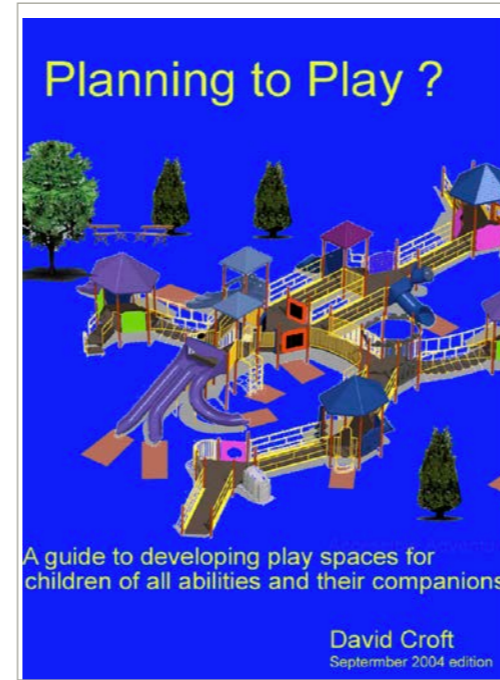


Fig.759 Guidance publications on inclusive play

# Inclusive design provisions: commercial

## Retail and workspace

### General Arrangement

The retail units are located along the High Street and within Highland Place.

The majority of the non-residential uses are located on the lower and upper ground floors with residential uses above.

At ground floor level, a combination of workspace, retail, cafe, bar and restaurant are provided all around the perimeter of the site.

All unit entrances are off the footway. These provide convenient resident amenities, reducing the need for travel.

The High Street will be the new Local Centre for Aberfeldy, and a key area of non-residential activity on the masterplan which serves residents of the Aberfeldy Village Masterplan and its wider surroundings.

There will also be a cluster of non-residential activity in Highland Place, predominantly within building B3. The Residents Hub is at ground and first floor. Cycle cafe, and other public facing use is part of building B3 but can operate independently.

Workspace is located along Enterprise Yard in the lower floors of the residential buildings and in small, narrow units that respond to the form of the existing Poplar Works buildings. These spaces would be flexible in order to accommodate a range of small independent businesses.

The new Poplar Works buildings along the A12 will provide workspace at ground and first floor levels.

### Inclusive Design provisions

The proposals at this stage indicate that all requirements for the commercial parts of the building provision in the Aberfeldy development will be met, subject to the detailed design and construction.

All internal communal doors will meet the guidance of AD M in all respects, including having suitable vision panels and sufficient tonal contrast with surrounding walls + 30 points difference in light reflectance value (LRV) is recommended.

Statutory requirements for access are set out in Approved Documents Parts K and Approved Document M, Vol 2, Buildings other than dwellings.

Retail units will be provided as shell and core and interiors will be fitted out by the tenant and will meet, at a minimum, requirements of Part M Vol 2 Buildings other than Dwellings. As the proposals for the retail space are progressed, it will be ensured that they are designed to all relevant accessibility standards.

### Entrances

All commercial entrances are well defined, external facing, generous and recessed to be clearly identifiable from the street and welcoming.

All entrance doors will be maintained and available for people to use at all times without requiring assistance.

The entrances will be designed to meet the Building Regulations Part M (Vol 2) standards and include:

- Weather protection and good illumination;
- Transitional lighting between the exterior and interior of the building.
- Manifestation to glazed screens and doors, dependent on their detailed design;
- Principal accessible public entrance doors will provide a clear opening width of 1000mm for a single leaf;
- Any intercom will be located to suit all users (including wheelchair users) and have a speech reinforcement system.
- A large mat (or similar) to remove water from shoes and wheels of wheelchairs and buggies.
- Highly reflective internal finishes will not be specified.

### Circulation and general provisions

Generally the commercial parts of the scheme will be designed to ensure that:

- Ground floor spaces will be step-free with adequate circulation widths;
- Decor will visually distinguish the walls from the floors, and doors within walls in all circulation spaces and corridors;
- Reflective surfaces will be avoided because they can cause confusion for people with sensory impairments;
- Doors with door closing devices on all circulation routes will be designed with an opening force of under 30N;
- All doors on circulation routes will have 300mm clear space on the pull side, to the side of the leading edge of the doors. Doors that only give access to flights of stairs are exempt from this requirement;
- The clear opening widths of doors will be a minimum of 800 mm wide per leaf unless power operated or held open double doors;
- Corridors and lobbies will meet Building Regulations Part M and doors that open into corridors will be recessed;
- Sanitary facilities will meet the requirements of Part M, with accessible WCs meeting wider space requirements of BS 8300:2018: part 2, (1700mm x 2200mm).



# Inclusive design provisions: residential

## Residential tenure and provisions

### Masterplan residential tenure mix

- The illustrative Masterplan provides at total of 1595 homes with a mix of studios, 1 bed, 2 bed, 3 bed and 4 bed units.
- The Detailed Component of the planning application will deliver 46.77 % of the habitable rooms as affordable with a tenure split of 43.42 % social and 3.35 % intermediate rent.
- The Outline Component of the application will deliver 34.5 % of the habitable rooms as affordable with a tenure split of 30.2 % social and 4.3 % intermediate rent.
- This can be provided on a plot-by-plot basis or across individual plots (subject to any other obligations to be agreed), i.e. should a Registered Provider deliver an entire development plot.

### Accessible Homes

Accessible homes are provided on the basis of 90% as M4(2) and 10% as M4(3), as per London Plan and London Borough of Tower Hamlets planning policy.

Of the M4(3) homes, the social rental tenure homes will be provided as M4(3) (2)(b).

All units meet the London Plan internal space standards. The dwellings also meet or exceed the Nationally Described Space Standard.

Residential access points will be provided at street frontages.

Locations of vertical circulation are optimised within the buildings in order to minimise horizontal travel distances.

### Private amenity space

Private amenity space is provided for all units in accordance with London Housing Design Standards.

Private amenity space is provided in the form of balconies, podium gardens and/or additional internal living space where it is not possible to provide external space.

### Phase A



Further information on the tenure, mix, and provision of accessible homes can be found in the **Design and Access Statement: Detailed Proposals** prepared by Morris + Company which supports this application.

# Inclusive design provisions: residential

## Residential amenities and common parts

### Introduction

The upper floors of all buildings will be solely residential use.

The proposals at this stage indicate that all requirements for the common parts of the residential building provision will be met, subject to the detailed design and construction.

Statutory requirements for access in communal areas of residential buildings are set out in Approved Documents Parts M and K. Some aspects of communal facilities in residential buildings will be designed with reference to Approved Document M, Vol 2, Buildings other than dwellings.

All internal communal doors will meet the guidance of AD M in all respects, including having suitable vision panels and sufficient tonal contrast with surrounding walls + 30 points difference in light reflectance value (LRV) is recommended.

It should be noted that where Category 3 units are provided within a block, the access route and associated communal areas will also comply with Category 3 guidance.

### Residential entrances

The residential building entrances have been carefully positioned to remove vehicular movement (except emergency vehicles) along Community Lane by locating the majority of the communal entrances on the East West Links of Blair Street, Dee Street, Ettrick Street and Highland Place which have only emergency vehicle access.

The communal entrances to the towers are located adjacent to prominent corners, where the East West Links meet Enterprise Yard. Additional entrances serving the lower buildings along Enterprise Yard are provided to activate the public realm.

All communal entrances are well defined, external facing, generous and recessed to be clearly identifiable from the street and welcoming.

Entrances to podium buildings and the towers are double height to add a sense of arrival and provide a bright and open entrance point to the buildings.

Private entrances with direct off-street access will be distributed throughout the masterplan, particularly along Community Lane where the majority of the family homes will be located. The private entrances have a small recess and have been paired to encourage neighbourly interactions.

Each apartment building has a dedicated street entrance to an entrance lobby providing access to the vertical core.

All communal residential entrances will be detailed to meet the guidance of Approved Document M, Volume 1, Clauses 2.14 -2.15, and 3.14-3.15 in all respects, including:

- Communal entrances will stand out from and be distinguishable on the façade so as to be easily identifiable, especially to visually and cognitively impaired people;
- Entrances will be weather protected and well illuminated to meet building regulation requirements.
- Clear opening width of each leaf being a minimum of 850mm;
- Compliant opening forces where manually operated (and automatic closers to be adjusted to be compliant);
- Any door opening controls (for example, large push pads on posts) will be located within reach of all users with clear signage.

### Horizontal Circulation

#### Corridors and doors

Compliant dimensions of communal corridors, lift and stair landings, and clear landings in front of communal and private dwelling entrances will be maintained throughout detailed design and construction in line with Approved Document M.

A minimum of 1500 x 1500mm clear space is provided outside lift doors at each level and also outside each wheelchair user unit private entrance.

### Vertical Circulation

#### Lifts

Each core will have access to at least two passenger lifts to all floors, providing a minimum internal car size that exceeds the relevant requirements of Approved Document M of the Building Regulations.

At least one lift in each core will be provided to evacuation standard for emergency egress in line with the London Plan 2021.

### Stairs

All common stairs are designed to meet provisions of Part K 'general access' stair

These will be designed to suit ambulant disabled people with suitable tonal contrast to aid people with impaired sight.

Handrails will be set at 900-1000mm above the pitchline and extend 300mm beyond top and bottom steps.

### Residential amenity areas

The main internal communal residential amenities are located at ground and first floor level with lift access.

These will provide a lounge, cafe and co-working spaces.

### Cycle stores

These are typically accessed via a covered passage with step free access.

There are separate stores for the retail units and the residential buildings.

Doors to cycle stores will be automatically or easy opening providing a minimum of 1.0m clear opening width.

### Bin stores and refuse strategy

The refuse strategy will require residents to bring their waste to refuse stores on the ground floors of each building, near to the entrance lobby.

These will have adequate turning circles for wheelchair users.

The horizontal distance between each apartment entrance door and its associated refuse store will generally be within 30 metres as set out in AD G.

# Inclusive design provisions: residential

## Accessible Housing

### Overview

This section of the Inclusive Design Statement covers the approach to inclusive design for the residential units and how they will be designed to meet the relevant standards and regulations.

Most residential units are located at first floor level and above and accessed via vertical cores in each building.

### Accessible Homes

The proposed development will provide a total of 1595 new dwellings of which:

- 90% (1440 no) are designed to meet the Building Regulations M4(2) Accessible and adaptable dwellings;
- 10% (155 no) to meet M4(3) Wheelchair user dwellings standards, according to the guidance of Approved Document M, Volume 1.

The dwellings also meet or exceed the Nationally Described Space Standard.

### General arrangement

The external approaches to residential entrances, the entrances, lobbies and common areas, including vertical circulation that have been reviewed at this stage are designed to meet the guidance of Approved Document M, Volume 1, Categories 2 and 3 in all respects.

The layouts of the units will be designed to meet Categories 2 and 3 of the Building Regulations and to meet the criteria of the Nationally Described Space Standard.

Features of the residential common parts that are not designed, specified or assessed prior to the planning application that will need to be compliant at completion include:

- Appropriate and accessible directional signage to parts of the development and to residential units;
- External lighting, including lighting of entrances;
- Entrance shelters;
- Level thresholds to all communal entrances, individual residential unit entrances and balconies;
- Opening forces of doors to entrances and common areas;
- Surface materials in common parts to have sufficient tonal contrast and lighting where required;
- Detailing of internal stairs and ramps, including tactile warning (exterior only) and handrails to both sides;
- Detailing of lift cars, controls and audio information;
- Detailing of sanitary and kitchen facilities for residents' facilities; and
- Specification of suitable surface materials, including provision of sufficient tonal contrast where required.

### M4(2) Category 2 units Accessible and adaptable dwellings

The M4(2) units will include single storey apartments, 2-3 storey houses and maisonettes.

There is lift access via two lifts to all upper level apartments.

All units meet the requirements of Part M, the London Plan Housing SPG (parts relating to accessible homes) and the Nationally Described Space Standard.

### M4(3) Category 3 Wheelchair user dwellings

The M4(3) wheelchair units are provided across tenure for market, intermediate and shared ownership tenures.

All M4(3) market and shared ownership units will be designed and built to be M4(3a) wheelchair adaptable dwellings.

All M4(3) social rental units will be designed and built to be M4(3b) wheelchair accessible dwellings.

All apartments are accessed via a minimum of two passenger lifts in the cores that serve the units in each building.

# Inclusive design provisions: means of escape

## Means of escape

### Emergency evacuation: Strategy and Emergency procedures

The Fire Strategy for the Development will take precedence over this section. Nevertheless, the following measures for the evacuation of residents, disabled staff, customers and visitors to the Development should be considered.

The strategy should include best practice procedures for the evacuation of disabled people from all parts of the buildings, including BS 9999:2017 and Regulatory Reform (Fire Safety) Order Supplementary Guidance and all relevant emerging fire guidance.

Management procedures will need to include the training and provision of staff to assist with the evacuation of disabled people from the retail / commercial units.

The use of suitable warning systems, such as vibrating pagers may be considered for individual members of staff, (such as a concierge) following a PEEP (Personal Emergency Evacuation Plan) assessment.

Normal provisions for residential buildings will apply to the residential levels of the Development whereby only the residents of an affected unit will evacuate. Others are protected as the residential units themselves function as safe refuges.

### Emergency evacuation: Provision of space and equipment

All designated escape routes will allow wheelchair users and others to reach a safe area from each non-residential part of the Development.

Alarm systems will provide visual as well as audible signals in isolated locations such as staff and customer WCs.



Fig.760 Building B3 viewed from Abbott Road (Illustrative proposal)

# Conclusion

## Inclusive design considerations

Aberfeldy Village Masterplan provides an inclusive redevelopment of the Site that currently suffers from severance from the neighbouring area due to major transport infrastructure along its boundaries. The Proposed Development addresses the severance by providing improved walking and cycling links to the surrounding area, including to surrounding open spaces and waterways.

The Proposed Development offers a level of inclusive design that exceeds the minimum access requirements of the Building Regulations, local and London-wide access policies.

The design of the public realm and buildings focuses on making it easy for all people of all ages and abilities to move through and use the amenities the development will offer.

Each aspect of accessing the development, moving through the open spaces, arriving, entering and using the buildings has been carefully considered during the design process, including activities within individual dwellings.

Key provisions that enhance accessibility and inclusion include:

- Addressing the severance the development currently suffers by providing inclusive and accessible links to neighbouring areas and improving permeability and connectivity within the development.
- Accessible routes to all pedestrian route connections and public transport;
- Walking and cycling routes that are connected, direct, permeable and safe;
- Employment and work opportunities embedded locally within the neighbourhoods, permitting people to work close to home which is particularly useful for some older people, those with caring responsibilities, and disabled people.
- Residential amenity space and facilities that are conveniently located and accessible, and that are comfortable and inclusive for independent use by residents;
- A second lift being available for use by residents of wheelchair accessible homes living at upper levels;
- Wheelchair accessible residential layouts with increased circulation space compared to the minimum required by the London Plan.

The Aberfeldy Village Masterplan is truly inclusive in catering for all ages and abilities, while future proofing the development for generations to come by providing a healthy, sustainable and accessible neighbourhood.



Fig.761 Community Lane North (Illustrative proposal)

9

**TECHNICAL STRATEGIES**

# Environmental design

## Creation of a truly sustainable neighbourhood from strong, passive design principles

### Summary

The design of the Proposed Development has been driven by the sustainability objectives and masterplan strategies set out in Chapter 5 of this document, which seek to deliver a sustainable new urban mixed use neighbourhood at Aberfeldy.

The hybrid planning application is accompanied by a joint Environmental Statement ('ES'), which assesses the Outline and Detailed Applications as a single Hybrid Application. The ES assesses the likely significant effects of the Proposed Development and sets out potential mitigation measures in respect of environmental effects, which will be considered in setting planning conditions. In the case of the outline application, mitigation set out in the ES will be considered in the detailed design of buildings at Reserved Matters stage.

The Hybrid application is also accompanied by a Sustainability Statement, Energy Assessment (including overheating), Whole Life Carbon Assessment, Circular Economy Statement and a Waste Management Strategy.

The Design Code for the Outline Proposals incorporates multiple measures to ensure that sustainable development is brought forward at Reserved Matters stage for each phase, setting out design requirements such as sustainable urban drainage systems, green roofs, materials and lighting.

### Sustainability

The scheme focuses on creating a sustainable urban environment with health and well-being central to the design. Landscape features and buildings which are highly energy efficient are proposed and the development prioritises passive, ultra-low energy fabric first measures. Proposals include high levels of insulation and good air tightness to target low running costs for the life of the building.

### On a path to zero carbon

The masterplan takes ambitious steps to meet zero operational carbon on-site. Low energy design has been considered from the outset, with orientation and building form established in the parameter plans and allowance made for highly insulating building fabric. These principles should be carried through to the detailed design of all buildings.

The adoption of these measures will minimise energy demands and make homes comfortable for residents. The approach also provides the foundation to allow homes to meet and exceed the London Plan targets.

Phase A will make use of additional capacity in an existing energy centre (delivered in Phase 3a of the original OPP) with Phases B to D provided with their own energy centre which will not use fossil fuels. Opportunities to make use of waste heat from nearby sites has been explored and the energy strategy has been designed to make use of these if they are available. Proposals are set out in more detail in the Energy Strategy section on the following pages.

### Good design for effective natural ventilation and daylight

Dual aspect homes should include appropriate window sizes for their orientation and integrated shading from window reveals, balconies and tree planting. These design features will ensure good levels of daylight, natural cross ventilation and a reduction in overheating.

### Wind and micro-climate

The building form has been designed to minimise channelling and acceleration and to avoid high wind speeds at street level. Further mitigation elements such as clusters of trees, soft and hard landscape elements, recessed entrances, colonnades, building chamfers and projecting entrance canopies also form part of the design.

### Healthy places

The creation of new landscaped areas across the masterplan and the improvement of the existing open spaces will also help to encourage and diversify wildlife, reduce the heat island effect, improve individual and community access to the open spaces, and help surface water to drain naturally, minimising the risk of flooding.

### Sustainable movement

Reduced parking areas and public spaces designed for pedestrians and cyclists, alongside high levels of cycle storage provision, will encourage residents to make sustainable transport choices.

Charging points will be provided to encourage and facilitate the use of electric vehicles and reduce emissions.

The new pedestrian and cycle Underbridge will also increase sustainable transport opportunities, both in terms of daily commuting and leisure opportunities.

### Managing waste

The waste management strategy has been developed to ensure provision for collection and removal throughout the construction of all phases.

Demolition and excavation waste will include principles such as a target of 95% of uncontaminated demolition/excavation waste to be diverted from landfill, excavation waste to be calculated and re-used if feasible, and a pre-demolition audit of existing structure to be undertaken at early stage 3.

Construction waste includes principles such as site waste management plan to be produced, construction waste segregated on site, non-hazardous construction waste generation target of  $\leq 7.5\text{m}^3$  ( $\leq 6.5$  tonnes) per 100 sqm and a target 95% construction waste to be diverted from landfill.

In terms of operational waste all commercial elements will need to achieve 65% recycling target and seek a zero landfill waste contract. Separate residential and commercial bin stores will be provided, with segregated areas for residual waste, mixed recycling & food waste sized in line with calculations based on LBTH waste storage requirements & BS5906. Refer to chapter 5 for more information.

### Early environmental analysis

Early engagement with the environmental specialists for the Proposed Development, including overheating, energy, acoustics, air quality and daylight sunlight engineers has helped to inform the design development of the buildings to ensure all homes and workplaces are comfortable and safe places to live and work, now and in the future.

At the beginning of Stage 2, early analysis of the A12 environment was undertaken by the team to inform the design development and identify early mitigation measures that were integrated into the Proposed Development. This helped inform important design decisions such as the glazing ratio and balcony strategy of the exposed western façades facing onto the A12 and the towers, and identified the importance of the new Poplar Works buildings as an environmental buffer and visual amenity for the Proposed Development.

### This chapter

In addition to the detail provided in the application documents referenced above, this section of the DAS briefly summarises specific environmental design considerations relating to:

- Energy strategy
- Overheating
- Daylight and sunlight
- Noise and vibration
- Air quality
- Wind and micro-climate

# Energy strategy

## Heat connections and distribution

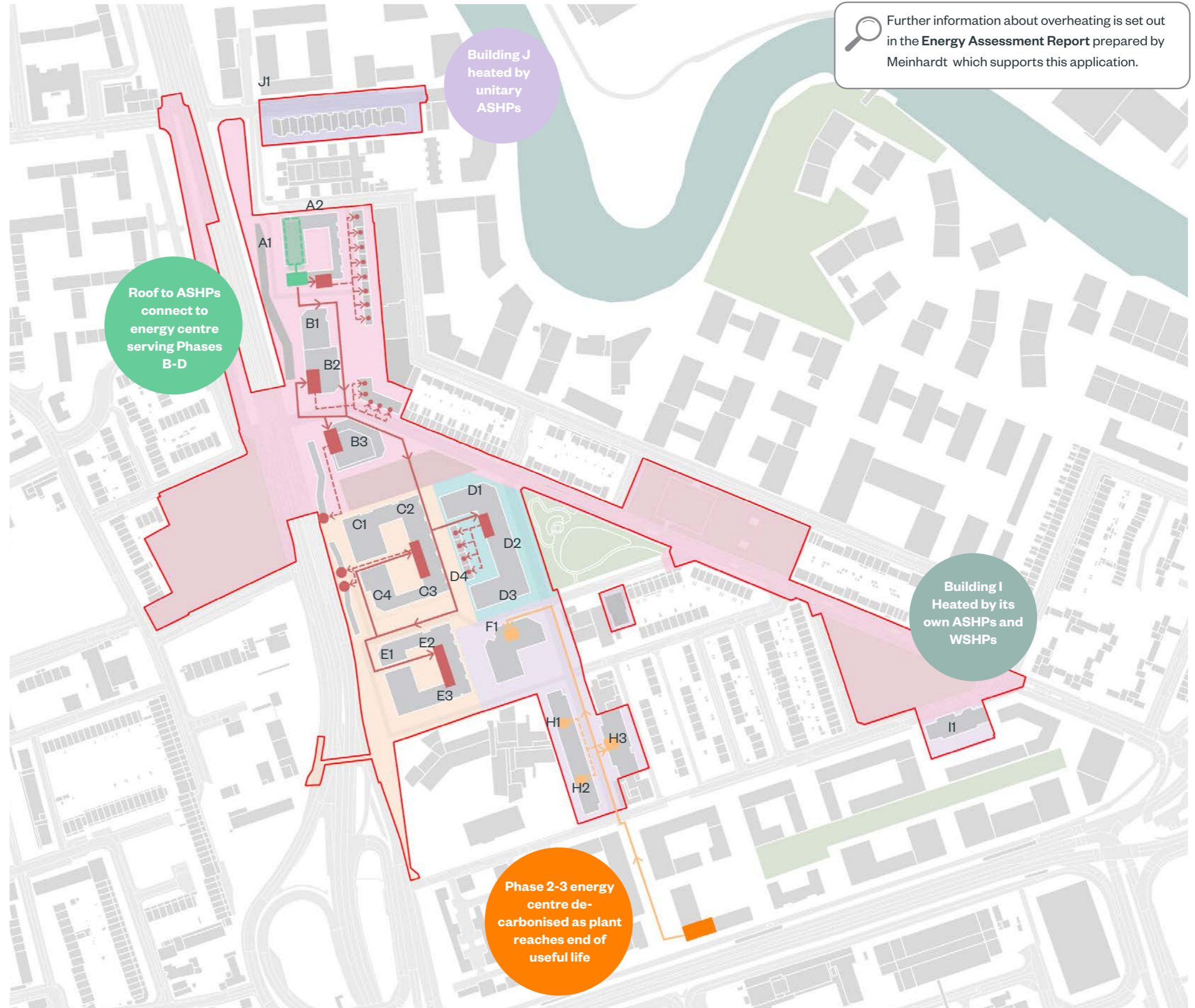
Detailed Proposals: Buildings H1-3 and F in Phase A will connect to the existing energy centre delivered in Phase 3b of the original OPP, which has spare capacity. As plant in this energy centre comes to the end of its life, it will be replaced by equipment which will not use fossil fuels.

Buildings I and J will be provided with their own ASHPs and WSHPs and will be independent of the wider energy strategy.

Outline Proposals: A new energy centre for the illustrative masterplan will be delivered in Phase B. It will be located in the base of Building A1-A2 and will be served by ASHPs on the roof of building A1. This energy centre will distribute heat (in the form of hot water) to heat intake rooms serving each apartment building. This hot water will then be distributed to individual Heat Intake Units for each of the homes and non-residential units.

This energy strategy has been designed, and plant spaces sized, to ensure that opportunities to make use of waste heat from neighbouring sites can be taken up.

- Phase A
- Phase B
- Phase C
- Phase D
- Building Footprint
- Plot I
- Plot J
- Existing Energy Centre - Phases 2-3
- Energy Centre (ASHPs above)
- Heat Intake Room Phase A
- Primary Connection - Phase A
- Secondary Connection - Phase A
- Heat Intake Room Phase B-D
- Primary Connection - Phase B-D
- Secondary Connection - Phase B-D



Further information about overheating is set out in the **Energy Assessment Report** prepared by Meinhardt which supports this application.

Fig.762 Diagram illustrating the masterplan heat connections and distribution



# Energy strategy

## Exploring opportunities to utilise waste heat

Close to the Site on the south side of the A13, there are several large data centres that currently discharge a significant amount of waste heat to the atmosphere.

A waste heat circuit from this source could be connected into both the Phase A and Phases B-D distribution networks during construction or after delivery.

Discussions with E.on are ongoing and this option will be explored further during Reserved Matters Applications of the future phases.

- Phase A
- Phase B
- Phase C
- Phase D
- Building Footprint
- Plot I
- Plot J
- Waste Heat Circuit from Data Centre
- Connection to Waste Heat Circuit
- Existing Energy Centre - Phases 2-3
- Energy Centre (ASHPs above)
- Heat Intake Room Phase A
- Primary Connection - Phase A
- Secondary Connection - Phase A
- Heat Intake Room Phase B-D
- Primary Connection - Phase B-D
- Secondary Connection - Phase B-D

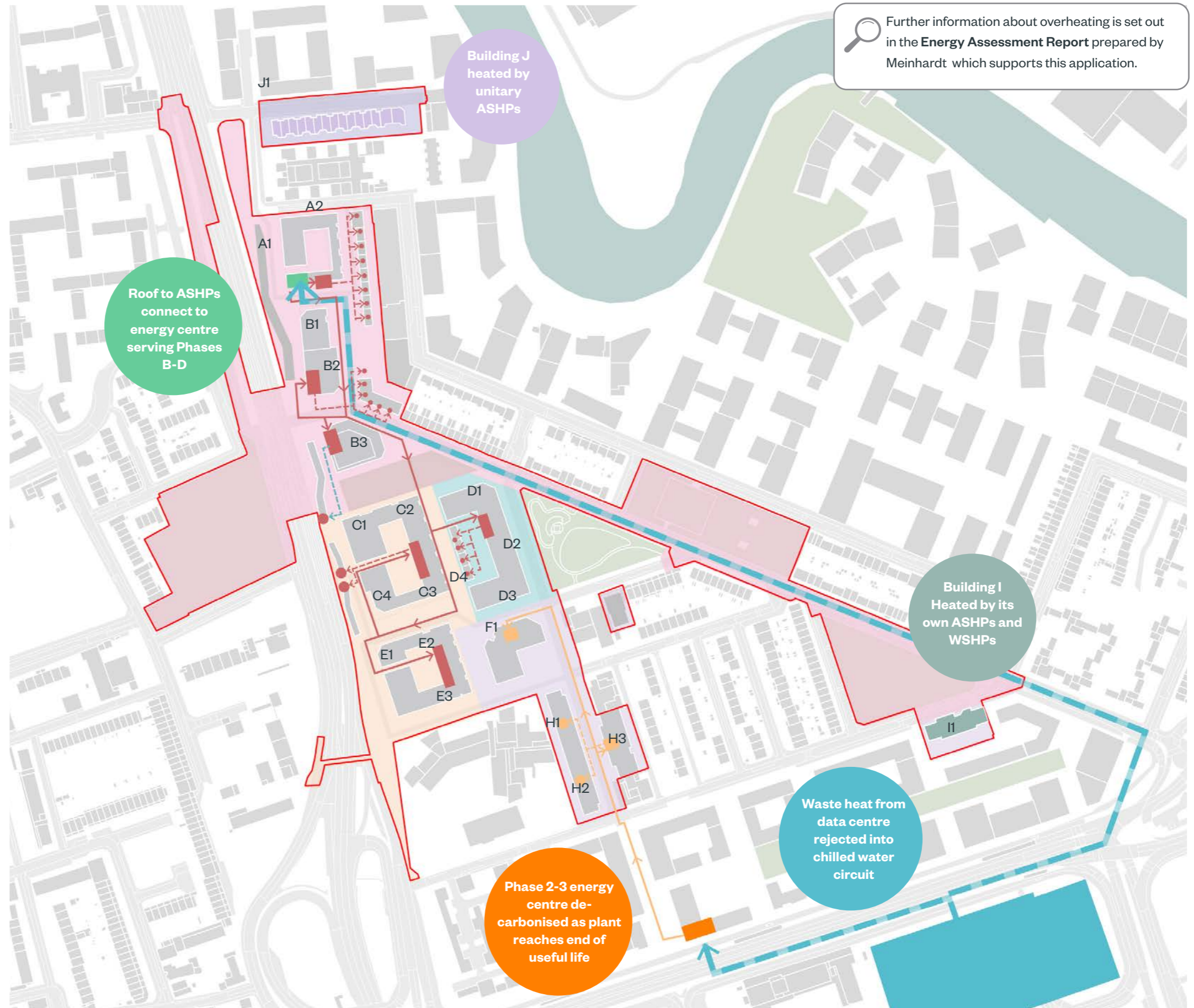


Fig.763 Diagram illustrating the masterplan heat connections and distribution with connection to the data centre

# Overheating

## Over heating assessment

An initial early stage assessment has been carried out for the Outline Proposals in accordance with the cooling hierarchy detailed in policy SI 4 of the London Plan and the latest Energy Assessment Guidance, in order to reduce overheating and minimise the use of air conditioning. Although dynamic thermal modelling is not a requirement for the Outline Proposals, early stage design modelling has been carried out on a sample of residential apartments to assess the risk of overheating, using IES modelling software, in accordance with the guidance and data sets in CIBSE TM49 and TM59 guidance, using the current 2020s summer year (DSY 1) and the more extreme DSY 2 and DSY 3.

This modelling has been completed for apartments with both recessed and projecting balconies to establish which balcony type performed best along western facade facing onto the A12 and the towers. The results of this early stage dynamic modelling overheating assessment are summarised below;

- The CIBSE compliance criteria are met in almost all rooms modelled (for the 2020s DSY1 weather scenario) for both recessed and projecting balconies, without blinds through the use of natural ventilation via openable windows/doors and increased mechanical ventilation, together with an improvement of the glazing g-value to 0.33.
- The CIBSE compliance criteria are met in a significant proportion of the rooms modelled (for the 2020s DSY2 and 3 weather scenarios) without blinds through the use of natural ventilation via openable windows/doors and increased mechanical ventilation, together with an improvement of the glazing g-value to 0.33.
- Recessed balconies performed better than projecting balconies at reducing overheating. This has informed the balcony strategy with recessed balconies proposed to all homes facing the A12 and the three tallest buildings.

The results demonstrate that the Outline Proposals provides a suitable reduction in the risk of overheating at this stage of design.

## Mitigation measures

As the design is developed for the later Reserved Matters application(s), further work will be done to explore all available passive measures with the aim of further reducing the risk of overheating, including the following:

- Optimisation of window sizes and opening areas
- Optimisation of glazing g-value
- External shading
- Maximising cross ventilation
- Consideration of a lighter colour palette for the façades to reflect more heat
- Maximising floor to floor height

There are a small number of homes in the Outline Proposals that will be affected by higher levels of external noise and air pollutants from the A12 to the west (please refer to the acoustic and air quality pages within this chapter). The overheating risk will be assessed in detail for these homes as part of the Reserved Matters application(s) with the windows open to assess the passive design, and also with the windows closed to determine whether any further mitigation measures are required.

For those apartments that could not use opening windows to prevent overheating, a potential mitigation measure may be to install a cooling coil on the MVHR ventilation supply to 'temper' the air and assist in reducing the impact of high summer temperatures. This would provide the occupants with an alternative method of sufficiently reducing the risk of overheating without opening the windows. This would not be considered as active cooling.



Further information about overheating is set out in the **Energy Assessment Report** prepared by Meinhardt which supports this application.

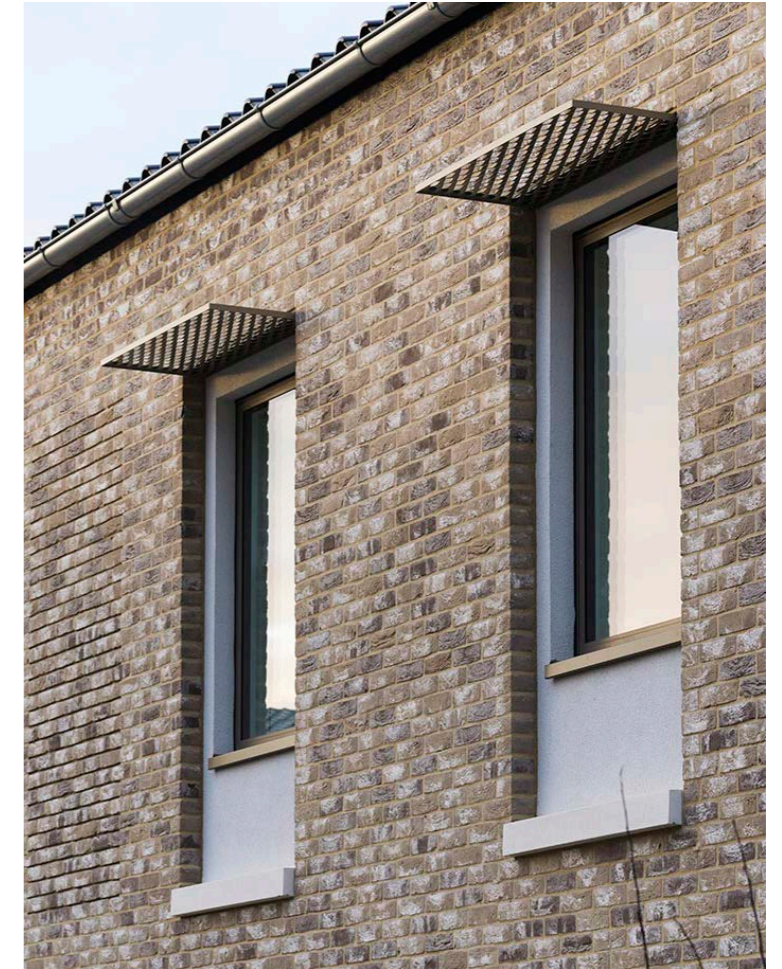


Fig.764 Example of solar shading to windows - Goldsmith Street (Mikhail Riches)

# Daylight and sunlight

Levitt Bernstein Architects and Morris and Co. Architects have worked alongside GIA to design a scheme that makes the most of the available daylight and sunlight. This was achieved through an iterative review of the massing, internal layouts and façade details throughout the design process.

Preliminary assessments have been undertaken at the early stages of design to understand the daylight potential within the proposed massing and the sunlight availability in the proposed open spaces.

Further detailed internal assessments were carried out once the initial interim internal arrangements were issued, and advice on a room-by-room basis was provided to optimise daylight and sunlight across all the proposed habitable rooms.

Strategies that have been implemented include:

- Reducing the massing in some areas to increase daylight and sunlight availability in the proposed accommodation and open spaces, whilst contextually preserving acceptable levels of light to the neighbouring properties;
- Reconfiguring some of the internal layouts to enhance the daylight appearance of spaces according to room use;
- Prioritising daylight in living areas where it is typically most valued by occupants, for example by providing dual aspect where possible, or by locating them in the most daylight areas of the façades;

- Resizing the fenestration for all homes in response to the interim technical tests' results;
- Balancing the provision of private amenity, in the form of balconies, with the internal daylight and sunlight levels. The balcony strategy was a key consideration throughout the development of the scheme. Whilst providing a valuable form of amenity, these also introduce additional obstructions for the windows directly below, therefore reducing the light ingress within rooms further; and adopting a lighter floor finish to improve the diffusion of light within all rooms.

As a result of the above, it is considered that the Proposed Development makes the most of the daylight and sunlight available and will provide future residents with acceptable daylight and sunlight amenity overall.

## Conclusions on overshadowing

As suggested by BRE, all proposed public and communal outdoor areas have been assessed for Sun Hours on Ground (SHOG).

The below images provides an overview of the overshadowing on all outdoor spaces within the Illustrative massing of the Outline Proposals, which shows that overall the vast majority of the proposed spaces would meet BRE's recommendation.

The ground floor public realm would see very good levels of sunlight, with all areas far exceeding BRE's recommendation and being well sunlit throughout the year.

The four proposed courtyards would fall short of recommendation on 21st March. This is a typical occurrence in courtyard shaped blocks which are enclosed from all sides. The vast majority of these areas would see in excess of three hours of sunlight in June. Three of the four courtyard blocks are provided with rooftop amenity spaces, all of which far exceed recommendation and will be excellently sunlit throughout the year.

Overall, the design has carefully considered access to sunlight across the masterplan and, as a result, excellent sunlight amenity can be enjoyed in most of the proposed open spaces. The only areas seeing lower levels of sunlight are the four proposed courtyards which would see in excess of three hours of sunlight in summer. On balance, the masterplan is considered to provide good sunlight amenity.

Further information about daylight sunlight is set out in the **ES & The Daylight Sunlight Assessment** for the Detailed Proposals prepared by GIA which supports this application.

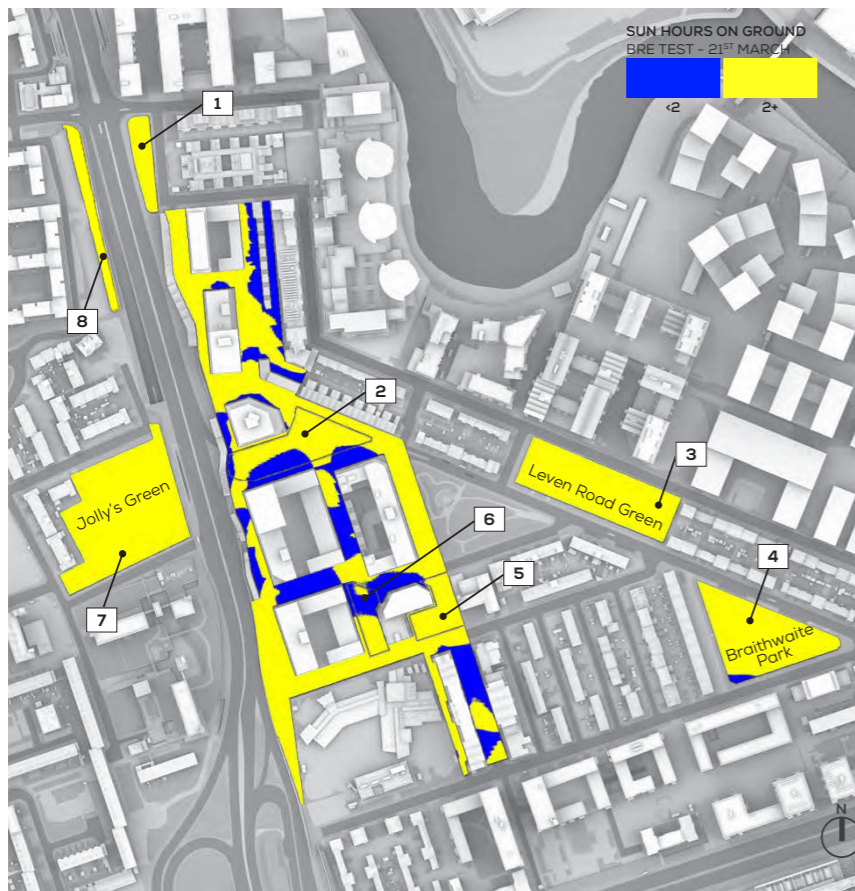


Fig.765 BRE test - sun hours on the ground - public realm

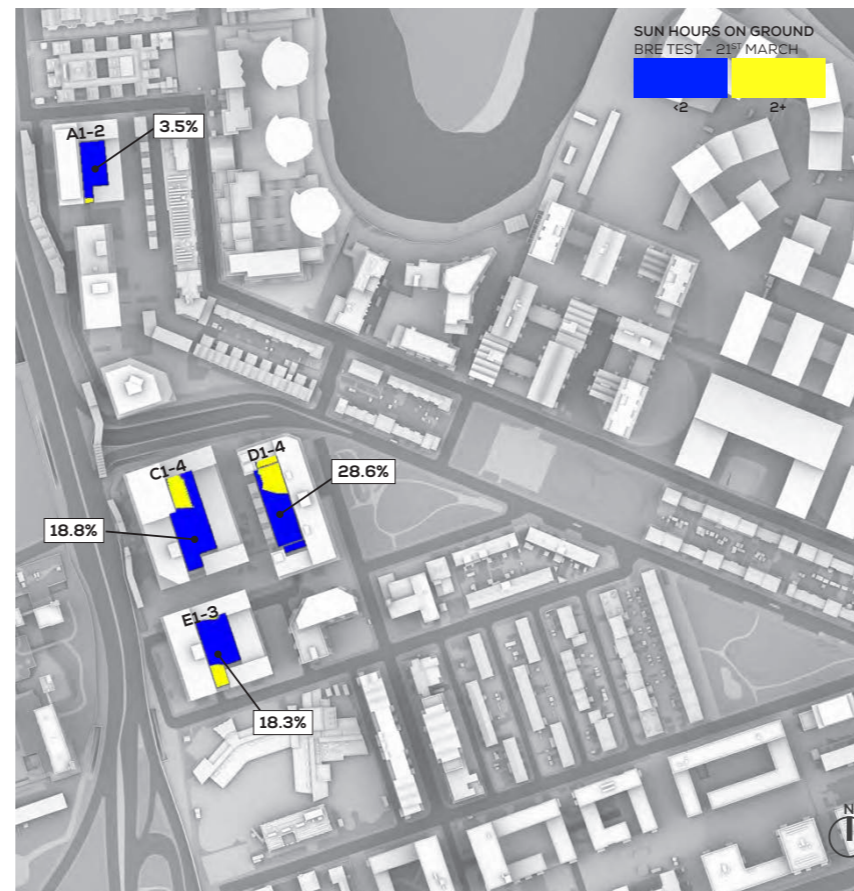


Fig.766 BRE test - sun hours on the ground - courtyards

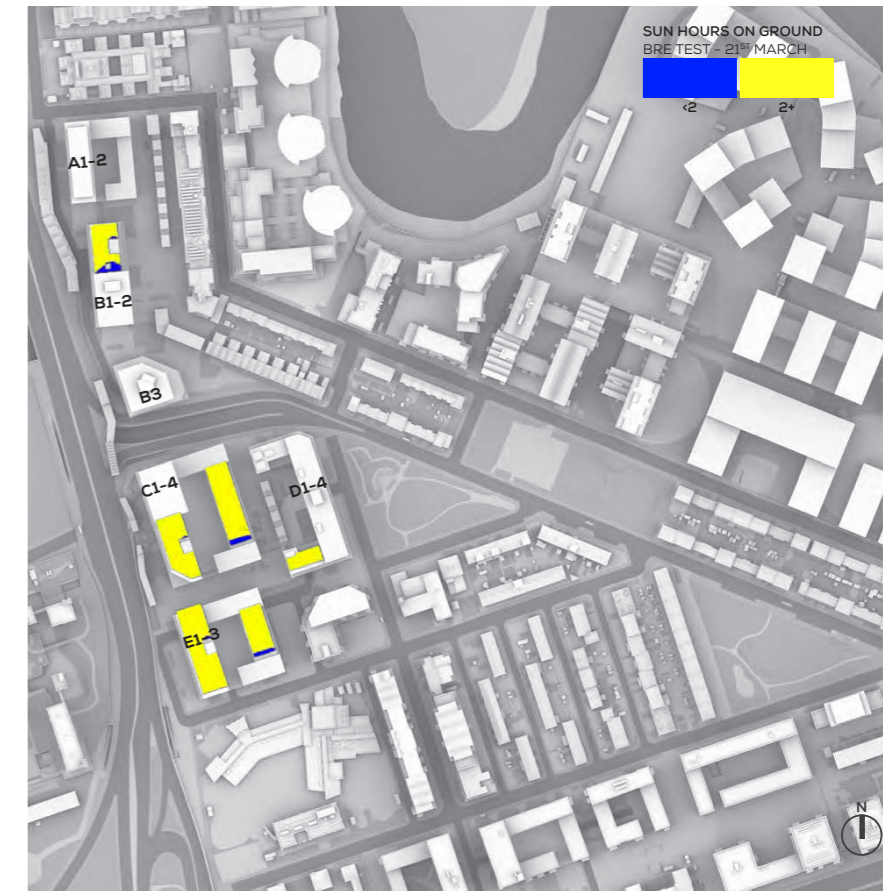


Fig.767 BRE test - sun hours on the ground - roof terraces

# Noise and vibration

Further information about overheating is set out in the **ES Chapter 10: Noise and Vibration** prepared by Entran which supports this application.

## Initial assessment

The existing noise constraint of the A12 has been one of the most important environment considerations during the design process for the Proposed Development. An early initial assessment was undertaken to identify any mitigation measures that could be implemented to improve the acoustic performance of the Outline Proposals. Three design changes were implemented as a result of this analysis:

- A greater proportion of the existing Poplar Works building was retained ;
- The length and number of new Poplar Works buildings was increased; and
- The balconies facing west onto the A12 have been recessed and wintergardens added.

## Noise and vibration assessment

Following the completion of Chapter 10: Noise and Vibration of the EIA the future suitability of the site for residential accommodation has been confirmed by considering the calculated noise contours and the guidance adopted for the EIA chapter.

The noise contour map below shows the noise levels across the Site for the Proposed Development and how quickly the noise levels drop from west to east. This map also clearly shows the positive impact the Proposed Development buildings have on the noise levels within the Site, acting as an acoustic barrier and reducing the noise levels within the Site.



Fig.768 Daytime noise contour map

The introduction of the new Poplar Works buildings along the A12 shows the positive localised noise reductions provided by these buildings on Enterprise Yard and the homes and workspaces at lower levels that look onto it.

All façades have been assessed to calculate the required facade noise reductions across the Proposed Development. The diagram at the bottom left of the page shows the required façade reductions for all façades that are calculated to exceed the BS 8233 criterion noise levels within habitable rooms, with windows partially open, when adopting the typical reduction due to partially open windows as presented within BS 8233.

Private amenity balconies have also been assessed. This assessment shows that the balconies onto the A12 will require wintergardens, but where façades do not directly overlook the A12 the balconies benefit from partial or complete screening by the proposed building structures and therefore the noise levels will not be as high meaning protruding balconies can be proposed.

The development design incorporates 'courtyard' areas where noise levels will fall below the upper guideline noise levels.

## Mitigation

A number of mitigation measures have been proposed for the Proposed Development:

- Suitable glazing and ventilation options should be adopted in conjunction with typical façade in order to achieve the BS 8233 and WHO criteria.

- Mechanical ventilation is proposed across the development. Any installed mechanical ventilation system should allow for sufficient airflow whilst maintaining the integrity of the façade with regard to noise insulation. The glazing and ventilation elements should be selected with consideration to the required façade reduction.
- To ensure the RW values take account of possible low frequency noise, the sound reduction index of each element should include a correction for the Ctr urban traffic noise spectrum. The ventilation should achieve this value when open/operational, to allow ventilation to the dwelling.
- For non-habitable rooms, such as kitchens, bathrooms, stairways, halls, landings etc, lower acoustic performance glazing configurations may be considered permissible.
- Recessed balconies with winter gardens are incorporated for dwellings directly overlooking the A12. The remainder comprises protruding balconies and external amenity areas at ground level which are screened by the layout of the development. Balconies would benefit from measures such as imperforate balustrades and absorptive linings.
- Considering the façade sound reduction identified in the 8233 assessment, maximum night time noise levels with windows closed achieve the WHO criteria of 45 dB. Windows need to remain closed at façades overlooking the A12. Please refer to the Overheating Assessment for potential mitigation measures.

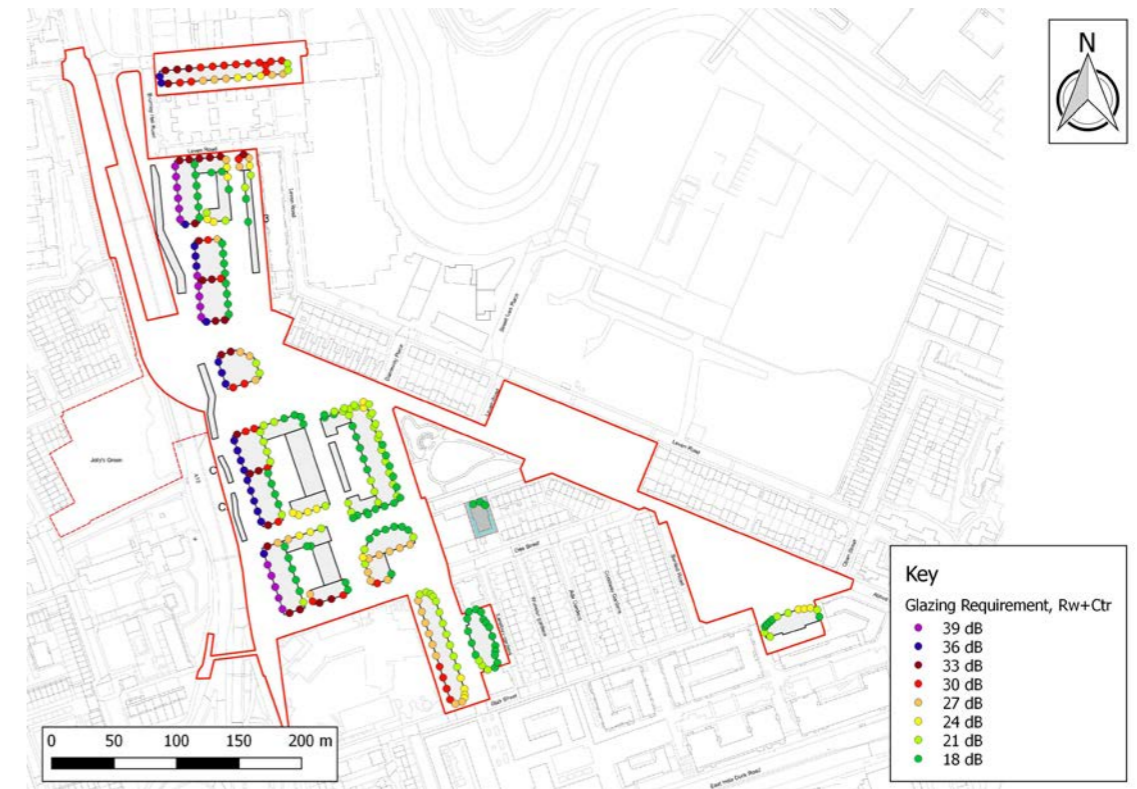


Fig.769 Calculated facade reductions required at facade locations

# Air quality

## Initial assessment

London Borough of Tower Hamlets has declared the Borough an Air Quality Management Area, AQMA, since 2000. This is in response to a failure to meet the required levels of nitrogen oxide NO<sub>2</sub> and particulate matter PM<sub>10</sub>.

Due to the critical importance of air quality on the local population's health and life expectancy the design team undertook early initial assessment of the buildings facing onto the A12 to build in mitigation measures from the outset. The air quality was assessed using computational modelling to compare LBTH monitored average levels and predicted average levels of NO<sub>x</sub> and particulate matter. The results indicated that:

- NO<sub>2</sub> concentrations are below relevant objectives at the proposed homes and outdoor amenity spaces;
- Predicted pollutant concentration levels identify that the provision of balconies facing onto the A12 is acceptable;
- Concentrations of nitrogen dioxide fall rapidly with distance from the A12 resulting in extra protection provided by the recessed balconies; and
- As concentrations of nitrogen dioxide fall rapidly with distance from the kerbside height gain also represents a significant drop in air pollutants as illustrated on the left.

## Air quality assessment

The following policies have been used to inform the scope of the air quality assessment:

- Tower Hamlets Local Plan 2031: Managing Growth and Sharing Benefits;
- Cleaning London's air, The Mayor's Air Quality Strategy;
- The London Environment Strategy; and
- The London Plan: The Spatial Development Strategy for Greater London.

An assessment of the potential impacts during the construction phase has been carried out. This has shown that during this phase of the Proposed Development releases of dust and PM<sub>10</sub> are likely to occur during site activities. Through good site practice and the implementation of suitable mitigation measures, the impact of dust and PM<sub>10</sub> releases may be effectively mitigated and the resultant impacts are considered to be negligible.

Dispersion modelling using ADMS-Roads has been carried out to assess the impact of the construction and operational phases of the Proposed Development on local air quality. The modelling confirmed:

- Construction traffic and the operational development are predicted to result in a negligible impact on local air quality at existing receptors within the vicinity of the site.

- Future occupants of the Proposed Development would not be exposed to pollutant concentrations above the relevant objective levels, therefore the impact of the Proposed Development with regards new exposure to air quality is considered to be negligible.
- Pollutant concentrations at the façades of the proposed buildings will also decrease with height as a result of increased dispersion and dilution with separation distance from road traffic sources.
- Nonetheless, the apartments will be mechanically ventilated to ensure that there is no new exposure to poor air quality.
- The Proposed Development is also predicted to be air quality neutral.

Further information about overheating is set out in the **ES Chapter 8: Air Quality** prepared by Entran which supports this application.

- Level 20 - 28 (assumed)
- Level 14 - 31.1 (assumed)
- Level 08 - 34.2
- Level 02 - 37.3

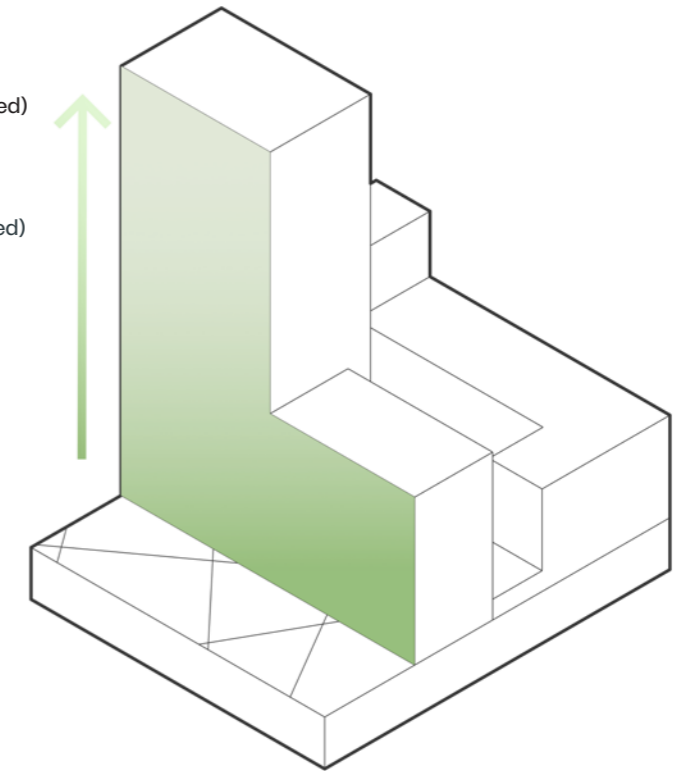


Fig.770 Height gain predicted NO<sub>2</sub> concentrations

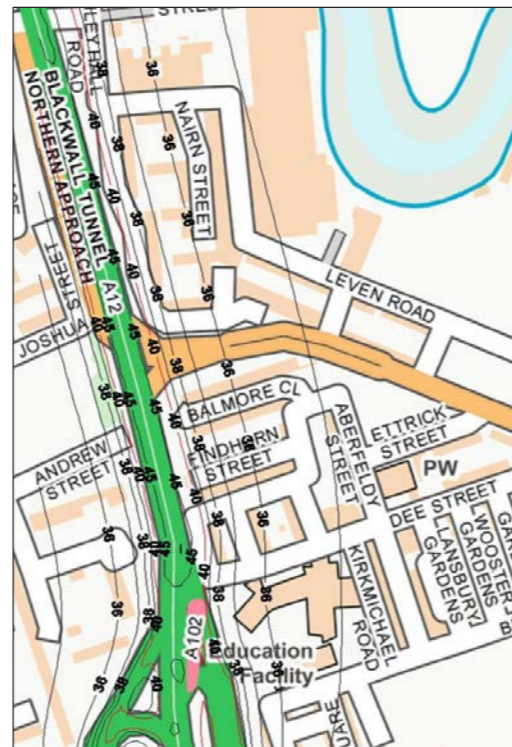


Fig.771 Predicted ground floor NO<sub>2</sub> concentrations

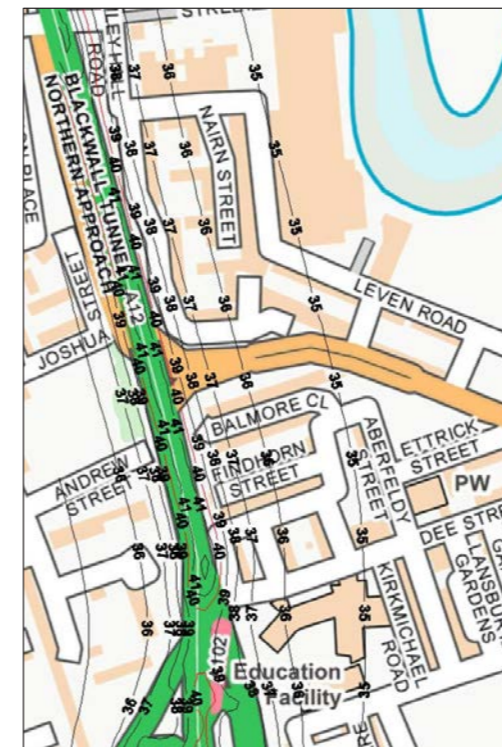


Fig.772 Predicted first floor NO<sub>2</sub> concentrations

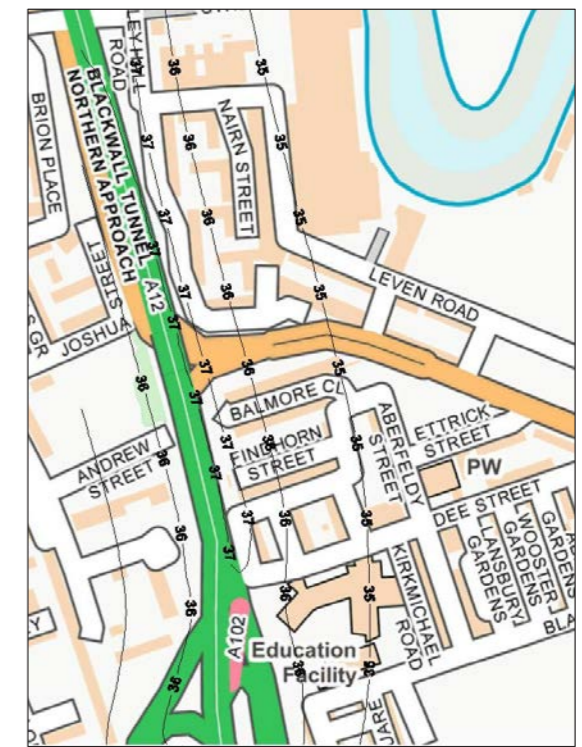


Fig.773 Predicted second floor NO<sub>2</sub> concentrations

Predicted annual mean ground, first and second level NO<sub>2</sub> concentrations across the Site are presented as contour plots in Figures 1, 2 and 3, respectively. The concentrations are below the air quality objective of 40 ug/m<sup>3</sup> at the façades of the proposed residential units. NO<sub>2</sub> concentrations will also decrease with height as a result of increased dispersion and dilution with separation distance from road traffic sources, as indicated in Figures 1-3.

# Wind and micro-climate

The Proposed Development has undergone a number of iterative wind tunnel assessments to assess the wind conditions across the Site. The results from these wind tunnels has helped to inform the design development of the Proposed Development. Mitigation measures have been applied to the illustrative masterplan massing for the Outline Proposals to demonstrate how a compliant scheme can be delivered. Further wind tunnel assessments will take place during design development of the Detailed Proposals of each phase during the Reserved Matters application process.

## Initial assessment

Several early initial wind tunnel assessments of the Proposed Development were undertaken without the proposed landscaping included to simulate a 'worst-case' scenario. The wind conditions were assessed using the widely accepted Lawson Criteria. The results of these assessments showed:

- In the context of Phase A alone with existing surrounds, wind conditions would be suitable for the intended use at the majority of locations, except for entrances on the northern elevation of Block F1 and a stack of balconies at the north-eastern corner, which would be one category windier than suitable for the intended use and would require mitigation as discussed below.
- Wind conditions around the majority of the Site would be suitable for the intended use in the context of the maximum parameter models. However, several areas between Blocks A/B1, B2/B3, B3/C and C/E would be windier than suitable and at some locations subject to strong winds exceeding the safety condition set out by Lawson. These areas would require wind mitigation measures as discussed below. The majority of Phase A would be suitable for the intended use in the context of the masterplan with the exception of an entrance at the western elevation of Plot F1 which would be one category windier than suitable.
- The introduction of the cumulative schemes in both context models would improve wind conditions as the cumulative scheme provide back pressure which shelters the Proposed Development; however the adverse wind conditions in the areas mentioned above would continue to persist and would require mitigation.



Further information about overheating is set out in the **ES Chapter 13: Wind Microclimate** prepared by RWDI which supports this application.



Fig.774 View of the illustrative massing with Cumulative Surrounding Buildings in the wind tunnel



Fig.775 View of the illustrative massing with mitigation measures tested in white



Fig.776 View of the 10m chamfer to Building C of the illustrative massing

# Wind and micro-climate

## Recommendations and mitigation measures

The design team and RWDI held wind mitigation workshops of the illustrative scheme to improve the wind conditions reported above by altering the massing of Buildings, A, B1, B2, B3, C and E as well as incorporating landscaping features in the form of deciduous and evergreen trees distributed around the windy areas.

The wind mitigation strategy incorporates the following set of mitigation measures that would improve wind conditions within and around the Proposed Development:

- Chamfers added to the lower floors of the south west corners of the plinths to Buildings A1, B2 and E1.
- Chamfers added to the lower floors of the north west corners of the plinths to Buildings B1, B3 and C4.
- Chamfer added to the lower floors of the south east corner of the plinth to Buildings B2;
- 10m chamfer from the first floor to the top of the building introduced to the south west corner of Building C4;

- Colonnades added to the southern elevation of Buildings A and C;
- Colonnades added to the northern elevation of Buildings B1 and E;
- Evergreen and deciduous trees added to the public realm throughout the west of the Site;
- Deciduous trees changed to evergreen in small number of locations across the Site;
- Shrubs 1-1.5m in height along the southern elevation of Building B3 to the eastern side of the proposed seating area;
- Shrubs 1.5m in height added to Building B1 and C4 roof terrace.

The final wind tunnel assessment showed that with the proposed landscaping and wind mitigation measures incorporated, and the massing changes made to the illustrative scheme, wind conditions would improve such that safety exceedances would only occur at the north-western corner of Building C1.

Qualitative mitigation measures have been proposed to mitigate this safety

Further information about overheating is set out in the **ES Chapter 13: Wind Microclimate** prepared by RWDI which supports this application.

exceedance along with comfort exceedances at the windy entrance on the western elevation of Plot F (Detailed Proposals) and other areas including entrances and amenity spaces at the Outline Proposals. The effectiveness of these mitigation measures to ensure a safe and suitable wind environment will be assessed at Reserved Matters stage for the Outline Proposals. Further mitigation measures could include:

- Additional 6m localised trees at two sides of the north-western corner of Building C1 (safety);
- Additional 6m localised trees at two sides of the north-western corner of Building B3 (comfort);
- 3m tall trees with shrubs 1m in height underneath located on two sides of seating areas to provide localised shelter along Community Lane between Buildings C and D (comfort);
- Populating Building E roof terrace with trees and low dense planting to break-up the open space (comfort).



Fig.777 Wind mitigation strategy plan (illustrative plan)

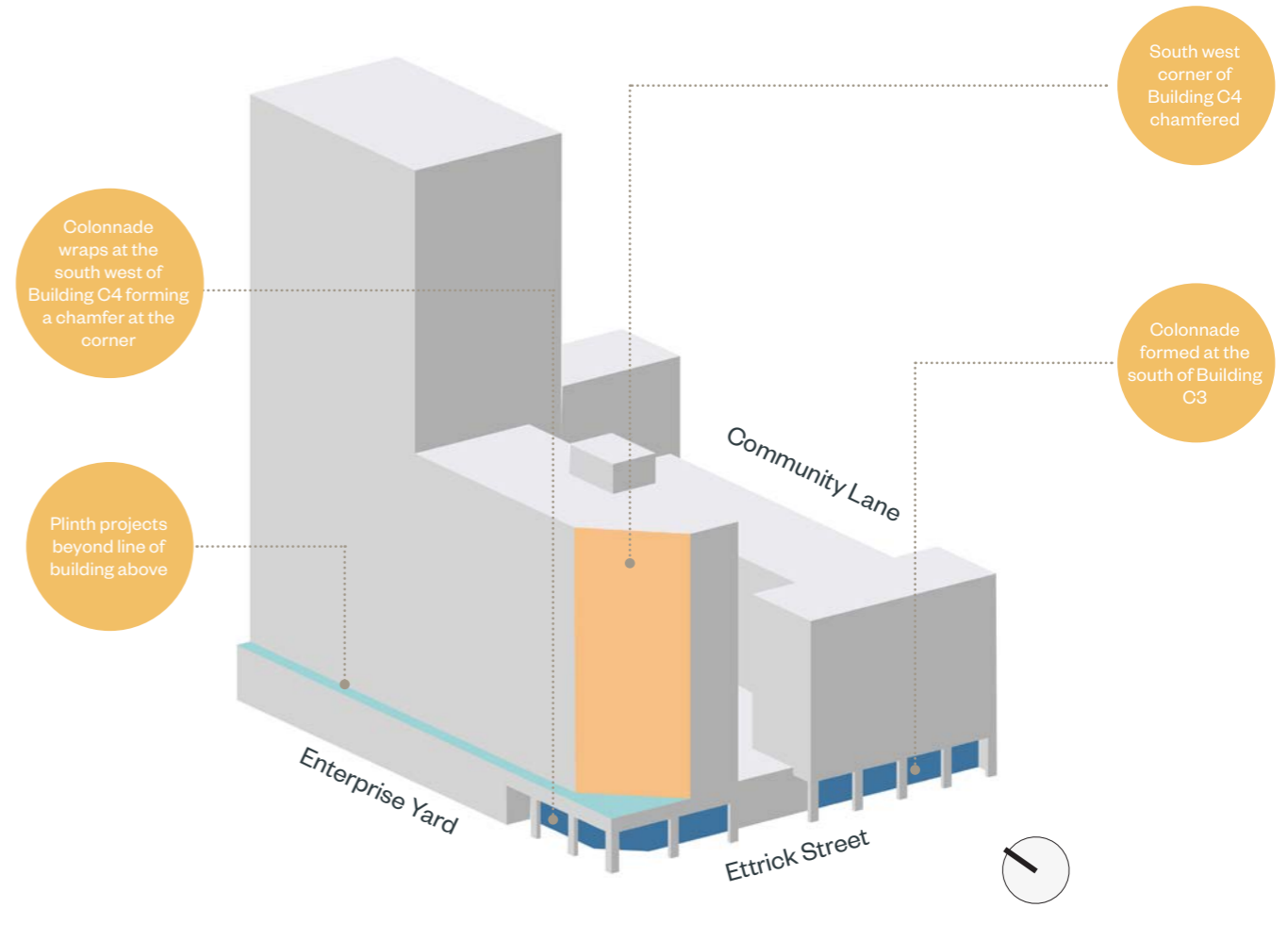
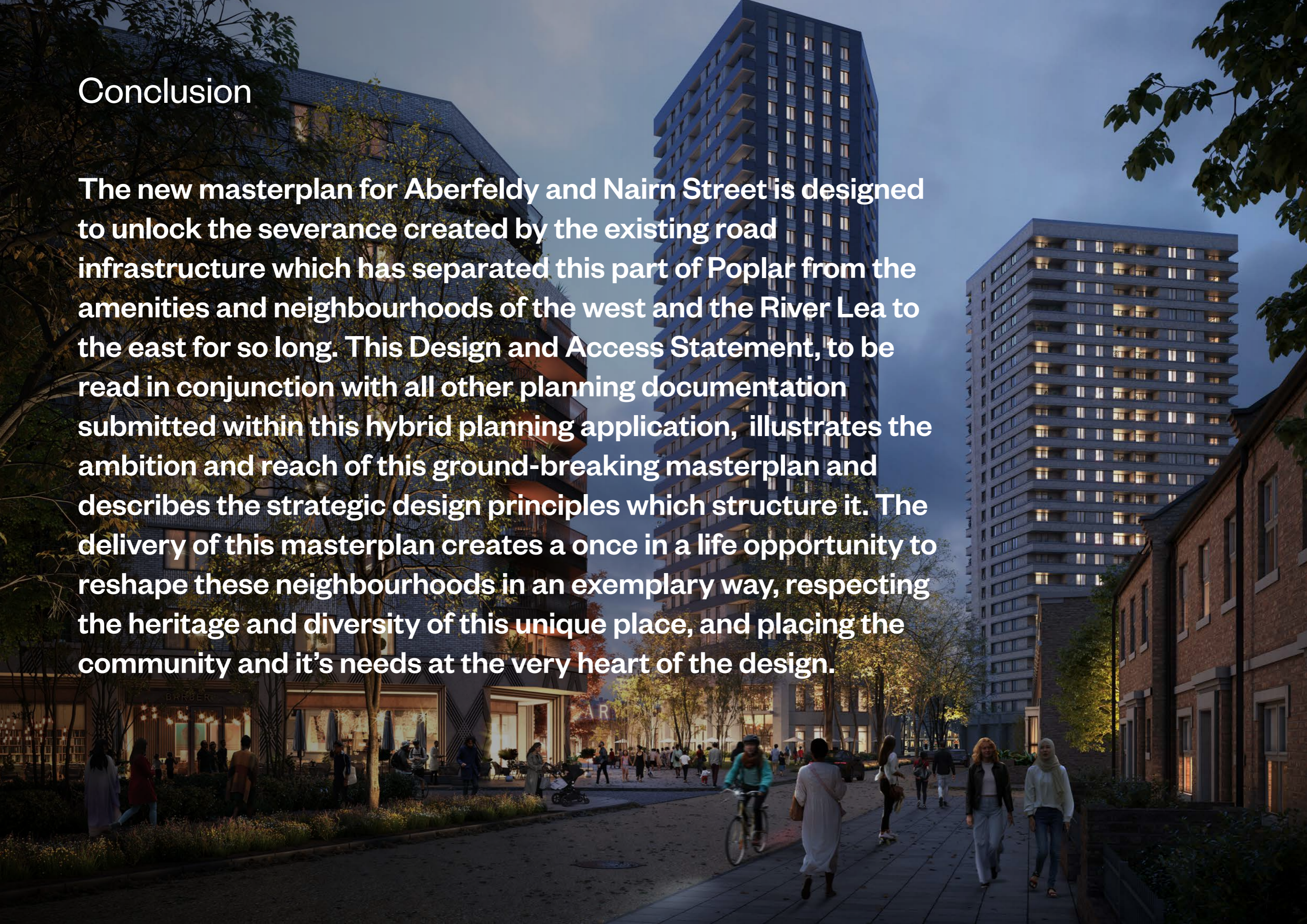


Fig.778 Building C1-4 (Illustrative proposal) showing wind mitigation measures incorporated

## Conclusion

The new masterplan for Aberfeldy and Nairn Street is designed to unlock the severance created by the existing road infrastructure which has separated this part of Poplar from the amenities and neighbourhoods of the west and the River Lea to the east for so long. This Design and Access Statement, to be read in conjunction with all other planning documentation submitted within this hybrid planning application, illustrates the ambition and reach of this ground-breaking masterplan and describes the strategic design principles which structure it. The delivery of this masterplan creates a once in a life opportunity to reshape these neighbourhoods in an exemplary way, respecting the heritage and diversity of this unique place, and placing the community and it's needs at the very heart of the design.







**APPENDIX**

# Underpass and Slip Road Technical Note, Meinhardt

Technical Feasibility Note prepared to demonstrate the technical feasibility, from an engineering perspective, for the repurposing of the underpass and the wider works including the connection to Jolly's Green.



## 2812 Aberfeldy Village

PROJECT: **2812 Aberfeldy Village**  
 TITLE: **A12 Underpass and Sliproad Technical Note**  
 REVISION: **P06**

PREPARED BY:	P. KANABAR, L. BOUSTEAD, G. BHUIE	DATE:	04/04/2022
REVIEWED BY:	V. ALLOTT	DATE:	04/04/2022
APPROVED BY:	V. ALLOTT	DATE:	04/04/2022

### 1 Introduction

This design note has been prepared on behalf of Poplar Harca and Ecoworld International.

The design note has been prepared in response to London Borough of Tower Hamlets request for a formal statement on the technical feasibility of development to Jolly's Green, A12 Underpass and Slip Road and its potential impact to the A12 highway.

Meinhardt (UK) Ltd have been appointed by Poplar Harca and Ecoworld International to provide the structural, civil, mechanical, electrical and public health engineering services for the development.

### 2 Existing Site and Location

The development site referred to in this design note comprises of Jolly's Green and the underpass and slip road to A12, named B125 Abbott Road. The development site under consideration is illustrated in Figure 2-1. Jolly's Green is located at postal code E14 ORD.



Figure 2-1: Extent of site referred to in this design note

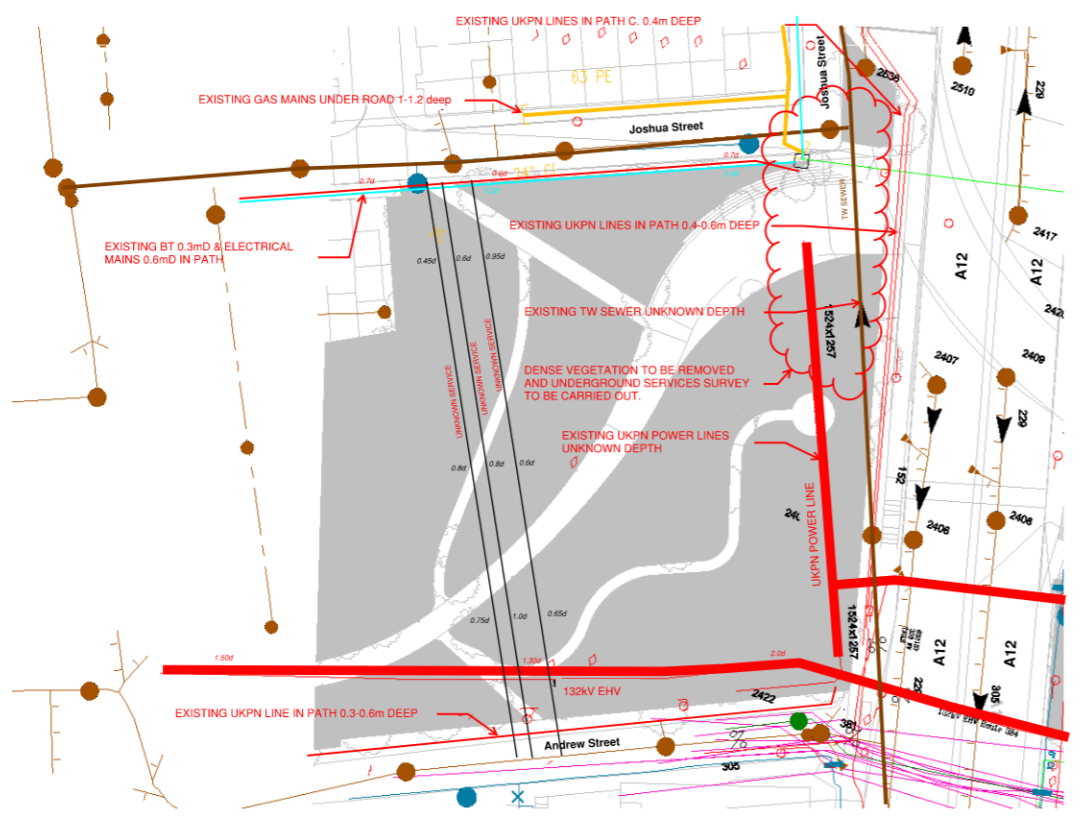
# Underpass and Slip Road Technical Note, Meinhardt

### 3 Existing Services

Utility searches for this area indicate a 132kV EHV route through the south of Jolly's Green. It is expected this will remain in this location, but access could be required (excavation of ground) in the event of a failure or replacement.

Utility maps indicate a capped gas main in the top right corner of the green, although underground CAT scan service confirms location to be within Joshua Street and no capped branch.

Around the northern edge of Jolly's green, with the path there are BT services at only 0.2-0.3m depth and electrical services at 0.6m depth. These can be diverted or buried deeper into the ground if there are any clashes with the proposed landscaping.



**Figure 3-1: Existing Utility Services around and in Jolly's Green and A12 Underpass (based on asset maps and catscan survey)**

Utility Maps indicate UKPN power lines in the ground running from the path in Andrew Street along the eastern side of the green up to Joshua Street. These services are running under dense vegetation (see Figure 3-2-2) where catscan equipment is not able to survey and establish exact location and depth. Once the depth and final location is understood, the service can be diverted above or below.

Also under the dense vegetation utility maps indicate a Thames water sewer.



**Figure 3-2: utilities under Dense Vegetation**

### 4 Existing Structure

Review of TFL Highways structural records have indicated the walls of the underpass structure are the responsibility of TFL and the Abbot Road carriageway is maintained by the London Borough of Tower Hamlets. The retaining structure comprises of a U-section reinforced concrete sections. The U-sections have polysulphide sealant between each with a maximum retained height of approximately 7.0m. A 0.5m high steel parapet runs along the top of each wall. It is assumed the U sections are of prefabricated construction with limited or no load sharing capacity between panels.

The bridge deck comprises of reinforced concrete box sections, 0.3m thick. Between each box section is a transverse expansion joint. The minimum headroom clearance within the underpass is 5.2m. The clear width in the subway between abutments is 11.0m. The bridge abutments are curved. It is assumed the concrete box sections are of prefabricated construction. Views of the bridge deck soffit look as if the deck is formed with insitu concrete therefore this is to be investigated further.

Figure 4-1 illustrates the interpreted underpass and bridge deck structure.

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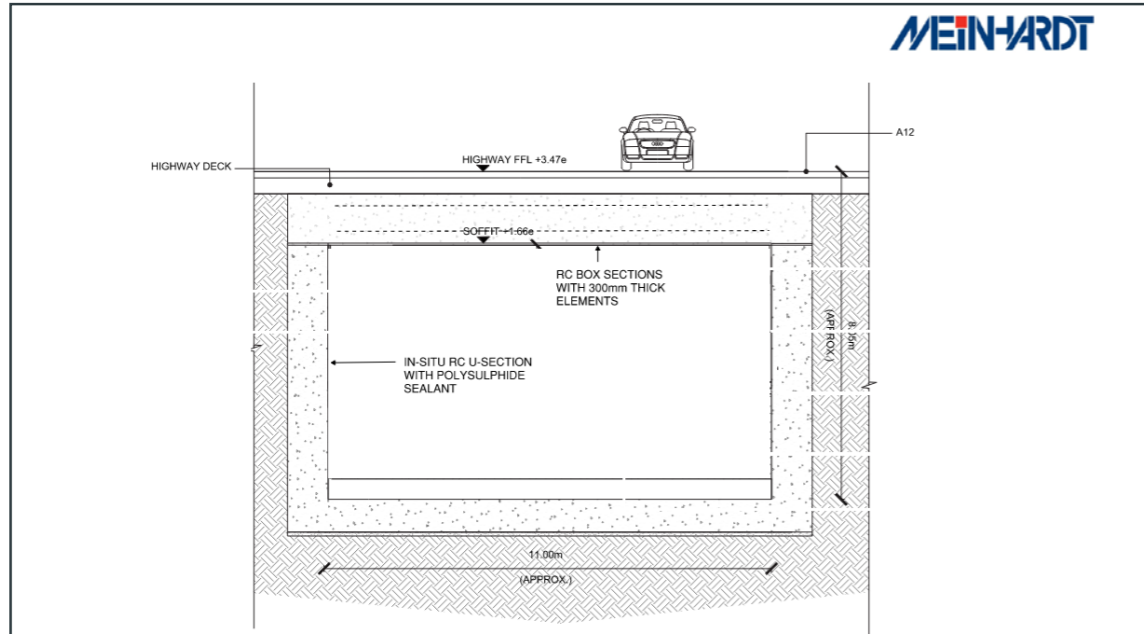


Figure 4-1: Sketch showing interpreted existing underpass and bridge deck structure

### 5 Development Proposals

The Aberfeldy masterplan aims to connect the site with its surroundings and to improve the pedestrian and cycle connections. A new cycling route along Abbott Road connecting to Crisp Street Market has been identified in the Tower Hamlets Cycling Strategy. Jolly's Green is presented as an opportunity to connect the site to its surroundings, via the existing underpass, connecting green spaces.

Please refer to Figure 5-1 below. It is proposed to relocate the A12 slip road serving Southbound traffic approximately 50m to the North of its current location. The current underpass is proposed to become accessible only for cyclists and pedestrians and the existing approach to underpass converted into a green space named Highland Place. An opening is proposed to the retaining wall of the underpass to allow access to Jolly's Green as well as removal of a portion of the pedestrianised roof slab to the entrance of the underpass. A pedestrian walkway and new bridge will be installed over the opening.



Figure 5-1: Proposed development to Jolly's Green and A12 Underpass

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## 6 Impact of Development to A12

### 6.1 Impact to Utilities

Generally there are minimal services around the centre of the of Jolly's green allowing the area to be excavated if required to form new green and paths.

Where a new opening is required to connect the existing underpass to the new Jolly's Green path (see Figure 5-1), vegetation will require removal to allow underground survey of the drainage and electrical services running here (see Figure 3-1 & Figure 3-2). The likelihood is, these are circa 0.6 to 1m depth into the ground and will require raising out and over the new opening formed into the underpass for the Jolly's Green path. A bridge will be formed for the electrical services to be diverted over the opening. The Thames Water sewer is not assumed to be a constraint, due to the depth indicated on asset maps, however the appropriate approvals will be gained from Thames Water for any works in the vicinity of the sewer.

There is a sewer noted under the existing dense vegetation requiring further survey to establish the most appropriate diversion or protection.

### 6.2 Structural Impact

To accommodate the opening to the RC wall and removing the portion of pedestrianized roof slab, the remaining structure adjacent the edge of the highway deck will need to be strengthened and a structure for the walkway and bridge constructed. Structural piers may be required adjacent the existing u-shaped retaining walls as well as strengthening of the existing footing. The structural proposals will ensure that the footing to existing u-shaped retaining walls are not undermined. Refer to Figure 6-1 for conceptual sketch of proposals.

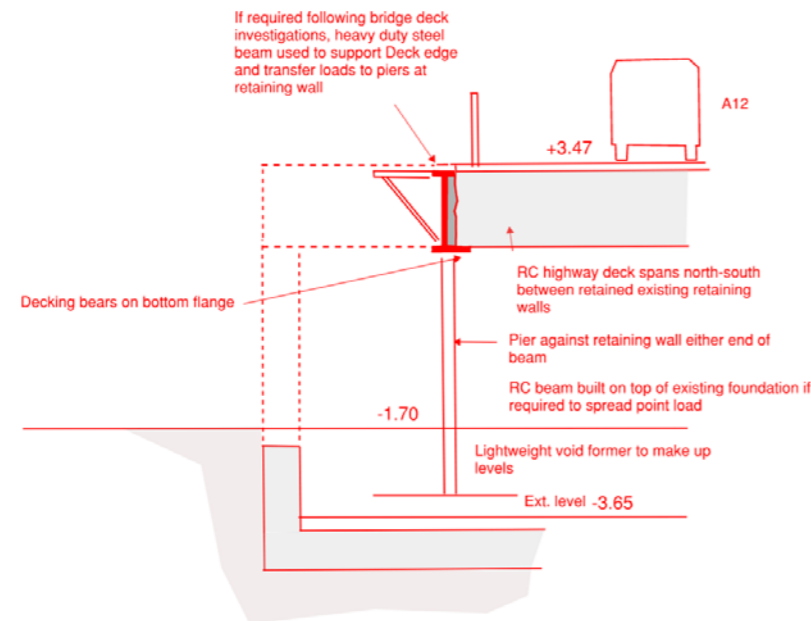


Figure 6-1: Conceptual structural proposal

No structural issues are envisaged with the addition of cladding and finishes loads to the underside of deck and walls. Fixings back to existing structure will be positioned to avoid internal reinforcement.



To construct the new path from Jolly's Green to the underpass, new retaining walls will be required either side of the path. The retaining walls would not take any vertical load and would be separated via a movement joint from the existing highway and underpass structure.

A new two storey workshop structure is proposed over the existing approach to underpass. The structure is proposed to bridge over entrance using steel beams with shallow foundations placed to not minimize surcharge on the existing underpass retaining walls.

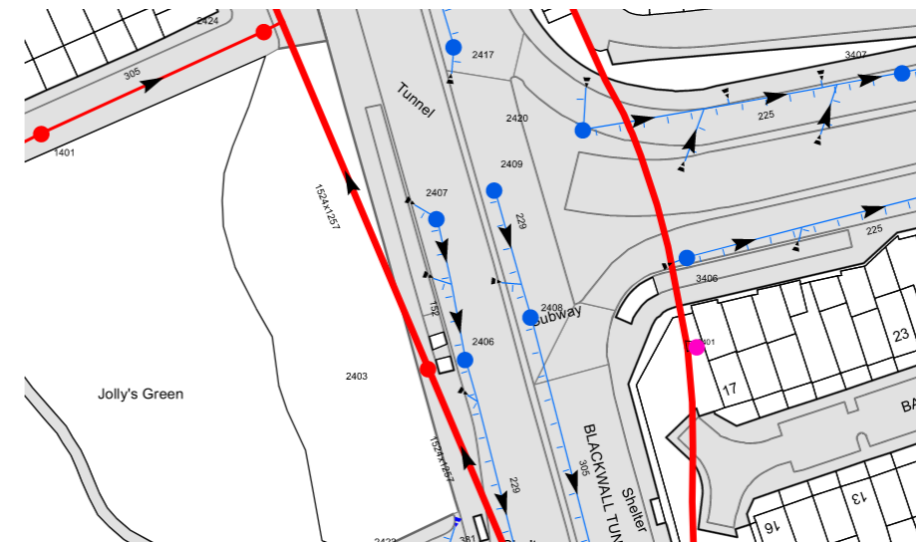
There is no intention to disrupt the function of the A12 in the permanent condition. In the temporary condition it is envisaged that any propping or temporary works required will be located below the highway deck. Temporary works plans will be developed by the contractor at a later stage.



Figure 6-2: Structural proposals

### 6.3 Impact to Drainage

It can be seen from existing information on the underpass section of the B125 that there are drainage features within the tunnel to actively drain the area. Thames Water asset records confirm this and show a drainage network in the existing underpass tunnel to be owned and maintained by the Tower Hamlets Highway Authority.



It is proposed to replace and re-lay the gullies within the tunnel area to suit the proposed levels and

# Underpass and Slip Road Technical Note, Meinhardt



levels for the scheme shall facilitate a gravity connection from the gullies into the existing drainage infrastructure.

It is not anticipated that the flow rate generated by the underpass will be increased, however, Tower Hamlets will be consulted during later design stages to ensure there is sufficient capacity in the network to accept these flows.

There is anecdotal evidence that the existing drainage network serving the underpass floods during high intensity or prolonged rainfall events. This issue may be caused by an inadequate maintenance regime or simply be due to the system not being designed in accordance with current drainage design requirements which takes into account climate change. A hydraulic assessment of the underpass drainage will be undertaken to determine if this flooding issue is either a capacity issue or due to inadequate maintenance. Irrespective of this, an operations and maintenance manual will be provided for the proposal which will aid in alleviating this issue by designating an effective maintenance regime to allow the network to perform as intended. If following the hydraulic assessment, which will be carried out during a later design phase, it is deemed some upgrades works are needed to the drainage network, then this will be included within the proposal.

No foul flows are proposed to be generated by the underpass development, as such no foul drainage will be proposed.

### 6.4 Impact to Waterproofing

The current underpass and highway structure looks to be open to the elements. No drainage or waterproofing system can be seen within the underpass structure.

Cladding and lighting are proposed within the underpass structure. In case of water leaks from the highway structure above, a drainage layer will be considered between the structure and cladding. Figure 6-3 illustrates a conceptual sketch of this drainage layer.

Existing waterproofing systems to the highway deck are not proposed to be altered.

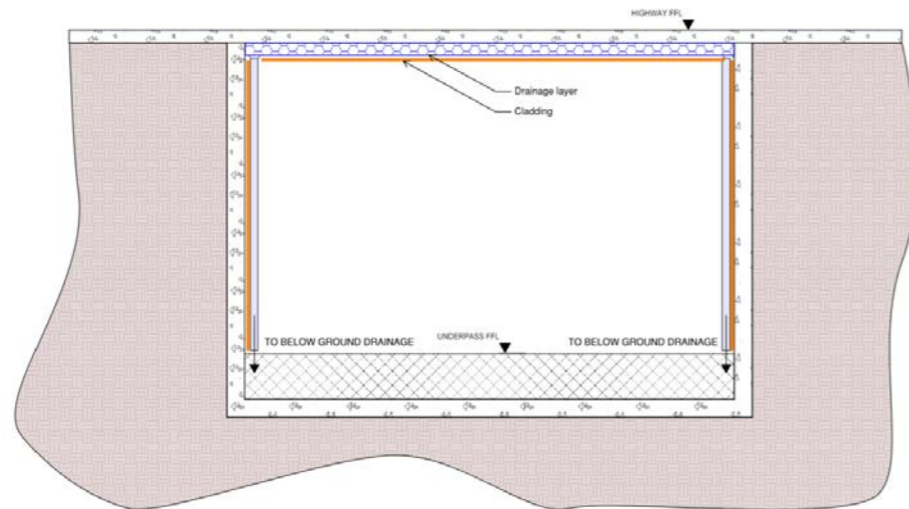


Figure 6-3: Conceptual sketch of drainage layer to highway soffit



## 7 Conclusions

To conclude, the proposed changes to the underpass are key to connect the site to its surroundings, improving the pedestrian and cycle connections and connecting green spaces. New cycle routes tie in with the proposed Tower Hamlets Cycling Strategy.

Structural works are not anticipated to affect the use of the A12 in the permanent condition. Changes to the drainage regime in the area will be minimal and can be facilitated by the existing drainage infrastructure in the immediate area.

Where a new opening is required to connect the existing underpass to the new Jolly's Green path vegetation will require removal to allow underground survey of the electrical services running here. The existing services will be diverted over the new opening formed into the underpass allowing connection to the Jolly's Green path.

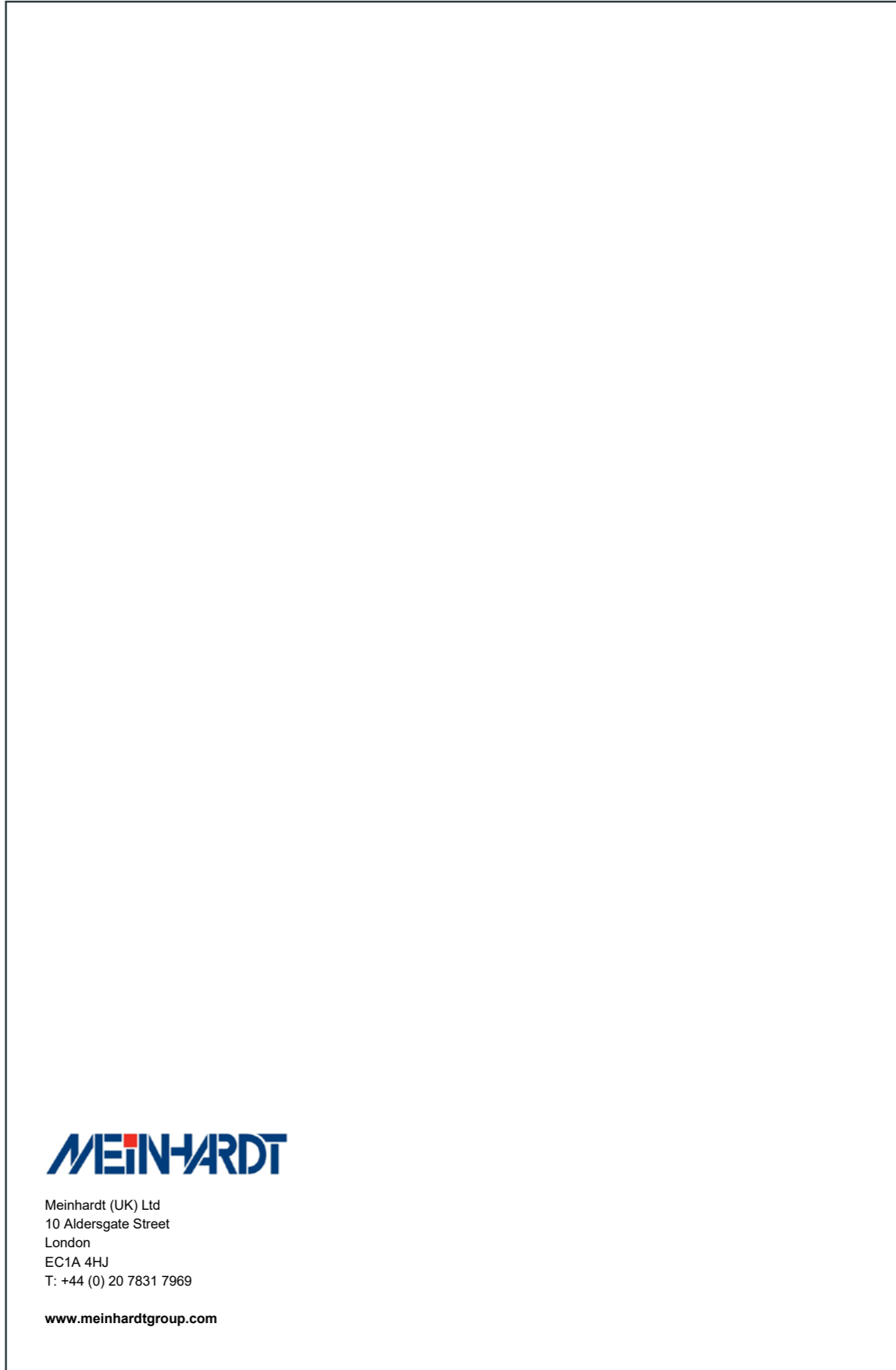
## 8 Next Steps

Detailed Proposals will be developed in conjunction with LBTH and TFL through the AIP process. The proposed works are included within Phase B of the masterplan, aiming for construction in 2025.

Structural proposals will be developed further using record drawings or investigations where necessary. Where utilities are assumed further surveys will be carried out to establish final diversion details.

The following outline programme demonstrates the design and delivery of the underpass works in the context of the wider masterplan.

	Item	Start Date	End Date	Time required for approvals
New A12 junction	Modelling completed / planning permission		Apr-22	
	Detailed design and technical approval process	32 months available		Allow 18 months
	TMAN traffic management works approvals, appointment of contractor			Allow 12 months
	Utilities works, construction and commissioning	Jan-25	Jun-26	
	New A12 junction open	Jun-26		
Underpass closure and re-purposing	Modelling completed / planning permission		Apr-22	
	Detailed design and technical approval process	50 months available		Allow 24 months
	TMAN traffic management works approvals, appointment of contractor			Allow 12 months
	Underpass closed		Jun-26	
	Underpass re-purposing works (utilities, construction, landscape, commissioning)	Jun-26	Jun-27	
	Phase B opening date		Dec-27	



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**B**

**APPENDIX**