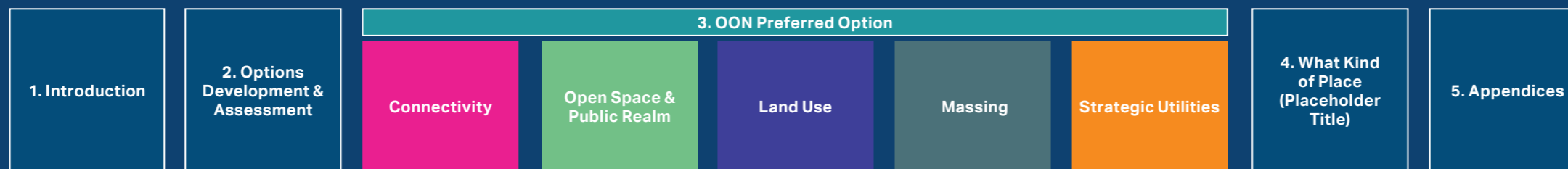


Stage 2 Report: Document Structure





3

■ | **Placemaking
Principles & Key
Components:
Preferred Option**

DRAFT

3.1 Summary of Preferred Option

3.1.1 Summary of Preferred Option

This chapter provides a summary description of the Preferred Option for Old Oak North. The remaining part of this chapter sets out a fuller articulation of the Preferred Option through a set of Development Principles and Supporting Information.

The Preferred Option for Old Oak North is described in summary as follows:

- The proposed Hythe Road Viaduct (2-track) and station are provided enhancing connectivity and legibility through the site, and ensure high quality public transport connections between Old Oak North and the wider city.
- Ground levels under the viaduct are proposed at 30.0 AOD for Old Oak Street to allow buses to pass under and 29.0 AOD for the eastern connection - School Lane. Streets and spaces have to rise from this level to meet Park Road in the north (at levels between 34.0 and 37.0 AOD). Proposed ground levels around the viaduct will require further understanding of the viaduct heights from future reiteration of TfL GRIP 3 process.
- A direct, legible and accessible north-south 'Parkway' pedestrian/cycle connection between Harlesden Bridge and Old Oak Bridge is incorporated as a primary development principle. This has been developed to overcome the challenges of ground levels and rail/canal infrastructure within the site and ensures a direct connection between HS2 and Willesden Junction stations that does not exceed a gradient of 1:20 (5%) at any point.
- Park Road provides a new city street that connects through the site from east to west. The Park Road alignment has been developed to allow for no more than a 1:20 (5%) gradient on any point along this key street. Park Road has the potential to form a spine through the development, connecting the Old Oak North development to surrounding communities and future developments.
- Vehicular access from the east is provided from Scrubs Lane via Laundry Bridge. Access from the west is via the Atlas Junction, the Oaklands South development and Park Bridge. The proposal incorporates Old Oak Bridge which provides access to Old Oak Common Station and Wormwood Scrubs via the Green Bridge.
- A secondary access is provided via the upgraded Hythe Road Underpass from Scrubs Lane.

- New infrastructure includes:
 - Park Bridge - across the canal on the alignment of Park Road.
 - Harlesden Bridge across railways, connecting Willesden Junction to Old Oak North.
 - Old Oak Bridge - across railways and the canal connecting Old Oak Common station to Old Oak North.
 - Laundry Bridge - connecting Scrubs Lane to Old Oak North.
 - Canal Bridges - two pedestrian and cycle bridges connecting Birchwood Nature Reserve to Old Oak North and providing for future connections.
 - Green Bridge - pedestrian and cycle bridge providing connection to Wormwood Scrubs.

See Section 3.3.2 for more information on Infrastructure Components.

- Three primary spaces are proposed including:
 - a multi-level park and urban space north of the viaduct (Old Oak North Local Park);
 - a canalside park (Grand Union Canal Local Park), and
 - a pocket park and yard (Rolls Royce Yard) around the retained Rolls Royce building.
- Hythe Road has been realigned to provide a direct, continuous route from east to west across the site and connect two key spaces - the Canal Park and Rolls Royce Yard
- The existing Haul Road/Powerday access road is retained along the eastern and northern edges of OON, with the present access from Scrubs Lane retained.
- A future access to the Old Oak Sidings site is provided from Park Road via an extension of Hythe Road through the West London Line embankment.

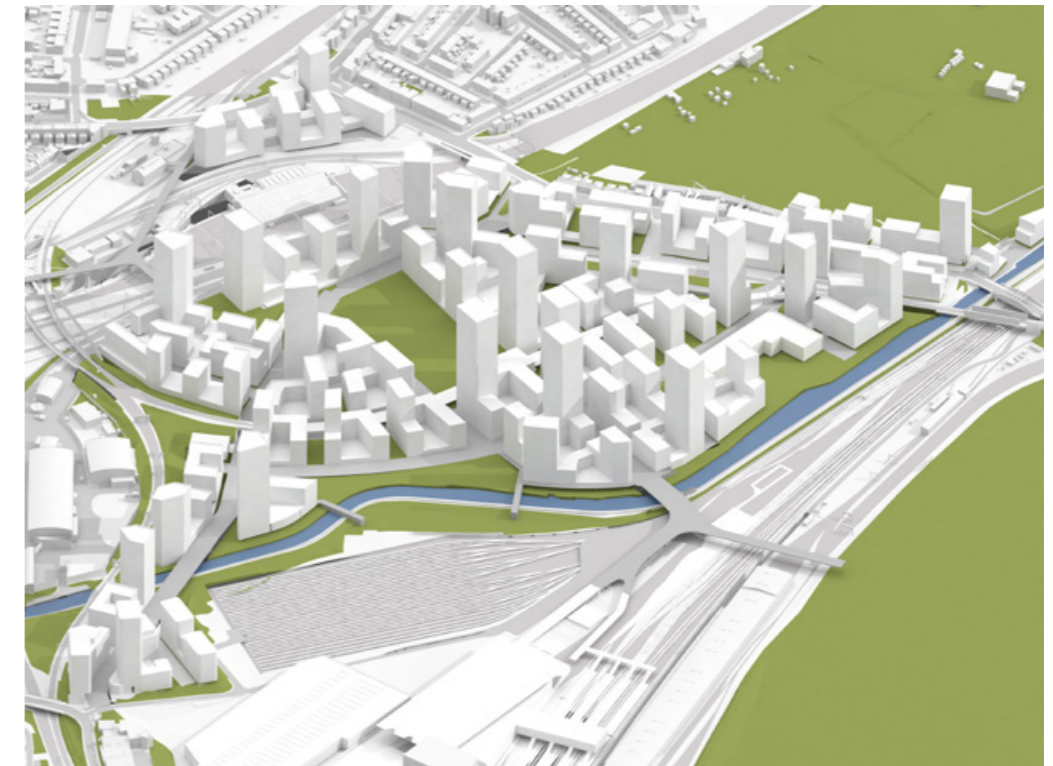


Figure 3-2 Rev 2 - Preferred Option (Option 6 - March Optimisation) - Massing and Density

	Preferred Option (m ²)
Residential	815'781
Units	7'461
Retail	11'774
F&B	9'483
Leisure*	14'749
Social Infrastructure	14'650
Hotel	9'976
B1a/B1b Employment	37'771
B1c Employment	11'824
TOTAL	926'008 m²

All figures GEA (DCS figures as per Stage 1; Stage 2 figures calculated from GIA - GIA:GEA assumed as 90%). Car parking and CHP areas excluded.

Figure 3-1 Preferred Option - March Iteration - Development Quantity- Old Oak North (GEA)



Figure 3-3 Preferred Option (Option 6 - March Optimisation) - Illustrative Framework Masterplan

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3.2 Structuring Principles

3.2.1 Strategic Connections and Key Places

Development at Old Oak North must deliver a well-connected piece of city and ensure strong connections between the new neighbourhood, its urban centre and surrounding communities such as Harlesden, North Acton, White City and Park Royal. Two key connections have been formed to perform this role and are described on these pages.

- **Park Road**, (see Figure 3-10) a new east-west route for all modes, will be a key street within Old Oak North, providing connection between Old Oak Common Lane and Scrubs Lane, significantly enhancing east-west permeability, enabling a high PTAL across OON, and ensuring there is a vehicular link from OON onwards to Harrow Road. This street will be delivered within the early phases of development.
- Park Road connects to key places within the masterplan. Harlesden Place provides pedestrian connection to Willesden Junction via the Harlesden Bridge and Park Road passes and provides views to both Oak Park and the Canal Park and canalside environment.
- In future, Park Road will provide access to potential development sites at the Crossrail Depot, the Old Oak Sidings and Channel Gate – reinforcing its role as the primary connecting street within the wider area.



Figure 3-4 - Glen Oaks Branch Library, NY

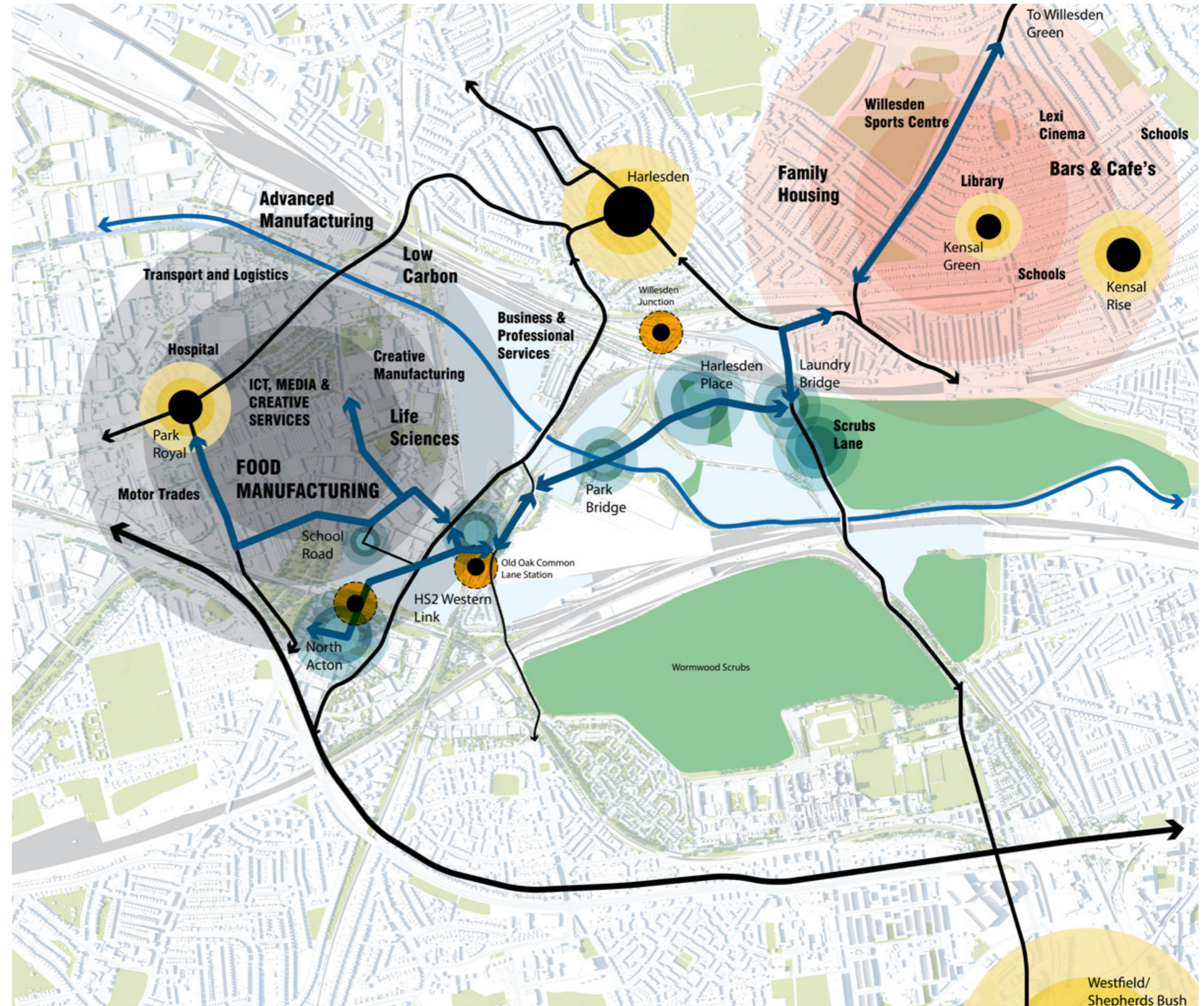


Figure 3-5 Key Strategic Connections: Park Road from East to West

Key Findings:

– More detailed understanding is required of the strategic connections into the Old Oak North site to ensure that the development is not 'ghetto-ised'. For example - Harlesden Bridge, Green Bridge and the HS2 Western Link to the Sheild site and North Acton.

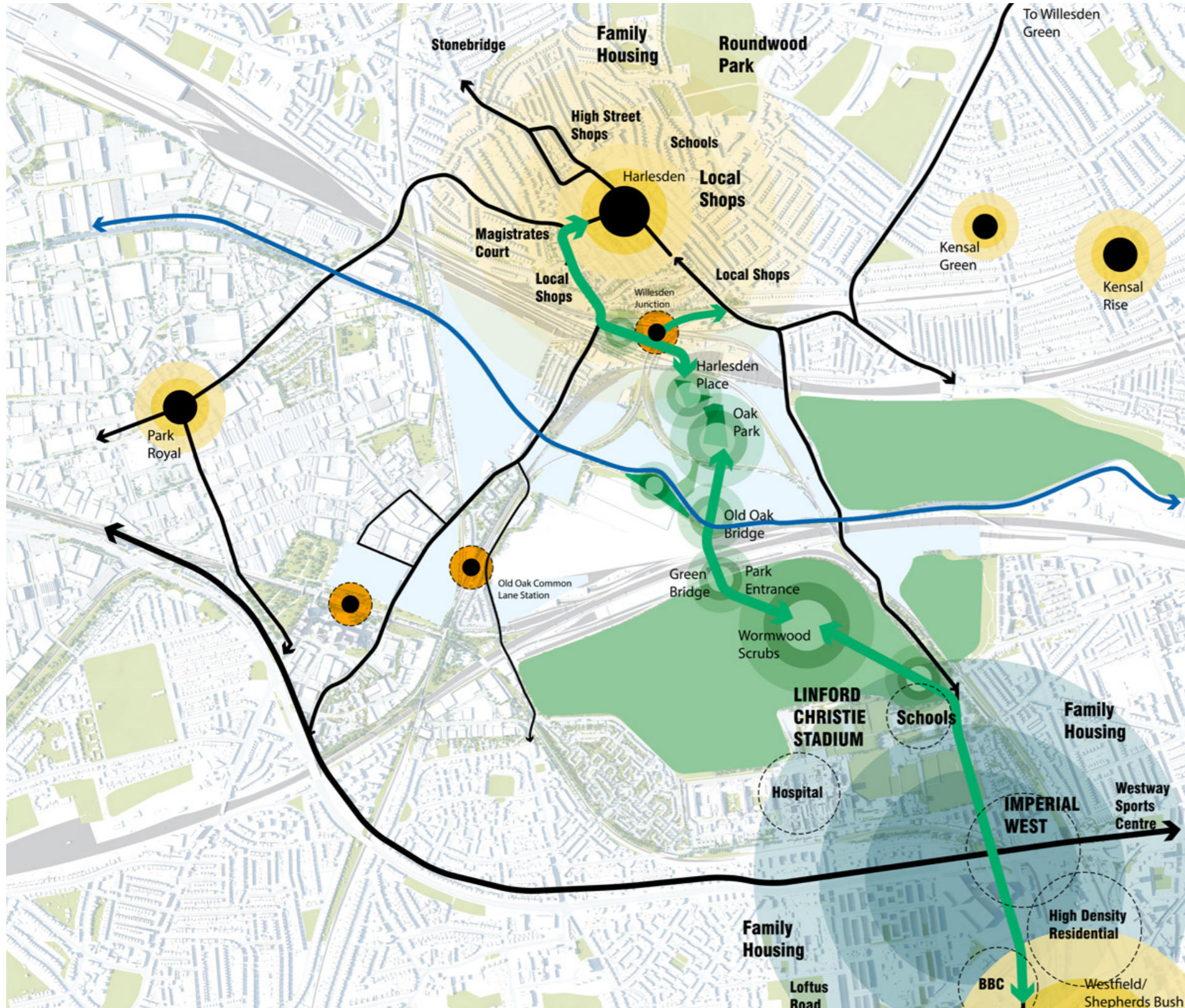


Figure 3-6 Key Strategic Connections - Old Oak Street and 'Parkway' from North to South

- **Old Oak Street and the 'Parkway'** (see Figure 3-25) is a key north-south connection running through the Old Oak North development. This route is in parts all-modes and in others a pedestrian and cycle only 'Parkway', which follow different alignments through Old Oak North. The Parkway runs directly through Oak Park and connects between Harlesden Bridge, through Harlesden Place, to Hythe Road station. Old Oak Street also connects from Harlesden Place to Hythe Road station, but runs to the west of Oak Park, where it then turns east to re-meet the Parkway where it aligns with Old Oak Bridge. At Old Oak Bridge the two separate again with Old Oak Street turning west to connect to the Old Oak Common HS2/Crossrail Station, and the Parkway spurs off over the Green Bridge to Wormwood Scrubs.
- The street and Parkway will serve to connect Harlesden and other northern communities to Wormwood Scrubs, and further to White City and Shepherds Bush. This also provides accessibility to the HS2 station.
- The street and Parkway connects key public places and green spaces along its length - Harlesden Place, Oak Park, Canal Park and Birchwood Nature Reserve, the Canal and Wormwood Scrubs.

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3.3 Connectivity and Movement Network

3.2.2 Movement Network

The primary streets and movement network within Old Oak North are shown in Figure 3-9 and described on this page.

Old Oak North should be a highly connected community, with residents and workers provided with choice for how they travel. The Movement Network will create a highly connected network for pedestrians and cyclists, which encourages healthy modes of transport. Part of this network is the incorporation of the strategic connections of Park Road and Old Oak Street/Parkway as described on previous pages - these will form the primary streets within Old Oak North.

This primary street network has been carefully investigated to ensure that these connections can pass over and under existing railway infrastructure and provide access to the development site at an accessible gradient of no more than 1:20. This close examination has set critical vertical and horizontal alignments.

The three Primary Streets within the Old Oak North development consist of:

- Park Road (connecting Old Oak Common Lane with Scrubs Lane).
- Old Oak Street and the Parkway (connecting between Harlesden Place/ Willesden Junction station and Old Oak Bridge/ OOC rail station).
- Hythe Road (connecting Scrubs Lane with Old Oak Street and Park Road).

Park Road will be a key all-modes 'city-street' prioritising pedestrian and cycle movement. This should be delivered within the early phases of development to ensure enhanced east-west connectivity and permeability and PTALs. The street will also be critical for servicing development plots along its length, which have been identified for early delivery and are key to OPDC achieving its homes and jobs targets during the early years of the plan period. Park Road should be designed for all modes, with physical design features incorporated to prevent the through movement of general vehicular traffic between Scrubs Lane and Old Oak Common Lane.

Old Oak Street will be an all-modes street prioritising pedestrian and cycle movement and bus movement. General traffic will not be able to cross Old Oak Bridge (bus, taxi, cycle and pedestrian only).

Hythe Road provides an east-west connection to the south of the viaduct. The western section, adjacent to the Grand Union Canal Local Park should be a shared space, prioritising pedestrian and cycle movement and connections from development frontage to the park. Future connections to the Old Oak Sidings site can be provided by extending this alignment through the railway embankment.

Beyond the primary streets there is a network of smaller streets and railway 'backs' providing access to development and ensuring permeability throughout the development. These Local Streets will provide local access to development plots and will be more pedestrian orientated with reduced traffic levels and speeds.

Streets throughout the network will integrate demands such as high levels of pedestrian movement, cyclists, trees and planting, utility requirements, SuDS, on-street parking, doorstep play, street activity, etc.

Physical design features will be incorporated to prevent the through movement of general vehicular traffic between Scrubs Lane and Old Oak Common Lane. These features could include bus-gates or removable bollards in order to maintain access for buses, emergency vehicles, pedestrians and cyclists.

The Haul Road to Old Oak Sidings will be maintained to ensure that Powerday can continue to operate effectively. Development servicing may be required to plots along the Haul Road to ensure active frontage to and reduce the impact of service access on Park Road, Harlesden Place and Oak Park frontages. Development frontage (possible B1c uses) has been provided facing the Haul Road and so it must become part of the network of secondary streets and lanes and form good street frontage and comfort for pedestrians and cyclists. Consideration will need to be given to the nature and character of the Haul Road once Old Oak sidings is no longer operational and the site becomes a new development area.

Providing a high quality walking and cycling network through the Old Oak North development, which connects to wider network, will promote more sustainable modes of transport as well as health and well-being of residents. Key pedestrian and cycle routes include:

- The Parkway - a direct, accessible and legible north-south pedestrian and cycle connection between Willesden Junction Station to Old Oak Bridge, and continuing into Wormwood Scrubs via the Green Bridge.
- The canalside, a key asset of the site, will be opened up for increased pedestrian and cycle activity, and will include a new northern towpath within Old Oak North. Early Activation projects at Mary Seacole Gardens and Old Oak Common Lane Access (Depot site) begin to open up the northern side of the canal and anticipate the new northern towpath.

Future connections are described to ensure that the primary and secondary street network can be extended in the future, to integrate future development areas into the Old Oak North neighbourhood.

Assumptions

- The development will be designed throughout with features appropriate for a speed limit of 20mph.
- Maximum gradients on all streets and pedestrian and cycle routes should not exceed 1:20/5%.
- Streets will reflect the Mayor's Healthy Streets agenda with emphasis on the quality of the public realm.
- All primary streets will be designed to adoptable standards for adoption by the Local Highway Authority.

Buffalo Niagara University, USA



King's Cross Canalside, London



Viaduct des Arts, Paris



Figure 3-7 Pedestrian and Cycle Movement Precedents



Figure 3-8 Primary Movement Network

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3.3.1 Connective Infrastructure

The Infrastructure Components required to enable connections across the Old Oak North area for the Preferred Option are described on this page and in Figure 3-7.

The Preferred Option requires the following infrastructure elements:

- **Park Bridge** – providing access to the Old Oak North development across the canal to the west of the site. The road level will need to rise to 37m AOD to pass over the Crossrail depot extension and 36m AOD to pass over the canal. Will need to carry all modes of transport.
- **Park Road Underpass** – provides a continuation of Park Road from Park Bridge into the northern part of the Old Oak North site. The road level has to drop to 28.6m AOD to provide a clearance of 6.0m under the West London Line. Will need to carry all modes of transport.
- **Hythe Road Underpass (upgraded)** – provides access from Scrubs Lane to the south-eastern part of the development. Adjustments need to be made to the existing vertical alignment to allow double decker buses to pass under the existing railway bridges (to provide a minimum of 4.7m clearance). Will need to carry all modes of transport. Pedestrian and cycle access through the underpass requires further study to ensure a good quality connection can be made at this threshold to the development.
- **Harlesden Bridge** – providing pedestrian and cycle access only from Willesden Junction station to Harlesden Place. Further detailed study is required for this infrastructure element.
- **Laundry Bridge** – providing access from Scrubs Lane into the north-eastern part of the development, and forms the eastern end of Park Road. The road level will need to rise to 42m AOD to provide assumed clearances for the railway line. The connection between the bridge and Scrubs Lane requires further study to ensure that accessible gradients can be achieved for pedestrian and cyclists. The bridge will need to carry all modes of transport.

- **Old Oak Bridge** – providing access from Old Oak North across the canal to Old Oak South and Old Oak Common station. Road levels will need to rise to 36m AOD to cross the canal and 37m AOD to pass over the Crossrail depot gantry. This bridge will need to carry all modes of transport except private vehicles.
- **Green Bridge** – providing pedestrian and cycle connection from Old Oak Bridge to Wormwood Scrubs. Further detailed study is required for location and details of this infrastructure element.
- **Canal Bridges (1 and 2)** – providing pedestrian and cycle connection across the canal to ensure that Birchwood Nature Reserve can be fully integrated into the Grand Union Canal Local Park. Canal Bridge 2 also provides for a future connection to continue through Old Oak South to Old Oak Common station.
- **Hythe Road Viaduct and station** – the viaduct provides the potential for a new Overground station at the centre of the Old Oak North development and allows for strong north-south connections under the structure. The viaduct within the Preferred Option is a 2-track viaduct (dimensions, location of this viaduct have been assumed). Clearances under the viaduct currently allows for 5.5m headroom on Old Oak Street and 5.3m on School Lane. Proposed ground levels around the viaduct will require further understanding of the viaduct heights from future reiteration of TfL GRIP 3 process.
- In addition, existing railway embankments on West London Line (WLL) and North London Line (NLL) will require retaining structures to maximise development opportunity on EMR and Cargiant West site. Network Rail constraints and structural details will require further study.

The infrastructure components illustrated within this drawing have been developed by the masterplanning team based on non-CAD based information. All proposed levels are masterplanning assumptions based on the last iteration of Road Contours (vertical and horizontal alignments of highways) developed by IA Team in February 2018.

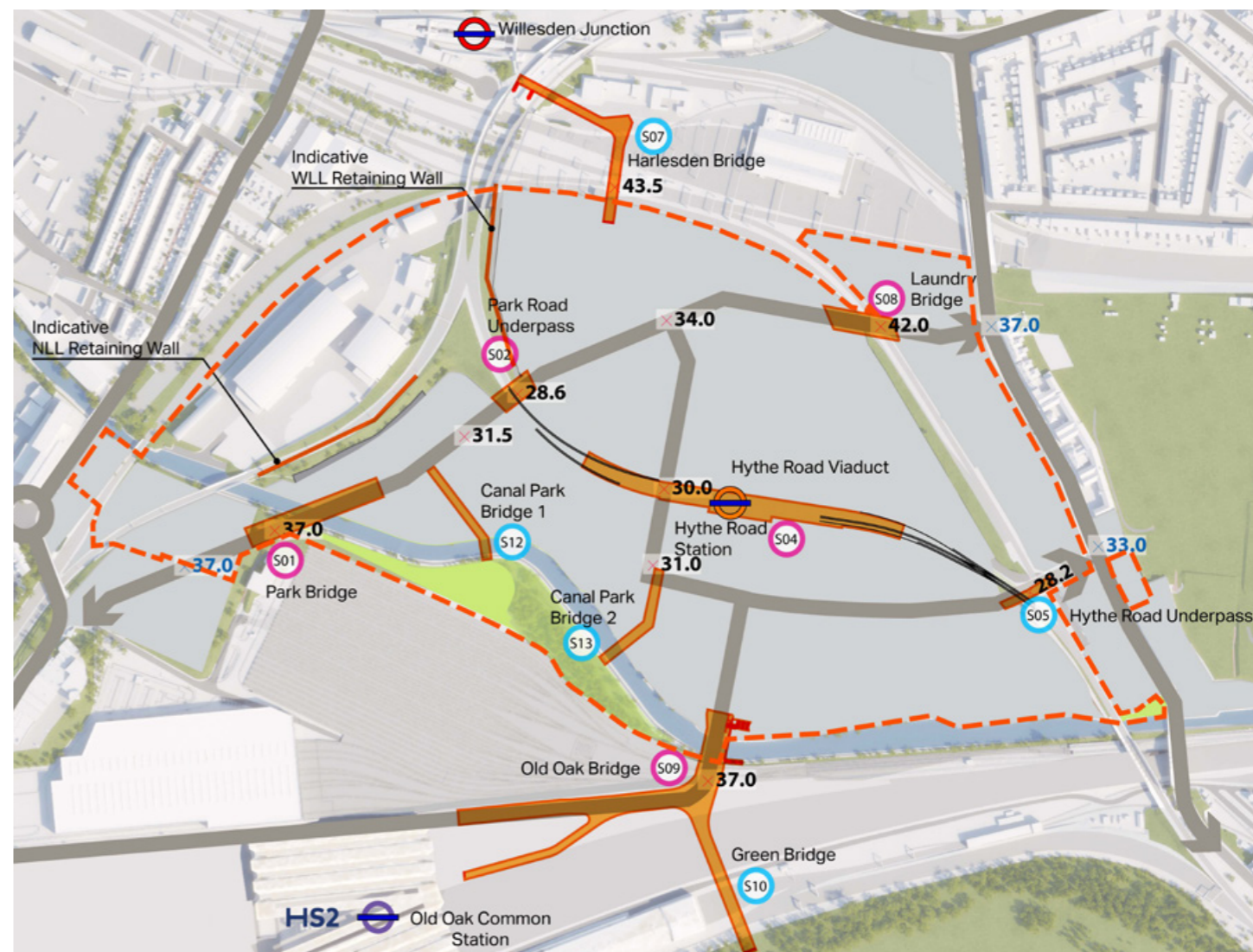


Figure 3-9 Preferred Option (Option 6 - March Optimisation) - Infrastructure Components

Preferred Option - Infrastructure

- SO1 - Park Bridge
- SO2 - Park Road Underpass
- SO4 - Hythe Road Station and Viaduct
- SO5 - Hythe Road Underpass (upgraded)
- SO7 - Harlesden Bridge
- SO8 - Laundry Bridge
- SO9 - Old Oak Bridge
- SO10 - Green Bridge (to Wormwood Scrubs)
- SO12 - Canal Bridge 1
- SO13 - Canal Bridge 2

Key Findings:

- Key infrastructure components require further study, including: Harlesden Bridge, Laundry Bridge the Canal Bridges and the Green Bridge.
- Hythe Road Underpass requires further study to ensure that pedestrian and cycle connections into the site can be improved.
- The retaining structures along the embankment will require further study as well as further stakeholder engagement.
- The GRIP 3 process for the 2-track viaduct will need to be carried out.

3.3.2 Levels and Topography

The Preferred Option infrastructure components provide fixes in terms of vertical alignment and optimal locations. These drive the horizontal alignment and gradient of streets and connections across the Old Oak North development.

Park Road rises and falls across the development – with high points at Laundry Bridge (42.0m AOD) and Park Bridge (37.0m AOD) and the lowest point at Park Road Underpass at 28.6m AOD. The gradients are generally around and no steeper than 1:20 (5%).

Hythe Road has a low point at the re-profiled Hythe Road Underpass (at 28.2m AOD) rising to meet existing ground levels around 31.0m AOD. Once through the Underpass, Hythe Road is relatively flat across the site.

The key north-south pedestrian ‘Parkway’ connection rises and falls across the site with high points at Harlesden Place (at 41.0m AOD) at Old Oak Bridge (at 37.0m AOD) and the lowest point under the Hythe Road Viaduct at 30.0m AOD. The gradients are generally around and no steeper than 1:20 (5%).

Oak Park to the north of the development area needs to traverse levels between 34.0m and 39.0m AOD at Park Road and 30.0m AOD at the viaduct.

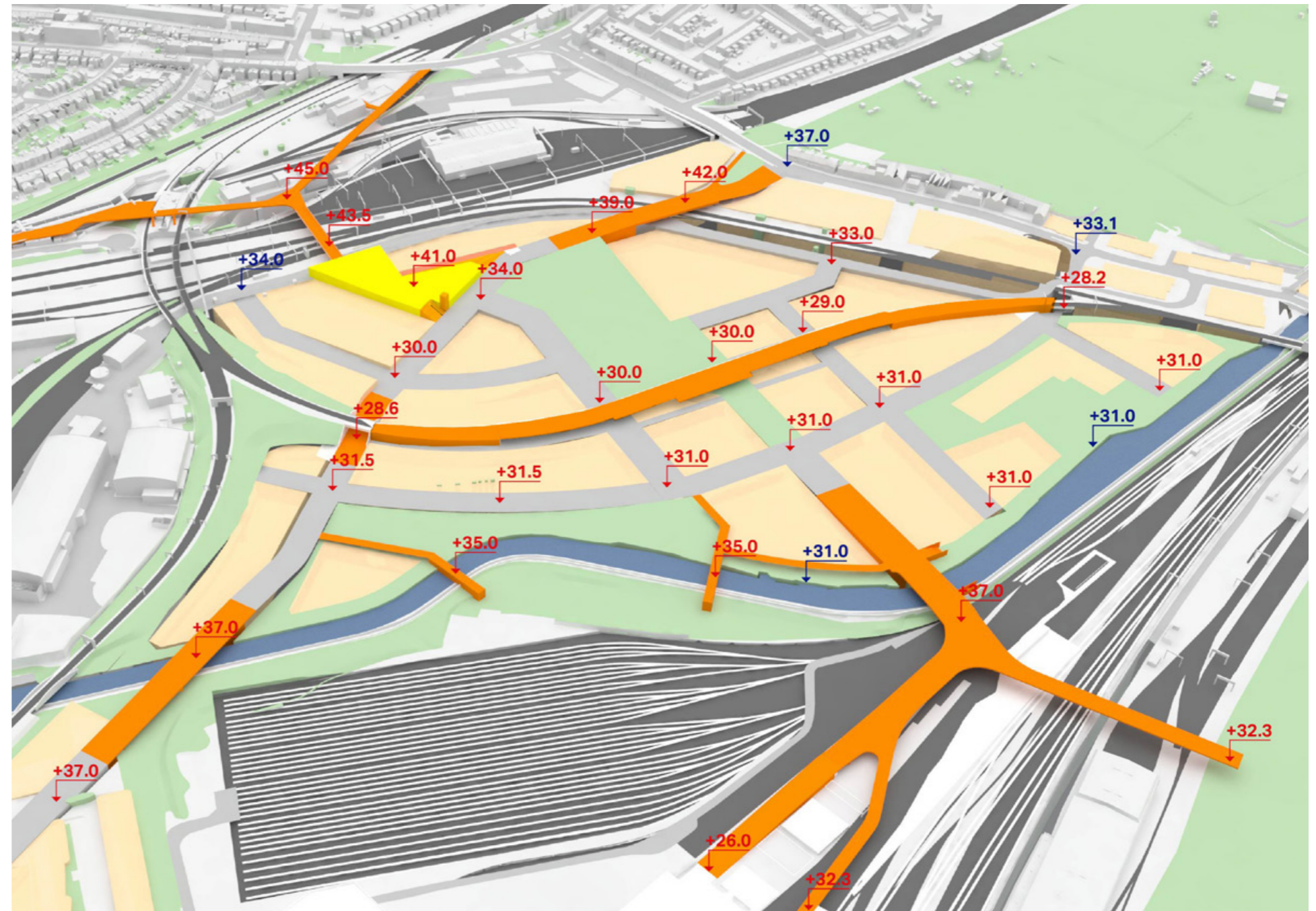


Figure 3-10 Preferred Option (Option 6 - March Optimisation) - Topography and Levels

The infrastructure components illustrated within this drawing have been developed by the masterplanning team based on non-CAD based information. All proposed levels are masterplanning assumptions based on the last iteration of Road Contours (vertical and horizontal alignments of highways) developed by IA Team in February 2018.

+xx
↓ Sample ground level existing spot height
+xx
↓ Proposed road level

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3.3.3 Future Connections

The masterplan for Old Oak North must ensure that future development is not precluded and that the neighbourhood can in the future be seamlessly extended.

Selected key routes have been studied to provide information for TfL Strategic modelling (Issued end of March 2018) to ensure that they can be extended to future sites. These include:

- The pedestrian route from Oak Park, running south through the Canal Park, across the Canal and Birchwood Nature Reserve. This route can provide a second, more direct 'park route' between Old Oak North and Old Oak Common Station through the Crossrail Depot site which may become a major development site in the future.
- A future extension of Hythe Road from Park Road will provide vehicular/emergency access beneath the Overground railway line to the Old Oak Sidings site which may become a development site in the future.

Other key routes will need to be given further consideration:

- Harlesden Bridge should provide for pedestrian and cycle connections to Harrow Road (in the east) and Station Road (in the west) as development comes forward at Scrubs Lane North and around Willesden Junction station.
- HS2 Western Link (over the proposed Old Oak Common Lane Station) and how high quality connection can be made between Old Oak common station and North Acton.
- Consideration should be given to extending the northern canal towpath westwards into the Channel Gate development sites to provide additional connection between these sites and the urban centre and canalside environment at Old Oak North.

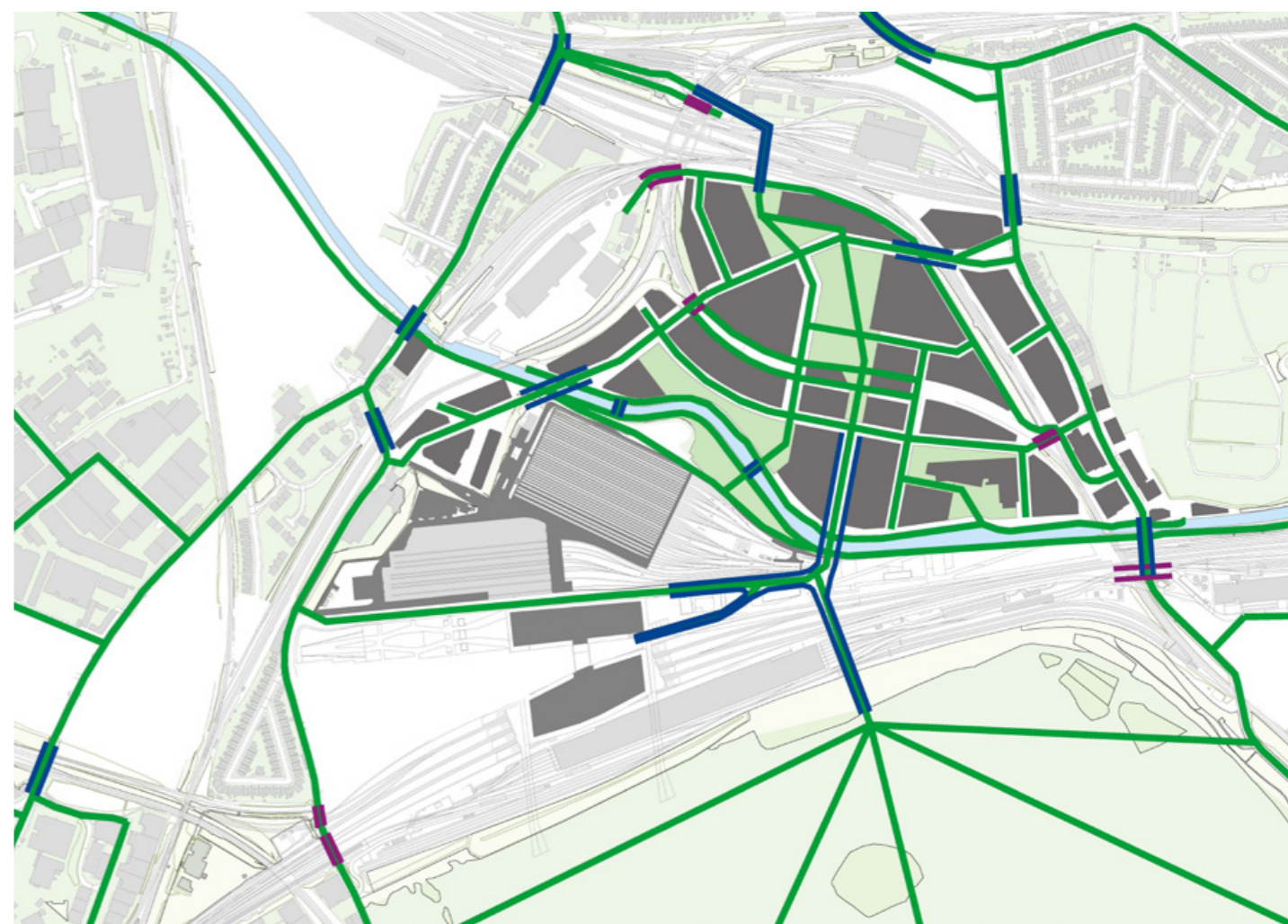


Figure 3-11 Old Oak North - Proposed Movement Network (in 2026)

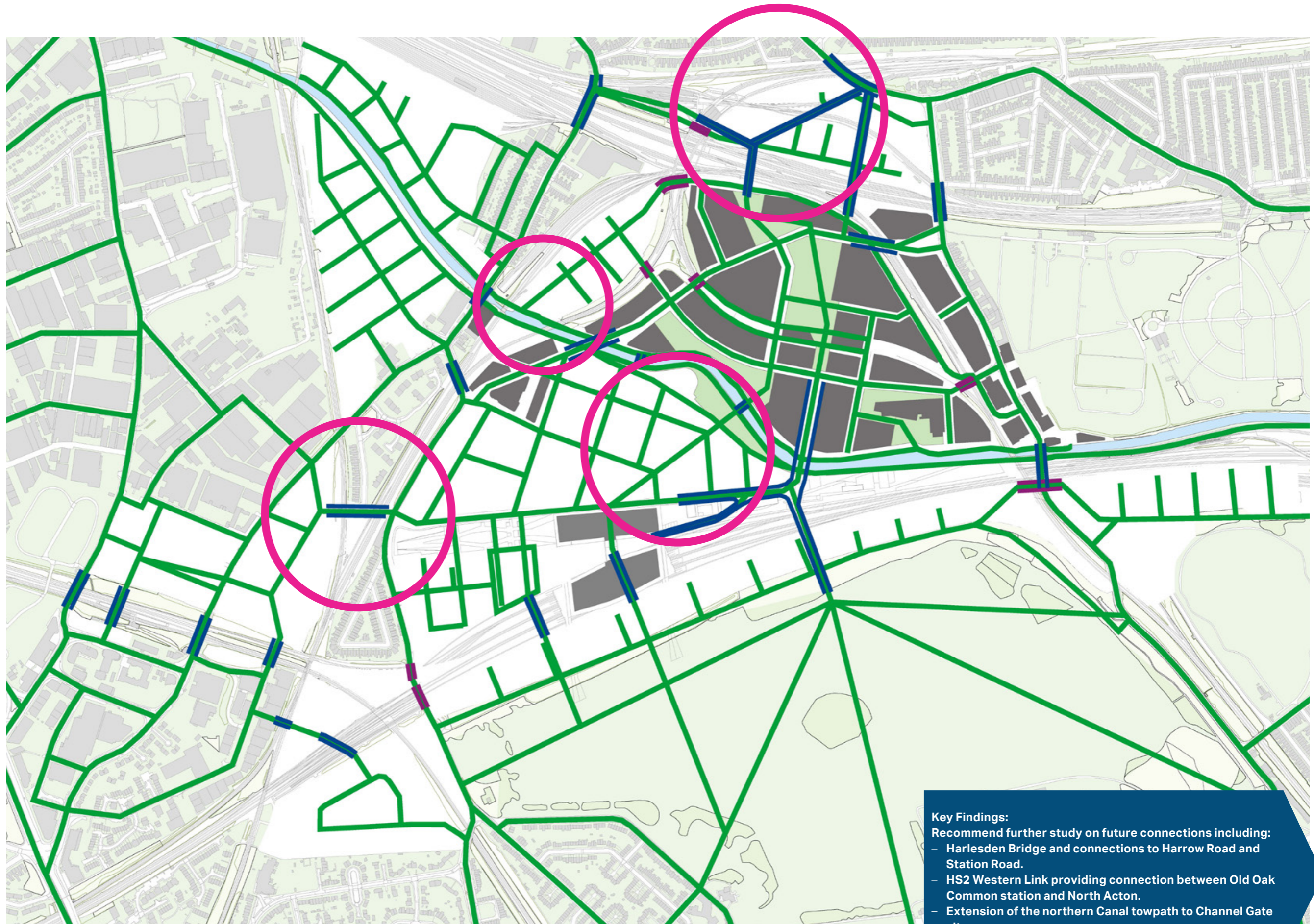


Figure 3-12 Old Oak North - Illustrative Movement Network (in 2042)

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3.3.4 Strategic Rail Connections

To understand the transport strategy for the site, it is important to recognise the strategic connections, particularly by public transport, available to future residents and workers in Old Oak Common.

There will be a wide variety of strategic rail connections available for people who work or live in Old Oak from the local stations:

Old Oak Common Station

- From 2026 HS2 services from Old Oak Common Station will provide direct high speed connections to Euston and to Birmingham and the north of England.
- From 2026 The Elizabeth Line from Old Oak Common Station will provide fast connections to Heathrow, to central London and on to Shenfield in Essex and Abbey Wood in South East London.
- Chiltern Railways plan a service from Old Oak Common Station to Princes Risborough and Aylesbury.
- Interchange with the Great Western Railway main line will also be provided at Old Oak Common Station providing direct services to the west of England.

Willesden Junction Station

- The Bakerloo Line provides routes to Harrow and Wealdstone and to Elephant and Castle.
- TfL Rail Overground Services link the development directly to Stratford, Euston, Clapham Junction, Richmond and Watford Junction.

North Acton Station

- The Central Line provides services to Ealing Broadway and West Ruislip and to Epping via central London.

Hythe Road Station

- The proposed Hythe Road Station will provide access to the North London line of TfL Rail Overground with direct services to Clapham Junction and Stratford.

Services and stations are shown in Figure 3-19.

3.3.5 Strategic Bus Connections

The emerging bus strategy developed by TfL has been developed to provide strong connections to the surrounding existing communities.

Existing Routes in the Old Oak Area

- Route 18 Running between Sudbury and Euston bus station via Wembley, Stonebridge, London, Harlesden, Kensal Green, Paddington.
- Route 220 Running between Wandsworth and Willesden Junction Station.
- Route 228 Running between Central Middlesex Hospital and Maida Hill.
- Route 266 Running between Brent Cross bus station and Hammersmith bus station.
- Route 487 Running between Willesden Junction Station and South Harrow
- Route 283 Running between East Acton and Hammersmith.

Routes Extended to Serve the Development

The emerging bus strategy proposes to extend the local existing routes 228 and 283 into the development via the HS2 station, extend routes that currently do not pass the site to provide access to London destinations not well served by the rail network and to facilitate access to the new HS2 service from a wider area. The following routes are proposed to be extended through the site to the HS2:

- 218 (North Acton to Hammersmith)
- 302 (Kensal to Mill Hill Broadway)
- 187 (Finchley Road to Central Middlesex Hospital)
- 7 (East Acton to Oxford Circus).

The initial proposed routing is shown in Figure 3-26.

Strategic Highway Connections

Access to the A40, part of the TfL Road Network, from the development is provided via Old Oak Common Lane and Scrubs Lane.

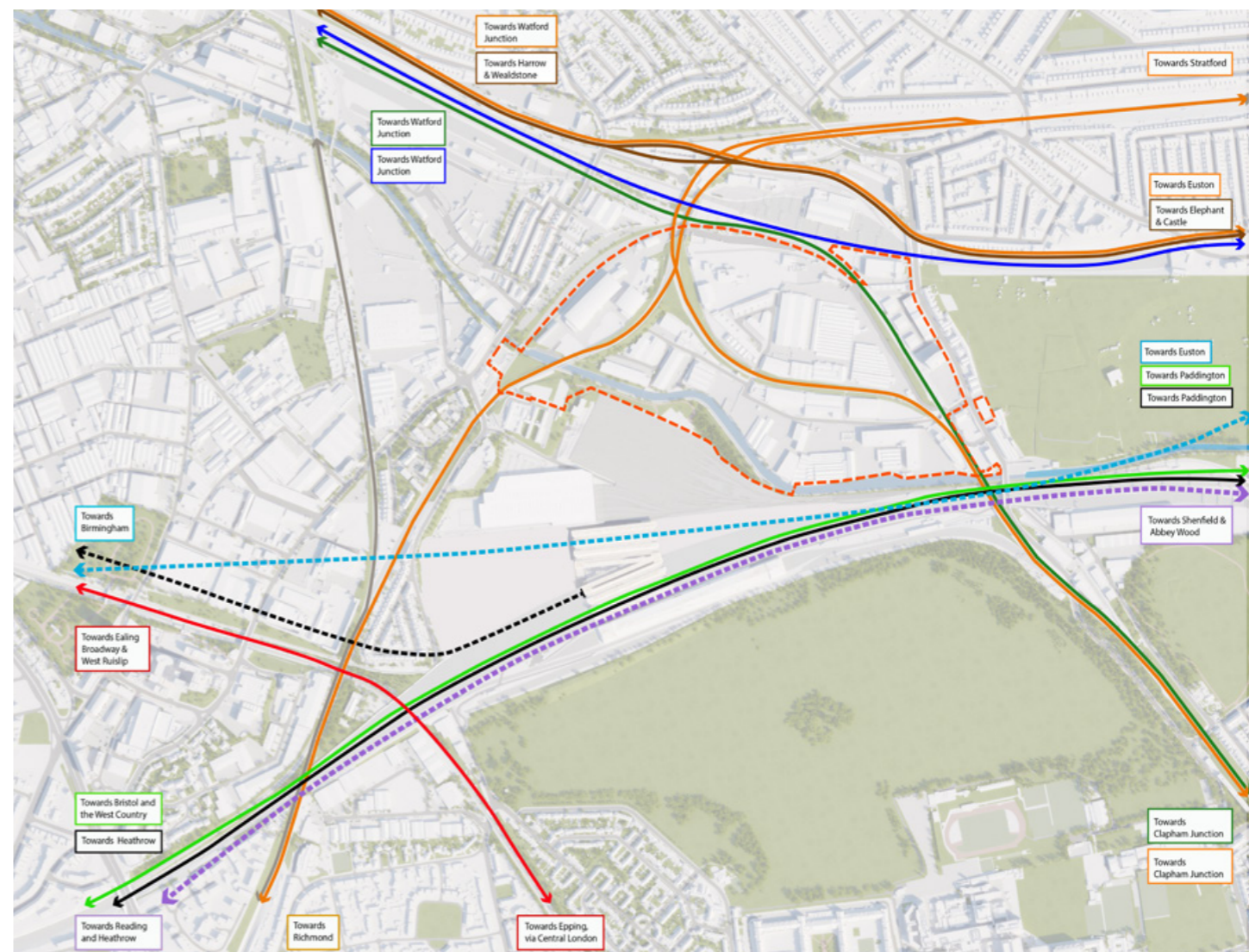


Figure 3-13 Strategic Rail Connections



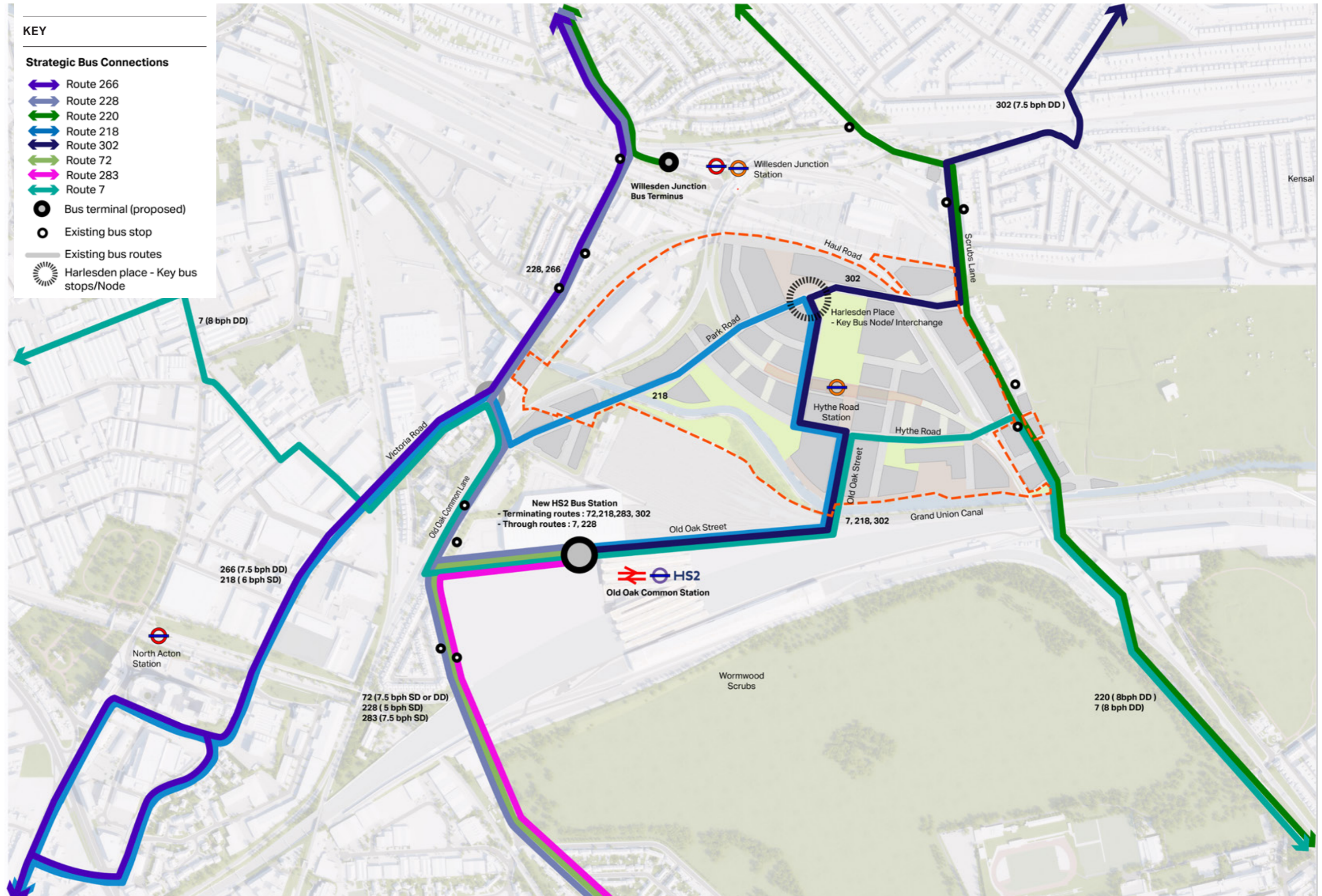


Figure 3-14 Strategic Bus Connections

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3.3.6 A Network of Streets

The network of local streets and service access within Old Oak North are shown in Figure 3-15 and described on this page.

Beyond the three key streets there is a network of smaller streets and railway 'backs' providing access to development and ensuring permeability throughout the Old Oak North development.

This secondary network of streets forms an additional layer within the development, contributing to the character of place, forming interest and variation in the public realm, and supporting the principle of hard working, multi-functional open space and public realm. The secondary network of streets will integrate SUDs and contribute to the greening of the public realm.

No general traffic will be allowed to travel from east- to-west through the development. Bus gates or other traffic limiting measures will be located to allow bus connections across the site whilst preventing general traffic crossing the development. General traffic will not be able to cross the Old Oak Bridge (bus, taxi, cycle and pedestrian only).

The secondary network of streets at Old Oak North will be a pedestrian and cycle orientated environment ensuring delivery of Healthy Streets requirements. Measures such as shared surfaces and temporary closure of streets (such as for weekend street markets and other events) could be used to discourage non-development traffic.

The secondary network can also provide for play and recreation - 'play streets' - and other pedestrian activities.

The network must also accommodate servicing to development plots. Servicing should be provided from along the railway lines, wherever possible to allow strong active street frontage on primary streets and spaces. This strategy will provide a series of working railway 'backs' along the railway embankments and viaduct where industrial and workspaces can be located.

Next Steps

At the proposed high density of development, the amount of servicing to both residential and commercial uses will be significant and with future trends indicating that this is a growing form of activity, there is an opportunity for the Old Oak North development to be an exemplar development and show how this activity can be fully integrated into the urban realm.

A considered delivery and servicing strategy will be required to ensure that streets and spaces are not congested with servicing vehicles and unregulated drop-offs. This strategy will need to consider:

- A last mile delivery consolidation centre could be set up on Old Oak North. Such a facility could rely on off-peak drop offs for deliveries to commercial and residential units.
- Deliveries to residential and commercial units could be carried out using smaller electric vans or cargo cycles (such as at Paris Distripolis or at the urban consolidation centres for the City of Bath or Regent Street).
- Delivery hubs could be set up for residential development. These would need to be within a short walking distance from each dwelling.
- Large scale residential deliveries could be carried out on demand using smaller electric vans.
- This strategy needs to consider how groceries and hot food deliveries can be managed.

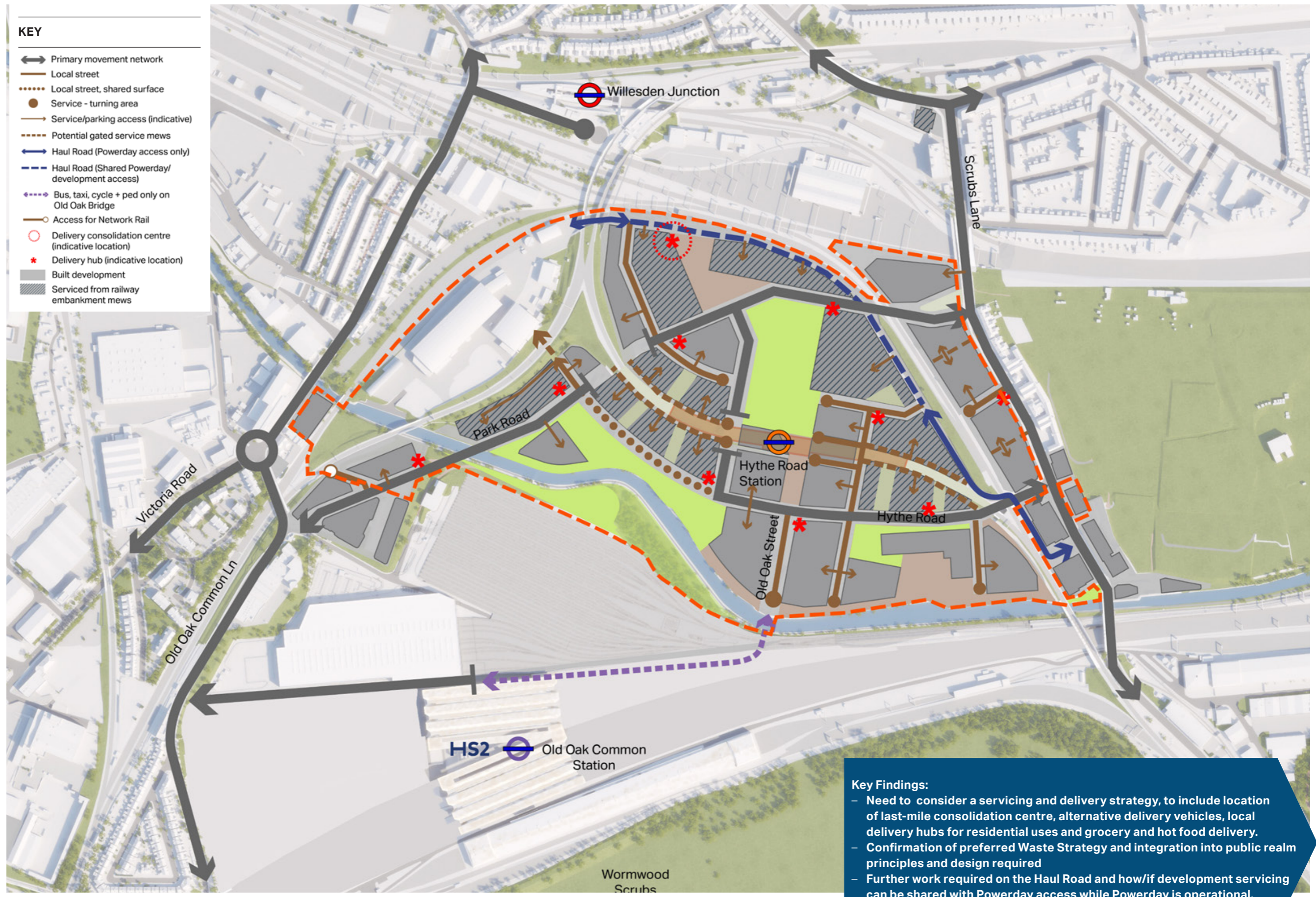


Figure 3-15 Local Streets and Service and Access Strategy

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3.3.7 Street Character

Streets and spaces have a key role in defining a strategy for character across the development. The initial thoughts are presented here and these have informed further work on street character through the SUDs integration work set out later in this document.

Streets have a key role in defining character and will form part of a strategy for character to be commenced in the next stage of work.

It is proposed to form two character zones within the Old Oak North development area. These character areas relate to their location within the site and to distinctive geographies: the area to the north where a new higher topography is formed can be known as The Uppers and the area to the south of the West London Line, along Hythe Road, where ground levels are relatively constant, is known as The Levels. The nature of the new streets within the development will result from the new imposed site topography but also from their location within these character areas.

The three key streets of Park Road, Old Oak Street and Hythe Road are each distinctive and coherent in character and cut across the two character zones. The character of these streets should continue across the infrastructure to ensure a seamless connection with wider communities.

The northern Canal Towpath should form a distinctive character zone within the development. This will be defined through the wider Canal and Waterspace strategy to be commenced.

The Haul Road should form a 'working street' in the interim condition (when Powerday is still operational) and so a further character zone within the development. The consider future condition when Powerday has ceased to be operational.

All streets will need to integrate SUDs, pedestrian and cycle movement, greening and ecology, lighting, cycle parking, buses, play and informal activities such as sitting, etc. All elements and street furniture required for these activities should contribute to forming the different characters within the site.

Next Steps

Further work is required on the characters of the northern Canal Towpath and the Haul Road. Transformation of existing streets should also be considered, such as Scrubs Lane.

Dalston, London



Passeig de St Joan, Barcelona



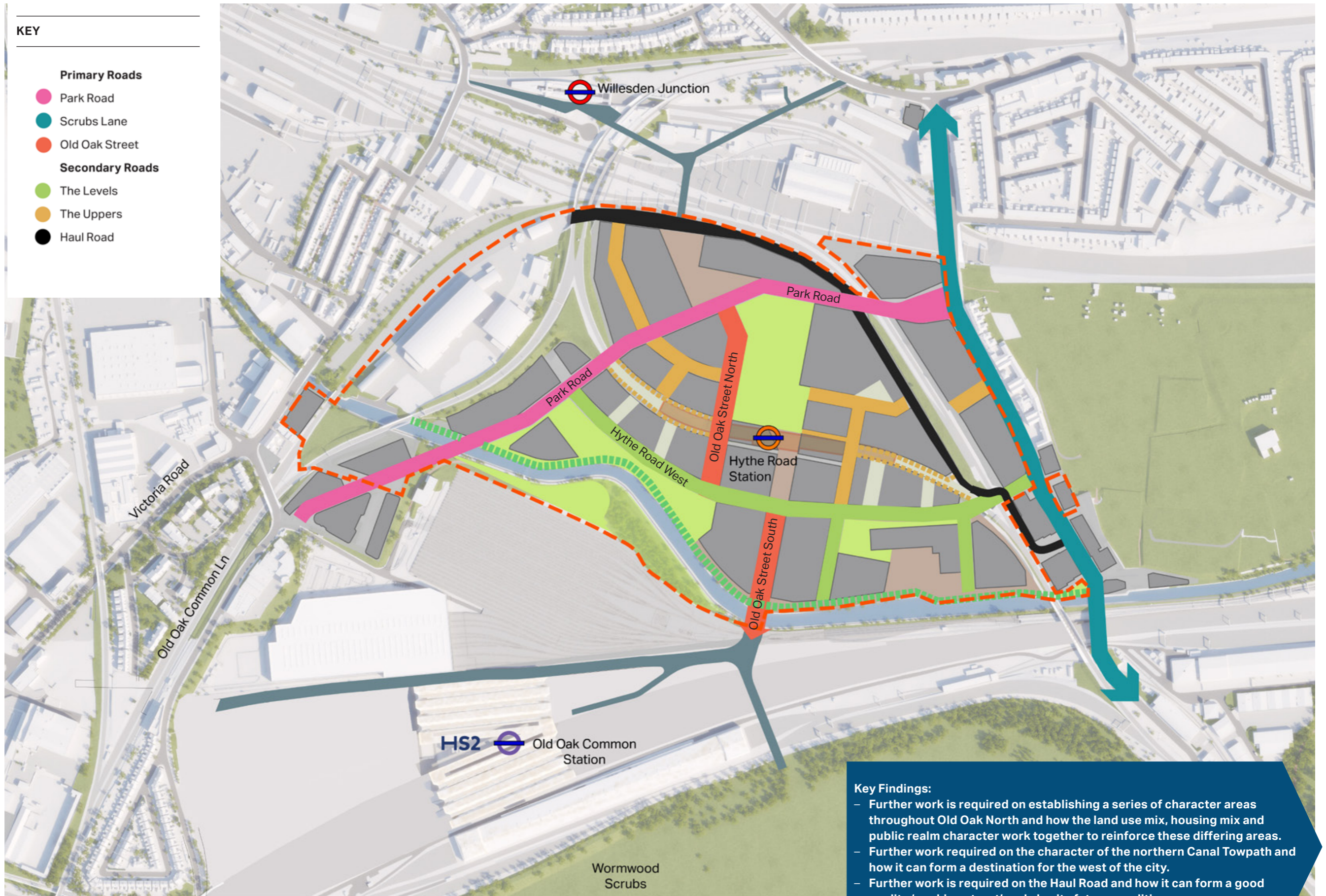
One Coleman Street Gardens, London



Mermoz Sector, Lyon



Figure 3-16 Precedents - Street Character



Key Findings:

- Further work is required on establishing a series of character areas throughout Old Oak North and how the land use mix, housing mix and public realm character work together to reinforce these differing areas.
- Further work required on the character of the northern Canal Towpath and how it can form a destination for the west of the city.
- Further work is required on the Haul Road and how it can form a good quality 'working street' and also its future condition.

Figure 3-17 Street Character

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3.3.8 Primary Streets - Topography

The need to cross several railways and the canal to provide connection across the site drives key vertical and horizontal alignments for streets and spaces.

The new site levels have previously been summarised in section 3.3.2. The new infrastructure drivers create a new topography across the site which provides an opportunity to create a place of unique character within West London.

The levels on the key streets of Park Road, Old Oak Street and Hythe Road are described in the diagrams below and the potential character of these streets are shown in the illustrative views opposite.

Park Road and Old Oak Street will rise and fall through the development with low points at the West London Line and high points at the edges of the development. Hythe Road remains relatively flat across the site at the same level of the canal edges. All gradients are no steeper than 1:20 (5%).

Key

+XX Sample ground level spot height

+XX Proposed road level

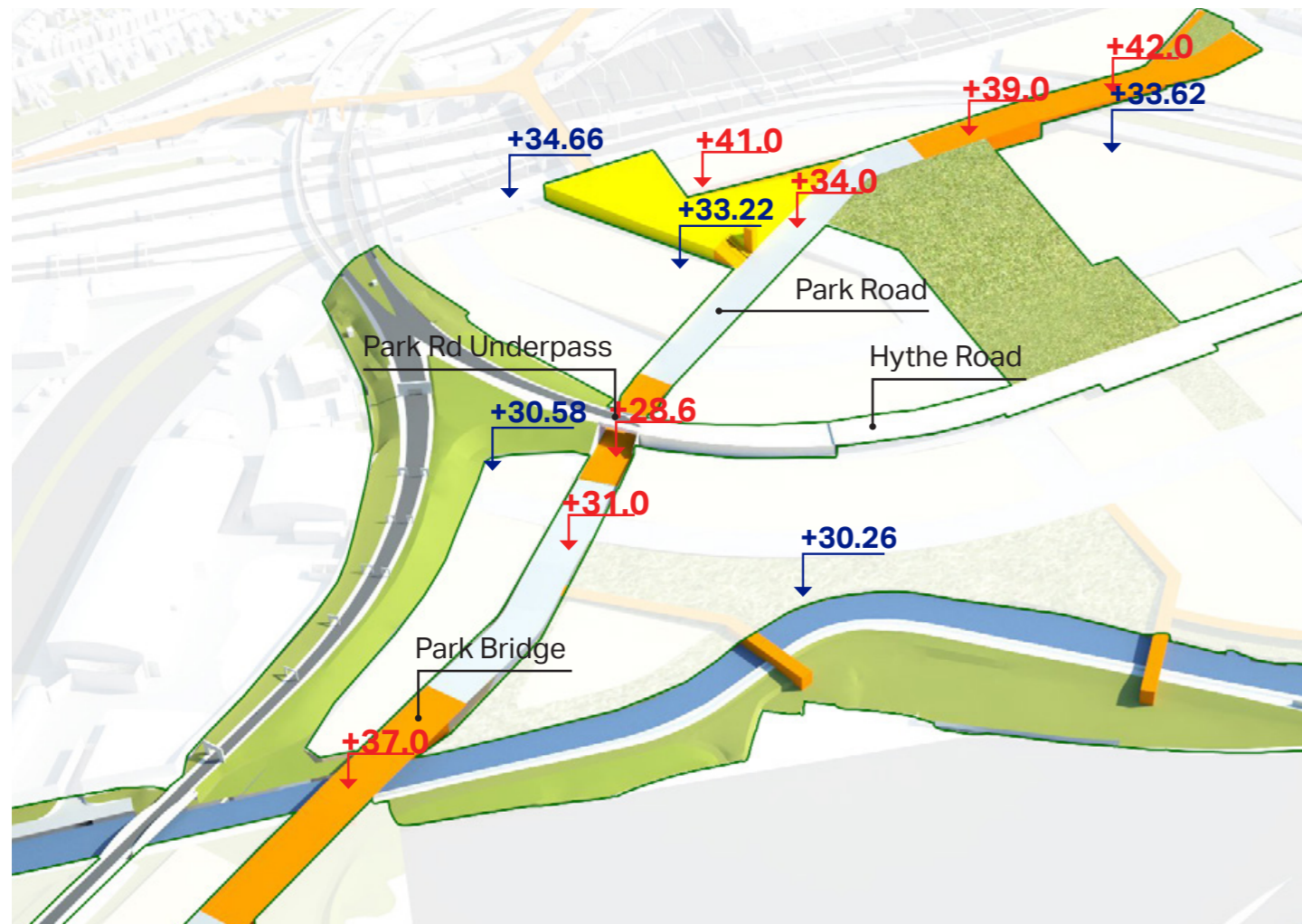


Figure 3-18 Key Street - Park Road - Topography and Levels

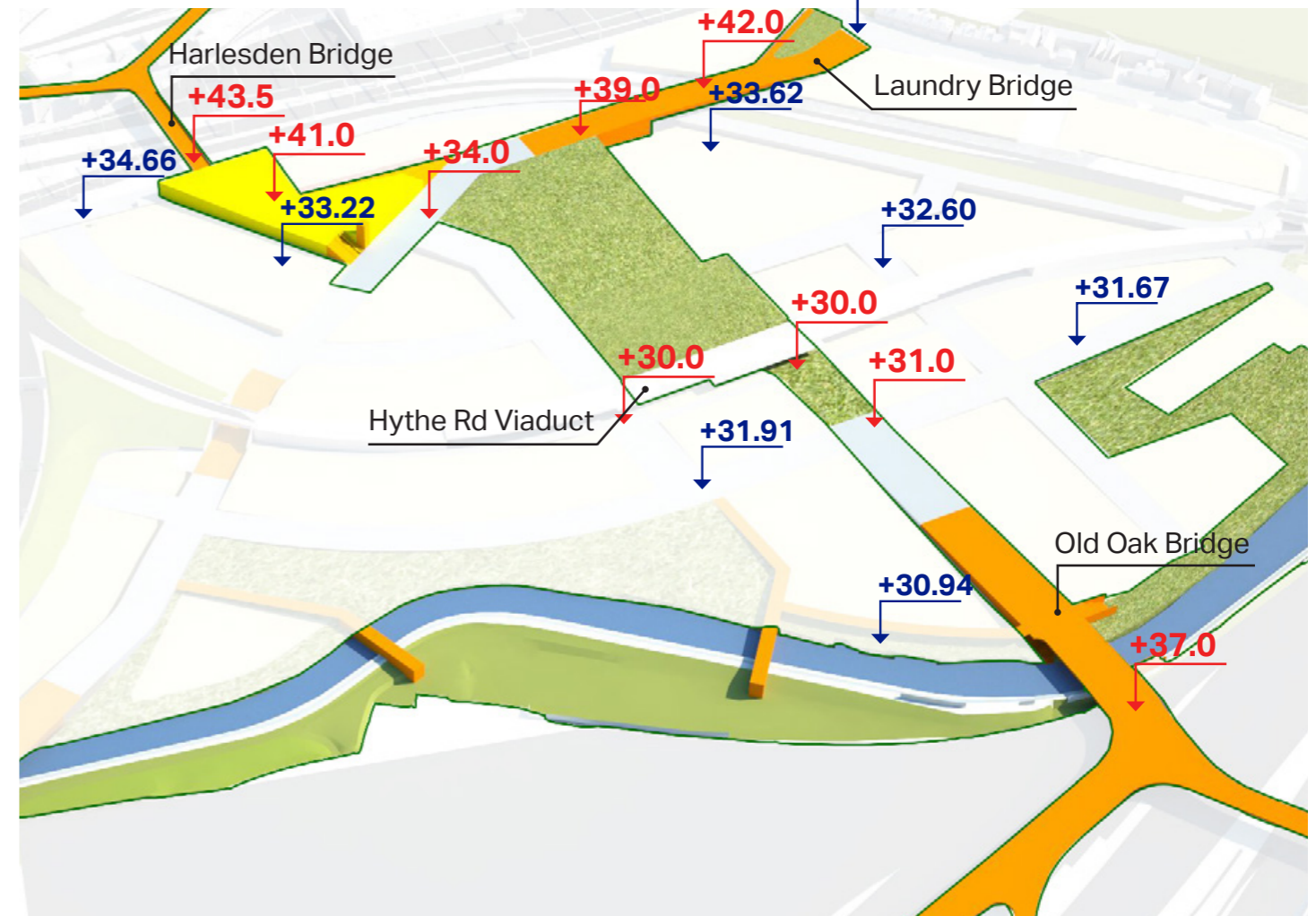


Figure 3-19 Key Street - Old Oak Street and 'Parkway' - Topography and Levels

Key Findings:

- The requirements for the infrastructure components mean that the two key streets generally have continuous gradients of 1:20/5% along their entire length.
- This could provide Old Oak North with a unique character within the local area.
- Streets will need to be carefully designed to accommodate safe cycle movement, ensure full accessibility and infrastructure such as SUDs, etc.

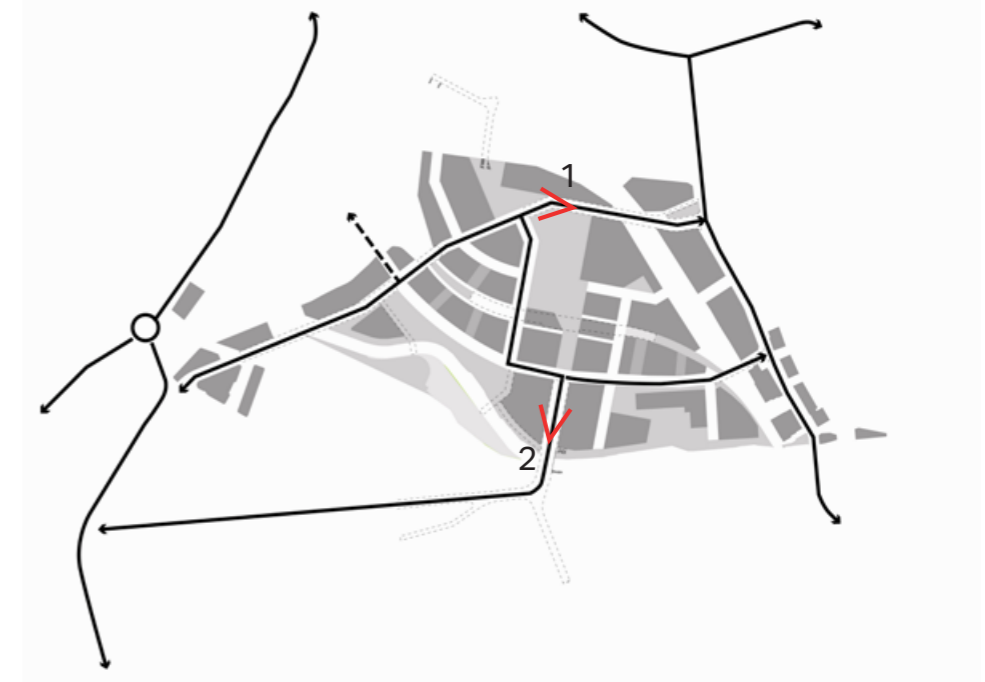


Figure 3-20 Park Road - Looking West towards Harlesden Place (View 1)



Figure 3-21 Old Oak Street - Looking North towards Hythe Road Viaduct (View 2)

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3.3.9 Park Road - Character

The character strategy for Park Road is described through the sectional diagram in Figure 3-22. This shows that SUDs and strategic utility requirements can be integrated into a 24m corridor for Park Road.

Park Road is a primary connection and key street through the Old Oak North development. It is characterised by being:

- an all-modes street, with anticipated high use by buses, pedestrians and cycles due to its connection to Harlesden Place and Willesden Junction station. A larger amount of circulation for pedestrians and cyclists (on street provision) has been included within the corridor design, as well as the creation of spaces for a slower pace and street activity.
- a highly visible street within the development, with a high degree of greenery included to provide pedestrian comfort, amenity as well as a strong character.
- a sloping street with fairly steep gradients (at 1:20/5%). This is a key consideration in terms of water storage.

For street trees and planting is essential to provide the conditions necessary for healthy and sustained tree growth and planting. Providing large volumes of uncompacted soil is a requirement for any urban trees. A generous design of appropriate tree pits ensures that the trees can stay healthy, grow to maturity and become character defining elements. These tree pits can then also be used to absorb stormwater.

Design studies have shown that appropriately sized and located tree pits can be integrated within the street design and across the slope. These can provide enough volume for underground attenuation while also acting as a sponge reducing the amount of irrigation required. For peak storm events they can temporarily store water and then slowly release water in a controlled way to ensure the trees do not become water logged.

Spaces for gathering or pausing can be designed using a permeable paving which can also be connected to the underground attenuation volume.

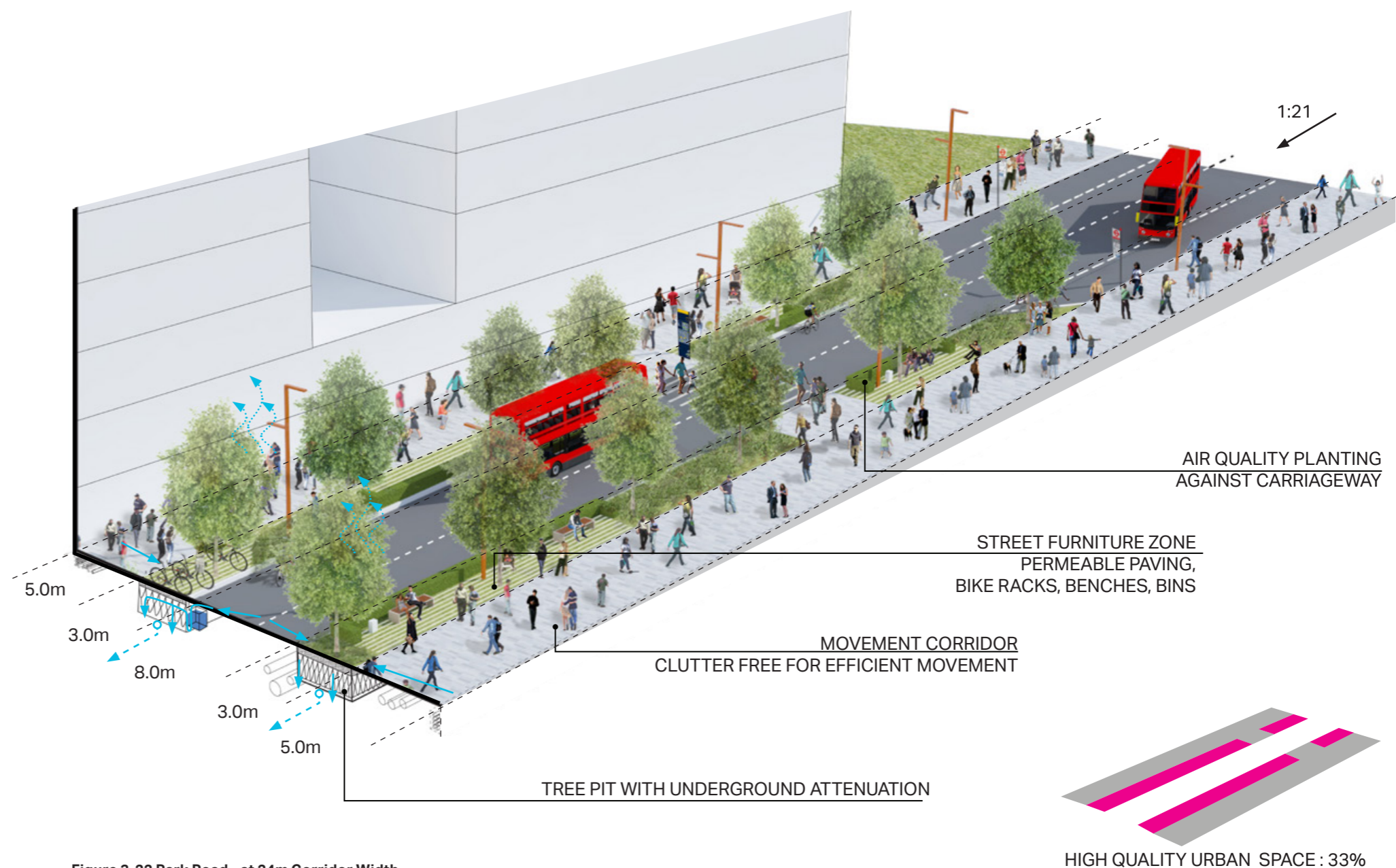


Figure 3-22 Park Road - at 24m Corridor Width

Key Findings:

- Design Studies for Park Road indicate that to accommodate all of the required performance criteria, including SUDs and utility requirements, a 24m corridor width is necessary.



Figure 3-23 View of Park Road

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3.3.11 Old Oak Street South - Character

The character strategy for Old Oak Street South is described through the sectional diagram in Figure 3-26. This shows that SUDs and strategic utility requirements can be integrated into a 27m street corridor.

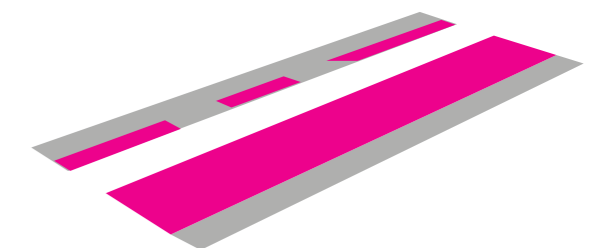
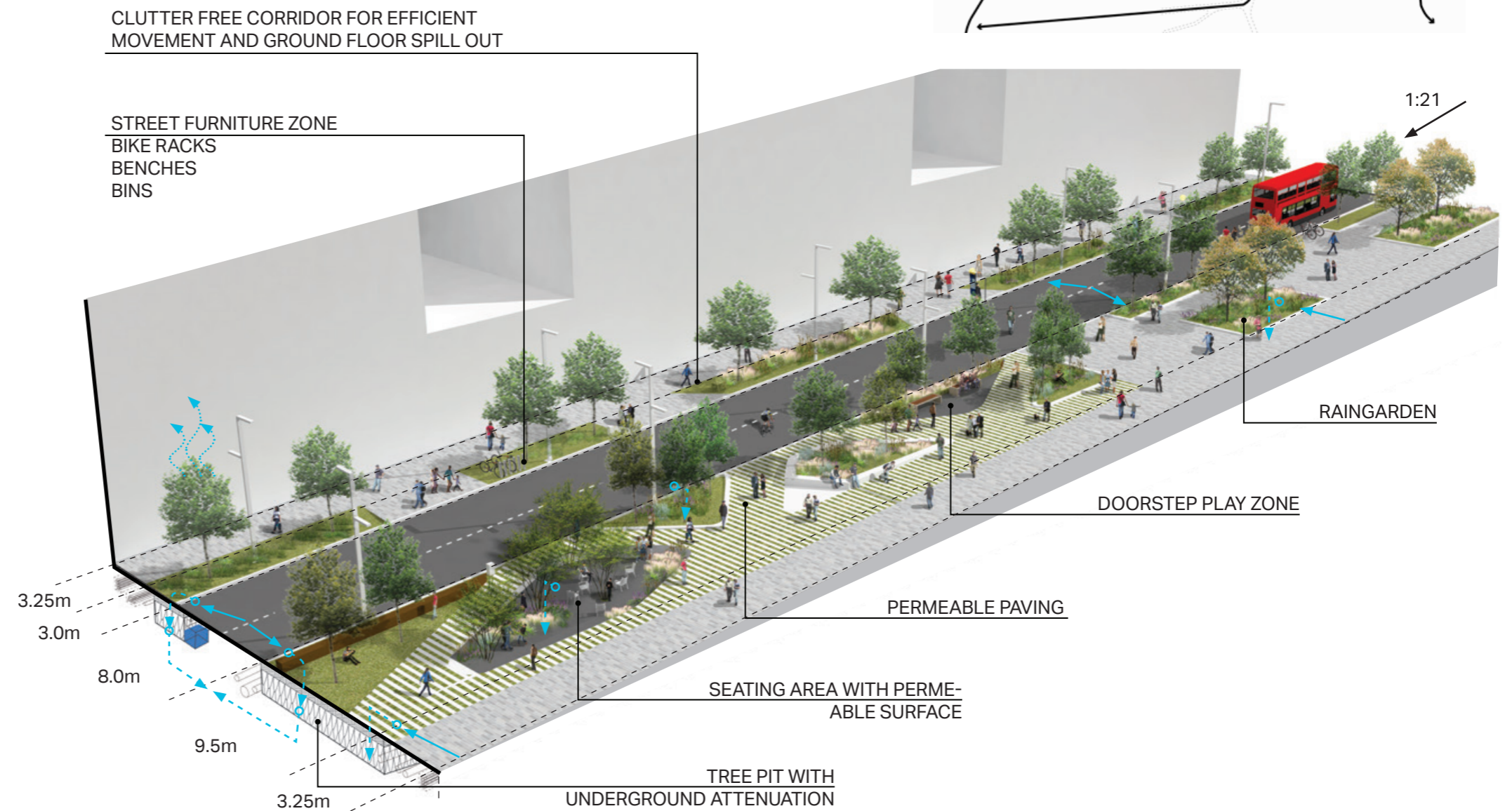
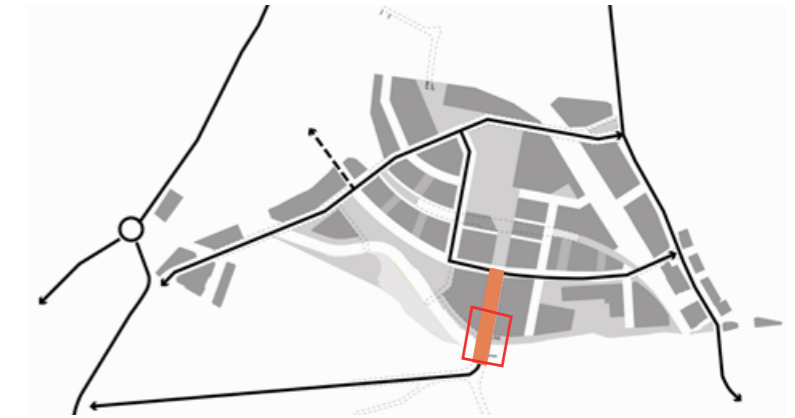
Old Oak Street South is a primary connection and key street through the Old Oak North development. It is characterised by being:

- an all-modes street, with anticipated high use by buses, pedestrians and cycles due to its connection to Old Oak Common station via the Old Oak Bridge and Hythe Road Station. A larger amount of circulation for pedestrians and cyclists (on street provision) has been included within the corridor design, as well as the creation of spaces for a slower pace and street activity.
- a predominantly residential lined street (Indicated by plot testing). The streetspace should provide a high amount of amenity and consider play spaces and other social activities.
- part of the key pedestrian and cycle 'Parkway' between Harlesden Place and the Green Bridge. This street should form a highly green connection between Oak Park and Wormwood Scrubs.
- a sloping street with fairly steep gradients (at 1:20/5%). This is a key consideration in terms of water storage.

The illustration shows how an asymmetric street layout that frees up space for activities and general use on the eastern side, which ties into the Green Bridge to the south but also the connection under the viaduct into Oak Park in the north. This includes provisions for gathering, doorstep play, seating and planting for amenity value.

A similar system of underground storage combined with generously sized tree pits is applied as described for Park Road. Permeable paving can be included in spaces that do not have a primary movement or circulation function.

Due to the generosity in space rain gardens could also be included which could become educational elements that showcase the sustainable approach towards water management.



HIGH QUALITY URBAN SPACE : 57%

Figure 3-25 Old Oak Street South - at 27m Corridor Width

3.3.12 Old Oak Street North - Character

The character strategy for Old Oak Street North is described through the sectional diagram in Figure 3-27. This shows that SUDs and strategic utility requirements can be integrated into a 24m street corridor.

Old Oak Street North is a primary connection and key street through the Old Oak North development. It is characterised by being:

- an all-modes street, with anticipated high use by buses, pedestrians and cycles due to its connection to both Harlesden Square and Hythe Road Station. A larger amount of circulation for pedestrians and cyclists (on street provision) has been included within the corridor design.
- a mixed use street (town centre and community uses as indicated by plot testing). The streetspace should provide a high amount of pedestrian space and consider space for spill out of activity and other social activities.
- a highly visible street that forms the western edge of Oak Park. The street should accommodate freer crossing between east and west sides of the street.
- a sloping street with fairly steep gradients (at 1:20/5%). This is a key consideration in terms of water storage.

In keeping with the general language of Old Oak Street South the street layout is asymmetrical and the character of both streets should be related. However, this street is designed to anticipate high footfall within a mixed use focused environment.

Generous and uncluttered spaces have been provided for movement and circulation whilst equally generous spaces have been allowed for seating, waiting and resting.

Raingardens help to separate the more static zone against the carriageway whilst receiving surface water from the carriageway. The planting within the raingardens act as visual separation against the carriageway and protects pedestrians.

A similar system of underground storage combined with generously sized tree pits is applied as described for Park Road. Permeable paving can be included in spaces that do not have a primary movement or circulation function and can be connected to the underground storage volume.

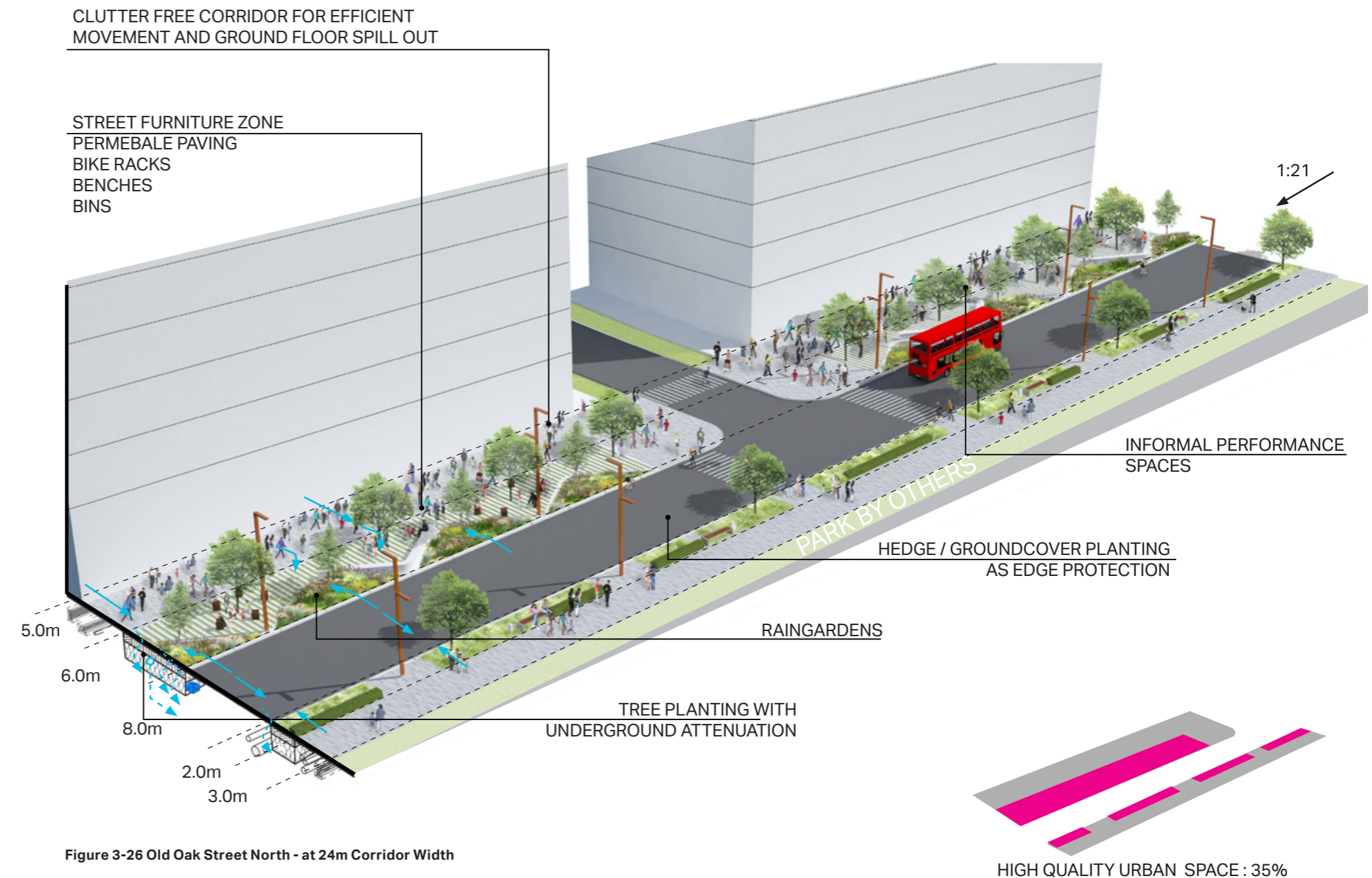
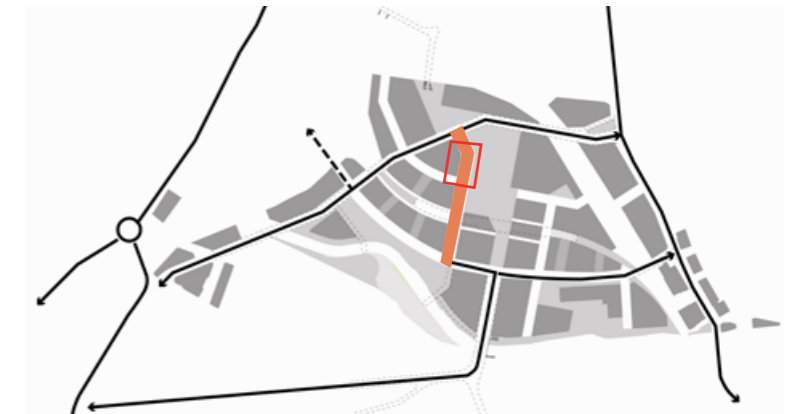


Figure 3-26 Old Oak Street North - at 24m Corridor Width

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3.3.13 Hythe Road West - Character

The character strategy for Hythe Road West is described through the sectional diagram in Figure 3-28. This shows that SUDs and strategic utility requirements can be integrated into a 20m street corridor.

Hythe Road West is part of a key east west street through the Old Oak North development. It is characterised by being:

- a shared pedestrian, cycle and vehicular street. A larger amount of circulation for pedestrians and cyclists (on street provision) has been included within the corridor design. The design of the street should encourage use by cyclists and pedestrians through slow traffic speeds and other traffic limiting measures.
- a mixed use street (leisure, f+b, cultural uses as indicated by plot testing), overlooking Canal Park and the Grand Union Canal. The streetspace should provide a high amount of pedestrian space and consider space for spill out of activity and other social activities.
- a highly visible street that forms the northern edge of Canal Park. The street should accommodate freer crossing between north and south sides of the street and provide a high amount of street trees and planting.
- Hythe Road is a generally level street along its length.

This street is one of the few streets that is directly connected to an open space which could provide opportunities to combine water collection and re-use.

Water could be collected from hard surfaces via gullies or permeable paving and directed towards an underground storage system connected to the tree pits. Raingardens can directly receive surface water from the footpaths and the shared surface.

This collected water can then be discharged into ponds along the Canal Park edge where it can be cleansed by infiltration through reed beds. The cleansed water could be used to supply water for a wet edge to the park showcasing a holistic approach to surface water management and how it can help to create amenity value.

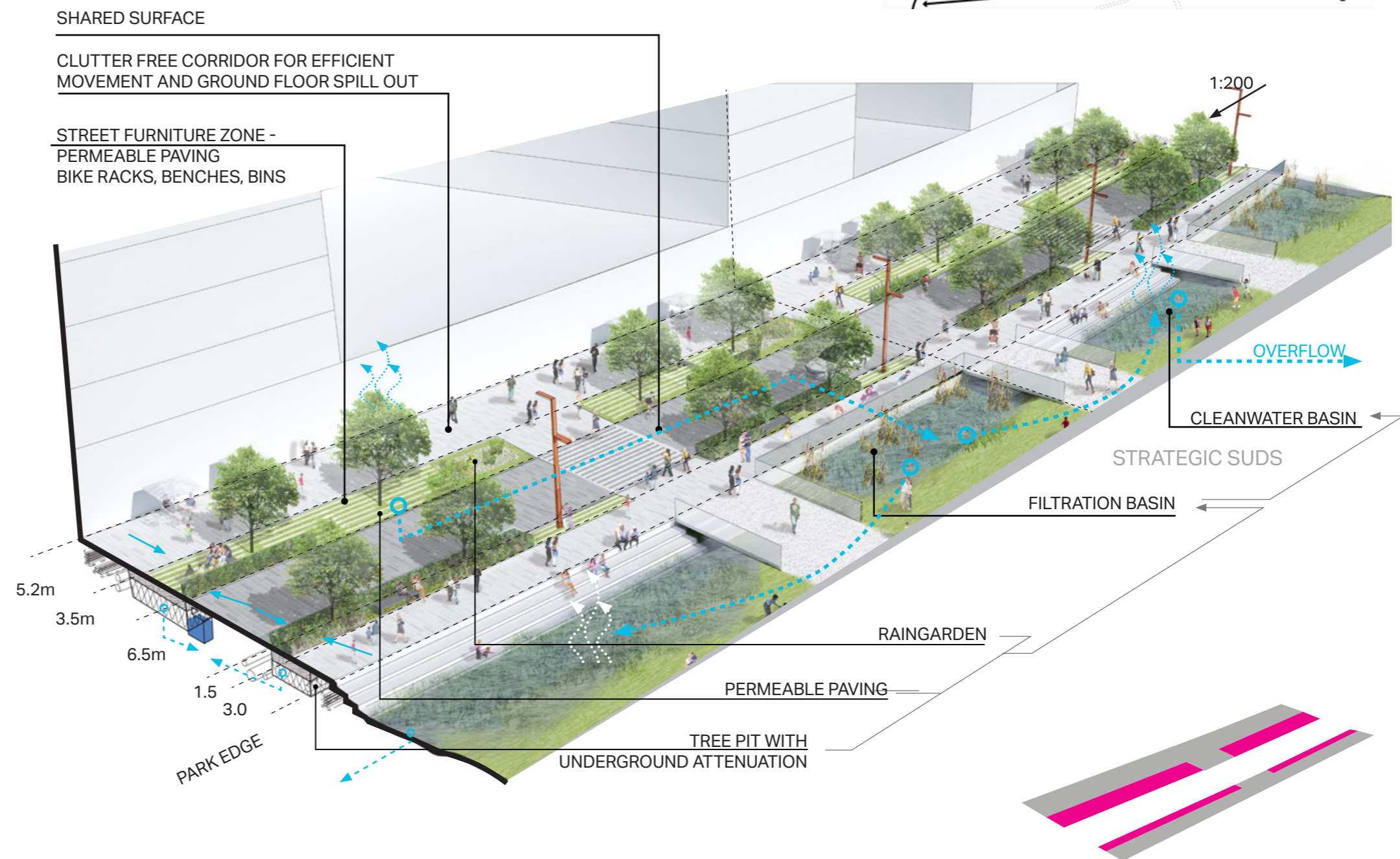
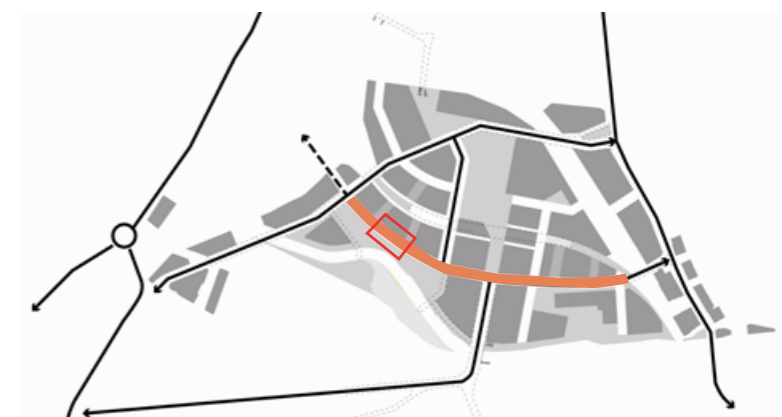


Figure 3-27 Hythe Road West- at 20m Corridor Width

HIGH QUALITY URBAN SPACE : 28%

3.3.14 Hythe Road East - Character

The character strategy for Hythe Road East is described through the sectional diagram in Figure 3-29. This shows that SUDs and strategic utility requirements can be integrated into a 20m street corridor.

Hythe Road East is part of a key east west street through the Old Oak North development. It is characterised by being:

- an all-modes street, with anticipated use by buses, pedestrians and cycles and general traffic.
- a mixed use street (employment, community and residential uses as indicated by plot testing), with the retained Rolls Royce Building forming its southern edge (considered for employment and leisure/f+b uses). The streetspace should provide a high amount of pedestrian space and consider space for spill out of activity and other social activities.
- Hythe Road is a generally level street along its length.

The street continues the asymmetrical street layout and character of Hythe Road West, however this street is not a shared surface. The street can provide for on street car parking, and permeable paving within the parking bays or rain gardens against the bays can receive the surface water run off from the streets.

A clutter free movement corridor is provided against the building facades whilst pocket spaces for seating and gathering can be provided near the roadway. The tree pits of the street can be connected or be an integral part to the attenuation volume.

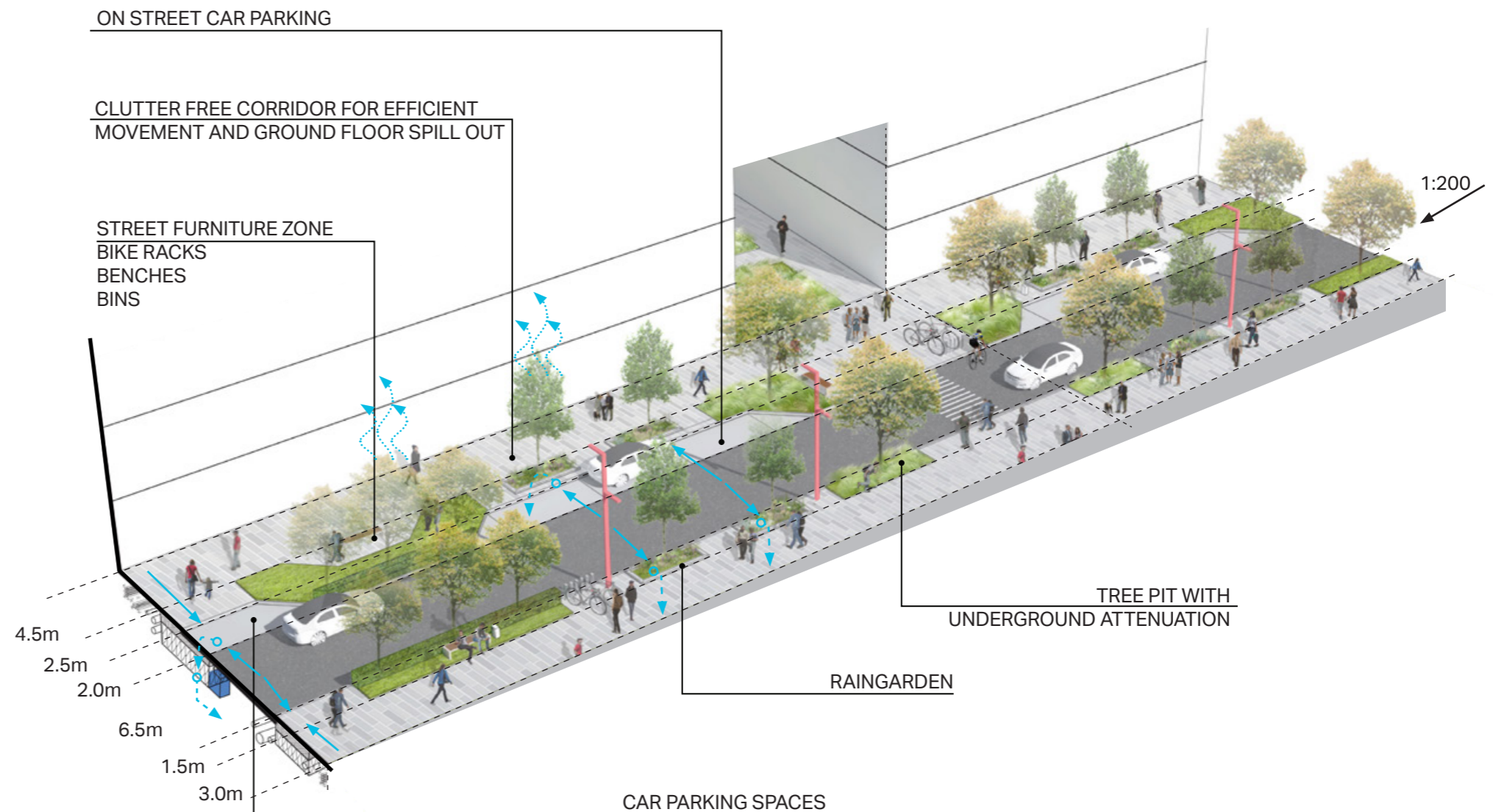
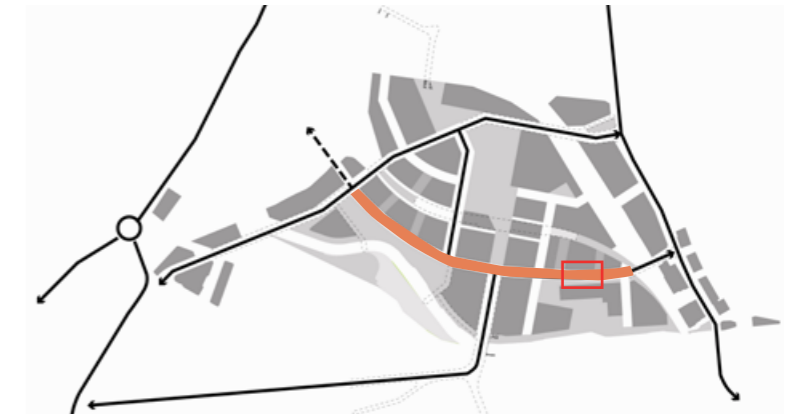
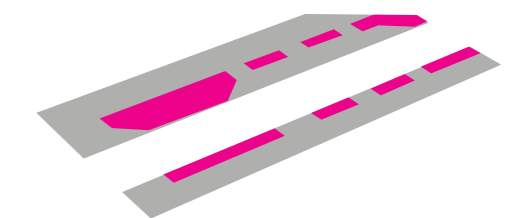


Figure 3-28 Hythe Road East- at 20m Corridor Width



HIGH QUALITY URBAN SPACE : 22%

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3.3.15 The West London Line

It is essential to provide high quality north-south connectivity through the West London Line railway to ensure a contiguous development and provide public transport connections across the Old Oak North development. Through the options development process the inclusion of a viaduct was thought to be the best approach to ensuring this.

The inclusion of a viaduct on the West London Line provides:

- high levels of permeability between northern and southern parts of the Old Oak North development;
- better legibility and a more seamless connection across the West London Line;
- the opportunity for the provision of an Overground station at Hythe Road, providing the development with better connections to London and relieving capacity pressures on existing stations.

It is assumed that a new viaduct will be constructed to the north of the present embankment, and will accommodate a new Overground station – Hythe Road station.

Within the Preferred Option the viaduct is assumed to be a 'two-track viaduct', which will reduce the width of the '3-track' viaduct proposed as part of the GRIP 3 work. This potentially provides stronger, more legible connections beneath it.

To ensure high levels of permeability between the northern and southern parts of Old Oak North, four key connections through the West London Line are proposed:

- at Park Road (underpass, separated from the viaduct);
- at Old Oak Street (Salter Street alignment);
- at the 'Park-way' (aligning with the Old Oak Street/Bridge); and
- a fourth to the east of Old Oak Street (School Lane).

Two of these connections will provide for double-decker buses to pass through the West London Line: at Park Road and at Old Oak Street (Salter Street alignment), as shown in Figure 3-32

The Old Oak Street connection should also provide a green-link between the two Local Parks. Old Oak Street may be a good location for the station entrance, with its close proximity to buses and mixed use.

The Park-way connection is considered as a landscaped 'green-corridor' linking Harlesden Place/Oak Park to the Green Bridge/Wormwood Scrubs. This link can be predominantly pedestrian and cycle use and can be seen as a landscaped extension of Oak Park. This link may also be a good location for the station entrance.

The School Lane connection ensures that eastern parts of the site are well connected and, which impacts on quality of place and development values.

Illustrative views of these four connections under the West London Line are provided on the following pages.

Next Steps

The following should be considered during the next stages of work:

- Design quality of the station and viaduct: The station and viaduct are highly visible elements within the heart of the Old Oak North development area and this will be a key arrival point to the development as well as an element that will provide identity to the development. As such the station, buildings (at street level and above at viaduct level) as well as the viaduct structure itself should be of very high quality design.
- Location of station entrance: The station entrance should be located either onto Oak Park, or one of the primary north-south pedestrian and cycle routes through the development to ensure activation along these routes and reinforce these as primary connections and spaces.
- Land use: Uses located under the viaduct will ensure that the town centre offer is coherent and contiguous and will activate spaces and streets to either side of the viaduct. The viaduct also provides opportunity to create working areas, through the insertion of workspaces within the viaduct and the creation of 'working yards' or mews to the rear of development.

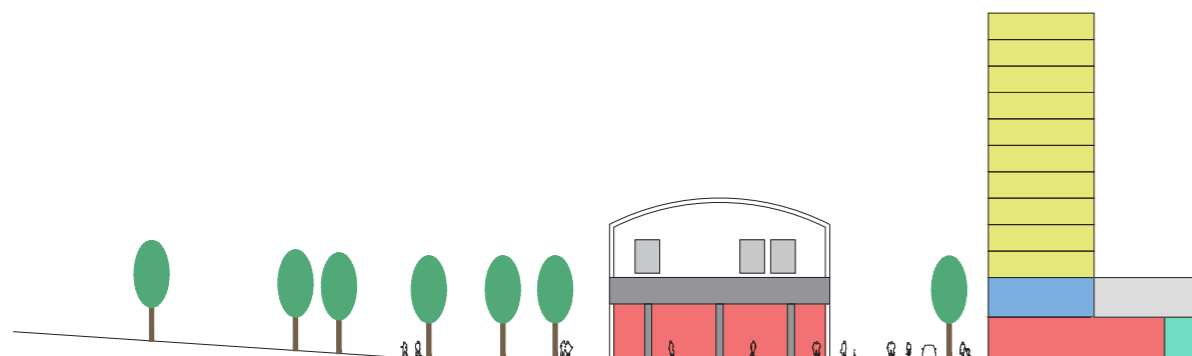


Figure 3-31 West London Line - Section with Town Centre Uses under Viaduct

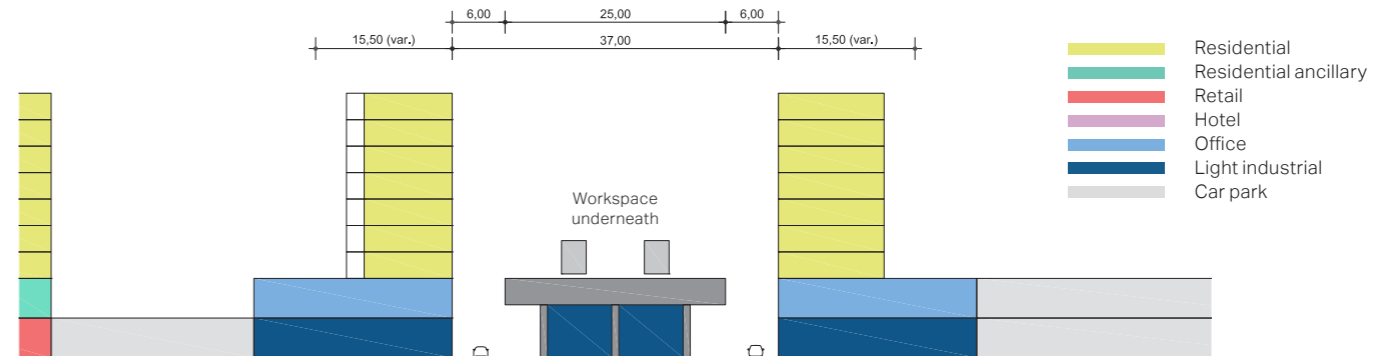
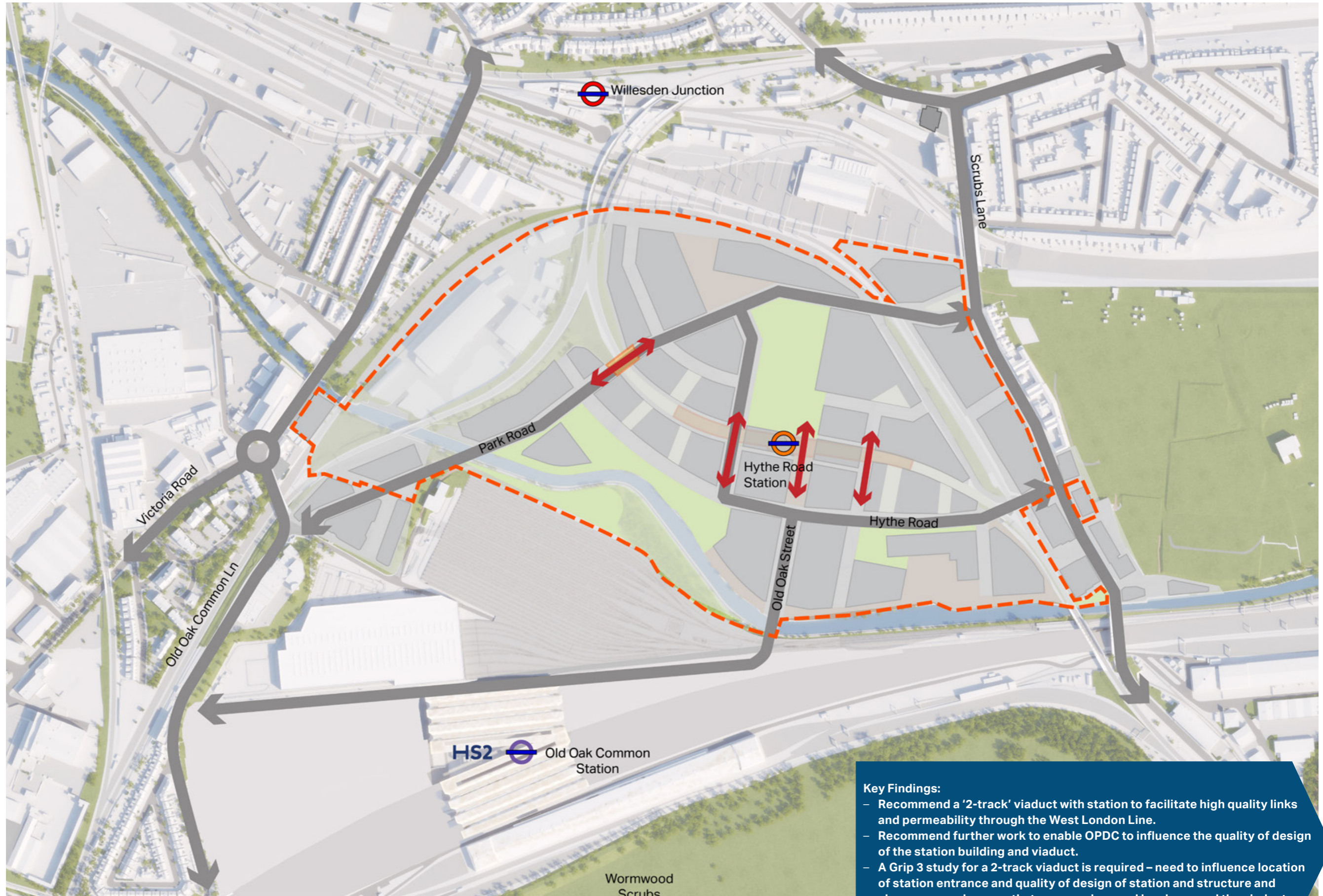


Figure 3-29 West London Line - Workspaces under Viaduct and Service 'Backs'



Key Findings:

- Recommend a '2-track' viaduct with station to facilitate high quality links and permeability through the West London Line.
- Recommend further work to enable OPDC to influence the quality of design of the station building and viaduct.
- A Grip 3 study for a 2-track viaduct is required – need to influence location of station entrance and quality of design of station and structure and clearances and ensure that proposed ground levels around the viaduct allow for 1:20 gradients on the North-south route and Old Oak Street.

Figure 3-32 Permeability through the West London Line

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3.3.16 Old Oak North Local Park - Character

The following provide an illustrative views of these four connections under the West London Line.



Figure 3-33 View through Viaduct at the Parkway - looking south from Oak Park (View 1)



Figure 3-34 View through the Viaduct at Old Oak Street - Looking North towards Oak Park (View 2)

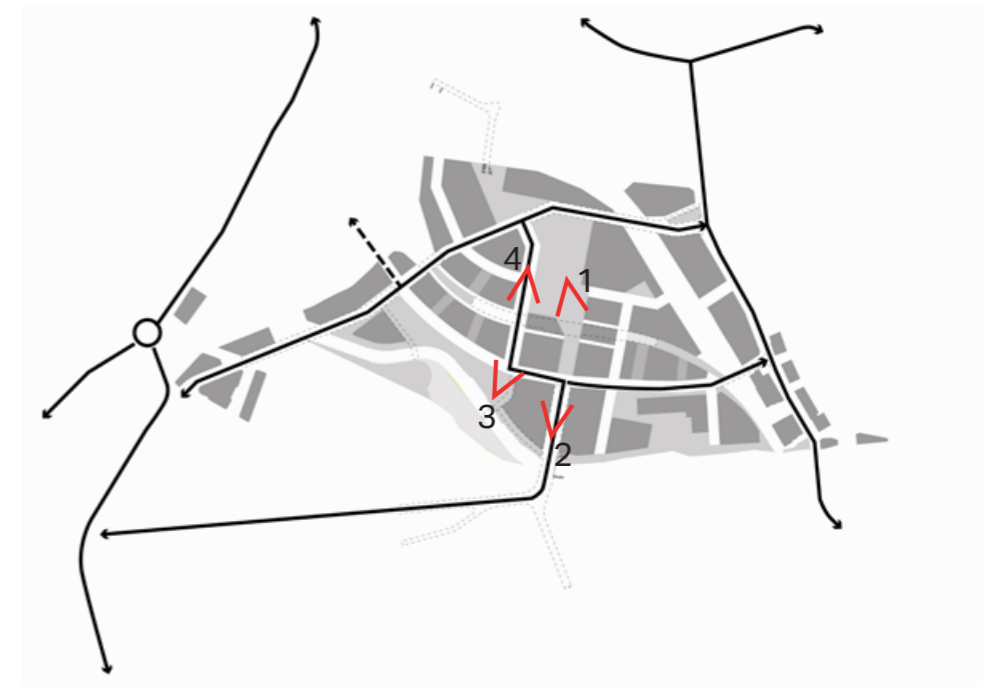


Figure 3-35 View through the Viaduct at Old Oak Street - Looking North from Canal Park to Oak Park (View 3)



Figure 3-36 View through the Viaduct from Old Oak Street - looking south to Canal Park (View 4)

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3.3.17 Hythe Road Viaduct and Rail Embankments - Network Rail Land-take

Old Oak North Preferred Option proposes to narrow the space between the viaduct/embankments and the adjacent development by building closer to, or within Network Rail land ownership.

This approach will utilise dark spaces under the structure through introducing working yards for light industrial workspaces fronting on to the rail infrastructure and seeks to maximise the overall development area and capacity.

Key Assumptions and Challenges

This study has made numerous assumptions for land uses under and adjacent to the viaduct/embankments based on a meeting with Network Rail property management team. However, structural/maintenance requirements related to operations, noise and vibration issues have not been consulted on with Network Rail and so the study is based on basic structural assumptions from the IA team.

Key assumptions and challenges for narrowing down space on different sections of the viaduct/embankment are as follows:

- **Viaduct:**
 - a 6m offset should be provided from the edge of the viaduct structure to adjacent development plots.
 - Uses located under and adjacent to the viaduct should be formalised spaces with active uses fronting the street.
 - Agreement is required with potential stakeholders of the viaduct.
- **Embankment retained as existing:**
 - a 4.5m offset from live tracks is required - Network Rail defined, no development zone.
 - RRAP's (Road Rail vehicle Access Points) is provided outside of Old Oak North site.
 - Network Rail agreement is required.

- **Embankment with retaining wall structures:**
 - 3m max. height retaining wall in place to maximise development plot.
 - 17.8m of space reserved for the rail operation (4.5m offset from each side of live tracks) and retaining wall structures.
 - 3m additional access track on each side for MEWP (Mobile Elevated Working Platform).
 - RRAP's (Road Rail vehicle Access Point) is assumed to be provided outside of Old Oak North site.
 - Alternative pedestrian track to be provided through development before the construction work.
 - Network Rail agreement required.

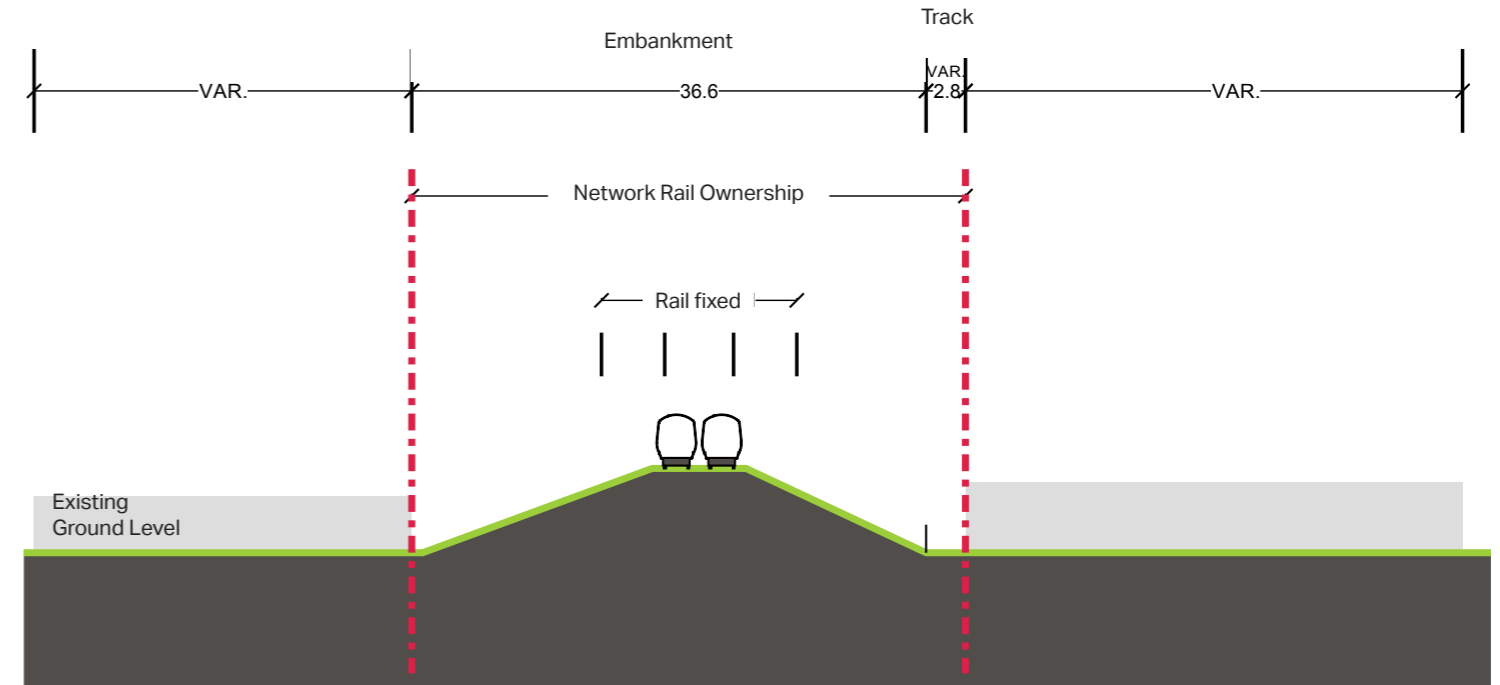


Figure 3-37 Section, West Rail Embankment: Existing Condition

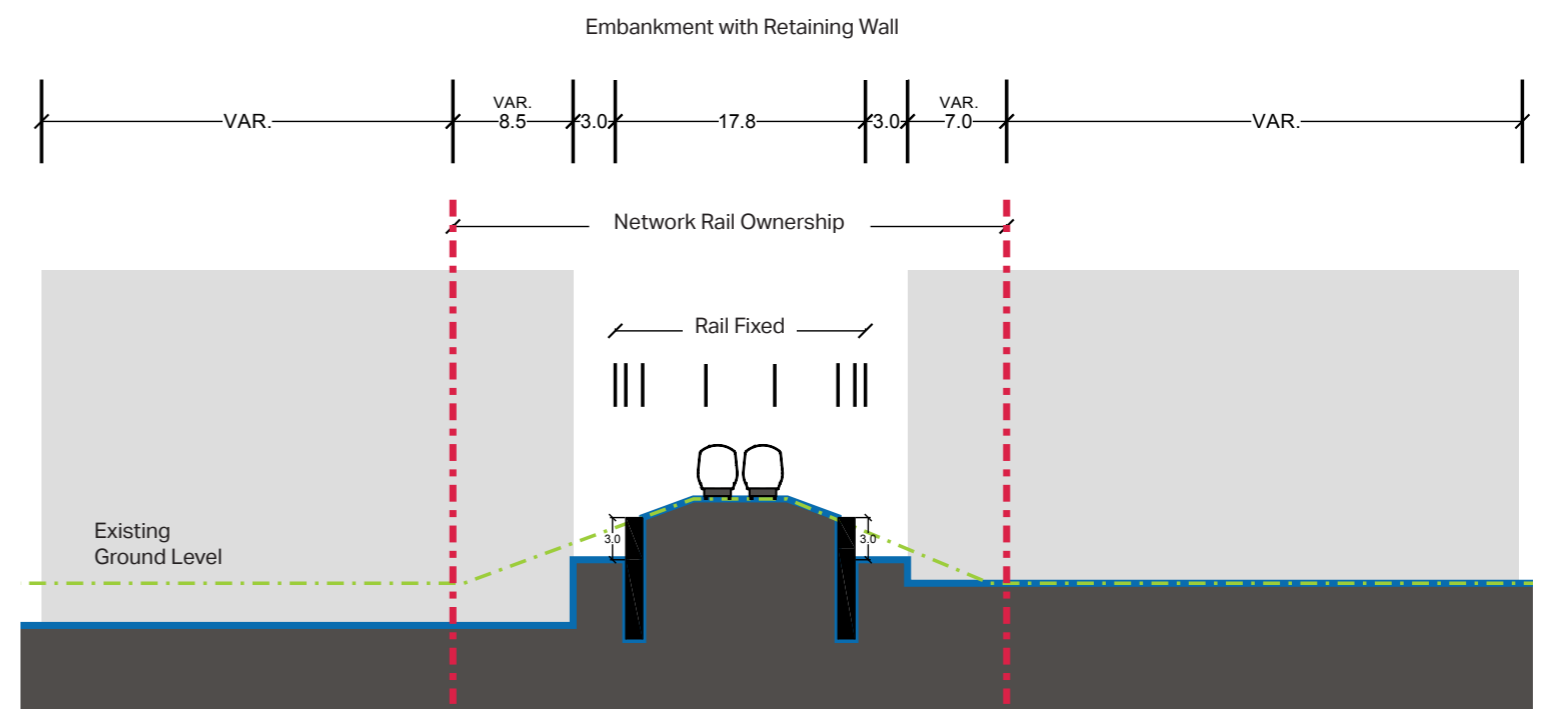


Figure 3-38 Section, West Rail Embankment: Structured 3m height retaining wall

Development adjacent to Hythe Road Viaduct and Rail embankments

The study considered a high level review of the network rail operational requirements and explored how adjacent proposed development could be integrated with the proposed rail infrastructure, including existing railway embankments and the proposed Hythe Road viaduct. The viaduct will lie to the north side of the current West London Line, crossing various landownerships, including Network Rail, London Borough of Hammersmith Fulham, London Borough of Ealing, adopted highway and Cargiant.

Network Rail land-take for the viaduct was explored for two different scenarios:

- A base-case scenario of a 'three track' viaduct; and
- an alternative scenario of 'two track' viaduct without a turn-around facility.

The base-case scenario requires approximately 17,400sqm of development land consisting of 8,300sqm private (Cargiant) and 9,100sqm publicly owned land. The alternative scenario provides a slightly reduced area of approximately 15,000sqm of land which consists of 5,800sqm private (Cargiant) and 9,200sqm of publicly owned land. The 'two-track' viaduct releases an additional development area of 2,400sqm when compared with the base-case 'three-track' viaduct.

Both scenarios will require agreement of land swaps between the landowners and careful coordination of a phased delivery on the adjacent development sites due to complexity of the existing landownership.

Cargiant sites adjacent to the viaduct and the southern part of the LBHF triangle site will have to be neutralised and used for construction compounds during the viaduct construction period. This will potentially last for 20 months based on the current assumption of the masterplan phasing plan.

Key Assumptions:

The alignment of the Hythe Road 'three track' viaduct was taken from TfL GRIP 3B BIM model. For the avoidance of doubt, no engineering design work exists for the 'two track' viaduct. The 'two track' viaduct drawing used in this study was drawn by AECOM masterplan team. A reduction of 2,000sqm across the whole length of the 'three track' viaduct. This assumption was based on a high level estimate summary of a 'two-track' viaduct provided by TfL (21 Feb 2018). This reduction in area translates to approximately a 7.3m decrease in width along the length of the station platform.

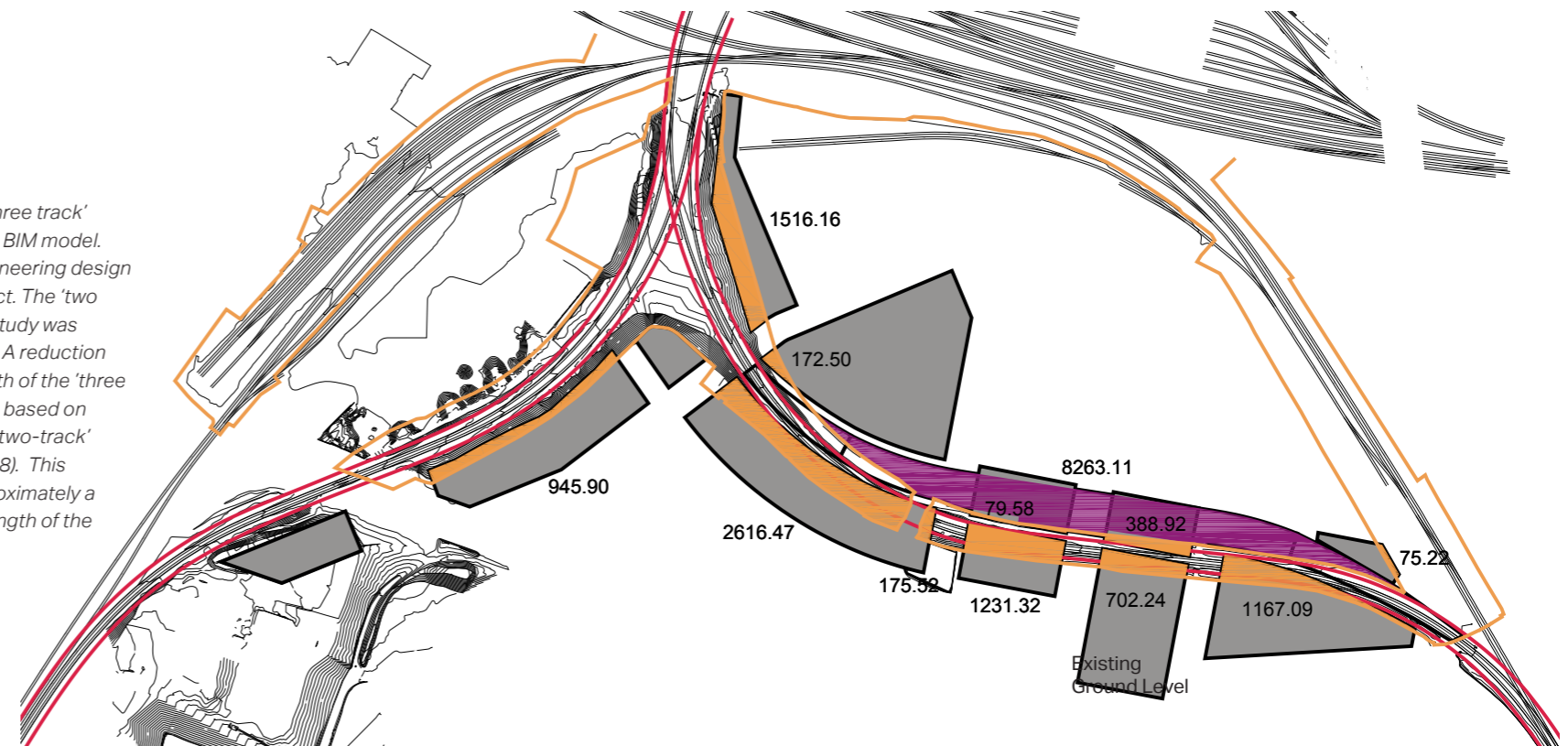


Figure 3-39 Viaduct and embankment study: 3 track viaduct base-case scenario

KEY

- Land required from Cargiant
- Land required from Network Rail
- Indicative development plots

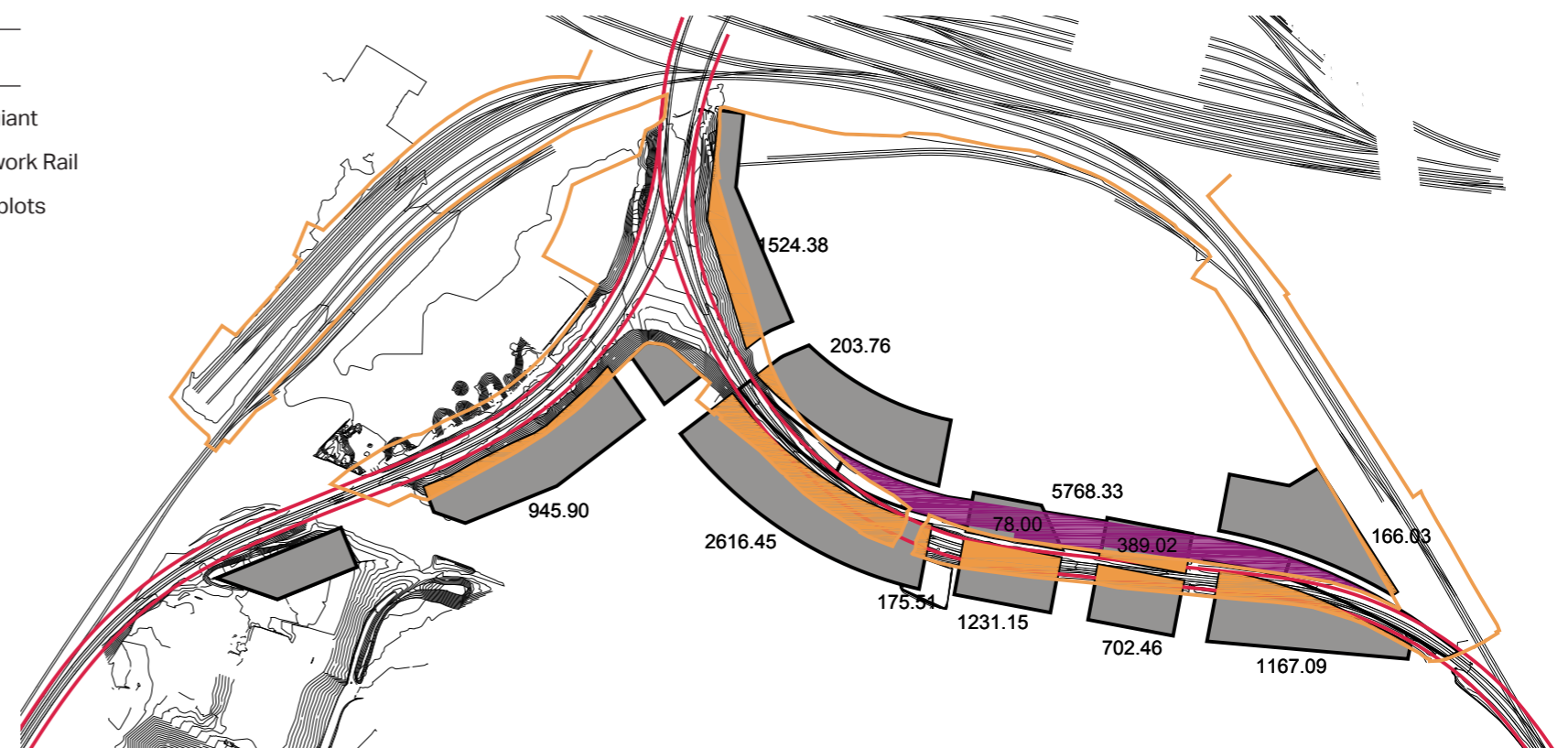


Figure 3-40 Viaduct and embankment study: 2 track viaduct alternative scenario

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3.3.18 Hythe Road Viaduct - Benefits of a 'two-track' Viaduct

This study provides an understanding of the potential gain of residential units provided by the introduction of the 'three-track' viaduct, through defining the loss of units resulting from increasing the 'two-track' viaduct back into a 'three-track' viaduct.

As the March Optimisation process of the Preferred Option evolved, various changes within the masterplan were carried out and it is difficult to isolate the development capacity gained from the changes made just to the viaduct.

This study explores the loss of residential units when increasing the 'two-track' viaduct back into a 'three-track' viaduct. Two different rail alignments were used to expand the platform width as described in Figure 3-43 and Figure 3-44. This allows the impact on residential capacity to be expressed as a range. This was undertaken as a high level assessment and did not include any technical feasibility, cost or land owner engagement.

This study shows that the loss in development area when increasing the viaduct from the 'two-track' to the 'three-track' viaduct results in a loss of between 83 and 93 units - meaning that the result of integrating the 'two-track' viaduct within the Preferred Option increased residential units by between 83 and 93 units.

The options assessment process recommends a 'two-track' viaduct as a preferred option for the viaduct. This study confirms that the 'two-track' viaduct provides:

- increased residential development capacity and additional development area for ground floor uses;
- increased public open space. The 'three-track' viaduct using the GRIP3B alignment will lose 713 sqm and the central alignment will lose 355sqm of open space compared to the 'two-track' viaduct scenario;
- less infrastructure cost (this is assumed due to less construction work);
- the deeper undercroft space of the 'three-track' viaduct results in less permeability and poorer quality of connections. (The 'three-track' viaduct is approx. 7.38m deeper).

Further engineering and design feasibility around each of the potential options and engagement with key stakeholders including land owners would be required for a detailed comparison of the options.



KEY

- 2 Track Viaduct
- - - 6m Offset

Figure 3-41 Two Track Viaduct_Stage 2 Masterplan Baseline

Two Track Viaduct: Stage 2 Masterplan Baseline

	Units Lost
Central	236
NE	574
NW	278
SE	542
SW	452

Total Units 2082

Three Track Viaduct: GRIP3 Alignment

	Area Lost (m ²)	Units Lost
NE	6,039.432	62
NW	2,137.896	12

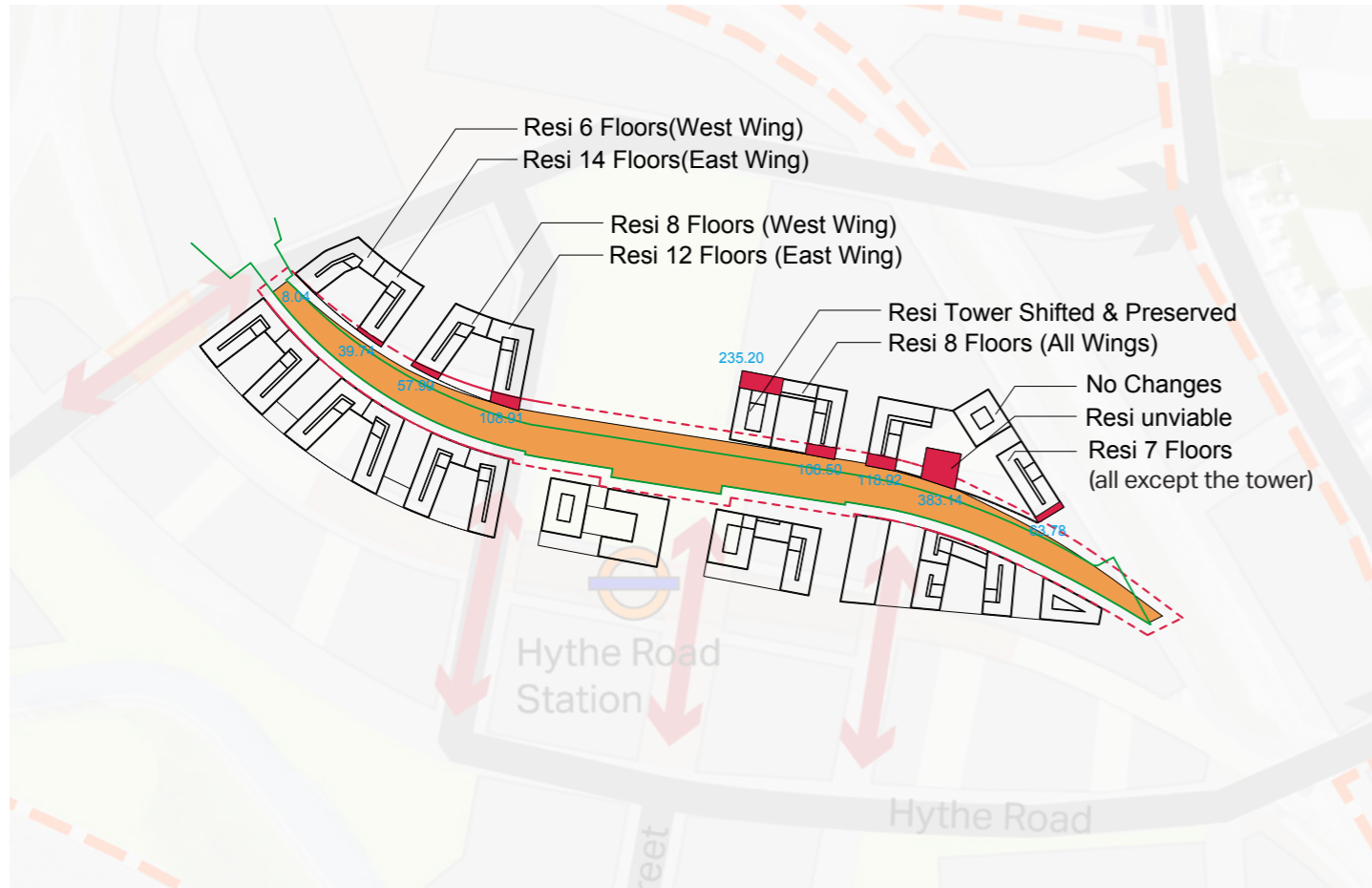
Total Units Lost 83

Three Track Viaduct: Centre Line Alignment

	Area Lost (m ²)	Units Lost
Central	605.115	0
NE	4,628.835	47
NW	1,620.522	17
SE	1,052.838	11
SW	1,787.247	18

Total Units Lost 93

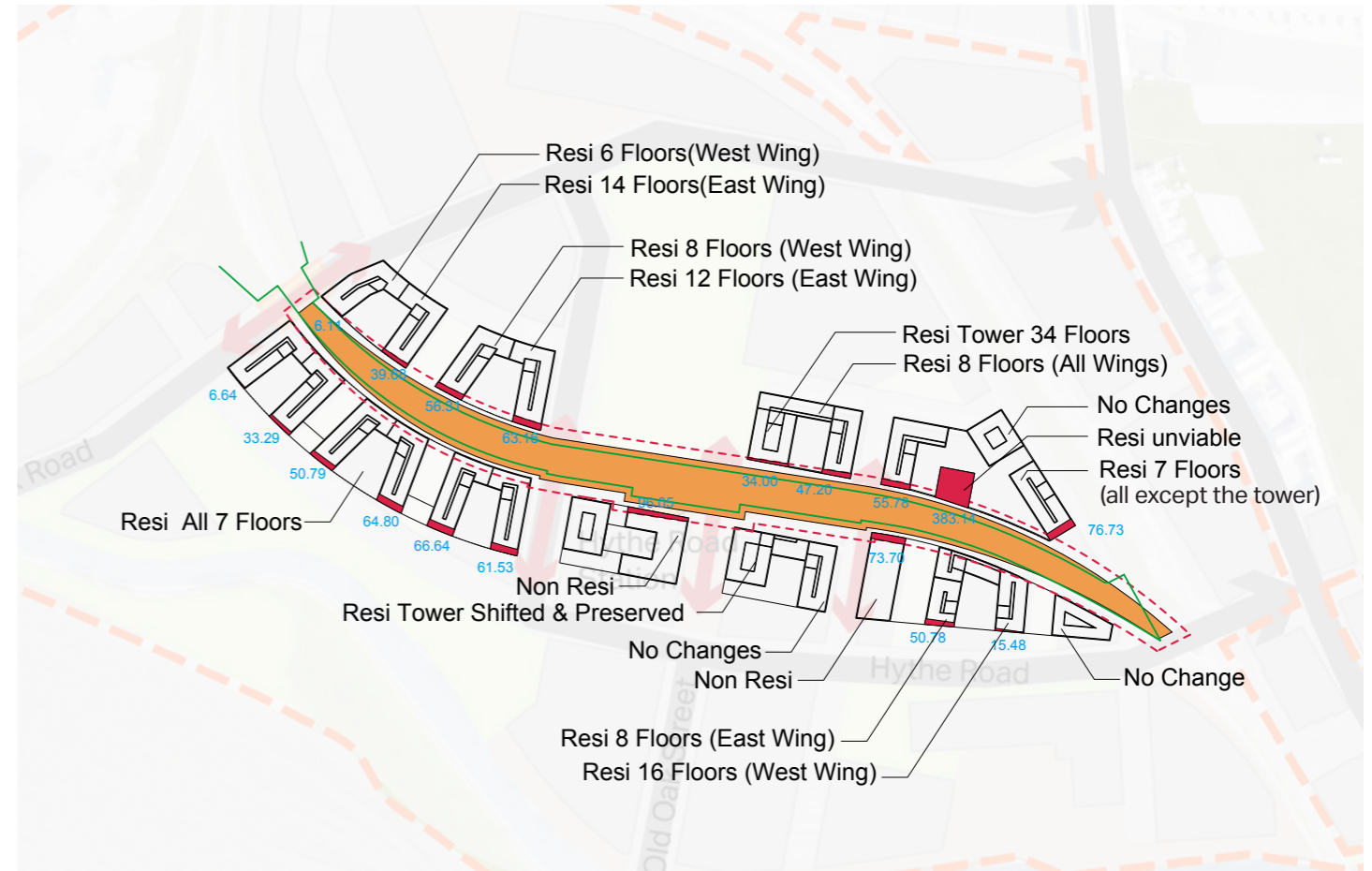
Based on Rev 2 assumption (Residential unit = 98sqm)



KEY

- 2 Track Viaduct
- 6m Offset

Figure 3-42 Three Track Viaduct_GRIP3 Alignment



KEY

- 3 Track Viaduct
- 2 Track Viaduct
- 6m Offset

Figure 3-43 Three Track Viaduct_Centre Line Alignment

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