Prologis UK Ltd

# EMI DAWLEY ROAD, HAYES

## Construction Logistics Plan

P01
JULY 2022

PUBLIC

Prologis UK Ltd

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## Construction Logistics Plan

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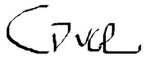
| Signature | |  | | |
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# 1 INTRODUCTION

## 1.1 CONTEXT AND PURPOSE

1.1.1. WSP has been commissioned by Prologis UK Ltd ("Prologis") to provide transport and highways advice in relation to redevelopment of the EMI archive site, Vinyl Place, within the London Borough of Hillingdon (LBH). The Site, within Speedway Industrial Estate and formerly occupied by EMI Music Archives, is shown in **Figure 1-1**. It is being developed from the former music archives to 2,365m² GIA of warehouse, retaining the existing B8 use class.

**Figure 1-1 - Site Location**


## 1.2 OUTLINE CLP OBJECTIVES

1.2.1. CLPs apply to the design and construction phases of developments with the specific aim of improving construction freight efficiency by reducing accidents, carbon dioxide emissions and congestion.

1.2.2. Transport for London's (TfL) guidance document entitled 'Construction Logistics Plan Guidance' for planners identifies the benefits of CLPs to local authorities, residents, developers, businesses and freight operators.

1.2.3. TfL expects CLPs to achieve the following benefits:

- Improved air quality from reduced traffic and congestion;
- Raised standards of safety on the roads, with emphasis on vulnerable road users;
- Better highway efficiency by reducing the effects of construction activity through better delivery management and access; and
- More cost-effective construction logistics activity.

1.2.4. The primary aim of any CLP is to:

> *'To provide the planning authority with the detail of the logistics activity expected during the construction stage of the proposed development'.*

1.2.5. In line with this primary aim, the objectives of the Outline CLP are to:

- Identify surrounding constraints and opportunities for the delivery and operation of freight to the Site;
- Identify potential opportunities for reducing, re-timing or combining deliveries;
- Help minimise congestion on the surrounding highway network and ease environmental pressures;
- Improve the reliability of deliveries to the Site;
- Reduce the fuel costs of the freight operators;
- Identify the needs of a Detailed CLP; and
- Demonstrate an understanding of the logistical needs of a modular construction project.

1.2.6. From the Outline CLP, a Detailed CLP will be prepared once a Principal Contractor is appointed. The Detailed CLP will define in detail the total number, distribution and types of construction vehicles, the exact location of vehicular access, and any impacts on local bus services.

## 1.3 DEVELOPMENT PROPOSALS

1.3.1. The application seeks full planning permission for the following redevelopment proposals, to redevelop the former EMI Music Archives off Dawley Road, Hayes within the London Borough of Hillingdon (LBH) for B8 uses with a single unit of approximately 2,365m² GIA. The proposed development masterplan is illustrated in **Appendix A**

## 1.4 OUTLINE CLP STRUCTURE

1.4.1. This report will be structured as follows in accordance with TfL's guidance:

- Chapter 2 – Context, Considerations and Challenges;
- Chapter 3 – Construction Programme and Methodology;
- Chapter 4 – Vehicle Routing and Site Access;
- Chapter 5 – Strategies to Reduce Impact;
- Chapter 6 – Estimated Vehicle Movements; and
- Chapter 7 – Implementing, Monitoring and Updating.

# 2 CONTEXT, CONSIDERATIONS AND CHALLENGES

## 2.1 POLICY CONTEXT

2.1.1. This chapter identifies the relevant national, strategic and local policy concerned with construction management for the Proposed Development. In particular, this chapter looks at the following policy documents:

- National Planning Policy Framework (2019)
- Traffic Management Act (2004)
- London's Low Emission Zone (2008)
- The Mayor's Transport Strategy (2018)
- New London Plan (2021)
- The London Freight and Servicing Action Plan (2019)
- Construction Logistics Planning Guidance (2021)
- Freight Operator Recognition Scheme (FORS)
- London Borough of Hillingdon Local Implementation Plan 3 (LIP3, 2019) and Local Plan Part 2 (LPP2, 2020) Development Management Policies

### NATIONAL PLANNING POLICY FRAMEWORK (2021)

2.1.2. Section 9 of the NPPF provides guidance on promoting sustainable transport for new developments. With relevance to development construction and logistics it states:

> *'112. (…) applications for development should:*
>
> *d) allow for the efficient delivery of goods, and access by service and emergency vehicles;'*

2.1.3. This guidance outlined in the NPPF provided the basis for the development of the London Plan (2021) and CLOCS' Construction Logistics Planning Guidance (April 2021).

### TRAFFIC MANAGEMENT ACT (2004)

2.1.4. Part 2 of the Traffic Management Act sets out the responsibility of local authorities to manage traffic networks within their geographical area of responsibility. This includes efficient use of the network and the requirement to take measures to avoid contributing to traffic congestion. Part 5 outlines the responsibility of local authorities in Greater London to manage the strategic route network. This includes TfL's role to manage certain areas of the Greater London route network.

### LONDON'S LOW EMISSION ZONE (2008)

2.1.5. The Low Emissions Zone (LEZ) is a scheme that aims to improve air quality in London by setting and enforcing new emissions standards for HGVs, large vans and minibuses, and deterring the use of the most polluting vehicles by freight operators.

2.1.6. The LEZ came into force on 4 February 2008 for lorries over 12 tonnes with different vehicles affected over time and tougher emissions standards introduced in 2012. Cars and motorcycles are not affected.

2.1.7. The LEZ is enforced through fixed and mobile cameras which then read vehicle registration number plates and check against a database of vehicles which meet the LEZ emissions standards, are either exempt or registered for a 100% discount, or from which the LEZ daily charge has been paid.

2.1.8. All roads surrounding the Site are within the LEZ which covers all London boroughs and will be further expanded from October 2021.

### THE MAYOR'S TRANSPORT STRATEGY (2018)

2.1.9. Freight and servicing is frequently mentioned throughout The Mayor's Transport Strategy which contains a strategy considering all methods of freight delivery including road, rail, pipeline, water, bicycles and air. The document especially highlights the importance of the London Freight Plan, DSPs, CLPs and FORS to encourage improved efficiency and provide a framework for incentivisation and regulation.

2.1.10. In particular, Proposal 16 states that:

> *"The Mayor, through TfL, and working with the boroughs and members of the Freight Forum, will improve the efficiency of freight and servicing trips on London's strategic transport network by:*
>
> *a) Identifying opportunities for moving freight on to the rail network where this will not impact on passenger services and where the benefits will be seen within London.*
>
> *b) Increasing the proportion of freight moved on London's waterways.*
>
> *c) Reviewing the potential benefits of a regional freight consolidation and distribution network and completing the network of construction consolidation centres in London."*

### LONDON PLAN 2021

2.1.11. The London Plan 2021 continues to state the relevance and importance of CLPs, with Policy T7 referring to Deliveries, Servicing and Construction and confirming that "*Construction Logistics Plans and Delivery and Servicing Plans will be required and should be developed in accordance with Transport for London guidance and in a way which reflects the scale and complexities of developments that*". Additionally, it is stated that "*During the construction phase of development, inclusive and safe access for people walking or cycling should be prioritised and maintained at all times*".

2.1.12. Paragraphs 10.7.6 and 10.7.7 of the supporting text provide more detail of CLPs:

> *"Construction Logistics and Delivery and Servicing Plans should be developed in line with TfL guidance and adopt the latest standards around safety and environmental performance of vehicles to ensure freight is safe, clean and efficient. To make the plans effective they should be monitored and managed throughout the construction and operational phases of the development.*
>
> *To reduce the road danger associated with the construction of new development and enable the use of safer vehicles, appropriate schemes such as CLOCS (Construction Logistics and Community Safety) or equivalent and FORS (Fleet Operator Recognition Scheme) or equivalent should be utilised to plan for and monitor site conditions."*

### LONDON FREIGHT AND SERVICING ACTION PLAN (2019)

2.1.13. The London Freight and Servicing Action Plan identifies CLPs as a key element of the Safe Freight objective, comprised of:

- Safe vehicles;
- Safe speeds;
- Safe streets; and
- Safe behaviours.

2.1.14. With respect to CLPs and their role to provide safe streets:

> "*CLPs specify the safest direct route for construction vehicles to and from a site, avoiding left-turning manoeuvres and locations where people are more vulnerable, such as around schools and cycling routes. All construction vehicles of FORS members must only be driven on the route identified in the relevant Construction Logistics Plan, or their membership can be suspended or terminated."*

## 2.1.16. FLEET OPERATOR RECOGNITION SCHEME (FORS)

2.1.17. The FORS is a voluntary scheme that encourages sustainable best practice for fleet operators and is named within London Freight and Servicing Action Plan as well as in the Mayor's Transport Strategy and the London Plan 2021.

2.1.18. FORS promotes safe working practices, legal compliance and a corporate social responsibility to improve the performance of fleet operators. The project has been developed with trade union involvement and collaboration with freight operators and the facility of sharing information.

2.1.19. Operators join the scheme as members, with tiers of membership reflecting freight operator achievements. It will offer members incentives to increase the sustainability of their operations and to develop their skills, including best practice development for:

- *Training to improve safety and reduce CO2 and emissions*
- *Maintenance, to improve safety and reduce fuel consumption, CO2 and emissions*
- *Management of road risk to improve safety, particularly for pedestrians and cyclists*
- *Fuel efficiency, to save costs and reduce CO2 and emissions*
- *The use of low-carbon engine technologies such as hybrid and electric vehicles, hydrogen fuel cells and biofuels to reduce CO2 and emissions*

### CONSTRUCTION LOGISTIC PLANNING GUIDANCE (2021)

2.1.20. TfL published in 2017 the Construction Logistics Planning Guidance to help London Freight Plan objectives, which was consequently adapted by CLOCS in 2021 for UK-wide implementation, although still being referred to by TfL as the relevant guidance to produce CLPs for London's sites.

2.1.21. The purpose of the Construction Logistics Planning Guidance is *to ensure that CLPs of high quality are implemented to minimise the impact of construction logistics on the road network*.

2.1.22. The guidance aims to:

> - *"Establish a standardised approach to assessing the CLP element of planning applications;*
> - *Inform developers of the technical requirements of CLPs;*
> - *Describe the Planned Measures that should be considered or included within a CLP;*
> - *Provide detail on the implementation and monitoring of CLPs; and*
> - *Introduce the concept of Community Considerations and their relevance to the CLP process."*

2.1.23. Following from the above aim of establishing a standardised approach to CLPs, the guidance sets out a particular structure which all CLPs should follow depending on whether they are Outline or Detailed CLPs.

2.1.24. In accordance with the structure set out within the Construction Logistic Planning Guidance, this Outline CLP has been structured as already detailed in Section 1.4.

2.1.25. Additional to the standardised structure of CLPs, the Construction Logistic Planning Guidance also describes the access plans and particular scales to which the relevant information has to be shown, which has been particularly considered within Chapter 4 of this CLP.

*2.1.26.* Furthermore, the guidance is clear on proposing strategies within the Outline CLP to reduce and mitigate any potential impacts arising from construction works. In particular,

> "*Measures that can be implemented to ensure the CLP is effective in achieving the aims of reducing environmental impact, road risk, congestion and cost (…) are categorised as follows:*
>
> - *Committed: indicates a measure that will be implemented as part of the CLP, secured by planning condition or, where applicable, through the Section 106 agreement;*
> - *Proposed: indicates a measure that is feasible must be evaluated to determine its practicality; and*
> - *Considered: indicates a measure that is not currently relevant but may be in the future."*

2.1.28. Committed, proposed and considered measures (as defined above) to ensure the Detailed CLP will be effective in achieving the desired aims are contained within Chapter 4this CLP.

**LONDON BOROUGH OF HILLINGDON LIP3 AND LPP2**

Outcome 3 of the Borough's Transport Objectives *'London's streets will be used more efficiently and have less traffic on them'* applies to this CLP. Specifically, the Plan seeks to:

> *2.1.29."Reduce the number of freight trips in the central London morning peak."*

2.1.30. This is something that will need to be considered during construction, particularly with regards to delivery timings.

2.1.31. In addition to the above, it is confirmed within the supporting text of LBH's LIP3 that "*The London Borough of Hillingdon always seeks reassurance that the risks associated with construction traffic will be reduced to an absolute minimum. Planning applications are expected to be supported by a Construction and Logistics Plan. FORS Silver accreditation is a standard prerequisite when considering construction and logistics plans.*"

2.1.32. Policy DM7 of LBH's LPP2 – Development Management Policies refers to Freight and it is included within its supporting text that "*proposals should include, where relevant, DSPs and CLPs as part of the transport appraisal and travel plan requirement. These plans should aim for the efficient and consolidated movement of goods with minimum disruption to local amenity.*"

2.1.33. This Outline CLP considers all the above and makes necessary arrangements for the Detailed CLP to build a strong, effective strategy to manage construction traffic and minimise potential disruptions.

## 2.2 LOCAL ACCESS ARRANGEMENTS

### VEHICULAR ACCESS

2.2.1. As part of this Outline CLP, impacts on both the strategic and local road networks have been considered at a high level through the routing of construction vehicles towards and from the Site. This is considered in more detail in Chapter 4 and Chapter 6.

2.2.2. Once a principal contractor is appointed the total number and timely distribution of construction vehicles will be defined in detail and said assessment will be included in the Detailed CLP.

2.2.3. It is not envisaged that any Traffic Regulation Orders (TROs) will be required for any phase of the construction programme for the Proposed Development and access to neighbouring properties will be maintained at all times. However, should this be needed, it will be highlighted as part of the Detailed CLP so that the TRO process will start at the earliest opportunity.

### PUBLIC TRANSPORT ACCESS

2.2.4. Swallowfield Way is the closest bus stop to the site located adjacent to Vinyl Place on Dawley Road. The exact location of the construction vehicular access and a review of any impacts on local bus services will be included in the Detailed CLP, following the appointment of a principal contractor.

2.2.5. Hayes and Harlington Station is located around 1km away to the east of the site, served by Great Western Rail and the Elizabeth Line between Reading and Paddington. These lines provide frequent and regular direct connections to many destinations across west London, Berkshire and south Oxfordshire such as Didcot Parkway, Reading, Slough and Paddington Station.

2.2.6. It is not envisaged that the construction activity associated with the Proposed Development will affect the rail and underground services within the proximity of the Site.

### CYCLE ACCESS

2.2.7. The Site benefits from proximity to cycle infrastructure with local routes located along the Grand Union Canal. It is advised that construction vehicles are warned when attending the Site of cyclist activity in the area, as well as reinforcing the message when on-site with signage.

2.2.8. It is not envisaged that the construction activity associated with the Proposed Development would warrant closure of local cycle routes at this time however the Detailed CLP will agree any necessary mitigation measures.

### PEDESTRIAN ACCESS

2.2.9. Wide footways are provided on Dawley Road, adjacent to Vinyl Place, which provides links to the wider area. It is not envisaged that the construction activity associated with the Proposed Development will affect the local footway network however the Detailed CLP will agree any necessary mitigation measures.

## 2.3 CONSIDERATIONS AND CHALLENGES

2.3.1. Planned measures to mitigate any potential conflicts or challenges are presented in Chapter 5 of this Outline CLP, whilst challenges and other considerations are detailed herein.

### FREIGHT BY RAIL

2.3.2. Considering the proximity of West Drayton Railhead (approximately 2.8km west to the Site) and Hayes & Harlington Railhead (approximately 0.9km east to the Site), the opportunities of rail freight will be considered as a transport mode option to undertake construction deliveries.

### FREIGHT BY WATER

2.3.3. Considering the Grand Union Canal is located on the northern boundary of the Site, the opportunities of freight by water will be considered as a possible transport mode option to undertake part of the route of construction deliveries.

### SPEEDWAY INDUSTRIAL ESTATE

2.3.4. The Proposed Development is located within the existing industrial areas, accessed via Dawley Road.

2.3.5. The volume of the construction traffic is not expected to be significant enough to have a detrimental impact on the current operation of these industrial areas and any other roads in the locality, or subsequently cause (in combination with industrial traffic in the area) any capacity issues resulting in excessive queueing and delays.

2.3.6. Where practically possible, construction traffic, deliveries and removals will take place during off-peak hours to avoid adding to local traffic during busy periods.

### NEIGHBOURING CONSTRUCTION SITES

2.3.7. A review of construction sites in the local area will take place once a fixed construction programme has been defined. This will identify overlapping construction periods and assist in assessing the feasibility of freight consolidation opportunities and cumulative impacts of construction operations in the area.

### CONSULTATION AND PUBLIC RELATIONS

2.3.8. The Considerate Constructors Scheme (CCS) is the national initiative set up by the construction industry to improve its image. Construction sites and companies can register with the Scheme and are monitored against a Code of Considerate Practice, designed to encourage best practice beyond statutory requirements. The Scheme is concerned about any area of construction activity that may have a direct or indirect impact on the image of the industry as a whole. The main areas of concern fall into three categories: the general public, the workforce and the environment.

2.3.9. A dedicated point of contact will be responsible for communication with statutory authorities, including LBH and TfL, non-statutory authorities and local interest groups. This dedicated person will be nominated once a principal contractor is appointed. All queries and complaints received will be directed to the dedicated point of contact. The contact details and location of site offices and the dedicated points of contact would be communicated to local residents and businesses nearer the time using letters or leaflets. A register of complaints will be maintained.

## FLEET OPERATORS RECOGNITION SCHEME

2.3.10. It is expected that the principal contractor will use sub-contractors who are members of the FORS, as standard prerequisite for LBH. This will ensure that the construction vehicle fleet meets the requirements of London's LEZ regarding both emissions standards and the need for safe vehicles as per the Safer Lorries Scheme.

## CONSTRUCTION LOGISTICS AND COMMUNITY SAFETY (CLOCS)

2.3.11. As with the FORS, it is expected that the principal contractor will meet CLOCS' standards for construction logistics. By being recognised as a member of FORS, several requirements to meet CLOCS' standards will already be demonstrated.

# 3 CONSTRUCTION PROGRAMME AND METHODOLOGY

3.1.1. As the principal contractor has not been appointed, there is insufficient data to determine the programme and construction period at this time to a detailed level; however, following initial from information from Prologis, it is envisaged that demolition and enabling works will commence in December 2022 over a period of 6 months. Vertical build is thereafter expected to commence in June 2023 i.e. for a duration of 6 months.

## 3.2 METHODOLOGY

3.2.1. As with the construction programme discussed above, the proposed methodology for the different phases of the works has not yet been fixed. Once the contractor is appointed, they will be able to provide these details to LBH.

3.2.2. It is expected that the appointed contractor will work in accordance with the CCS and the project will be registered with the CCS in order to ensure that care is given to environmental protection, safety of workforce and the members of public, and also that the local communities are respected with the appearance of the Site being least disruptive as possible.

# 4 VEHICLE ROUTING AND SITE ACCESS

## 4.1 CONSTRUCTION VEHICLES

4.1.1. It is proposed that access for construction vehicles to the site will be retained via Vinyl Place.

4.1.2. The vehicular access is located on Vinyl Place off the A437 Dawley Road, it can be seen in context with **Figure 4-3**.

4.1.3. Details of the proposed construction routing will be agreed with LBH and the relevant highway authority prior to commencement of construction work. However, it is recommended at this stage that routes will follow the roads marked in **Figure 4-1**, **Figure 4-2** and **Figure 4-3** below.

4.1.1. The routes identified include the Strategic Road Network (SRN) of the M4, as well as key London Red Route networks and A roads in the vicinity of the site. The final routing will be dependent on where materials are being delivered from, however it is likely that the use of the SRN and major routes will be promoted. The construction vehicles are therefore likely to utilise the M4, before accessing the site via the A437 if coming from the south of the site and using the A4020, A317 if coming from north of the site. More locally, it is expected that vehicles will utilise routes such as the A312, Shepiston Lane, North Hyde Road and A437 to access the site. Whilst unlikely to impact construction activities as these will be limited to day times, any final routes will also be cognisant of the London Lorry Control scheme.

**Figure 4-1 - Strategic Highway Network**

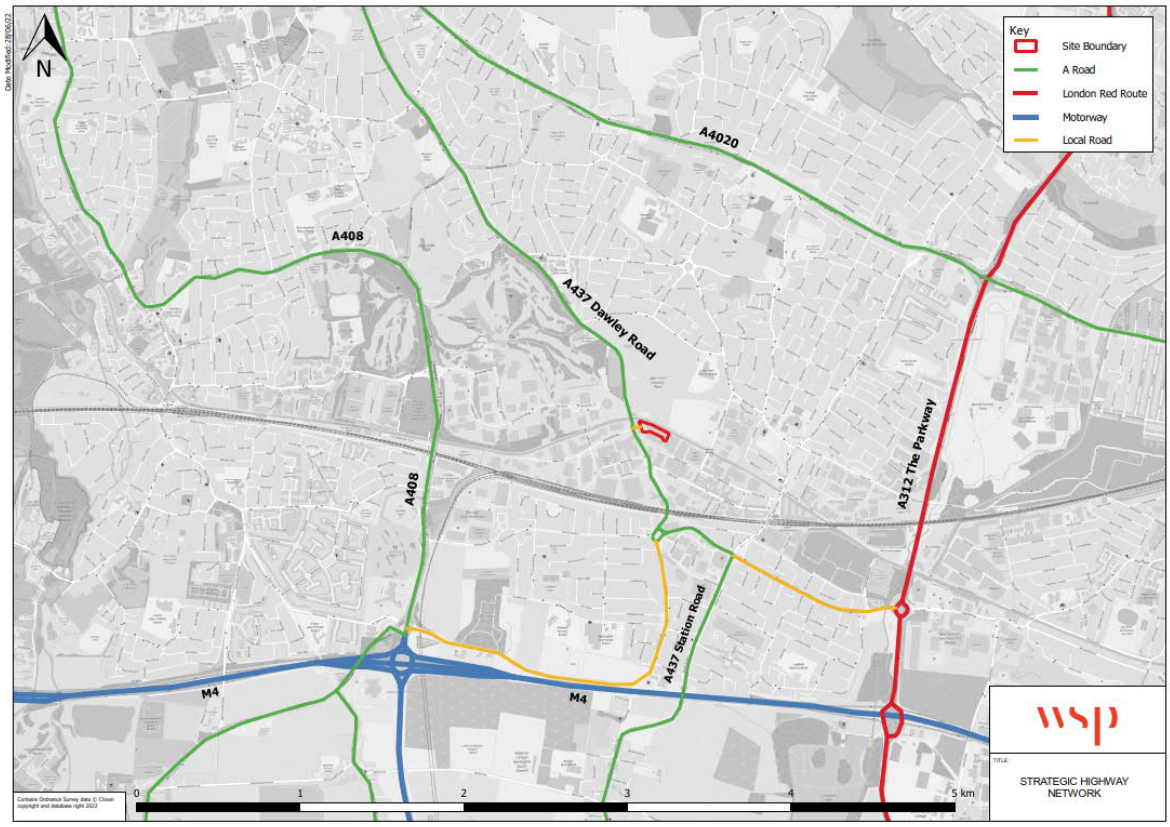


**Figure 4-2 - Regional Access Plan**

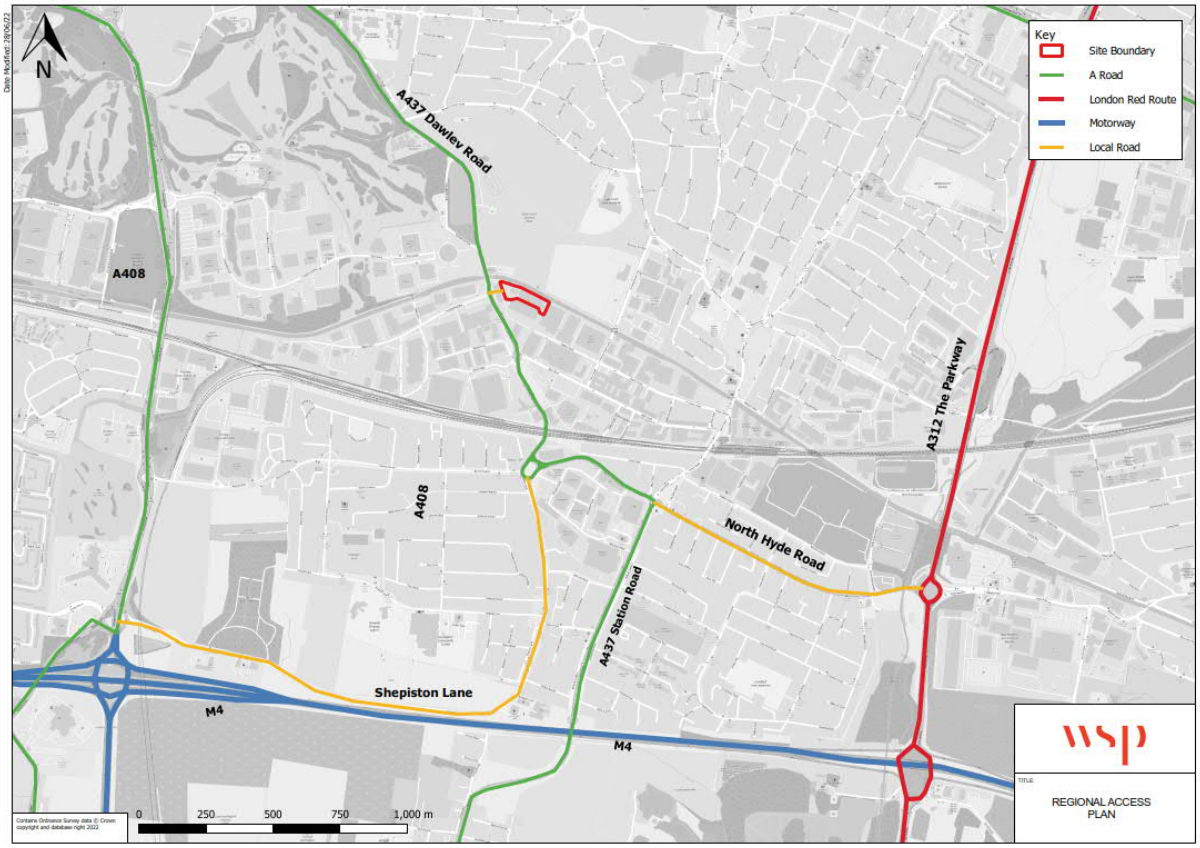
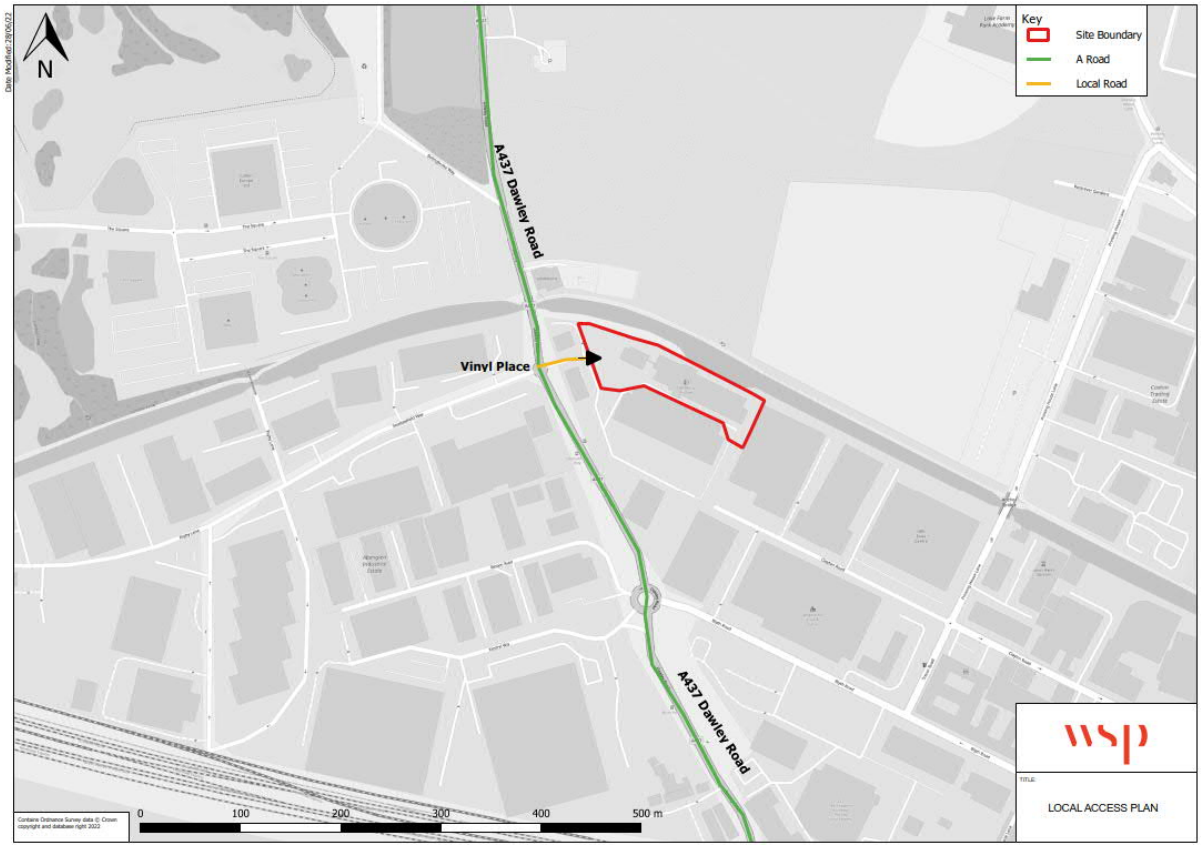



**Figure 4-3 - Local Access Plan**



## 4.2 ACCESS FOR SITE PERSONNEL

4.2.1. All construction personnel will be advised of the parking restrictions in force in the vicinity of the Site and encouraged to use public transport, walk or cycle to work. A dedicated pedestrian access for employees is anticipated to be located on Vinyl Place.

4.2.2. As described within Chapter 2 of the TA, the Site is accessible via public transport. Public transport includes frequent bus and rail services located within walking / cycling distance of the Site.

4.2.3. Site personnel will be made aware of protocols setting out the secure entry/exit routes to the Site, travel planning details, emergency evacuation procedure and the proposed delivery management strategy during the construction phases.

## 4.3 VISITOR ACCESS

4.3.1. All visitors will be directed to the Site compound offices for registration and, as necessary, site induction. They will be required to sign in and out of the site on a daily basis. At no time will any visitors be allowed access to areas where construction works are in progress.

4.3.2. A non-PPE (Personal Protective Equipment) route will always allow pedestrian access to the office and welfare facilities prior to going on-site and to ensure visitors use the appropriate PPE when being permitted to access an area of construction activity.

4.3.3. The general public will be excluded from the works area using appropriate signage and hoarding, although again there will be a safe route provided to enable the public to liaise with the Site Manager when required.

## 4.4 EMERGENCY VEHICLE ACCESS

4.4.1. Suitable access for emergency vehicles will be maintained throughout the course of the works, with access from Vinyl Place and Dawley Road using the dedicated vehicular access route. A second emergency access will be explored by the appointed contractor to maintain emergency access at all times to the Site if required

# 5 STRATEGIES TO REDUCE IMPACT

## 5.1 REDUCING IMPACTS

5.1.1. This section identifies the measures and the level of commitment to them in ensuring the minimal impact of the construction process on the environment, road safety, congestion and cost. The following checklist shown in **Table 5-1** identifies the CLP Guidance recommended measures and the commitment levels expected on Site:

- *"Committed indicates a measure that will be implemented as part of the CLP, secured by planning condition or, where applicable, through the Section 106 agreement;*
- *Proposed indicates a measure that is feasible but must be evaluated to determine its practicality; and*
- *Considered indicates a measure that is not currently relevant but may be in the future."*

5.1.2. Measures of specific interest are then further described in the subsequent paragraphs.

**Table 5-1 - Planned Measures to reduce impacts**

| Planned Measures Checklist | Committed | Proposed | Considered |
|---|---|---|---|
| **Measures influencing construction vehicles and deliveries** | | | |
| Safety and environmental standards and programmes | X | | |
| Adherence to designated routes | X | | |
| Delivery scheduling | X | | |
| Re-timing for out of peak deliveries | | X | |
| Re-timing for out of hours deliveries | | X | |
| Use of holding areas and vehicle call off areas | | X | |
| Use of logistics and consolidation centres | | X | |
| Vehicle choice | | | X |
| **Measures to encourage sustainable freight** | | | |
| Freight by water | | | X |
| Freight by rail | | | X |
| Use of Electric Vehicles | | X | |
| **Material Procurement measures** | | | |
| DfMA and off-site manufacture | | X | |
| Re-use of on-site material | | X | |
| Smart procurement | | X | |
| **Other measures** | | | |
| Collaboration with other sites | | X | |
| Implement a staff travel plan | X | | |

5.1.3. Once the Contractor is appointed the above measures will be considered and confirmation will be given on those which can be committed to. However, it is expected that construction personnel will look to adopt suitable measures where appropriate.

## MEASURES INFLUENCING CONSTRUCTION VEHICLES AND DELIVERIES

5.1.4. In terms of safety, it is recommended that all contractors are required to register under the CCS. The principal contractor will also look to use contractors who are members of the FORS wherever possible. FORS provides a quality and performance benchmark for the industry. This will ensure that the construction vehicle fleet meets the requirements of London's LEZ with regard to both emissions standards and the need for safe vehicles as per the Safer Lorries Scheme.

5.1.5. In terms of environmental measures, it is expected that air quality mitigation measures will be applied in line with the Greater London Authority's 'Best Practice Guidance for the Control of Dust and Emissions from Construction and Demolition, November 2006'.

5.1.6. All vehicle routes used by construction traffic will be regularly inspected for any deposits of soil/debris deposited by construction traffic and if necessary, the road will be swept using a mechanical sweeper.

5.1.7. All vehicles exiting the Site will be checked to ensure that loads are fully sheeted and secure and that no spoil is carried out to the public highway. Vehicles will pass through a wheel washing facility which is to be installed and utilised by the contractor before they leave the Site.

5.1.8. Dust suppression will be achieved by ensuring that all materials transported to/from the Site are enclosed or fully sheeted. During dry periods the construction surfaces will be dampened to control the generation of dust.

5.1.9. To assist in timing of deliveries, larger vehicle movements will be scheduled to avoid peak hours on the local road network, wherever practicable. It is expected that a suitable structure will be in place (e.g. delivery booking system) to manage delivery scheduling in accordance with these measures.

5.1.10. Details of routes to be used for journeys to and from site for road operations are provided in Chapter 4. The routes to/from the Transport for London Road Network and Strategic Road Network are specified. A copy of the route plan will be given to all suppliers when orders are placed to ensure drivers are fully briefed on the required route to take. The supplier will be made aware that these routes are required to be followed at all times unless agreed or alternate diversions are in place.

## MEASURES TO ENCOURAGE SUSTAINABLE FREIGHT

5.1.11. Opportunities to route freight by rail or water will be reviewed following the appointment of a contractor and in line with any changes to the Proposed Development.

5.1.12. Railheads that be used to assist in the transportation of construction goods include West Drayton Railhead (approximately 2.8km west to the Site) and Hayes & Harlington Railhead (approximately 0.9km east to the Site). Wincanton Greenford Consolidation Centre is located approximately 7.2km northeast of the Site. These railheads and terminuses are shown in **Figure 4-1.** The Grand Union Canal is also located on the northern boundary of the Site. These will be reviewed, and the use of these facilities considered. All distances are as the crow flies, distances may vary based upon vehicle routing

5.1.13. The use of electric freight vehicles will be encouraged for deliveries to the site. The appointed contractor will work with sub-contractors, suppliers, and haulage/transport suppliers to encourage the use of electric vehicles for freight delivery.

## OTHER MEASURES

5.1.14. It is anticipated the Contractor will review whether any collaboration with nearby sites and / or the strategic logistics partner will be of benefit to the construction site.

5.1.15. Safe access routes for the emergency services will be maintained and controlled by a Traffic Marshall permanently located at the principal construction Site access.

5.1.16. It is anticipated that some on-site parking for construction staff will be provided, however, as there are suitable transport links nearby, travel by public transport, walking and cycling will be strongly encouraged.

### Training and Induction

5.1.17. It is proposed that drivers of commercial vehicles visiting the site on a regular basis will attend a site induction. This induction will include:

- The adopted HGV route(s) for the site, prioritising the strategic road network;
- Road safety for both public and site roads including speed restrictions and defensive driving;
- Site procedures including queuing and parking;
- Cyclist awareness video;
- Environmental issues and processes for their minimisation, including noise and vehicle cleanliness leaving the site; and
- Discussion on potential hazards and risk reduction.

### Site Management

5.1.18. The principal contractor will adopt a site management strategy that minimises the construction impacts in the local area. It is envisaged that the following measures will be adopted;

- Display the name and contact details of the person(s) accountable for air quality pollutant emissions and dust issues on the site boundary;
- Display the head or regional office contact information;
- Record and respond to all dust and air quality pollutant emissions complaints;
- Make complaints log available to the local authority when asked;
- Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked;
- Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions, and dust are being carried out, and during prolonged dry or windy conditions;
- Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the Site and the action taken to resolve the situation is recorded in the logbook;
- Regular inspection and, if necessary, cleaning of local highways and along the site boundaries to check for dust deposits (and removal if necessary); and
- Construction vehicle access arrangements shall be designed to avoid inappropriate or heavily congested roads.

### Operating vehicle/machinery and sustainable travel

5.1.19. It is expected that the site will adopt the following:

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone;

- Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance;
- Ensuring that all construction plant and equipment is maintained in good working order and not left running when not in use;
- Implementation of design controls for construction equipment and vehicles and use of appropriately designed vehicles for materials handling;
- Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where possible; and
- Utilise the information in the framework Travel Plan to support and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

**Waste management**

5.1.20. The following measures will also be implemented:

- Reuse and recycle waste to reduce dust from waste materials; and
- Burning of any material prohibited anywhere on-site;

# 6 ESTIMATED VEHICLE TYPES AND MOVEMENTS

## 6.1 VEHICLE DEMAND AND TYPE

6.1.1. When considering construction vehicle types, a balance is needed between the size of vehicles and the number of vehicular trips to be carried out. Generally, the larger the vehicle, the fewer trips will need to be made. Therefore, environmental protection means that it is best to use larger vehicles, where possible, to limit vehicular movements if this does not have a detrimental impact on other factors such as traffic movement, pedestrian and cycle safety, etc.

6.1.2. Prologis intends to have early involvement from a contractor, and the type and use of vehicles will be set out to minimise the number of movements to and from the Site. It is assumed that materials required for the Proposed Development are delivered into the Site in the largest possible delivery quantities; i.e. the vehicles identified above are fully laden instead of part laden to minimise the number of delivery movements.

6.1.3. The most appropriate routes and links to be used during the construction stage have been reviewed to ensure that all vehicles use the safest and most logical routes to/ from the Site.

6.1.4. Appropriate construction is a key consideration for not only Prologis but also for neighbouring businesses.

6.1.5. The routing plan proposed in Chapter 4 will be reviewed as part of the Detailed CLP and is envisaged to be adopted to ensure that the HGVs follow an appropriate route that reduces any travel through sensitive areas and promotes the use of the strategic road network.

## 6.2 CONSTRUCTION VEHICLES TRIP GENERATION

6.2.1. As the Principal Contractor has not yet been appointed, it is not possible to forecast construction vehicle movements to/from the Site in detail. However, given the size of the Site, it is not expected that the construction works associated with the proposals will generate a significant volume of traffic. Outputs from the TfL CLP tool are provided in **Appendix B.** However, it is noted that as the Principal Contractor is not appointed, some details could not be finalised. As such, the CLP tool outputs are indicative at this stage and will be updated when the full CLP is completed. Assumptions have been made within the tool outputs on the various build-out stages based on the details set out below.

6.2.2. Without bespoke data from the Principal Contractor, a different methodology has been adopted in order to estimate the number of construction-related vehicles arriving/departing the Site for the purposes of this Outline CLP. The methodology uses factored data estimated by a contractor for a similar scheme, which provided a breakdown of construction activities into two categories: site enabling works and construction works.

6.2.3. It is considered that the enabling phase will include activities such as site clearance, decoupling and work to the buildings that will remain on the Site, fencing and security provisions, etc. This stage is expected to last approximately six months (i.e. 26 weeks) in accordance with the information provided by Prologis and in accordance with the programme outlined in Section 3.1.

6.2.4. The second element to the forecast is the construction works, including yard reconfiguration and building fit-out. That is expected to last approximately 6 months which equates to a total of 26 weeks of works. It is expected that the construction works would take place after clearance and demolition with the 12 months expected to cover the complete building programme at this stage.

**Table 6-1 – Estimated Construction Vehicle Generation**

| Phase | Approx. No. Working Days | Yearly | | Daily – AAWT | | Daily AADT | |
|---|---|---|---|---|---|---|---|
| | | LGVs | HGVs | LGVs | HGVs | LGVs | HGVs |
| **Enabling works (Site-wide)** | 130 | 2184 | 1261 | 17 | 10 | 13 | 8 |
| **Warehousing Unit Construction Works** | 130 | 330 | 286 | 3 | 2 | 2 | 2 |

6.2.5. It should be noted that the construction flows outlined above represent daily flows. As such, the forecast construction traffic will be spread throughout the working hours, reducing the impact on the local highway network.

6.2.6. The re-development also seeks to re-utilise the vast majority of the existing buildings and so both the enabling works and construction estimates are likely to over-estimate the volumes of vehicles considerably. For robustness, these have been based on the full development square metreage.

6.2.7. The construction traffic volumes are lower than the operational traffic trip generation assessed in the TA. It is considered in the TA that the local highway network can accommodate the operational traffic, therefore the local highway network can cope with the additional (construction) traffic.

6.2.8. Once a principal contractor is appointed, it is expected that they will review the number and routing of construction vehicles as part of the monitoring process of the Detailed CLP. This process will identify the types of vehicles used for the construction and the number of each which will be needed to complete the Proposed Development.

## 6.3 VEHICLE TYPES

6.3.1. A list of possible vehicle types is supplied below to provide an indication of access and routing considerations made for particular vehicle types. Once a principal contractor is appointed, it is expected that they will define the construction vehicle types to be used for construction which would be included in the Detailed CLP.

6.3.2. The first set of vehicles may be required for the delivery of construction materials and equipment:

- 20T Lorries;
- Articulated Lorries;
- Concrete Wagons;
- Concrete Mixer Trucks;
- Concrete Pumping Trucks;
- Rigid Lorries;
- Small Vans;
- Pick-up Vans;
- HIABs; and
- Waste Skip Removal and Delivery Vehicle.

6.3.3. The second set of vehicles may be required on-site for construction and are likely to arrive when required in different phases of the construction process:

- Bulldozer;
- Excavators;
- Forklift Trucks;
- Tipper Trucks;
- 6T Dumper Truck; and
- Cranes, fixed or mobile.

# 7 IMPLEMENTING, MONITORING AND UPDATING

## 7.1 IMPLEMENTATION

7.1.1. It is expected that the following overarching strategy will be adopted; however, the separate phases of the Proposed Development will provide more detail on their respective units and construction process. This will be confirmed once the Principal Contractor is appointed and as part of the Detailed CLP per development parcel.

7.1.2. The Principal Contractor will look to nominate a member of staff to be responsible for the day-to-day organisation and monitoring of the construction logistics for the construction Site (i.e. Logistics Manager). The responsibilities of this Logistics Manager role will include the implementation and management of the CLP for the lifetime of the construction project.

7.1.3. As well as planning and coordinating the day-to-day deliveries, on-site arrangements to accommodate delivery vehicles, and the arrangements for special deliveries, the Logistics Manager will liaise with nominated representatives of other ongoing construction projects in the area to determine the feasibility of consolidation of vehicle activity and other measures to support the running of the CLP where practical to do so. The Logistics Manager will also liaise regularly with key personnel at LBH.

7.1.4. The CLP will be implemented on a phased basis therefore there may be separate CLPs for each phase of development.

7.1.5. LBH will be notified of the nominated individual prior to the commencement of activities during demolition and construction.

## 7.2 MONITORING AND UPDATES

7.2.1. The CLP is a 'live' overarching document and will be regularly reviewed with key stakeholders and updated throughout the project's construction. It is anticipated that Detailed CLPs will be reviewed annually for each phase of the Proposed Development. Should updates be required, these will be undertaken, and an updated version issued to LBH and other key stakeholders for review and information. Conversely, should the annual review identify that no material changes are required, this too will be articulated to LBH and key stakeholders.

7.2.2. The Logistics Manager will monitor vehicle movements on a daily basis and will carry out surveys of vehicle movements and routing at regular intervals throughout the construction project, as required. An appropriate schedule of surveys will be identified upon the appointment of a contractor in agreement with LBH.

7.2.3. The appointed Construction Logistics Manager will be in charge of implementing the Detailed CLP on behalf of the Principal Contractor. Their job description will include collecting data on:

7.2.4. The number of vehicle movements to the Site, collected by the delivery booking-in system, including:

- total number of vehicles, by vehicle type/size/age;
- duration the vehicle was on Site;
- the origin of the vehicle; and
- the accuracy of the vehicle arrivals relative to the booking system.

7.2.5. Breaches and complaints, including:

- deviation from prescribed vehicle routes;
- unacceptable queuing;
- unacceptable parking;
- status of the suppliers FORS accreditation; and
- compliance of the vehicle to ULEZ and LEZ standards.

7.2.6. Safety, including:

- logistics-related collisions/near-misses;
- any associated injuries or fatalities;
- the methods of travel staff are travelling to Site; and
- whether vehicles or associated safety equipment are maintained correctly.

# Appendix A

MASTERPLAN

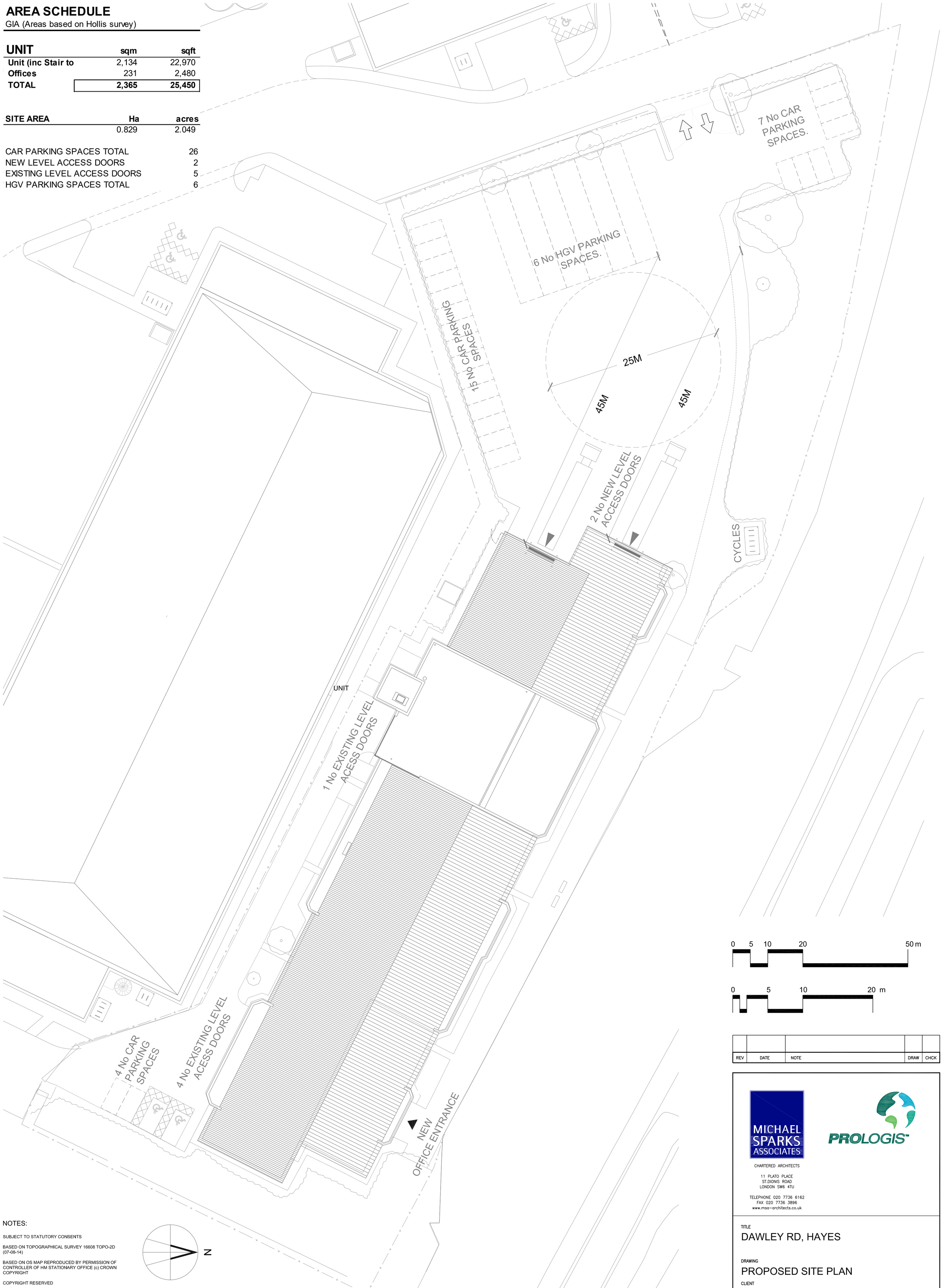
## AREA SCHEDULE

GIA (Areas based on Hollis survey)

| UNIT | sqm | sqft |
|---|---|---|
| Unit (inc Stair to | 2,134 | 22,970 |
| Offices | 231 | 2,480 |
| TOTAL | **2,365** | **25,450** |

| SITE AREA | Ha | acres |
|---|---|---|
| | 0.829 | 2.049 |

| | |
|---|---|
| CAR PARKING SPACES TOTAL | 26 |
| NEW LEVEL ACCESS DOORS | 2 |
| EXISTING LEVEL ACCESS DOORS | 5 |
| HGV PARKING SPACES TOTAL | 6 |




NOTES:

SUBJECT TO STATUTORY CONSENTS

BASED ON TOPOGRAPHICAL SURVEY 16608 TOPO-2D (07-08-14)

BASED ON OS MAP REPRODUCED BY PERMISSION OF CONTROLLER OF HM STATIONARY OFFICE (c) CROWN COPYRIGHT



BASED ON: HOLLIS GLOBAL'S.
SITE PLAN AND FLOOR PLANS.
REF: 91748-HLS-00-01-M2-G-10200-A7-01, 91748-HLS-00-R1-M2-G-10200-A7-01, 91748-HLS-00-Z0-M2-G-10104-A7-01 & 91797-HLS-00-GF-M2-G-10200-A7-01.
DATED: 12.10.2020.

01/104 SITE LAYOUT PLAN

1:250

0 5 10 20 50 m

0 5 10 20 m

| REV | DATE | NOTE | DRAW | CHCK |
|---|---|---|---|---|
| | | | | |

MICHAEL SPARKS ASSOCIATES
CHARTERED ARCHITECTS
11 PLATO PLACE
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PROLOGIS

TITLE
DAWLEY RD, HAYES

DRAWING
PROPOSED SITE PLAN

CLIENT
PROLOGIS UK LTD

| DATE | SCALE | DRAWN |
|---|---|---|
| JULY 2022 | 1:250@A1/1:500@A3 | PF |
| | STATUS | CHECKED |
| | PLANNING | PW |

DRAWING NUMBER
31515-PL-104

# Appendix B

## TFL CLP OUTPUTS

# CONSTRUCTION LOGISTICS PLANNING TOOL (INPUTS)

## USER INPUTS

| | |
|---|---|
| Development name: | EMI Dawley Road, Hayes |
| Landowner: | Prologis UK Ltd |
| Principal contractor: | not known |
| Site addess: | 1A Vinyl Place, Hayes |
| Site postcode: | UB3 1HH |
| Consolidation centre postcode: | unknown |
| Type of project: | Building |
| Type of construction: | Renovation of existing building |
| State of current site: | Vacant |
| Number of working days per month: | 22 |

| Gross floor area (sqm) | Residential | A1 Retail | A3 Retail | A5 Retail | B1 Office | B2 General industry | B8 Storage and distribution | D1 Residential institutions | D2 Leisure | Hotel | Other | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New/additional floor area | | | | | | | | | | | | 0 |
| Refurbished floor area | | | | | | 2,365 | | | | | | 2,365 |
| Total | 0 | 0 | 0 | 0 | 0 | 2,365 | 0 | 0 | 0 | 0 | | 2,365 |

| Construction phase | Schedule (mmm/yyyy) | |
|---|---|---|
| | Start month | End month |
| Site setup and demolition | Dec-2022 | Feb-2023 |
| Basement excavation and piling | Mar-2023 | Mar-2023 |
| Sub-structure | Apr-2023 | Jun-2023 |
| Super-structure | Jul-2023 | Sep-2023 |
| Cladding | Oct-2023 | Oct-2023 |
| Fit-out, testing and commissioning | Nov-2023 | Dec-2023 |

| Construction phase | Schedule | | | | Dec-2022 | Jan-2023 | Feb-2023 | Mar-2023 | Apr-2023 | May-2023 | Jun-2023 | Jul-2023 | Aug-2023 | Sep-2023 | Oct-2023 | Nov-2023 | Dec-2023 | Jan-2024 | Feb-2024 | Mar-2024 | Apr-2024 | May-2024 | Jun-2024 | Jul-2024 | Aug-2024 | Sep-2024 | Oct-2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Start month (mmm/yyyy) | End month (mmm/yyyy) | Duration (Number of months) | Month number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| Site setup and demolition | Dec-2022 | Feb-2023 | 3 | 1 | 462 | 462 | 462 | | | | | | | | | | | | | | | | | | | | |
| Basement excavation and piling | Mar-2023 | Mar-2023 | 1 | 4 | | | | 462 | | | | | | | | | | | | | | | | | | | |
| Sub-structure | Apr-2023 | Jun-2023 | 3 | 5 | | | | | 462 | 462 | 88 | | | | | | | | | | | | | | | | |
| Super-structure | Jul-2023 | Sep-2023 | 3 | 8 | | | | | | | | 88 | 88 | 88 | | | | | | | | | | | | | |
| Cladding | Oct-2023 | Oct-2023 | 1 | 11 | | | | | | | | | | | 88 | | | | | | | | | | | | |
| Fit-out, testing and commissioning | Nov-2023 | Dec-2023 | 2 | 12 | | | | | | | | | | | | 88 | 88 | | | | | | | | | | |
| | | | Monthly total | | 462 | 462 | 462 | 462 | 462 | 462 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | Average daily total | | 21 | 21 | 21 | 21 | 21 | 21 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Construction phase | Vehicle type | | | |
|---|---|---|---|---|
| | ≤ 3.5t | 3.5t - 7.5t | ≥ 7.5t | Total |
| Site setup and demolition | | 63% | 37% | 100% |
| Basement excavation and piling | | 63% | 37% | 100% |
| Sub-structure | | 54% | 46% | 100% |
| Super-structure | | 54% | 46% | 100% |
| Cladding | | 54% | 46% | 100% |
| Fit-out, testing and commissioning | | 54% | 46% | 100% |

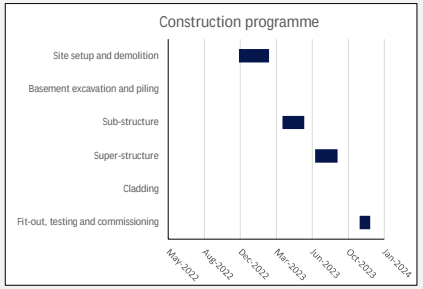
| Construction phase | Input hourly distribution of vehicles on typical day | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 00:00 | 01:00 | 02:00 | 03:00 | 04:00 | 05:00 | 06:00 | 07:00 | 08:00 | 09:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Total |
| Site setup and demolition | | | | | | | | | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | | | | | | | 100% |
| Basement excavation and piling | | | | | | | | | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | | | | | | | 100% |
| Sub-structure | | | | | | | | | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | | | | | | | 100% |
| Super-structure | | | | | | | | | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | | | | | | | 100% |
| Cladding | | | | | | | | | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | | | | | | | 100% |
| Fit-out, testing and commissioning | | | | | | | | | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | | | | | | | 100% |

## EXPECTED NUMBER OF VEHICLES

| Construction phase | No. of vehicles in peak month (Dec-2022) | | | |
|---|---|---|---|---|
| | ≤ 3.5t | 3.5t - 7.5t | ≥ 7.5t | Total |
| Site setup and demolition | 0 | 291 | 171 | 462 |
| Basement excavation and piling | 0 | 0 | 0 | 0 |
| Sub-structure | 0 | 0 | 0 | 0 |
| Super-structure | 0 | 0 | 0 | 0 |
| Cladding | 0 | 0 | 0 | 0 |
| Fit-out, testing and commissioning | 0 | 0 | 0 | 0 |
| Total | 0 | 291 | 171 | 462 |

| Construction phase | Vehicle type in peak of individual construction phase | | | |
|---|---|---|---|---|
| | ≤ 3.5t | 3.5t - 7.5t | ≥ 7.5t | Total |
| Site setup and demolition | 0 | 291 | 171 | 462 |
| Basement excavation and piling | 0 | 291 | 171 | 462 |
| Sub-structure | 0 | 249 | 213 | 462 |
| Super-structure | 0 | 48 | 40 | 88 |
| Cladding | 0 | 48 | 40 | 88 |
| Fit-out, testing and commissioning | 0 | 48 | 40 | 88 |

## CONSTRUCTION PROGRAMME OVERVIEW




## EXPECTED SCHEDULE OF VEHICLES

| Construction phase | ber of vehicles in peak month (Dec-2 | | 00:00 | 01:00 | 02:00 | 03:00 | 04:00 | 05:00 | 06:00 | 07:00 | 08:00 | 09:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Avg daily tot | | | | | | | | | | | | | | | | | | | | | | | | |
| Site setup and demolition | 462 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basement excavation and piling | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sub-structure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Super-structure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cladding | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fit-out, testing and commissioning | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 462 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |

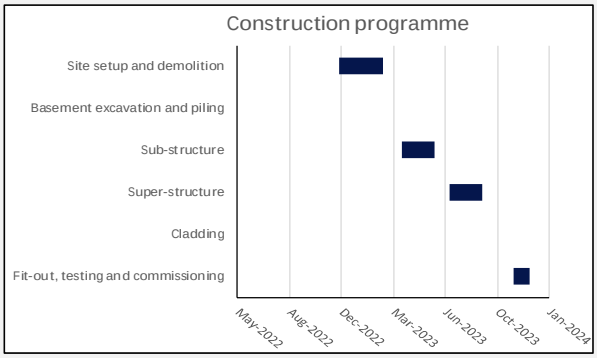
| Construction phase | ak of phase (including possible overla | | 00:00 | 01:00 | 02:00 | 03:00 | 04:00 | 05:00 | 06:00 | 07:00 | 08:00 | 09:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Avg daily tot | | | | | | | | | | | | | | | | | | | | | | | | |
| Site setup and demolition | 462 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basement excavation and piling | 462 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sub-structure | 462 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Super-structure | 88 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cladding | 88 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fit-out, testing and commissioning | 88 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## CONSTRUCTION LOGISTICS PLANNING TOOL (OUTPUTS)



### CONSTRUCTION PROGRAMME OVERVIEW (INDICATIVE - DRAFT)

| Construction phase | Start | End |
|---|---|---|
| Site setup and demolition | Dec-2022 | Feb-2023 |
| Basement excavation and piling | Mar-2023 | Mar-2023 |
| Sub-structure | Apr-2023 | Jun-2023 |
| Super-structure | Jul-2023 | Sep-2023 |
| Cladding | Oct-2023 | Oct-2023 |
| Fit-out, testing and commissioning | Nov-2023 | Dec-2023 |




### NO. OF VEHICLES IN PEAK PHASE (EX. OTHER PHASES)

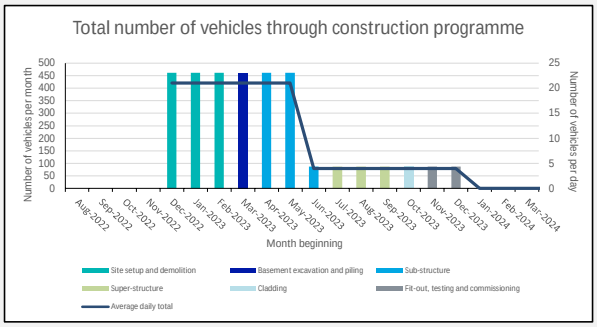
| Construction phase | Period of stage | No. of trips (monthly) | Peak no. of trips (daily) |
|---|---|---|---|
| Site setup and demolition | Q4 2022 - Q1 2023 | 462 | 21 |
| Basement excavation and piling | Q1 2023 - Q1 2023 | 462 | 21 |
| Sub-structure | Q2 2023 - Q2 2023 | 462 | 21 |
| Super-structure | Q3 2023 - Q3 2023 | 88 | 4 |
| Cladding | Q4 2023 - Q4 2023 | 88 | 4 |
| Fit-out, testing and commissioning | Q4 2023 - Q4 2023 | 88 | 4 |
| Peak period of construction | Q4 2022 - Q2 2023 | 462 | 21 |

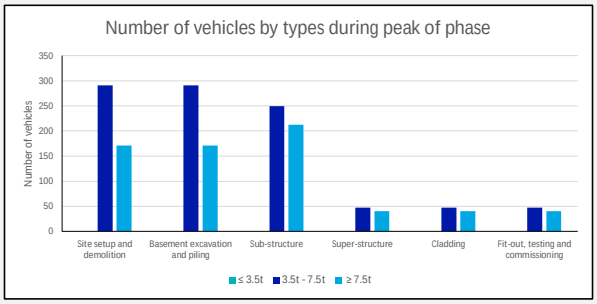
### NO. OF VEHICLES IN PEAK PHASE (INC. POSSIBLE OVERLAP OF SUBSEQUENT PHASES)

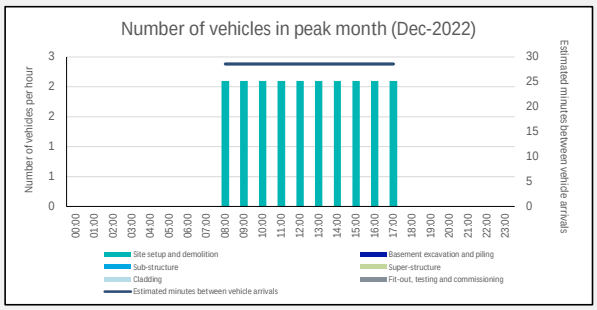
| Construction phase | Period of stage | No. of trips (monthly) | Peak no. of trips (daily) |
|---|---|---|---|
| Site setup and demolition | Q4 2022 - Q1 2023 | 462 | 21 |
| Basement excavation and piling | Q1 2023 - Q1 2023 | 462 | 21 |
| Sub-structure | Q2 2023 - Q2 2023 | 462 | 21 |
| Super-structure | Q3 2023 - Q3 2023 | 88 | 4 |
| Cladding | Q4 2023 - Q4 2023 | 88 | 4 |
| Fit-out, testing and commissioning | Q4 2023 - Q4 2023 | 88 | 4 |

## CONSTRUCTION LOGISTICS PLANNING TOOL (OUTPUTS)





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