

## 5 CONSTRUCTION METHODOLOGY & PHASING

### Introduction

- 5.1 This chapter describes the anticipated demolition and construction methodology and phasing of the Development. Consideration of likely significant effects on the environment that may arise during the demolition and construction phase, and any necessary mitigation measures, are provided within the respective technical chapters of this ES (Chapters 6 to 13).
- 5.2 Planning for demolition and construction is necessarily broad at this stage and may be subject to modification. This chapter is based on reasonable assumptions and experience and allows assessment of the realistic "worst case" demolition and construction phase effects. Construction phase effects on future residents living in the earlier phases of the Development have been assessed in the relevant technical chapters.

### Anticipated Programme

- 5.3 Demolition and construction of the Development is anticipated to commence in 2021, subject to gaining planning permission, and span approximately 5 years. Overall, the demolition and construction process is expected to be completed by 2026. Table 5.1 shows the indicative demolition and construction and phasing programme for the Development. The Transport and Access, Air Quality and Noise and Vibration ES Chapters have all assumed this indicative programme for purpose of their assessment.

**Table 5.1: Indicative Demolition and Construction Phasing**

Phase	Development	Completions per phase	Anticipated Construction Start	Anticipated Construction Completion
1	Vacant Possession/Demolition of Homebase	N/A	Q3 2021	Q3 2023
2	Construction of Tesco	1 store	Q2 2023	Q1 2025
3	Construction of Block B1	102 units	Q4 2023	Q2 2025
4	Construction of Block B2	89 units	Q2 2023	Q4 2024
5	Construction of Block B3	75 units	Q1 2023	Q3 2024
6	Construction of Block C	76 units	Q1 2023	Q3 2024
7	Construction of Block D	34 units	Q1 2024	Q3 2025
8	Construction of Block E	32 units	Q2 2024	Q3 2026
9	Construction of Block A	65 units	Q3 2024	Q3 2026

Note the above periods overlap and are indicative dependant on the Main Contractor's desired demolition and construction programme. Construction periods may overlap to allow the Contractor to arrange deliveries, plant hire and works as efficiently as possible and for the Applicant to react to market conditions.

## Demolition and Construction Methodology

### Demolition and Construction Machinery

5.4 Consideration has been given to the types of plant that are likely to be used during the demolition and construction works. The plant and equipment likely to be associated with each key element of the demolition and construction process is as follows:

- Tracked/wheeled 360 degree excavators;
- Dumpers;
- Mobile cranes;
- Hand held tools including breakers (pneumatic and hydraulic);
- Power tools including percussion drills, cutting disks, pipe-threaders;
- Piling equipment;
- Wheel washing plant;
- Scaffold;
- Mobile access platforms;
- Delivery trucks;
- Skips / Skip trucks;
- Forklift trucks;
- Ready mix concrete wagons;
- Concrete placing booms & pumps; and
- Road sweepers.

### Pre-Commencement and Enabling Works

5.5 Pre-Commencement and Enabling works will comprise:

- Preparation of Health and Safety Plans, Demolition Method Statement and Construction Tender Documents;
- Geotechnical and Site Investigations to inform the detailed structural design and confirm ground conditions at the Site;
- Arboricultural works – including the protection of any trees/vegetation to be retained and removal of trees/vegetation where applicable;
- Installation of any site hoarding and security fencing;
- Ground re-profiling works;
- Service disconnections and diversions;
- General clearance; and

- Installation of temporary surface water management measures.

### Demolition

5.6 The existing Homebase store on the site would be demolished prior to the construction of the Development. It is anticipated that the demolition works would be carried out according to the following sequence:

- Internal strip out of the existing Homebase building;
- Removal of all mechanical plant and equipment; and
- Deconstruction of the Homebase building. There would be a commitment to reuse demolition materials on the Site where appropriate. Recycling works associated with demolition materials would be managed to avoid disturbance out-with the Site, including the restriction of activity to the centre of the Site and undertaking activities within normal working hours.

5.7 Any asbestos identified from the Asbestos Register would be removed and disposed of by a fully licensed and qualified contractor before any other works are undertaken.

5.8 All demolition waste material which cannot be recycled will be disposed of appropriately and in accordance with all relevant legislation.

### Excavation and Sub-Structure Works

5.9 Excavation work, preparation of ground works and installation of foundations would take place at this stage.

5.10 Excavated material from the Site is likely to comprise made ground/topsoil, rubble, bricks, concrete, tarmac from former hard standings, gravel and clay material. Any clean excavated material that cannot be reused on-site would be removed by licensed waste carriers.

5.11 Pilled foundations will be necessary across the Development and will be undertaken using a continuous flight auger rig.

5.12 Sub-structure works will involve:

- Localised re-grading within the Site to create level development platforms for the structures;
- Excavation for foundations and to allow installation of any below ground services; and

- Installation of ground slabs (ground bearing or suspended block) and supporting beams; and
- Localised excavation and retaining wall structures for basement areas; and
- Remedial works, if any contamination is identified.

#### Drainage works

- 5.13 All site works will be undertaken in accordance with CIRIA (2001) Control of Water Pollution from Construction Sites<sup>i</sup> which promotes environmental good practice for control of water pollution arising from construction activities.
- 5.14 Construction vehicles will be properly maintained to reduce the risk of hydrocarbon contamination and will only be active when required. Construction materials will be stored, handled and managed with due regard to the sensitivity of the local water environment and thus the risk of accidental spillage or release will be minimised.
- 5.15 In accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001<sup>ii</sup>, any tanks storing more than 200 litres of oil will have secondary bunding. Bunding will be specified having a minimum capacity of "not less than 110% of the container's storage capacity or, if there is more than one container within the system, of not less than 110% of the largest container's storage capacity or 25% of their aggregate storage capacity, whichever is the greater." Any above ground storage tanks will be located on a designated area of hardstanding. No underground storage tanks will be used during the construction period. Storage of liquids such as degreasers, solvents, lubricants and paints will be in segregated, banded enclosures.
- 5.16 The construction drainage system will be designed and managed to comply with BS6031 "The British Standard Code of Practice for Earthworks"<sup>iii</sup>, which details methods that should be considered for the general control of drainage on construction sites. Further advice is contained within the Geotechnical Design, General Rules (BS EN 1997)<sup>iv</sup> which should be read in conjunction with Basis of Structural Design (BS EN 1990)<sup>v</sup>.
- 5.17 The following control measures have also be incorporated into the Outline Design and Construction Method Statement (DCMS) and Construction Environmental Management Plan (CEMP) (refer to Appendix 5.1):
- Temporary surface water management system, for example oil interceptors, holding tanks to remove suspended sediment before discharge etc;
  - Equipment maintenance;
  - Wheel washing;

- Covering stockpiles; and
- Storage of substances in accordance with applicable legislation.

5.18 The above measures will be secured by planning conditions on the future permission, which will require further details to be submitted for approval by way of a detailed CEMP prior to construction of the Development.

### Construction of Superstructure

5.19 As noted in Table 5.1, the construction of the proposed Tesco building would form the initial phase of the Development and would be completed before the remainder of the construction work begins on the Site. As stated in chapter 2, the proposed Tesco food store would be operational prior to the demolition of the existing Tesco food store at the Osterley Park site.

5.20 The construction of the superstructures will include the pouring of concrete, load bearing brick walls, erection of steelwork and the external building fabric.

### Fit Out

5.21 Fit out of the Development will involve the installation of block work or dry lined party walls, dry lining to internal walls, internal walls, domestic mechanical and electrical installations, joinery, tiling, flooring and fitted kitchens and bathrooms.

### Landscaping

5.22 Landscaping works will involve some ground modelling works and the establishment of green spaces within the Site including soil preparation, tree and vegetation planting, seeding, construction of footpaths/cycle routes. Landscaping works to the public realm will also include the introduction of paved materials and the provision of street furniture.

5.23 As detailed in Chapter 3, the majority of the landscaping works on the Site will be on top of the proposed podium level of the Development while the perimeter of the Site will largely be hard landscaping which abuts the public highway. Any necessary ground modelling works will be undertaken concurrently with the Site preparation and substructure works outlined above.

5.24 Reconfiguration of the Syon Lane junction (roundabout) and associated roads would be undertaken during the course of Development. This would be completed as part of the S278 works (refer to Chapter 9: Transport).

## Material and Resource Use

- 5.25 The primary construction materials to be used will include concrete, steel and brick. Indicative quantities/areas of construction materials to be used within the Development are set out in Table 5.1 below.

**Table 5.1: Construction Material Quantities**

Material	Quantity/Area
Excavation and pile arisings	25,000m <sup>3</sup>
Concrete	51,000m <sup>3</sup>
Reinforcing steel	16,000 tonnes
Façade cladding and glazing	30,000m <sup>2</sup>
Roof finishes	5,500m <sup>2</sup>
Internal Walls	35,000m <sup>2</sup>
Floors	20,000m <sup>2</sup>
Ceilings	20,000m <sup>2</sup>
Hard and soft landscaping	10,000m <sup>2</sup>

- 5.26 Where possible, materials and resources used during the construction of the Development will be sourced from the local area. All timber and wood-based products would be sustainably sourced and procured from known and legal sources.
- 5.27 The off-site re-use, recycling or recovery of demolition, construction and excavation waste would be maximised where possible. Waste would only be sent to landfill as a last resort if there is no alternative disposal route. If landfill is selected, it would be notified to the project team in advance of any collections.
- 5.28 All construction materials would be stored on-site to minimise damage.

## Construction Phase Vehicle Movements

- 5.29 Construction vehicle movements will be managed to minimise the impact on the local road network. Table 5.2 provides an indicative maximum level of construction traffic trip generation based on the likely construction materials and phasing of the Development. This is estimated to take place over a three week period in 2023 during the peak of the construction works. The trip generation has been calculated by the project's transport consultants, and has been based on the Highbury Redevelopment (2006) as referenced in the TRICS "Construction Traffic – Research Report" (February 2008)<sup>vi</sup> document, which includes the percentage split of different vehicle classifications.

**Table 5.2: Construction Traffic**

Vehicle Type	Maximum Trips Per Day
HGV	72 (144 two-way)
Cars and Light Goods	28 (56 two-way)

5.30 The HGV movements would be dispersed across the working day outside of the AM and PM peak periods. The arrival and departure of light vehicles would be concentrated during the morning and evening periods but would be less than the predicted levels of traffic during the operational phase of the Development.

### Construction Traffic Access and Management

5.31 Construction traffic access will be via Syon Lane. Construction vehicles will access the Site using the main arterial roads, most notably the A4 / Great West Road, as far as possible to minimise the impacts on the local road network.

5.32 If abnormal or oversized loads are required to deliver materials to the Site, notice will be given to LBH, depending on the routing, and also the Police, the Fire Brigade, and other emergency services, sufficiently in advance of the required closure or diversion dates. Should any hazardous materials arise during the course of the works, these materials will be transported to a licensed disposal site using permitted routes as identified in the Construction Traffic Management Plan.

5.33 All vehicle unloading will take place within the Site and will not affect public highways or adjacent occupiers.

5.34 All management of construction traffic and access will be carried out in accordance with a Construction Logistics Plan (CLP) (the Outline Construction Logistics Plan is included as Appendix 5.2) as set out below:

- Planning and managing both vehicle (details of proposed routes for HGVs travelling to and from the Site) and pedestrian routes;
- The elimination of reversing, where possible;
- Safe driving and working practices;
- Protection to the public;
- Adequate visibility splays and sight lines;
- Provision of signs and barriers; and
- Adequate parking for off-loading storage areas.

## Controls to Protect the Environment

5.35 The environmental controls (or mitigation measures) to eliminate, reduce or offset likely significant adverse effects on the environment during the construction phase (as identified above) are identified below. It is anticipated that these controls will be secured by appropriately worded planning conditions or obligations:

- Preparation of a detailed CEMP, including a detailed CLP, which clearly sets out the methods of managing environmental issues for all involved with the construction works, including supply chain management;
- Requirement to comply with the detailed CEMP included as part of the contract conditions for each element of the work. All contractors tendering for work will be required to demonstrate that their proposals can comply with the content of the detailed CEMP and any conditions or obligations secured through the planning permission;
- In respect of necessary departures from the above, procedures for prior notification to LBH, as appropriate, and affected parties will be established;
- Establishing a dedicated point of contact and assigning responsibility to deal with construction related issues if they arise. This will be a named representative from the construction team;
- Regular engagement with residents living in the early phases of the Development concerning ongoing construction works at the Site; and
- Regular dialogue with LBH and the local community.

5.36 The preparation of a detailed CEMP is an established method of managing environmental effects resulting from construction works.

5.37 The detailed CEMP will be submitted to LBH (and other statutory authorities) prior to the commencement of the works. Compliance with the CEMP will be to be secured by planning condition. The structure of the CEMP will include the following:

- Site Information: including environmental management structure, roles and responsibilities, location of any potentially sensitive receptors such as trees, watercourses and local residents;
- Construction Information: a description of the works, construction programme, proposed working hours, details of haulage routes and equipment to be used;
- Environmental Management: details of the audit programme, methods for managing environmental risks and reducing effects, emergency procedures, waste and hazardous materials storage procedures, liaison with the local neighbourhood, and specific management plans relating to archaeology, dust, landscape, lighting and noise; and



- Monitoring: procedures for recording and reporting monitoring results and taking remedial action in the event of any non-compliance, details of receptors, threshold values and analysis methods; and
- Legal Requirements: a schedule of relevant and current environmental legislation and good practice, objectives and targets imposed by planning conditions, consultations and a register of permissions and consents required, with responsibilities allocated and a programme for obtaining these.

### Site Offices & Welfare Accommodation

5.38 Specific offices and accommodation for construction staff will be required and located on-Site. These will be located away from sensitive receptors. It is intended to locate offices and accommodation within the basement area of the Development and on top of the podium structure.

### Hours of Work

5.39 Working hours on the Site will be agreed with LBH through the Outline DCMS and CEMP (Appendix 5.1). However, it is likely that the standard hours of work will be adhered to. These are:

- Monday to Friday, 8am to 6pm;
- Saturday, 8am to 1pm; and
- Sunday and Bank Holidays, no works on-site.

5.40 All work, audible at the site boundary, outside these hours will be subject to prior agreement of, and/or reasonable notice to LBH as appropriate.

5.41 Night-time working will be restricted to exceptional circumstances and work internally with buildings. By arrangement, there may be some out of hours construction deliveries made to the Site.

### Management of Construction Works

5.42 All contractors will be required to complete a method statement and risk assessment and obtain approval of these from the Applicant prior to commencement on Site. The Site would be registered with the 'Considerate Constructors Scheme', which will ensure that contractors carry out their operations in a safe and considerate manner with due regard to neighbours, passing pedestrians and road users.

### Response to Complaints

- 5.43 Any complaints will be logged on-site and, where necessary, reported to the relevant individual within LBH, as appropriate, (and vice versa) as soon as practicable. Protocols to be implemented on-site in instances of emergencies and environmental incidences would be set out within the detailed CEMP for approval by LBH.

### Prior Notice

- 5.44 In the event of unusual activities or events, these will be notified to LBH, as appropriate, and relevant property owners or occupiers in advance. The relevant activities will be agreed with LBH, as appropriate, once the detailed programme of construction is defined. This will include:
- Necessary night-time, weekend or evening working (outside core areas) of a type which may affect properties; and
  - Road or footpath closures/diversions and movements of wide loads (unlikely to be required).
- 5.45 The community will be kept informed during the construction phase through press adverts, LBH, and through direct notification to Council Wards as appropriate.
- 5.46 During the demolition and construction works measures would be implemented to ensure that the local community and workers are not adversely affected. These measures would include the use of appropriate Site hoarding, dust management procedures and construction traffic management.

## REFERENCES

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- <sup>i</sup> CIRIA C532 (2001) Control of Water Pollution from Construction Sites Guidance for consultants and contractors
- <sup>ii</sup> The Control of Pollution (Oil Storage) (England) Regulations 2001, Statutory Instrument 2001 No. 2954
- <sup>iii</sup> British Standards Institution (December 2009) BS6031:2009 Code of Practice for Earthworks
- <sup>iv</sup> British Standards Institution (December 2004) BS EN 1997-1:2004 Eurocode 7. Geotechnical Design. General Rules.
- <sup>v</sup> British Standards Institution (2002) BS EN 1990: 2002 Basis of Structural Design
- <sup>vi</sup> TRICS "Construction Traffic – Research Report" (February 2008)