

5 Construction Methodology and Phasing

Introduction

- 5.1 This Chapter outlines the construction methodology and phasing for the Proposed Development.
- 5.2 Consideration of likely significant effects on the environment that may arise during the construction phase and any necessary mitigation measures are provided within the respective technical chapters of this ES (**Chapters 6-10**).
- 5.3 Given the outline nature of the Proposed Development application, planning for construction is necessarily broad at this stage and may be subject to modification. This construction methodology and phasing is based on reasonable assumptions and experience and allows assessment of the realistic “worst-case” construction phase effects.

Anticipated Programme

- 5.4 At this stage the phasing of the development is necessarily broad and has been developed in order to assist with the assessment of environmental effects.
- 5.5 The construction phase of the Proposed Development is anticipated to commence in 2027, subject to gaining planning permission, with the last parcels commencing in approximately 2031. The Proposed Development is expected to be completed by 2032.
- 5.6 The Employment Land Road (DC/25/1543), FWPS3, balancing pond, and footways / cycleways (RMA2) are subject to a separate planning application already submitted with a target determination date in January 2026. It is anticipated construction will commence in June 2026. RMA2 will be built in a west to east direction and is required to service the Proposed Development. A 21 month build programme is allowed for RMA2.

Outline Construction Methodology

Construction Machinery

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

Table 5.1: Typical Construction Plant

Plant	Stage		
	Enabling Works	Infrastructure and substructures	Construction & landscaping
Tracked/wheeled 360-degree excavators	✓	✓	✓
Excavator mounted hydraulic breakers	✓	X	X
Excavator mounted hydraulic crushers	✓	X	X
Dumpers	✓	✓	✓
Concrete Crushing Plant	✓	X	X
Mobile Craneage/Tower Cranes	X	✓	✓
Eighter-wheeler trucks	✓	✓	✓
Air Compressors	✓	✓	✓
Diamond cutting tools / saws	✓	✓	✓
Handheld Tools including breakers (pneumatic and hydraulic)	✓	✓	✓

Plant	Stage		
	Enabling Works	Infrastructure and substructures	Construction & landscaping
Power Tools including percussion drills, cutting disks, pipe-threaders	✓	✓	✓
Hand/power tools	✓	✓	✓
Wheel Washing Plant	✓	✓	✓
Piling Rigs	X	✓	X
Scaffold	X	X	✓
Mobile access platforms	X	X	✓
Delivery trucks	✓	✓	✓
Skips & Skip trucks	✓	✓	✓
Forklift trucks	✓	✓	✓

Site Preparation and Enabling Works

- 5.8 Site preparation will involve the establishment of on-site parking arrangements and any construction worker facilities (including site compound area with offices and welfare facilities for management and construction workers). Enabling works would comprise:
- Preparation of Health and Safety Plans;
 - Arboricultural works – including the protection of trees to be retained and removal of trees where applicable;
 - Ecological works including the protection of vegetation to be retained;
 - Further investigations in the form of geophysical surveys and potentially archaeological trial trenching, if required (to be secured by planning condition, as necessary);
 - Installation of site hoarding and security fencing;
 - Ground works including topsoil stripping and stockpiling for later use and localised re-grading within the Site; and
 - Installation of temporary surface water management measures.

Excavation and Sub-Structure Works

- 5.9 Excavation work, preparation of ground works and installation of foundations would take place at this stage. Foundations will be constructed in accordance with the detailed design requirements established at a later 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.
- 5.11 Substructure works may involve:
- Localised re-grading within the Site to create level development platforms for the structures;
 - Excavation for conventional foundations; and
 - Installation of any required piled foundations.

Infrastructure and Drainage Works

- 5.12 Appropriate infrastructure to serve the Proposed Development, such as roads, will be installed and the sustainable drainage (SuDS) systems will be constructed. All site works will be undertaken in accordance with CIRIA (2001) Control of Water Pollution from Construction Sitesⁱ which promotes environmental good practice for control of water pollution arising from construction activities.
- 5.13 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.
- 5.14 In accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001ⁱⁱ, 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, bunded enclosures.
- 5.15 The construction drainage system will be designed and managed to comply with BS6031 “The British Standard Code of Practice for Earthworks”ⁱⁱⁱ, 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)^{iv} which should be read in conjunction with Basis of Structural Design (BS EN 1990)^v.
- 5.16 Mitigation measures associated with infrastructure and drainage during construction will be set out in a Construction Environmental Management Plan (CEMP), to be secured via planning condition and agreed with HDC prior to commencement of construction works.

Fit Out

- 5.17 Fit out of the Proposed Development will involve the installation of internal walls, light industrial and / or office mechanical and electrical installations, and utilities.

Landscaping

- 5.18 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, and construction of footpaths/cycle routes. The ground modelling works will be undertaken concurrently with the Site preparation and substructure works outlined above. The CEMP, to be secured via a planning condition, would include measures such as temporary site compounds, lighting, signage, and perimeter screen fencing, which would minimise landscape and visual effects.
- 5.19 Temporary protective fencing will be implemented to protect areas of importance in terms of landscape, visual amenity, or ecology from construction works.
- 5.20 Any clearance of nesting habitat or features required to facilitate the Proposed Development should avoid the period between March and August (inclusive) when nesting birds are most likely to be present. If this is not possible, habitat will need to be checked for nesting birds by a suitably qualified ecologist prior to clearance with works only proceeding if no nesting evidence or behaviour are observed.
- 5.21 Advanced planting of hedgerow, woodland, and grassland areas and new habitats would likely be planted as early as possible within the phasing to the Proposed Development to reinforce landscape character and deliver beneficial landscape effects. Early in the construction period, earthworks operations would implement adoptable road levels, drainage runs, attenuation ponds and achieve parcels at the correct height and gradient for construction to occur.

Material and Resource Use

- 5.22 The primary construction materials to be used will likely include concrete, brick, steel post and beams and timber. Where possible, materials and resources used during the construction of the Proposed Development, such as aggregates, will be sourced from the local area to reduce transportation distances.
- 5.23 The typical construction methodology for the commercial office buildings (E) would be traditional approach steel frame with composite floors, or concrete frame / concrete floors. Alternative options such as a hybrid approach steel frame / CLT floors with lift cores in pre-cast concrete, or timber frames and floors, with lift cores in pre-cast concrete, could also be adopted.
- 5.24 For the B2 or B8 warehouse buildings, a traditional approach steel frame with composite or pre-cast concrete floors to the office element is most likely to be adopted, although hybrid approaches with steel frames or columns for warehouses and CLT / LVL frames for office, or timber CLT or LVL portal frames plus CLT or LVL frames and floors for offices, also remain options.
- 5.25 Typically, the facades of all buildings will consist of aluminium double or triple glazed curtain walling & windows, with insulated metal or timber rainscreen or composite cladding panels. Commercial buildings are likely to have either a single ply membrane, two layer built up bitumen membrane, or hot melt system applied as a roof finish.
- 5.26 Warehouse buildings are likely to have either a composite panel sub-base with single ply membrane or built up roof system.
- 5.27 Photovoltaic panels are to be provided to all commercial office buildings where available roof space allows. All warehouse buildings are to accommodate PV panels.
- 5.28 The Proposed Development will seek to incorporate a series of measures to conserve material resources and manage waste safely and effectively in line with the Resource Hierarchy. Waste generation, storage, treatment, and disposal during construction will be managed in accordance with the waste hierarchy and circular economy principles.

Construction Phase Vehicle Movements

- 5.29 Construction vehicle movements will be managed through the implementation of a Construction Traffic Management Plan (CTMP) to minimise the impact on the local road network. A detailed construction programme has not been produced at this stage.
- 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 will have some impact during the morning and evening periods; however, it is likely that a majority of construction workers will travel outside the network peak periods due to an early daily start on the Site. During the initial stages, vehicular movements will solely be associated with construction traffic. As the development plots are completed, there will be a mix of the operational and construction traffic.

Construction Traffic Access and Routing

- 5.31 Construction routes will be agreed with West Sussex County Council within the final CTMP. All heavy and abnormal loads are required to notify HDC in advance of any abnormal load movement. Hauliers should also contact the police for approval and to provide escort where necessary.
- 5.32 It is anticipated that HGV traffic will be routed via the A264 to avoid the use of more sensitive roads.
- 5.33 Whilst it is not anticipated, should any soils require off-site disposal, all surplus materials will be transferred to appropriately licensed waste management facilities by registered waste carriers. It will be ensured that waste will be stored and transported appropriately and securely.
- 5.34 All vehicle loading and unloading will take place within the Site and will not affect public highways or adjacent occupiers.

5.35 All management of construction traffic and access will be carried out in accordance with the CTMP to be secured via planning condition, as set out below:

- Planning and managing both vehicle and pedestrian routes;
- Off-site construction routing;
- Procedures for access by abnormal loads;
- The elimination of reversing onto local roads, where possible;
- Ensuring only necessary journeys are made in order to reduce impact on the local and wider road network;
- Safe driving and working practices;
- Protection to the public;
- Provision of signs and barriers to prevent access via unsuitable roads and warn road users of construction traffic;
- Adequate parking for staff/contractors; and
- Promotion of staff / contractors travelling by public transport, car sharing initiatives, and local parking options.

Road Network Management

5.36 The Principal Contractor will co-ordinate all deliveries and collections to / from the Site, and ensure that as far as possible:

- All delivery and collection vehicles are aware of the proposed routing;
- Larger vehicle movements will be scheduled to avoid peak hours on the local road network if possible;
- The relevant highway authorities will be advised in advance of any large or abnormal construction traffic and appropriate routing agreed; and
- If an alternative construction traffic route is required, this will first be agreed with the highway authority.

5.37 All management of construction traffic and access will be carried out in accordance with the CTMP as set out below:

- Planning and managing both vehicle 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

- 5.38 The preparation of a CEMP is an established method of managing environmental effects resulting from construction works.
- 5.39 The environmental controls (or mitigation measures) to eliminate, reduce or offset likely significant adverse effects on the environment during the construction phase are identified below. It is anticipated that these controls be secured by appropriately worded planning conditions or obligations:
- Preparation of a CEMP, including measures to control construction traffic, 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 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 CEMP and any conditions or obligations secured through the planning permission;
 - In respect of necessary departures from the above, procedures for prior notification to HDC, 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; and
 - Regular dialogue with HDC and the local community.
- 5.40 The CEMP will be submitted to HDC (and other statutory authorities) prior to the commencement of the works. Compliance with the CEMP will be secured by planning condition. The structure of the final CEMP will include the following:
- A table showing the objectives, activities (mitigation/optimisation measures), and responsibilities for the implementation of those activities;
 - The broad plan of the work programme including working hours and delivery times;
 - Details of prohibited or restricted operations (location, hours etc.);
 - Institutional arrangements for its implementation and for environmental monitoring: responsibilities, role of the environmental authorities, participation of stakeholders;
 - Contact during normal working hours and emergency details outside working hours;
 - Measures for the storage of materials;
 - Construction noise and dust management;
 - Provision for reporting, public liaison, and prior notification of particular construction related activities;
 - The mechanism for the public to register complaints and the procedures for responding to such complaints; and
 - The details of proposed routes for HGVs travelling to and from the Site.

Hours of Work

- 5.41 Working hours on the Site will be agreed with HDC through the CEMP. However, it is likely that the standard hours of work will be adhered to. These are:

- Monday to Friday, 8am to 5pm;
- Saturday, 8am to 1pm; and
- Sunday and Bank Holidays, no working on-site.

5.42 All work outside of these hours will be subject to prior agreement of, and/or reasonable notice to HDC as appropriate.

5.43 It is assumed that there would be no HGV access to the Site before 7am or after 7pm, Monday to Friday, or before 7am or after 1pm on Saturdays.

5.44 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.

Response to Complaints

5.45 Any complaints will be logged on-site and, where necessary, reported to the relevant individual within HDC, as appropriate (and vice versa) as soon as practicable.

Prior Notice

5.46 In the event of unusual activities or events, these will be notified to HDC, as appropriate, and relevant property owners, or occupiers in advance. The relevant activities will be agreed with HDC, 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.

5.47 The community will be kept informed during the construction phase as appropriate.

REFERENCES

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- ⁱ CIRIA C532 (2001) Control of Water Pollution from Construction Sites Guidance for consultants and contractors
 - ⁱⁱ The Control of Pollution (Oil Storage) (England) Regulations 2001, Statutory Instrument 2001. No. 2954
 - ⁱⁱⁱ British Standards Institution (December 2009) BS6031:2009 Code of Practice for Earthworks
 - ^{iv} British Standards Institution (December 2004) BS EN 1997-1:2004 Eurocode 7. Geotechnical Design. General Rules.
 - ^v British Standards Institution (2002) BS EN1990: 2002 Basis of Structural Design