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 10) and ES Volume 3: Townscape and Visual Assessment.

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 12 years. Overall, the demolition and construction process is expected to be completed by 2033. Table 5.1 shows the indicative demolition and construction and phasing programme for the Development. The Indicative Phasing Plan is shown in Figure 5.1.

Table 5.1: Indicative Demolition and Construction Phasing

Phase	Anticipated Construction Start Date	Anticipated Construction Completion Date
Phase 1	June 2021	May 2025
Phase 2	September 2023	August 2027
Phase 3	May 2025	September 2029
Phase 4	October 2027	December 2030
Phase 5	April 2029	April 2033

Note the above periods overlap and are indicative dependant on the Main Contractor's desired demolition and construction programme.

Rehousing Strategy

5.4 A number of existing residents currently living on site will need to be rehoused prior to the demolition commencing. A coordinated rehousing strategy has been prepared, which sets out that a total of 1,642 residents in 710 households will require rehousing as a result of the regeneration process. Rehousing will take place in 5 phases over a period of 10-15 years, prior to the demolition and construction works for each phase.

5.5 The Rehousing Strategy is submitted in support of the planning application.

Demolition and Construction Methodology

Demolition and Construction Machinery

5.6 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 set out in Table 5.2.

Table 5.2 Plant used during the Construction Process

Type of Equipment	Required for Construction Phase
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	✓
Road sweepers	✓
Tower Cranes	✓

Pre-Commencement and Enabling Works

5.7 The initial stages of the construction will include the new access routes into the Development and secondary internal roads. It is anticipated that the internal roads will be constructed up to base-course level and used for construction traffic routes as the Development is built.

5.8 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;
- Ecological works, where required;
- 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

5.9 Existing residential dwellings, non-residential facilities and associated structures across the Site would be demolished to ground level prior to the construction works commencing. It is anticipated that the demolition works would be carried out according to the following sequence:

- Internal strip out of the existing buildings and associated structures;
- Removal of all mechanical plant and equipment; and
- Deconstruction of the existing buildings and associated structures. 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.

5.10 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.

5.11 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

5.12 Excavation work, preparation of ground works and installation of foundations would take place at this stage. Piling rigs will be utilised as part of the sub-structure works.

5.13 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.

5.14 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.

Drainage works

5.15 All Site works will be undertaken in accordance with CIRIA (2001) Control of Water Pollution from Construction Sites[i] which promotes environmental good practice for control of water pollution arising from construction activities.

5.16 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.

5.17 In accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001[ii], 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.

5.18 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 (BE EN 1990)[v].

5.19 The following control measures are incorporated into the Outline Construction Method Statement and Construction Management Plan (CMP) (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

5.20 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

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

Fit Out of buildings

5.22 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

5.23 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. The ground modelling works will be undertaken concurrently with the site preparation and substructure works outlined above.

Material and Resource Use

5.24 The primary construction materials to be used will include concrete, steel and brick.

5.25 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.

5.26 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.

Construction Phase Vehicle Movements

5.27 Demolition and construction vehicle movements will be managed to minimise the impact on the local road network. Table 5.3 provides an indicative level of construction traffic trip generation based on the likely construction materials and phasing of the Development.

Table 5.3: Indicative Construction Traffic

Vehicle Type	Average Trips Per Day
HDV	24
Cars and Light Goods	16

5.28 The HDV movements would be dispersed across the working day outside of the AM and PM peak periods, including school pick up and drop off 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

5.29 Construction vehicles will access the Site using the main arterial roads, most notably the A2043 Cambridge Road, as far as possible to minimise the impacts on the local road network.

5.30 If abnormal or oversized loads are required to deliver materials to the Site, notice will be given to RBKuT, 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.

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

5.32 All management of construction traffic and access will be carried out in accordance with Transport for London's Construction Logistics Plan (CLP) Guidance.

Controls to Protect the Environment

5.33 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 the 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 RBKuT, 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 RBKuT and the local community.

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

5.35 The detailed CEMP will be submitted to RBKuT (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 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;
- 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 HDVs travelling to and from the Site.

Site Offices & Welfare Accommodation

5.36 Specific offices and accommodation for construction staff will be required and located on-site. Safe working (in line with the Government's social distancing guidelines in light of the Covid-19 pandemic) will also be applied as necessary during the phased construction of the Development.

Hours of Work

5.37 Working hours on the Site will be agreed with RBKuT through the Outline Construction Method Statement and CMP (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 noisy activities on-site.

5.38 However, on 13th May 2020, the UK Government published a written ministerial statement[1] on planning and construction working hours during the Covid-19 pandemic. This statement from Government expects local planning authorities to approve requests to extend construction working hours temporarily to ensure safe working in line with social distancing guidelines until 9pm, Monday to Saturday, unless there are very compelling reasons against this. All work outside the general working hours set out above would, therefore, be subject to prior agreement of, and/or reasonable notice to RBKuT as appropriate.

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

[1] Gov.UK website, accessed online: https://www.gov.uk/guidance/coronavirus-covid-19-construction-update-qa [published 13th May 2020]

Management of Construction Works

5.40 All contractors will be required to complete a method statement and risk assessment and obtain a works permit 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. The Applicant will also ensure compliance with all relevant Covid-19 pandemic related requirements (including but not limited to social distancing standards / requirements).

Response to Complaints

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

Prior Notice

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

5.43 The community will be kept informed during the construction phase through press adverts, RBKuT, and through direct notification to Council Wards as appropriate.

5.44 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

[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 EN 1990: 2002 Basis of Structural Design