

5.0 CONSTRUCTION METHODOLOGY & PHASING

Introduction

- 5.1 This chapter describes the anticipated construction methodology and phasing of the Development. 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 assessments of this ES (Chapters 6 to 13).
- 5.2 Planning for 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” effects. Construction phase effects on future residents living in the earlier phases of the Development have been assessed in relevant chapters.

Anticipated Programme

- 5.3 Construction of the Development is anticipated to commence in Spring 2024 subject to gaining planning permission and span approximately 14 years. Overall, construction is expected to be completed by 2038.
- 5.4 Each chapter of the ES has assessed the worst-case scenario for construction to ensure all realistic likely significant effects have been considered and appropriate mitigation proposed. Table 5.1 and Figure 5.1 shows the indicative construction and phasing programme for the Development. The Transport, Air Quality, and Noise and Vibration ES Chapters have all assumed this indicative programme for purpose of their assessment.

Table 5.1: Indicative Construction Phasing

Phase	Development Description	Completions per phase	Anticipated Construction Start	Anticipated Construction Completion
1	All in One Garden Centre (Phase 1 of the detailed element of the application)	46 units	March 2024	July 2024
2	Phase 2 of the detailed element including St John’s heritage area	119 units	July 2024	January 2026
3	Phase 3 of the detailed element	68 units	February 2026	March 2027
4	First phase of the outline element of the application	Up to 98 units	March 2027	June 2028
5	Newhey local centre/community heart	Up to 161 units	July 2028	August 2030
6	Open market second tranche	Up to 113 units	September 2030	February 2032
7	Open market first tranche - Accessed off Thornham New Road	Up to 108 units	February 2032	July 2033
8	Phase 8 (separates phases 7 and 10 and is accessed via a link from phase 5)	Up to 112 units	July 2033	December 2034

Phase	Development Description	Completions per phase	Anticipated Construction Start	Anticipated Construction Completion
9	Phase 9 (separates phases 5, 6 and 10 and is accessed via a link from phase 5)	Up to 69 units	December 2034	November 2035
10	Thornfields Waterside Hamlet	Up to 79 units	November 2035	January 2036
11	Thornfields Woodside Hamlet	Up to 77 units	January 2036	January 2037
12	Thornfields Hillside Hamlet	Up to 116 units	January 2037	July 2038

Outline Construction Methodology

Construction Machinery

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

- Tracked/ wheeled 360 degree excavators;
- Dozers;
- Crushing machines;
- Scissor lifts;
- Cherry pickers;
- Dumpers;
- Mobile cranes;
- Hand held tools including breakers (pneumatic and hydraulic);
- Power tools including percussion drills, cutting disks and 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 and pumps; and
- Road sweepers.

Access Road Construction

5.6 The initial stages of the construction will include the new permanent access routes into the Development and 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.

Site Preparation and Enabling Works

5.7 Site preparation will involve the establishment of on-site parking provision 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, where required;
- Archaeological works, where required;
- Ground modelling works;
- Removal of underground obstructions;
- Installation of site hoarding and further security fencing; and
- Installation of temporary surface water management measures.

Excavation and Sub-structure Works

5.8 This will involve the installation of below ground services and construction of new foundations. Substructure works will include installation of foundations.

5.9 It is anticipated that piled foundations will only be necessary in some localised areas, and this will be worked up at the detailed design stage.

5.10 Sub-structure works will involve:

- Localised re-grading within the Site to create level development platforms for the structures; and
- Installation of ground slabs (ground bearing or suspended block) and supporting beams.

5.11 As outlined in the Scoping Report (Appendix 2.1), a Phase 2 Geo-Environmental Site Investigation will be undertaken prior to construction of the Development, to qualitatively assess potential contamination linkages on-site. Should subsequent remediation be required, it would be secured through a planning condition and undertaken before or during construction, subject to agreement with RBC and undertaken in accordance with all relevant legislation and guidance.

Infrastructure and Drainage Works

- 5.12 Appropriate infrastructure to serve the Development will be installed and sustainable drainage systems (SuDS) 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 and Non-Road Mobile Machinery (NRMM) 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 as 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.

Construction of Substructure

- 5.16 This will involve foundation excavation, the installation of below ground services and construction of new foundations. Substructure works will include the installation of foundations.

Construction of Superstructure

- 5.17 This stage will involve the construction of the main building envelope of the residential dwellings and the local centre. It will include the pouring of concrete, the installation of steel

frames, load bearing brick walls, reinforced masonry and the external buildings fabric.

Fit Out

- 5.18 Fit out of the Development will involve the installation of drylined party walls, internal walls, commercial mechanical and electrical installations, joinery, tiling, flooring, and plumbing.

Landscaping and SuDS

- 5.19 Landscaping works will involve the establishment of green spaces within the Site, structural landscaping inclusive of tree and vegetation planting, seeding and construction of footpaths/cycle routes.
- 5.20 The street furniture throughout the Development will include timber benches, proposed picnic tables, Sheffield cycle stands, timber bollards and posts. The hard landscaping to be incorporated in the detailed element of the Development includes a shared 3m wide footpath and cycleway, with self binding gravel and timber edging. There will also be informal pedestrian paths with a width of 2m and a timber bridge.
- 5.21 The detailed Phase 1 landscape plan shows a range of plant species that will be planted during the construction phase of the Development. A range of trees will be planted, as well as conifers, bulbs, native hedgerows, a shrub mix, a wet scrub mix, and aquatic plants for the SuDS attenuation ponds.
- 5.22 Grassland planting will comprise meadow grass mix for wetlands, amenity grass mix, a general-purpose meadow mixture and a pond edge mix.
- 5.23 Further information on the landscaping and SuDS throughout the Development is available from the Design and Access Statement (DAS) submitted separately with the application and Chapter 3 of this ES.

Material and Resource Use

- 5.24 The primary construction materials to be used will include concrete, timber, and steel. All construction materials would be stored on-site to minimise damage. The indicative volume of construction materials to be used within the Development is anticipated to be approximately 120,000m³.
- 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. Recycled aggregate will be given preference over virgin aggregate, a finite resource, wherever such material can meet the required specification for use.

- 5.26 The significant waste streams expected to be generated will arise from steel, timber, packaging and insulation. The off-site re-use, recycling or recovery of construction and excavation waste would be maximised where possible. Construction 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 Construction vehicle movements will be managed via a Construction Traffic Management Plan (CTMP), to be secured through a suitably worded planning condition, in order to minimise the impact on the local road network. It is anticipated that construction traffic will access the Site via Rochdale Road. Table 5.2 provides an indicative level of construction traffic trip generation showing robust estimates of the likely number of vehicles generated by the construction of on-site infrastructure and buildings, together with potential staff movements. Table 5.2 presents two-way trips, whereby the same vehicle enters and exits the Site.

Table 5.1: Estimated Daily Construction Traffic

Vehicle Type	Average Trips Per Day
Heavy Goods Vehicles (HGVs)	34
Cars or Light Goods Vehicles (LGVs)	131

- 5.28 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; however, it is likely that a significant majority of construction workers would travel outside the network peak periods due to an early daily start on-site.
- 5.29 During the initial stages, vehicular movements will solely be associated with construction traffic. As the Development phases are completed, there will be a mix of operational and construction traffic accessing the Site.

Construction Traffic Access and Management

- 5.30 If abnormal or oversized loads are required to deliver materials to the Site, notice will be given to RBC, 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 a CTMP.

- 5.31 All vehicle unloading will take place within the Site and will not affect public highways or adjacent occupiers. Deliveries and vehicle movements will be planned so as to avoid the queuing of construction vehicles on the public highway. If waiting or queuing is unavoidable, engines will be switched off and not left to idle.
- 5.32 All management of construction traffic and access will be carried out in accordance with a 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.

Construction Traffic Vehicle Routing

- 5.33 Construction vehicles will travel via the local road network, including the M62, the A664 Rochdale Road and the A627. Primary access to the Site will be from Rochdale Road (A664) on the western boundary of the Site, following demolition of the All-In-One Garden Centre.

Controls to Protect the Environment

- 5.34 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 will be secured by appropriately worded planning conditions or obligations:
- The CEMP, to be secured via a planning condition will set out the methods of managing environmental issues for all involved with the construction works, including supply chain management;
 - Requirement to comply with the CEMP will be 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 RBC, 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 RBC and the local community.

5.35 The preparation of a CEMP is an established method of managing environmental effects resulting from construction works. The CEMP will be submitted to RBC (and other statutory authorities) prior to the commencement of the works. Compliance with the CEMP will be secured by planning condition. 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, primary contact in working hours and emergency details outside of working hours;
- Construction Information: a description of the works and potential mitigation/optimisation measures, 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 and monitoring plans relating to drainage, water resources, 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.

5.36 The CEMP will also include measures to mitigate effects on biodiversity, such measures may include:

- Details of protective fencing installed prior to construction to demarcate works areas and to safeguard sensitive ecological features to be retained;
- Requirements for any pre-construction checks required before the commencement of the construction phases (i.e. for nesting birds);
- Details associated with vegetation management and vegetation clearance, including appropriate timing of site clearance to avoid breeding bird period (March - August inclusive) and sensitive vegetation clearance to avoid harm to mammals or herpetofauna;
- Details regarding removal of invasive species;

- Relevant pollution prevention guidelines and working practices to be adopted to prevent silt and contamination entering watercourses;
- Adherence to best practice guidelines to minimise noise disturbance, suppress dust and limit disturbance to retained areas of habitat;
- Outline of construction phase lighting measures to minimise light spill on sensitive habitat areas;
- Relevant safeguards to minimise the risk to terrestrial mammals, such as covering all excavations and the provision of escape ramps;
- Protection of retained habitats especially boundary features and trees with Heras fencing;
- Prevention of pollution and dust on sensitive habitats including the off-site bat roost; and
- All habitats with the potential reptiles will be cleared using reptile sensitive habitat clearance techniques and set out in a reptile management method statement. This will include but not be limited to the following methods: A directional two stage cut of suitable habitats during suitable weather conditions, with first cut to c.15cm and second cut to ground level after a period of at least 24 hours.

Site Offices & Welfare Accommodation

- 5.37 Specific offices and accommodation for construction staff will be required and located on-site.

Hours of Work

- 5.38 Working hours on the Site will be agreed with RBC through the CEMP and it is likely that the standard hours of work will be:

- Monday to Friday, 08:00 to 18:00;
- Saturday, 09:00 to 14:00; and
- Sunday and Bank Holidays, no working anticipated, however this is subject to change according to planning conditions and Client requirements.

- 5.39 All noisy works outside these hours will be subject to prior agreement of, and/or reasonable notice to RBC as appropriate. 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

- 5.40 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.

Response to Complaints

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

Prior Notice

- 5.42 In the event of unusual activities or events, these will be notified to RBC, as appropriate, and relevant property owners or occupiers in advance. The relevant activities will be agreed with RBC, 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 and a designated notice board will be identified on-site where environmental information on the project will be displayed.
- 5.44 During the 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