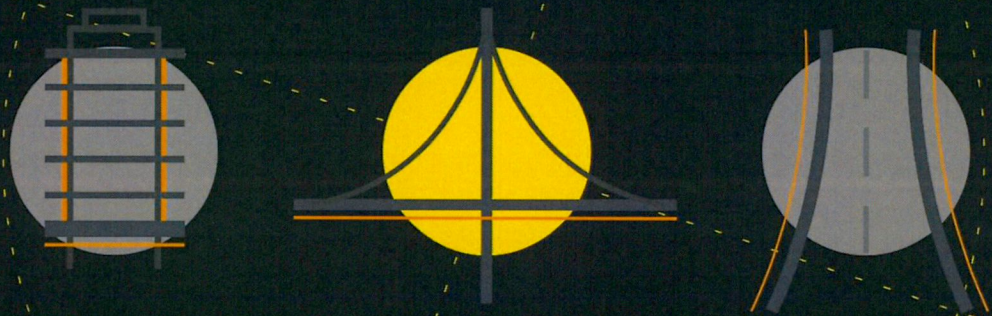


Clonburris T3

Preliminary Construction & Environmental Management Plan

CLB-T3-ZZZ-SW-DTM-RP-DBFL-CE-0002

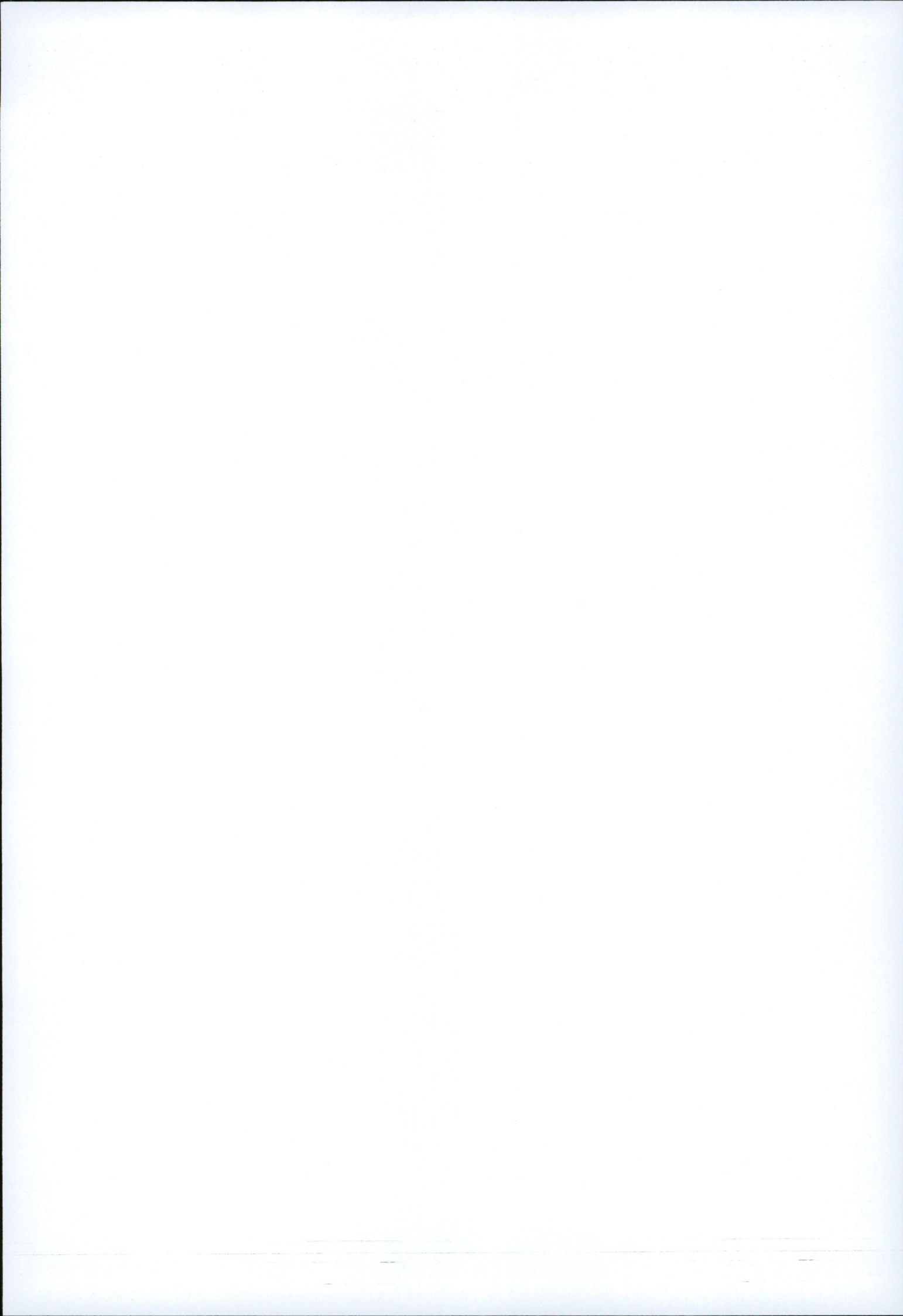
INFRASTRUCTURE



November 2022



DBFL CONSULTING ENGINEERS





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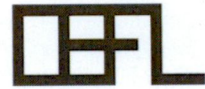
Rev.	Date	Description	Prepared	Reviewed	Approved
0	10-10-22	Draft Planning Issue	Dieter Bester	John Carr	John Carr
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1 INTRODUCTION

1.1 Background

This PCMP has been prepared by DBFL Consulting Engineers in support of the planning application for the Clonburris T3 Development. The proposed Clonburris T3 Development is part of the Clonburris Strategic Development Zone (SDZ) within the administrative area of South Dublin County Council (SDCC).

The project is currently at planning stage and as such input from the contractor has not been incorporated into the plan. On appointment of a contractor this preliminary document will be issued to them to be further developed into their final construction management plan for the project. The final construction management plan would be submitted by the contractor to be agreed with the planning authority prior to commencement of development.

The outline plan seeks to demonstrate how works can be delivered in a logical sensible and safe sequence with the incorporation of specific measures to mitigate the potential impact on people and the surrounding environment, particularly the residential areas adjacent the site.

Nothing stated in this document shall supersede or be taken to replace the terms of the Contract or the detailed design description issued with the Contract tender or the conditions of planning. Similarly, the issues covered within this document may be amended or added to by the main contractors or in accordance with their specific works proposals, sequencing and procedures.

When read by the contractor, this document should be read carefully in conjunction with all drawings, specifications and survey information provided.

Any consequences that result through failure to implement measures in this construction plan, or inadequate development of this plan by the contractor are the responsibility of the contractor and not DBFL.

1.2 Site Location

The overall Clonburris SDZ lands, of approximately 280 Ha, are located within the townlands of Cappagh, Clonburris Little & Kishoge, Co. Dublin all on wider lands bounded generally by undeveloped lands and the Dublin-Cork railway line to the north, undeveloped lands and the Grand Canal to the south, the R113 (Fonthill Road) to the east and the R136 to the west. Refer to Figure 1-1 for the site location.

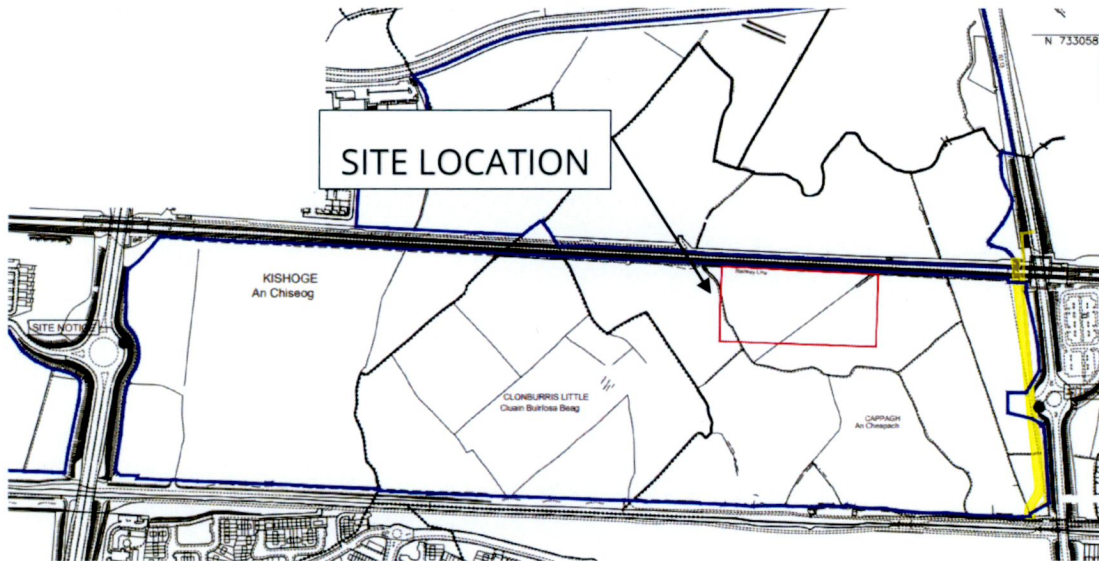


Figure 1-1 Clonburris T3 Site Location

The subject site for this planning application falls within Clonburris South West Sector 3 (CSW-S3) of the Clonburris SDZ, as shown in Figure 1-2.

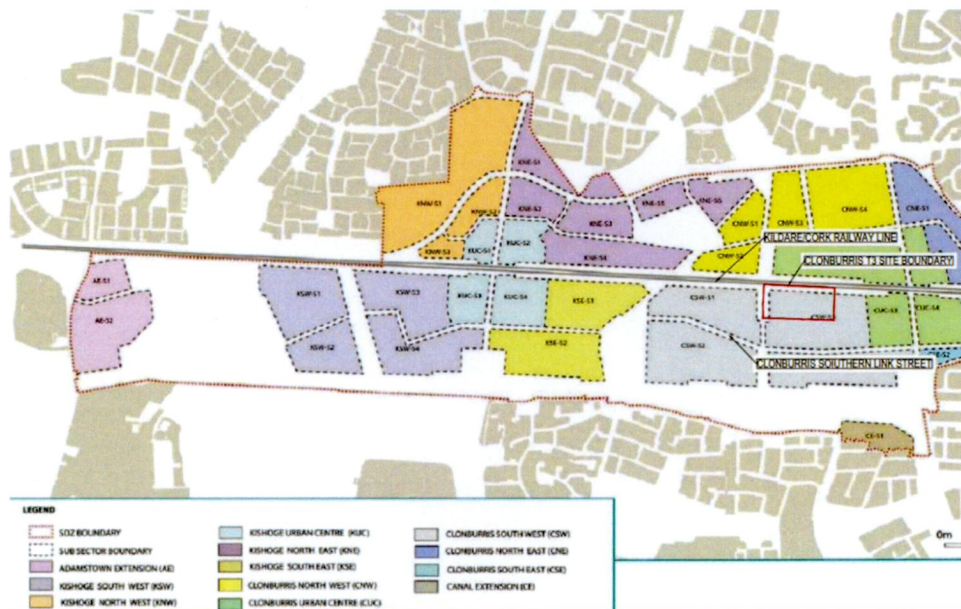


Figure 1-2 Clonburris SDZ (Boundary Indicative)

The proposed site will benefit from trunk infrastructure proposed as part of the Clonburris Southern Link Street (CSLS) for which planning has been granted in August 2021 under planning reference SDZ20A/0021. The CSLS includes trunk road, drainage, watermain and utility



infrastructure to serve the Clonburris Strategic Development Zone lands to the south of the Kildare/Cork Railway Line which includes the subject site.

1.3 Proposed Development

The development will consist of the construction of 157 no. dwellings on a site of c.3.45 hectares in the Clonburris South-West Development Area of the Clonburris Strategic Development Zone (SDZ) Planning Scheme 2019 as follows:

- A) 81 no. houses comprising 4 no. 2-bedroom houses, 65 no. 3-bedroom houses and 12 no. 4-bedroom houses (all 2-no. storey with associated private open space and car parking);
- B) 76 no. apartment units consisting of 26 no. 1-bedroom and 50 no. 2-bedroom units within Block 1 (4 no. storeys);
- C) Vehicular access will be provided from the permitted street under SDZ21A/0022 and the permitted Clonburris Southern Link Street (SDZ20A/0021) and R113 (Fonthill Road) to the east;
- D) All ancillary site development works including footpaths, landscaping boundary treatments, public and private open space areas, car parking (170 no. spaces) and bicycle parking (170 no. spaces), single-storey ESB sub-stations, bin and bicycle stores and all ancillary site development/construction works.



2 CONSTRUCTION PROGRAMME AND PHASING

2.1 PHASING

The project is currently at planning stage and subject to approval. It is estimated that the works would be tendered in the first quarter of 2023 with commencement expected in the second quarter of 2023. The development would have an estimated site program of 18 - 24 months, depending on phasing. The preliminary phasing plan is indicated in Figure 2-1 below.

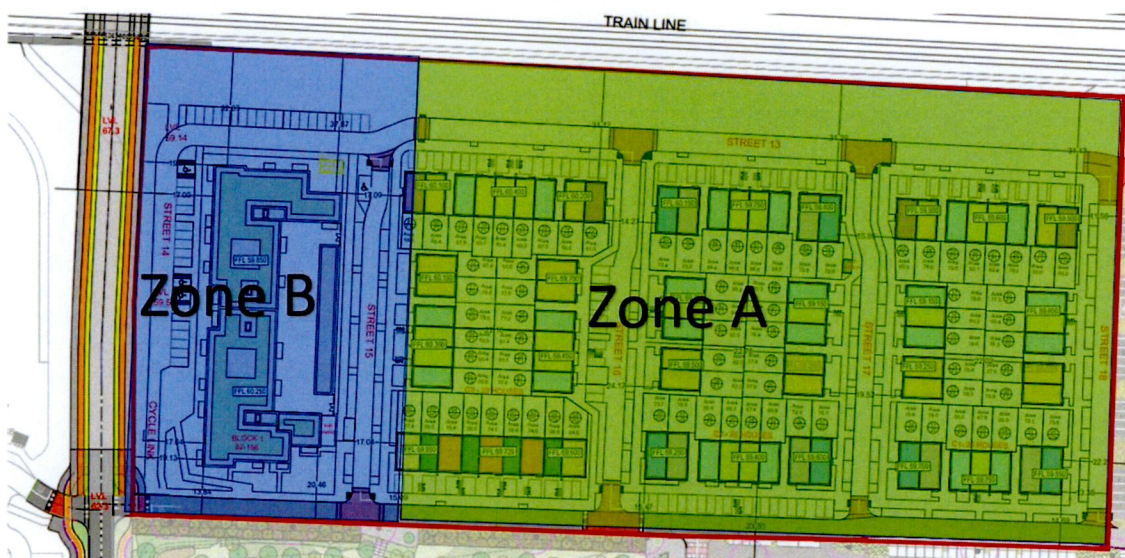


Figure 2-1 Indicative Phasing Plan

2.2 CO-ORDINATION AND INTERACTIONS

The proposed development is likely to be constructed in parallel with the CSLS works and the adjacent Clonburris T1A development. Therefore, interactions will be required between the developments throughout the works.

In order to manage interactions between the sites a Project Liaison Group will be established. This group will have regular meetings to ensure a co-ordinated approach to design interfaces, works programmes and environmental management activities for all sites. The group will consist of the Construction Project Manager for each site and the sites' PSCS, PDSP and key design staff as required.

As part of the southern SDZ planning scheme the infrastructure and services of the proposed development are to connect into those provided by the CSLS works at certain locations. Co-ordination is required between the developments to ensure a programme detailing an accurate



sequence of works for each infrastructure and services element of the CSLS is established. The following elements need to be co-ordinated prior to commencement of the works:

- Works programmes. Activities which may impact the adjoining site will be co-ordinated. For example where road construction works or service installation affect access along the CSLS to the residential development, the works shall be phased so that alternative access routes are maintained via haul routes or second site access. Likewise key residential development phases such as bulk material import/export shall be co-ordinated with CSLS so that arrangements can be made to maintain this traffic through the CSLS site
- Site Levels- Permanent access to the proposed development is to be via the Clonburris Southern Link Street. All road, footpath and floor levels are to be finalised and co-ordinated with the CSLS levels prior to construction of the internal roads network.
- Attenuation/Surface Water Drainage – Stormwater run-off generated on the proposed site is to be collected and discharged to the network within the CSLS and stored and controlled via the attenuation structures provided as part of the separately approved CSLS. The surface water network constructed as part of the CSLS needs to be complete prior to final connection from the proposed development. The surface water drainage network of the adjacent Clonburris T1A development is to be completed before final connection of the subject development at indicated tie-in points as this development's surface water network conveys surface water from the subject site's outfall point to the regional attenuation basin. All drainage works for the proposed development to be carried out in accordance with the Clonburris "Surface Water Management Plan".
- Foul Sewer – The foul sewers constructed as part the CSLS to be completed prior to final connection from the proposed development. The adjacent Clonburris T1A development's foul water network is to be completed before connection of the subject site to the site's outfall point as the sites foul will be received by the Clonburris T1A development and convey foul water to the CLSL bulk foul sewer. All connections and discharge points to be approved by Irish Water.
- Water Supply – The subject site's water will be supplied by the CSLS bulk water pipeline via the adjacent Clonburris 1A development. The adjacent Clonburris T1A watermain should be completed before connecting to the indicated tie-in points as supply from the CSLS bulk water supply is routed through this development. All connections and discharge points to be approved by Irish Water.



2.3 SITE ACCESS

The primary site access is to be from the R113 where an existing stubbed access has been formed from the Roundabout. This location coincides with the intended location for the junction of the CSLS with the R113.

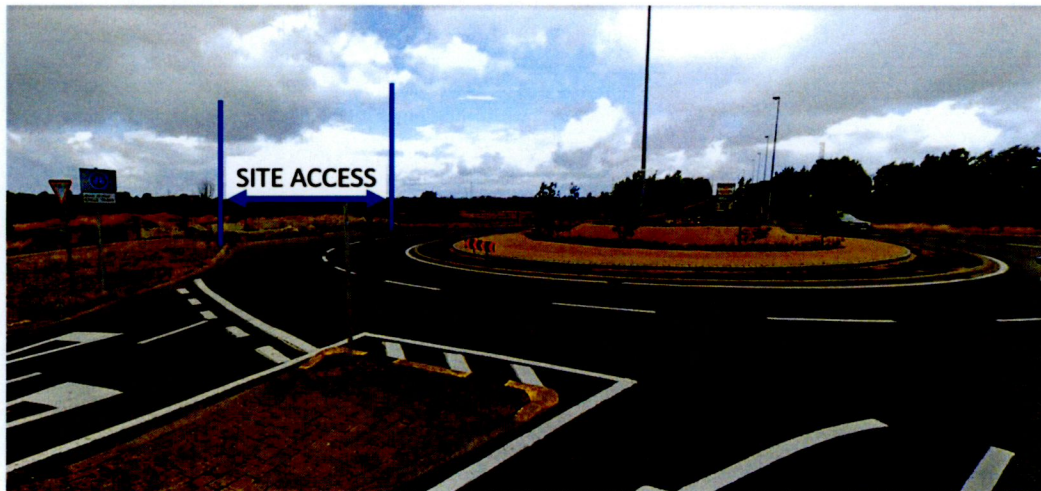


Figure 2-2: Access location from R113

As outlined above, there may be certain times when access from this location is constrained due to works as part of the CSLS, for example during works to modify the existing roundabout to a signalised junction. Therefore alternative routes to access the site are provided via haul routes from the west as part of the separately approved Clonburris T1A development. The haul routes initially follow the route of the permitted CSLS from the R136 before diverging to provide a route to both the northern and southern development parcels. The routes are generally designed to follow the future road network identified in the SDZ to minimise environmental impacts. Refer to Figure 2-3 for the location of these haul roads.

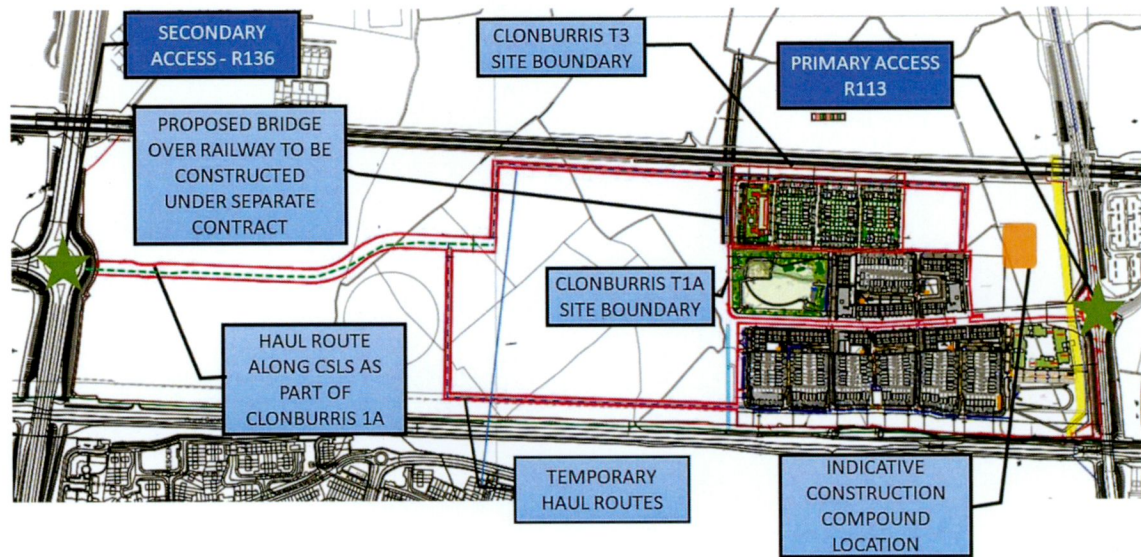


Figure 2-3: Site Access

A vehicle bridge is planned over the railway line north of the subject site. The bridge will pass over the railway line and is located on the western boundary of the subject site. The bridge is separately planned and the indicative tie-in location between the Link Street (as part of the CSLS works) and the bridge is shown in Figure 2-4 below.

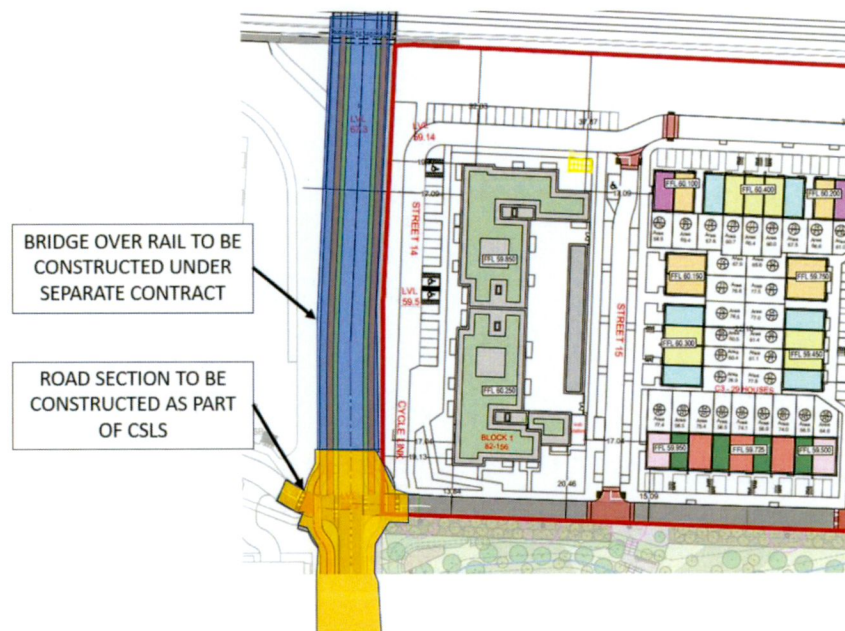


Figure 2-4 Proposed Vehicle Bridge (Separately Planned)



1.1 SITE COMPOUND FACILITIES AND PARKING

The exact location of the construction compound is to be confirmed in advance of commencement of the works.

The location of the construction compound may be relocated during the course of the works.

- The construction compound will include adequate welfare facilities such as washrooms, drying rooms, canteen and first aid room as well as foul drainage and potable water supply
- The proposed construction compound is to be located in an area with easy access to the CSLS and the two proposed haul routes. Indicative location shown in Figure 2-3.
- Foul drainage discharge from the construction compound will be transported off site to a licensed facility until a connection to the public foul drainage network has been established
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials
- The construction compound will be enclosed by a security fence
- Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure
- A permeable hardstand area will be provided for staff carparking
- A separate permeable hardstand area will be provided for construction machinery and plant
- The construction compound will include a designated construction material recycling area
- A series of way finding signage will be provided to direct staff, visitors and deliveries as required
- All construction materials, debris, temporary hardstands etc. in the vicinity of the site compound will be removed off-site on completion of the works
- Site security will be provided by way of a monitored infrastructure systems such as site lighting and CCTV cameras, when deemed necessary.

2.4 WORKING HOURS

For the duration of the proposed works, the working hours shall be in compliance with those identified in the planning permission for the works.

No working will be allowed on Sundays and Public Holidays.



Subject to the agreement of the local authority, out of hours working may be required for water main connections, foul drainage connections etc.



3 TRAFFIC AND TRANSPORTATION

A construction stage Traffic Management Plan (TMP) will be prepared for the works by the main contractor. The principal objective of the TMP is to ensure that the impacts of all building activities generated during the construction of the proposed development upon both the public (off-site) and internal (on-site) workers environments, are fully considered and proactively managed / programmed respecting key stakeholders thereby ensuring that both the public's and construction workers safety is maintained at all time, disruptions minimised and undertaken within a controlled hazard free / minimised environment. The TMP shall be prepared in accordance with the principles outlined above and shall comply at all times with the requirements of:

- Department of Transport Traffic Signs Manual 2010 – Chapter 8 Temporary Traffic Measures and Signs for Roadworks
- Department of Transport Guidance for the Control and Management of Traffic at Road Works (2010)
- Any additional requirements detailed in the Design Manual for Roads and Bridges (DMRB) & Design Manual for Urban Roads & Streets (DMURS)

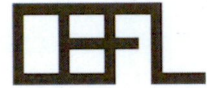
In general, the impact of the construction period will be temporary in nature and less significant than the operational stage of the proposed development (HGV vehicle movements not expected to exceed 5 vehicles per hour during the busiest period of construction works).

Construction Traffic will consist of the following categories:

- Private vehicles owned and driven by site staff and management
- Construction vehicles e.g. excavation plant, dump trucks
- Materials delivery vehicles involved in site development works (including trucks for delivery of imported fill to site).

On-site employees will generally arrive before 08:00, thus avoiding morning peak hour traffic. These employees will generally depart after 16:00.

Excavated material will be reused as part of the site development works (e.g. use as non-structural fill under green areas) in order to minimise truck movements to and from the site.



4 SOILS AND GEOLOGY

Site development works will include stripping of topsoil, excavation of subsoil layers and importation of fill. These activities have potential to expose the soils and geological environment to pollution.

The Contractor shall implement appropriate erosion and sediment control measures prior to commencing works on site.

The following measures are to be implemented in order to mitigate against erosion.

Stripping of Topsoil

- Stripping of topsoil will be carried out in a controlled and carefully managed way and coordinated with the proposed staging for the development
- At any given time, the extent of topsoil strip (and consequent exposure of subsoil) will be limited to the vicinity of active work areas
- Topsoil stockpiles will be protected for the duration of the works and not located in areas where sediment laden runoff may enter existing surface water drains
- Topsoil stockpiles will also be located so as not to necessitate double handling. Stockpile locations should be located so that they can be maintained separate from those used by the CSLS works
- The Contractor shall co-ordinate the transport of soils to and from the site with the CSLS works to limit traffic flow onto the R113.

Excavation of Subsoil Layers

- The duration that subsoil layers are exposed to the effects of weather will be minimized
- Disturbed subsoil layers will be stabilized as soon as practicable (e.g. backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping)
- Stockpiles of excavated subsoil material will be protected for the duration of the works, stockpiles of subsoil material will be located separately from topsoil stockpiles
- Subsoil stockpiles will also be located so as not to necessitate double handling. Stockpile locations should be located so that they can be maintained separate from those used by the CSLS works



Excavation of Rock

- Where bedrock is encountered in excavations, it will be assessed for viability of use within the designed works to reduce the volume of material required to be taken off site.
- Rock will typically be excavated using rock breakers or blasting where adequate separation distance can be achieved to existing properties.
- The duration that bedrock is exposed to the effects of weather shall be minimised. Disturbed bedrock layers shall be backfilled as soon as practicable (e.g. backfill of service trenches, construction of road capping layers, construction of foundations and completion of landscaping).
- Excavated rock stockpiles will also be located so as not to necessitate double handling.

Weather Conditions

- Typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimizing soil erosion



5 WATER – HYDROLOGY & HYDROGEOLOGY

The following measures are to be implemented during the construction phase to mitigate risks to the water and hydrogeological environment.

Erosion and Sediment Control

- Measures shall be implemented to capture and treat sediment laden surface water runoff (e.g. sediment retention ponds, surface water inlet protection, fencing and signage around specific exclusion zones and earth bunding adjacent to open drainage ditches) prior to discharge of surface water at a controlled rate.
- Groundwater pumped from excavations shall be directed to on-site settlement ponds.
- Discharge from any vehicle wheel wash areas shall be directed to on-site settlement ponds.
- On-site settlement ponds shall include geotextile liners and riprapped inlets and outlets to prevent scour and erosion
- Weather conditions and seasonal weather variations shall be taken account of when planning stripping of topsoil and excavations, with an objective of minimizing soil erosion.
- The duration that bedrock layers are exposed to the effects of weather shall be minimized by back filling excavations as soon as practicable after construction of the drainage network.

Accidental Spills and Leaks

- In order to mitigate against spillages contaminating underlying soils and geology, all oils, fuels, paints and other chemicals shall be stored in a secure bunded hardstand area.
- Refuelling and servicing of construction machinery shall take place in a designated hardstand area which is also remote from any surface water inlets (when not possible to carry out such activities off site).
- An Emergency Response Plan detailing the procedures to be undertaken in the event of a spillage of chemical, fuel or hazardous wastes will be prepared prior to construction.
- Pouring of concrete including wash down and washout of concrete from delivery vehicles shall be controlled in an appropriate facility to prevent contamination.



Concrete

- Concrete batching will take place off site and any excess concrete is not to be disposed of on site.
- Pumped concrete will be monitored to ensure there is no accidental discharge.
- Mixer washings are not to be discharged into surface water drains.

Wheel Wash Areas

- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds, debris and sediment captured by vehicle wheel washes are to be disposed off-site at a licensed facility.



6 ECOLOGY

The following measures are to be implemented during the construction phase in order to mitigate risks to flora and fauna.

- Ensure that invasive species (e.g. Japanese Knotweed) are treated appropriately (consult specialist invasive species contractor for suitable methods dependent upon the species) and avoid spreading these species during any works/activities.

The contractor shall also refer to particular mitigation measures for ecology as set out in Ecology report.



2 WASTE MANAGEMENT

The following measures are to be implemented during the construction phase in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle waste in such a manner as to minimise the effect on the environment:

- Building materials should be chosen with an aim to 'design out waste'
- On-site segregation of non-hazardous waste materials into appropriate categories
- On-site segregation of hazardous waste materials into appropriate categories
- All wastes segregated at source where possible
- All waste material will be stored in skips or other suitable receptacles in a designated area of the site
- Left over materials (e.g. timber off-cuts) shall be re-used on site where possible
- All waste leaving the site will be recycled, recovered or reused where possible
- All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licensed facilities
- All waste leaving the site will be recorded and copies of relevant documentation maintained



7 NOISE AND VIBRATION

During the works the contractor shall comply with the requirements of BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014 (Code of Practice for Noise and Vibration Control on Construction and Open Sites) as well as Safety, Health and Welfare at Work (General Application) Regulations 2007, Part 5 Noise and Vibration.

In particular, the following practices are to be implemented during the construction phase:

- Limiting the hours during which site activities that are likely to create high levels of noise and vibration are permitted
- Erection of a barrier along site boundary (e.g. Standard 2.4m high construction hoarding) to remove direct line of sight between noise source and receiver when construction works are being carried out in proximity to noise sensitive receivers
- Establishing channels of communication between the contractor, local authority residents and contractors involved with the CSLS works
- Appointing a site representative responsible for matters relating to noise
- Selection of plant with low inherent potential for generation of noise
- Siting of noisy plant as far away from sensitive properties as permitted by site constraints and implementation of noise reduction measures such as acoustic enclosures
- Avoid unnecessary revving of engines and switch off plant when idle
- All vehicles and mechanical plant used for the purpose of the Works shall be fitted with effective exhaust silencers and shall be maintained in good and efficient working order. In addition, all diesel engine powered plant shall be fitted with effective air intake silencers.
- All ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers, and where commercially available, dampened tools and accessories shall be used

Noise Limits

Noise Limits to be applied for the duration of construction works are as set out in the National Roads Authority (NRA) Guidelines for Treatment of Noise and Vibration in National Roads Schemes



(summarised below in Figure 7-1) and BS 5228-1:2009+A1:2014 (Code of Practice for Noise Control on Construction and Open Sites).

Days & Times	L_{Aeq} (1hr) dB	$L_{pA(max)slow}$ dB
Monday to Friday 07:00 to 19:00hrs	70	80 ²
Monday to Friday 19:00 to 22:00hrs	60 ²	65 ²
Saturday 08:00 to 16:30hrs	65	75
Sundays and Bank Holidays 08:00 to 16:30hrs	60 ²	65 ²

2. Construction activity at these times, other than that required in respect of emergency works, will normally require the explicit permission of the relevant local authority

Figure 7-1 NRA Guidelines for Maximum Permissible Noise Levels at the Façade of Dwellings During Construction.

BS 5228 applies a noise limit of 70 dBA between 07:00 am and 19:00 pm outside the nearest window of the occupied room closest to the site boundary in suburban areas away from main road traffic and industrial noise.

For the duration of construction works, a daytime noise limit (07:00 am to 19:00 pm) of 70 dBA shall apply (in accordance with the requirements of BS 5228 and generally in agreement with the NRA guidelines).

Vibration Limits

Vibration Limits to be applied for the duration of construction works are as set out in BS 5228-2:2009+A1:2014 (Code of Practice for Vibration Control on Construction and Open Sites) and BS 7385: 1993 (Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration). Allowable vibration during the construction phase is summarised below in Figure 7-2



Days & Times	L _{Aeq} (1hr) dB	L _{pA(max)slow} dB
Monday to Friday 07:00 to 19:00hrs	70	80 ²
Monday to Friday 19:00 to 22:00hrs	60 ²	65 ²
Saturday 08:00 to 16:30hrs	65	75
Sundays and Bank Holidays 08:00 to 16:30hrs	60 ²	65 ²

Figure 7-2 NRA Guidelines for Allowable Vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration



8 AIR QUALITY AND CLIMATE

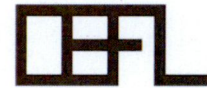
The primary air quality impact during the construction phase relates to nuisance dust emissions.

The following dust suppression practices are to be implemented during the construction phase:

- The Contractor shall prepare a dust minimisation plan which shall be communicated to all site staff
- Establishing channels of communication between the contractor, local authority residents and contractors involved with the CSLS work
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic
- Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly (on any un-surfaced site road, this will be 20 kph and on hard surfaced roads as site management dictates)
- Vehicles delivering material with dust potential (soil, aggregates, imported fill etc.) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust
- Public roads outside the site will be inspected on a daily basis for cleanliness and cleaned as necessary
- Debris, sediment, grit etc. captured by road sweeping vehicles is to be disposed off-site at a licensed facility
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate prior to entering onto public roads
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions



Monitoring of dust deposition levels (via the Bergerhoff method) shall take place at a number of locations at the site boundary of the proposed development to ensure that dust nuisance is not occurring at nearby sensitive receptors. This monitoring aims to ensure that the dust mitigation measures outlined above remain effective.



9 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Proposed construction phase mitigation measures are summarised below:

- Site hoarding will be erected to restrict views of the construction activity e.g. standard 2.4m high construction hoarding
- Site hoarding to be co-ordinated with CSLS works
- Establishment of tree protection measures as required (no-dig construction zones, tree protection fencing and existing hedgerow retention). Any trees which are not to be taken down shall remain undisturbed and undamaged
- Tree protection fences if required are to be constructed in accordance with BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations"
- A 'Construction Exclusion Zone' notice shall be placed on tree protection fencing at regular intervals
- Tree Protection Zones are not to be used for car parking, storage of plant, equipment or materials
- A post construction re-assessment of any retained trees shall be carried out



10 ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE

It is recommended that monitoring of ground disturbances associated with the proposed development be carried out in accordance with the direction of the project Archaeologist.

Full provision should be made for the resolution of any archaeological features / deposits that may be discovered, should that be deemed the most appropriate manner in which to proceed.



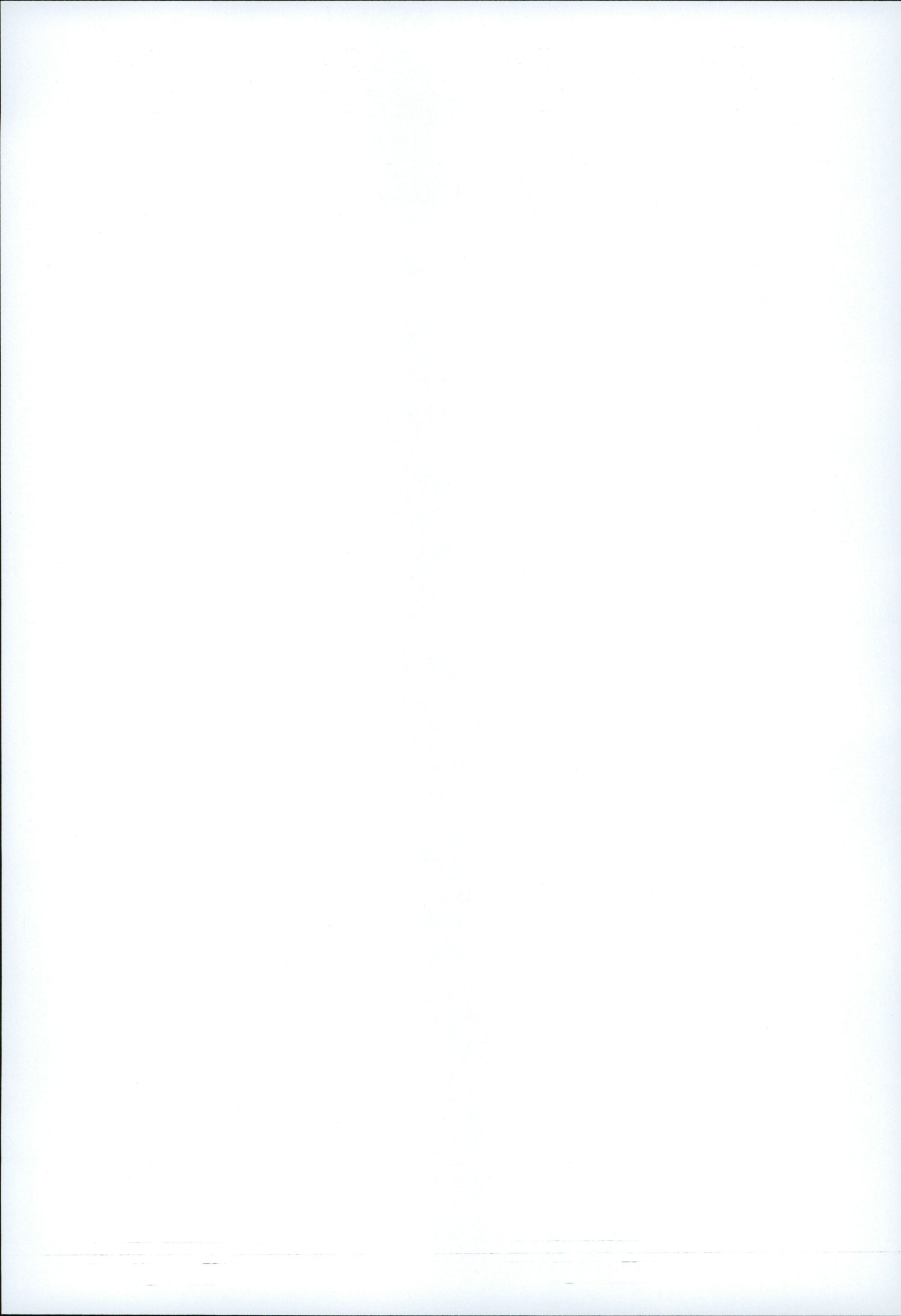
11 MATERIAL ASSETS: SITE SERVICES

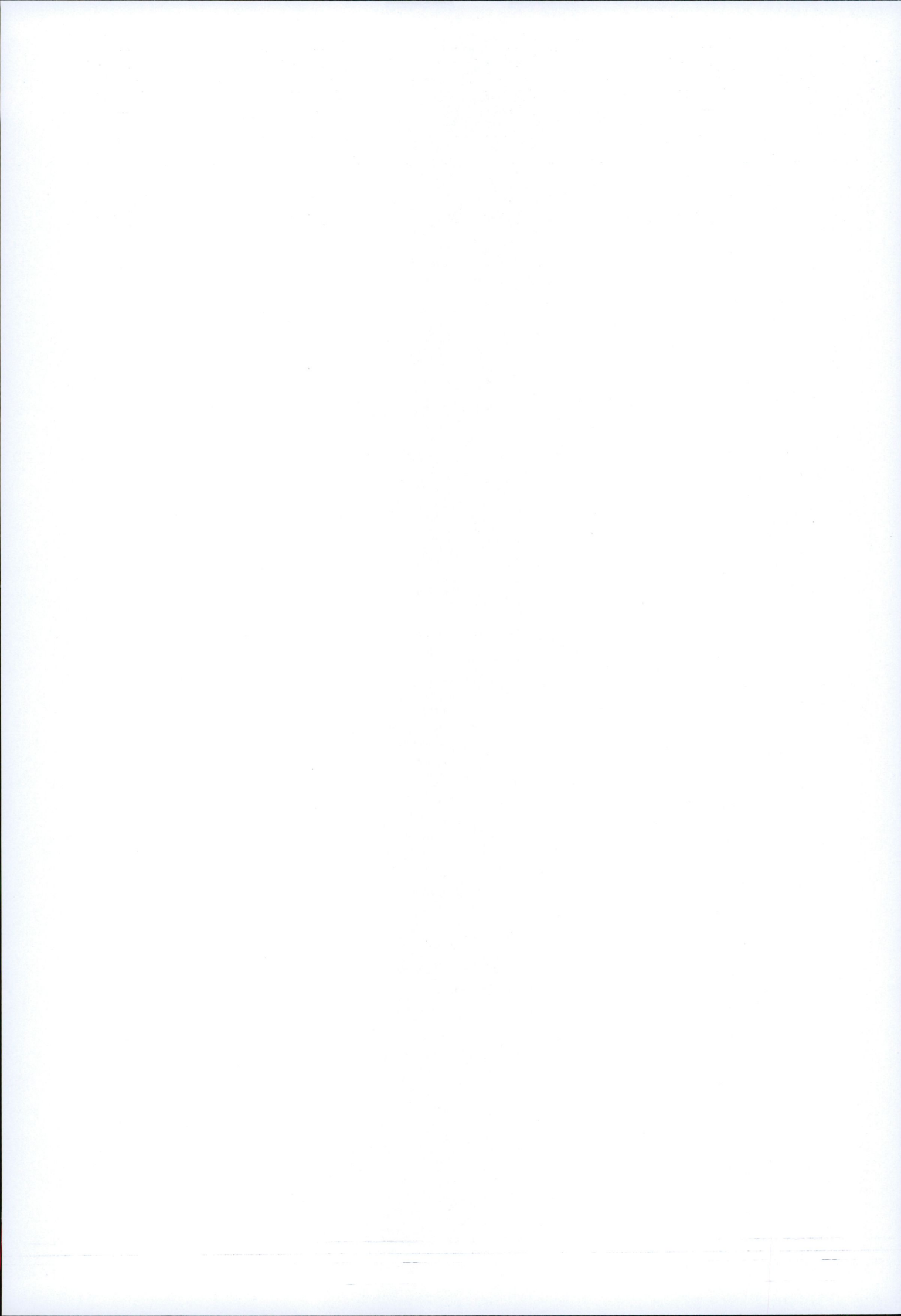
Existing Underground Services

- The location of all existing underground services are to be confirmed by the contractor prior to commencing any works on site.

CSLS Underground Services

- The Contractor shall co-ordinate the construction of the underground services of the proposed development with those constructed as part of the CSLS prior to final connection.







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