PUNCH
consulting engineers

Mixed Use Development, Greenhills Road Tallaght, Dublin 24

Outline Construction Management Plan
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1 Introduction

The purpose of this document is to briefly outline the general activities required for the construction of a proposed mixed-use development on a site located at Greenhills Road, Tallaght, Dublin 24.

A Main Contractor has not yet been appointed to carry out the proposed works. Once appointed, it will be the responsibility of the Main Contractor to prepare and submit a detailed construction management plan for the Client's submission to the local authority for approval. The construction management plan will be a live document that will be updated throughout the project lifecycle by the Main Contractor as required.

Regardless of the form of contract, the Contractor will be contractually bound by any conditions arising from the site constraints identified and specified, all Statutory Regulations governing the works, and any additional measures or modifications that may be imposed on the proposed development by the local authority or An Bord Pleanála.

2 Description of the Works

The development proposed is a mixed-use scheme on the site at the Old Greenhills Road, Tallaght, Dublin 24. The application area encompasses a development with frontage onto Greenhills Road and Old Greenhills Road within the applicant's control.

The proposed development consists of the demolition of the southern block of existing apartments on the eastern side of the site, and a multi-story extension of the current apartments that are located on the Greenhills Road. There is also an additional proposed multi story apartment block located on the western side of the site bounding the Old Greenhills Road.

The existing basement is to be upgraded to facilitate residential parking from the apartments. This Basement will be located beneath the proposed apartments and will be accessed from the Old Greenhills Road

3 Indicative Construction Programme

It is estimated that the construction programme for the works associated with the proposed works will last circa 18 months from the date of commencement. This estimation is based on the typical construction programmes for other similar developments that are currently underway. It is envisaged that construction of the proposed building and external works will be carried out over a single phase. The Main Contractor will be required to prepare a detailed construction programme as part of their tender proposal.

4 Site Set-Up and Security

The Main Contractor will be required to submit a site layout plan that will detail the proposed location of the site compound. The Contractor will ensure that the site compound will be serviced as required and will be secured with appropriate fencing/hoarding. The site compound will be used as the primary location for the storage of materials, plant and equipment, site offices and worker welfare facilities. As Project Supervisor Construction Stage (PSCS), the Contractor will be responsible for site security and they are to ensure that the site and site compound are adequately secured at all times.

As with the other construction activities that are being carried out within the South Dublin County Council local authority area, activities associated with the construction compounds will be subject to restrictions

to the nature and timing of operations so that they do not cause undue disturbance to neighbouring areas and communities.

The site layout plan will also include the site perimeter and the proposed detail with regards the hoarding and gate system.

5 Site Access

Site access and egress from the site will be from the N81 Tallaght Bypass road via Main Street Tallaght and Old Greenhills Rd/Greenhill Road. The Contractor will ensure that entrance points to the construction zone are controlled as required.

West of the site the N81 continues to Saggart and Blessington. A connection is provided to the N7 via the N82. East of the site, the N81 continues to the M50.

Main Road, Old Greenhills Road and the R819 are to remain open during the course of the works. The Main Contractor will be responsible for all site access and works activity and must ensure the continued operation of Old Greenhills Road and the R819. It is proposed that construction vehicles will primarily access the site via the Old Greenhills Road entrance.

Furthermore, in order to reduce the requirement for site parking for employees, public transport such as Dublin Bus and Luas (station at Tallaght) should be utilised.

6 Material Storage and Delivery

The Contractor will ensure that the delivery of materials is coordinated to minimise impacts to adjacent properties. The Contractor will ensure that all materials are adequately stored and secured in their site compound.

For more details, please refer to the Outline Construction and Demolition Waste Management Plan prepared and included in the planning submission.

The Contractor will ensure the roads adjacent to the site are kept clean and free of debris.

7 Traffic Management Plan

The Contractor will be required to prepare and submit a detailed traffic management plan as part of their tender submission. Once appointed, the preferred Contractor will further develop the traffic management plan as required for the developer to submit to the local authority for approval in advance of works commencing onsite. The Contractor will ensure that advanced warning signs are erected on approaches to the site as required by the PSCS. The Contractor will use a competent sign provider and all signage that meets the requirements of the Safety, Health & Welfare at Work (General Applications) Regulations 2007 and Chapter 8 Traffic Signs Manual. Any proposed temporary road markings must also confirm to the requirements of Chapter 8 of the Traffic Signs Manual.

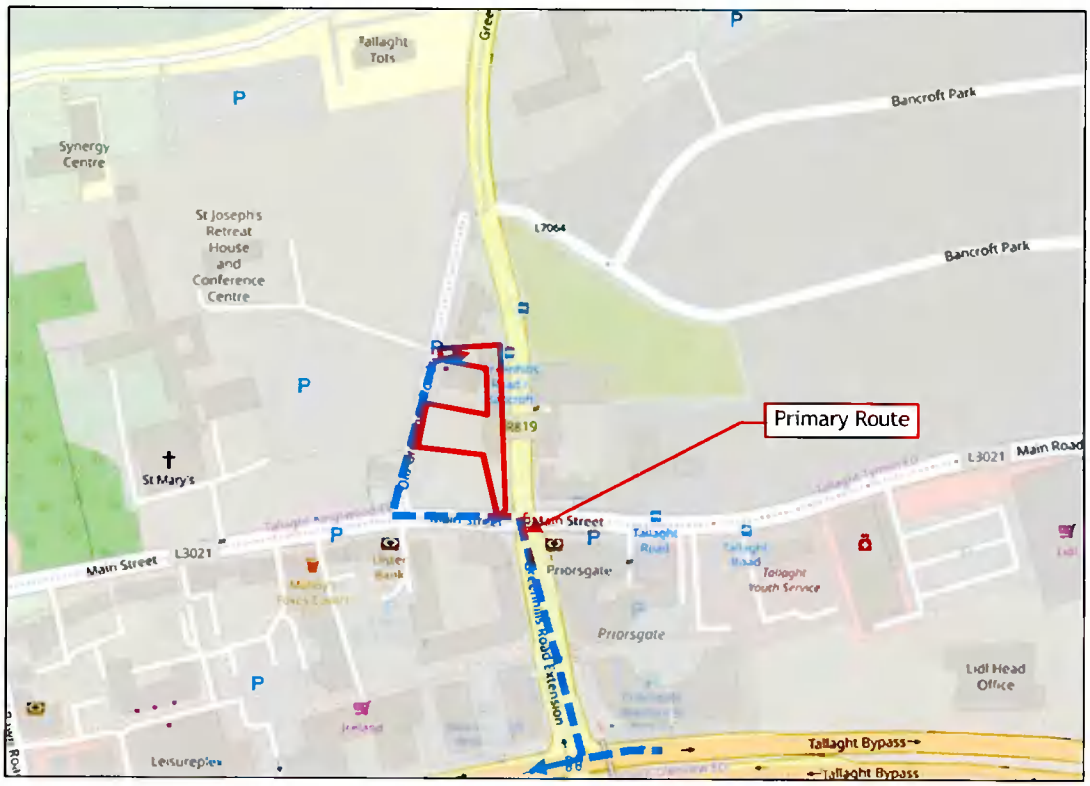

Figure 1: Proposed Primary Route To/From Site © Open Street Map

The Main Contractor will be responsible for all site access and works activity and must ensure the continued operation of the surrounding local road network as a result of its construction traffic.

The management of construction traffic on the public and private road networks in and around the proposed development is a critical part of the overall project and must be actively managed by the Contractor.

The Contractor must submit a Construction Traffic Management Plan to the Local Authority for approval. Haulage vehicle movements should be fully coordinated to comply with the requirements of the agreed plan:

- Construction vehicles must not stop or park along the routes at any time;
- Haulage vehicles must not travel in convoys greater than two vehicles at any time;
- Site entrance to remain free of parked or stationary vehicles at all times;
- All loading of demolition material will occur within the site boundary;
- All off-loading of deliveries will take place within the site, remote from the public road and will access via the agreed construction access point.

The site is located in an established suburban area where the road and junction space is shared with public road users and construction traffic associated with other nearby developments. Therefore, the flow of construction traffic will need to be marshalled and controlled to ensure that potential conflicts are avoided as much as possible.

There are no proposals to introduce temporary road closures or temporary traffic light signals to facilitate construction of the proposed development. There are also no proposals to amend the existing local access arrangements to the surrounding areas.

For more details please refer to the Outline Construction and Demolition Waste Management Plan prepared and included in the planning submission.

8 Potential Interface with Other Projects

There may be a number of PSCS's operating in the urban locality at any one time on individual sites. It will be responsibility of the appointed Contractor as PSCS to ensure that delivery and haul routes, site access and egress points and potential crossing points associated with the site are fully coordinated and agreed with other Contractors in advance of the works commencing.

9 General Construction Approach

9.1 Construction Working Space

Construction working space will be set out in the detailed construction management plan at compliance stage.

Construction access routes, haul routes and delivery routes to the site are to be agreed with the Engineer/Employer's Representative in advance of works commencing onsite.

Any road closures required will be submitted and approved in advance with the local authority. It is the responsibility of the Main Contractor to prepare and submit the road closure application to the local authority in advance of works commencing onsite.

9.2 Outline Works Description

The construction works will involve an indicative sequence of works, as described in short below. The Contractor will outline works which impact public spaces within the Construction Management Plan that shall be subject to submission and agreement with South Dublin County Council.

9.2.1 Hoarding, Site Set-up and Formation of Site Access/Egress

The site area will be enclosed with hoarding details of which are to be agreed with SDCC. Hoarding panels will be maintained and kept clean for the duration of the works. This will involve erecting hoarding around the proposed site perimeter in line with the finished development extents.

The available site footprint will enable the Contractor to set up the site compound within the site boundary.

The Contractor will be responsible for the security of the site. The Contractor will be required to:

- Operate a Site Induction Process for all site staff;
- Ensure all site staff shall have current 'Safe Pass' cards and appropriate PPE;
- Install adequate site hoarding to the site boundary;
- Maintain site security at all times;
- Install access security in the form of turn-styles and gates for staff;
- Separate public pedestrian access from construction vehicular traffic;

9.2.2 Site Clearance and Demolition

The existing site consists of existing apartment blocks to the east, of which a section of the southern block is to be demolished.

The following is an outline method statement for the demolition (and excavation) works associated with the building:

- Establish a site set-up and welfare facilities;

- Carry out an intrusive asbestos survey to identify the presence of any carcinogenic materials, possible fire protection to steel works and in plant areas;
- Carry out a detailed services survey of the site to identify all services, determine what services are live, redundant and potentially serving neighbouring properties. These activities are to be performed prior to any demolition is performed on site;
- Carry out any necessary service diversions and decommissioning works;
- Demolition and removal of existing structures and equipment to clear the site and enable construction of the residential development.

It is noted that the proposed development consists of the excavation and construction of a single level basement, the subsequent construction of multiple storeys of residential apartments and the associated site landscaping and ancillary development.

9.2.3 Construction Sequence of Development

The construction of the proposed apartment blocks will commence after the completion of the demolition of the section of the existing block, and the excavation and installation of the basement car park. The structure will consist of construction of RC framed structures with foundations below.

The construction methodology and programme of these activities will be dictated by the Contractor.

Pile Wall Installation

The site level will be reduced to a uniform level following demolition (which includes excavation works) and removal of the building foundations and redundant services. The temporary secant pile wall around the footprint of the basement will involve the installation of interlocking male and female augered piles. The augering of the piles will generate spoil that must be disposed at an appropriate licensed land fill site. The concrete operations associated with the pile wall will require concrete deliveries to site.

The Contractor will provide a design to manage existing basement parking during construction.

Bulk Excavation

The basement area will involve the excavation and removal of earthworks material. A desk-top study of historic information relating to the vicinity notes the ground comprising of the following build-up:

- Made Ground on;
- Yellow Brown Silty Clay on;
- Brown Stony Clay on;
- Dark Very Stony Clay.

The Contractor must prepare a Construction and Demolition Waste Management Plan in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licensed land fill site. The Contractor must also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

Site Grading

Site grading to be carried out by the Contractor prior to the construction of the foundation.

The Contractor must prepare a Construction and Demolition Waste Management Plan in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and

Demolition Projects" (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licensed land fill site. The Contractor must also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

Construction Sequence of Substructure

The nature and type of the proposed development with its single level of basement indicates that to prevent any potential risk of groundwater intrusion into the lower structure the basement will be constructed as a watertight box, the proposed grade for the basement is Grade 1, as per BS 8102:1990. The proposed structural integrity of the basement and its ability to prevent groundwater intrusion into the site is deemed sufficient to mitigate the potential risk to acceptable limits. The concrete works will involve concrete deliveries to site and adequate wash-down and wheel wash facilities must be provided for the concrete wagons. The basement waterproofing will be confirmed by the architect as part of detailed design.

Construction Sequence of Superstructure

The construction of the superstructure will involve the sequencing of activities and various construction methodologies. The nature of the building, the column grid and economic factors, among other issues, would suggest that the building will be constructed utilising a reinforced concrete frame. The façade may consist of a unitised system to limit the extent of scaffold required, or a more traditional 'stick' system to the Architect's specification.

Building Structure:

- Construction of the foundation basement slab and permanent basement retaining wall structures;
- Construction of rising elements to Level 0 and construction of Level 0 floor slab and transfer structures;
- Similar sequence of construction of rising elements and floor slabs

Envelope / Cladding:

- Commencement of envelope works to Level 1 when structure has progressed to approximately Level 2/3;
- Advancing of Cladding two levels behind the structure.

Envelope / Cladding - All Blocks:

- The structural blockwork will also act as the envelope for the structure, and cladding will follow completion of the blockwork.

Mechanical & Electrical Fit-Out:

- First fix will commence from ground floor level upwards;
- This will be followed by the second fix and final connections.

Fit-Out:

- Initial installation of stud work when cladding completed, and floor is weather tight;
- Installation of equipment and associated connection to services;
- Completion of finishes.

Commissioning:

- The final commissioning period will commence during fit-out.

The above represents a high-level indicative construction sequence only. The actual sequence will be dictated by the Contractor. The Contractor will issue a detailed construction programme outlining the various stages prior to commencement of works.

It is envisaged that a tower crane will be temporarily erected to accommodate the apartment block construction works for the distribution of building materials and plant. The Contractor is required to obtain all necessary licences from SDCC.

10 Waste Management Plan

The Main Contractor will be required to prepare a detailed waste management plan for the project. This will be included in the overall construction management plan that will be submitted to the local authority.

For more details please refer to the Outline Construction and Demolition Waste Management Plan prepared and included in the planning submission.

11 Communications and Local Stakeholder Management

The Contractor will, as required, liaise with owners of the local properties in advance of works commencing onsite. The Contractor will use a competent sign provider and all signage used will meet the requirements of the Safety, Health & Welfare at Work (General Applications) Regulations 2007 and Chapter 8 Traffic Signs Manual.

12 Construction Noise, Dust and Vibration

The Main Contractor will be required to monitor noise, dust and vibration as will be outlined in the planning conditions. The Contractor will establish baselines for noise, dust and vibration in advance of works commencing onsite. As part of their detailed construction management plan, the Contractor will be required to clearly indicate how they plan on monitoring noise, dust and vibration throughout the course of the project. This will be especially critical in relation to the basement construction and associated piling works. The Contractor will also be required to clearly outline the mitigation measures they plan on putting in place to ensure any breaches in the baselines are mitigated.

For more details please refer to the Outline Construction and Demolition Waste Management Plan prepared and included in the planning submission.

13 Working Hours

The proposed hours of work on site will be 07:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 16:30 hrs Saturday unless otherwise specified by planning conditions. It is anticipated that construction working hours will be stipulated in the planning conditions attached to the planning grant. Any working hours outside the normal construction working hours will be agreed with SDCC. The planning of such works will take consideration of sensitive receptors, in particular any nearby businesses.

For more details please refer to the Outline Construction and Demolition Waste Management Plan prepared and included in the planning submission.

14 Lighting

There are proposals to alter the existing lighting arrangements in the area. It is envisaged that some existing public lighting will need to be disconnected as a result of the proposed works. Please refer to M+E documentation in this regard.

Appropriate lighting will be provided as necessary at construction compounds. All lighting will be installed so as to minimise light spillage from the site.

15 Construction Employment

Construction employment numbers will vary depending on the construction stage of the project and the actual approach adopted by the Contractor. However, it is anticipated that at the peak of construction there may be a workforce of approximately 50 people employed (maximum).