OUTLINE CONSTRUCTION MANAGEMENT PLAN

for

A PROPOSED STRATEGIC HOUSING DEVELOPMENT

at

ST MICHAELS HOSPITAL CAR PARK, DÚN LAOGHAIRE

for

FITZWILLIAM DL LTD.

Muir Associates Limited,
Consulting Engineers,
Project Managers,
Marketing Network House,
Argyle Square,
Morehampton Road,
Dublin 4, D04 K0Y1

Tel: +353-1-6762788
Email: info@muir.ie
www.muir.ie

MUIR

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CONTENTS

1. INTRODUCTION

This Outline Construction Management Plan has been prepared by Muir Associates Limited to accompany a planning application for a proposed Strategic Housing Development located at St Michaels Hospital Car Park, Dún Laoghaire.

This Outline Construction Management Plan sets out a framework of measures to address the implications of the construction works. The Contractor appointed to undertake the works will be required to develop this framework document as part of their overall Construction Management Plan in line with their obligations under the Safety, Health and Welfare at Work (Construction) Regulations 2013.

2. LOCATION OF THE PROPOSED DEVELOPMENT

The proposed development is located within the existing surface car park off Crofton Road within the curtilage of St Michaels Hospital. The existing site levels fall from south to north with the levels varying from approximately 12.5mOD to 9.0mOD.

The proposed development includes the relocation of the existing vehicular access on Crofton Road together with all associated on plot and off-site infrastructural works. The location of the proposed development site is shown in Figure 2.1 below:

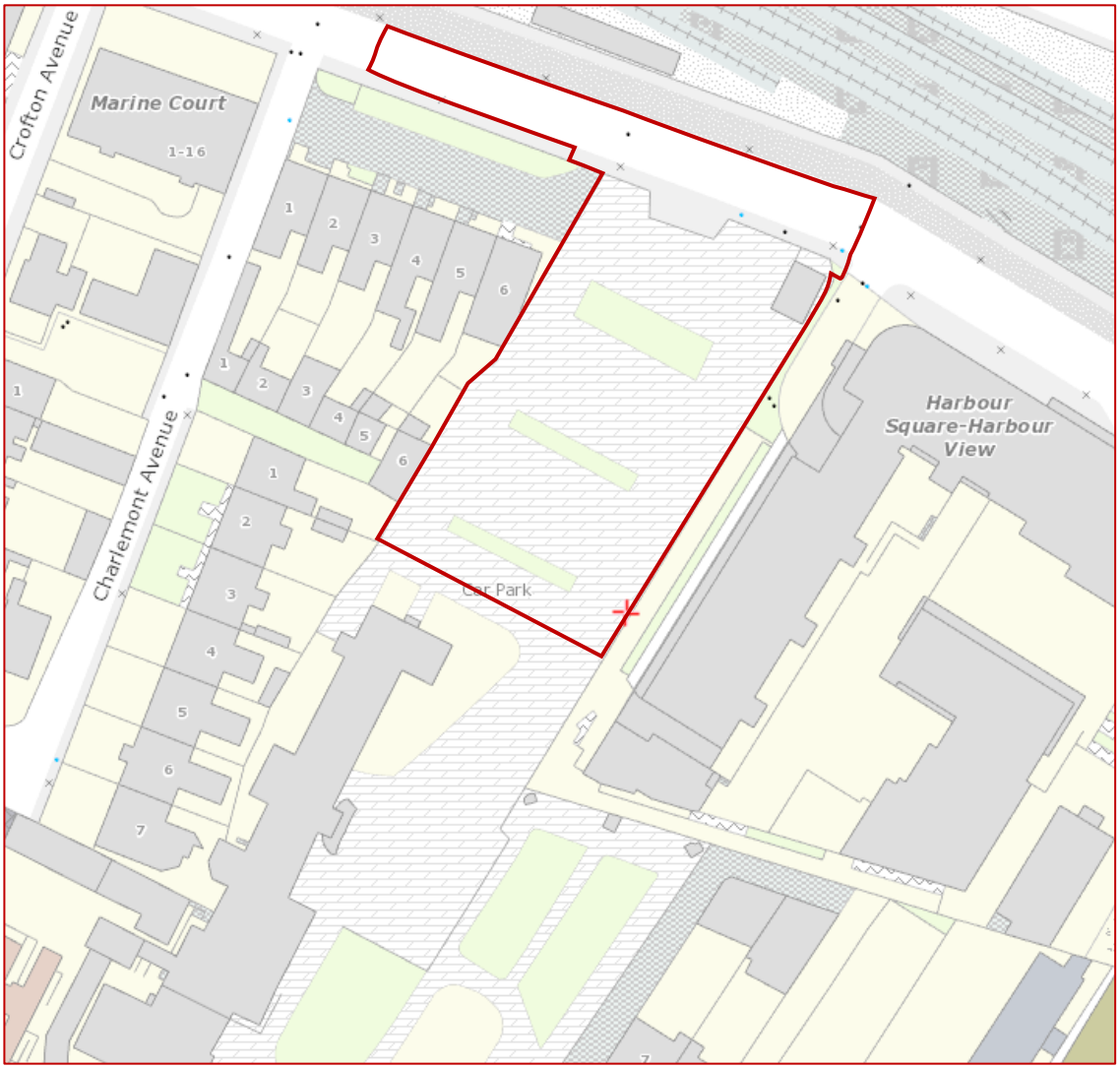

Figure 2.1: Site Location

3. WORKS EXTENTS

The anticipated works extents will be contained within the "red line" site area indicated on the architect's drawings and the overall site area extends to approximately c 0.42ha.

4. OUTLINE CONSTRUCTION MANAGEMENT PLAN

4.1 Development Description

The proposed development will consist of the demolition of an existing 2 No storey house on the site and the construction of 102 No build-to-rent residential apartments (80 No 1-bed and 22 No 2-bed units) across 2 No buildings (Building 01 and Building 02), along with ancillary residential amenities and a publicly accessible café on a c. 0.42ha site. Building 01 to the north extends to part 5, part 6, part 8 and part 13 No storeys in height. Building 02 to the south extends to part 8, part 9 No storeys in height, with a setback 9th storey.

Residential amenity space in the form of a reception, coworking/study space, gym, games area, lounge/kitchen area, and multi-purpose recreational space is provided at ground floor level of Building 01, alongside a reception and postal storage area. External roof terraces are included at storeys 6 and 9 at Building 01, with an enclosed glazed amenity space at 13th storey level, with external terrace. An external roof terrace is provided at 9th storey level at Building 02.

The development includes a vehicle right of way providing access to St. Michael's Hospital along the western perimeter of the site, accessed from Crofton Road. This provides access to 3 No car parking spaces (including 1 No disabled space) located between the two buildings. A secondary right of way is provided via a landscaped pedestrian route along the eastern perimeter of the site providing access to St. Michael's Hospital. A total of 150 No bicycle parking spaces are provided at the ground floor level of Building 02 (alongside a bicycle repair area), 26 No within the central courtyard and 8 No adjacent to the café at the northern perimeter.

The development also includes an ESB substation, bin store, services and drainage infrastructure, boundary treatments, access provision at Crofton and all ancillary development works necessary to facilitate the development.

A full development description is provided in the planning report which accompanies the submission.

4.2 Construction Programme and Phasing

Subject to a successful grant of planning permission, it is intended that the works will commence in Q4 in 2021. The proposed development is anticipated to be constructed over a period of 20 months.

The proposed development is likely to be constructed in the following sequence:

- Set up site perimeter hoarding, maintaining existing pedestrian and traffic routes around the site;
- Site clearance, services diversions, and demolitions;

- Construction of the building substructures;
- Construction of the building frame and envelope;
- Interior fitout;
- External landscaping;

4.3 Vehicular Access to Site

The site is currently accessed from the Crofton Road. It is anticipated that for the duration of the works all access and egress to the site for construction related activities will be via Crofton Road.

Security personnel will be present at the entrance/exit of the site to ensure all exiting traffic will do so safely. A wheel wash will be installed at the exit from the site to prevent any dirt being carried onto the public road and a road sweeper will be used to clean public roads in the immediate vicinity of the site when necessary.

4.4 Protection of Public Areas from Construction Activity

Fencing will be erected around the perimeter of the site to prevent unauthorised access to the construction site. Controlled access points to the site, in the form of gates or doors/turnstiles, will be kept locked outside working hours. The Fencing will be maintained and will contain graphic images of the completed project.

All materials being lifted by crane will be controlled by guide ropes and such lifts will only be carried out under the strict supervision of appropriately qualified and experienced banksmen. Cranes will be fitted with restrictors to prevent lifting of materials over existing buildings in the vicinity of the site. Method statements will be prepared by the contractor where any plant is operating adjacent to existing buildings.

4.5 Site Security

The sites of the various interventions will be secured with fencing along the perimeter of the sites. The site fencing may incorporate branding using the appointed Contractors logos and marketing images. Information boards may also be placed on the hoarding.

Access to sites will be controlled and camera remote monitoring system will be used for out of hours. During working hours, a gateman will control traffic movements and deliveries to ensure safe access and egress to site.

All personnel working on site will be required to have a valid Safe Pass card and be inducted by the Main Contractor with regard to site specific safety information.

4.6 Material Hoisting and Movement Throughout the Site

It is envisaged that at least two tower cranes will be erected on the project during the construction of the superstructure and façade. In addition to the in situ tower cranes, separate mobile crane visits may be required from time to time. These visits will be coordinated with the other site activities and crane operations to ensure all risks are appropriately assessed and any necessary mitigation measures implemented. Material hoists and teleporters may also be utilised around the perimeter of the building within the site as required during the works to facilitate material movement and waste movements.

4.7 Deliveries and Storage Facilities

It is proposed that material deliveries to the site will be accommodated within the perimeter fencing. Such locations will be accessible by forklifts. Designated storage zones will be used to separate and segregate materials.

All deliveries to site will be scheduled to ensure their timely arrival and avoid the need for storing large quantities of materials on site. Deliveries will be scheduled to avoid peak hours so as, insofar as possible, avoid disturbance to pedestrian and vehicular traffic in the vicinity of the site.

4.8 Site Accommodation

On site accommodation will consist of the following:

- Adequate materials drop-off and storage area;
- Staff welfare facilities (canteen, toilets, site offices etc);

A temporary electricity supply will be provided to the site from the existing local electricity supply network.

Water supply to the site will be provided by means of a temporary connection to the public water main. A temporary connection for foul water drainage will be made to the public network in agreement with the Local Authority and Irish Water. If feasible an existing branch connection will be utilised.

4.9 Site Working Hours

There are no set times in law limiting the working hours on construction sites. It is proposed that construction activities on the site will generally be confined to between the hours of 0700 and 1900, Monday to Friday, and 0800 to 1400 on Saturdays.

However, it may be necessary for some construction activities to be undertaken outside these times (e.g. service diversions and connections). Where such activities arise, they will be agreed with the necessary parties prior to commencement of the related works.

Deliveries of materials to site will generally take place during working hours. However, there may be occasions where it is necessary to make certain deliveries outside these times (e.g. where large loads are limited to road usage outside peak times).

5. METHODOLOGY AND SEQUENCE OF WORKS

The construction of the project will involve conventional construction methodologies and so will require the use of typical construction plant and equipment. The anticipated phasing of construction will generally be as follows:

Site Setup

- Establishing the site fencing, site offices, and contractors' compound;
- Welfare connections;

Building Works

- Site clearance, services diversions, and demolitions;
- Construction of building substructures;
- Construction of the building frame and envelope;

Site Works

- Utilities installation and diversions;
- Boundary treatments;
- Hard and soft landscaping

The above phasing and sequence are indicative. In practice, the actual approach taken by the Contractor will be subject to the following:

- Contractors standard works methodology
- Weather
- Time of Year
- Resources
- Subcontractors
- Lead in time for materials

It is worth noting that the type of plant and machinery to be used and the methodologies to be adopted for the works will need to take cognisance of the site access constraints and this, in turn, is likely to impact on the phasing of the works and on the construction programme.

Substructures

The building structures will be reinforced concrete frame construction and the substructures will comprise of pad and raft type reinforced concrete foundations founded on rock. Geotechnical ground investigations undertaken in 2007 identified bedrock at depths varying from 2.8m to 4.6m below the existing ground level on the site. The foundations will bear directly onto rock or lean mix concrete trench fill will be placed below the foundations between the base of the foundations and the rockhead.

The proposed foundation layouts for both Buildings are indicted on MAL drawing No's D1855-S-01, D1855-S-02 and D1855-S-03 which hare submitted with the application.

Connection to Existing Surface Water Sewer in Crofton Road

An Arboricultural Report in accordance with the recommendations of ***BS 5837:2012: Trees in relation to design, demolition and construction. Recommendations*** has been undertaken by The Tree File Limited and a copy of this report is submitted as part of this application. The Arboricultural Report has assessed the impact of the proposed works required to facilitate a connection to the existing surface water sewer located within the verge on the northern side of Crofton Road.

6. ENVIRONMENTAL ISSUES

6.1 Noise and Vibration

There are no published Irish regulations or guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local authorities normally control construction activities by imposing limits on the hours of operation and may also impose limits on noise at their discretion.
It is proposed that noise and vibration monitoring will be established on site throughout the project. Monitoring will be carried out prior to any works commencing on site in order to establish baseline data and the results of the monitoring will be issued to the Planning Authority on a regular basis.

All construction activities will be carried out in accordance with the relevant recommendations of ***BS 5228 Code of practice for noise and vibration control on construction and open sites***. The measures adopted to ensure compliance will include the following:

- Monitoring stations, which will be monitored daily, located on site and at recommended locations in the vicinity of the site to record background and construction noise activity;
- Proper maintenance of all operating plant to ensure noise emission compliance;
- All operating plant will be selected on the basis of incorporating noise reducing systems, and at a minimum be fitted with effective exhaust silencers;
- Plant such as pumps and generators which are required to work outside of normal working hours will be enclosed with acoustic enclosures;

- There will be strict adherence to the site working hours stipulated within this document or as amended by the planning permission conditions;

All demolition works will be undertaken in accordance with all relevant requirements of European and National legislation and regulation.

The Demolition works will adhere to the guidelines and recommendations given in the following British Standards:

- ***BS 6187:2011: Code of practice for full and partial demolition;***
- ***BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites. Noise;***
- ***BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites. Vibration;***

The construction works will also follow the guidelines and recommendations given in ***Best Practice Guidelines on the Preparation of Waste Management Plans for*** Construction ***and Demolition Projects*** published in July 2006 by the Department of the Environment, Heritage and Local Government.

6.2 Nosocomial Invasive Aspergillosis

During the course of the construction works the Main Contractor shall comply fully with the **National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis During Construction/Renovation Activities** published by the National Disease Surveillance Centre.

The contractor shall carry out a risk assessment in conjunction with the Hospital authorities to assess the risks and mitigating measures that are to be implemented during the construction of the works.

The contractor shall ensure that all materials exported from site shall be dampened and double bagged to eliminate, in so far as possible, the generation/spread of dust around the hospital grounds.

The works areas are to be dampened to mitigate dust generation as required.

6.3 Air Quality Monitoring

Appropriate air quality and dust monitoring will be carried out on a regular basis in accordance with any related planning conditions and in accordance with the recommendations contained in the **National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis During Construction/Renovation Activities.** Records will be kept of all such monitoring for review by the Planning Authority.

6.4 Dust Control

The contractor will be required to prepare a Dust Minimisation Plan for the construction phase of the project, as construction activities are likely to generate dust emissions.

The contractor will ensure that all construction vehicles that exit the site onto the public roads will not transport dust and dirt onto the external road network. This will be achieved through a combination of the following measures:

- Provision will be made for cleaning by a road sweeper of all access routes to and from the site during the course of the works. Road cleaning will be undertaken as required during the works. Exposed stockpiled demolition debris, crushed material, excavated materials, disturbed ground surfaces, and unpaved traffic areas will be maintained in a moist condition;
- During non-working hours, the site will be left in a condition that will prevent dust from being generated. At the end of each workday, disturbed areas will be wetted down, and security fencing will be installed and/or inspected to prevent access and additional disturbance.
- Ensuring all construction vehicles are inspected by the gateman for cleanliness prior to exiting the site;
- Ensuring an appropriate wheel or road washing facility is provided as and when required throughout the various stages of construction on site;

The use of appropriate water-based dust suppression systems will be adopted. This system will be closely monitored by site management personnel particularly during extended dry periods.

All external road gullies potentially impacted by the works will be surveyed in advance of the works and the condition recorded. Any deterioration of the gullies and their related performance during the works will be rectified immediately. Existing road markings potentially impacted by construction vehicles will be regularly monitored throughout the works and any deterioration promptly rectified in agreement with the Planning Authority.

6.5 Surface Water

The following is an outline of the procedures which will be implemented in relation to the protection of the existing surface water networks during the construction phase of the project. The details of the operational surface water disposal arrangements are given in the Engineering Report.

- Identify the location of all stream, watercourses, stormwater drains and drainage paths for surface water and how the proposed works will affect them by undertaking an appropriate pre-works survey (desk-based and on-site verification);

- A construction site drainage plan will be drawn up. Silt traps and settlement ponds will be established in appropriate locations of the site to treat run-off during construction prior to discharge. These will be inspected and maintained during construction;
- Run off from the construction site will be monitored;
- Designated impermeable concrete wash out areas will be established, maintained and the contents disposed of in an appropriate manner;
- All fuels and chemicals will be stored in bunded areas;
- Refuelling will take place in designated bunded areas;
- Identify potential sources of pollution;
- A method of disposing of contaminated water will be established in accordance with the requirements of the Environment Section of the Local Authority;
- In addition to the foregoing, the guidance provided in CIRIA C532 Control of Water Pollution from Construction Sites will be generally followed.

6.6 Excavations and Groundworks

All excavations and related groundworks will be undertaken using best practice methods and the following principles will be followed:

- Excavations will be kept to the minimum required taking cognisance of the construction methods and health and safety requirements;
- Construction equipment and support vehicles will travel only on designated roads and other approved access routes;
- Ground disturbance will be kept to a minimum;
- Material stockpiles will be stored in designated locations and soil stockpiles lightly compacted at the end of the working day;
- Surface water runoff from stockpiles will be intercepted via the construction site drainage plan to avoid direct discharge into the surface water system;

7. TRAFFIC MANAGEMENT

7.1 Access to the Site

It is anticipated that, following a successful grant of planning permission, construction works will commence in Q4 in 2021. Prior to the commencement of the works on site the contractor will prepare a detailed Construction Traffic Management Plan incorporating the traffic mitigation measures below and agree its proposals with the Planning Authority and An Garda Síochána. It is proposed that construction traffic will access the site via Crofton Road.

7.2 Construction Parking

Given the location and nature of access to the site, there will be no on site parking available for construction staff. Thus, construction staff will need to avail of the existing public parking in the vicinity of the site. Construction staff will also be encouraged to use public transport

and information on local transportation will be published on site. In addition, construction staff will be encouraged to car share.

7.3 Vehicle Movements During Construction

It is likely that the construction of the substructures will result in the greatest number of construction vehicle movements during the whole of the construction period. The number of construction vehicle movements generated during this period is likely to peak at of order 8 two-way trips per hour. The construction traffic is not expected to significantly impact on the capacity of the surrounding road network. Construction vehicle movements will be minimised by the adoption of the measures including:

- Consolidation of delivery loads to/from the site and managing large deliveries on site to occur outside of peak periods;
- Use of precast/prefabricated materials where possible;
- Provision of adequate storage space on the site;
- Development of a strategy to minimise construction material quantities insofar as possible;
- Construction staff vehicle movements will also be minimised by promoting, where feasible, the use of public transport and car sharing;

It is worth noting that proposed development site currently accommodates approximately 90 No surface car parking spaces. Thus, it is likely that the level of construction traffic will be less than the traffic associated with the current surface car park.

7.4 Public Roads

A visual condition survey will be undertaken of all surrounding public roads prior to the commencement of the works on site. The contractor will liaise with the Planning Authority to agree any changes to load restrictions and construction access routes for the site.

All entrances and temporary roads will be continuously maintained for emergency vehicle access. The following measures will be adopted to ensure that the site, public roads, and surrounding areas are kept safe and clean:

- A regular program of site cleaning will be established;
- Scaffolding will have debris netting attached to prevent materials and equipment being blown into public areas;
- Mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be permitted to accumulate;
- Wheel wash facilities will be provided for vehicles exiting the site;

In the event of any waste escaping from the site, it will immediately be retrieved by the contractor.

7.5 Project Specific Traffic Management Plan

A detailed Project Specific Traffic Management Plan, which will incorporate the mitigation measures referred to above, will be developed by the appointed contractor and agreed with the Planning Authority and An Garda Síochána prior to the commencement of the works on site. The traffic plan will be updated as required throughout the course of the project.

The issues to be addressed within the Project Specific Traffic Management Plan will include the following:

- Public safety
- Construction traffic routes
- Deliveries
- Traffic flows
- Signage and lighting
- Road opening licence requirements
- Road closures

The contractor will nominate an individual who will act as liaison with local stakeholders, the Planning Authority and An Garda Síochána.

Construction traffic will seek to avoid Dún Laoghaire town centre and this requirement will be incorporated into the construction documentation.

8. CONCLUSIONS

The Outline Construction Management Plan sets out the framework of measures to be developed by the Main Contractor as part of their obligation to properly manage the site and control all related activities that occur outside the site so that any related impact on people, property and the environment is reduced, insofar as possible, to an acceptable level.