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Outline Method Statement for Demolition of Existing Buildings

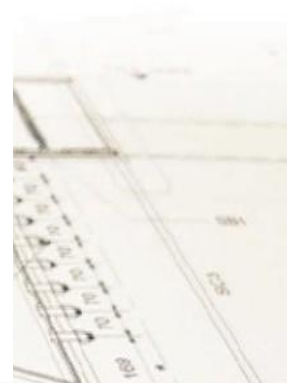
Strategic Housing Development

Frankfort Castle, Old Frankfort, Dundrum, Dublin 14

Client: Pembroke Partnership Ltd

Job No. H081

April 2021



OUTLINE METHOD STATEMENT FOR DEMOLITION OF EXISTING BUILDINGS

STRATEGIC HOUSING DEVELOPMENT

FRANKFORT CASTLE, OLD FRANKFORT, DUNDRUM, DUBLIN 14

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1.0 INTRODUCTION

In conjunction with the multi-disciplinary Design Team, Cronin & Sutton Consulting were commissioned by Pembroke Partnership Limited to input and coordinate a “Justification & Method Statement for Demolition of Existing Buildings” to accompany a planning application for a residential apartment development at Frankfort Castle, Old Frankfort, Dundrum, Dublin 14.

2.0 SITE LOCATION

2.1 Site Location

The site of the proposed development lies to the west of Dundrum Road, approximately 750m to the north of Dundrum village centre in Dublin 14. The site has a total area of approx. 0.9ha and is located in the administrative jurisdiction of Dún Laoghaire-Rathdown County Council.

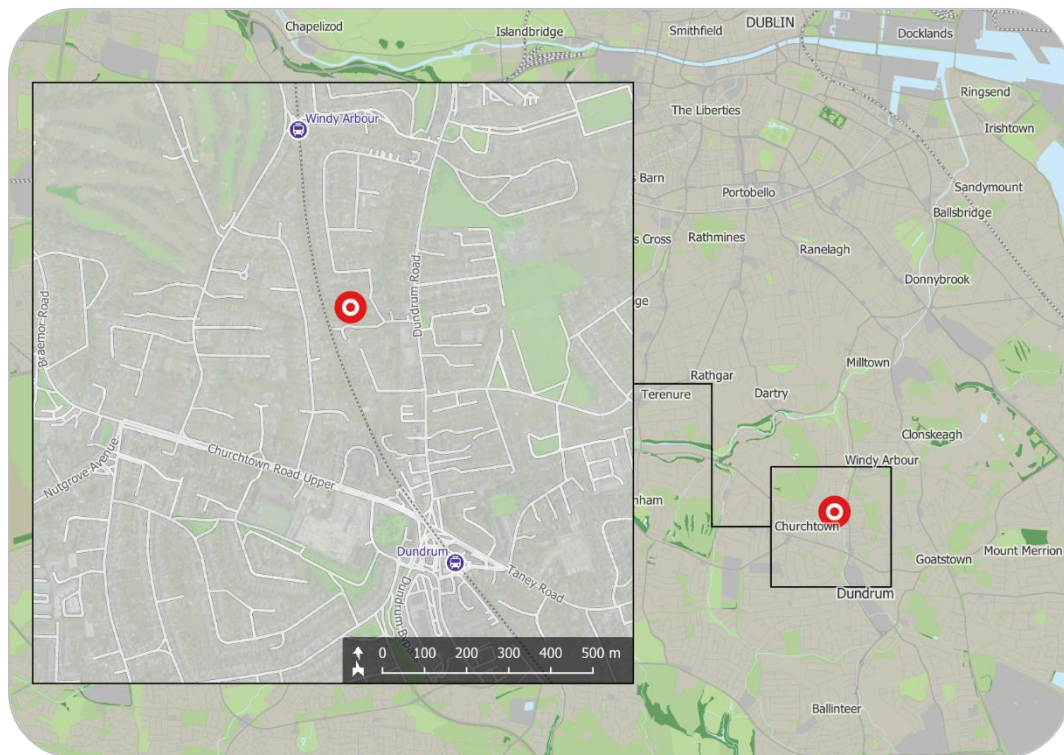


Figure 1 – Location of proposed development site
(map data and imagery: EPA, NTA, OSM Contributors, Google)

The location of the proposed development site is shown in Figure 1 above; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in Figure 2.

The site is bounded to the north, south and east by existing residential properties, and to the west by the Luas Green Line. The site has extensive street frontage on Frankfort at its eastern boundary, and on Frankfort Court at its southern boundary.



Figure 2 – Site extents and environs
(map data and imagery: NTA, OSM Contributors, Google)

2.2 Existing Land Use

The site of the proposed development is brownfield and comprises the existing properties of 97A Highfield Park, Dundrum, Dublin 14, D14 P710; 1 Frankfort Castle, Old Frankfort, Dublin 14, D14 HY03; 2 Frankfort Castle, Old Frankfort, Dublin 14, D14 DE72; and Frankfort Lodge, Old Frankfort, Dublin 14, D14 C9P2.

None of the structures on site is classified as a Protected Structure.

3.0 PROPOSED DEVELOPMENT

The proposed development will consist of 115no. residential units comprising 45no. one-bed units and 70no. two-bed units. The proposed units will be accommodated in the partially retained Frankfort Castle building and in 3no. blocks with a maximum height of 5 storeys. The subject proposal also includes for the demolition of the existing 97A Highfield Park residence (192.5sqm) and for the demolition of annexe buildings associated with Frankfort Castle including Frankfort Lodge (368sqm).

Additional works proposed include the provision of a childcare facility (80sqm), car and cycle parking at surface and basement level, hard and soft landscaping, surface water drainage infrastructure and attenuation tank, and all associated site development and infrastructure works.

4.0 OUTLINE METHOD STATEMENT FOR DEMOLITION

This Method Statement is provided for Planning Permission purposes only. A Construction and Demolition Waste Management Plan, prepared by AWN, 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) is also enclosed with this submission. The Contractor must ensure that all demolition material is managed, stored and disposed of in an appropriate manner in accordance with all relevant waste legislation.

Following decanting of the building by the tenant, any necessary investigatory work, sampling and/or testing can be carried out. Work shall be carried out in accordance with BS EN 6187: 2011 Code of Practice for Full and Partial Demolition. Refer to the “Outline Construction and Environmental Management plan” for reference to demolition construction traffic.

4.1 Site Specific Information

The existing site consists of 5 buildings. Four of these buildings are joined together and have been constructed at various stages throughout the last century. Refer to Figure 4-1 for reference to these 5 buildings. The buildings have been categorised from 1 to 5.

Building 5 (97A Highfield Park) is an independent house and garage located to the north west of the site approximately 15m from the tramline tracks and consists of a 2-storey red brick house with a pitched roof and a garage.



Figure 4-1 Extract of Existing Buildings Chronology Drawing
(image source: CS Consulting Drawing)



Figure 4-2 Aerial View of Existing Buildings 1-4
(image source: Google Map 2020)



Figure 4-3 Aerial View of 97A Highfield Park
(image source: Google Map 2020)

4.2 Building Structure

The buildings have various forms of construction.

Building 1

This building is the main building of 'Frankfort Castle' and is to be retained to form part of the proposed development. It is constructed with stone walls and has a 4no duo pitch roofs with slates.

Building 2

This building forms a wing to the north off the main building and is to be demolished as part of the development. The building is two storey and is constructed of stone walls with a hip roof with slates. There is a solid stone wall between buildings 1 and 2 that extends to parapet level that will act as the new external wall to building 1. It is proposed to demolish building 2 using non-percussive techniques as to avoid any damage to building 1.

The demolition of building 2 will involve:

- Soft strip of the building
- Removal of slates
- Removal of rafter/trusses
- Demolition and removal of 3no external walls and all internal walls
- Removal of foundations
- Removal of underground services
- Remediation to building 1 external wall.

Building 3

This building forms a wing to the south off the main building and is to be demolished as part of the development. The building is constructed of masonry walls. The roof is badly damaged from fire. The roof was a duo-pitched roof with dormer windows. There is a solid stone wall between buildings 1 and 2 that will act as the new external wall to building one. It is proposed to demolish building 3 using non-percussive techniques as to avoid any damage to building 1.

It is proposed to use the same methodology as outlines in Building 2 above.

Buildings 4

These buildings are a collection of one storey structures connected to the main building. All buildings are to be as part of the proposed development. The buildings are constructed of stone walls. Most of the buildings have mono-pitched roofs connected to building 1. One roof however is a duo-pitch roof connected to building 1. It is proposed to demolish buildings 4 using non-percussive techniques as to avoid any damage to building 1.

It is proposed to use the same methodology as outlines in Building 2 above.

Slates from the demolished building will be used to remediate the section of roof that currently adjoins the roof to be retained.

Building 5

This building consists of a two-storey red brick house and associated garage with a pitched roof with tiles.

The same methodology is proposed for demolition as was outlined in Building 2 above.

4.3 Installation of hoarding

Solid timber hoarding 2.4m in height will be provided along the perimeter of the site to protect members of the public from machines and materials on site. Hoarding will be erected off a vertical frame which will either consist of uprights encased in concrete 'Kelly' blocks or else using bolted steel shoes which will be placed in the ground. The Kelly blocks will be carefully lifted into place with a teleporter whose movement will be controlled, sequenced and managed by a qualified banksman. Once the vertical frame has been installed the hoarding panels (which will be prefabricated) will be loaded by hand into place.

For additional protection of pedestrians either a fully enclosed roof to the hoarding or an additional 600mm fluted section can be provided to the hoarding on Frankfort Court and Old Frankfort. Hoarding will be designed by a competent temporary works engineer.

4.4 Removal of services

Prior to demolition works a detailed services survey will be carried out to identify existing services. All services on site will be disconnected, diverted or removed as agreed with service providers.

4.5 Demolition of existing building

Prior to demolition works a full structural review of the existing structure will be carried out to review the stability of the existing structure and to assess the temporary measures such as propping that will be required during the demolition stage. These measures will be provided to ensure the structure is demolished in a controlled manner and there is no change of an unplanned structural collapse. After completion of the site hoarding, a full height scaffolding will be erected around the buildings which will be tied back to the existing building. This will have access platforms at each 2m level to provide access to the covered safety netting which will be installed along the front elevation. The scaffolding will not be used for demolition but for access to the safety netting to prevent dust and debris from falling onto the surrounding surface area.

Prior to demolition works a soft strip of the building will be completed to remove any loose fixtures and fittings. Once the property has been cleared back to its base shell demolition will commence. Demolition will take place from the top down starting with removal of the roof. Any temporary propping or crash decks required will be designed by suitably experienced chartered design engineers with a proven record in temporary works design. The section of the building along the adjoining workshop boundary will be carefully demolished using hand tools cutting the structure into manageable sections using road saws or other suitable equipment rather than using mechanical breakers from the inside of the building. The Safety netting and noise blankets installed along the scaffolding to control noise, dust and debris will be taken down in a progressive fashion with each floor level, always leaving a minimum of 5m extended scaffolding height above the demolition works. The lower ground floor slab will be cut into manageable sections using road saws or other suitable equipment and the material excavated rather than using mechanical breakers. Similarly, the foundations will be removed in sections after being cut. Whilst it is envisaged

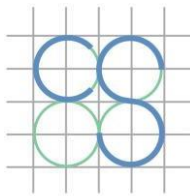
that the demolition will follow this low impact/low noise type approach certain parts of the foundation slabs will no doubt need to be removed using more aggressive techniques. These will be kept to an absolute minimum and strict noise and vibration protocols will be kept in place during these works.

4.6 Minimising risk of collapse

Following on from the soft strip out of the building a more thorough assessment of the structure will be completed by the demolition engineers. This will confirm the assumptions made heretofore and will inform on any particular risk that needs to be accounted for. Once the assessment has been made fully detailed demolition methodology will be submitted to all relevant parties for approval. This submission will outline the sequence of works and identify any hazards which may affect the demolition.

The following is a high-level method statement for the demolition of the building:

- Establish a site set-up and welfare facilities.
- Erect any necessary hoarding around the perimeter of the site.
- Carry out an intrusive asbestos survey to identify the presence of any carcinogenic materials, in particular as possible fire protection to steel work, and in plant areas.
- Carry out a detailed services survey of the site to identify all buried services, determine what services are live, redundant and potentially serve neighbouring properties.
- Carry out any necessary services diversions and decommissioning works.



- Carry out a soft strip of the building to remove free-standing units, office furniture, floor finishes, ceiling tiles, window blinds, partitions, doors and door frames, ceiling bulkheads, M&E services, radiators, light fittings, fixtures and fittings, first fix joinery, kitchens and toilet areas.
- Install temporary propping to the adjacent structure if required.
- Demolish the building roof structure and mezzanine floor using angle grinders and gas torches to cut the steel into small sections to be dismantled and removed with a teleporter.
- Demolish the building masonry walls using sledgehammers and/or a mini digger.

As part of the comprehensive site-specific Construction and Demolition Waste Management Plan all debris will be separated on site and stored in skips for removal to licensed tips or exported where suitable facilities are not available locally.

4.7 Dust

Dust prevention measures shall be included for control of any site airborne particulate pollution. The Contractor shall put in place and monitor dust levels in the vicinity using a Bergerhoff gauge instrument. The minimum criteria to be maintained shall be the limit for Environmental Protection Agency (EPA) specification for licensed facilities in Ireland, which is 350mg/m²/day. The Contractor shall continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project. It is proposed to use a "Dust Boss" spray cannon machine (or similar) in order to contain dust on site. The cannon is capable of spraying a water mist up to 45m and has been used in Dublin City Centre recently during the demolition of buildings up to 8 storeys in

height. This dust suppression method is very successful in containing dust on-site. The machine has a range of controls and adjustability to accurately target sources of dust generated from demolition works.

4.8 Dirt

Given the volumes of construction traffic generated by the Site Works it shall be a requirement that the Contractor shall ensure that:

- A “Full-Body Self Contained” wheel wash shall be constructed and located within the site confines.
- All vehicles will be required to pass through the wheel wash before exiting the site to the public road network. The wheel wash must be kept in place and used throughout the construction works. If conditions require it then a manned power washer shall be put in place to assist the wheel wash system.
- A dedicated road sweeper shall be retained for the duration of the haulage works. Water supplies shall be recycled for use in the wheel wash. All waters shall be drained through appropriate filter material prior to discharge from the site.

4.9 Noise

The Contractor will be required to monitor base noise levels at the site location before commencement of the project. Noise monitoring will be required throughout the project. Variation of noise levels from those experienced as part of everyday life in an area can result in extreme disruption. The Contractor shall implement measures to eliminate where possible and reduce noise levels where not. The proposed development shall comply with BS 5228 “Noise Control on Construction and Open Sites Part 1: Code of practice for basic information and procedures for noise

control (or such further limits as imposed by Dún Laoghaire-Rathdown County Council).”

Construction equipment for use outdoors shall comply with the European Communities Regulations – Noise Emission by Equipment for Use Outdoors – SI 241 -2006.

4.10 Vibration

The Contractor shall provide and maintain vibration monitoring equipment for the duration of the works. Condition surveys of adjoining buildings will be required before demolitions commence. Vibrations shall be monitored in accordance with BS 7385-1:1990.

4.11 Proximity to Public Roads

The demolition works will occur in close proximity to the adjoining public roads. Please refer to the Outline Construction and Environmental Management Plan for details regarding the impacts of construction traffic on the surrounding road network.

In advance of commencement of works, the Contractor will need to develop a Construction Management Plan and agree with DLRCC. The Construction Management Plan is to be formulated in the style as specified in the Dún Laoghaire-Rathdown County Council publication “Guidelines for Managing Openings in Public Roads” April 2017 with reference to the DTO publications “Traffic Management Guidelines” manual and the “Traffic Signs Manual”.

5.0 CONCLUSION

The existing buildings to be demolished are of simple construction with load bearing stone or masonry walls supporting pitch roof with slates. Building 2 is the largest building at two storeys high. Demolitions of these buildings is straight forward as outlined in the document. The contractor is to adapt non-percussive techniques to avoid damage to the existing building.

This report demonstrates the Outline method statement on how this demolition will be carried out in line with the relevant legislation.

This document outlines the approach to demolition of the existing buildings. A Construction and Demolition Waste Management Plan and an Outline Construction and Environmental Management Plan are enclosed with this submission.