



Civil Engineering Design Statement

Project:

Forest Little Road,
Swords

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1. INTRODUCTION

1.1 PROPOSED DEVELOPMENT

We, Golden Port Homes Limited, intend to apply for permission for a Large-scale Residential Development on lands at Forest Road, Swords, Co. Dublin. The proposed development will consist of amendments to the previously permitted development, granted under Reg. Ref. LRD0057/S3, and will comprise of amendments to the following 10 no. houses and 21 no. duplex units:

- (i) Amendments to house types B from a 2-storey 3-bedroom mid-terrace unit, to 3-storey, 4-bedroom, mid terrace units with associated elevational changes (2 no. houses in total);
- (ii) Amendments to house types C from a 2-storey 3-bedroom unit, to 3-storey, 3-bedroom unit with associated elevational changes (4 no. houses in total);
- (iii) Amendments to house types E from a 2-storey 3-bedroom unit, to 3-storey, 3-bedroom unit with associated elevational changes (4 no. houses in total);
- (iv) Amendments to the entrance to the ground floor Duplex Unit Types 1, 2, & 3 (17 no. units) to provide the entrance at the rear in lieu of the entrance to the front with associated elevational changes to all duplex units (21 no. units in total);
- (v) Amendments to public open space, including modifications to paths and mounding;
- (vi) Provision of a new underground pumping station with ancillary landscaping, infrastructure and vehicular access.
- (vii) All associated site and infrastructure work, along with landscaping, necessary to facilitate the proposed development.

Barrett Mahony Consulting Engineers (BMCE) have been appointed as Civil and Structural Engineers by Golden Port Ltd for this development.

1.2 SCOPE OF THIS REPORT

This report describes the proposed changes to the civil engineering infrastructure for the development for the planning amendment. In particular, changes to the Access and Road Layout, Foul and Surface Water Drainage and Water Supply are considered.

This report should be read in conjunction with the drawings listed in Section 1.3. The listed reports were not adjusted for the planning amendment due to there being no material change arising from the amendment due to the overall layout and total number of units within the development staying as previously granted.

- 24.183-RP-02: Flood Risk Assessment
- 24.183-RP-03: Construction & Environmental Management Plan
- 24.183-RP-04: Mobility Management Plan
- 24.183-RP-05: Traffic Impact Assessment

1.3 DRAWINGS SUBMITTED

FR-BMCE-ZZ-ZZ-DR-C-10000	Civil General Notes
FR-BMCE-ZZ-ZZ-DR-C-13000	Proposed Site Layout
FR-BMCE-ZZ-ZZ-DR-C-13100	Roads Layout – Sheet 1
FR-BMCE-ZZ-ZZ-DR-C-13110	Entrance and Sightlines
FR-BMCE-ZZ-ZZ-DR-C-13120	Kerb Details – Sheet 1
FR-BMCE-ZZ-ZZ-DR-C-13130	Site Entrance Junction Layout and Details
FR-BMCE-ZZ-ZZ-DR-C-13200	Proposed Site Drainage for Foul & Surface Water Drainage
FR-BMCE-ZZ-ZZ-DR-C-13201	Proposed Foul & Surface Water Drainage Layout
FR-BMCE-ZZ-ZZ-DR-C-13210	Proposed Watermain Drainage Layout
FR-BMCE-ZZ-ZZ-DR-C-11300	SuDS Strategy
FR-BMCE-ZZ-ZZ-DR-C-14100	Roads Standard Details – Sheet 1
FR-BMCE-ZZ-ZZ-DR-C-14101	Roads Standard Details – Sheet 2
FR-BMCE-ZZ-ZZ-DR-C-14110	Footpath Standard Details – Sheet 1
FR-BMCE-ZZ-ZZ-DR-C-14111	Footpath Standard Details – Sheet 2
FR-BMCE-ZZ-ZZ-DR-C-14300	Permeable Paving Standard Details
FR-BMCE-ZZ-ZZ-DR-C-14320	SuDS Details. Swales, Bio-Retention Areas & Tree Pits
FR-BMCE-ZZ-ZZ-DR-C-14321	SuDS Details. Filter Drain and Detention Basin Details

2. ACCESS AND ROAD LAYOUT

BMCE have reviewed the proposed amendments to the permitted LRD scheme and note there are no material alterations to the overall access and roads layouts of significance.

It is highlighted that to facilitate access to the new foul pumping station, proposed as part of this LRD amendment application, a small area of hardstanding will be required for maintenance vehicles. However, it should be noted that this additional hardstanding will not drain to the permitted SW drainage network, and any run-off will be dealt with locally, at source, via stone filled filter drains. As such there are no changes proposed to the overall surface water drainage network permitted under Reg. Ref. LRD0057/S3E

3. SURFACE WATER DRAINAGE

BMCE have reviewed the proposed amendments to the permitted LRD scheme and note there are no material alterations to the overall surface water and SuDS layout of significance.

Any alterations to the surface water drainage network are small, localised SuDS measures with on-site treatment of the water run-off. As such there are no changes proposed to the overall surface water network permitted under Reg. Ref. LRD0057/S3E.

4. FOUL DRAINAGE SYSTEM

During the planning process, Uisce Éireann indicated that a gravity solution was viable for the site. However, after a detailed assessment and survey it was found that the gravity network could not facilitate a connection, and that a pumping station is required. An application to Uisce Éireann for the pumped connection was submitted, Uisce Éireann requested that a grant of planning permission be obtained for the amended design, incorporating the pumping station, prior to issuing a connection offer. This application is intended to regularise this process.

The pump station has been designed in compliance with Uisce Éireann design guidelines. Separation distances of 50m from the pumping station have been achieved and agreed with Fingal County Council drainage engineers as part of the preplanning process. As indicated on the drawings FR-BMD-00-ZZ-DR-C-13200 and 13201.

4.1.1 Relevant Standards

The foul drainage network for the proposed development has been designed in accordance with the following guidelines:

- Irish Water Code of Practice for Wastewater Infrastructure
- Department of the Environment's Recommendations for Site Development Works for Housing Areas
- Department of the Environment's Building Regulations "Technical Guidance Document Part H- Drainage and Waste -Water Disposal"
- BS EN 752: 2008 Drain and Sewer Systems Outside Buildings
- IS EN 12056: Part 2 (2000) Gravity Drainage Systems Inside Buildings

4.1.2 Design Criteria & Network design

Dry Weather Flow (Daily)	= (Population)(Consumption/Capita) + (Infiltration)
Number of Residential Units	= 109
Population Estimate	= 109 x 2.7 = 295 persons
Consumption/Capita	= 150 litres / person / day
Infiltration	= 10% (as per App C Section 1.2.4 of CoP for WW Infrastructure)
Average Flow (DWF)	= (295 x 150 x 1.1) = 48,675 litres / day = 0.563 litres/second
Peak Flow = (Average Flow) x (6.0)	= 0.563 x 6.0 (6.0 for PE between 0-750) = 3.38 litres/second

The pumping station has been designed for 24-hour storage of the 109 units with a 300mm freeboard within the storage tank. The required storage for the 109 residential units is 45m³, whilst a tank of size 6m x 6m x 1.5m allows for a provision of 54m³, thus providing the 300mm freeboard above the maximum storage level. The pumped outflow from the site is anticipated to remain at the flow rate granted within the previous planning application Reg. Ref. LRD0057/S3E.

5. WATER SUPPLY

BMCE have reviewed the proposed amendments to the permitted LRD scheme and note there are no material alterations to the overall watermain layout of significance.

In order to facilitate the new foul pumping station, proposed as part of this amendment application, a 25mm OD MDPE watermain will be required to supply a tap in the main kiosk. As such this has led to a requirement for 1 additional 25mm feed from the watermain previously permitted under Reg. Ref. LRD0057/S3E, an extension of the connection stub provided for potential future developments to the west of the site, to allow for water to access the pumping station. Refer to drawing FR-BMCE-ZZ-ZZ-DR-C-13210 for clarity.

6. DMURS DESIGN STATEMENT

BMCE have reviewed the proposed amendments to the permitted LRD scheme and note there are no material alterations to the overall access and roads layouts of significance. This means that the DMURS design statement included within the previous planning application, Reg. Ref. LRD0057/S3E, is applicable for the site.

It is highlighted that to facilitate access to the new foul pumping station, proposed as part of this LRD amendment application, a small area of hardstanding will be required for maintenance vehicles. This hardstanding area is proposed to be taken in charge by Uisce Éireann to access the pumping station. Refer to drawing FR-BMD-00-ZZ-DR-C-13200 for additional information.

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