



Engineering Assessment Report, including DMURS: Statement of Consistency

Oldtown Planning: Phase 5 – Strategic Housing Development (SHD)

April 2022

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This document has been prepared and checked in accordance with
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Contents

- 1. Introduction1**
 - 1.1 Background of Report1
 - 1.2 Site Location and Description1
 - 1.3 Proposed Development3
- 2. FCC/ABP Planning Process Raised Issues5**
 - 2.1 ABP Opinion Report – Response to Engineering Items - Transport5
 - 2.2 FCC Transportation Planning Section Stage 2 Report Items Raised5
 - 2.3 ABP Opinion Report – Response to Engineering Items - Drainage8
 - 2.4 FCC Water Services Planning Section Stage 2 Report Items Raised.....8
- 3. Foul Water Network9**
 - 3.1 Existing Foul Water Network.....9
 - 3.2 Proposed Foul Water Network.....9
 - 3.3 Foul Water Drainage Calculations10
 - 3.4 Foul Water Drainage – General11
- 4. Surface Water Network12**
 - 4.1 Existing Surface Water Network12
 - 4.2 Proposed Surface Water Network12
 - 4.3 FEM-FRAM13
 - 4.4 Proposed Surface Water System and SUDS14
 - 4.4.1 Oldtown Masterplan SUDS Strategy.....14
 - 4.4.2 Oldtown Phase 5 SUDS Strategy15
 - 4.5 Surface Water Attenuation Provided - Design16
 - 4.6 Surface Water- General17
- 5. Water Supply Network18**
 - 5.1 Existing Water Supply Network.....18
 - 5.2 Proposed Water Supply Network.....18
 - 5.3 Water Supply Calculations19
 - 5.4 Water Supply – General.....20
- 6. Road and Transport Network21**
 - 6.1 Existing Road Network.....21
 - 6.2 Proposed Road Network21
 - 6.3 Road Safety Audit22
 - 6.4 Traffic Impact Assessment.....23
 - 6.4.1 Oldtown/Mooretown Full Development23
 - 6.5 Proposed Internal Road Network.....23

6.5.1	Oldtown Masterplan	23
6.5.2	Oldtown Avenue/Miller's Avenue (SWDLR).....	23
6.5.3	Internal Road Network	24
6.5.4	DMURS Statement & Traffic Calming.....	24
6.5.5	Parking & Car Sharing	25
6.5.6	Oldtown / Mooretown LAP (Expired) Road Upgrade Works.....	26

Figures

Figure 1	Oldtown Planning Site Location	2
Figure 2	Site Location and Adjacent Phases.....	3
Figure 3	Existing and Proposed Foul Water Drainage	9
Figure 4	Master Plan of Surface Water Drainage.....	13
Figure 5	FEM FRAM Fluvial Flooding Map	14
Figure 6	Existing and Proposed Water Supply Network.....	19

Tables

Table 1	Schedule of Accommodation	4
Table 2	Calculation of Total Foul Water Flow from the Development	11
Table 3	Attenuation Volume.....	17
Table 4	Calculation of Water Demand for the Development	20
Table 5	Oldtown / Mooretown Development Phases.....	26

Appendices

- A. Irish Water Confirmation of Feasibility Letter
- B. Phasing of Oldtown/Mooretown LAP Road Upgrade Works
- C. Stage 1 Road Safety Audit Report – Bruton Consulting Engineers
- D. Irish Water – Statement of Design Acceptance
- E. FCC SuDS Checklist
- F. Go-Car Letter of Intent

1. Introduction

1.1 Background of Report

This report has been prepared by Waterman Moylan as part of the documentation in support of a planning application for Phase 5 of a proposed residential development at Oldtown, Swords, Co. Dublin, to be submitted to An Bord Pleanála for a proposed Strategic Housing Development (SHD).

The proposed planning application for Phase 5 of the development forms part of the Oldtown and Mooretown lands, northwest of Swords, which were subject to the now expired Oldtown-Mooretown Local Area Plan (LAP) adopted by Fingal County Council in October 2010.

This report assesses the existing wastewater and surface water drainage, water supply infrastructure and the road and transportation network in the vicinity of the site, and details the criteria used to design and detail the proposed foul water drainage, surface water drainage, water supply and road network required to serve the development.

Accompanying this application for Oldtown Phase 5, is a proposed Stormwater Storage Tank required on the Irish Water foul water network, draining to the Swords Wastewater Treatment Plant and serving the Oldtown / Mooretown and Holybanks catchment in Swords, Co. Dublin. The proposed tank will alleviate known constraints within the Irish Water foul water system (including the subject application site, Oldtown Phase 5), that occur during times of heavy or prolonged rainfall, resulting from surface water and foul water infiltration.

The proposed site for the Stormwater storage tank is located on the junction of the Glen Ellan Road and the Balheary Road, Swords, Co. Dublin. The site is 1.4km north of Swords, 1.1km west of the M1 motorway and 300m south of the Broadmeadow River. The site is owned by The Applicant and is locally referred to as the Celestica/Motorola site.

The storage tank has been designed in conjunction with Irish Water input on volumetric storage capacity and was lodged as a planning application to Fingal County Council by the subject applicant. The application was registered under planning Reg. Ref. F21A/0476 and is currently a live application at Additional Information stage which is due for decision in mid-April 2022 (current status at the time of writing this report). Thus, it was deemed appropriate to propose the tank and the associated works as part of this SHD application.

In this regard, we refer you to the accompanying Waterman Engineering Assessment (EAR Ref: 17-144r.017), Flood Risk Assessment (FRA Ref: 17-144r.017), Construction, Environmental Management Plan (CEMP Ref 17-144r.018) reports and associated drawings prepared under separate cover for this tank, submitted and applied for as part of this SHD planning application.

1.2 Site Location and Description

The Oldtown-Mooretown LAP (Expired) lands are located at the western development edge of Swords, within the catchment of the Broadmeadow River. These lands cover an area of approximately 111 hectares.

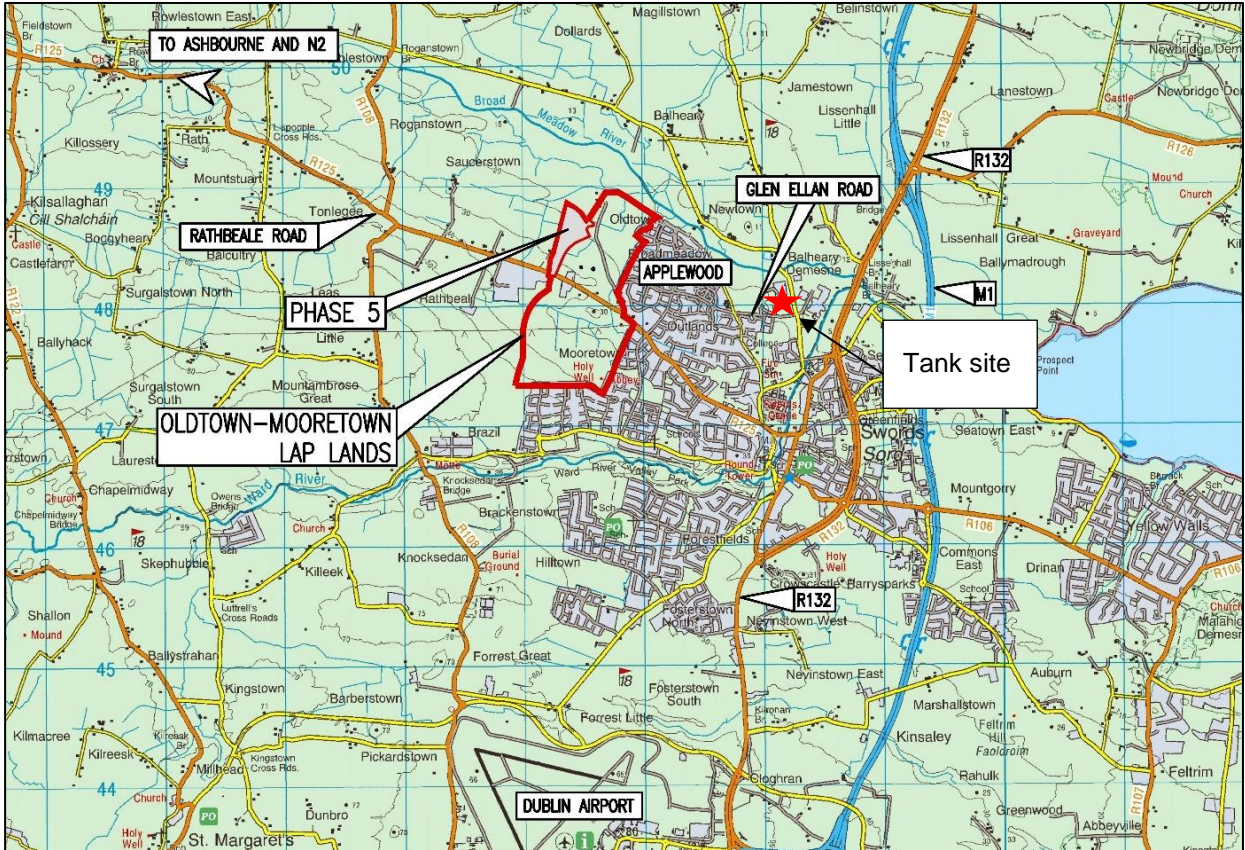


Figure 1 | Oldtown Planning Site Location

The Oldtown–Mooretown lands are divided by the Rathbeale Road, with Oldtown lands to the north (c. 50 Ha) and Mooretown to the south (c. 61 Ha). This subject Application (net area 7.80 Ha), which forms Phase 5 of the Oldtown development, is located in the north-west quarter of the Oldtown Lands. The location is shown in Figure 1, above.

The subject site was previously used for agricultural purposes and a temporary school, which is now used as the Oldtown site compound.

The Oldtown lands generally fall from a high point of approximately 33.0m OD Malin on Rathbeale Road down to approximately 9.0m OD Malin at the Broadmeadow River to the north-east of the subject lands.

The Oldtown Phase 5 site is bounded on the south-east by the Swords Western Distributor Link Road (SWDLR), to the west by agricultural lands.

Unit Description		No. of Units
Houses	2-Bed	9
	3-Bed	147
	4-Bed	17
Duplexes	Block A	18
	Block B	8
	Block C	8
	Block D	20
	Block E	8
	Block F	8
Apartments	Block A	48
	Block B1	32
	Block B2	32
	Block C	22
Total		377

Table 1 | *Schedule of Accommodation*

The development includes all associated site works and infrastructure, including internal roads, paths, cycle-paths, public lighting, utilities, foul and surface water drainage and landscaped open-space.

2. FCC/ABP Planning Process Raised Issues

2.1 ABP Opinion Report – Response to Engineering Items - Transport

It is noted that item 10 of the ABP opinion notes the following Transportation information request.

“Additional transportation details having regard to the requirements of the Transportation Planning Division as contained within Appendix 2 of the Planning Authority Opinion”

In this regard, we refer you to the following section 2.2, which outlines the actions taken to address the Transportation Items raised by Fingal County Council in their Stage 2 opinion report.

2.2 FCC Transportation Planning Section Stage 2 Report Items Raised

All items noted within the FCC Transportation Planning Section Stage 2 report, dated as being lodged on 7 July 2020, have been noted and addressed. Liaison has been held with Niall Thornton of FCC Transportation, following the Tripartite meeting, initially on 14 January 2020, as required to facilitate appropriate closure on raised items.

A summary of the transportation report items and actions taken is supplied below:

- Fingal County Transportation Planning Section noted in their SHD Stage 2 departmental report that the proposed car parking made provision for minimum practical parking requirements and similarly made commentary around the creche parking provision.

In this regard, a detailed parking breakdown and assessment has been supplied under section 14 of the accompanying Traffic and Transport Assessment, detailing the provision and standards applied. An allowance of 3 in-curtilage staff parking spaces has been made for the creche building (4 classroom 519sqm), and 5 dedicated and 1 shared parking spaces for drop off have also been afforded.

- Fingal County Transportation Planning Section similarly noted in their SHD Stage 2 departmental report that the proposed bicycle parking was below national standards.

In this regard, a detailed bicycle parking breakdown and assessment has been supplied under section 15 of the Traffic and Transport Assessment (TTA), supplied under a separate cover, detailing the provision and standards applied. A Provision/bed allowance has been made in accordance with the “Design Standards for New Apartments – March 2018”, as detailed under sections 15.2 and 15.3 of the TTA.

- For bicycle locations and accessibility, we refer you to the accompanying architectural submission drawings, supplied under separate cover. Refer 1736-SHD-C-100.
- Fingal County Transportation Planning Section similarly noted issues in their SHD Stage 2 departmental report with respect to the parking layout to the apartment street level parking. This area has been fully redesigned to afford appropriate access and a high-quality streetscape, as has been further developed within the architectural and landscape architectural submissions, supplied under separate cover. Appropriate room has been afforded to access parking spaces at the end of the parking bays and allowance has been provided to facilitate all turning movements, including that of fire tender and refuse vehicles, without the need for kerb overhang or parking

bay encroachment. In this regard, we refer you to the refuse vehicle swept path layout drawing 17-144-P1105.

Similarly, concerns with respect to duplex units facing the ball pitches have been addressed through layout re-design. In this regard, we similarly refer you to the accompanying architectural and landscape architecture submission drawings.

Likewise, concern at corner blocks with respect to potential overhang of footpath has been addressed in this final layout submission to ensure sufficient in-curtilage space is afforded for two vehicles.

- Taking in charge – We refer you to the accompanying CCK taking in charge layout identifying all areas proposed to be taken in charge.

The watermain wayleave afforded to Irish water over the 800mm trunk water main has been identified on the engineering watermain layouts P1300-P1303. It has been ensured that the wayleave for this critical piece of trunk infrastructure remains within public lands. A section of the 800mm main encroaches into the subject lands and as noted within the pre-connection response, it will be required of the Developer to demonstrate that proposed structures and works will not inhibit access for maintenance or endanger structural or functional integrity of the infrastructure during and after the works. In this regard, the internal layout of the proposed development site has been designed such that the wayleave is within roadway and outside of proposed building lines. Parking areas associated with the duplex Block D/house units fronting Miller's Avenue are accessed off Road 8 that runs parallel to Miller's Avenue, separated by a biodiversity open space. This permits an efficient means of integrating the 800mm trunk watermain wayleave that encroaches the Phase 5 site in this location.

As regards the secondary road surrounding the creche which is less than 5.5m in width, per prior discussions at the Tri-partite meeting with FCC Transportation Planning, this is a 1-way road which also facilitates safe access/egress to the creche/duplex drop off spaces.

- Swept Path - We refer you to the refuse vehicle swept path layout drawing 17-144-P1105. It has been ensured that vehicle overhang and parking bay overrun has been avoided and suitable turning movements afforded throughout.
- Traffic and Transport – Fingal County Transportation Planning Section noted in their SHD Stage 2 departmental report comments with respect to trip generation calculations and the use of Census data. Per prior liaison with FCC Transportation planning, the following is noted:
 - Trip generation has been calculated using TRICS Person trip rates for the Mixed Residential Development 'Flats and Houses' category and applying Census 2016 Modal Split to derive the multi-modal trips. One of the concerns raised by FCC noted that the calculated trips might be underestimated as "Flats" trip rates tend to be lower than "Apartments" trip rates. This concern was noted and a new consultation of TRICS Database was undertaken. In this consultation it was observed that TRICS Software does not include an option for "Apartments", and instead uses the term "Flats", which has been considered synonymous to "Apartments" – See print screen below.

The screenshot shows a software interface for land use selection. The 'Land Use Selection' section includes a dropdown for 'Select Land Use By' (Full List of Active Main/Sub Land Uses), a dropdown for 'Main Land Use' (03 - RESIDENTIAL), and a dropdown for 'Sub Land Use' (A - HOUSES PRIVATELY OWNED). Below this is the 'Calculation Options' section with two radio buttons: 'Calculate trip rate' (selected) and 'Calculate multi-modal'. The 'Detailed Selection' section has buttons for 'regions', 'individual sites(s)', 'search', 'areas', and 'browse & select'. On the right side, there are buttons for 'land use definitions' and 'land uses & use classes'. Below these are two tables: 'Vehicle Surveys' and 'Multi-Modal Surveys'.

Vehicle Surveys	
Survey Type	No. of Surveys
Manual Count	341
Directional ATC Count	297

Multi-Modal Surveys	
Survey Type	No. of Surveys
Manual Count	229

- Another raised concern in relation to trip generation calculation, is the Census 2016 Modal Split being applied to the calculated Person Trips to derive the all-mode trips (including car trips). This concern is noted, and the used methodology has been revised. The revised calculation has been based on TRICS Car trip rates as opposed to TRICS Person trip rates. With the car trips calculated, the bus, train, walk and cycle trips will then be estimated based on Census 2016 Surveyed Modal Split and on the 2027 Modal Split for Oldtown/Mooretown area contained in the South Fingal Transport Study – Swords Sub Report (2019) prepared by SYSTRA on behalf of FCC. Note that, the Car trips have been calculated after TRICS Car trip rates and the remaining trips (train, bus, walk, cycle) have been estimated based on the best available Modal Split trends for the area.
- Electric Vehicle Charging – All residential house parking spaces shall include EV charging provision in the form of cable ducting and capacity on distribution boards, in accordance with current building regulation.

The proposed non-residential development for the creche building includes a total of 9no parking spaces so one functioning charging point (capable of serving 2 parking spaces) will be provided and future provision for at least 1no other spaces will be required. Since the development will also include Part M compliant accessible spaces, the location of the charging point will be such that it can serve one accessible parking space and one standard parking space.

The proposed multi-unit residential development includes a total of 600 no. parking spaces, so in accordance with current building regulation requirements, future ducting provision for all duplex units and apartment spaces will be required. 30 No. communal EV charging spaces have indicatively been afforded, as broken down within section 14 of the TTA, meeting the 10% EV requirement requested in the FCC Transport Stage 2 opinion. We refer you to the accompanying architectural submission for detail of the indicative locations.

Ducting and services provided as part of the proposed development shall be installed to facilitate non-disruptive retro fitting of EV charging points in accordance with the requirements of current Building regulation

- Road Safety Audit – Road Safety Audits shall be carried out at the relevant stages as outlined in the current edition of TII guidelines GE-STY-1027, and we note that a Stage 1 Audit has been carried out and appended as Annex C of this report.

2.3 ABP Opinion Report – Response to Engineering Items - Drainage

It is noted that item 11 of the ABP opinion notes the following Drainage information request.

“Additional drainage details having regard to the requirements of the Drainage Division as contained within Appendix 2 of the Planning Authority Opinion”.

In this regard, we refer you to the following section 2.4 below, which outlines the actions taken to address the Drainage Items raised by Fingal County Council in their Stage 2 opinion report.

Item 11 of the ABP Stage 2 Opinion further notes that:

“Any surface water management proposals should be considered in tandem with the requirements of ‘The Planning System and Flood Risk Management’ (including associated ‘Technical Appendices’)”

In this regard, it is noted that a Flood Risk Assessment has been carried out and accompanies this submission package. Surface Water management proposals have been considered in tandem with Flood Risk Assessment. A Flood Risk Assessment has been carried out in accordance with the *DEHLG/OPW Guidelines on the Planning Process and Flood Risk Management* published in November 2009. This assessment identifies and sets out possible mitigation measures against potential risks of flooding from various sources. Sources of possible flooding include coastal, fluvial (river), pluvial (direct heavy rain), groundwater, and human/mechanical errors.

2.4 FCC Water Services Planning Section Stage 2 Report Items Raised

The Fingal County Council water services planning section report deemed the submission acceptable subject to a couple of standard conditions.

We supply the following additional information to address the FCC Water services Stage 2 report items raised.

- Foul Sewer – Upgrade of the network required to facilitate connection. We refer you to section 3.2 below in this regard which outlines the proposed foul infrastructure upgrade works necessary to facilitate the subject development
- Foul Sewer - Statement of Design Acceptance - We refer you to section 3.2 below in this regard and included as Annex D of this report.
- Water - Statement of Design Acceptance - We refer you to section 5.2 below in this regard and included as Annex D of this report.
- Surface Water – Opportunity for Green Roofs. Green Roofs shall be supplied to the apartment blocks as noted in Section 4 of this report.

3. Foul Water Network

3.1 Existing Foul Water Network

There is an existing 450mm diameter foul water sewer in the north-east of the Oldtown lands which was constructed as part of the adjacent Ashton development to the east of the site. The sewer was constructed to facilitate the development of the Oldtown lands. This system discharges to the Swords Wastewater Treatment Plant which has recently been upgraded.

As part of the Oldtown Phases 1, 3 and 4 developments, a series of 225mm and 300mm diameter outfall sewers were constructed along Millers Avenue, outfalling to the 450mm outfall sewer.

3.2 Proposed Foul Water Network

It is proposed to drain the proposed development to the series of 225mm and 300mm diameter outfall sewers that were constructed as part of the Planning 1, 3 and 4 developments.

Suitably sized spurs have been made available from the existing outfall sewers located along Millers Avenue to facilitate connections to the Phase 5 development and to the adjacent Phase 4 development.



Figure 3 | Existing and Proposed Foul Water Drainage

Pipe sizing and gradients have been designed using Flow software. Refer to drawings 17-144-P1200 to 17-144-P1203 for the proposed foul water layout.

A design submission was made to Irish Water and the subsequent Statement of Design Acceptance is included as Appendix D.

A Pre-Connection Enquiry was submitted to Irish Water and a Confirmation of Feasibility Letter was issued, dated 22 October 2018 – a copy of the letter is included in Appendix A. The letter notes that upgrade works are required in order to accommodate the proposed connections to serve the site. At that time, the letter stated that ongoing hydraulic modelling of the existing network would be available by the second quarter of 2019 (subject to change), and that the Developer will be required to enter into a Project Works Services Agreement to deliver infrastructure upgrades to facilitate the connection of the development to Irish Water infrastructure.

On 3 March 2020, Waterman Moylan met with John O'Shaughnessy, Dermot Phelan, Keith Kirwan and Fergal Broderick of Irish Water to discuss the results of the modelling and to establish the scope of upgrades required to accommodate the proposed development.

Irish Water confirmed that their modelling identified flooding downstream of the proposed development, at Balheary near the Swords Business Campus. This flooding was determined by Irish Water to be the result of flows exceeding the capacity of the pipe crossing the R132 to the Swords Treatment Plant.

At this meeting, Irish Water set out their proposed network upgrade strategy to accommodate future developments at the Oldtown and Mooretown LAP lands, including the subject site. The proposed solution is to provide long term storage to reduce the peak flows to the pipe crossing the R132. The storage tank was subsequently designed in conjunction with Irish Water input on volumetric storage capacity and was lodged as a planning application to Fingal County Council by the subject applicant. The application was registered under planning Reg. Ref. F21A/0476 and is currently a live application at Additional Information stage which is due for decision in mid-April 2022 (current status at the time of writing this report). Thus, it was deemed appropriate to propose the tank and the associated works as part of this SHD application.

In this regard, we refer you to the accompanying Waterman Engineering Assessment (EAR Ref: 17-144r.017), Flood Risk Assessment (FRA Ref: 17-144r.017), Construction, Environmental Management Plan (CEMP Ref 17-144r.018) reports and associated drawings P2000-P2010 prepared under separate cover for this tank, submitted and applied for as part of this SHD planning application.

3.3 Foul Water Drainage Calculations

The calculated foul water flows at the subject development are set out in the table below. The wastewater loads have been calculated based on 2.7 residents per unit, and with a per capita wastewater flow of 150 litres per head per day in accordance with Appendix D of the Irish Water Code of Practice for Wastewater Infrastructure. Appendix C of the same document specifies a volume of 90 l/person/day for the staff and children at the creche. A 10% unit consumption allowance has been applied to all calculated flows, in line with Section 1.2.4 of Appendix C of the Code of Practice. A peaking factor of 3.0 has been used in line with Section 1.2.5 of Appendix C of the Code of Practice.

Description	Total Population	Load per Capita	Daily Load	Total DWF	Peak Flow
	No. People	l/day	l/day	l/s	l/s
173 Houses	467.1	150	77,071.5	0.892	2.676
134 Apartments	361.8	150	59,697	0.691	2.073
70 Duplexes	189	150	31,185	0.361	1.083
Creche	119	90	11,781	0.136	0.408
Total	1,136.9	Varies	179,734.5	2.080	6.240

Table 2 | Calculation of Total Foul Water Flow from the Development

Based on the above calculations, the average wastewater discharge from the proposed development will be 2.080 l/s, with a peak flow of 6.240 l/s.

3.4 Foul Water Drainage – General

Foul water sewers will be constructed strictly in accordance with Irish Water requirements. No private drainage will be located within public areas.

Drains will be laid to comply with the requirements of the latest Building Regulations, and in accordance with the recommendations contained in the Technical Guidance Document H.

4. Surface Water Network

4.1 Existing Surface Water Network

The subject lands are in the catchment of the Broadmeadow River which discharges to the Broadmeadow (Malahide) estuary.

Existing surface water drainage within the Oldtown lands consists of the following:-

- Trunk surface water outfall sewers were constructed under Planning 1 to serve the Planning 1,2, 3 and 4 developments. The trunk sewers consist of a surface water system that ultimately discharges into an attenuation pond in the northeast of the development lands and immediately south of the Broadmeadow River.

The Broadmeadow River flows in a south-easterly direction towards the Irish Sea. It is joined by the Ward River prior to discharging to the Broadmeadow (Malahide) Estuary. The estuary is designated a Special Protection Area (SPA), a candidate Special Area of Conservation (cSAC), a proposed Natural Heritage Area (pNHA) and a Ramsar site.

The Environmental Protection Agency (EPA) website shows the nearest water quality monitoring station on the Broadmeadow River, which lies downstream of the site, having a water quality, Q, value of 2-3 which represents a moderately polluted river, with Q = 1 being the lowest level of pollution and Q = 5 being the highest level of pollution.

Neither the Oldtown lands nor the adjacent Broadmeadow River are part of the SPA or SAC site, however, any development immediately upstream is required to maintain or improve the quality of surface water to status objectives as set out in the Water Framework Directive (WFD), to protect and enhance the status of the aquatic ecosystems. This will require the implementation of SUDS which are further addressed in Section 4.4 of this report.

4.2 Proposed Surface Water Network

It is proposed to discharge the Phase 5 surface water network to the trunk surface water outfall sewers which were constructed under Planning 3, and which ultimately discharge to the Broadmeadow River via the attenuation ponds. See overleaf *Figure 4* which shows the existing and proposed surface water sewers for the Phase 5 development.

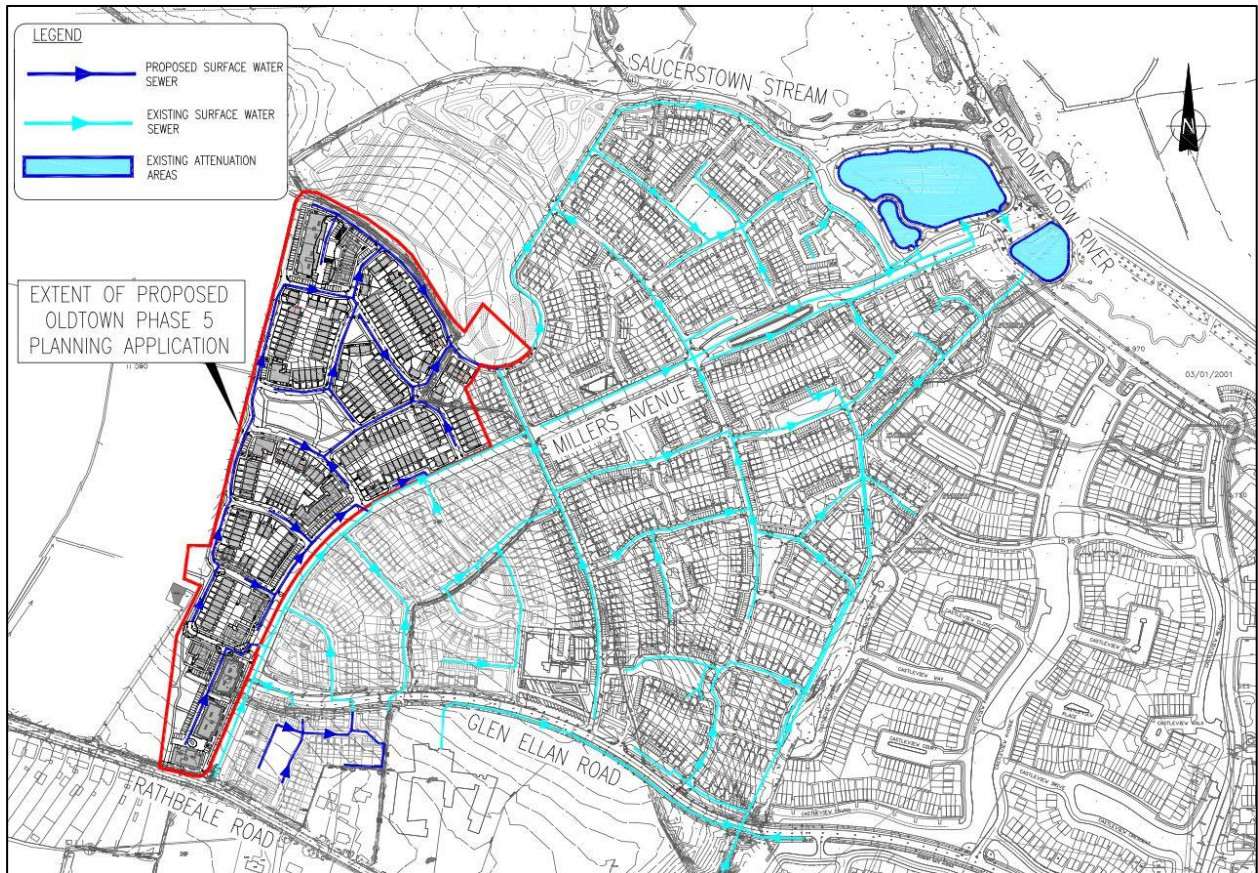


Figure 4 | Master Plan of Surface Water Drainage

4.3 FEM-FRAM

The Broadmeadow River has been designated as a high-priority water course under the Fingal East Meath Flood Risk Assessment and Management Study (FEM-FRAMS) OPW Flood Maps.

The main objective of FEM-FRAMS is to map the existing and potential flood hazard and risk areas, which are being incorporated into a Flood Risk Management Plan for areas in which a flood risk has been identified.

The FEMFRAMS ‘Broadmeadow Model Flood Extent Map’ (Figure No. BRO/HPW/EXT/CURS/009) for 1:10, 1:100 and 1:1000 year flood events for the Oldtown Area is included in *Figure 5* overleaf.

This map confirms that no flooding of the LAP lands is anticipated in the current scenario for the 1 in 1000 year event.

A Flood Risk Assessment report, prepared by Waterman Moylan in accordance with the guidelines set out in the “Planning System and Flood Risk Management” by the OPW, accompanies this planning application.

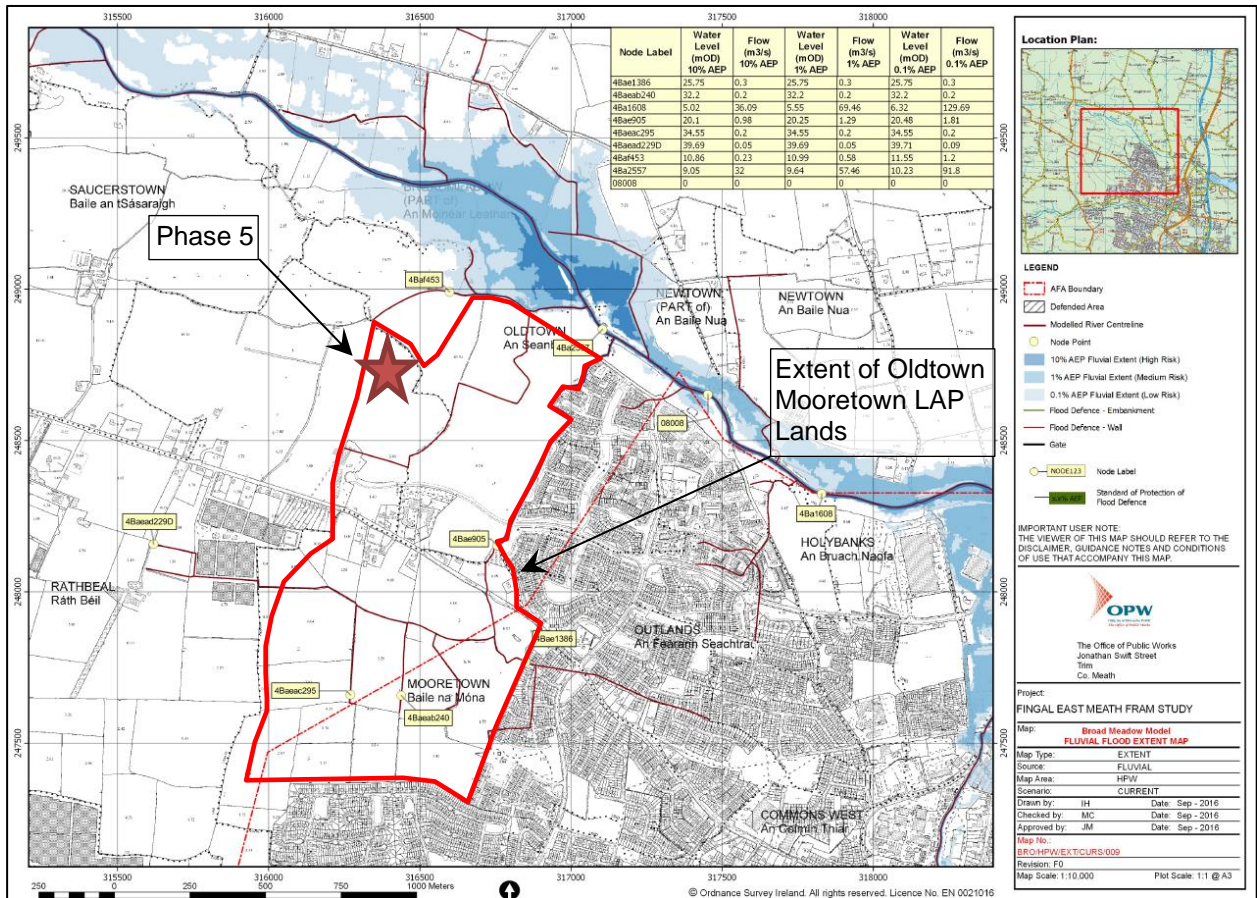


Figure 5 | FEM FRAM Fluvial Flooding Map

4.4 Proposed Surface Water System and SUDS

4.4.1 Oldtown Masterplan SUDS Strategy

The methodology involved in developing a storm water strategy for the subject development is based on recommendations in the Greater Dublin Strategic Drainage Study (GSDS). The suggested storm water management approach has been implemented across the entire development through the use of various SUDS techniques.

Based on three key elements, Water Quantity, Water Quality and Amenity, the targets of the Oldtown SUDS Strategy are:-

- Water Quality Protection – in receiving watercourses and groundwater.
- Stream Regime Protection – minimisation of ecological and physical impacts on receiving streams.
- Level of Service Protection – protection of site from flooding of drainage system.
- Stream Flood Protection – minimisation of risk of downstream flooding.
- Site Flood Protection – control of flooding of site during extreme events.

- Amenity – Ponds or wetlands can be visually attractive and add to the character of the development.

A SUDS train concept has been implemented in the design of the storm water systems for the Oldtown development as a whole including the Phase 5 development:-

- Source Control – for an individual houses or apartment blocks.
- Site Control – for a site or area within the subject lands (around road/parking bays, etc).
- Regional Control – for an entire catchment, i.e. Oldtown or Mooretown.

4.4.2 Oldtown Phase 5 SUDS Strategy

The train of SUDS features proposed for the Phase 5 development consists of the following constructions:

Source Control - Private Drainage:

- Permeable paving will be utilised at public roadside parking bays providing some treatment volume, with underlying perforated pipes connecting to the storm water sewer network within the roads. Adjacent road gullies will be connected to the underlying filter drains to treat and slow down the runoff rate by means of infiltration. Permeable paving public parking bays have been successfully incorporated within the Oldtown development within recent years.
- Minimise Runoff to Surface Water Network: At detail design stage the hard standing in private areas will be minimised and gradients of paths and driveways within the curtilage of each property will be set such that the pavements generally drain to green areas rather than gullies.
- Green roofs are to be installed as per FCC requirements from their document titled: Guidance Note on Green/Blue Infrastructure.

Site Control – Public Drainage

A second layer of SUDS will be provided locally in the public realm as follows:

- Tree Pits / Bio-retention Areas: Where possible, surface water runoff from the roads will discharge to tree pits (via kerb inlets) located on the side of the road. Gullies will be positioned downstream of the tree pits to cater for overflow during high rainfall events. Tree pits are suitable for installation alongside carriageways. The tree pit receives surface water runoff from the road via integrated kerb inlet slots. The surface water drains through the tree pit which is filled with engineered filter material to the underdrain system and discharges the treated surface water to the main surface water sewer in the roadway.
- Swales / French Drains: Local open spaces and pocket parks have also been utilized to locate swales and filter drains around the perimeter. Surface water from the adjacent roadway will drain directly to the swale, while gullies will discharge directly to the filter drains.

Regional Control – Wetlands Area

Regional suds features are provided prior to the storm water outfall to the Broadmeadow River as follows:

- Attenuation Ponds: An attenuation pond has been designed and is constructed as a regional attenuation area and will provide the final treatment to improve the quality of the surface water

discharge from the site prior to discharge to the Broadmeadow River. The ponds have been sized to facilitate full development of the Oldtown LAP lands, including the Phase 5 site.

- Pond Forebay: Planted forebay at the discharge point to the attenuation pond area has been constructed to provide a suitable area for specialist planting and to facilitate maintenance and removal of pollution loading.
- Flow Control: A flow control manhole will be provided at the outfall manhole to the Broadmeadow to limit the discharge to the equivalent greenfield runoff rate of 213l/s.

Refer to drawings 17-144-P1200 to 17-144-P1203 for proposed surface water layout.

FCC's SuDS checklist, required to be submitted as part of the planning application package, is included as Appendix E to this report.

4.5 Surface Water Attenuation Provided - Design

Full development of the Oldtown LAP laps require approximately 7,800m³ of attenuation, based on the following criteria:

Total Development Area	= 41.0 Ha
Hard Standing Area (40%)	= 16.4Ha
Climate Change	= 20%
Attenuation for	= 1 in 100 year flood event
Allowable Outflow	= 213 l/s

The ponds have been constructed under Phase 1 to provide 7,800m³ of attenuation which accommodates the subject Phase 5 development.

The allowable runoff from the site is calculated in accordance with the Greater Dublin Strategic Drainage Study (GDSDS). This allowable runoff is to reflect the original green-field runoff, i.e. the storm water runoff before the site was developed. This is achieved by limiting the discharge from the developed site to similar flow rates that would be expected from a greenfield site for return periods of 1 year, 30 year and 100 year. Attenuation storage has been provided to retain surplus storm water on site during significant storm events. The runoff is factored to take into account climate change. This factor is based on a 20% increase in rainfall depth.

This was proposed and agreed in principle with FCC Planning Department, FCC Drainage Department and FCC Parks Department at a meeting on 14th September 2016 and again in further detail with FCC Drainage Department and FCC Parks Department at a meeting on 14th March 2017.

In this regard, compliance submissions were submitted in May 2017 outlining the proposal under Condition 18 of Reg. Ref. F11A/0436 (Oldtown Planning 1), Condition 19 of Reg. Ref. F11A/0473 (Oldtown Planning 2) and Condition 6(b) of Reg. Ref. F15A/0390 (Oldtown Planning 3).

The following is a breakdown of the permanent water volume and attenuation volume in the enlarged pond:

Description	Catchment	Soil Type	l/s/Ha	Allowable Outflow	Permanent Water Volume	Attenuation Water Volume
Newly Proposed Enlarged Attenuation Pond	41.0 Ha	4	5.2 l/s/ha	213 l/s	9,040m ³	7,800m ³

Table 3 | Attenuation Volume

A planted forebay forms part of the inlet at the discharge point into the attenuation pond which provides a suitable area for specialist planting and to facilitate maintenance and removal of pollution loading. All associated surface water sewers will be sized to accommodate upstream development.

4.6 Surface Water- General

Surface water sewers will generally consist of PVC (to IS 123) or concrete socket and spigot pipes (to IS 6) and laid strictly in accordance with Fingal County Council requirements for taking in charge.

Drains will be laid in accordance with the requirements of the Building Regulations, Technical Guidance Document H.

5. Water Supply Network

5.1 Existing Water Supply Network

The Swords area, including the subject lands, is supplied from Leixlip Water Treatment Plant.

There is an 800mm diameter ductile iron trunk watermain crossing the lands, including a portion within the subject Phase 5 lands. This main connects Kingston to Lissenhall. The trunk main has a 16-metre wayleave through the lands which has been incorporated into Oldtown Avenue, the main spine road of the development, in accordance with the LAP. A spur has been provided from the 800mm diameter water main to serve the Oldtown/Mooretown LAP lands, located just south of the Glen Ellan Road. A section of the 800mm main encroaches into the subject lands and as noted within the pre-connection response, it will be required of the Developer to demonstrate that proposed structures and works will not inhibit access for maintenance or endanger structural or functional integrity of the infrastructure during and after the works. In this regard, the internal layout of the proposed development site has been designed such that the wayleave is within roadway and outside of proposed building lines.

A series of 100/150/200mm mains were constructed as part of the Phase 1 and Phase 3 developments that connect to the boundary of the Phase 5 development.

The proposed Phase 5 development will be served by the aforementioned connections that ultimately connect to the existing 800mm diameter trunk main. As part of the Planning 1 development, a connection was provided from the 800mm trunk main to the 250mm Glen Ellan watermain. Fingal County Council shut down the supply from the 250mm Glen Ellan watermain and the Oldtown development is now served from the 800mm connection.

5.2 Proposed Water Supply Network

The overall proposed Phase 5 development will have 4 no. connections to the existing Phase 2 watermain network: 2 no. connections to the eastern side of Phase 4D. The subject development will ultimately be serviced from the 800mm trunk main, via a 300mm main installed at Miller's Avenue. Refer to drawings 17-144.P1300 to 17-144.P1303 for proposed watermain layout, and to the Figure below which shows the General Arrangement for the proposed watermain layout for the Oldtown Lands:



Figure 6 | Existing and Proposed Water Supply Network

A Pre-Connection Enquiry was submitted to Irish Water and a Confirmation of Feasibility Letter was issued, dated 22 October 2018 – a copy of the letter is included in Appendix A. The letter notes that new connection to the existing network is feasible without upgrade.

A design submission was made to Irish Water and the subsequent Statement of Design Acceptance is included as Appendix D.

5.3 Water Supply Calculations

The calculated water demand at the subject development is set out in the below table. The average domestic demand has been established based on an average occupancy ratio of 2.7 persons per dwelling with a daily domestic per capita consumption of 150 litres per head per day and with a 10% allowance factor. The average day/peak week demand has been taken as 1.25 times the average daily domestic demand, while the peak demand has been taken as 5 times the average day/peak week demand, as per Section 3.7.2 of the Irish Water Code of Practice for Water Infrastructure.

Description	Total Population	Water Demand	Average Demand	Average Peak Demand	Peak Demand
	No. People	l/day	l/s	l/s	l/s
173 Houses	467.1	77,071.5	0.892	1.115	5.575
134 Apartments	361.8	59,697	0.691	0.864	4.320
70 Duplexes	189	31,185	0.361	0.451	2.255
Creche	119	11,781	0.136	0.170	0.850
Total	1,136.9	179,734.5	2.080	2.600	13.000

Table 4 | Calculation of Water Demand for the Development

Based on the above calculations, the average water demand for the proposed development is 2.080 l/s, with a peak demand of 13.00 l/s.

5.4 Water Supply – General

All watermains will be laid strictly in accordance with Irish Water requirements for taking in charge.

Valves, hydrants, scour and sluice valves and bulk water meters will be provided in accordance with the requirements of Irish Water.

6. Road and Transport Network

This section provides an overview of the existing and proposed road and transportation network in the vicinity of the site. A comprehensive Traffic and Transport Assessment has also been prepared by Waterman Moylan and accompanies this submission under separate cover.

6.1 Existing Road Network

Details of the existing road network serving the proposed development and north Swords are indicated on *Figure 7* below.

The Oldtown Phase 5 site is bounded on the southeast by the west by agricultural lands, to the north by the Oldtown Regional Park and to south and east by the Swords Western Distributor Link Road.

The site is accessed from Glen Ellan Road and Rathbeale Road via Oldtown Avenue/Miller's Avenue, Park Avenue and Longview Avenue which have been constructed as part of the Oldtown LAP development.

The junction between Glen Ellan Road and Balheary Road, to the east of Oldtown provides a signal-controlled junction with priority for traffic on the Glen Ellan Road / Balheary Road arms of the junction.

Glen Ellan Road serves an existing school complex to the south of the Oldtown Lands as follows:

- Swords Educate Together has approximately 450 students and 21 staff. The opening hours of the school are 8.30am – 1.10pm for Junior and Senior Infants and 8.30am – 2.10pm for all other classes.
- Gaelscoil Brian Boroimhe has approximately 360 students and 20 staff. The opening hours of the school are 8.50am – 1.30pm for Junior and Senior Infants and 8.50am – 2.30pm for all other classes.

Rathbeale Road, R125, bisects the Oldtown Mooretown LAP lands and forms the southern boundary of the Oldtown lands. This road connects Swords with Ashbourne to the west. The road links to the Old Dublin Road, R135, just south of Ashbourne to the N2 at Interchange No 3, Fleenstown Little. Rathbeale Road also provides a direct link from Oldtown towards the east to Swords Main Street, at the junction between Bridge Street and Main Street. The Rathbeale Road has recently undergone ~1km of upgrade works fronting the Oldtown/Mooretown LAP lands, as further discussed in Section 6.5.6.

6.2 Proposed Road Network

This proposal comprises Oldtown Planning Application 5 and is for the construction of 377 dwellings with infrastructure and road network. The site is located to the northwest of Swords adjacent to Applewood and north of the Rathbeale Road. The location and the site layout are indicated on the drawings which form part of this Application (refer also to *Figure 7* below).

Access to the site is from the proposed Oldtown Avenue/Miller's Avenue (WDLR). Oldtown Avenue originates at a signalised junction with Rathbeale Road. The Oldtown Avenue/Glen Ellan Road signalised junction is located approximately 110m north of Rathbeale Road junction as shown on drawing 17-144-P1000. Oldtown Avenue then extends in a northeast direction towards the Broadmeadow River, becoming Miller's Avenue at the intersection with Park Avenue.

In order to provide a robust traffic assessment for the proposed development, the combined impacts of the entire Oldtown lands have been considered as part of the traffic impact assessment. In this regard, we refer you to the Traffic and Transport Assessment, supplied under separate cover as part of this application.

6.3 Road Safety Audit

A Stage 1 Road Safety Audit (RSA) has been carried out by Bruton Consulting Engineers. The completed RSA is a separate document and has been included as part of Appendix C of this application. The agreed minor recommendations of the report have or will be adopted through minor layout amendment. A summary of agreed changes is found below.

RECOMMENDATION 1

It is recommended that the verge areas be sized to allow free movements of two vehicles if the on curtilage paved areas are designed for two spaces.

RESPONSE:

All grass verges shall be reviewed to ensure that sufficient 3m width has been provided to crossover (in accordance with recommendations site development works) so as to allow sufficient manoeuvrability for both vehicles entering and exiting properties.

RECOMMENDATION 2

It is recommended that the disabled parking bay size meets the current standards.

RESPONSE:

The disabled parking bay has been widened to meet the current standards

RECOMMENDATION 3

It is recommended that the tactile area be constructed of material that is designed to take vehicular loading and that the crossing point is split between the adjoining property boundaries.

RESPONSE:

The Road 2 pedestrian crossing shall be shifted slightly south so as to lie between the 2 properties. The tactiles shall be of sufficient quality to allow for the occasional heavy loading of vehicles entering and exiting the properties.

RECOMMENDATION 4

It is recommended that a suitably located uncontrolled crossing be provided across Road 8.

RESPONSE:

A suitable, uncontrolled pedestrian crossing will be installed at this location as indicated.

6.4 Traffic Impact Assessment

6.4.1 Oldtown/Mooretown Full Development

As noted above, a comprehensive Traffic and Transport Assessment (TTA) has been prepared by Waterman Moylan and accompanies this submission under separate cover.

As has been developed upon in the TTA for the subject site, trip generation figures and traffic junction assessments, represent Oldtown Mooretown when fully developed.

The results of the traffic impact assessment, as set out in the TTA and in Chapter 12 of the EIS which accompanies this application, indicates that the existing and proposed road network with the recommendations included as part of the SYSTRA assessment of the Swords North West area, is capable of accommodating the proposed development.

The recommendations include, a new quality bus route linking Oldtown-Mooretown with Swords main Street; provision of high standard and prioritised cycle infrastructure along Rathbeale Road and Glen Ellan Road (amongst others); provision of high-quality and cycle priority along key roads on the network and the northern extension of the Swords Western Distributor Road to provide direct access to the MetroLink Park and Ride at Estuary station.

6.5 Proposed Internal Road Network

6.5.1 Oldtown Masterplan

The hierarchy of the internal road network is set out in the Master Plan for Oldtown which accompanies this planning application.

The general strategy is to provide restricted road widths where appropriate with additional buffer zones at parking locations and generous footpaths along pedestrian desire lines.

The design of the roads layout has been informed by the Design Manual for Urban Roads and Streets (DMURS). The principal road features are outlined below.

6.5.2 Oldtown Avenue/Miller's Avenue (SWDLR)

Oldtown Avenue/Miller's Avenue have been constructed up to road base and will provide the access routes to the proposed Phase 5 development. Along with Glen Ellan Road it will be a main route in the Oldtown lands. Oldtown Avenue will form a signalised junction with Rathbeale Road at the southeast boundary of the site. Junction works to Rathbeale Road/Oldtown Avenue have been completed. The road will then extend in a northerly direction for approximately 110m before intersecting with the Glen Ellan Road, forming another signalised T-Junction. From the intersection with Glen Ellan Road, Oldtown Avenue follows a northeast path until it intersects with Park Avenue, then becoming Miller's Avenue, continuing in a northeast path to the south of the proposed development. Miller's Avenue is currently under construction as part of the Planning 3 development.

Oldtown Avenue/Miller's Avenue will have a 7.0 m wide carriageway to accommodate bus traffic. The road will have a design speed limit of 50km/h.

On road cycle lanes will be provided in both directions. A grass verge will separate the carriageway from 2.0m footpaths provided on each side of the road. Pedestrian crossings will be provided on each arm at the junctions with Rathbeale Road and with Glen Ellan Road. These allow safe crossing points to the proposed development and to the existing school.

6.5.3 Internal Road Network

The minor roads forming part of the internal road network in the proposed development will generally have a width of 5.5m and a design speed of 30km/h. Footpaths will be provided on both sides of the road and will have widths of 2.0m.

On street parking intermixed with soft verges will separate footpaths from the main carriageway.

All intersections within the development itself will be priority junctions. The low design speeds and traffic calming measures will ensure the safe operation of these junctions.

Parking areas associated with the duplex Block D/house units fronting Miller's Avenue are accessed off Road 8 that runs parallel to Miller's Avenue, separated by a biodiversity open space. This permits an efficient means of integrating the 800mm trunk watermain wayleave that encroaches the Phase 5 site in this location, as further discussed in Section 5.1. As required by Irish Water, access is required to be afforded to this 16m wayleave and structures or works are not permitted to endanger the structural or functional integrity of the main. In this regard, long term protection of this critical piece of infrastructure is efficiently afforded beneath road reservation as shown on watermain layout drawings 17-144.P1300 to 17-144.P1303

Wider scale development pedestrian and cycling linkage and routes have been detailed on the accompanying drawings 17-144-P1002 & 17-144-P1003, demonstrating this high quality and permeable environment supplied for vulnerable road users.

6.5.4 DMURS Statement & Traffic Calming

Traffic calming has been implemented within the development generally in accordance with the recommendations of DMURS. The following traffic calming features have been incorporated into the design:-

- Road widths have been reduced to generally 5.5m with additional buffer zones where required.
- Kerb radii have been reduced to a minimum of 4.0m at internal junctions.
- On street parking has been provided (with the resultant reduction in speed as assessed in TRL 661)
- Vertical deflection, speed tables, etc. have been limited to areas of significant pedestrian activity.
- Signage and road markings play a part in traffic calming and these will be introduced at detail design stage.
- In general, traffic calming features have been introduced at 80m to 100m intervals with a view to reducing the design speed within the development to a target of 30km/h. For example, curvature and build outs have been introduced to the circumference Road 1.

Active edges are recommended in DMURS to enliven the edges of the street, creating a more interesting and engaging environment. An active frontage is achieved with frequent entrances and openings that

ensure the street is overlooked and generate pedestrian activity as people come and go from buildings. The roads throughout the development have regular junctions and pedestrian crossings in accordance with this recommendation. Speed reducing measures such as speed cushions and horizontal curvature will to promote lower vehicle speeds all in accordance with DMURS Section 4.4.7.

On-street parking separates pedestrians from the vehicle carriageway and, as per DMURS Section 4.4.9, can calm traffic by increasing driver caution, contribute to pedestrian comfort by providing a buffer between the vehicular carriageway and foot path and provide good levels of passive security.

Roads through the development have been designed with a gentle horizontal curvature, which helps to calm traffic without impeding on safe sight lines or unduly increasing walking distances for pedestrians and is in accordance with alignment and curvature recommendations set out in DMURS Section 4.4.6.

Suitable sightlines are provided throughout the development, ensuring that localised planting does not obscure visibility as cars make turning manoeuvres, improving the pedestrian safety at crossing points.

The public areas fronting and within the proposed development have been designed by the multidisciplinary design team to accommodate pedestrians and cyclists in accordance with the appropriate principles and guidelines set out the Design Manual for Urban Roads and Streets. In particular the vehicular access and public footways within the remit of the development have incorporated the relevant DMURS requirements and guidelines as set out above.

Having regard to the above we would be of the opinion that the proposed development is consistent with the requirements for the design of urban roads and streets as set out in DMURS.

6.5.5 Parking & Car Sharing

The proposed development will provide surface car parking for residential use. The parking facilities are detailed in full in Section 14 of the Traffic and Transport Assessment Report, submitted under a separate cover.

The development also proposes car sharing vehicles. Each car sharing vehicle that is placed in a community has the potential to replace the journeys of up to 15 private cars. This development proposes to provide 2 No. Car Share Parking spaces (Go-Car or similar approved) to service this development, effectively replacing up to 30 vehicles.

Car Sharing contributes to sustainable travel modes by decreasing car ownership, limiting private car journeys to occasions when alternative modes of transport are unsuitable. The following outlines the benefits of car sharing:

- Each car can be accessed by multiple drivers, 24/7, and is bookable at a moment's notice;
- Reduces reliance on the private car;
- Reduce the need for car parking spaces;
- Helps reduce the number of cars on the road, traffic congestion, noise and air pollution, frees up land traditionally used for parking spaces, and increases use of public transport, walking and cycling; and
- The vehicles used are newer than the average car, and therefore are generally more environmentally friendly and safer.

A letter of intent from Go-Car has been supplied as Appendix F of this report.

6.5.6 Oldtown / Mooretown LAP (Expired) Road Upgrade Works

This subject application, referred to as Oldtown Phase 5, is one of several development phases in the expired Oldtown / Mooretown LAP lands, generally as follows:

	Description	No. of Residential Units	Status
Oldtown	Phase 1	234	Constructed and occupied
	Phase 2	249	Construction commenced in 2021
	Phase 3	230	Constructed and occupied
	Phase 4	295	Constructed and occupied
	Phase 5	377	Subject application
Mooretown	Phase 1	283	Under construction
	Phase 2	208	Planning granted
	Phase 3	650	Planning Stage

Table 5 | Oldtown / Mooretown Development Phases

All the road network improvements required as part of the expired Oldtown-Mooretown Local Area Plan, both within and outside the LAP boundaries, have been summarised in Appendix B of this report and presented in Section 2.2 of the accompanying TTA, supplied under separate cover.

Liaison has been made with Linda Lally of the Fingal County Council Transportation Department with respect to the wider transportation infrastructural works outlined within the expired Oldtown/Mooretown LAP, most recently on the 4th of March 2022.

As agreed with Linda Lally at the above referenced meeting, it is considered that Gannon Homes have either completed or are in the process of completion of the LAP identified infrastructural works that are deemed appropriate to be undertaken by the applicant.

We refer you in this regard to the summary tables provided to and agreed in principle with FCC Transport, in Appendix B of this report. The summary tables detail the LAP transport infrastructure requirements and indicate the following :

- Works complete to date by the applicant,
- Works to be undertaken by the applicant, or
- Works outside of the development boundary and remote from the site have been identified as not under the applicant's remit, as agreed with Linda Lally, 4th March 2022.

The expired LAP road network improvements include:

- Development of a number of new roads/road links – in particular provision of the Swords Western Distributor Road (SWDR) and the Inner Ward River Valley Crossing;
- Enhancement of existing junctions and roads external to the lands;
- Redesign of Glen Ellan Road as a main urban street within the lands and design of a main street within Mooretown lands;
- Provision of a quality bus route to transport those living in northwest Swords into the Town Centre;
- Provision of pedestrian and cyclist networks, associated with green corridors both within and into adjoining areas

At the time of writing this report, the SWDR is substantially complete within the Oldtown lands. These development works were undertaken as part of the previous phases of Oldtown. The SWDR is further constructed 800m south into Mooretown, supplying access to the Mooretown Secondary School. The completion of the SWDR to the extent of the applicants lands (~400m) in Mooretown has received a grant of planning and is anticipated to commence in the 2022.

The road upgrades along the R125 Rathbeale Road, both within and outside the LAP boundaries, were subject to a Part 8 planning application by FCC. This planning application received approval in 2017. Works were approved for LIHAF funding and are now complete and open to the public.

The works included a new signalised junction at the Rathbeale Road / Mooretown Western Distributor Road intersection, widening and upgrading of 1,150m of the Rathbeale Road, a new signalised toucan crossing to the Archaeology Park to the north and signalisation and upgrading of the Rathbeale Road/Murrough Road junction. The new road includes two-way cycle lanes along the northern side of the carriageway, a pedestrian footpath north of the cycle lanes, and a shared pedestrian/cycle surface along the southern side of the carriageway. In this regard, we also refer you to the wider pedestrian and cycling linkage drawings that form part of this planning application (17-144-P1002 & P1003), demonstrating the high quality provision of pedestrian and cyclist linkages throughout the development and to the wider local catchment.

The Glen Ellan Road Extension works are complete as part of the previous phases of Oldtown.

Appendices

A. Irish Water Confirmation of Feasibility Letter

Gannon Homes, c/o Stephen Dent-Neville
Waterman Moylan
East Point Bus Park
Block S
Alfie Byrne Road
Dublin 3



Uisce Éireann
Bosca OP 6000
Baile Átha Cliath 1
Éire

Irish Water
PO Box 6000
Dublin 1
Ireland

T: +353 1 89 25000
F: +353 1 89 25001
www.water.ie

22 October 2018

Dear Sir/Madam,

Re: Customer Reference No 6518327617 pre-connection enquiry - Subject to contract | Contract denied
[Connection for 354 domestic units and a creche]

Irish Water has reviewed your pre-connection enquiry in relation to water and wastewater connections at Oldtown, Swords, Dublin. Based upon the details that you have provided with your pre-connection enquiry and on the capacity currently available in the network(s), as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place, your proposed connection to the Irish Water network(s) can be facilitated.

In the case of wastewater connections this assessment does not confirm that a gravity connection is achievable. Therefore a suitably sized pumping station may be required to be installed on your site. All infrastructure should be designed and installed in accordance with the Irish Water Code of Practice.

Water:

New connection to the existing network is feasible without upgrade.

Wastewater:

In order to accommodate the proposed connection at the Premises, upgrade works are required to increase the capacity of the Irish Water network.

Currently Drainage Area Plan (DAP) with hydraulic modelling for the area is in progress which will determine system deficiencies and outline needed upgrades in existing Irish Water infrastructure. The DAP hydraulic model for existing network and current load will be available in Q2 2019 (subject to change). The hydraulic model can then be updated with load from the proposed site and specific network upgrade to cater the load can be established.

The proposed wastewater connections for this development connect to the Irish Water network via infrastructure that has not been taken in charge by Irish Water (Third Party Infrastructure). Please be advised that at connection application stage you have to:

- Provide written confirmation from the owner of the infrastructure that you have received permission to connect to and wayleave from water and wastewater connection points into existing infrastructure up to the Irish Water infrastructure.
- Demonstrate that the Third Party Infrastructure is in compliance with requirements of Irish Water Code of Practice and Standard Details and in adequate condition and capacity to cater additional load from the Development.
- Provide Wastewater infrastructure Master Plan of the area to Irish Water for review.

Strategic Housing Development

Irish Water notes that the scale of this development dictates that it is subject to the Strategic Housing Development planning process. Therefore:

- A. In advance of submitting your full application to An Bord Pleanála for assessment, you must have reviewed this development with Irish Water and received a Statement of Design Acceptance in relation to the layout of water and wastewater services. All infrastructure should be designed and installed in accordance with the Irish Water Codes of Practice and Standard Details.
- B. You are advised that this correspondence does not constitute an offer in whole or in part to provide a connection to any Irish Water infrastructure and is provided subject to a connection agreement being signed and appropriate connection fee paid at a later date.
- C. In advance of submitting this development to An Bord Pleanála for full assessment, the Developer is required to have entered into a Project Works Services Agreement to deliver infrastructure upgrades to facilitate the connection of the development to Irish Water infrastructure.

A connection agreement can be applied for by completing the connection application form available at **www.water.ie/connections**. Irish Water's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities.

If you have any further questions, please contact Marina Byrne from the design team on 018925991 or email mzbyrne@water.ie. For further information, visit **www.water.ie/connections**

Yours sincerely,

Maria O'Dwyer
Connections and Developer Services

Stiúrthóirí / Directors: Mike Quinn (Chairman), Cathal Marley, Brendan Murphy, Michael G. O'Sullivan
Oifig Chláraithe / Registered Office: Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin 1, D01 NP86
Is cuideachta ghníomhaíochta ainmnithe atá faoi theorainn scaireanna é Uisce Éireann / Irish Water is a designated activity company, limited by shares.
Uimhir Chláraithe in Éirinn / Registered in Ireland No.: 530363

REV006

IW-HP

B. Phasing of Oldtown/Mooretown LAP Road Upgrade Works

March 2022

Oldtown / Mooretown LAP Phase 1 Transportation Network Improvement Works

Table 1: LAP Phase 1 Transportation Network Improvements

Item	Description	Notes
1	<u>Western Distributor Link Road:</u> 0.3 km of new single carriageway distributor road from Rathbeale Road to Glen Ellan Road Extension.	This section of road has been constructed as part of the Phase 1 works.
2	<u>Western Distributor Link Road:</u> A signal controlled junction including a pedestrian and cyclist crossing at the junction with Glen Ellan Road Extension.	This Junction serves Oldtown Planning 02 area and is substantially complete by Applicant as part of the Glen Ellen Road Extension works.
3	<u>Western Distributor Link Road:</u> A roundabout junction on the Rathbeale Road at western edge of Oldtown- Mooretown lands.	It was agreed with FCC to replace the roundabout with a signalised junction. The junction serves Mooretown and the Oldtown Planning 02 area and was subject to a Part 8 planning application by FCC. These road upgrade works were subject to a Part 8 planning application by FCC which is subject to LIHAF funding This planning application received approval in 2017. Works are now complete.
4	<u>Western Distributor Link Road:</u> A signal controlled toucan crossing for pedestrians and cyclists on the Rathbeale Road a short distance east of the new roundabout with provision for connection northward and southward along Swords Western Distributor Link Road.	This pedestrian crossing was required in the event that the junction at this location was to be a roundabout. The crossing has now been incorporated into the WDLR / Rathbeale Road junction. As noted above, works were approved for LIHAF funding and are complete.
5	<u>R125 Rathbeale Road Upgrade:</u> R125 Rathbeale Road shall be upgraded to urban road standard with footpaths and cycle lanes from the new junction with the Swords Western Distributor Link Road to the Cianlea estate.	These road upgrade works were subject to a Part 8 planning application by FCC which is subject to LIHAF funding This planning application received approval in 2017. Works are now complete.

Item	Description	Notes
6	<u>R125 Rathbeale Access to Mooretown:</u> A signal controlled junction with right-turn lanes shall be provided at a new access into the Mooretown lands at the north-eastern corner.	An entrance into the Mooretown lands has now been incorporated into the Rathbeale Road upgrade works. Works are now substantially complete
7	<u>R125 Rathbeale Road Access Oldtown (FCC):</u> A priority controlled junction with right-turn lane at a new access into the Oldtown lands at the south-eastern corner shall be provided.	This access is required as part of an approved FCC housing estate. These lands are not connected to the main body of the LAP. These road upgrade works were subject to a Part 8 planning application by FCC which is subject to LIHAF funding Works are now complete.
8	<u>R125 Rathbeale Road Access to Mooretown:</u> A signal controlled junction with right-turn lanes at a new access into the north-western portion of the Mooretown lands shall be provided. This will provide pedestrian and cycle access from the Mooretown lands to the school site located in the Oldtown lands immediately north of the Rathbeale Road.	Decision to grant has been supplied under Reg. Ref. F15A/0183 for a second access into the Mooretown lands to serve the Mooretown Planning 01 development. These road upgrade works were subject to a Part 8 planning application by FCC which is subject to LIHAF funding Works are now complete.
9	<u>R125 Rathbeale Road Improvements:</u> A signal controlled toucan crossing for pedestrians and cyclists between the two public park areas on either side of Rathbeale Road approximately midway along the frontage of the LAP lands shall be provided.	These road upgrade works were subject to a Part 8 planning application by FCC which is subject to LIHAF funding Works are now complete.
10	<u>Glen Ellan Road Extension/Street:</u> Upgrade of Glen Ellan Road Extension to a Street, providing footpaths and off-road cycle tracks through local center and verges, footpaths and off-road cycle tracks elsewhere. Provide signal controlled toucan crossing for pedestrians and cyclists at 3 locations along Glen Ellan Street to cater for pedestrians and cyclists.	These works are within Planning 1 and 2 and is substantially complete by Applicant as part of the Glen Ellen Road Extension works.
11	<u>Off-Site:</u> Rathbeale Road/Murrough Road Junction.	These road upgrade works were subject to a Part 8 planning application by FCC which is subject to LIHAF funding Works are now complete.

Item	Description	Notes
12	Off-Site: Castlegrange Junction.	<i>Not anticipated that these works are to be undertaken by the applicant. Agreed with LLally 04/03/2022</i>

Table 1: LAP Phase 2 Transportation Network Improvements

Item	Description	Notes
1	<p><u>Western Distributor Link Road:</u> Development of Western Distributor Link Road from Rathbeale Road southwards to Brackenstown Road shall be developed, including provisions for cyclists and pedestrians.</p>	<p>Works to the WDLR from Rathbeale Road southwards to Brackenstown Road have commenced under planning reference F12A/0270 and an 800m section of the WDLR has been substantially complete. A further planning submission for further circa 400m extension of this road towards Brackenstown Rd was submitted at the end of 2019 and granted planning in May 2021</p>
2	<p><u>Western Distributor Link Road:</u> Upgrade of Brackenstown Road from Swords Manor to the R108 Naul Road junction to urban single carriageway road standard with footpaths and cycle tracks.</p>	<p><i>The applicant considers that these Brackenstown Road works are remote from their development and that the upgrade works are not under their remit to undertake as part of their development works Agreed with LLally 04/03/2022</i></p>
3	<p><u>Western Distributor Link Road:</u> Provision of a pedestrian and cycle link along the eastern side of the R108 Naul Road from the junction with Brackenstown Road southward to the Knocksedan housing estate.</p>	<p><i>The applicant considers that these Naul Road works are remote from the development and that the proposed works are not under their remit to undertake as part of their development works. Agreed with LLally 04/03/2022</i></p>
4	<p><u>Internal Road Network</u> Local access roads and pedestrians/cyclist links shall be provided to open up the LAP lands to development as per plan layout.</p>	<p>The internal road network and pedestrian / cycle links are being provided as the development progresses. Pedestrian / cycle tracks are being provided as part of Phase 1 along Glen Ellan Road, Oldtown Avenue, Mooretown Avenue and Rathbeale Road as far as the archaeological park. This will continue through Phase 2.</p>
5	<p><u>Road Network Improvements Which Shall be Provided Outside of Plan Lands:</u> Upgrade 3 roundabouts on Glen Ellan Road to cyclist friendly roundabouts.</p>	<p><i>The applicant considers that these works are remote from site. It is noted that crossings on the westmost roundabout (closest to the Gannon development) has been recently upgraded to include improved pedestrian/cycle crossing</i></p>

		<i>points. The remaining two roundabouts are remote from the development, and it is not anticipated that these works are to be undertaken by the applicant. Agreed with LLally 04/03/2022</i>
6	<u>Road Network Improvements Which Shall be Provided Outside of Plan Lands:</u> Major upgrade and realignment of the junction of Glen Ellan Road with Balheary Road.	<i>These works are remote from the site and a design for which is under review we understand as part of residential development works closer to the site. It is not anticipated that these works are to be undertaken by the applicant, however FCC to review as to whether some form of contribution towards these works may be sought by FCC from the applicant. FCC Transport to review and revert to the applicant. Agreed with LLally 04/03/2022</i>
Item	Description	Notes
7	<u>Road Network Improvements Which Shall be Provided Outside of Plan Lands:</u> Widen Balheary Road to 4 lanes between Glen Ellan Road and Castlegrange junctions over 300m length. This will encroach on public park area to the east.	<i>These works are remote from the site It is not anticipated that these works are to be undertaken by the applicant . Agreed with LLally 04/03/2022</i>
8	<u>Road Network Improvements Which Shall be Provided Outside of Plan Lands:</u> Widen link road to 4 lanes between Castlegrange and R132 Estuary junctions.	<i>These works are remote from the site It is not anticipated that these works are to be undertaken by the applicant . Agreed with LLally 04/03/2022</i>
9	<u>Road Network Improvements Which Shall be Provided Outside of Plan Lands:</u> Major capacity improvement at the R132 Estuary junction (unless previously delivered by Metro North project).	<i>These works are remote from the site It is not anticipated that these works are to be undertaken by the applicant . Agreed with LLally 04/03/2022</i>
10	<u>Swords Western Quality Bus Corridor</u>	

	Bus priority measures within Oldtown LAP area and via Glen Ellan Road to Rathbeale Road Junction.	<i>Road upgrade works, including agreed bus stop provision supplied as part of the Rathbeale Road upgrade works project within the LAP lands. These works are now complete. Further Glen Ellan road bus measures are remote from the development. It is not anticipated that further bus network improvement works are to be undertaken by the applicant. Agreed with LLally 04/03/2022</i>
11	<u>Swords Western Quality Bus Corridor</u> Bus lanes over 150m length on the northern approach to the junction of Rathbeale Road and Murrough Road.	<i>These works are remote from the site. It is not anticipated that these works are to be undertaken by the applicant. Agreed with LLally 04/03/2022</i>

Table 1: LAP Phase 3 Transportation Network Improvements

Item	Description	Notes
1	<p><u>Western Distributor Link Road:</u> Northern extension of road through lands at Oldtown adjoining this phase of development.</p>	<p>Road works substantially complete as part of Oldtown North LAP Development works</p>
2	<p><u>Western Distributor Link Road:</u> Undertake remaining road network improvements/ connections to complete Western Distributor Link Road south of Brackenstown/ Naul Road junction, including it's connection to Forrest Road.</p>	<p><i>These works are remote from the site. It is not anticipated that these works are to be undertaken by the applicant. Agreed with LLally 04/03/2022</i></p>
3	<p><u>Internal Road Network</u> Local access roads and pedestrians/cyclist links shall be provided to open up the LAP lands to development as per plan layout.</p>	<p>The internal road network and pedestrian / cycle links are being provided as the development progresses. Pedestrian / cycle tracks are currently being provided as part of Phase 1 along Glen Ellan Road, Oldtown Avenue, Mooretown Avenue and Rathbeale Road as well as the archaeological park. This will continue through Phase 3.</p>
4	<p><u>Road Network Improvements Which Shall be Provided Outside of Plan Lands:</u> Capacity improvement at the junction of R125 Rathbeale Road with Watery Lane shall be carried out.</p>	<p><i>These works are remote from the site. It is not anticipated that these works are to be undertaken by the applicant. Agreed with LLally 04/03/2022</i></p>
5	<p><u>Road Network Improvements Which Shall be Provided Outside of Plan Lands:</u> Capacity improvement at the junction of Watery Lane with Balheary Road shall be carried out.</p>	<p><i>These works are remote from the site. It is not anticipated that these works are to be undertaken by the applicant. Agreed with LLally 04/03/2022</i></p>
6	<p><u>Swords Western Quality Bus Corridor</u></p>	

	The main elements of the 6km long QBC shall be developed during this phase.	<i>Road upgrade works, including agreed bus stop provision supplied as part of the Rathbeale Road upgrade works project within the LAP lands. These works are now complete. Further glen ellan road bus measures are remote from the development. It is not anticipated that further bus network improvement works are to be undertaken by the applicant Agreed with LLally 04/03/2022</i>
7	<u>Swords Western Quality Bus Corridor</u> A new link road from Brackenstown to Dublin Road at Swords Town Centre (Lord Mayor Link Road) shall be delivered in conjunction with the third phase of development.	<i>These works are remote from the site. It is not anticipated that these works are to be undertaken by the applicant. Agreed with LLally 04/03/2022</i>

Table 1: LAP Phase 4 Transportation Network Improvements

Item	Description	Notes
1	<u>Western Distributor Link Road:</u> Northern extension of road through lands at Oldtown to the edge of the Broadmeadow Linear Park shall be provided (with provision in design for future extension into the Lissenhall development lands and for connection to the Swords Western Ring Road).	Road works substantially complete as part of Oldtown North LAP Development works
2	<u>Internal Road Network</u> Local access roads and pedestrians/cyclist links shall be provided to open up the LAP lands to development as per plan layout.	The internal road network and pedestrian / cycle links are being provided as the development progresses. Pedestrian / cycle tracks are currently being provided as part of Phase 1 along Glen Ellan Road, Oldtown Avenue, Mooretown Avenue and Rathbeale Road as well as the archaeological park. This will continue through Phase 4

C. Stage 1 Road Safety Audit Report – Bruton Consulting Engineers

Title: STAGE 1 ROAD SAFETY AUDIT

For

Phase 5, Mixed Use Development, Oldtown, Swords.

Client: Waterman Moylan

Date: March 2020

Report reference: 0753R01

VERSION: FINAL (March 2022)

Prepared By:

Bruton Consulting Engineers Ltd

Glaspistol

Clogherhead

Drogheda

Co. Louth.

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Mob: 086 8067075

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CONTENTS SHEET

Contents

1.0	Introduction	2
2.0	Background	3
3.0	Main Report	5
3.1	Problem.....	5
3.2	Problem.....	5
3.3	Problem.....	6
3.4	Problem.....	7
3.5	Problem.....	7
3.6	Problem.....	8
3.7	Problem.....	9
4.0	Observations	9
4.1	Observation.....	9
5.0	Audit Statement.....	10
	Appendix A.....	11
	Appendix B - Problem Location Map	12
	Appendix C.....	0

STAGE 1 RSA –PHASE 5, OLDTOWN WATERMAN MOYLAN

1.0 Introduction

This report was prepared in response to a request from Mr. Robert Walpole, Waterman Moylan Consulting Engineers, for a Stage 1 Road Safety Audit of the proposed strategic housing development referred to as, “Phase 5, Mixed Use Development, Oldtown, Swords”.

The Road Safety Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA.

TII Auditor Approval no. NB 168446

Team Member: **Owen O’Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI

TII Auditor Approval no. OO1291756

The Road Safety Audit comprised an examination of the drawings and a site visit by the Audit Team, together, on the 25th March 2020.

The weather at the time of the daytime site visit was dry and the road surface was dry.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

If any of the recommendations within this safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

A list of the documents provided to the Audit Team is contained in **Appendix A**.

A Problem Location Map is contained in **Appendix B**.

A feedback Form is contained in **Appendix C**.

STAGE 1 RSA –PHASE 5, OLDTOWN WATERMAN MOYLAN

2.0 Background

It is proposed to construct a strategic housing development (SHD) in Swords which would be an extension of both an existing and under construction development known as Oldtown (various phases).

At the time of the site visit previous phases were under construction. Miller’s Avenue which forms the eastern boundary of the proposed development was partially constructed.

Phase 5 would bound Rathbeale Road (R125) to the South. At the time of the site visit, Rathbeale Road was closed to facilitate improvement works and a temporary diversion along Glen Ellan Road was in place. The signalised junction at Glen Ellan Road and Millers Avenue was partially constructed however the signals were not in place.

It is proposed that there will be three priority junctions onto Miller’s Avenue from the development. Pedestrian crossing points across Millers Avenue will be provided along with traffic calming raised tables.

It is assumed that the speed limit within the development will be 30km/hr.

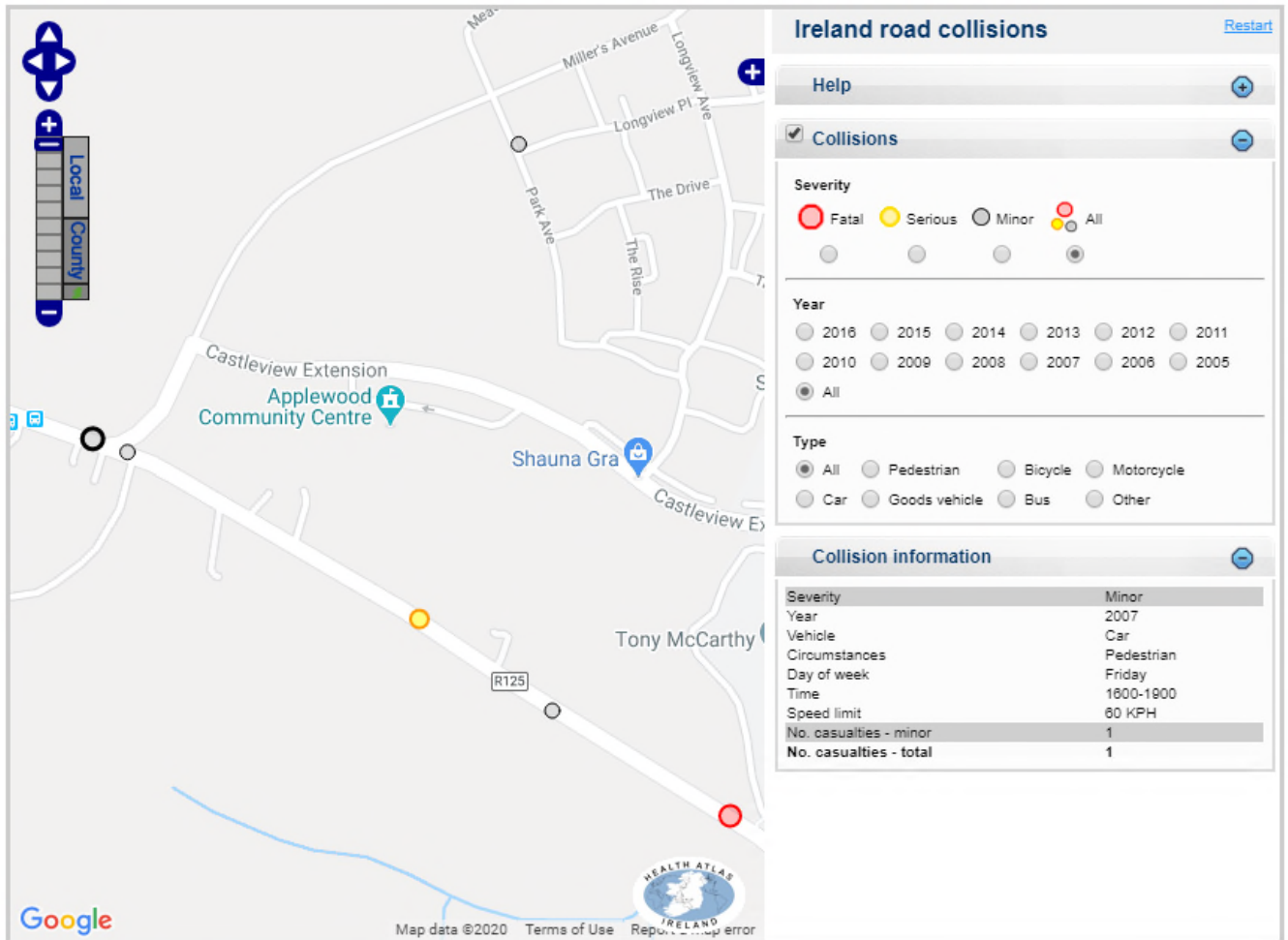
The site location is shown in the map below.



STAGE 1 RSA –PHASE 5, OLDTOWN
WATERMAN MOYLAN

The Road Safety Authority’s website (www.rsa.ie) shows that there were two minor injury collisions recorded on Rathbeale Road between the years 2005 and 2016.

One collision involved a pedestrian and the other was a head-on right turn collision.



STAGE 1 RSA – PHASE 5, OLDTOWN WATERMAN MOYLAN

3.0 Main Report

3.1 Problem

LOCATION

General throughout the scheme.

PROBLEM

There are parallel parking spaces along some of the internal roads. There is a risk that parked vehicles will block visibility for drivers exiting side roads. This could result in side-impact or rear-end collisions.



RECOMMENDATION

It is recommended that parking spaces are outside the visibility splays of the side road junctions.

3.2 Problem

LOCATION

General throughout the scheme.

PROBLEM

In many locations there is a proposed 2.0m footpath to the rear of perpendicular parking spaces. The effective width of the footpath will be reduced if drivers park with the front or rear tyres against the kerb line. A lower effective width could lead to difficulties for the mobility impaired passing on the footpath and they may have to use the carriageway.

STAGE 1 RSA –PHASE 5, OLDTOWN
WATERMAN MOYLAN



RECOMMENDATION

It is recommended that the effective width of the internal footpaths should be no less than 1.8m.

3.3 Problem

LOCATION

General throughout the scheme.

PROBLEM

Some internal roads have a 1.2m wide verges. The verge area obstructs the path of a second vehicle exiting the on-curtilage parking space which could lead to the verge being overrun especially by reversing vehicles where the driver might not be able to see it. This could lead to dirt being brought onto the carriageway and material damage to the underside of vehicles.



STAGE 1 RSA –PHASE 5, OLDTOWN WATERMAN MOYLAN

RECOMMENDATION

It is recommended that the verge areas be sized to allow free movements of two vehicles if the on-curtilage paved areas are designed for two spaces.

3.4 Problem

LOCATION

Drawing 17-144 P1101

PROBLEM

There is a disabled parking bay adjacent to Block C. The parking bay appears to be no larger than regular spaces to the rear. This could lead to access issues for wheelchair users who may have to enter the carriageway.



RECOMMENDATION

It is recommended that the disabled parking bay size meets the current standards.

3.5 Problem

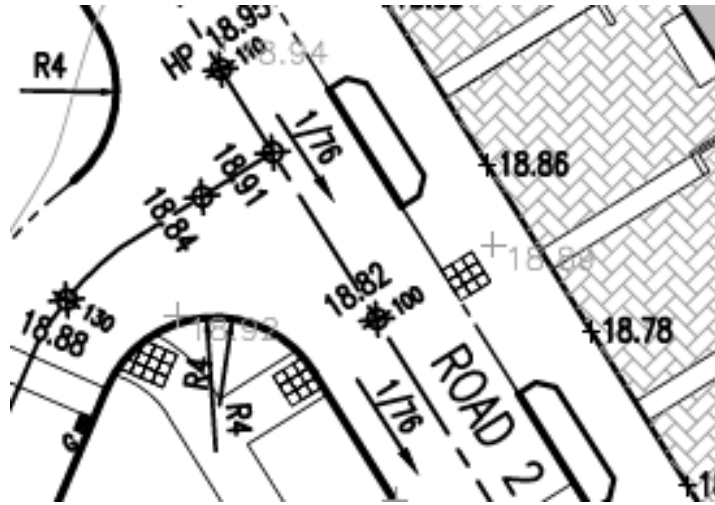
LOCATION

Drawing 17-144 P1101, Road 2 Chainage 90

PROBLEM

The uncontrolled pedestrian crossing on Road 2, chainage 90 is at a location where the tactile paving will be crossed by vehicles entering/leaving the adjacent property. This could lead to the tactile paving cracking and becoming a trip hazard. There is also a higher risk that there will be a child behind a reversing vehicle as they cross from the park area.

STAGE 1 RSA –PHASE 5, OLDTOWN
WATERMAN MOYLAN



RECOMMENDATION

It is recommended that the tactile area be constructed of material that is designed to take vehicular loading and that the crossing point is split between the adjoining property boundaries.

3.6 Problem

LOCATION

Drawing 17-144 P1102, Road 8 Chainage 20

PROBLEM

There is a lack of continuity of footpath provision across Road 8 from Road 9. This could lead to trips and falls at high kerbs or lack of accessibility for the mobility impaired.



RECOMMENDATION

It is recommended that a suitably located uncontrolled crossing be provided across Road 8.

STAGE 1 RSA –PHASE 5, OLDTOWN WATERMAN MOYLAN

3.7 Problem

LOCATION

Drawing 17-144 P1102, Road 7 Chainage 20.

PROBLEM

There is a lack of continuity of footpath provision across Road 7 to Road 2. This could lead to trips and falls at high kerbs or lack of accessibility for the mobility impaired.



RECOMMENDATION

It is recommended that a suitably located uncontrolled crossing be provided across Road 7.

4.0 Observations

4.1 Observation

A swept path analysis for refuse trucks and locations for bin storage on collection day have not been provided to the Audit Team.

5.0 Audit Statement

We certify that we have examined the site on the 25th March 2020. The examination has been carried out with the sole purpose of identifying any aspects of the design which could be added, removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Norman Bruton

Signed:



(Audit Team Leader)

Dated: 24-3-2022

Owen O'Reilly

Signed:



(Audit Team Member)

Dated: 24-3-2022

STAGE 1 RSA –PHASE 5, OLDTOWN
WATERMAN MOYLAN

Appendix A

Information Supplied to the Audit Team

- Drawing 17-144 P1000
- Drawing 17-144 P1100
- Drawing 17-144 P1101
- Drawing 17-144 P1102

Appendix B - Problem Location Map



Appendix C

Feedback Form


SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: Phase 5, Oldtown

Stage: 1 Road Safety Audit

Date Audit (Site Visit) Completed: 25th March 2020

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	No	No	<p>All internal road junctions have been reviewed with respect to visibility relating to the placement of adjacent parallel parking spaces.</p> <p>A design speed of 20km/hr is applicable in certain instances where parallel bays have been included given the presence of speed reducing infrastructure and DMURS compliant design. A review of Safe Stopping Distance y dimensions achieves the necessary 14m in these locations, and the required 23m where 30km/hr is design speed is applicable.</p> <p>It is also noted that Page 109 of DMURS states that “Splays should generally be kept free of on-street parking, but flexibility can be shown on lower speed streets with regard to minor encroachments.”</p>	Yes
3.2	No	No	<p>The effective depth of the footpaths will be 2m as indicated.</p> <p>Perpendicular parking bays are 5m deep, greater than the 4.8m recommended by DMURS section 4.49.</p> <p>As per Figure 4.82 of DMURS, Roads 5 & 11.3 with carriageway widths of 5.5m & 5m (Cul-de-sac) respectively which would be considered narrow have been afforded a 1m buffer zone to the rear of the spaces.</p>	Yes

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
			<p>All other perpendicular parking is located on carriageways of 6m width.</p> <p>This excess space allows for easier maneuverability, visibility and also eliminates the need for vehicles to park with wheels against the kerb and overhanging the footpath.</p> <p>This typical parking/2m footpath layout has been incorporated into previous stages of the overall Oldtown/Mooretown LAP development and has been deemed acceptable by FCC.</p>	
3.3	Yes	Yes	All grass verges shall be reviewed to ensure that sufficient 3m width has been provided to crossover (in accordance with recommendations site development works) so as to allow sufficient maneuverability for both vehicles entering and exiting properties.	Yes
3.4	Yes	Yes	The disabled parking bay has been widened to meet the current standards	Yes
3.5	Yes	Yes	The Road 2 pedestrian crossing shall be shifted slightly south so as to lie between the 2 properties. The tactiles shall be of sufficient quality to allow for the occasional heavy loading of vehicles entering and exiting the properties.	Yes
3.6	Yes	Yes	A suitable, uncontrolled pedestrian crossing will be installed at this location as indicated.	Yes
3.7	No	No		Yes

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
			Pedestrian desire lines research for the overall project has been mapped (extract of area included above) and indicates that the majority of footfall shall be on the western side of the junction where sufficient crossing points have been provided. Mobility impaired VRUs may take a slightly different route via the south to use tactile paved crossing points as per the current layout, which avoids the need for tactile crossing at driveway entrances.	

Signed... *Richard Miles*
Design Team Leader

Date.....06/04/2020.....

Signed... *Norman Bruton*
Audit Team Leader

Date.....6/4/2020.....

Signed... *Susan McClafferty*
Employer

Date.....^{25/1/2020}.....

D. Irish Water – Statement of Design Acceptance

Robert Walpole
Block S, EastPoint Business Park
Alfie Byrne Road
East Wall
Dublin 3
D03H3F4

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Irish Water
PO Box 448,
South City
Delivery Office,
Cork City.

www.water.ie

20 December 2021

**Re: Design Submission for Oldtown, Swords, Dublin (the “Development”)
(the “Design Submission”) / Connection Reference No: CDS21001700**

Dear Robert Walpole,

Many thanks for your recent Design Submission.

We have reviewed your proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined in Appendix A to this letter, Irish Water has no objection to your proposals.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Irish Water infrastructure. Before you can connect to our network you must sign a connection agreement with Irish Water. This can be applied for by completing the connection application form at www.water.ie/connections. Irish Water’s current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities (CRU)(https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/).

You the Customer (including any designers/contractors or other related parties appointed by you) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Irish Water’s network(s) (the “**Self-Lay Works**”), as reflected in your Design Submission. Acceptance of the Design Submission by Irish Water does not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.

If you have any further questions, please contact your Irish Water representative:

Name: Dario Alvarez

Email: dalvarez@water.ie

Yours sincerely,



Yvonne Harris
Head of Customer Operations

Appendix A

Document Title & Revision

- [17-144-P1201]
- [17-144-P1202]
- [17-144-P1203]
- [17-144-P1301]
- [17-144-P1302]
- [17-144-P1303]
- [17-144 Foul Long Section (Foul 1)]
- [17-144 Foul Long Section (Foul 2)]
- [17-144 Foul Long Section (Foul 3)]

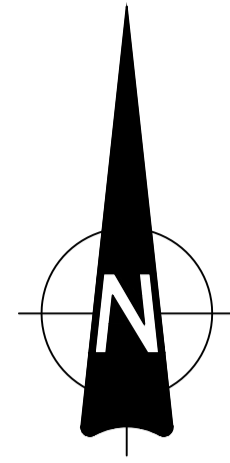
Standard Details/Code of Practice Exemption:

While Irish Water notes that the apartment block wastewater collector infrastructure will remain private and not be vested, we have the following comments:

- *It is recommended that the apartment block wastewater collectors should be located 3m distance from the apartment block.*

For further information, visit www.water.ie/connections

Notwithstanding any matters listed above, the Customer (including any appointed designers/contractors, etc.) is entirely responsible for the design and construction of the Self-Lay Works. Acceptance of the Design Submission by Irish Water will not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.



PROVISION MADE FOR PEDESTRIAN ACCESS TO REGIONAL PARK TO BE CO-ORDINATED WITH FCC PARK MASTERPLAN

CLASS 1 OPEN SPACE ATTRIBUTED TO PERMITTED DEVELOPMENT

490SQM OF LINEAR OPEN SPACE WITHIN REDLINE TO BE CONTIGUOUS WITH REGIONAL PARK

NOTES:

1. ALL INDIVIDUAL PRIVATE FOUL WATER DRAINS TO BE 100mm PIPES, MIN AT 1/60, MAX AT 1/30. ALL COLLECTOR FOUL WATER DRAINS TO BE 150mm PIPES.
2. APARTMENT BLOCK COLLECTOR DRAINAGE TO BE PRIVATELY MANAGED AND INSTALLED TO THE REQUIREMENTS OF BUILDING REGULATIONS. IE NOT IRISH WATER RESPONSIBILITY
3. SERVICE CONNECTIONS TO PER STANDARD DETAIL STD-WW-02 AND STD-WW-03.
4. CONCRETE SURROUND TO BE INSTALLED TO IW REQUIREMENTS WHERE DEPTH OF COVER OF 1.2M CANNOT BE ACHIEVED.
5. PIPE MATERIAL SPECIFICATION AS PER NOTES ON GENERAL ARRANGEMENT DRAWING NO. P1200.

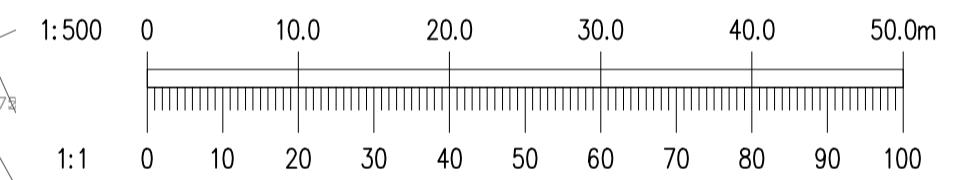
NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND

EX XXX@ 1/XXX	EXISTING SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
EX XXX@ 1/XXX	EXISTING FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
XXX@ 1/XXX	PROPOSED FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
[Red square symbol]	PROPOSED INSPECTION CHAMBER
XXX@ 1/XXX	PROPOSED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
XXX@ 1/XXX	PROPOSED PERFORATED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
G [Symbol]	PROPOSED GULLY AND 150mm GULLY PIPE, DOUBLE GULLY AT LOW POINTS
[Hatched box symbol]	PERMEABLE PAVING
[Green circle symbol]	PROPOSED BIO-RETENTION TREE PIT

KEY PLAN



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REV.	DATE	AMENDMENT	DRN	APPD

STATUS **PLANNING**

Waterman Moylan
Engineering Consultants
BLOCK 5, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD, DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900
Email: info@waterman-moylan.ie www.waterman-moylan.ie

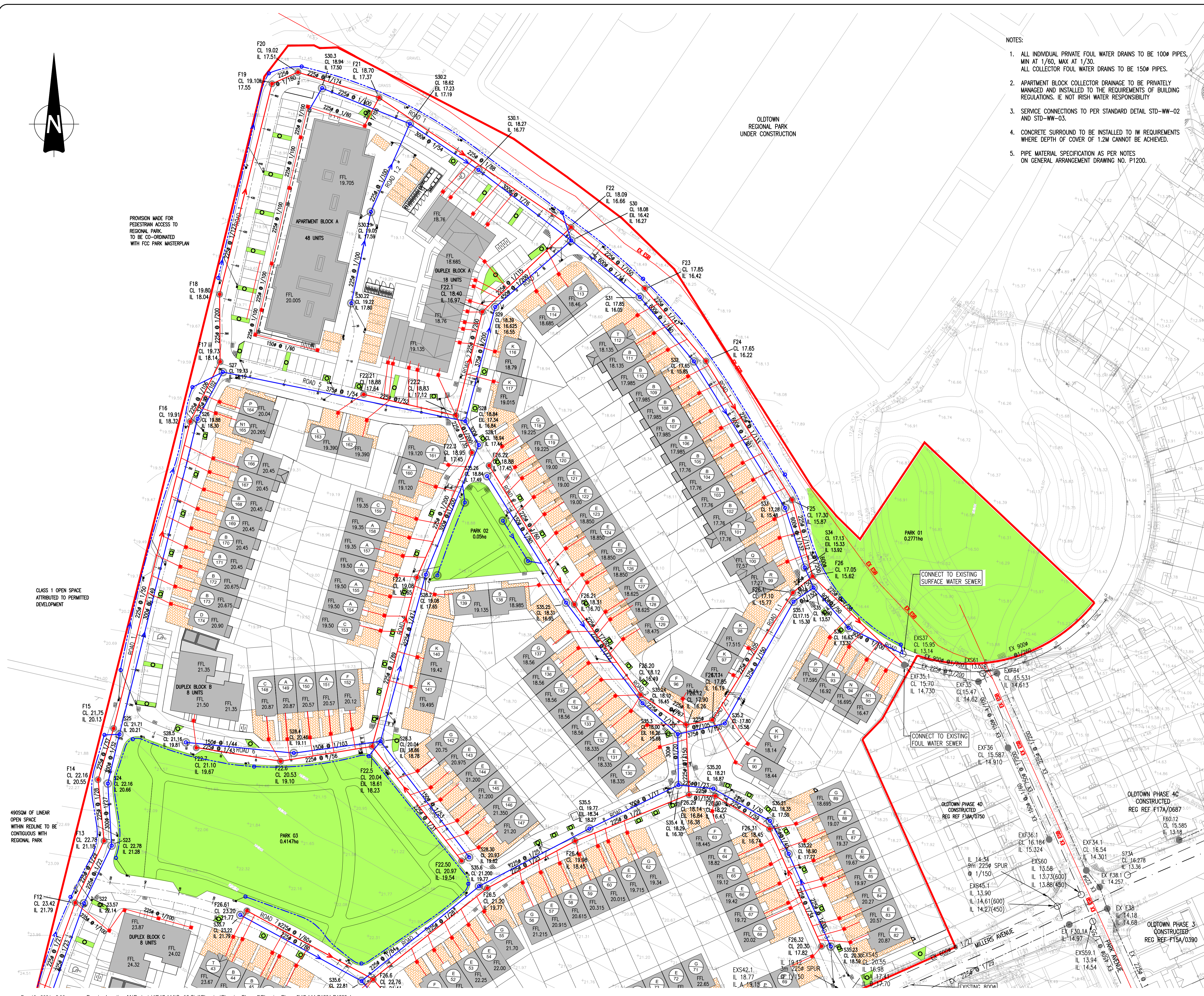
CLIENT **GANNON PROPERTIES**
ARCHITECT **CONROY CROWE KELLY ARCHITECTS**

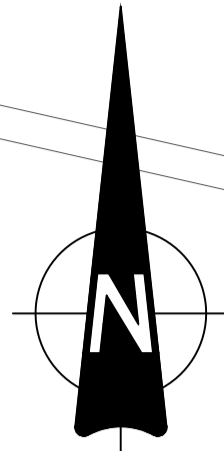
PROJECT **PHASE 5, MIXED USED DEVELOPMENT, OLDTOWN, SWORDS**

TITLE **DRAINAGE LAYOUT SHEET 1 OF 3**

DRAWN MS	DESIGNED MD	APPROVED MD	DATE APR 2020
SCALE 1:500 @ A1	JOB NO. 17-144	DRG. NO. P1201	REVISION

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CLASS 1 OPEN SPACE
ATTRIBUTED TO PERMITTED
DEVELOPMENT

AREAS OF LINEAR
OPEN SPACE
WITHIN REDLINE TO BE
CONTIGUOUS WITH
REGIONAL PARK

PROVISION MADE FOR
PEDESTRIAN ACCESS TO
REGIONAL PARK.
TO BE CO-ORDINATED
WITH FCC PARK MASTERPLAN

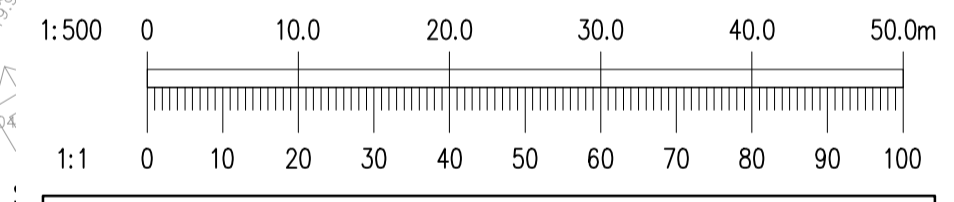
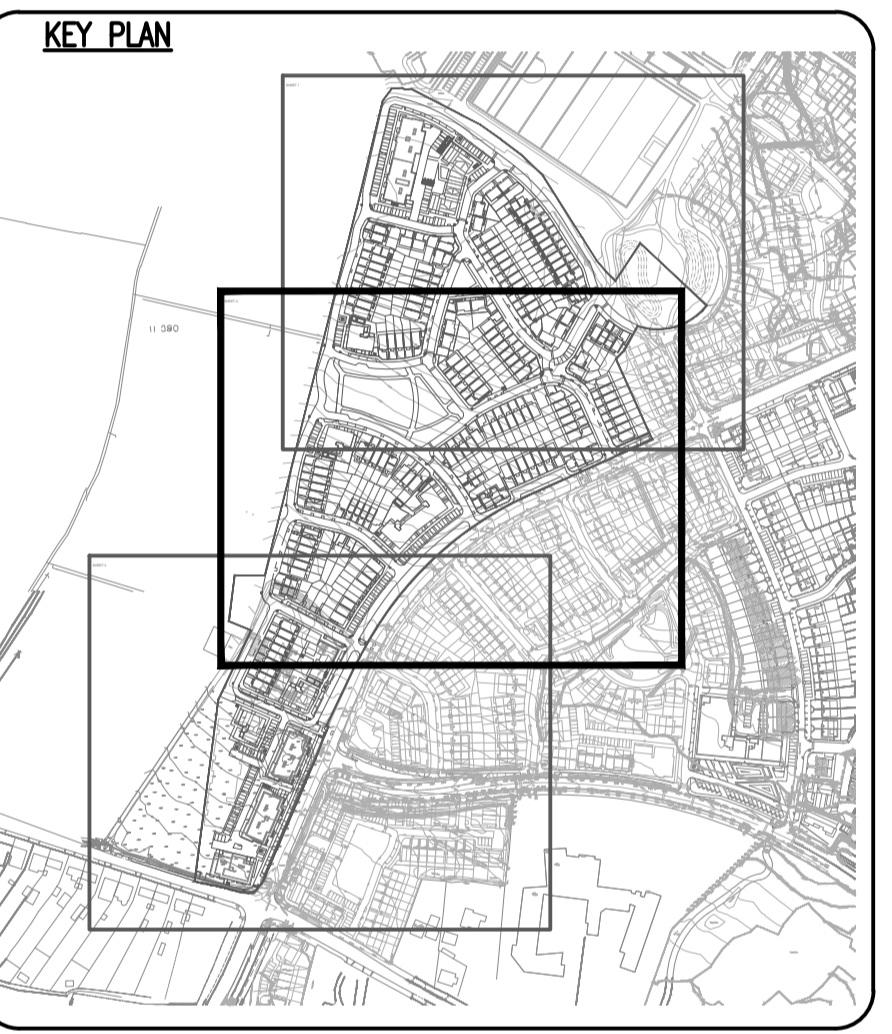
'LINEAR' OPEN SPACE
WITHIN REDLINE TO BE
CONTIGUOUS WITH
REGIONAL PARK

OPEN SPACE CONTIGUOUS
TO REGIONAL PARK
REGIONAL PARK 01
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- NOTES:
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND

- EX XXX@ 1/XXX CL X IL X EXISTING SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- EX XXX@ 1/XXX CL X IL X EXISTING FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- XXX@ 1/XXX CL X IL X PROPOSED FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- PROPOSED INSPECTION CHAMBER
- XXX@ 1/XXX CL X IL X PROPOSED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- XXX@ 1/XXX CL X IL X PROPOSED PERFORATED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- G --- PROPOSED GULLY AND 150Ø GULLY PIPE, DOUBLE GULLY AT LOW POINTS
- PERMEABLE PAVING
- PROPOSED BIO-RETENTION TREE PIT



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REV.	DATE	AMENDMENT	DRN	APPD

STATUS **PLANNING**

Waterman Moylan
Engineering Consultants

BLOCK 5, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD,
DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900
Email: info@waterman-moylan.ie www.waterman-moylan.ie

CLIENT **GANNON PROPERTIES**

ARCHITECT **CONROY CROWE KELLY ARCHITECTS**

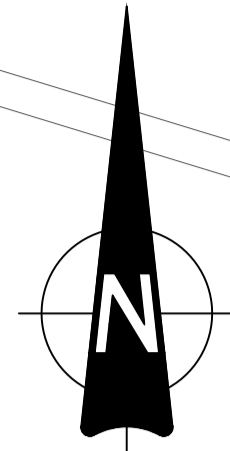
PROJECT **PHASE 5, MIXED USED DEVELOPMENT, OLDTOWN, SWORDS**

TITLE **DRAINAGE LAYOUT SHEET 2 OF 3**

DRAWN	DESIGNED	APPROVED	DATE
MS	MD	MD	APR 2020

SCALE	JOB NO.	DRG. NO.	REVISION
1:500 @ A1	17-144	P1202	

- NOTES:
- ALL INDIVIDUAL PRIVATE FOUL WATER DRAINS TO BE 100Ø PIPES, MIN AT 1/60, MAX AT 1/30. ALL COLLECTOR FOUL WATER DRAINS TO BE 150Ø PIPES.
 - APARTMENT BLOCK COLLECTOR DRAINAGE TO BE PRIVATELY MANAGED AND INSTALLED TO THE REQUIREMENTS OF BUILDING REGULATIONS. IE NOT IRISH WATER RESPONSIBILITY
 - SERVICE CONNECTIONS TO PER STANDARD DETAIL STD-WW-02 AND STD-WW-03.
 - CONCRETE SURROUND TO BE INSTALLED TO IW REQUIREMENTS WHERE DEPTH OF COVER OF 1.2M CANNOT BE ACHIEVED.
 - PIPE MATERIAL SPECIFICATION AS PER NOTES ON GENERAL ARRANGEMENT DRAWING NO. P1200.

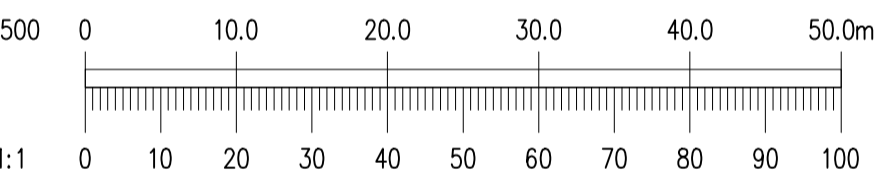


- NOTES:
1. ALL INDIVIDUAL PRIVATE FOUL WATER DRAINS TO BE 100mm PIPES, MIN AT 1/60, MAX AT 1/30. ALL COLLECTOR FOUL WATER DRAINS TO BE 150mm PIPES.
 2. APARTMENT BLOCK COLLECTOR DRAINAGE TO BE PRIVATELY MANAGED AND INSTALLED TO THE REQUIREMENTS OF BUILDING REGULATIONS. IE NOT IRISH WATER RESPONSIBILITY
 3. SERVICE CONNECTIONS TO PER STANDARD DETAIL STD-WW-02 AND STD-WW-03.
 4. CONCRETE SURROUND TO BE INSTALLED TO IW REQUIREMENTS WHERE DEPTH OF COVER OF 1.2M CANNOT BE ACHIEVED.
 5. PIPE MATERIAL SPECIFICATION AS PER NOTES ON GENERAL ARRANGEMENT DRAWING NO. P1200.

- NOTES:
1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND

- EX XXX @ 1/XXX (circle) EXSX EXISTING SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- EX XXX @ 1/XXX (circle) EXFX EXISTING FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- XXX @ 1/XXX (circle) FX PROPOSED FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- XXX @ 1/XXX (square) PROPOSED INSPECTION CHAMBER
- XXX @ 1/XXX (circle) SX PROPOSED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- XXX @ 1/XXX (circle) SX PROPOSED PERFORATED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
- G --- PROPOSED GULLY AND 150mm GULLY PIPE, DOUBLE GULLY AT LOW POINTS
- [Hatched Box] PERMEABLE PAVING
- [Green Circle] PROPOSED BIO-RETENTION TREE PIT



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REV. DATE	AMENDMENT	DRN	APPD

STATUS **PLANNING**

Waterman Moylan
Engineering Consultants

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Email: info@waterman-moylan.ie www.waterman-moylan.ie

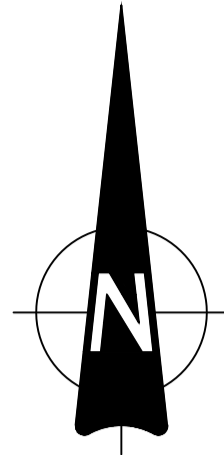
CLIENT **GANNON PROPERTIES**
ARCHITECT **CONROY CROWE KELLY ARCHITECTS**

PROJECT **PHASE 5, MIXED USED DEVELOPMENT, OLDTOWN, SWARDS**

TITLE **DRAINAGE LAYOUT SHEET 3 OF 3**

DRAWN MS	DESIGNED MD	APPROVED MD	DATE APR 2020

SCALE 1:500 @ A1	JOB NO. 17-144	DRG. NO. P1203	REVISION



BULK FLOW METER IN ACCORDANCE WITH STD-W-26A

SCOUR VALVE AND WASHOUT HYDRANT INCLUDING THRUST BLOCK REQUIREMENTS, TO IRISH WATER STD-W-30A.

OLDTOWN REGIONAL PARK UNDER CONSTRUCTION

PROVISION MADE FOR PEDESTRIAN ACCESS TO REGIONAL PARK, TO BE CO-ORDINATED WITH FCC PARK MASTERPLAN

CLASS 1 OPEN SPACE ATTRIBUTED TO PERMITTED DEVELOPMENT

490SQM OF LINEAR OPEN SPACE WITHIN REDLINE TO BE CONTIGUOUS WITH REGIONAL PARK

NOTES:

- PIPE MATERIAL SPECIFICATION AS PER NOTES ON GENERAL ARRANGEMENT DRAWING NO. P1300.
- METERS FOR APARTMENT BLOCKS OR SIMILAR WILL BE INSTALLED INTERNALLY WITHIN THE PREMISES IN ACCORDANCE WITH THE BUILDING CONTROL AUTHORITY REQUIREMENTS AND SUBJECT TO IRISH WATER REVIEW.
- AIR VALVE AND HYDRANT COVERS, WHERE LOCATED IN GRASS AREAS, SHALL BE SURROUNDED BY A CONCRETE PLINTH, 200MM ALL ROUND AND 100MM DEEP, FORMED WITH C20/25 CONCRETE, 20MM AGGREGATE SIZE, AND BEDDED IN CLAUSE 804 MATERIAL. THE PLINTH SHALL INCORPORATE MILD STEEL REINFORCEMENT LINKS AND SHALL HAVE A BULL-NOSE FINISH AROUND ITS EXTERNAL PERIMETER. SEE SECTION 3.18 OF WATER CODE OF PRACTICE.
- FOR APARTMENT BLOCKS, AN ISOLATION DEVICE SHALL BE PROVIDED USING A CONNECTION VIA AN UNRESTRICTED AIR-GAP DEVICE (AA TYPE DEVICE, IS EN 1717) TO PREVENT BACKFLOW FROM THE INTERNAL WATER DISTRIBUTION SYSTEM TO IRISH WATER'S NETWORK TO PREVENT THE RISK OF BACKFLOW CONTAMINATION. SEE SECTION 3.13 OF THE WATER CODE OF PRACTICE.

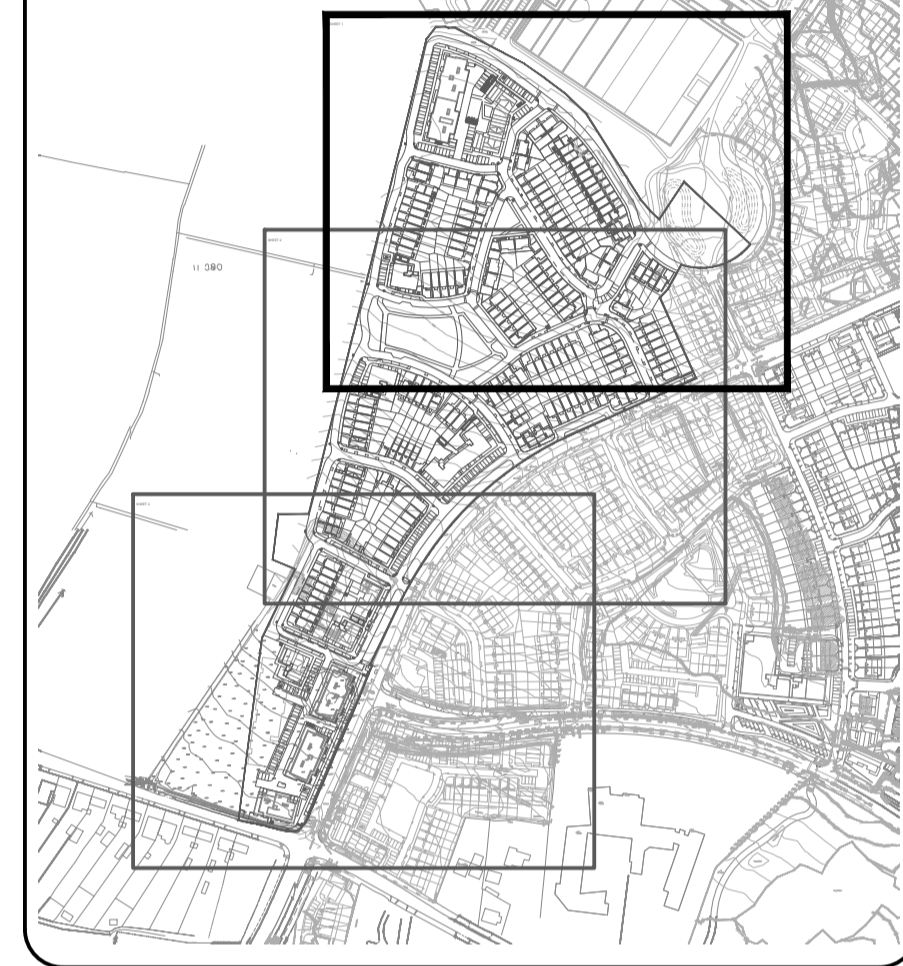
NOTES:

- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND

- XXXmm ϕ PROPOSED HDPE WATERMAIN WITH PIPE SIZE
- SV PROPOSED SLUICE VALVE
- H PROPOSED HYDRANT
- AV PROPOSED AIRVALVE
- ScV PROPOSED SCOUR VALVE
- PROPOSED BOUNDARY BOX AND CONNECTION
- XXXmm ϕ EXISTING WATERMAIN WITH PIPE SIZE

KEY PLAN



1:500 0 10.0 20.0 30.0 40.0 50.0m

1:1 0 10 20 30 40 50 60 70 80 90 100

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REV. DATE AMENDMENT DRN APPD

STATUS **PLANNING**

Waterman Moylan Engineering Consultants

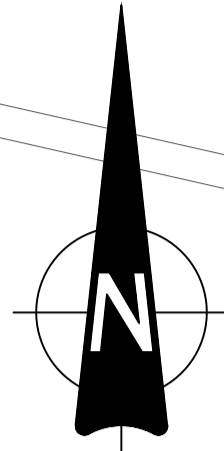
BLOCK 5, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD, DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900 Email: info@waterman-moylan.ie www.waterman-moylan.ie

CLIENT **GANNON PROPERTIES**
ARCHITECT **CONROY CROWE KELLY ARCHITECTS**

PROJECT **PHASE 5, MIXED USED DEVELOPMENT, OLDTOWN, SWORDS**

TITLE **WATERMAIN LAYOUT SHEET 1 OF 3**

DRAWN MS	DESIGNED MD	APPROVED MD	DATE APR 2020
SCALE 1:500 @ A1	JOB NO. 17-144	DRG. NO. P1301	REVISION



CLASS 1 OPEN SPACE
ATTRIBUTED TO PERMITTED
DEVELOPMENT

490SQM OF LINEAR
OPEN SPACE
WITHIN REDLINE TO BE
CONTIGUOUS WITH
REGIONAL PARK

PROVISION MADE FOR
PEDESTRIAN ACCESS TO
REGIONAL PARK.
TO BE CO-ORDINATED
WITH FCC PARK MASTERPLAN

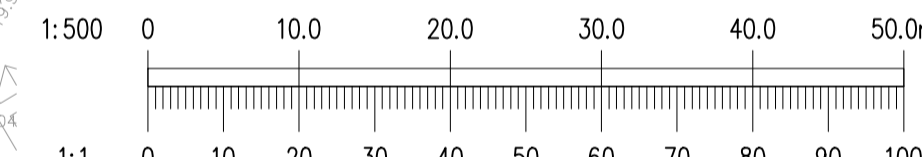
'LINEAR' OPEN SPACE
WITHIN REDLINE TO BE
CONTIGUOUS WITH
REGIONAL PARK

OPEN SPACE CONTIGUOUS
TO REGIONAL PARK
REGIONAL PARK 01
0.0774 HA

- NOTES:
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND

XXXmm ϕ	PROPOSED HDPE WATERMAIN WITH PIPE SIZE
SV	PROPOSED SLUICE VALVE
H	PROPOSED HYDRANT
AV	PROPOSED AIRVALVE
ScV	PROPOSED SOURCE VALVE
--- ϕ ---	PROPOSED BOUNDARY BOX AND CONNECTION
--- ϕ ---	EXISTING WATERMAIN WITH PIPE SIZE



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REV.	DATE	AMENDMENT	DRN	APPD

STATUS **PLANNING**

Waterman Moylan
Engineering Consultants

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DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900
Email: info@waterman-moylan.ie www.waterman-moylan.ie

CLIENT **GANNON PROPERTIES**

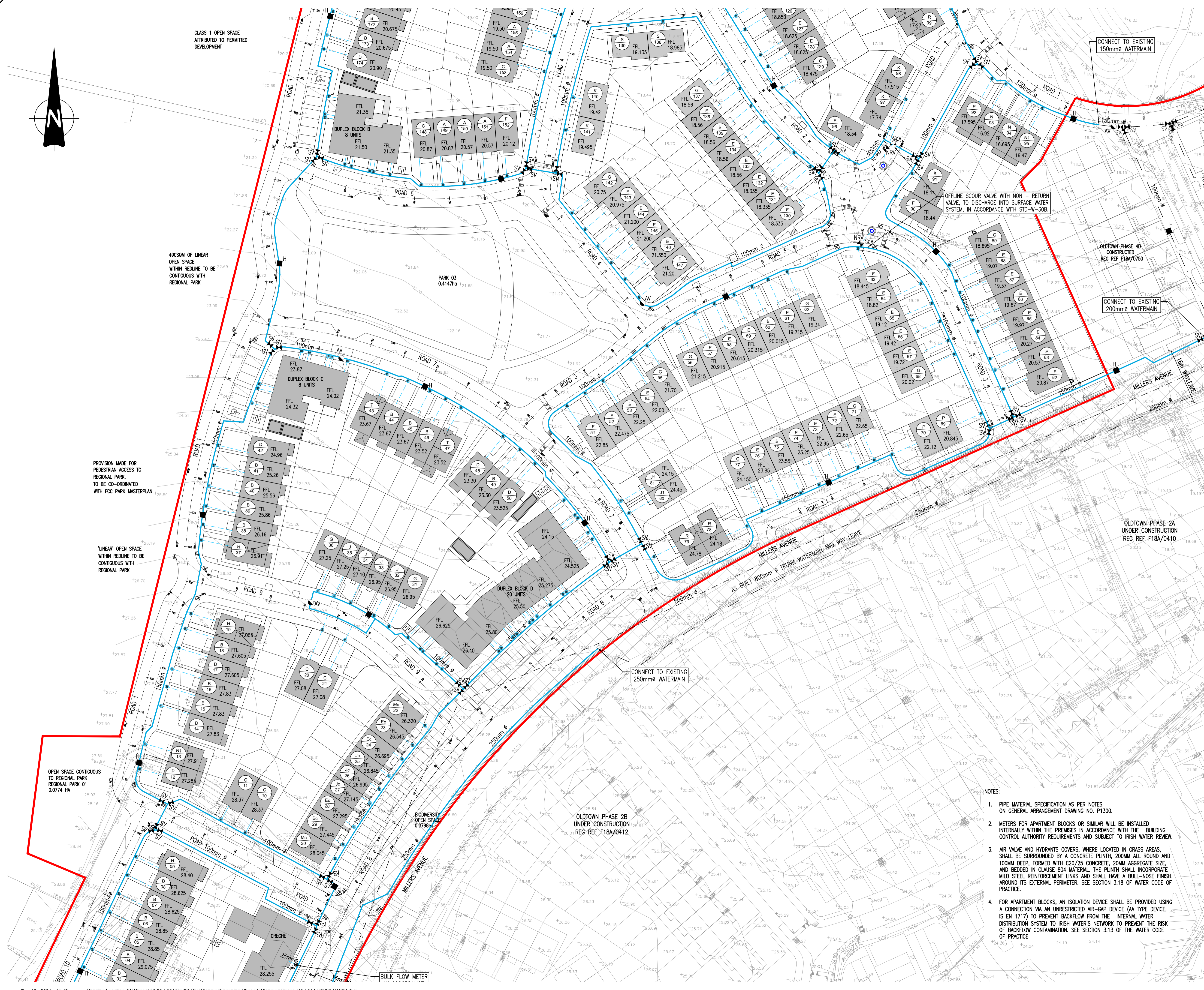
ARCHITECT **CONROY CROWE KELLY ARCHITECTS**

PROJECT **PHASE 5, MIXED USED DEVELOPMENT, OLDTOWN, SWORDS**

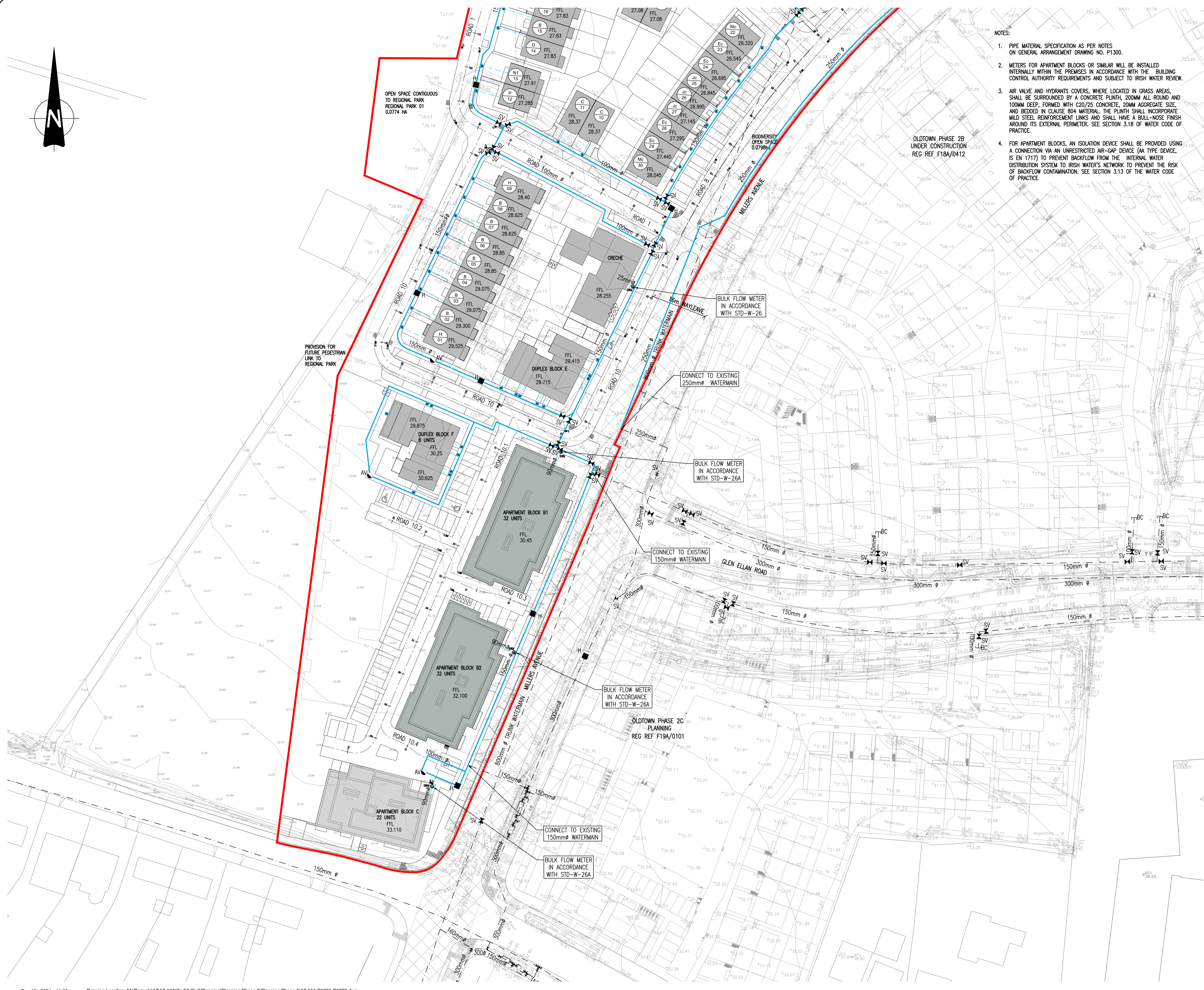
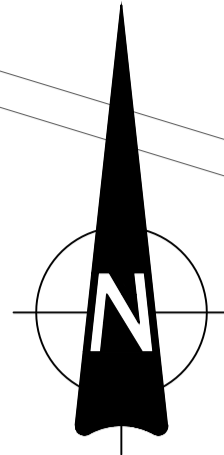
TITLE **WATERMAIN LAYOUT SHEET 2 OF 3**

DRAWN MS	DESIGNED MD	APPROVED MD	DATE APR 2020
SCALE 1:500 @ A1	JOB NO. 17-144	DRG. NO. P1302	REVISION

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- NOTES:
- PIPE MATERIAL SPECIFICATION AS PER NOTES ON GENERAL ARRANGEMENT DRAWING NO. P1300.
 - METERS FOR APARTMENT BLOCKS OR SIMILAR WILL BE INSTALLED INTERNALLY WITHIN THE PREMISES IN ACCORDANCE WITH THE BUILDING CONTROL AUTHORITY REQUIREMENTS AND SUBJECT TO IRISH WATER REVIEW.
 - AIR VALVE AND HYDRANTS COVERS, WHERE LOCATED IN GRASS AREAS, SHALL BE SURROUNDED BY A CONCRETE PLINTH, 200MM ALL ROUND AND 100MM DEEP, FORMED WITH C20/25 CONCRETE, 20MM AGGREGATE SIZE, AND BEDDED IN CLAUSE 804 MATERIAL. THE PLINTH SHALL INCORPORATE MILD STEEL REINFORCEMENT LINKS AND SHALL HAVE A BULL-NOSE FINISH AROUND ITS EXTERNAL PERIMETER. SEE SECTION 3.18 OF WATER CODE OF PRACTICE.
 - FOR APARTMENT BLOCKS, AN ISOLATION DEVICE SHALL BE PROVIDED USING A CONNECTION VIA AN UNRESTRICTED AIR-GAP DEVICE (AA TYPE DEVICE, IS EN 1717) TO PREVENT BACKFLOW FROM THE INTERNAL WATER DISTRIBUTION SYSTEM TO IRISH WATER'S NETWORK TO PREVENT THE RISK OF BACKFLOW CONTAMINATION. SEE SECTION 3.13 OF THE WATER CODE OF PRACTICE.



NOTES:

- PIPE MATERIAL SPECIFICATION AS PER NOTES ON GENERAL ARRANGEMENT DRAWING NO. P1300.
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NOTES:

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LEGEND

XXXmm ϕ	PROPOSED HDPE WATERMAIN WITH PIPE SIZE
SV	PROPOSED SLUICE VALVE
H	PROPOSED HYDRANT
AV	PROPOSED AIRVALVE
ScV	PROPOSED SCOURCE VALVE
--- ϕ ---	PROPOSED BOUNDARY BOX AND CONNECTION
--- ϕ ---	EXISTING WATERMAIN WITH PIPE SIZE

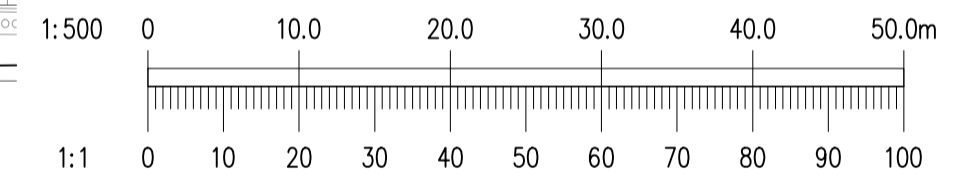
KEY PLAN



NOTE:

PIPE MATERIAL SPECIFICATION AS PER NOTES ON GENERAL ARRANGEMENT DRAWING NO. P1300.

METERS FOR APARTMENT BLOCKS OR SIMILAR WILL BE INSTALLED INTERNALLY WITHIN THE PREMISES IN ACCORDANCE WITH THE BUILDING CONTROL AUTHORITY REQUIREMENTS AND SUBJECT TO IRISH WATER REVIEW.



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REV.	DATE	AMENDMENT	DRN	APPD

STATUS **PLANNING**

Waterman Moylan
Engineering Consultants

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Email: info@waterman-moylan.ie www.waterman-moylan.ie

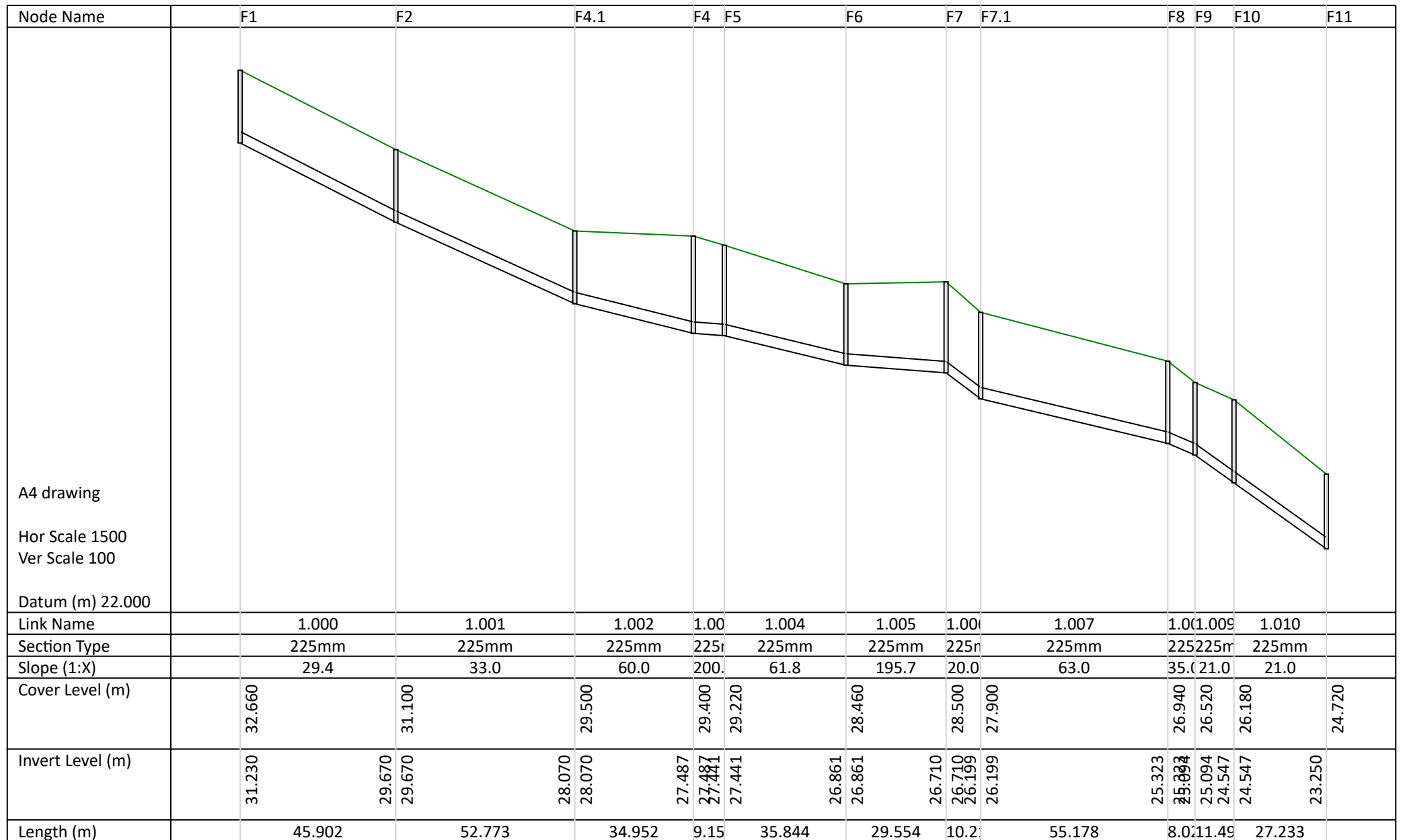
CLIENT **GANNON PROPERTIES**

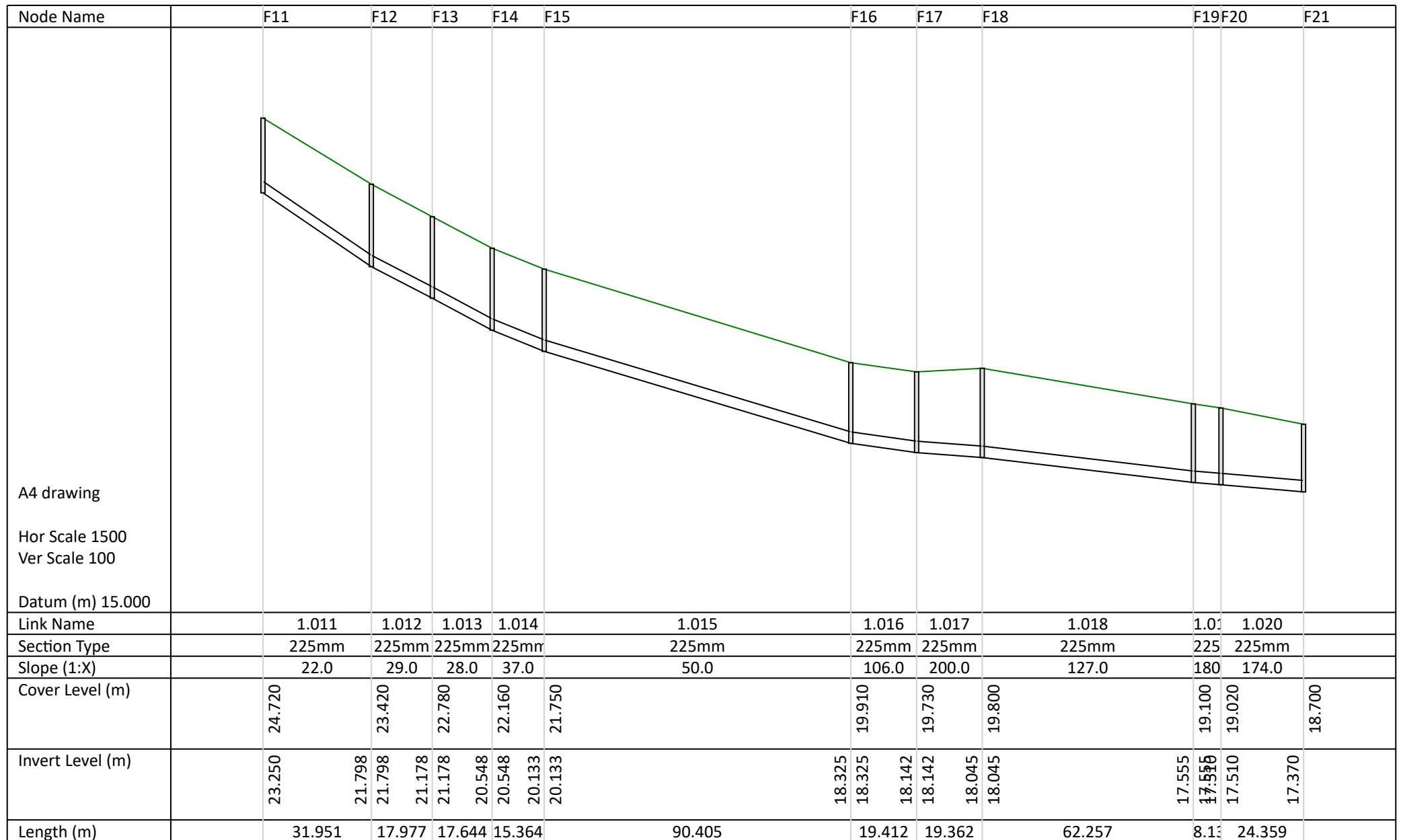
ARCHITECT **CONROY CROWE KELLY ARCHITECTS**

PROJECT **PHASE 5, MIXED USED DEVELOPMENT, OLDTOWN, SWORDS**

TITLE **WATERMAIN LAYOUT SHEET 3 OF 3**

DRAWN MS	DESIGNED MD	APPROVED MD	DATE APR 2020
SCALE 1:500 @ A1	JOB NO. 17-144	DRG. NO. P1303	REVISION

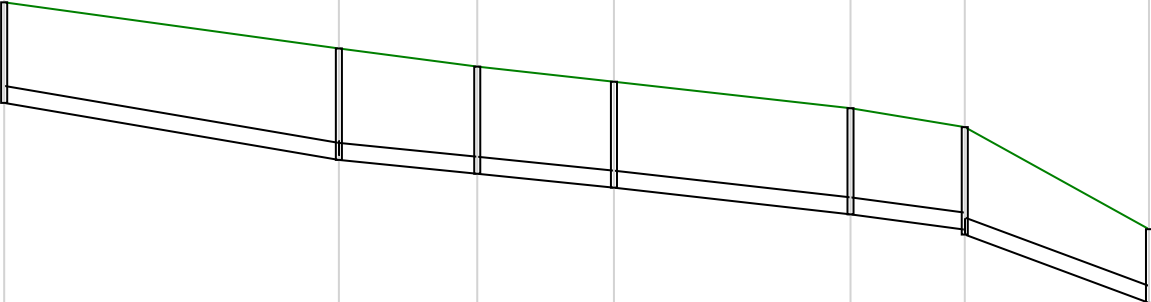


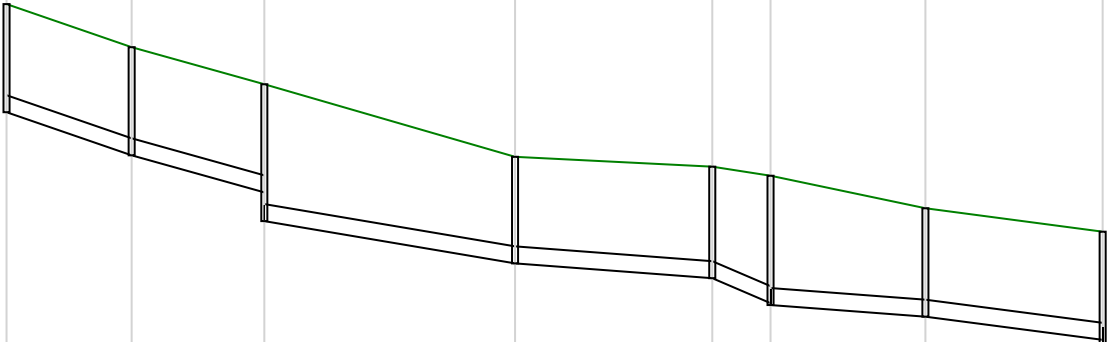


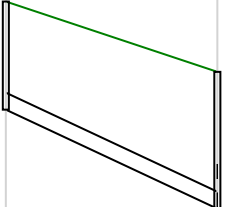
A4 drawing

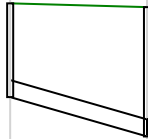
Hor Scale 1500
 Ver Scale 100

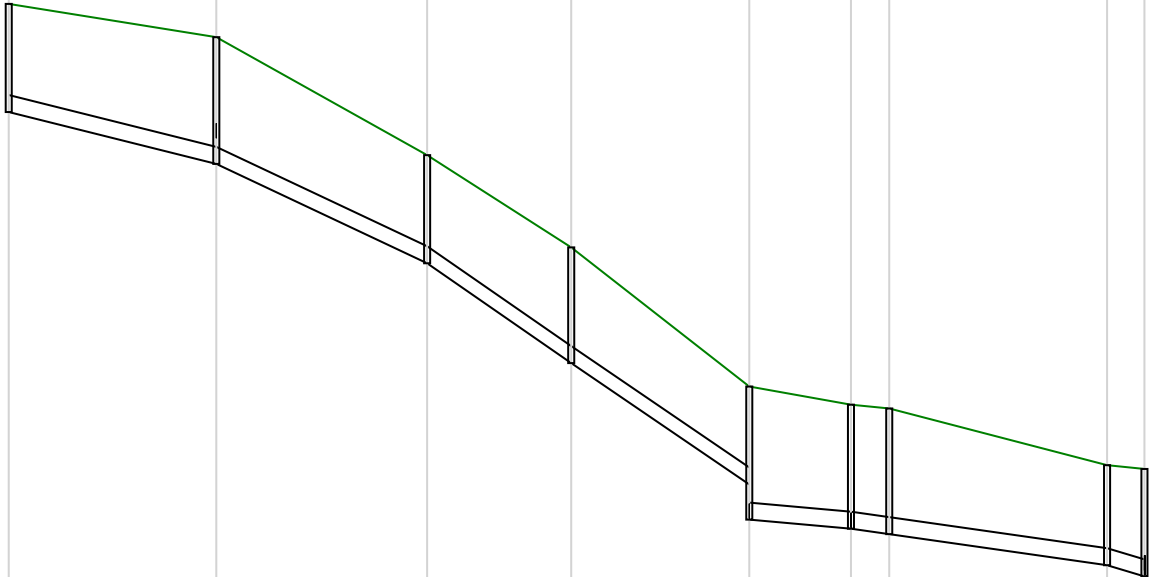
Datum (m) 15.000

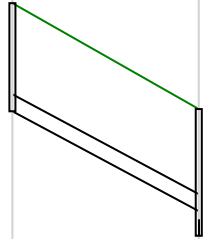
Node Name	F21	F22	F23	F24	F25	F26	EXF35.1		
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 11.000									
	Link Name	1.021		1.022	1.023	1.024		1.025	1.026
	Section Type	225mm		225mm	225mm	225mm		225mm	225mm
	Slope (1:X)	88.0		150.0	147.0	133.0		112.0	40.4
	Cover Level (m)	18.700	18.090	17.850	17.650	17.300	17.050	15.700	
	Invert Level (m)	17.370	16.616 16.616	16.433 16.433	16.249 16.249	15.896 15.896	15.694 15.629	14.725	
	Length (m)	66.389		27.446	27.115	46.920		22.665	36.542

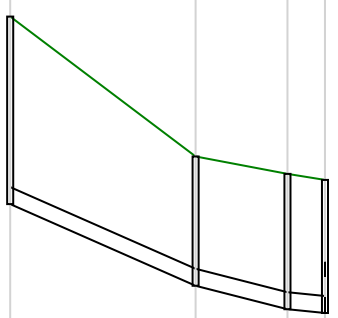
Node Name	F22.7	F22.6	F22.5	F22.4	F22.3	F22.2	F22.1	F22
								
A4 drawing								
Hor Scale 1500								
Ver Scale 100								
Datum (m) 13.000								
Link Name	2.000	2.001	2.002	2.003	2.004	2.005	2.006	
Section Type	225mm	225mm	225mm	225mm	225m	225mm	225mm	
Slope (1:X)	43.5	53.7	89.0	200.0	35.0	200.0	114.9	
Cover Level (m)	21.100	20.530	20.040	19.080	18.950	18.830	18.400	18.090
Invert Level (m)	19.670	19.100	18.610	17.671	17.475	17.120	16.966	16.660
Length (m)	24.818	26.316	49.734	39.118	11.55	30.720	35.155	

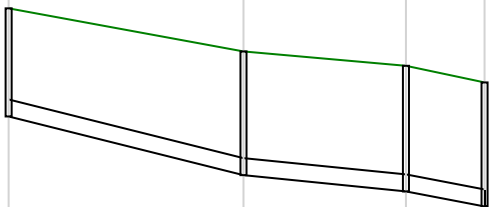
Node Name	F22.50	F22.5
<p>A4 drawing</p> <p>Hor Scale 1500</p> <p>Ver Scale 100</p> <p>Datum (m) 14.000</p>		
Link Name	3.000	
Section Type	225mm	
Slope (1:X)	32.0	
Cover Level (m)	20.970	20.040
Invert Level (m)	19.540	18.230
Length (m)	41.956	

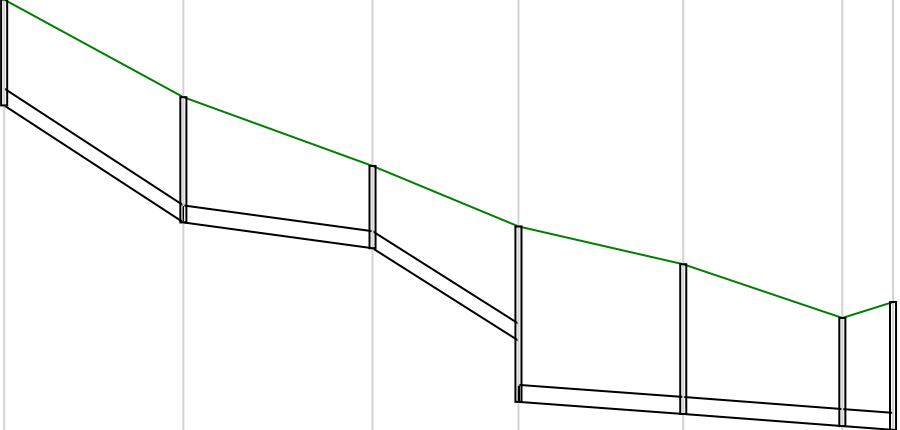
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Link Name	4.000	
Section Type	225mm	
Slope (1:X)	52.2	
Cover Level (m)	18.880	18.830
Invert Level (m)	17.640	17.120
Length (m)	27.136	

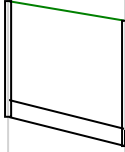
Node Name	F26.61	F26.6	F26.5	F26.4	F26.29	F26F25.11	F26F26
A4 drawing							
Hor Scale 1500							
Ver Scale 100							
Datum (m) 14.000							
Link Name	5.000	5.001	5.002	5.003	5.004	5.005	5.006
Section Type	225mm	225mm	225mm	225mm	225mm	225	225mm
Slope (1:X)	60.0	31.8	21.7	22.0	168.1	105	105.0
Cover Level (m)	23.200	22.760	21.200	19.980	18.140	17.900	17.850
Invert Level (m)	21.770	21.084	19.770	18.450	16.845	16.260	15.670
Length (m)	41.173	41.817	28.581	35.319	20.171	7.5	43.206

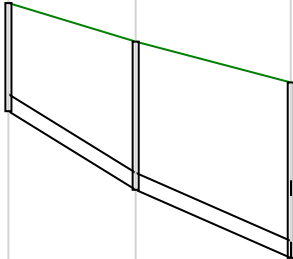
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Link Name	6.000	
Section Type	225mm	
Slope (1:X)	28.0	
Cover Level (m)	24.160	22.760
Invert Level (m)	22.730	21.410
Length (m)	36.964	

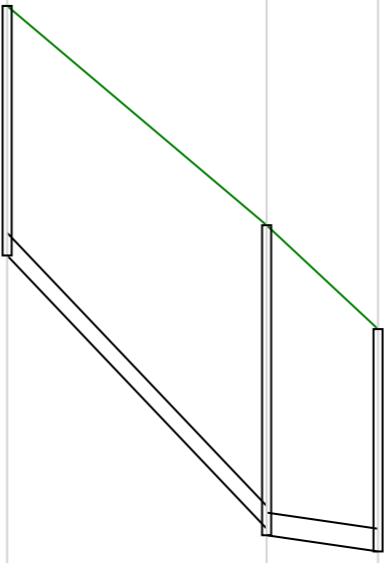
Node Name	F26.32	F26.31	F26.30	F26.29
<p>A4 drawing</p> <p>Hor Scale 1500</p> <p>Ver Scale 100</p> <p>Datum (m) 13.000</p>				
Link Name	7.000	7.001	7.002	7.003
Section Type	225mm	225mm	225mm	225mm
Slope (1:X)	34.1	58.8	150	150
Cover Level (m)	20.300	18.450	18.220	18.140
Invert Level (m)	17.820	16.740	16.430	16.430
Length (m)	36.775	18.222	7.4	

Node Name	F26.22	F26.21	F26.20	F26.12
				
A4 drawing				
Hor Scale 1500				
Ver Scale 100				
Datum (m) 12.000				
Link Name	8.000	8.001	8.002	
Section Type	225mm	225mm	225mm	
Slope (1:X)	60.0	150.0	78.4	
Cover Level (m)	18.880	18.310	18.120	17.900
Invert Level (m)	17.450	16.674	16.459	16.260
Length (m)	46.586	32.221	15.593	

Node Name	F29	F30	F31	F32	F33	F34	F35
							
A4 drawing							
Hor Scale 1500							
Ver Scale 100							
Datum (m) 20.000							
Link Name	1.000	1.001	1.002	1.003	1.004	1.005	
Section Type	225mm	225mm	225mm	225mm	225mm	225mm	
Slope (1:X)	23.0	110.0	23.7	204.3	197.2	200.0	
Cover Level (m)	28.900	27.610	26.700	25.900	25.400	24.690	24.900
Invert Level (m)	27.500	25.954 25.953	25.612 25.612	24.390 23.580	23.420 23.420	23.260 23.260 23.210	
Length (m)	35.548	37.519	28.947	32.687	31.555	10.0	

Node Name	F30.1	F30
<p>A4 drawing</p> <p>Hor Scale 1500 Ver Scale 100</p> <p>Datum (m) 21.000</p>		
Link Name	2.000	
Section Type	225mm	
Slope (1:X)	60.0	
Cover Level (m)	27.870	27.610
Invert Level (m)	26.340	25.953
Length (m)	23.203	

Node Name	F32.2	F32.1	F32
			
A4 drawing			
Hor Scale 1500			
Ver Scale 100			
Datum (m) 20.000			
Link Name	3.000	3.001	
Section Type	225mm	225mm	
Slope (1:X)	24.3	34.2	
Cover Level (m)	26.950	26.440	25.900
Invert Level (m)	25.520	24.480 24.480	23.580
Length (m)	25.242	30.761	

Node Name	F37	F36	Saddle Connection
			
A3 drawing			
Hor Scale 1000			
Ver Scale 50			
Datum (m) 17.000			
Link Name	1.000	1.001	
Section Type	150mm	150mm	
Slope (1:X)	19.0	137.7	
Cover Level (m)	23.550	22.100	21.413
Invert Level (m)	21.900	20.094 20.050 19.943	
Length (m)	34.315	14.731	

E. FCC SuDS Checklist

SUDS/Green Infrastructure selection checklist –To be submitted in planning submission

Suds Measures	Measures to be used on this site	Rationale for selecting/not selecting measure	Checklist submitted? See no. 8 below
Source Control			
Swales			
Tree Pits	✓	Roadside tree pits are to be provided throughout the development. Trees help to attenuate flows, trap silts and pollutants, promote infiltration and prevent erosion.	
Rainwater Butts			
Rainwater harvesting			
Soakaways			
Infiltration trenches			
Permeable pavement (Grasscrete, Block paving, Porous Asphalt etc.)	✓	All private driveways and private parking bays are to be permeable paving with underlying filter drains. Downpipes from the front of the houses will also drain to the filter drain under the permeable paving to facilitate maximum infiltration of surface water from driveways and roof areas. Access road to pumping station to be Grasscrete	
Green Roofs	✓	60% minimum of the roof area of the apartment blocks to be green roof, in line with FCC document: Green/Blue infrastructure for development – Guidance note.	
Filter strips			
Bio-retention systems/Raingardens	✓	Rain gardens are proposed at open spaces around the site. Rain gardens are gardens of native shrubs, perennials, and flowers planted in a small depression, designed to temporarily hold and soak in rainwater runoff that flows from roofs, driveways, patios or lawns.	
Blue Roofs			
Filter Drain	✓	Filter drains are to be incorporated underneath permeable paving utilised on all parking bays to facilitate infiltration of surface water.	
Site Control			
Detention Basins			
Retention's basins			
Regional Control			
Ponds	✓	Attenuation Ponds already constructed as part of the overall Oldtown Development and have been sized to accommodate volumes from the subject Oldtown Planning 5 application.	
Wetlands			
Other			

Petrol/Oil interceptor	✓	Class 1 petrol interceptor have been provided as part of construction of the attenuation ponds of the overall Oldtown development.	
Attenuation tank – only as a last resort where other measures are not feasible			
Oversized pipes– only as a last resort where other measures are not feasible			

Note:

1. Fingal has a preference for above ground Green Infrastructure rather than tanks or oversized pipes. Above ground flows through swales, basins etc are encouraged.
2. Demonstrate SUDS system will have sufficient Pollutant removal efficiency in accordance with Ciria Suds Manual C753
3. Basins sides should be no steeper than 1:4 and no deeper than 1.2m in the 1%AEP
4. Culverting shall be avoided where possible
5. De-culverting is encouraged.
6. Please submit evidence of infiltration rates
7. To account for climate change in the design of the drainage system rainfall intensities should be factored up by 20%
8. The Applicant must provide Suds checklists in accordance with the Appendix B of the Ciria Suds manual C753

Appendix	Name
B3	Full planning
B4	Scheme design
B5	Health and safety
B6	Infiltration assessment
B7	Proprietary treatment
B9	filter strip
B11	filter drain
B13	swale
B15	bioretention
B16	pervious pavement
B17	attenuation tank
B19	basin
B21	pond wetland

F. Go-Car Letter of Intent



Gerard Gannon Properties
Kinvara House
52 Northumberland House
Ballsbridge
Dublin 4

26/01/2022

To Whom It May Concern,

This is a letter to confirm that GoCar intends to provide a service of up to 2no. shared car club vehicles in the proposed Strategic Housing Development (SHD) at Oldtown, Swords, Co. Dublin. GoCar representatives have discussed the project with representatives of Gerard Gannon Properties, who are the developers for this project, and are excited to provide a car sharing service at this location. While it is the intention for these vehicles to be used primarily by the residents of the development, the vehicles will be open for access to other GoCar members nearby.

GoCar is Ireland's leading car sharing service with over 60,000 members and over 860 cars and vans on fleet. Car sharing is a sustainable community service. Each GoCar which is placed in a community has the potential to replace the journeys of up to 15 private vehicles. The Department of Housing's Design Standards for New Apartments - Guidelines for Planning Authorities 2018 outline: "For all types of location, where it is sought to eliminate or reduce car parking provision, it is necessary to ensure... provision is also to be made for alternative mobility solutions including facilities for car sharing club vehicles."

By allowing multiple people to use the same vehicle at different times, car sharing reduces car ownership, car dependency, congestion, noise, and air pollution. It frees up land which would otherwise be used for additional parking spaces. Most GoCar users only use a car when necessary and walk and use public transport more often than car owners.

By having GoCar car sharing vehicles in a development such as this, the residents therein will have access to pay-as-you-go driving, in close proximity to their homes, which will increase usership of the service.

I trust that this information is satisfactory. For any queries, please do not hesitate to contact me.

A handwritten signature in black ink, appearing to read 'Rob Montgomery'.

Rob Montgomery
Revenue and Growth Manager
GoCar Carsharing Ltd
Mobile: 086 609 7096
E: robert.montgomery@gocar.ie

UK and Ireland Office Locations

