

Sustainable Drainage Design Statement

Whitechurch Sports Facility, Dublin

M02138-07_DG01 | August 2026

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1 INTRODUCTION

1.1 Terms of Reference

This Sustainable drainage (SuDS) design statement was commissioned by South Dublin County Council to support a Part 8 planning application for a site located at Glenmore Court, Rathfarnham, Dublin.

The design status is considered suitable for planning submission in adherence with *South Dublin County Council: Sustainable Drainage Explanatory Design and Evaluation Guide 2022*.

1.2 Statement of Authority

McCloy Consulting is an independent environmental and water engineering consultancy specialising in drainage and SuDS design, surface water management plans and flood risk assessment. The practice has extensive experience in design and implementation of surface water management across Ireland.

The key staff members involved in the drainage design and drafting of this report are as follows:

- Iain Black MSc BEng (Hons) *MIEI* – Project Engineer with experience in drainage assessment, drainage design and surface water management

1.3 Approach to the Assessment

This report details the SuDS design associated with the proposals for proposed sports facility for Whitechurch Boxing Club and Wanderers GAA Ballyboden, along with associated works on the undeveloped land north of existing pitches at Glenmore Court, Rathfarnham, Dublin 16.

For the purposes of this study, the following resources have been referred to:

- South Dublin County Council Development Plan (2022 – 2028).
- South Dublin County Council: Sustainable Drainage Explanatory Design and Evaluation Guide 2022.
- South Dublin County Council: A Householders Guide to Sustainable Drainage.
- CIRIA C753: The SuDS Manual

2 DESIGN FOR PLANNING APPLICATION

2.1 Design Drivers

The key aspects driving the design are as detailed in Policy GI4: Sustainable Drainage Systems of South Dublin County Council's Local Development Plans. Summary of SuDS policy is as follows:

Policy GI4: Sustainable Drainage Systems	Require the provision of Sustainable Urban Drainage Systems (SUDS) in the County and maximise the amenity and biodiversity value of these systems.
Objective 1	To limit surface water from new developments through SuDS / nature based solutions.
Objective 2:	To incorporate a SuDS management train which manages surface water in small catchments
Objective 3	Open space provision to include for ecology / sustainable water management
Objective 4	SuDS measures are completed to taking in charge standard.
Objective 5	Promotion of SuDS in greening of urban areas to restrict / delay run-off entering drainage networks
Objective 6	Maintain and enhance existing drainage in the County; promote SuDS to control surface water outfall and protect water quality.

2.2 Proposed SuDS Approach

The development runoff will be collected and stored using an arrangement a vegetated rill (and associated voided storage) and a rain garden. Flow controls will be placed upon the rain garden located at the site access. Due to the relatively flat nature of the site, a single flow control will allow runoff will be attenuated in the SuDS features located at ground level.

The proposed SuDS layout is included in Appendix C.

2.3 Hydraulic Design Calculations

2.3.1 Design parameters

The following was adopted in the analysis of the proposed SuDS elements at the site:

- 100-year return period / 1% AEP event plus climate change allowance of 20%.
- Assumption that roof are 95% effective runoff and hardstanding is 90% effective runoff.

2.3.2 Peak Flow

Hydraulic analysis demonstrates that the use of a 22mm orifice plate will limit flows from the 653m² development to a maximum of 1 Lps for the 100 year +20% climate change rainfall event.

2.4 Pollution Control

The proposed development consists of roofing and pedestrian areas with only occasional trafficking for maintenance purposes and is assessed as low pollution hazard per CIRIA C753 SuDS Manual, Table 26.2. The SuDS manual indicates source hazard indices per Table 2-1.

The proposed SuDS drainage features include use of swale and raingarden

The paved area is at highest risk of pollution and therefore is assessed.

Table 2-1 Pollution Control Hazard and Treatment Indices

Pollutant	Source Hazard Index (Risk score)	Swale (Mitigation score)	Total Mitigation Index >=0 deemed compliant	Compliant?
TSS	+0.5	-0.5	0	Yes
Metals	+0.4	-0.6	-0.2	Yes
Hydrocarbons	+0.4	-0.6	-0.2	Yes

Per CIRIA C753, Table 26.3, the mitigation indices of a swale would exceed the respective pollution hazard indices.

2.5 Amenity and Biodiversity

The design considers the required orientation, aspect, and proximity to other features (such as amenity space for users and site access) and appropriate scale and form to suit the surrounding area, as per the recommendations of The SuDS Manual (CIRIA C753).

The planting list which will inform the planting schedule / plan for the SuDS features is subject to detailed design.

2.6 Maintenance Requirements

The developer is to ensure that maintenance of the drainage system is provided for as part of the overall management plan for the site.

Maintenance plans for drainage features are detailed on the following table.

Table 2-2 Drainage System Maintenance Requirements

Flow Controls, Sub-base, Inspection Chambers, Non-return Valves and Sediment Traps		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly
	Remove debris and sediment from chambers	Monthly for first six months, then quarterly or after significant storm
Remedial actions	Repair/rehabilitate where required	As required
Monitoring	Check all structures to ensure all is in good condition and operating as designed.	Annually
	(Flow control and NRV) check for evidence of blockage	Monthly or after significant storm.

	(Flow control and NRV) check for damage to components	Annually or after significant storm.
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Vegetated Rill		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly, as required
	Cut grass – to retain grass height within specific design range. Manage other vegetation and remove nuisance plants	Monthly, as required
	Inspect inlets, outlets, and overflows for blockages, and clear if required	Monthly
	Inspect filtration surfaces for ponding, compaction, silt accumulation, record areas where water is ponding for > 48 hours	Monthly, as required
	Inspect vegetation coverage	Monthly for 6 months, quarterly for 2 years, then half yearly
	Inspect inlets and facility surface for silt accumulation, establish appropriate silt removal frequencies	Half yearly
Occasional Maintenance	Reseed areas of poor vegetation growth, alter plant types to better suit conditions if required	As required or if bare soil is exposed over 10% or more of the swale treatment area
Remedial Actions	Repair erosion or other damage by re-turfing or re-seeding	As required
	Relevel uneven surfaces and reinstate design level	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of soil surface	As required
	Remove build-up of sediment on upstream gravel trench, flow spreader or top of filter strip	As required
	Remove and dispose of oils or petrol residues using safe standard practices	As required

Rain Garden		
Maintenance Schedule	Required Action	Typical Frequency
Regular inspections	Inspect filtration surfaces for silting / ponding. Record dewatering time and assess standing water levels in any underdrain to determine if maintenance is necessary	Quarterly
	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly
Regular Maintenance	Remove litter, surface debris and weeds	Quarterly
	Replace any plants to maintain density	As required
Occasional Maintenance	Infill any holes / scour in filter medium. Improve erosion protection if required.	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch.	As required
Remedial actions	Remove and replace filter medium and vegetation above	As required but likely to be >20 years.

3 SUMMARY / DEMONSTRATION OF COMPLIANCE

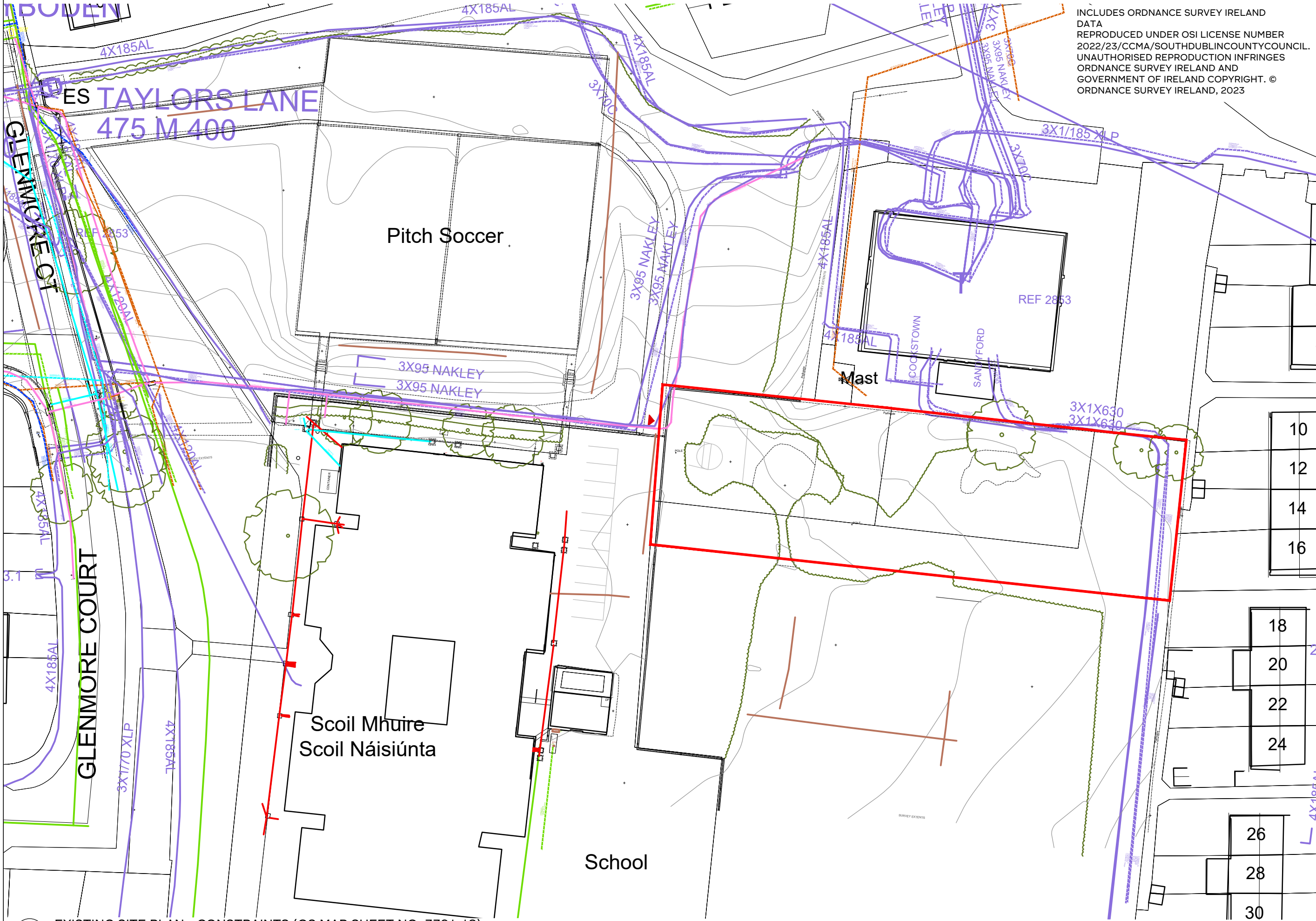
The proposed development is resilient to surface water flooding. Site drainage design shall ensure the site is drained and flood resilient. Drainage design shall be as per the requirements of South Dublin County Council Policy GI4 – Sustainable Drainage Systems.

Table 3-1 Demonstration of Compliance with South Dublin County Council Planning Policy

Policy GI4: SuDS Objectives	Description of Objective	Demonstration of compliance	Complies?
Objective 1	To limit surface water from new developments through SuDS / nature-based solutions.	The proposals involve the use of a raingarden planter and under-drained swale.	✓
Objective 2:	To incorporate a SuDS management train which manages surface water in small catchments	Due to the small scale of development and relatively flat nature of the site, there is requirement for only 1 flow control. Two SuDS features are contained within the sub catchment which are hydraulically linked.	✓
Objective 3	Open space provision to include for ecology / sustainable water management	The raingarden planter shall have planting which encourages pollinators.	✓
Objective 4	SuDS measures are completed to taking in charge standard.	Typical detail has been provided which are generally in accordance with SDCC taking in charge details.	✓
Objective 5	Promotion of SuDS in greening of urban areas to restrict / delay run-off entering drainage networks	The proposals involve the introduction of a raingarden and swale.	✓
Objective 6	Maintain and enhance existing drainage in the County; promote SuDS to control surface water outfall and protect water quality.	Water quality pollution risk for the development is low. Polishing of runoff and removal of residual pollutants will be achieved through the vegetated SuDS features. Runoff will be limited to maximum of 1/s through use of protected small diameter orifice.	✓

Appendix A

Existing and Proposed Site



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WHITECHURCH CLUB SPORTS FACILITY

10
12
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18
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28
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01 EXISTING SITE PLAN - CONSTRAINTS (OS MAP SHEET NO. 3391-18)
02 1:500 (A3)

LEGEND

DEVELOPMENT SITE FOR CONSIDERATION

EXISTING VEGETATION/TREES

ESB

BORD GAIS

DISTRIBUTION PIPE (MEDIUM PRESSURE)

MV/LV (10KV/20KV/400V/230V) UNDERGROUND CABLE ROUTES

VIRGIN MEDIA

VIRGIN MEDIA

EIRCOM

TELECOM SERVICES

IW

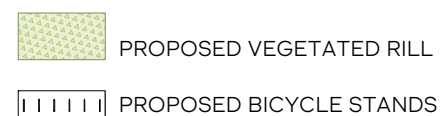
WATER MAINS
SEWER MAINS
STORM MAINS

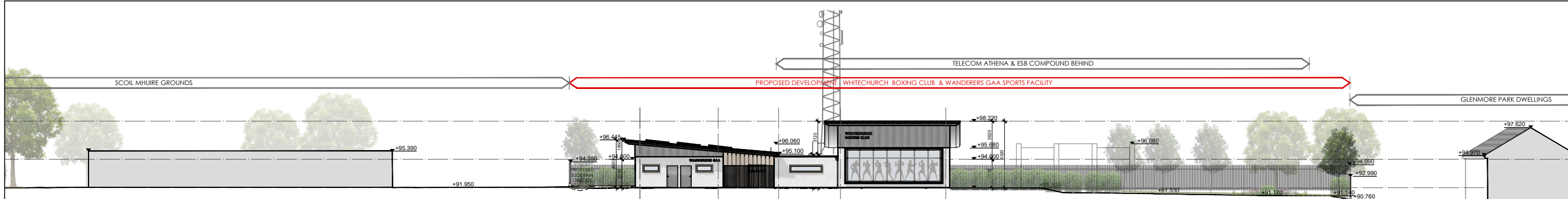
LIGHTING SERVICES

UNKNOWN UNDERGROUND SERVICES

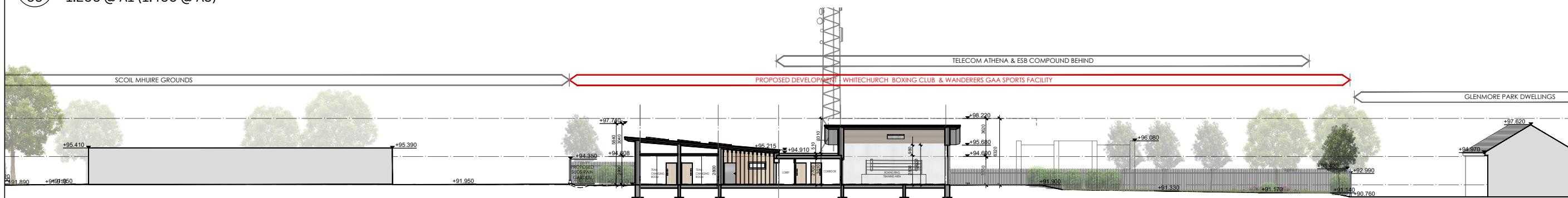
SHEET 02
PART 8
September 2026

SDCC
Comhairle Contae South Dublin
Atha Cliath Theas County Council

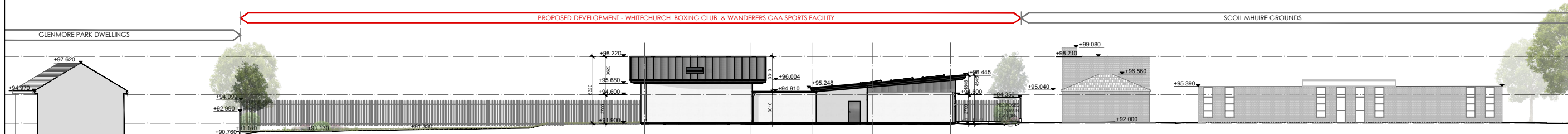




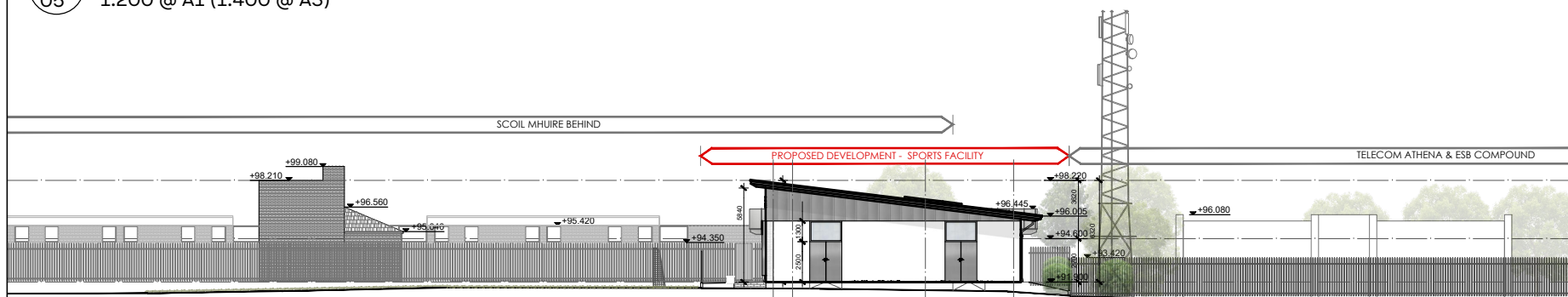
01
05 PROPOSED CONTEXT SOUTH (FRONT) ELEVATION
1:200 @ A1 (1:400 @ A3)



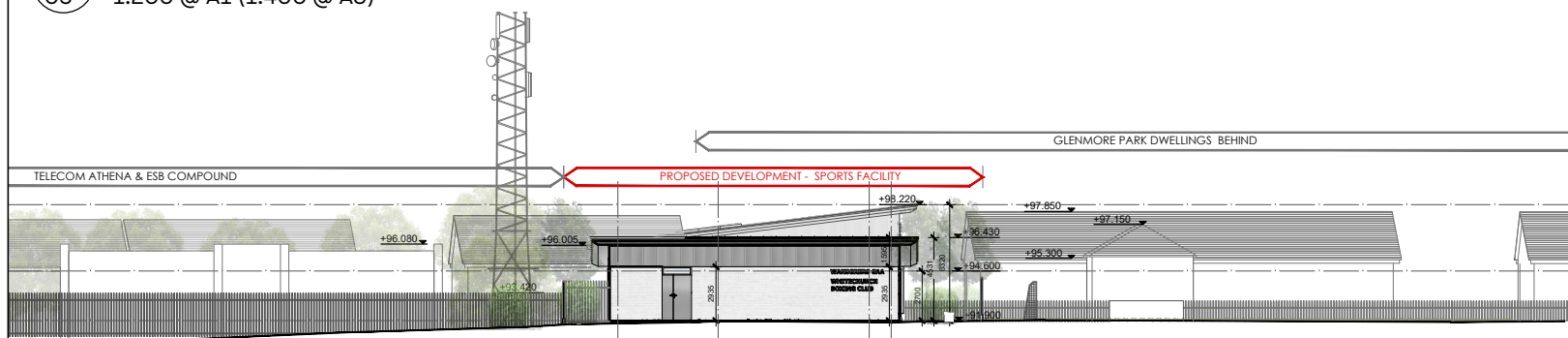
02
05 PROPOSED SECTION A-A
1:200 @ A1 (1:400 @ A3)



03
05 PROPOSED CONTEXT NORTH (REAR) ELEVATION
1:200 @ A1 (1:400 @ A3)

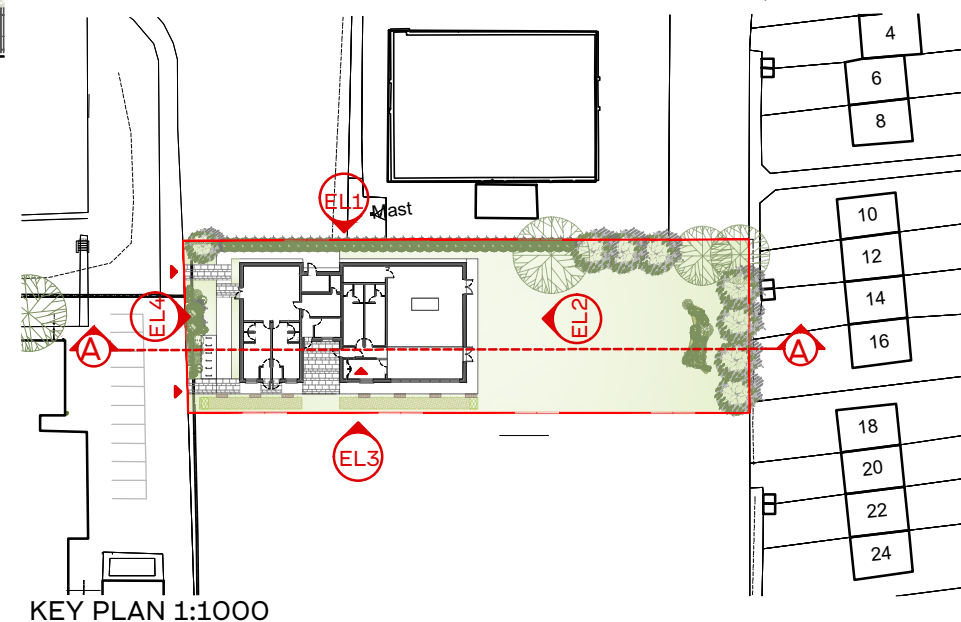


04
05 PROPOSED CONTEXT EAST (SIDE) ELEVATION
1:200 @ A1 (1:400 @ A3)



05
05 PROPOSED CONTEXT WEST (SIDE) ELEVATION
1:200 @ A1 (1:400 @ A3)

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KEY PLAN 1:1000

Appendix B

Hydraulic Calculations

CRM Stormflow Stormwater Management Software

Client: South Dublin CC
Project: M02138-07
Location: Dublin
Catchment:

Catchment Details:

Buildings	561	m ²	x 95 %
Dense surfacing	133	m ²	x 90 %
Effective Area	652.65	m ²	

Storage Details:

Vol	32	CU.m
Width		
Depth		
Porosity	100	%
Area Increase	0	%

Rainfall Details - FSR Method:

Return Period	100	years
Climate Change Factor	20	%
r value	0.27	
M5-60	16	mm

Summer Storm Profile

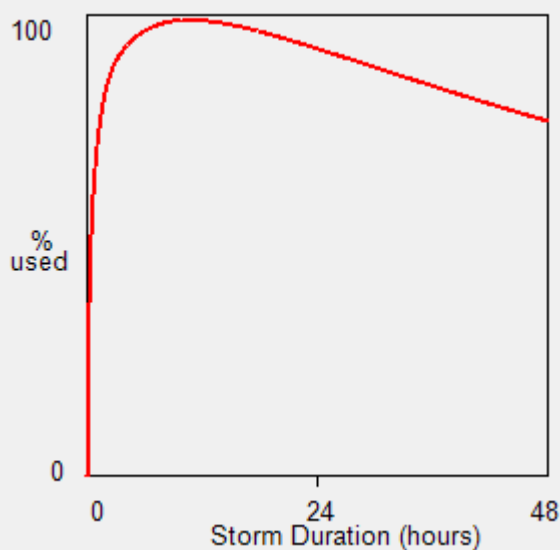
Duration	Intensity mm	Intensity mm/h	Required storage (m ³)
5 min	9.0	128.9	6.929
10 min	13.9	99.8	10.646
15 min	17.3	83.1	13.199
30 min	24.1	57.8	18.002
45 min	28.4	45.4	20.807
60 min	31.5	37.8	22.711
2 hours	40.0	24.0	26.953
6 hours	56.4	11.3	30.914
24 hours	85.4	4.3	29.665

Outflow Details:

Infiltration rate	0	m/hr
Attenuation Control	Orifice Plate	
Control Diameter	22	mm
Discharge rate	1	l/s

Results:

Outcome:	Pass
Critical Storm Duration	10.62 hrs
Vol	32 CU.m
Time to half empty	4.4 hrs



Project Ref: M02138-07
Project Name: WHITECHURCH SPORTS FACILITY



Drained Area		Coeffient
Roof	561	0.95
Paving/other	133	0.9
Applied Area	652.65	

Rill	Channel	Underdrain
Length(m)	32	58
Width(m)	1.5	0.7
Depth(m)	0.3	0.15
Porosity	1	0.95
Profile Area (m2)	0.45	
Volume (m3)	14.4	5.7855

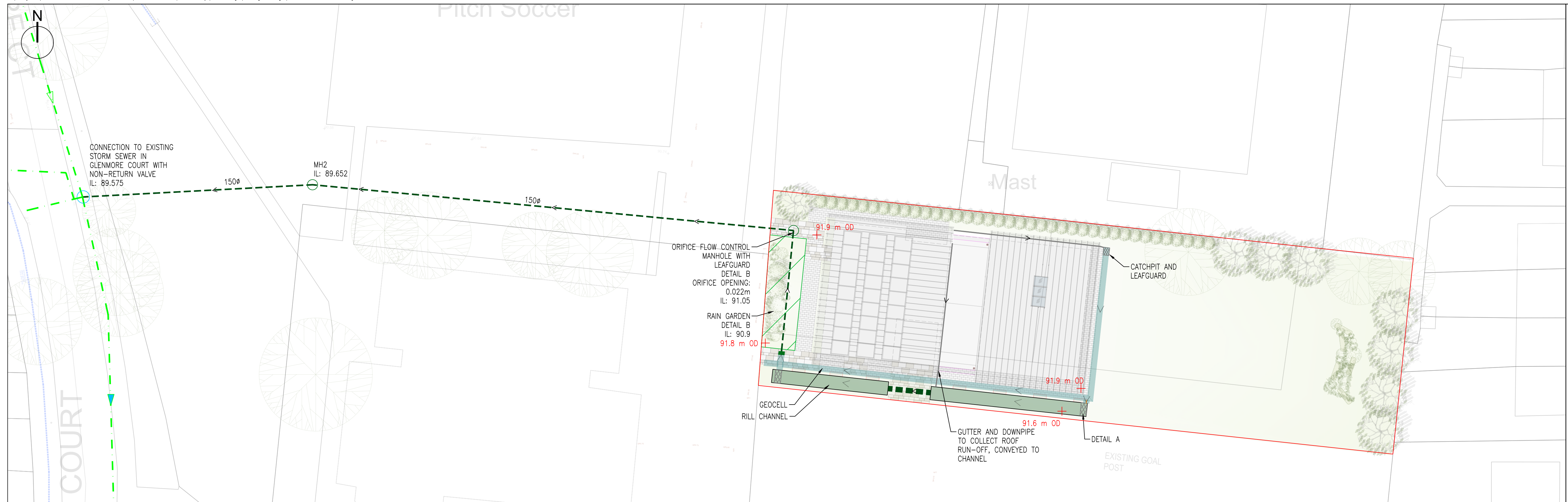
Planter	
Surface area (m2)	53.5
Filter medium depth(m)	0.15
Transition layerdepth (m)	0.1
Drainage layer depth (m)	0.65
Depth Below CL (m)	0.9
Min IL (m OD)	90.9
Max IL (m OD)	90.138
Overall Porosity	0.25
Volume provided (m3)	12.0375

Volume (m3)	
Total	32.223
Required	32
Meets or Exceeds?	Y

By	Checked	Revision	Reason for Change	Date
IB	AM	Original		03/04/2025
IB	AM	2	Update Layout	25/06/2026

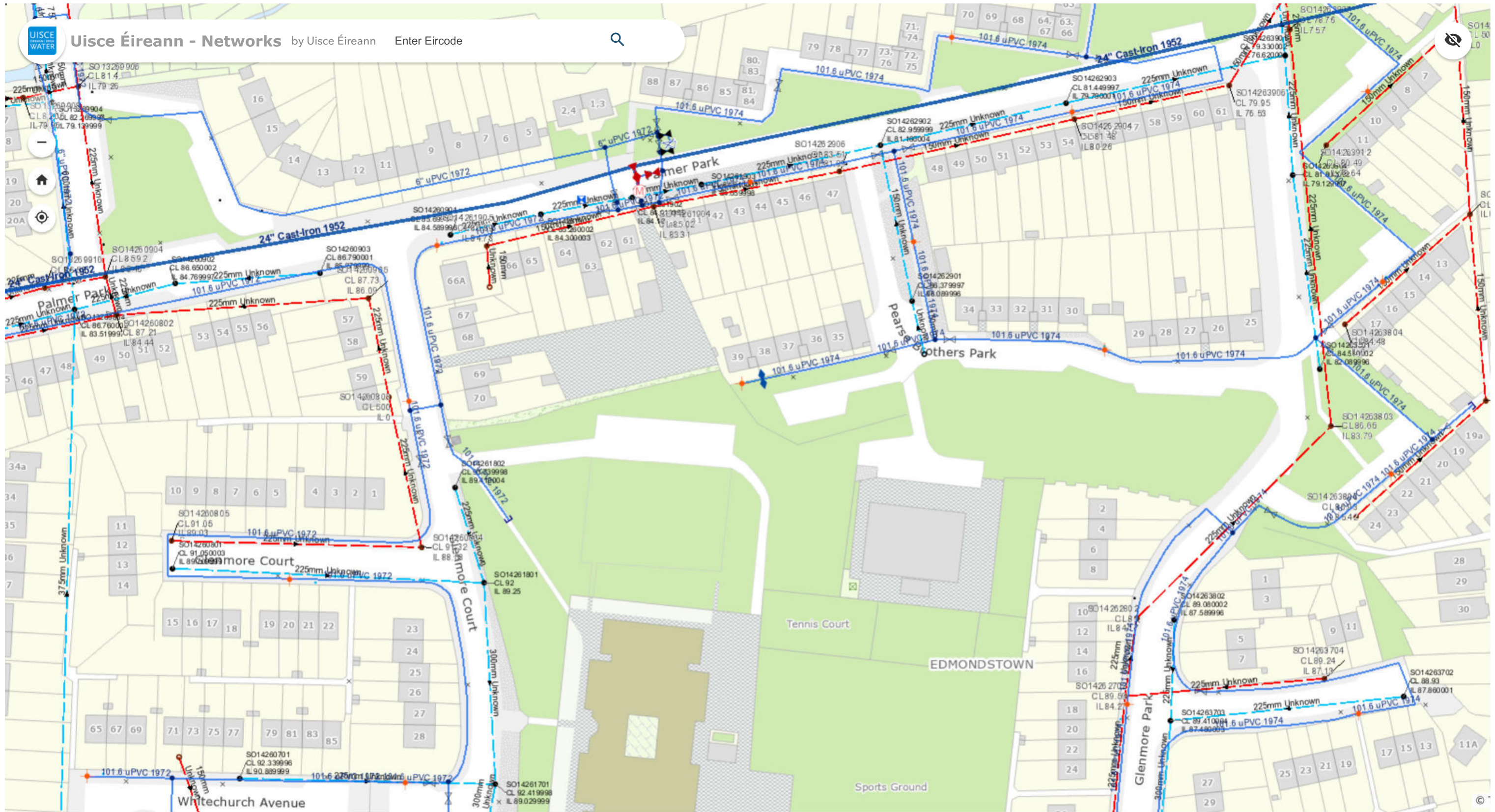
Appendix C

Proposed SuDS Layout and Typical Details



Appendix D

Drainage Records



714,002.935 726,976.112 Meters

30m

