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CONSULTING ENGINEERS LIMITED

**Proposed Development at
Saggart, Co. Dublin**

St. Mary's GAA Club

**Planning Submission Report to Engineering Services
SOUTH DUBLIN County Council**



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1.1 LOCATION

The development is located within St. Marys Gaa Club lands at Saggart, Co. Dublin. There is a GAA pitch, a carparking and an existing building at the site location. Refer to Figure 1 for site location.

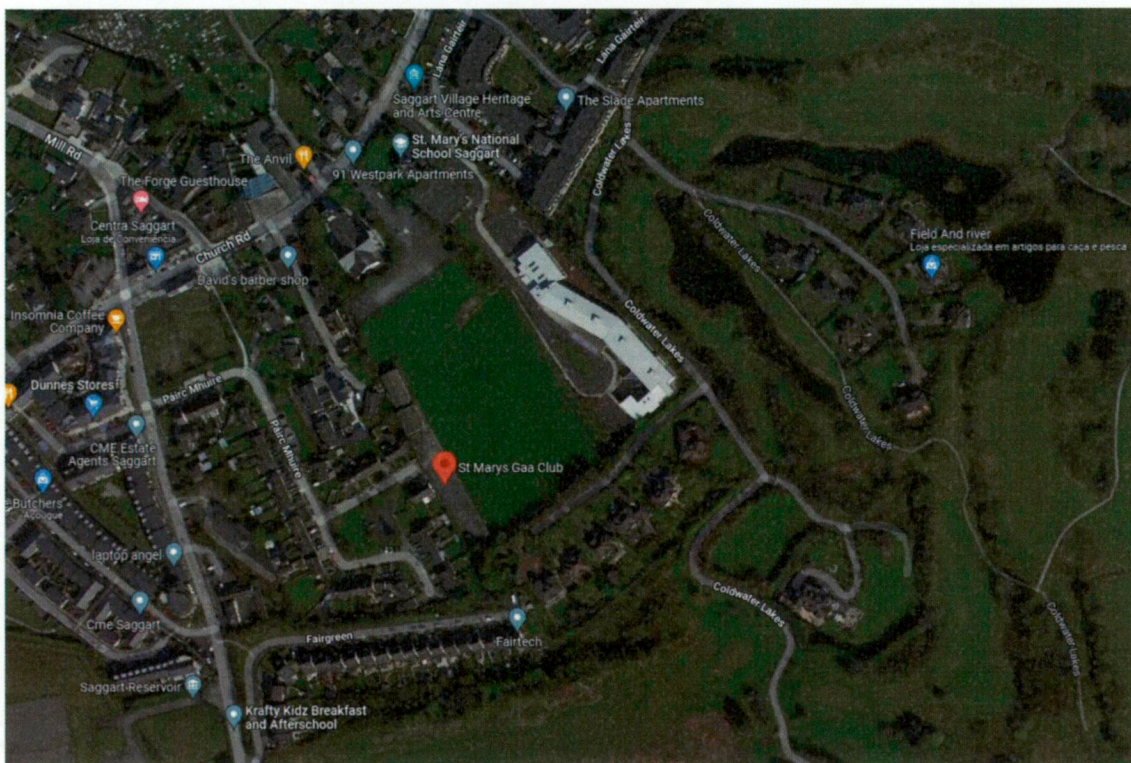


Figure 1 - Site Location

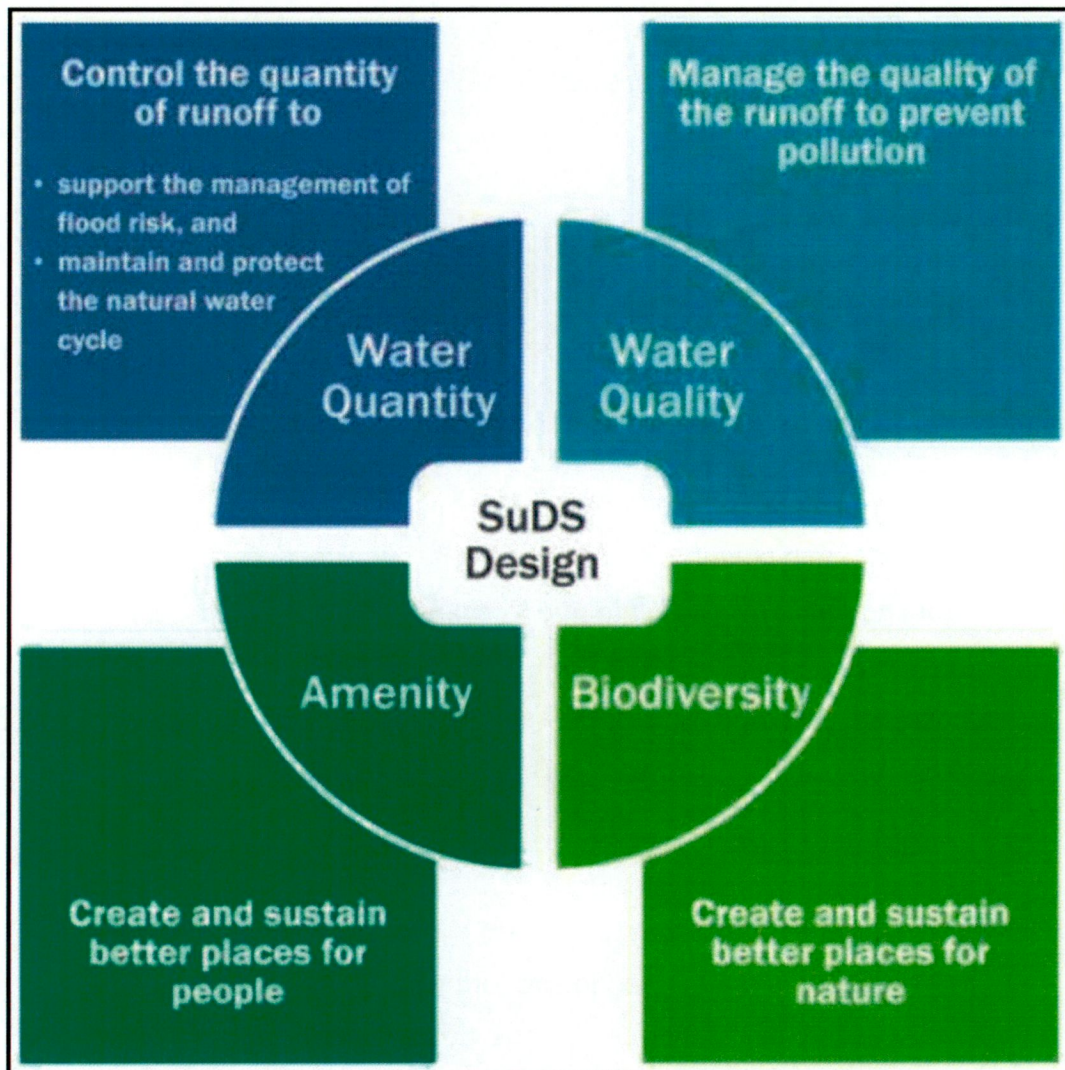


Figure 2 - The four pillars of SuDS design (CIRIA C753)

It is proposed to use a sustainable urban drainage system (SuDS) approach to stormwater management throughout the site where possible. The overall strategy aims to provide an effective system to mitigate the adverse effects of urban stormwater runoff on the environment by reducing runoff rates, volumes and frequency, reducing pollutant concentrations in stormwater

2.5 SURFACE WATER STORAGE

It is proposed to provide underground storage volume through the filter material that forms part of the bio retention area. Refer to drainage drawing for details.

2.6 WATER QUALITY MANAGEMENT

SuDS drainage designs collect and treat surface water runoff as close to source as possible. Surface water runoff is managed using a treatment train approach. This ensures that the quantity and quality of surface water runoff are addressed through the techniques of Pollution Prevention, Source Control, Site Control and Regional Control. The treatment train approach divides the drainage elements of the development into sub catchments with different drainage characteristics and land uses.

The treatment train approach applied to the proposed development is roof runoff discharging to the bio retention area and associated filter drain. We have used the simple index approach as per section 26.7.1 from CIRIA C753.

2.7 INTERCEPTION STORAGE

Interception storage is required in order to ensure that no run-off passes directly to the ditch for the majority of rainfall events with depths of 5mm or less. This is aimed at trying to replicate greenfield runoff response when no runoff is likely to take place for most small events. This type of storage is principally aimed at river water quality protection - polluted water is prevented from entering the water course for all small rainfall events. A 5mm rainfall threshold which, if effectively applied, will reduce the number of events with runoff into a receiving water body by around 50% and reduce total runoff volumes from the site by a significantly higher proportion.

$$\begin{aligned} & \text{(Impermeable Area)} \times \text{(5mm rainfall depth)} \times \text{(80\% paved runoff factor)} \\ & (18 \times 8) \times 0.005 \times 0.8 = 0.576\text{m}^3 \end{aligned}$$

2.8 WATER QUALITY MANAGEMENT: DESIGN METHODS (TREATMENT VOLUME)

The approach to water quality risk management will be the simple index approach as per section 'Chapter 26 - CIRIA C753'.

2.8.1 Hazard Classification

Runoff from non-residential roofs is classed as 'low' and commercial yards and roads as 'medium' in terms of hazard classification (refer to Figure 3 below). A simple index approach will be used for this calculation.

Land use	Pollution hazard level	Requirements for discharge to surface waters, including coasts and estuaries ²	Requirements for discharge to groundwater
Residential roofs	Very low	Removal of gross solids and sediments only	
Individual property driveways, roofs (excluding residential), residential car parks, low traffic roads (eg cul de sacs, home zones, general access roads), non-residential car parking with infrequent change (eg schools, offices)	Low	Simple index approach ³ <i>Note: extra measures may be required for discharges to protected resources¹</i>	
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	Simple index approach ³ <i>Note: extra measures may be required for discharges to protected resources¹</i>	Simple index approach ³ <i>Note: extra measures may be required for discharges to protected resources¹</i> In England and Wales, Risk Screening ⁴ must be undertaken first to determine whether consultation with the environmental regulator is required. In Northern Ireland, the need for risk screening should be agreed with the environmental regulator.

Figure 3

As per Table 26.2 of CIRIA SUDS Manual 2015 (Figure 5) the Pollution Hazard level is classed as 'medium' for retail car parking/roads which is treated using a combination of bio-retention areas, filter drains and a bypass petrol interceptor. The design below shows the results for TSS, Metals and Hydrocarbons.

TOTAL SUDS MITIGATION INDEX => Mitigation index1 +0.5(Mitigation index2)

Table 1 - TSS for Roofs

Hazard Indice for TSS for Roofs	0.3
Mitigation index1 (Bio Retention)	0.8
Mitigation index2 (Filter drain)	0.4
Total Suds Mitigation Index	(0.8+(0.5*0.4)=1.0
Conclusion	1.0>0.3
Minimum Cleansing Achieved	

Table 5 - Metals for Roofs

Hazard Indice for Metals for Roofs	0.2
Mitigation index1 (Bio Retention)	0.8
Mitigation index2 (Filter drain)	0.4
Total Suds Mitigation Index	(0.8+(0.5*0.4)=1.0
Conclusion	1.0>0.2
Minimum Cleansing Achieved	

Table 6 - Hydrocarbons for Roofs

Hazard Indice for Hydrocarbons for Roofs	0.05
Mitigation index1 (Bio Retention)	0.8
Mitigation index2 (Filter drain)	0.4
Total Suds Mitigation Index	(0.8+(0.5*0.4)=1.0
Conclusion	1.0>0.05
Minimum Cleansing Achieved	

Table 8 - Flood Risk to be Assessed

Flood risk	Applicable to subject site	Measures to reduce risk	Residual risk
Fluvial	N	Not Applicable	
Pluvial	N		
Coastal	N		

2.9 COMPLIANCE WITH SURFACE WATER POLICY

Surface water management for the proposed development is designed to comply with the Greater Dublin Strategic Drainage Study (GDSDS) policies and guidelines and the requirements of South Dublin County Council. The guidelines require the following 4 main criteria to be provided by the development's surface water design.

- Criterion 1: River Water Quality Protection – 1.1 & 1.2

Satisfied by providing interception storage, treatment of run-off within the SUDS features.

- Criterion 2: River Regime Protection – 2.1 & 2.2

Satisfied by attenuating run-off with flow control devices prior to discharge to the outfall.

- Criterion 3: Level of Service (flooding) for the site – 3.1, 3.2, 3.3 & 3.4

Pluvial flood risk addressed by development designed to accommodate surface water runoff from a 100-year period storm plus climate change. The site is outside the 1000-year coastal flooding.

Criterion 4: River flood protection – 4.1, 4.2 & 4.3

3 CONCLUSION

The proposed development consists of a single story shed location to the south of the existing car park.

The location of the shed is to be placed on the existing yard area and hence the existing surface water run off from the development will not be increased.

Due to the low surface water flows from the proposed development (<5l/s) it was decided to slow down the peak runoff to the existing network through a bioretention area. This will also provide the 5mm interception and attenuation through the void ratio in the stone.

As there are no change to the existing toilets there will be no change to the foul flow.

As there are no change to the existing toilets there will be no change to the water demand.

The proposed development has been designed in accordance with the latest guidance documents.

Report By

Paul Mc Grail

Chartered Engineer

BSc.Eng, Dip.Eng, C.Eng, MIEI, Dip Proj Mang., Dip Conservation

The Lugg,
Brittas,
Co Dublin,

Date 20th September 2022

South Dublin County Council,
Planning Department,
County Hall,
Town Centre,
Tallaght,
Dublin 24

RE; Planning Application for Construction of a Storage Area/Weights and Fitness Training Area (144m²) at St Marys GAA Grounds, Pairc Mhuire, Saggart, Co Dublin.

Dear Sir/Madam,

On behalf of St Mary's GAA Club, we are applying for planning permission to construct a fully insulated shed for the purposed of a Storage Area and space to facilitate Weights and Fitness Training, exclusively for the use of club members. We wish to have the following considered as part of our application;

- At present the club has a tractor and lawnmower that is transported to and from the grounds to a club members garage as we have no facilities to store the equipment at our grounds. Likewise, two of our four dressing rooms are out of use to our players, as they are used to store chairs and tables and other equipment from the adjacent club rooms. The new Storage Area will facilitate keeping the machinery on site and free up the dressing rooms to the playing members.
- All training takes place on the adjacent playing field, or on the club carpark in inclement weather, in order to save the pitch. With the proposed facility the club members will be able to carry out Strength Conditioning Training in part of the

proposed shed. The scheduling of this training will be at the same times as the members would be out on the club pitch, finishing at 9.30pm. The players will use the existing club changing rooms prior to using the new facility thus negating the need for any further facilities, such as toilets or showers in the proposed shed. No additional car parking facilities will be required as the existing carpark requirements will serve the new area, and it will only be used by the club teams similar to the existing use of the pitch etc.

- The proposed structure will be fully insulated as detailed on the submitted drawings and heavy duty rubber mats will be installed to ensure noise levels will be kept to a minimum during our training sessions. The structure will be located in the top corner of the carpark, which will reduce disruption to the traffic flows into the carpark while other activities are taking place. The structure will be located away from the boundary wall to reduce the visual impact, and this corner is screened off by existing mature hedging which will obscure the building from adjacent dwellings.
- As the shed will be situated predominately on the existing carpark area, which is served by an existing drainage system of gullies outfalling into an existing surface water pipeline, there will be no additional volumes of surface water to cater for from the new structure. However, we propose to upgrade the existing drainage system by installing Sustainable Drainage System (SuDS) features for the development to manage surface water runoff through a Bio Retention Area prior to dispersing into the existing surface water system.

As St Marys GAA Club are a Voluntary Community Group, this submission is exempt, as per Article 157 of the Planning & Development Regulations 2001-2022 (Updated March '22), from requiring to pay a fee for this application

Yours sincerely,

Jimmy Callaghan

Acting for St Mary's GAA Club

REV. NO 1 ; - HEIGHT OF ROOF HAS BEEN REDUCED
FROM 6.500 TO 6.100 (AS EXISTING)

TITLE PLAN, ELEVATIONS & SECTION OF EXISTING GARAGE	
DRAWING PREPARED BY J CALLAGHAN, THE LUGG, BRITTAS, CO. DUBLIN TEL. 086 2513452	
RAHEEN, BRITTAS, CO. DUBLIN FOR MR JAMES & BRENDA TRACEY	
SCALE 1; 100	
DATE 03/03/2022	
DRAWING REF;	JT/01
REVISION No ##	

EXISTING DWELLING
FFL = 10.000

EXISTING GARAGE
FFL = 10.505

PROPOSED GARAGE
FFL = 10.500

EXISTING CLUB HOUSE

PROPOSED STORAGE AREA/
WEIGHTS & FITNESS
TRAINING AREA

K
RELOCATED EX. CONTAINER

FL = 130.900	2.700	1.000	80 X 40 BOX GALVANISE
8.000	18.000	FL = 130.900	RL = 135.100
3.000	3.000	3.000	3.000

18.000 1.000 8.000

3.650 4.200

PLAN

SCALE 1:100

NORTH ELEVATION

SCALE 1:100

WEST ELEVATION

SCALE 1:100

EAST ELEVATION

SCALE 1:100

PROPOSED MATERIAL FINISHES	
1	OLIVE GREEN SHEETING
2	HORIZONTAL ROLLER DOOR
3	SINGLE LEAF DOOR
4	CLEAR FOOF LIGHTS

SECTION A-A

SCALE 1:100

WALL INSULATION

<p>PROPOSED STORAGE AREA/WEIGHTS & FITNESS TRAINING AREA 144M2</p>
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TITLE;			
SITE LAYOUT MAP			
PROJECT			
PROPOSED STORAGE AREA/WEIGHTS & FITNESS TRAINING AREA			
DRAWING PREPARED BY;			
JIMMY CALLAGHAN, THE LUGG, BRITTAS, CO. DUBLIN			
DATE:	SEPT 2022	SCALE:	AS SHOWN
DRG REF:	ST MARYS/001	REVISION	0

BIO RETENTION AREA
150mm STONE BELOW TO ALLOW FOR
INTERCEPTION STORAGE VOLUME
PLAN AREA 15M2

<p>POSITION OF SITE NOTICE</p>

<p>POSITION OF SITE NOTICE</p>

SECTION A A