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S1 Ballymount Drive

Drainage Report

ONCE Civil & Structural Ltd

1.0 INTRODUCTION

1.1 Instruction

ONCE Consultant Engineers have been appointed to provide civil engineering design services for a proposed industrial unit at S1 Ballymount Drive, Dublin 12.

The following report will address the civil engineering elements, including;

- Surface Water Strategy design

The existing site covers approximately 0.03 hectares. This is an existing green field at the end of an existing industrial unit.



Figure 1, Site Layout

3.0 Surface Water Drainage

3.1 Existing Surface Water

The site is an existing industrial unit with grass land to the side elevation.

3.2 Surface Water Policy

The proposed development will comprise of two new single story industrial unit adjoining to the existing building and widening of the side footpath.

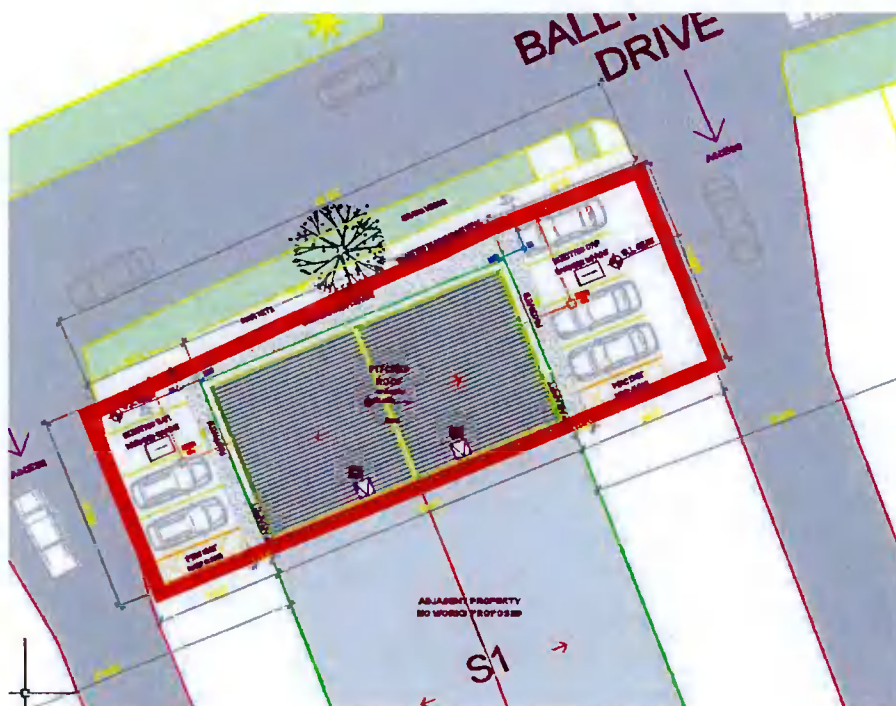
The proposed development will include a new surface water drain to collect the surface water runoff from the roof and new carparking and discharge to an attenuation tank in the common area of the site.

The drainage is designed to comply with policies and guidelines, outlined in the Greater Dublin Strategic Drainage Study (GSDSDS), Greater Dublin Regional Code of Practice for Drainage Works.

An analysis of the site layout was completed to comply with Chapter 7&8 of the Current Development Plan.

A review of the possible SUDs alternative for the site was undertaken

Swales : Not suitable do to the industrial location of the site and lack of appropriate green space.



Site Layout, restrictions

Permeable pavement: The available area is the parking to the front and rear of the site. This pavement will be permeable.

3.3 Attenuation Tanks:

The attenuation tanks will be located in a trafficked area, a standard minimum depth of cover from road level to top of the roof of the tank will be 1.2m as per Greater Dublin Regional Code of Practice V6.0 30 16.6.3. Lockable manhole covers will be installed at either end of the tank and will allow for safe access and egress via step irons, see section 10 All enlarged pipes and associated manholes will comply with this document

The location for the attenuation tank is noted in figure 3

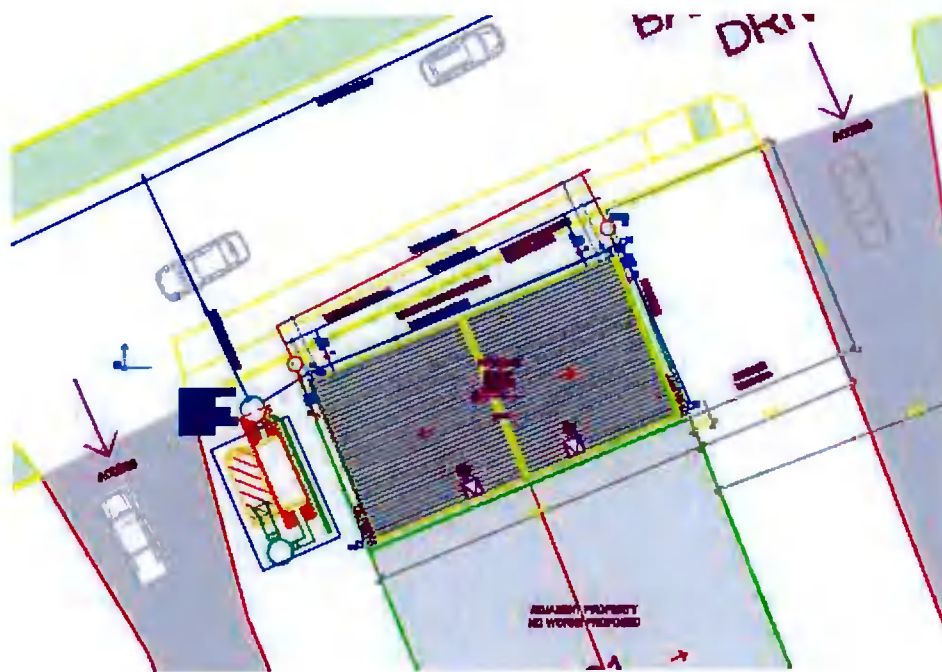


Figure 3, Proposed Drainage Layout

The attenuation tank was chosen based on the characteristics of the site and the data extracted from the Flood studies Reports.

The contribution factors were;

Contribution Area -- 350m²

Total Site Area -- 350 m²

Obar - 2.0/sec /H

With these factors and then data from the rainfall Return Table (Annex) the required storage need for the site estimated at 2.0cu.m for a 15min storm event.

A concrete 3cu.m attenuation tank will discharge through a stainless steel hydrobreak with flow restricted for the qbar of the site.

APPENDIX

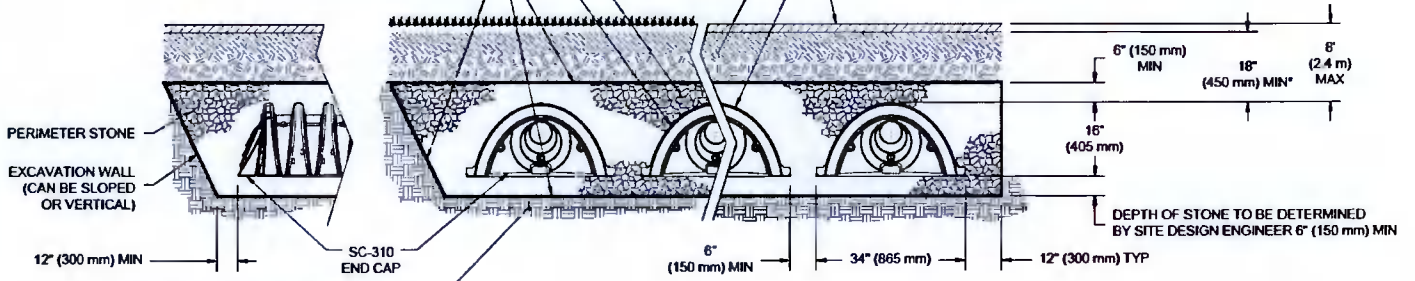
EMBEDMENT STONE SHALL BE A CLEAN, CRUSHED AND ANGULAR STONE WITH AN AASHTO M43 DESIGNATION BETWEEN #3 AND #57
 CHAMBERS SHALL MEET THE REQUIREMENTS FOR ASTM F2418 POLYPROPYLENE (PP) CHAMBERS OR ASTM F922 POLYETHYLENE (PE) CHAMBERS

ADS GEOSYTHETICS 601T NON-WOVEN GEOTEXTILE ALL AROUND CLEAN, CRUSHED, ANGULAR EMBEDMENT STONE

GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES, COMPACT IN 6" (150 mm) MAX LIFTS TO 95% PROCTOR DENSITY. SEE THE TABLE OF ACCEPTABLE FILL MATERIALS.

CHAMBERS SHALL BE BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"

PAVEMENT LAYER (DESIGNED BY SITE DESIGN ENGINEER)



SITE DESIGN ENGINEER IS RESPONSIBLE FOR THE ENSURING THE REQUIRED BEARING CAPACITY OF SUBGRADE SOILS

*MINIMUM COVER TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 24" (600 mm).