Drainage Strategy for

Neogen Extension, Rochdale

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1. Introduction

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This report describes the strategy, and background to, the drainage design proposed for the extension of the industrial unit at Neogen, Sandfield Industrial Park, Rochdale. The site currently houses a number of existing buildings and associated hard landscaping. The new unit is to be sited on the vehicle route and carpark.

The surface water run-off from the existing buildings and hardstanding areas are connected via manholes and gullies, through a surface water system, connected to a combined public sewer.

The existing foul water connects to a public combined sewer which runs along the north of the site.

The site is an industrial unit which houses chemicals, and has a license for trade effluent. Some of the hardstanding areas are designed to store an emergency overflow of this, in line with guidance from the Local Authority and Environment Agency. Both foul and surface water systems will be designed to work alongside this bunded system.

2. Below Ground Drainage Strategy

2.1. Performance Objectives

The principal performance objectives are to:

- Ensure no disruption to neighbouring properties during the construction works. It is not anticipated to have drainage services crossing the site to serve neighbouring properties.
- Provide separate below ground foul and surface water drainage systems to convey all discharges by gravity from the new building and surrounding external works to the public sewerage, without causing a future nuisance or hazard to the building or its occupants.
- In summary, the surface water will be discharged using systems in accordance with the normally recognised hierarchy:
    1. Into the ground (infiltration);
    2. To a surface water body;
    3. To a surface water sewer, highway drain, or another drainage system;
    4. To a combined sewer.

2.2. Design Parameters

The below ground foul and surface water drainage systems are designed to comply with:

- BS 752 Part 1 to 7
- Local Authority Requirements
- BRE 365 2007 Revision Soakaway Design
- The SUDS manual by Ciria
- Building Regulations Part H
- 7th Edition Sewers for Adoption.

The design will be agreed with United Utilities, the EA & Local Authority, prior to commencement on site.

2.3. Surface Water

At the time of writing, the Site Investigation has not been completed; however, due to the recent industrial usage of the site, there is a risk of potential leachable contaminants on site, which could migrate by infiltration. At this stage therefore, we would not propose to utilise level 1 of the hierarchy described in section 2.1.

Site levels and the industrial nature of the site limit the possibility of using swales, balancing ponds, etc.

It is therefore proposed to utilise below ground storage and mechanical attenuation to connect to the existing surface water system running across site.

The storage volume will be sized according to the proposed discharge rates and the storm event confirmed by the Local Authority. As the site is entirely existing hardstanding and positively drained, it is anticipated a 50% betterment on existing flow rates will be required.

The below-ground surface-water drainage network has been sized using the MicroDrainage software package.

The design criteria for the installation will be as follows:

- No surcharging within system for storm with a return period of 1:1 years
- No surface water flooding for storms with a return period of 1:30 years
- Preference for no surface water flooding for storms with a return period 1:100 years; however, if site levels allow, overland flow and flooding will be utilised to keep the below ground attenuation to a minimum.

To the above critical storm, a climate change allowance of 30% will be added.

If overland storage is possible, the design will ensure that any overland flows fall away from vulnerable areas, i.e. the buildings, and be directed towards less vulnerable areas such as car parks.

Whilst the new car park area is only small, as it is an industrial site with goods vehicles manoeuvring, it is proposed to design the drainage in accordance with PPG3, whereby standard gullies will be used for their trap detail, which have inherent oil storage capability.

2.4. Foul Drainage

The new unit is proposed to have limited allowance for foul water appliances. The limited requirements for the foul water drains will be sized using the discharge unit method contained within BS EN 12056 Part 2.

The system will be designed to flow not more than three-quarters full and will be laid at gradients that allow self-cleansing velocities to be achieved. Maximum velocity within the system will be 3m/s.

The existing sewer records, along with the topographical survey, show that the site has a conventional below ground combined pipe network. The new foul drainage system will tie into the existing network at the available existing combined outfall position just to the south of the site. Discharge rates will be confirmed with United Utilities prior to commencement, through a S106 application.