



Bradshaw Gass & Hope LLP
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1978.35-1 Blackley Fire Station

Introduction

Bradshaw Gass & Hope LLP have been commissioned to provide the drainage design and strategy to the proposed new Blackley Fire Station, Rochdale Rd, Manchester, M9 7EQ.

The site is currently occupied by an Existing fire Station building and ancillary facilities which have exceeded their design life and require replacing to a new purpose built modern facility.

It is intended the underground drainage for both foul and surface water will be on separate systems.

The proposed design will demonstrate that the surface water run-off rate and volume for the post development site is managed so it adheres to current regulations, and local authority requirements, and has been prepared to the requirements of the:

- National Planning Policy Framework (NPPF) 2019;
- National Planning Practice Guidance (NPPG);
- Principles of Sustainable drainage systems (SuDS) set out by DEFRA (2011);
- Ciria SuDS Manual C753 (2015);
- Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015);

Run-Off Destination

Surface water run-off is to discharge to one or more of the following in the order of priority shown: Discharge into the ground (infiltration); Discharge to a surface water body; Discharge to a surface water sewer, highway drain or other drain; Discharge to combined sewer.

The Management Train

A concept fundamental to implementing a successful SuDS scheme is the management train. This is a sequence of SuDS components that serve to reduce run-off rates and volumes and reduce pollution. The hierarchy of techniques that are to be used for the surface water management of the development are:

- Prevention - Prevention of run-off by good site design and reduction of impermeable areas
- Source Control - Dealing with water where and when it falls (e.g. infiltration techniques)
- Site Control - Management of water in the local area (e.g. swales, detention basins)
- Regional Control - Management of run-off from sites (e.g. balancing ponds, wetlands)

Design Principles

The design principles for the surface water management of the development will be to: Ensure that people, property and critical infrastructure are protected from flooding; Ensure that the development does not increase flood risk off site; Ensure that SuDS can be economically maintained for the development.



Peak Surface Water Flow

To adhere to national and local guidance / policies, the peak surface water run-off from the post development site is to be reduced to as low as possible, with the aim to reduce the rates to the equivalent greenfield rates.

Flood Risk

The drainage system will be designed so that, unless an area is designed to hold and/or convey water, flooding does not occur on any part of the site for a 1 in 30-year rainfall event.

The drainage system will also be designed so that, unless an area is designed to hold and/or convey water, flooding does not occur during a 1 in 100-year rainfall event in any part of a building (including a basement) or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development. The design of the site will ensure that flows resulting from rainfall more than a 1 in 100-year rainfall event are managed in exceedance routes that avoid risk to people and property both on and off site.

Design Methodology

The foul water system will discharge to the 450mm diameter combined sewer in Rochdale Road (A664) this has been agreed with United Utilities.

At the time of writing there are 2 No surface water options under consideration:

- 1. Infiltration System to on-site Soakaways
- 2. An attenuated system discharging to the combined drain in Rochdale Road (A664)

The Geotechnical Site investigations (Phase 1 and Phase 2 reports) have indicated that the ground conditions on site have good infiltration characteristics, however they have also indicated that there is a high potential for PFAS contamination on site. As there is some historic evidence of the use and storage of firefighting foam which contained PFAS.

The presence of PFAS contamination in the ground would preclude the use of an infiltration system as this can mobilise the harmful contamination in the ground.

Although PFAS is an emerging contaminant the ground investigation specialist involved on the scheme has been liaising directly with the Environment Agency and has agreed a suitable testing regime for the site.

Once this information has been received the preferred design solution will be submitted.

Report prepared by

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For and on behalf of Bradshaw Gass & Hope LLP