NORTH RIDGE CAMPUS

DRAINAGE STRATEGY

-
- 25 January 2007

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Northridge Campus
Drainage Strategy - Progress Report
25th January 2007

As part of the drainage strategy the site will be split up into four separate drainage areas to ensure a more cost effective design as well as enabling the discharge to be minimised at each discharge point. (See drawing NR_LOR_DR_G_51_AZ_NS_5001)
The following strategies for the separate areas are:-

Area A

Area A comprises of the extended sports hall and gym areas of the existing school, located to the North East of the site as well as the new basketball area and visitors car park.
The existing Area A was the sports hall and gym area which equated to an approximate area of 2000sqm, which gives us a flow of 25 l/s.
The proposed area now equates to 4350m^2 which gives an approximate flow of 60 l/s.
Due to the fact that the area is flowing into an existing 225mm diameter pipe of which the gradient is unknown we will assume that the flow is to be restricted to the original flow of 25 l/s.
In order to prevent flooding an attenuation tank will have to be incorporated which will be approximately 125m^3.

Area B

Area B consists of the synthetic sports pitch, tennis courts and the car park, situated at the South East corner of the site.
The existing area B was originally the main school which had an approximate area of 5121sqm which gives an approximate flow of 110 l/s.
The proposed area now gives us an approximate area of 7500m^2 which gives an approximate flow of 105 l/s.
Due to the fact that the surface water is to discharge into an existing 225mm diameter pipe with a gradient of 1/26, we feel that the flow should be restricted to half the capacity of the that pipe to take into account other flows running through it.
Therefore the flow is to be restricted to 43 l/s which to prevent flooding gives us an attenuation tank of approximately 160m^3.

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Area C

Area C comprises of the new building and surrounding play areas at the West side of the site.
The existing area was originally made up of sports pitches which equated to an area of 7607m^2 which gives us an approximate flow of 105 l/s.
The proposed roof/hard standing area of 17,950m^2 which equates to an approximate estimated flow of 290 l/s.
We feel that an appropriate discharge for this area of the site will be to match what the original discharge was of 105 l/s.
Therefore to prevent flooding the attenuation tank will have to be approximately 250m^3.
Due the large car parking area, a suitable petrol interceptor will also be required prior to discharge.

Area D

Area D comprises of the two grassed sports pitches that were there originally. These cannot be discharged into a public sewer, as land drainage is not permitted to connect to a public sewer. Due to the existing ground conditions (under lying clay soils) soakaways would not be suitable on this site. There is an existing watercourse to the southwest corner of the site, initial discussions with the Environment Agency suggest that this may be a possible solution for the land drainage discharge, although this would require a road crossing, avoiding the existing services & public sewers. Also a new drain would need to run adjacent to the existing United Utilities water aqueduct, and along to the outfall. Discussions with UU, they had no objections to the drain being with the easement of the aqueduct.

Drainage Discharge Approvals

Approvals will be required from United Utilities for the discharges to the existing public sewers adjacent to the site. United Utilities may impose discharge restrictions at the proposed outfall points based on restriction in PPG25/PPS25.
Any new connections to public sewer will require an application Under Section 106 of the Water Industry Act 1991. Under Section 107 of the Water Industry Act 1991, the sewerage undertaker (United Utilities) has the right to make the connection themselves and charge the applicant.
Any discharge to local water course will require approval from both the EA and local council land drainage officer.

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