Entec

Creating the environment for business

Former West Moor School, Killingworth
Drainage Impact Assessment
Miller Homes

West Moor School is located to the north east of Newcastle upon Tyne adjacent to a residential area. The school was sold by the Local Authority for redevelopment for housing. Miller Homes (North East) Ltd purchased the site for development and proposed to demolish the former school and redevelop the site to include new housing and sports/leisure facilities. The proposed redevelopment replaced approximately 50% of the area of the original school buildings and part of the playing fields, increasing the total impermeable area by approximately 200%.

Although the school's existing drainage system had connected to the combined public sewer Northumbrian Water Ltd (NWL) would only permit foul water to discharge and suggested that surface water discharge into a local, off-site watercourse approximately 300m from the site. This watercourse connected, via a culvert and open channel, to a larger watercourse identified on the Environment Agency Flood Maps as being subject to flooding from the 1% annual probability of occurrence. This watercourse ultimately connected to the Ouse Burn, one of the main watercourses in Newcastle, which was also identified as flooding from the 1% event.

Entec liaised with the Environment Agency (EA) to agree a discharge limit from the proposed development into the watercourse. The EA set a discharge restriction equivalent to greenfield runoff from the developed area into the watercourse, which would have resulted in considerable on site attenuation and storage requirements.

Drainage Impact Assessment

Entec undertook a drainage impact assessment to assess the effects, of the proposed redevelopment of the former school, upon the local watercourse. This included:

- a walkover survey to assess the condition of the watercourse;
- identification of any possible restrictions to the flow that may contribute to, or exacerbate, flooding;
- inspection of historic records to confirm the original catchment extents and route of the watercourse;
- hydrological investigation of the watercourse including an assessment of the storm flows;
- an assessment of the existing and proposed surface water runoff rate and volume;
- liaison with the EA regarding the watercourse and allowable discharge rates;
- liaison with NWL regarding the potential off-site drainage issues; and
- liaison with the Local Authority regarding land ownership and historic flooding.

Continued negotiation with the EA throughout the preparation of the drainage impact assessment by Entec, resulted in a revision of the discharge rate allowing a significant increase in the surface water runoff from the site. This enabled Entec to reduce the associated volume of on-site storage by 42%, which resulted in a considerable cost saving to Miller Homes.