Proposed residential development at James Road, Crowland
Drainage Strategy

14th December 2018

Introduction

This drainage strategy has been produced to accompany a planning application for a residential development on land located to the northwest of James Road, Crowland, Lincolnshire. This document should be read in conjunction with the Concept Drainage Strategy drawing.

For developments of 10 or more dwellings there is a requirement to apply sustainable drainage principles (SuDS) to the disposal of surface water from the site. Generally, the aim should be to discharge surface water as high up the following hierarchy of drainage options as reasonably practicable:

1. Into the Ground (infiltration);
2. To a surface water body;
3. To a surface water sewer or highway drain;
4. To a combined sewer

Surface Water

At present the land comprises abandoned allotment gardens and recent ground investigation work has suggested a poor infiltration rate and therefore it is unlike that soakaways would work as a solution. An IDB drain exists north-east of the site into which the drainage may discharge. It is proposed to provide a filter drain system across the site to collect flows from roads, roofs and other impermeable areas. Car-parking spaces and driveways shall be permeable paved, allowing the subbase to act as attenuation. The Filter drains lead surface water from the drained surface to an attenuation pond which will be constructed at the south-east side of the development site. The pond will be able to store 232m^3 in 1 in 30 years storm without flood, and through a Hydro-Brake (limiting discharge to Qbar 8.2 l/s) the surface water will be routed to existing culvert beneath James Road, north-east of the site. The Filter Drain system will be offered for adoption to Anglian Water under a Section 104 agreement.

Foul Water

The foul water from the application site will be connected into existing foul drainage system. The assumed connection point is into the existing public sewer within Thorney Road to the west of No. 40 Thorney Road. The primary foul water drainage system beneath the roads will be designed to Sewer for Adoption 6th Edition and offered for adoption to Anglian Water under a Section 104 agreement. See Concept Drainage Strategy drawing.

Finished Floor Levels

The requirements of the Flood Risk Assessment are 2m AOD and 2.2m however, to allow a gravity drained site without the need for an adopted pumping station which would be unviable for a 49 dwelling scheme, the scheme has been designed with higher finished floor levels. This has the knock on effect of reducing the flood resilient measures required within the construction of the new homes.

Conclusion

The above drainage strategy demonstrates that the site can be drained appropriately including the use of a Sustainable Drainage System.