



## Project

Functional Floodplain and Flood Alleviation Scheme

## Client

Knight Developments Ltd and Crest Nicholson Eastern

## Location

Elms Farm, Stansted Mountfitchet, Essex

Ardent's in-house specialists undertook a flood risk assessment and flood alleviation scheme for a proposed development of 53 residential units. The 2.4-hectare site was partially within flood zones 1, 2, 3a and 3b associated with the Stansted Brook main river.

As a third of the development was within the functional floodplain (flood zone 3b), we undertook site specific modelling to convert the Environment Agency (EA) 1D river model to a linked 1D-2D model. Based on this modelling, the site was re-planned, with proposed realignment of the Stansted Brook, floodplain compensation upstream to increase the functional floodplain area and storage to ensure no loss in flood storage. Proposals also accommodated the requirements of Stansted Airport and Network Rail, resulting in a reduction in flood risk both on and off-site.

A cut and fill earthworks strategy ensured that excavated material from the flood plain compensation areas was used to raise the development platform above flood levels. This resulted in the developed site being located within Flood Zone 1.

## Our Role

- Undertook early stage consultations with Uttlesford District Council, regarding sequential and exception tests, and the Environment Agency on functional flood plain proposals
- Agreed strategy with Stansted Airport for the wetlands area and construction, and created a maintenance strategy for the wetland area with Network Rail, EA and Uttlesford District Council
- Created a 2.40 hectare flood alleviation wetland area within a public area, providing additional floodplain resulting in social, economic and environmental benefits
- Realigned Stansted Brook (530m) with associated ecological features

## Client Benefits

- Retained all excavated materials on-site for re-use, cut and fill balance
- Created green areas with habitat and leisure benefits
- Reduced flood risk in excess of the minimum standards of the NPPF, and current and future climate change requirements
- Created a scheme which addressed concerns relating to historical flooding
- Proposed a maintenance strategy which ensured scheme officers and members' support
- Created a development that was flood risk free ensuring residents could secure mortgages and insurance