

Case study

Urban Extension for Lincoln (Mixed Use)

Charterholme (formerly Western Growth Corridor) is a 240-hectare mixed-use development comprising 3,200 dwellings, community facilities, commercial/industrial space, and two new road bridges.

Given the scale of the 240-hectare site, the layout has been developed around how to effectively collect, convey, and store surface-water runoff. The system incorporates plot-level SuDS, perimeter ditches and swales that feed into phased Linear Drains designed to act as an extension of the existing watercourse network. These Linear Drains are up to 15 m wide and approximately 2.5 km long, representing a significant piece of engineering. Their design reflects site constraints such as flat topography, controlled IDB water levels, limits on land raising due to flood-risk mitigation, and the need to phase drainage in line with strategic hydraulic modelling.

Construction phasing is also influenced by access constraints, which require bridges to be built before the permanent drainage network can be completed. This necessitates temporary swales, temporary outfalls, and early sections of the Linear Drains.

Alan Wood & Partners prepared a drainage strategy addendum setting out the detailed design and phasing of both temporary and permanent surface-water systems required to enable early access and initial development. Works include integrating SuDS within the site layout, designing temporary swales and outfalls for bridge works, preparing Linear Drain designs, coordinating parcel-level SuDS and ditch connections, and securing the necessary consents with key stakeholders.



Location:
Lincoln



Client:
City of Lincoln Council
and Lindum Homes Ltd



Architect:
Spawforths



Value:
Est £500 million



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The Geo-Environmental Team have prepared the site-wide Materials Management Plan and the general earthworks strategy for the scheme. Ground-investigation data is being used to design the earthworks so that development platforms can be constructed at levels that mitigate flood risk.

The team will oversee material movement and re-use on site and validate that all works comply with the required specifications and standards. This enables beneficial re-use of excavated materials, reducing pressure on raw aggregates, minimising disposal to landfill, and lowering vehicle movements and associated carbon emissions.

In addition, detailed assessments have been carried out on the stability of the open drainage channels required to manage surface water, and measures are being developed to ensure these remain stable for their operational lifetime.

The project is being delivered via the Pagabo Professional Services Framework.



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