PORTLAND CONSULTING ENGINEERS

PLOT 2, NELSONS PARK INDUSTRIAL ESTATE

Client: UK Land Estates

Project Value:

Project Details: Construction of a new 43,000ft² manufacuring facility on the Nelson's Park Industrial Estate in Cramlington, alongside a service yard and 107 car parking spaces.

Plot Two, as the site is known, is the latest manufacturing hub for the Legrand Group in Europe. Plot Two is home to the CP Electronics lighting controls and Legrand Care brands, close to the clean energy sector and it's associated skills base.

The project focused on the design of a large-scale industrial building, Portland's involvement began with feasibility sketches to explore a range of steelwork options. Various configurations, including portal frames and propped portal designs with different grid spacings, were assessed.

The assessment process led to the selection of the most economical solution: a large-span portal frame. Upon selection, Portland progressed to designing and detailing the unit's foundations, slab, steelwork and metal decking, ensuring the solutions aligned with the architectural and functional requirements of the building.

In addition to the superstructure, Portland were responsible for the design and detailing of the external works, including the concrete yard and drainage layouts. The size and layout of the building presented significant challenges, as conventional drainage routes along the sides of the building would have clashed with existing foundations. This was overcome through developing a split drainage system serving the northern and southern areas of the site, each employing sustainable drainage techniques.

The southern system incorporated permeable paving with underground attenuation crates, discharging through a hyrdobrake to the restricted outflows. The northern system utilised underground attenuation feeding into a detention basin, complemented by a swale along the building's sides to manage overland flows. This combined approach delivered a practical and sustainable drainage solution while accommodating the site's physical constraints.

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