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CIVIL, STRUCTURAL, GEOTECHNICAL, TRANSPORT

Bloomfield Rd/Seasiders Way Junction, Blackpool: Ground Stabilisation Solutions

Project Description Sheet

Loc ation

Bloomfield Rd, Blackpool

Client

Blackpool Borough Council

Commenced

Ongoing

Key Project Elements

Ground Investigation
Geotechnical Design
Ground Improvement
Settlement Analysis
Pile Design
Foundation Design
Retaining Wall Design
Sheet Piling
Waste Disposal
Expanded Polystyrene
Lightweight Fills
Vibro-stone columns
Vibro-concrete columns

PSA Design were commissioned to carry out the geotechnical design for the engineering works at the junction of Seasider's Way and Bloomfield Rd in Blackpool.

The demolition of Bloomfield Road bridge will lead to an at-grade junction with Seasider's Way being built, which will require the construction of a new embankment between the bridge abutments, and the reconstruction of Seasider's Way to a new raised vertical alignment to meet Bloomfield Road. The new embankment will be about 2 m above current ground level at the intersection.

The ground conditions were poor, which include highly compressible peat and very soft alluvial silts and clays, with a high water table, which will lead to excessive total and differential settlement if standard construction methods are used.

Analysis showed that total settlement of between 250 mm and 400 mm due to consolidation of the both the underlying peat and alluvial deposits was envisaged conventional techniques.

Consideration must therefore be given to alternative construction techniques that can both control settlement, and be built quickly.

An extensive investigation was carried out which included conventional boreholes, cone penetration testing, trial pits, plate load tests, large scale load tests, gas and groundwater monitoring and contaminant testing.

A combination of ground stabilisation techniques was used that included lightweight fill (LWA), expanded polystyrene (EPS) blocks, vibro-stone and concrete columns and traditional pile solutions.

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