

Ansty Park Coventry – Building and Externals Stabilisation

Project	JJM2973 – Building and Storage Depot Stabilisation
Location	Prospero – Ansty Park Development
Client	McLarens
Key works delivered	Bulk Fill Modification, Capping and Subbase Replacement stabilisation
Project Duration	March 23 – Sept 23
Stabilised Area	110,000m ³ modified and 240,000m ² stabilised
Earthworks	By Heywood HCD



PROJECT OVERVIEW

- Demolition and Re-development of the former Air Field
- The site required approx 110,000m³ of earthworks with Modification to the bulk fill.
- In-situ treatment of the modified material in 300mm deep layer with 4.0% Cement Addition to Footprint of the Buildings
- In-situ treatment of the material in 300mm deep layers with 3.0% Cement Addition to the External Areas.
- Client requirements 95% Compaction and 30% CBR Non-Frost Susceptibility
- Building Floor 450mm make up laid directly onto the Stabilised Layers
- Independent Design and testing carried out by i2 Laboratories

PROJECT CHALLENGES

- The project programme was challenging and with the weather we encountered in march and April being so wet it was difficult to travel on the site. The hot weather in June was a challenge also as we were on the building layers and water had to be imported and spread to achieve the MCVs
- Binder spreading, water delivery and mixing had to be very precise to ensure the design CBR would be achieved.
- The project has a very stringent test and compliance schedule. All target MCV and CBR test were taken daily
- Proximity to other works on site meant very well managed works and deliveries were always required.

ENGINEERING AND SOLUTIONS TO OVERCOME THE CHALLENGES

- Our team worked with the client and advised on the findings of the site won material testing and classification.
- Once the site was Remediated and levelled, the challenge was to spread and stabilise the host material by mixing with Cement and complying with the stringent testing schedule for the stabilised material.
- Our site team set to work with the MC team to develop a system to allow both earthworks and stabilisation to progress efficiently.

Modification and STABILISATION Works

JJMac operate a fleet of very agile equipment.

Tractor mounted Wirtgen 250WS Mixers were selected for this project due to the challenging site conditions earlier on in the project.

Our Dustless Stehr was also utilised for all works near the existing offices during any windy conditions which enabled us to progress works in all conditions.



Lime Modification to Bulk Fill Material

Bulk Fill Modification was undertaken using 1% Lime to condition the material for optimum compaction to achieve >5% CBR

**RDC Rolling Dynamic Compaction to Bulk Fill Material**

We also utilised RDC Rolling Dynamic Compaction on the bulk fill which also achieved >5% on some of the soils that had a natural moisture content close to the range for optimum compaction.



Stabilisation works to Building footprint

Stabilisation was undertaken for the Building Footprint using 1% Lime and 3% Cement to achieve >30% CBR



Water addition as necessary to ensure the Moisture Content Value MCV was within range at all times



All works were tested during the construction process for MCV and CBR

Completed Works

Stabilised areas under building footprints had min 100mm 6f material placed to protect the stabilised material

Foundations were dug and poured directly into the excavations without the need for any formwork. The stabilised material was solid all the way through the Bulk Fill.



30% CBR stabilised ground below the buildings



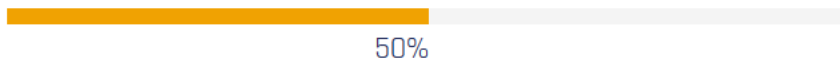
ADVANTAGES

The works had numerous advantages to this site.

- Bulk Excavations for Cut and Fill treated and compacted ready for subsequent layers without any time lost during all weather conditions
- Site won material used to make up levels and reducing the need for any off site disposal
- Capping layers and subbase replacement offers huge Reduction of Primary Aggregates
- Reduction of Lorries from the surrounding roads

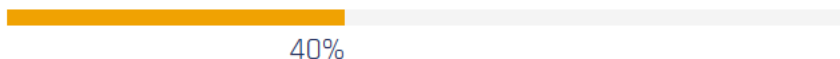
BENEFITS TO CLIENT

Cost Saving



50%

Programme Reduction



40%

Vehicle Movements Reduction



75%

Imported Aggregate Reduction



80%

Material Sent To Landfill Reduced By



100%

Stone Layer Depth Reduction



70%