



Case Study

High Energy Impact Compaction Delivers Significant Time and Cost Savings

Market Sector

COMMERCIAL INDUSTRIAL



Application

UNCONTROLLED FILL



Project Phase

EARLY WORKS



LANDPAC
INTELLIGENT GROUND ENGINEERING SOLUTIONS

Helensvale HQ, Queensland

Equipment Used

Landpac deployed two High Energy Impact Compaction (HEIC) units for the Helensvale HQ project:

- A 5-Sided Impact Compactor.
- A 3-Sided Impact Compactor.

These units were equipped with Landpac's Intelligent Compaction Measurement (ICM) system, which uses differential GPS and specialised software to monitor settlement and sub-grade stiffness in real time.

Project Overview

The project involved High Energy Impact Compaction (HEIC) of existing uncontrolled fills at the Helensvale HQ site, located at 50 Town Centre Drive, Helensvale, QLD. The site, measuring 2.5 hectares, was divided into two stages for compaction. The work was commissioned to improve the ground conditions.

Results

The HEIC works successfully improved the sub-grade, resulting in a more uniform soil response across the site. The project was completed in two stages:

- Stage 1: A minimum of 20 passes were performed, with some isolated areas receiving an additional 10 passes. The average settlement across this stage was 22mm, with the southern half experiencing an average settlement of 46mm.
- Stage 2: A total of 40 passes were completed. The final 10 passes showed an average settlement of only 2mm, indicating that the compaction had reached an effective level.

The ICM plots confirmed the overall ground improvement, identifying only a few minor localised weaker areas.



Summary

The use of High Energy Impact Compaction on the Helensvale HQ site provided a ground improvement solution that eliminated the need for the costly and time-consuming process of removing and replacing the uncontrolled fill. This approach delivered significant time and cost savings for the project.

Key Outcomes

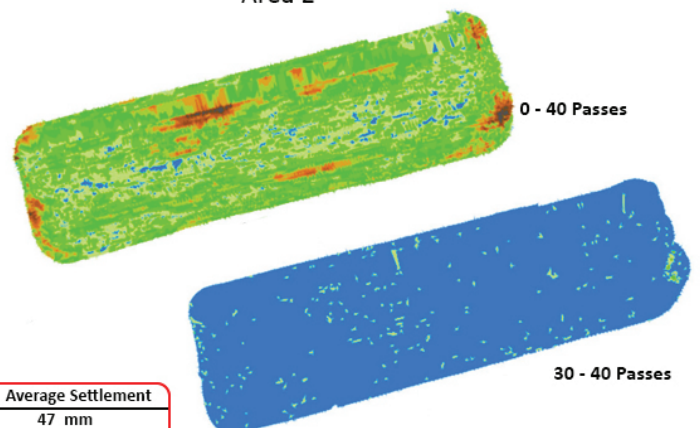
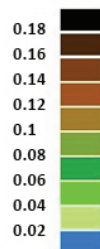
- ✓ Ground Improvement
- ✓ Eliminated "remove and replace"
- ✓ Uniform sub-grade
- ✓ Time and cost savings compared to conventional remediation

Significant settlement achieved in first 30 passes

ICM Settlement

Area 2

Height ranges
in meters



Area 2	Average Settlement
0 to 40	47 mm
30 to 40	2 mm

Get in touch

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