

# PORTGORDON PHASE 1

📍 Scotland

Van Elle's ground improvement team completed a significant rigid inclusion project to support a new warehousing complex in Portgordon, Scotland.

## PROJECT BACKGROUND

- Appointed by Robertson Construction Northern, to meet the expansion needs of William Grant & Sons, a renowned premium spirits company.
- 15,000 rigid inclusions installed across four whisky storage warehouses.

## CHALLENGE

The primary challenge of this project was the enhancement of the bearing capacity and settlement performance of in situ weak soils, without resorting to costly piling or fully suspended construction methods.

The solution needed to be economically viable and efficient, providing a robust foundation for the new warehousing complex which included four whisky storage warehouses spanning an area of 535,000 square feet, a sprinkler tank and forklift truck ancillary buildings.

## SOLUTIONS

Given the poor ground conditions encountered, rigid inclusions were chosen as the most economically viable solution, offering significant improvements over traditional vibro techniques and serving as a cost-effective alternative to driven precast piling methods.

The layout of the rigid inclusions were designed to achieve a bearing capacity of 150 kN/m<sup>2</sup> under the foundations and 65 kN/m<sup>2</sup> under the floor slabs, ensuring that the ground improvement would meet the engineer's requirements and specification.

To complete the work, RG19T, SR95, and RG21T specialist rigs were utilised. With a new on-site welding unit and a dedicated on-site welder, the team minimised delays and ensured smooth operations.

## AT A GLANCE

**Sector:** Commercial

**Solutions:** Ground Stabilisation

**Techniques:** Rigid Inclusions

**Client:** Robertson Construction Northern

**Van Elle Division:** Ground Improvement

## EQUIPMENT

- Bauer RG19T, SR95, and RG21T telescopic leader rigs

