



Glenfiddich Distillery, Dufftown

LOCATION	Dufftown, Keith
REQUIREMENT	Basement Retention
TECHNIQUES	Drilled Micropiles
MAIN CONTRACTOR	Robertson Construction Limited

Project Overview

The expansion of the existing distillery required an embedded piled retaining wall immediately adjacent to the live plant to facilitate the construction of the new extension.

Micropiles were used to form this wall due to the proximity and sensitivity of the process equipment in the operational facility. It was critical to position the new structure directly next to the existing building.

Minipiles or larger diameter piles would also have been unsuitable due to the predominantly granular material containing many cobbles and boulders. These ground conditions are ideal for micropiles.



Project Challenges

- The centreline of the building piles were 450mm from the face of the adjacent building.
- Granular overburden material with frequent cobbles and boulders.
- Sensitivity of adjacent structures and equipment to vibration. Vibration monitoring was required throughout the pile installation works.
- Restricted site requiring careful planning with regard to material storage, concrete deliveries and spoil management.

Solution Delivered

Micropiles were designed and installed using the TGS modified method. These were drilled to the design depth using rotary percussive techniques and grout flush. Reinforcement comprised full length circular hollow sections (CHS).

These piles were tied at the head with a reinforced concrete capping beam, prior to excavating the ground on the passive side to the reduced level for the new extension.

Excavation for the extension could be carried out in quick succession after installation of the wall, as the CHS was designed to carry all of the earth pressures. Conventional concrete bored pile walls would have required significantly longer curing time prior to excavation.



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