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Kingbarrow Quarry, Portland.

The problem.

Kingbarrow Quarry on the Isle of Portland in Dorset is a SSSI containing rare fauna, flora and fossils. A nature trail was planned to take the public around the quarry often through narrow paths hemmed by high spoil heaps contained by dry stonewalls. Consulting Engineers, Jacob Babbie undertook a study of the quarry and identified that many of the dry stone wall 'skins' were collapsing and unsafe.



A typical section of collapsing dry stone retaining wall

The Solution

Vertical Technology working with the consultants arrived at solutions to these unique stability problems. Access around the site was restricted by narrow paths, high unstable slopes and tunnels.

A multi stage approach was required to ensure that operatives were not exposed to risk.

- Loose rock was carefully picked off and the area injected with grout to 'stick' blocks together.
- Collapsed walls were built back up using concrete filled sand bags to give a strong long lasting structure.
- The new walls were anchored into the spoil behind using hollow self drilling anchors allowing grout to be injected deep into the fabric of the spoil.
- Finally, rock netting was secured using additional anchors and reinforced by tensioned steel cables.





Stabilised dry stone retaining wall



Other areas required temporary propping to allow safe access, dentition and hollow anchors

Access tunnels were assessed and where necessary, reinforced with props.

