

BROOKHOUSE FARM
SOLIHULL, BIRMINGHAM, UNITED KINGDOM**Mass Gravity Retaining Walls****Problem**

In December 2016 an existing concrete retaining wall carrying a road over the Brookhouse Farm culvert which is located in a low-lying geographical point of Frankley Green Lane, 10km southwest of Birmingham, became badly damaged as a result of surface water runoff. This caused erosion of the ground behind and below the concrete wall causing it to collapse, taking part of the carriageway with it. To reinstate the carriageway a new retaining wall was required to replace the damaged wall.

Worcestershire County Council's consulting engineers CH2M Hill produced an Approval in the Principal document which proposed a concrete-faced MSE wall with a requirement for a 120-year design life.

Solution

Maccaferri were approached by contractors Alun Griffiths to offer an engineered retaining wall solution to meet the requirements of the AIP. The chosen solution was MacWall® Vertica, a segmental block soil-reinforced wall system.

This proposal saw Paragrid Geogrid used as the reinforcement to the rear of the MacWall® Vertica block facing. Both the Paragrid and the Vertica block are BBA certified with a design life of 120 years.

The MacWall® Vertica blocks are a mortarless system that offers swiftness and ease of installation, relying on a friction connection with the Paragrid placed between the blocks at regular intervals to reinforce the granular backfill material which creates the reinforced soil wall.

In addition to improved highway drainage, effective drainage of the structure was also introduced by utilising the Macdrain drainage geocomposite to the rear of the reinforced earth structure which connected to a heel drain outfalling into the culvert.

Client: WORCESTERSHIRE COUNTY COUNCIL**Designer / Consultant:** CH2M Hill**Contractor:** Alun Griffiths**Products used (Qty.)****Date of construction:** 10/2017 - 02/2018[Google Maps](#)[Google Earth](#)**MacWall® Vertica block facing MSE wall****Side view of the MacWall® Vertica blocks**



Culvert headwall below MacWall® Vertica structure



MacWall® Vertica MSE wall - side view