MSE WALL - BRIDGE ABUTMENT WING WALLS
Product: MacWall Landmark & Paralink

Problem:
A housing development consortium including Bovis Homes, Bloor Homes and Linden Homes were required to build a new bypass from Pylands Lane to Heath House Lane in Bursledon near the M3-M27 intersection. This structure was needed to support the local infrastructure related to the consortium’s new development of 1,350 new homes on the site of a former golf course at Boorley.
Maccaferri Construction were appointed by Breheny Civil Engineering to build the two approaching ramps to the 20m single-span concrete bridge.

Solution:
Paralink and Macwall were the chosen solutions for this project.
The approaching embankments to the bridge were done with Macwall BBA due to the challenging ground conditions and load involved. The MSE walls were supported by Paralink placed over the piled foundation acting as a load transfer platform.
The Paralink and Macwall were also designed to support a crane for moving bridge elements into place which was part of the construction works.
A load of maximum pressure—198kPa was transferred to four steel bearing plates over the design MSE wall.

The Macwall approaching the bridge ramps has a maximum height of 11m and a total length of approx 100m. The MSE abutment walls were designed by specialist Geotechnical Engineer Gavin and Doherty Geosolutions Ltd (GDG) coordinating with principal designer SMA and OPUS.
The site which is ecologically sensitive had a great deal of work done to preserve the local flora and fauna. The bridge allows animals to pass through the valley of their natural habitat avoiding traffic.
The project was not only demanding in regards to the geotechnical point of view, but also from the health, safety and construction aspects, as the MSE wall and the Paralink foundations were installed into two tier platforms in very tight spaces.

Wing wall typical elevation. A two tier piled foundation platform with Paralink LTP was designed by GDGeo

Client:
HAMPshire COUNTY COUNCIL

Main contractor:
BREHENY CIVIL ENGINEERING

Designer:
GDGEO/OPUS-WSP/SMA

Products used:
BBA MACWALL (650sqm face area)
PARALINK 350 and 1100

Date of construction
JAN-JUNE 2018
Initial earthworks towards the end of 2017

Work started on the Macwall - Jan 2018

A piled embankment was constructed at either side of the structure to ensure that long term differential settlements between the bridge structure and the approach embankment were within tolerance. Paralink 350 & 1100 were selected

Macwall structure installed over the Paralink LTP platform

Paralink was wrapped back and covered as per BS8006 details
Latest Macwall courses were installed in June 2018
Lifting crane operating over the Macwall structure: the heavy loadings were considered into the MSEW design

Macwall MSEW structure completed in Autumn 2018