

MULLAN MOR, GLENANAIL ASHBROOKE, GALWAY, IRELAND

RETAINING STRUCTURES

Product: MacWall

Problem

A brown field site, previously used as a landfill on the outskirts of Galway, was to be redeveloped for housing. Retaining walls were required around three sides of the landfill. A system was required that would be rapid and simple to build, as the excavations would be within unstable waste material. Furthermore, to avoid leaving the unprotected landfill exposed for too long, the contractor required a system that could be built in short lengths.

An additional requirement was that the system had to be chemically inert to the waste within the landfill. The system needed to retain the site access road along one side of the development, 11m vertically above the toe of the landfill.

Solution

It was recognised that the MacWall Landmark system offered several unique benefits on this project.

Being a modular dry build system, construction is rapid and the Enkagrid™ PRO geosynthetic used as reinforcement within the structural backfill is unaffected by the landfill material and leachates. Also, the components of the Landmark system are produced off-site in quality controlled processes, offering significant benefits to the contractor on site.

At their tallest, these walls needed to be 11 metres (36 ft) tall but local planners required that in some areas, the walls should be split into three, 4 metre (13 ft) high terraced walls to accommodate a requirement for steps down to a park area and to soften the aesthetics of the structure where it faced the road. The planners extended this requirement for a 'soft appearance' by not allowing any 90 degree corners. The MacWall Landmark standard facing allows a 2.5m radius without the need for special or cut out blocks.

Client:

MICHAEL FITZGERALD & SONS

Main contractor:

MICHAEL FITZGERALD & SONS

Designer:

MACCAFERRI LTD, (UK)

Product used:

MACWALL "LANDMARK", ENKAGRID PRO

Construction date:

SPRING 2005



Post construction



Post construction



Post construction

A unique 'locking bar' anchors the Enkagrid™ PRO geogrid into the MacWall Landmark block, forming a positive connection between fascia blocks and the geogrids reinforcing the structural backfill. This offers engineered reassurance in these tall structures.

Although the contractor had no previous experience of similar systems, with on-site training they were able to utilise their own labour to build the wall quickly and cost-effectively.

A key benefit identified by the contractor was that once completed, the MacWall Landmark retaining wall could support heavy construction equipment immediately, without the need to wait for the concrete to cure as with traditional cast-in-place walls.

In selecting the MacWall Landmark system, the Developer maximised the land available for housing and also overcame the significant technical difficulties on the site. Because the wall could be built in sections, the contractor was able to be flexible in phasing the construction, in line with the overall development programme. Although MacWall Landmark wall systems are inherently commercially viable, the use of on-site labour further enhanced the cost-effectiveness of the project.

The split face and blended colours of the MacWall Landmark blocks used on this project contributed to an aesthetically pleasing scheme that comfortably met the requirements of the local city planners.



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