

# Improving Sustainability With Geosynthetics In A Landscaping And Architectural Project In Dubai

Dubai's Museum of the Future is one of the most innovative structures in the world, which is designed as - the lower green hill, a three-story building embedded inside the hill housing the museum, and an elliptical void structure at the top. Instead of a solid earth hill, the green hill was made as claddings of varying green cover slopes around the base structure.

Maccaferri was chosen as the technology provider for the green cover system, thanks to its wide range of products that could meet the project's complexity.

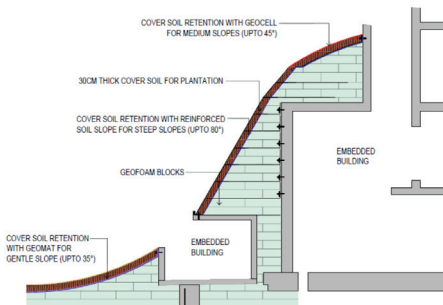
To create slopes at drastically varying angles addressing the functions of soil retention, stabilization and smart irrigation needs of the project, a wide range of geosynthetics were used, such as Biomac® (GMA), Macmat HS® (GMA), Macdrain W® (GCO), Macweb® (GCE) and Terramesh Green® (GGR).

A comparative Life Cycle Assessment was also done to quantify the sustainability benefits of using geosynthetics in the project. The chosen approach ensured the following environmental sustainability benefits:

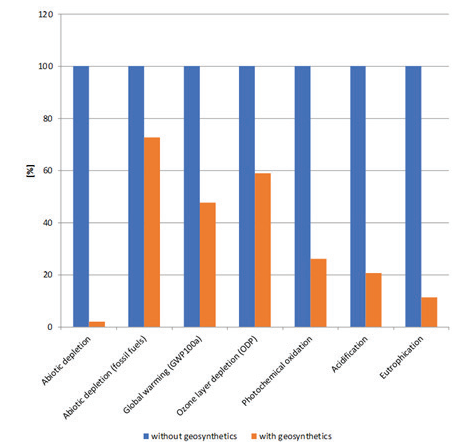
- Replacement of a 30cm thick gravel drainage layer by adopting a GCO layer.
- Cover soil thickness reduction (by 20cm ) by a GMA veneer reinforcement layer.
- Recycling excess irrigation water (by 25%) using a GCO layer below the cover soil.
- Carbon sequestration from trees and plants growing within geosynthetics.
- Reducing solar gain and heat island effect of the embedded building due to the green roof made of geosynthetics.



**Company:** Maccaferri  
**Client:** MERAAS  
**Location:** Dubai  
**Application:** Boosting greenery and fortifying soil structure by using a combination of geosynthetics in a sloping application  
**Benefits:** Environmental sustainability, cost and time savings, improved safety



The International Geosynthetics Society (IGS) is a learned society dedicated to the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies. We are registered as a non-profit corporation.



To find out more, contact Maccaferri Middle East by emailing at [info.ae@maccaferri.com](mailto:info.ae@maccaferri.com).

The IGS Sustainability Committee is committed to communicating the positive environmental impact of using geosynthetics, improving worldwide understanding of the sustainability benefits of geosynthetic materials, and supporting the geosynthetics industry maximize the sustainability potential of their projects. For more information, visit our webpage at [www.geosyntheticsociety.org/sustainability](http://www.geosyntheticsociety.org/sustainability).

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