

# Project:

*Reinforced slope  
in Vignale (Italy)*



## Project Reinforced slope in Vignale (Italy)



**Fig. 1**  
Secugrid® (total 15 layers) reinforced slope surrounding a hotel property

Vignale, Italy is famous for its dance festival around the ancient hilltop and the church located at the top as well as for its outstanding wine. At the base of the hill a building was substantially renovated and transformed into a hotel.



**Fig. 2**  
Secugrid® reinforced front facing

However, due to the lack of level terrain, both the owner and designer (architect Carlo Assandro) had to find a solution that would cause the least impact on the environment but allow them to gain a maximum of level terrain for recreation purposes.

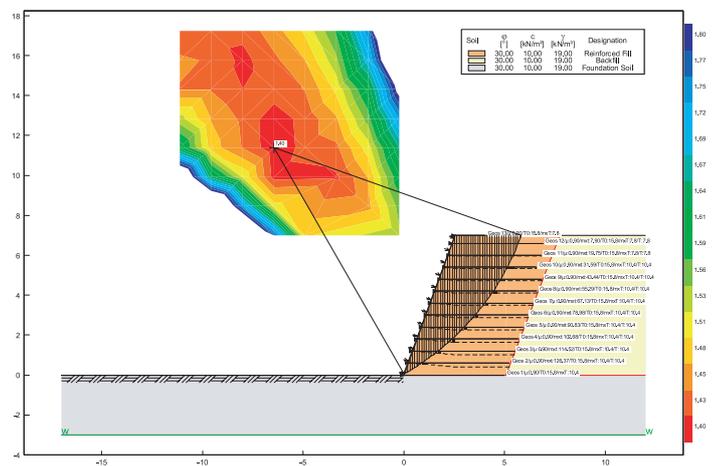
After a meeting with the owner, the architect, the general contractor (Cavallo Co.) and NAUE Geosystem (Turin, Italy), a design was recommended that included reinforced slopes, to ensure the internal and external stability of the construction. A main reinforced slope was created with the aim to surround the property. Two additional, smaller reinforced and rectangular slopes, orthogonally arrayed to the main one, established three levels for the inner park. The Secugrid® reinforced slope has an approximate inclination of 75 degrees. The soil was reinforced by installing one geogrid layer every 60 cm. The anchorage lengths varied from 3 m - 6 m. The highest zone in the reinforced structure has 15 geogrid layers.

In order to obtain an even facing, wire mesh mats were used. Coconut mats between the wire mesh and soil were used to prevent soil erosion due to wind and water prior to plant growth.

Approximately 12,350 m<sup>2</sup> of geogrid layers were installed in this project. With this soil reinforcement solution it was possible to add additional area to the surrounding of the hotel and shape a suitable structure around the hotel with a cost-effective budget. The additional space was filled with tennis courts, swimming pool and solariums.

This geogrid-reinforced soil construction method has increased the property value and the recreation possibilities for the hotel.

**Fig. 3**  
Critical slip circle of the internal stability analysis for the design of the retaining wall in Vignale



**Fig. 4**  
Vegetation of Secugrid® reinforced slope after 1 year



NAUE GmbH & Co. KG  
Gewerbestr. 2  
32339 Espelkamp-Fiestel · Germany  
Phone +49 5743 41-0  
Fax +49 5743 41-240  
E-Mail info@naue.com  
Internet www.naue.com



NAUE®, Secugrid® are registered trademarks of NAUE GmbH & Co. KG.

The information contained herein is the best to our knowledge, true and accurate. There is no implied or expressed warranty.  
© 2009 by NAUE GmbH & Co. KG, Espelkamp-Fiestel, Germany · All rights reserved. · No. 124 · Status 08/2009