



View upon the eye-catching steep pitched green roofs of 5-star GF Victoria hotel.

### Project data

Area: ca. 1,000 m<sup>2</sup>

Construction year: 2017

Architect/Design:  
Architects Studio Javier Álvarez and  
Silvia Miguel, Santa Cruz de Tenerife

Contractor:  
Impermeabilizaciones Machado,  
S.L.U., La Orotava. S/C de Tenerife

System build-up: "Steep pitched roof"  
with Georaster®

Coordinates:  
28°05'29.4"N 16°44'19.6"W

### Conception

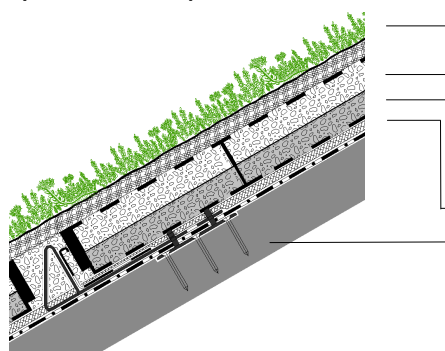
The GF Victoria luxury hotel which opened its doors in 2018 in Costa Adeje / Tenerife, not only impresses with its sustainability concept, but has also become a visual attraction in this popular tourist destination thanks to its three steep pitched green roofs. With slopes of up to 45° and a verge length of up to 33 m, these green roofs are among the steepest of their kind in Europe and could only be realized under very specific conditions. Steep pitched roofs usually reach their natural limit at a pitch of approx. 35°. So a variety of conditions had to be fulfilled that a roof with slopes going beyond could be greened.

Apart from the functional reliability of the material installed, other aspects played an important role during installation. First and foremost was the enthusiasm and commitment of all those involved, who never questioned the success of the project. In addition, stable weather conditions during installation were important in order to be able to go without the usual pre-cultivated sedum mats which are normally used on steep pitched roofs. Instead a selection of drought-resistant shrubs and perennials adapted to the Tenerife climate and well coordinated in colours was planted giving the roof its unique and extraordinary design.

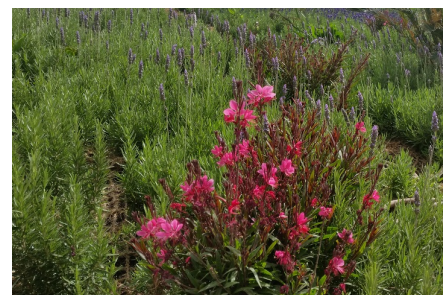


Artificial rocks and the planting of palm trees within and between the pitched roofs add further accents to these extraordinary green roofs.

### System Build-up



- Plant layer
- System Substrate "Roof Garden"
- Georaster® infilled with System Substrate, plus shear barriers consisting of Shearfix LF 300 support bracket and TRP 80 eaves profile for shear protection
- Protection Mat WSM 150
- Roof construction with root resistant water-proofing



The planting scheme included plant species well adapted to the climate with low water requirements and resistant to strong solar radiation.



Only six months after planting, the shrubs and perennials have developed into a beautiful flower carpet, both in the pitched and in the few flat roof areas.





### Development



View upon one of the three steep pitched roofs after the installation of shear barriers and Georaster.



The substrate was applied by crane ...

### Shear protection and Irrigation

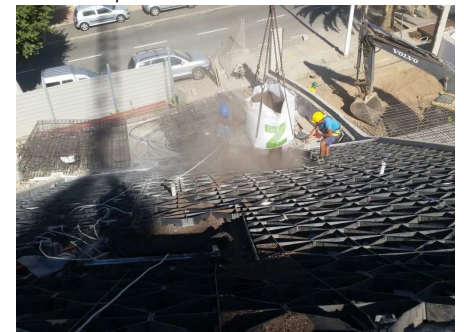
Due to the extremely steep roof pitch of these three roofs, special measures for shear protection were required. To prevent the green roof build-up from slipping, more than 700 ZinCo Shear-fix LF 300 support brackets in combination with TRP 80 eaves profiles were installed as shear barriers. Between the barriers, ZinCo Georaster elements were laid over the entire surface and filled with system substrate up to a height of 120 mm.

In addition, the substrate layer was secured

against wind and water erosion by using a special biodegradable organic glue and fixing coconut fiber nets before introducing the plants.

For irrigating the plants, which is a particular challenge with pitched roofs in dry climates, two coordinated irrigation systems were installed, which in combination with the ZinCo protection and water storage mat WSF 150 ensure an optimised water supply at the lowest possible consumption.

...with a roof pitch of up to 45° a demanding installation job.



More than 700 Shearfix LF 300 support brackets had to be installed on the steep pitched roofs.



Detailed view of the shear barriers with TRP 80 eaves profile, Georaster and WSM 150 Mat.



Two coordinated irrigation systems were installed for optimising the water supply.



Before introducing the plants, the substrate was secured against erosion with a special organic glue and nets of coconut fibers. Instead of sedum mat planting customary for steep pitched roofs, shrubs and perennials adapted to the local climate were selected and developed well and quickly thanks to irrigation.

