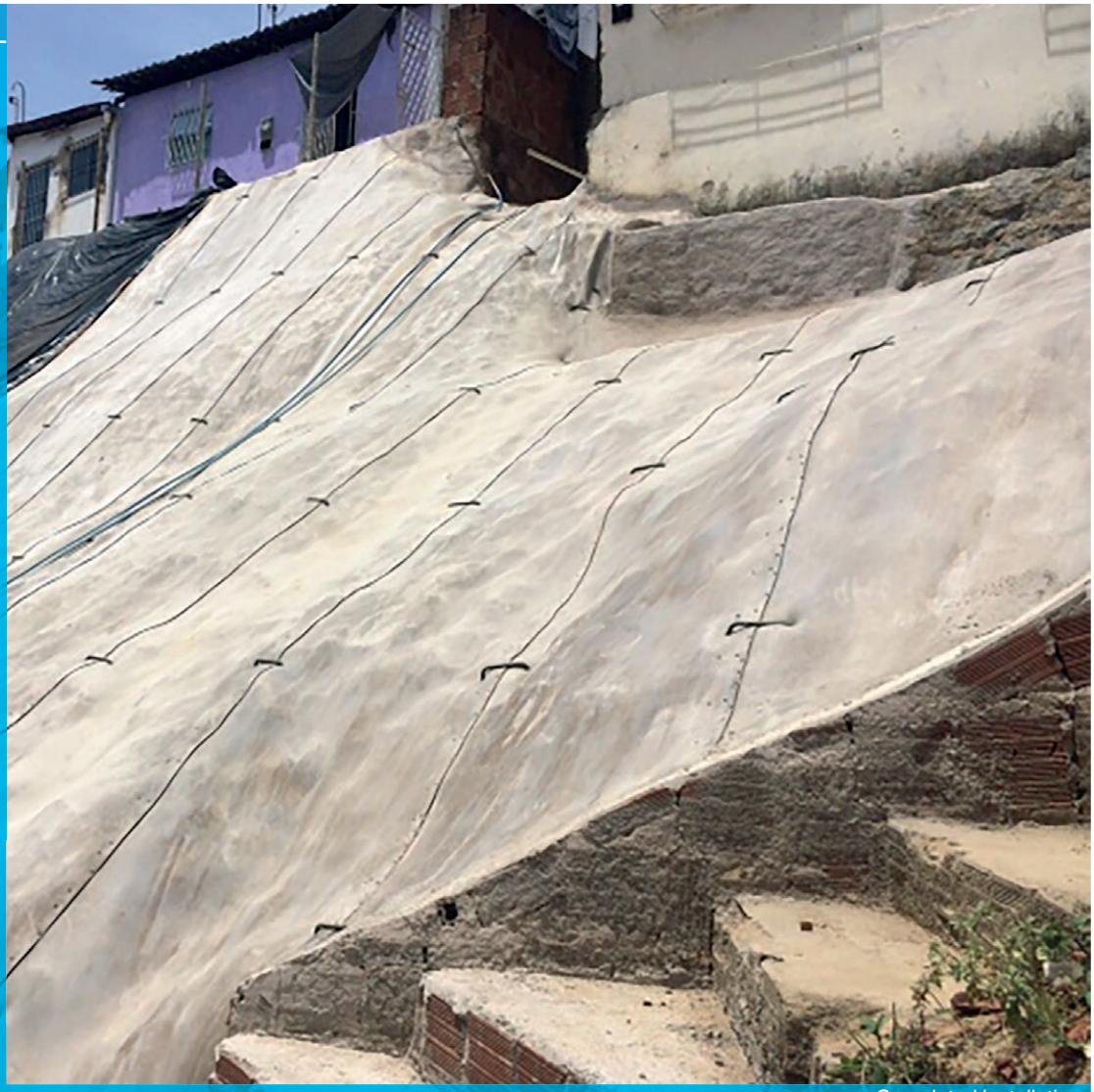
SLOPE PROTECTION

Project Info

- 06 / 02 / 15
- CC8™ Bulk Rolls
- 125m²
- Vertical layers
- Recife, Pernambuco Brazil, Bairro Imbura, Brazil
- SPI Brazil
- CC8™ used to protect a residential slope facing severe erosion issues.



Completed installation

In February 2015, Concrete Canvas® GCCM* (CC) was used to protect a residential slope in Recife, Brazil.

The slope was facing severe erosion problems which had led to the collapse of a house at the crest of the slope. Shotcrete was considered, but due to the varying profile of the slope and the site location this would have been logistically complex and was therefore ruled out. A gel and geotextile combination was also an option, however, it was decided this solution was too fragile to cope with the anticipated weathering erosion. Additionally, previous installations of this material had been subject to theft. Due to CC's resistance to impact, UV degradation and its estimated 50 year life-span, it was installed as a trial to assess its suitability for 1,400 similar projects within the municipality.

The slope ranges in height from 5m to 12m and is surrounded by housing. Loose soil, rock and vegetation was removed and the surface re-graded to ensure intimate contact between the CC and the substrate. The nearby stairs and a masonry wall were repaired with concrete as part of the works. A bulk roll of CC8™ was delivered to site and mounted onto a spreader beam hung from a crane. For the smaller lengths, the CC was unrolled on the flat, cut to specific length and positioned onto the slope by hand, with the installation crew ensuring there was a 100mm overlap between layers. For the steeper, taller parts of the slope the CC roll was positioned at the top of the slope and spooled down, reducing the manual handling requirement.

The works were carried out by SPI Brazil for Defesa Civil Recife (Civil Defense Recife Municipality).

*Geosynthetic Cementitious Composite Mat

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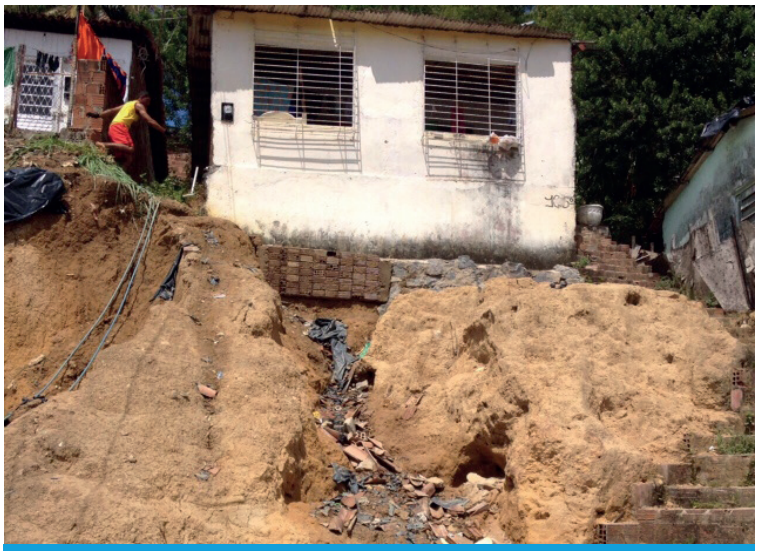
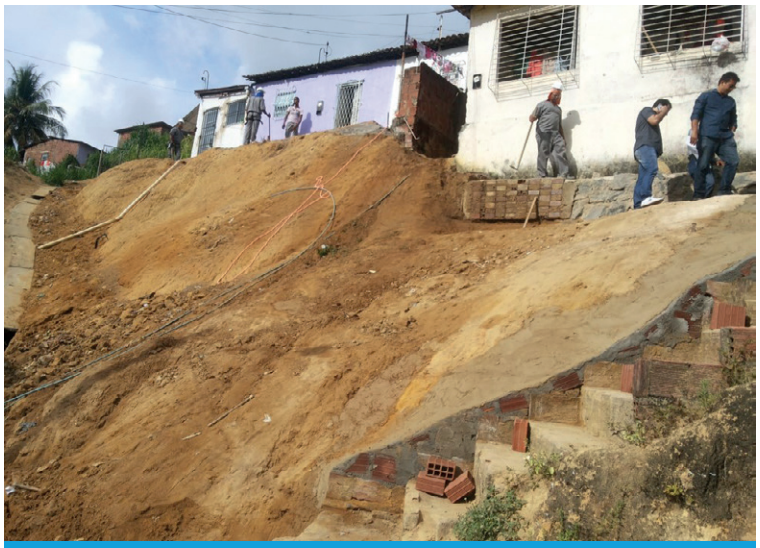
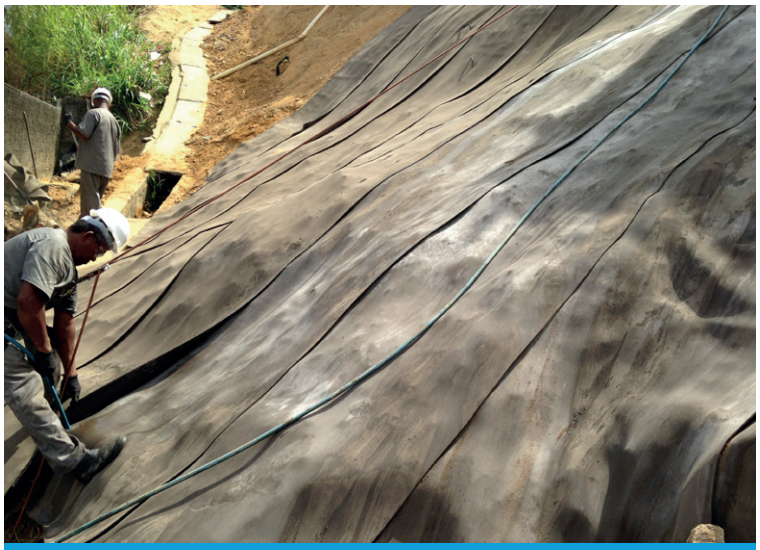


Extensive erosion of the slope

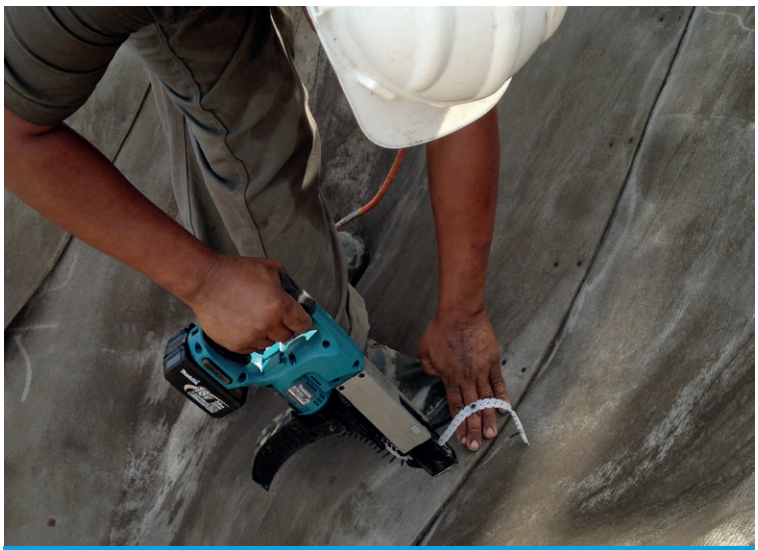


Ground preperation

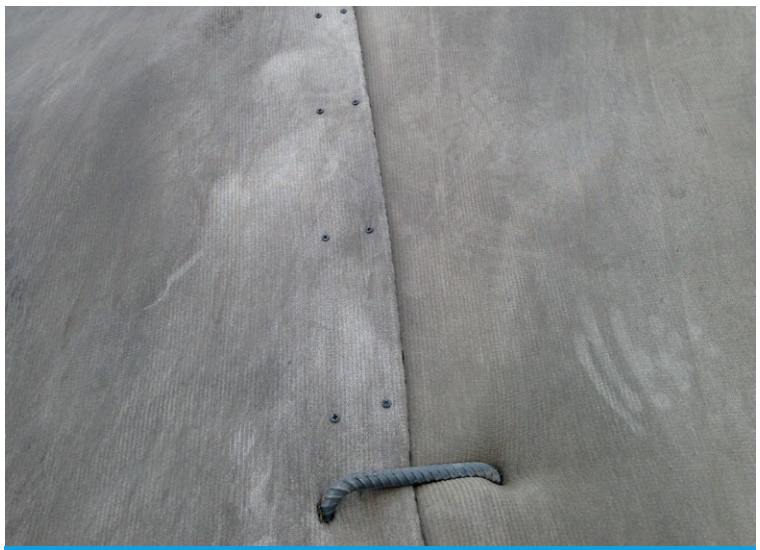
CC spooled down the slope



Hydrating under the overlap



Joints were screwed every 200mm with a double row of screws



Pegs were inserted through every overlap at 2m intervals

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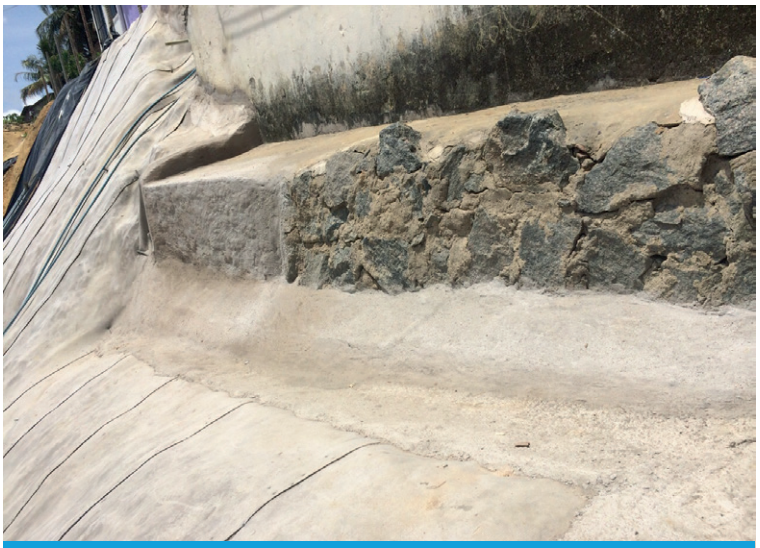
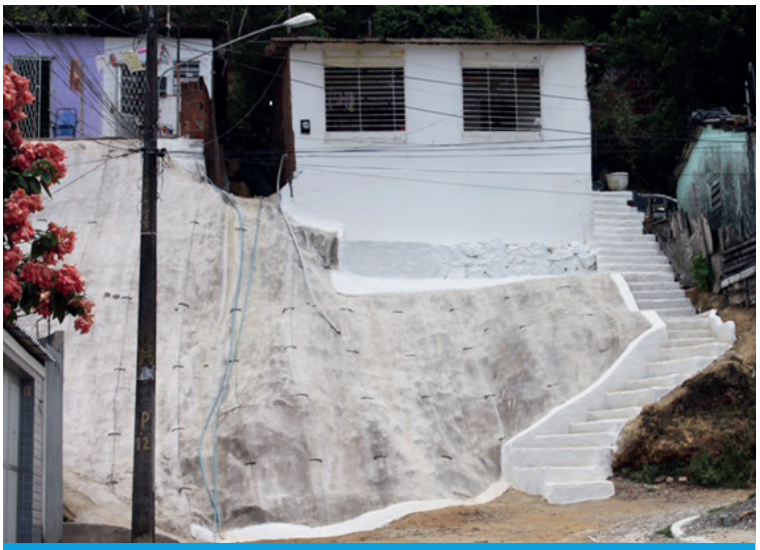
Hydration



Mortar joint

The finished painted slope



The finished project

The CC was initially fixed at the top of the slope to allow the installation crew to hydrate under the overlap before fixing and jointing. 400mm ground pegs were then inserted through the overlaps at 2m intervals to fix the CC to the slope. To joint the overlaps a double row of screws were applied at 200mm centres using an auto feed screwdriver, then hydration was completed using an 8000L bowser and hose with spray nozzle attached. A concrete mortar was used where CC terminated onto masonry infrastructure and, once set, the slope was painted to match the surroundings.

125m^2 of CC8^{TM} were installed in just 9 hours by a team of 6 supervised by SPI Brasil in temperatures of up to 35^{o}C. The project was a huge success with the client calling it an 'innovative solution' that was faster and cleaner to install than shotcrete with less weight burden being placed on the slope. As a result of this project, CC has the potential to be listed in the Brazilian National suppliers system, showing that it has been approved for use by the state.

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