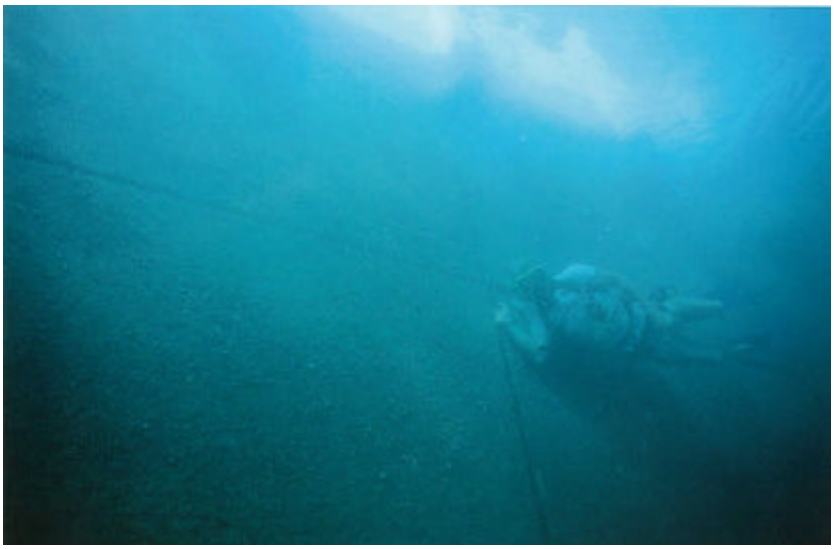


CASE STUDY

Honiara Copra Wharf

Honiara, Solomon Islands

Reinforced Earth Walls
TerraSet®

Owner:	Solomon Islands Port Authority
Contractor:	John Holland (Honiara) Ltd.
Construction:	August 1986

Background
Copra and fish are the principal exports of the Solomon Islands.

Challenge
The reconstruction of the copra wharf in Honiara became necessary, as the existing steel sheet pile wharf had decayed near to the point of collapse.

The project became the pioneer for a new technique of constructing Reinforced Earth underwater. Its use allowed maximum use of local resources and labour.

Solution
The traditional Reinforced Earth techniques were reinterpreted for underwater construction.

The Reinforced Earth block carries the loads applied by the bollards (up to 50T), fenders, wharf traffic and earthquakes. The steel strips reinforce the granular backfill and the precast concrete facing panels contain the resulting cohesive load carrying mass.

A rectangular panel of mass concrete replaced the familiar cruciform panel shape. The panel was specifically proportioned to:

- Improve panel stability during construction.
- Improve durability.
- Provide flexibility between the panel and the Reinforced Earth block.

The panels were guided into place by divers, who also installed the ribbed steel reinforcing strips.

The construction was staged by installing temporary wirewalls, which would enable only the required work zones to be opened up and exposed at any one time.

The wirewall was fabricated in the dry and the whole wirewall was lowered into place, this allowed for a layer-by-layer release of reinforcement strips to be placed as the backfill continued on the main wall.

The Poha River gravel backfill was placed by grab around the strips and consolidated using poker vibrators.

The wall is 85.2m long and varies in height between 3m and 6m. The job was completed in 10 months.

Special features/benefits

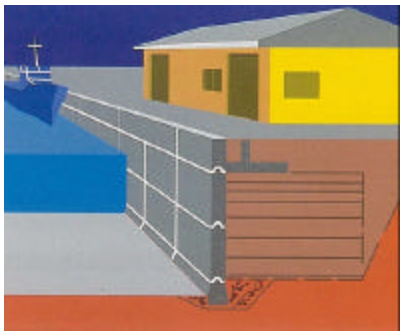
- Design and Construction of an underwater Reinforced Earth Wall.
- Staged construction ensuring only the required work zones were open up and exposed at any one time.

Main Picture: Scuba diver inspects the underwater installation of the TerraSet® wharf wall.

Above: Worker starting to placed one of the TerraSet® panels in a lower section of walling.

Industrial, energy, military and hydraulic infrastructure

Reinforced Earth
Sustainable Technology



Top left: The completed Honiara Copra Wharf

Top Right: Diagrammatic cross-section of the Project

Project specifications

System	TerraSet®
Finish	Smooth, grey concrete
Structure	Wharf (underwater)
Area	342m²
Max. Height	6m
Length	85.2m
Design load	The loads applied by the bollards (up to 50T), fenders, wharf traffic and earthquakes.

Reinforced Earth

Sustainable Technology

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