



GEOQUEST

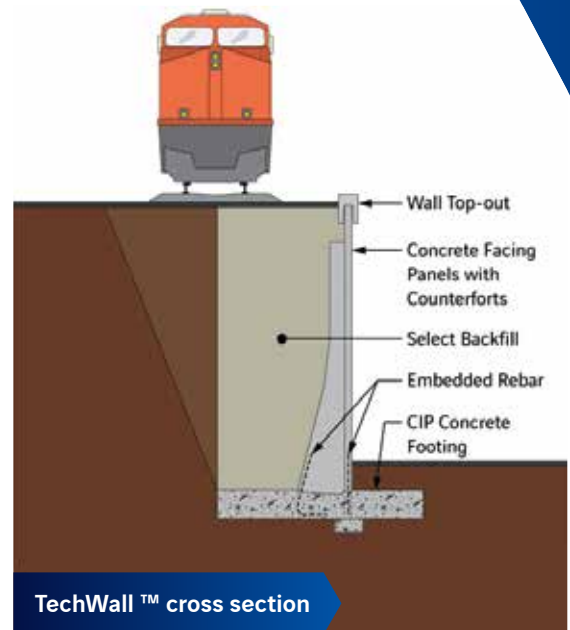
TechWall™

PRECAST COUNTERFORT RETAINING WALLS

TechWall™

Precast Counterfort Retaining Walls

TechWall™ is a precast retaining wall solution designed to withstand lateral earth pressure and provide reliable support for various civil works, such as vertical retaining walls, wingwalls and bridge abutments.



TechWall™ relies on counterforts, which play a crucial role in ensuring the overall stability and strength of the retaining wall. By acting as cantilever beams, the counterforts can effectively resist the lateral earth pressure, thereby reducing the moments in the facing panel. As a result, the thickness of the concrete panel can be minimised, without compromising the strength and durability of the structure.

TechWall™ can be used in a wide range of applications and provides a cost-effective, reliable, and durable solution for retaining walls.

Common applications include:

- Overpasses and underpasses
- Bridge abutments
- Hydraulic works, like river channelings

Geoquest has designed more than 1300 projects and close to 1,000,000 square meters of TechWall™ around the world.



Where does TechWall™ fit the best?

TechWall™ counterfort precast retaining walls are a top choice for sites that have a soil bearing capacity that can accommodate for a shallow foundation. Design allows for a **reduction in foundation depth**, making it a **cost-effective and efficient solution** for retaining walls.

In situations where a deeper foundation is necessary, a piling solution can be easily integrated into the design. This is a testament to the **flexibility and adaptability of TechWall™**, which can be customised to meet the unique needs and requirements of each project.

Another key feature of TechWall™ is its **height capacity**. With the ability to reach up to 15 meters in height, this system is ideal for projects that require a tall and durable retaining wall.

The **width of TechWall™ units is also highly customisable**, with standard widths ranging between 1.20 meters and 2.40 meters. The elements can also be manufactured in other widths when necessary, allowing for maximum flexibility in design and construction.

Advantages in short:

- **Cost effectiveness:** lower overall cost compared to conventional methods, and minimal maintenance requirements
- **Quick construction:** standardised TechWall™ installation method
- **Sustainability:** thin panels allow for carbon footprint reduction
- **Aesthetics:** various architectural finish options available
- **Experience:** Geoquest and its subsidiaries have a strong global experience and proven record of successful projects built with TechWall™.



Installations

- The **installation** of TechWall™ is a relatively simple process, thanks to the precast nature of the wall units. After a thorough safety and responsibility briefing, the following steps are followed:
- Set of precast panels on top of a leveling pad or a shear key
- Installation of lateral bracing
- Footing casting
- Removal of bracing and backfilling of structure

Customisable panels

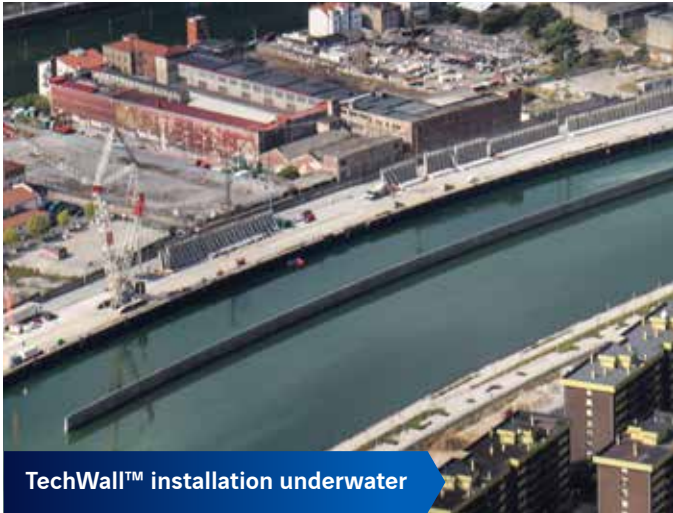
Another key advantage of TechWall™ is the ability to customise the panel facings with various architectural finishes. This means that retaining walls can be designed to blend seamlessly with the surrounding environment or to make a bold statement with unique finishes.



Land reclamation using TechWall™

Bilbao, Spain

As part of a 20Mn€ residential and mixed uses project, the Bilbao Port Authority needed to reclaim 50,000m² of land for land development in the Bilbao estuary. Geoquest Spain was appointed to design and supply 1.5km of TechWall™.



TechWall™ installation underwater



Land reclamation with TechWall™

Key challenges

Working in a tidal zone presents many challenges. In this case, instead of considering a standard coffer dam approach with steel piles and the disadvantages that come with it, the client wanted an aesthetic surface matching existing estuary walls.

The selected solution consisted in installing 60 km of stone column foundations, which were installed below the area to be built upon, on top of which granular and levelled fills were later deposited where the thin-walled precast counterfort panels would be placed.

The most complex work was the placement of TechWall™ where installation procedures required the use of a crane with a great reach (up to 115m) as well as under-water placement capacity.

These works resulted in the construction of more than 750 TechWall™ units, up to 10m tall to form the 1.5km breakwater walls necessary to contain the landfill reclamation area in two separate areas.



TechWall™ installation underwater

About Us



1968

established since



293 M€

2023 revenue



80

countries



70 million m²

of Reinforced Earth[®]
walls



+100.000

structures around
the world



102,8 m

tallest structure

As global specialist we operate as **designer** and **supplier** of civil engineering solutions that **Retain, Cross, Protect and Strengthen**. As the **inventor of the Reinforced Earth[®] solution**, our strength is the result of an **unrivalled combination of expertise with over 60 years of experience** in the fields of **soil-structure interaction** and **engineered backfills**.

Geoquest delivers **its leading technologies** to serve clients' projects, from the simplest to the most extraordinary. Guided by our focus on **innovation** and our **culture of excellence in client care**, we offer **durable solutions**. We build on our **global expertise**, which is applied by our **local companies** to develop new applications to address challenges and ensure sustainability of our solutions.

Watch our Retain, Cross, Protect, Strengthen video.



 www.geoquest-group.com.au

 Geoquest Australia

 Geoquest Group

**Engineering expertise,
innovation and excellence
in client care to deliver
sustainable solutions.**



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