

# West Beach Rock Wall



## Precast integral to success of rockwall

Australia's coastlines are under threat. They are being eroded to the extent that receding shorelines are threatening seaside cities, suburbs and towns. With 85% of our population living within 50 kilometres from the coast and an increase in coastal development, the threat is real. Approximately 10 kilometres from the city of Adelaide, West Beach is experiencing extreme shoreline erosion, and it's affecting the local community.

### West Beach community under threat

According to the City of Charles Sturt Operations Engineer Mark Chittleborough, environmental impact in recent years has damaged the structural integrity of the existing West Beach Coastal Seawall.

The original Seawall was constructed in 1973, with the purpose of protecting nearby assets including car parks, the West Beach Surf Life Saving Club (WBSLSC), domestic properties, public amenities and tourist areas. Major storms in May 2015 and May 2016 prompted the question of whether the Seawall had reached the end of its useful life.

Slumping in some areas, the existing Seawall was posing a threat to the safety of those using the area. Along with erosion of the Seawall, both sand management and the reinstatement of the Coast Path required attention.

### Precast adds structural integrity

To address the issues, council engaged engineers Kellogg Brown Root to design a rock wall that would improve the durability of the shoreline during severe storm events. This design has taken multiple factors into consideration, such as the surrounding amenities of the location, as well as the residents who live close by.

Integral to the design is a series of precast L-walls manufactured by National Precast member Rocla. The L-walls measured 2000mm by 2800mm. Locally supplied from the precaster's Edinburgh factory, the precast elements were selected to enhance the structural integrity of the design.

#### Precast manufacturer

Rocla

#### Builder

Lucas Total Contract Solutions

#### Engineer

Kellogg Brown & Root

#### Client

City of Charles Sturt Council

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A 50-year life has been implemented into the design of the Rock Wall, reflecting on the requirements in AS 4997-2005 Guidelines for the Design of Maritime Structures.

Precast concrete was not only chosen for its longevity and strength, but also for its inherent mass to provide impact resistance against strong currents and storms. Unlike other materials, the council was confident that precast would withstand the chloride-induced corrosion from the aggressive marine environment.

Cost and efficiency of construction were other considerations. Precast proved to be more cost competitive than an in-situ alternative, and its offsite manufacture and just-in-time delivery meant that erection and installation was efficient and simple.

Mr Chittleborough says that once complete, the project will ensure that the rock wall will withstand significant storm events and projected sea level rise.

"It will act as a barrier and protector for the Surf Club, the Coast Path, road, car park and homes along Seaview Road for the design life of the wall."



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