

Mooloolaba Foreshore Revitalisation



Stage Two Southern seawall update

Stage Two of the Mooloolaba Foreshore Revitalisation includes the Central Meeting Place and the Southern Seawall.

A new 290 metre long, curved seawall will replace the existing vertical rock-pitched seawall.

It will be made of light coloured concrete and feature:

- wide stepped terraces that double as community seating for watching the waves or events
- an ocean viewing deck
- attractive landscaping including areas with seats and new shade trees.
- four beach access stair locations.

The new design allows enhanced beach access with an all-abilities access ramp for wheelchairs, prams or mobility devices as well as reducing the physical and visual barrier between businesses and the beach.

During construction public access remains to more than a kilometre of Mooloolaba Beach including a surf lifesaver patrol flagged area.

Post construction there will be no net loss of useable beach with the seawall's footings covered by sand and an ongoing sand renourishment program plan. Adjacent dunal areas will also be revegetated.

Seawall construction method

The replacement seawall will be built using a 'secant pier' construction method. This method enables the seawall's footprint:

- to be reduced
- footings and lower terraces to be buried (by sand)
- to create less vibration during construction.

Overlapping reinforced concrete piles are put into the ground in an interlocking fashion.

This creates a continuous barrier that ensures the seawall's structural integrity and provides erosion protection from major storm events.

As the old seawall is demolished, the new seawall will be constructed in sections, moving from south (near the surf club), northwards towards the temporary toilets.

Step by step seawall construction

Replacing a seawall in a beachside location presents some challenges including working with the weather, tidal variations and requiring specialist construction machinery. An efficient construction process has been developed to ensure the seawall can be built as quickly as possible. [A brief summary of each step has been included below.](#)

Creating a temporary beach track: Rocks are laid on a base of Geotextile fabric as a temporary beach track to allow construction machinery to move safely across the sand. Both the rocks and fabric will be removed after construction is finished. *Image below shows the temporary beach track being formed.*



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Temporary guide wall: To assist with accurate positioning of the seawall piles, a temporary guide wall is constructed and later removed once piling is complete. *Image below shows the guide wall indicated via red arrow.*



Bringing in the piling rig: Specialist construction machinery is required to install the piles. The drill has a spiral blade that rotates and buries into the ground. As it drills down, it pulls up and removes the soil/sand. *Image below of the piling rig in action.*



Primary piles installed: As the drill comes up, concrete is pumped into the hole created by the drill to form the first set of piles. These piles extend up to 5 metres below ground level and form the start of the wall below ground.

Foundation piles installed: The second set of piles are partially cut into the first ones. This creates an interlocking wall known as a 'secant pile wall'. These piles extend up to 9 metres below ground to provide a foundation for the terrace wall.

Reinforcements added: Steel bar reinforcement cages are placed inside the piles to ensure a solid structural foundation. *Image below showing bar reinforcements being inserted in piles.*



Piling finished: Once all piles are in place, the guide wall is removed. The excess concrete material is reused as fill behind the seawall.

Embankment stabilisation: Prior to the concrete terrace construction, the embankment is shaped, covered with geofabric and then seepage drainage and rock material installed (old seawall rock). *See below image of rock laid onto the geofabric.*



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Preparation for lowest terrace: The tops of the piles are then cut back to expose the reinforcing using a device called a 'cropper'. Steel reinforcement is then prepared to connect with the first level of the seawall terraces. *See below image of the 'cropper' in action.*



Building the seawall terraces: Plain concrete is poured to create a 'blinder' which provides a working platform to allow for the concrete terraces to be constructed. Steel moulds (formwork) are then used to create the exposed fronts of the terraces and seating areas.

First terrace: Eco friendly, high-strength, sand coloured concrete is then poured inside the steel moulds to form the first terrace step. *The image below is an example terraced step built off-site, showing the steel moulds for the terraces and plain concrete laid as 'working platform' before the sand coloured concrete is laid on top.*



Formwork: Each terraced step uses steel formwork moulds to create the shape of each terrace. These steel moulds are then reused throughout the seawall terrace construction. *Image above right, shows the steel formwork being removed after the concrete has cured.*



Example seawall: Construction starts from the lowest level terrace (which will be buried under sand) and moves upward towards the parkland and Esplanade level. *Image below shows an example of the seawall's terraced steps and shows the plain concrete 'working platform' beneath the sand coloured terraces.*



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Seawall construction finished: Once the seawall is built, the beach area in front will reopen. Planting, landscaping and other finishing touches will continue to take place within the construction area. The terraces will include areas for planter boxes, new lights and irrigation. *The artist impression below of the replacement seawall shows planting and landscaping throughout the terraced steps.*



What to expect as the seawall takes shape

There are multiple technical steps and stages required before the finished terraced seawall is complete.

From site preparation and groundwork, through to structural works, services installation and finishing- each stage requires careful planning, safety checks and quality assurance.

It's important to note that any temporary levels, finishes, or appearances seen during construction are not the final result. Instead, are necessary stages of the building process critical to ensuring the strength, safety and longevity of Mooloolaba's coastal protection.

Timeframe

While the seawall will take some time to complete, our community can expect to see a finished section by early 2026, providing a tangible sense of progress and a clearer picture of the high-quality outcome that is being delivered.

Keep updated on the project

To help keep our community informed, regular emailed construction updates will be issued to all [subscribers](#) and published on the project's [web page](#). The project team will continue to liaise directly with businesses as applicable.

Contact the project team

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All information contained in this communication is accurate at the time of distribution. However, works and dates are subject to change due to circumstances outside of Sunshine Coast Council's control including weather and site conditions.

The Mooloolaba Seawall project received funding from the Australian Government.



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