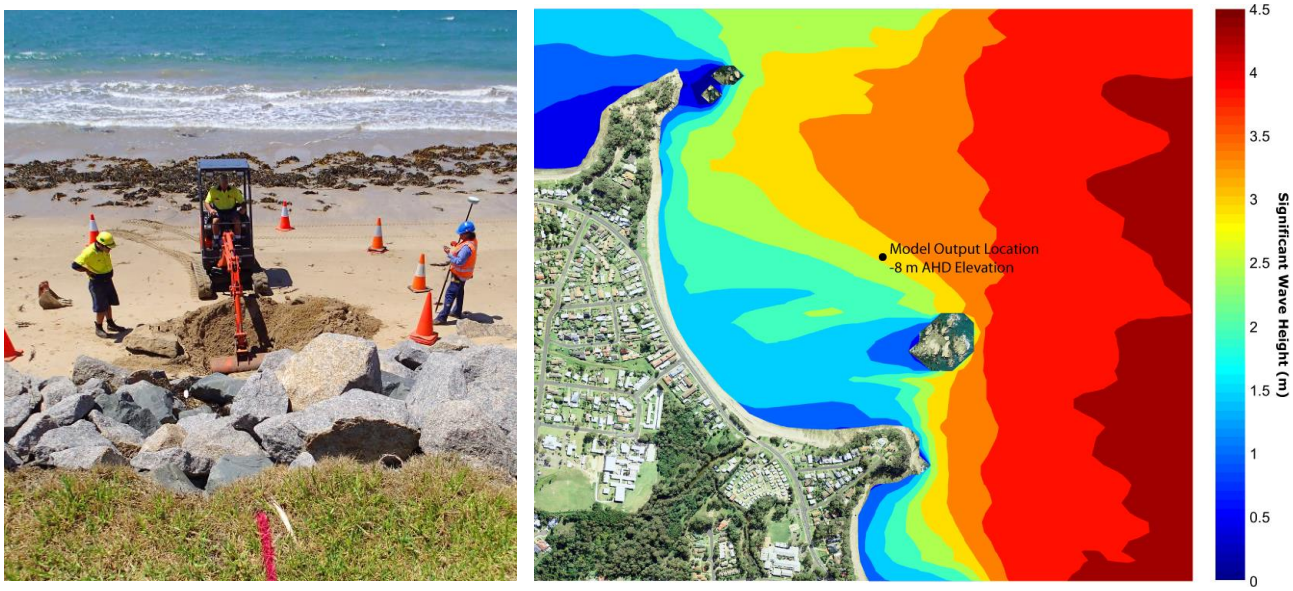
Caseys Beach Seawall Upgrade

Client: Eurobodalla Shire Council
Year: 2013
Project Reference: 2012107
WRL Technical Report: Caseys Beach Seawall Design (2013/04)

Eurobodalla Shire Council engaged WRL in partnership with Aurecon to prepare the design for the Caseys Beach seawall upgrade. Caseys Beach is located on the mid-south coast of NSW approximately 5 km south-east of the CBD of Batemans Bay. It is an 850 m long pocket beach situated between Observation Head (Corrigans Beach) in the north and Sunshine Bay in the south. The beach faces east with a low gradient and is exposed to a low to medium wave climate which usually maintains a shallow continuous bar along the length of the beach. The beach is generally most narrow at its centre and widens to the north and south of this point. Reefs exist off the northern and southern ends of the beach providing some protection from wave attack.



(Left) Test pit excavation to determine the nature and level(s) of the footing of the existing structure as well as to confirm the presence of toe protection. (Right) Example SWAN wave model output for Caseys Beach – 1 in 100 year ARI (east).

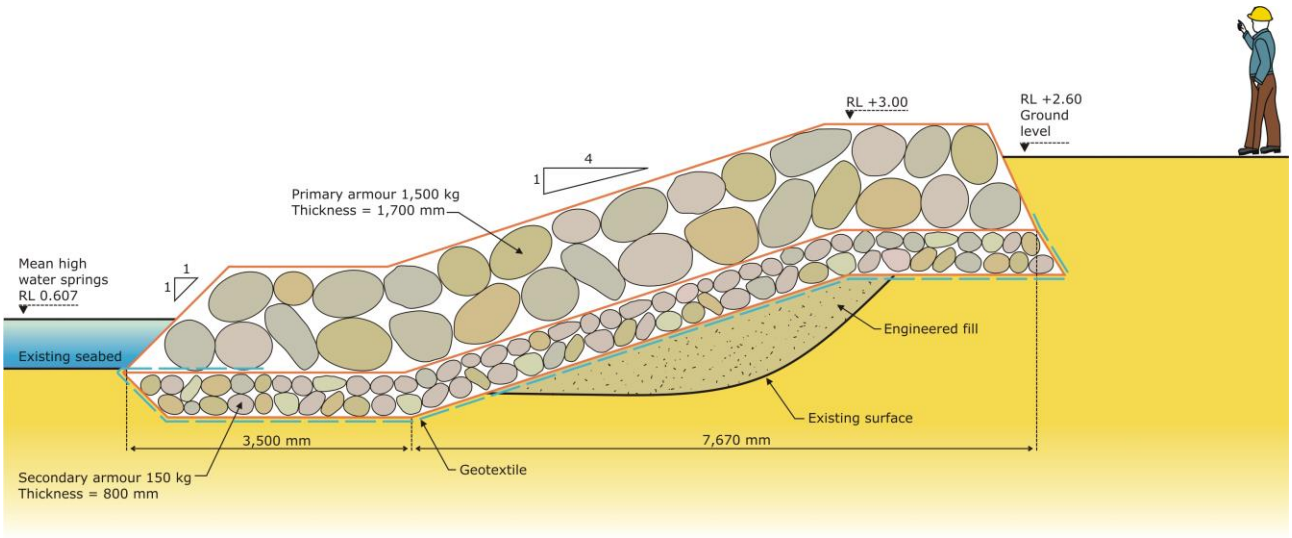
The southern part of the Caseys Beach seawall, which protects the sewage pumping station, is dilapidated and requires upgrading. It was damaged during storms in 2012 and required emergency rehabilitation works to be carried out by Council. There is also a 20 m section of the beach between the sewage pumping station and the Beach Road bridge which is completely unprotected. Council is therefore upgrading an 80 m length of the southern part of the Caseys Beach seawall to ensure the stability of the foreshore and prevent undermining of the sewage pumping station. WRL's input to the Caseys Beach seawall design upgrade included:

- Coordinating and supervising test pit excavations in front of the existing Caseys Beach seawall to determine the nature and level(s) of the footing of the structure as well as to confirm the presence of toe protection;
- Taking measurements of rock primary armour size along the seawall to establish rock grading curves at eight locations;

- Collecting sand samples from the intertidal zone of the beach which were dried and analysed according to AS 1289 in WRL's soils laboratory to determine the particle size distributions by mechanical sieving;
- Developing a preliminary design with a working life of 50 years for the upgrade to the southern part of the seawall; and
- Preparing a poster summarising the project for the purpose of public consultation.

In addition to the investigations at the southern end of the seawall, WRL reviewed long-term future management options for the northern part of the seawall and provided recommendations for short-term management options. As part of this review, it was found that the section of Beach Road behind the northern part of the Caseys Beach seawall is one of the few well-trafficked roads in NSW prone to relatively frequent wave overtopping events (approximately 2-3 times per year). Construction of the Caseys Beach seawall upgrade is expected to commence in the 2014-2015 financial year.

Aerial view of Caseys Beach showing footprint of seawall upgrade



Typical cross section of upgraded seawall (construction stage 1)