

NEWCASTLE OCEAN BATHS UPGRADE

DARACON
Group



City of Newcastle



Newcastle, NSW



March 2022 - December 2023



19M



Project Summary

Stage 1 of the Newcastle Ocean Baths Upgrade included the rebuilding and restoration of the pool, promenades, and pumping system, extending the design life of the facility for a further 50 years. The key requirements of the project involved:

- Addressing coastal hazards due to sea level rises and increased storm surges.
- Restoring the existing facility to resolve structural and safety issues caused by the deterioration of materials.
- Enhancing the user experience with an improvement of equitable user access and water quality.
- Improving safety for undertaking pool maintenance and cleaning works.

This project was awarded a CCF NSW Earth Award in 2024, taking out the \$10 - \$30M category. Daracon's Alex Massey was awarded a 2023 [CCF NSW People Award](#) for his outstanding leadership on the project as Project Manager. His exceptional skills were pivotal in the success of the project.



Project Scope

- Removal of sand from the pool base and transfer back to Newcastle Beach.
- Placement of 2600m³ of mass concrete to the existing pool base to raise the floor levels.
- Placement of a new 150mm thick concrete slab to the pool floor.
- Demolition and reconstruction of pool walls.
- Construction of new promenade concrete slabs to new raised finished level heights.
- Deep rock excavation adjacent to the existing heritage pump house and bleachers and construction of a new wet well pump station.
- Installation of new HDPE pipework and pumps for the supply of seawater to the pool.
- Installation of new pool outlet pipework and outlet culvert, including associated water control systems such as penstocks and stop logs.
- Concrete repair of existing heritage bleachers, including colour matching of new materials to original
- Construction of new access ramps and retaining walls across the upper promenade.
- Upgrade of electrical infrastructure, including new supply to the pump station, upgraded lighting, and upgraded LV supply to the new site switchboard.



- Installation of new furniture, including shade sail structure, seating, showers, handrails, and composite boardwalk structure spanning the pool.
- Painting of pool walls and retaining walls, including extensive surface preparation.
- Commissioning of new pool infrastructure, including mechanical and electrical services, and preparation of a full and detailed operation and maintenance manual at completion.

Key Services Provided

- Supplied mass concrete for the raising of the pool base utilising our own Daracrete, supplying in excess of 300m³ per day to achieve the program.
- Formed, Reoed, and Poured (FRP) all 6,500m³ of concrete required for the works utilising our own skilled concreting division.
- Polywelded and installed all new pipework required for the new hydraulic system.
- Completed all survey requirements for the project, including detailed remodelling and redesign of work elements to improve the design.
- Utilised our Beresfield Head Office Facility for offsite pre-fabrication of components, including concrete precast for the new wet well pump station and decorative seating, and for secure storage of materials procured for the works unable to be stored on site due to restricted space constraints.
- Transported materials to site by our Heavy Haulage division, Transtrac.
- Conducted in-house noise and vibration monitoring to ensure compliance working in close proximity to heritage structures, residents, and the general public.

- Managed the project, including close liaison and collaboration with the client to ensure project success.

Key Challenges

- Planning and undertaking of works in a coastal zone with continual tidal and swell ingress.
- Monitoring and control of site water, including tidal and swell ingress, for the duration of the works.
- Supply, placement, and finishing of high specification marine-grade concrete mixes to achieve a Class 1 finish.
- Use of alternative reinforcing materials, including fiberglass reinforced polymer bar and duplex stainless-steel bar. This innovation provided a strong, yet lightweight solution in the face of a tidal environment.
- Deep excavation works within rock adjacent to the heritage pump house, bleachers, and Cowrie Hole.
- Complex temporary works involving construction of a temporary seawall to enable more working days, propping of structures during construction, and protection works to prevent damage from large swells.
- Demolition materials management including hazardous waste classification, management, and removal.
- Restricted site area for storage of materials and vehicle movements in and out of the site.
- Procurement of high-grade stainless-steel items in a volatile global market, while meeting program deadlines.
- Continual liaison with the client and designers to resolve design issues and improve the design where deficiencies were identified.