



URBAN PLUNGE

Sydney
WATER



Seabin | 100 Smarter Cities by 2050 (Smart City program)

Country of Origin: Australia

Technology Readiness Level: 9 - Fully commercial



Description: Seabin's Smart City program is a data-led, end-to-end solution aimed at improving and reducing the environmental impact of cities located on or in close proximity to a water body. The program is officially recognised by the United Nations Environment Programme (UNEP) as a prevention technology, and has a focus on microplastics, and capturing plastic pollution and marine debris. Central to the program is the V6 skimmer, a trash-capturing device designed to be installed in marinas, yacht clubs, ports and other open bodies of water. Seabin V6 acts as a floating garbage bin, skimming the surface of the water by pumping water into the device. Water is sucked in from the surface and passes through a catch bag inside the unit, with a submersible water pump, capable of displacing 25L/ hr. The water is then pumped back into the marina leaving litter and debris trapped in the catch bag. The Seabin V6 is easily equipped with oil-absorbent pads capturing petroleum-based surface oils and detergents, predominant in most marinas. Seabin V6 can catch an estimated 3.9 kgs of floating debris per day or 1.4 tons per year, including microplastics down to 2 mm small.



Applicability to Urban Swim Sites: Seabin's Smart City program is in line with the City of Sydney's mandate for Sydney harbour to be swimmable by 2050. Since the project's first implementation in Sydney in 2020, a 780% increase in plastic items have been collected from the 16 Seabin units across the Sydney Harbour. In the Sydney City Pilot program marine litter data was collected daily and used to develop Seabin's [Pollution Index \(PI\) platform](#) that quantifies the health of waterways and also reports localized prevalence of marine litter. The PI platform provides key decision and policymakers with valuable baseline data to address the entry of pollution in waterways.

Technical Risk and Case studies:

Seabins have been operational since 2020 with around 79 units installed worldwide. Seabin has reduced downtime to less than 2% per annum. Some clients include Infrastructure NSW, Multiplex, NSW Environmental Protection Agency (EPA), United States EPA, Veolia, the Australian Department of Defence, the City of Sydney, and Transport NSW. In July 2022, Seabin's environmental technicians maintained five units at the [New Sydney Fish Market](#), as part of the project aimed at revitalising Blackwattle Bay. Due to a lack of commercially available options, the waste captured by Seabins goes into a landfill or is incinerated, depending on local regulations. Seabin is working on more viable options as waste handling regulations evolve.

Cost & Business Case: The cost of a unit is AUD\$37,000 per annum on a 3- year term. This cost includes access to the latest hardware, installation and quarterly maintenance costs, daily data uploads, impact reporting and marketing and communications packages to support the educational angle of the solution.

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