

Solar Powered Automatic River Cleaner

Sustainably removing rubbish from our rivers

Port of Brisbane has proudly partnered with Ocean Crusaders since 2017 to address litter issues in the river through our Environmental Management and Community Grants programs.

In 2021, led by Ocean Crusaders and with other stakeholders, we embarked on a new project to support the design, development and trial of a new Solar Powered Automatic River Cleaner (SPARC).

The project sought to develop a safer and more sustainable way to collect rubbish from the Brisbane River and prevent it from travelling into Moreton Bay – an area of high ecological significance. Not only would this improve the health of the Brisbane River and Bay, but it would also be an important local step towards reducing marine debris in the world's oceans.

The outcome was development and trial of the SPARC – a 24/7 collection device that can be used in rivers to collect debris and lift it out of the water before placing it in a bin, ready for removal.

Trial site – Brisbane International Cruise Terminal seawall

The SPARC is designed for major rivers where debris travels in current.

The site of the trial was in the Brisbane River, in an area adjoining the seawall of the new Brisbane International Cruise Terminal (BICT), a world-class facility delivered by the Port of Brisbane. The mouth of the Brisbane River is an identified “hotspot”, where the water current slows down and rubbish accumulates.

A team effort

Led by environmental not-for-profit organisation, Ocean Crusaders, the design, development and trial of the SPARC unit brought together stakeholders from across the community, government, industry and local

businesses who provided funding, technical expertise, construction work and in-kind support, including:

- Port of Brisbane
- IFM Investors, a shareholder of Port of Brisbane
- Brisbane City Council
- Suez
- RDT Engineering Brisbane
- Scallywag Fabrications and Matt Pilecki.

Many other local suppliers provided parts and products to enable the development of the prototype.



What we did and our impact

The project was delivered in two stages:

	STAGE 1	STAGE 2
OUTLINE	<p>A litter clean-up campaign was conducted to understand litter deposition in the area and provide baseline data to support further assessments of the SPARC.</p> <p>Clean-ups were completed between every 2-4 weeks by Ocean Crusaders and Port of Brisbane volunteers</p>	<p>The development and trial of the SPARC unit to capture rubbish and debris coming down the Brisbane River.</p>
OUTCOMES	<p>A comprehensive breakdown of the accumulating litter and important baseline data to help assess the efficacy of the trial of the SPARC unit at the site.</p> <p>Notably, litter volumes decreased significant following the installation of the SPARC.</p>	<p>Design improvements identified during the trial has improved the final unit design.</p> <p>Three month in-sea trial demonstrated the viability of the SPARC and will support its future development and on a broader scale.</p>
IMPACT	<p>12 clean up events at the trial site</p> <p>43 volunteers worked a total of 129 hours</p> <p>1,376 kg of rubbish collected</p>	<p>3 months operational at site collecting litter</p> <p>500 volunteer hours in design, construction and trial</p> <p>2,309 pieces of litter collected</p>

How it works

The SPARC collects rubbish 24 hours a day, 7 days a week in a safer and more sustainable way than manual litter collections.

Floating booms alongside the SPARC capture rubbish 24/7 from a larger area

Hydro and solar power turns a conveyor belt that lifts debris out of the water and places into the rubbish bin, ready for removal

Once the rubbish bin is full, it can be floated to shore and a new one floated in; the full bin is lifted onto a truck and taken for processing



With debris removed from the water there is no risk to wildlife and no risk of the rubbish escaping. If litter collected does break apart in the skip bin, it is still encapsulated.

MORE INFORMATION

Find out more about the partnership and how the SPARC works.
 Ocean Crusaders: www.oceancrusaders.org
 Port of Brisbane: www.portbris.com.au

