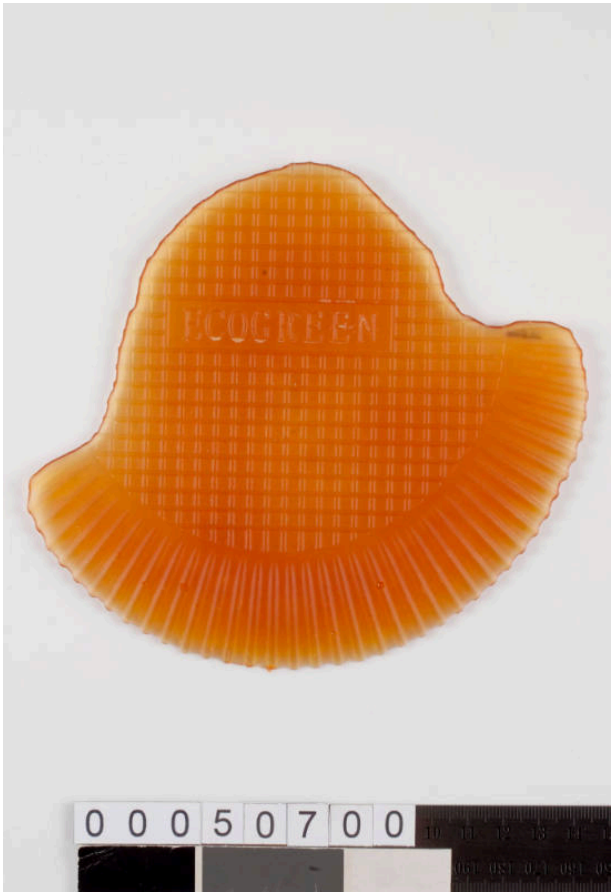
Basic Detail Report



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Title

'ECOGREEN' scraper

Date

2010

Medium

Plastic

Dimensions

Overall: 104 x 106 mm

Name

Scraper

History

This is part of a portable educational display developed for the PLASTIKI Pacific Ocean crossing in 2010. It includes a display stand, samples of the plastic materials and bottles used in the construction of the vessel, a series of environmental 'fact cards', a ship's flag signed by the crew and a jar with small pieces of plastic collected on the voyage from the North Pacific Garbage Patch or Gyre. The constuction of the PLASTIKI was innovative and challenging. The recyclable plastic used in the construction of the vessel is created from recycled plastics or PET. The PLASTIKI used srPET or self reinforced PET. This is regarded as a 'smart material' as it uses its own properties to reinforce itself, unlike fibreglass or carbon fibre, which uses a secondary material to increase its strength. It is 100 percent recyclable. 12,500 post consumer 2-litre PET drink bottles were used in building the PLASTIKI. Each bottle came from a recycling centre. The labels were then removed, the bottle washed, and then 12 grams of dry ice placed inside the bottle, which is then capped and sealed - pressurising the bottle at 75psi (double the average car tyre). The bottles were then sealed in a structure of PET tubes and elbow joints in the hull of the vessel, above and below the waterline, providing 68% of the boat’s buoyancy. The vessel is an achievement in maritime history as an almost truly recycled or recyclable boat. The super structure is made from srPET, the mast is a reclaimed aluminum irrigation pipe. The sail is hand-made from recycled PET cloth. The secondary bonding is reinforced using an organic glue made from cashew nuts and sugar cane. The PLASTIKI relies primarily on renewable energy systems including; solar panels, wind and trailing propeller turbines, bicycle generators, a urine to water recovery and rain water catchment system and a hydroponic rotating cylinder garden. The catamaran design was a significant challenge. There are no centreboards so leeway is significant and the average speed of around 5 knots can only be achieved downwind. The concept of a recycled vessel and a voyage across the Pacific Ocean to highlight the growing amount of plastic waste began in 2006 after

taking inspiration from a UN report on the threats to biodiversity in oceans. With inspiration from Thor Heyerdahl’s epic 1947 expedition on the KON-TIKI raft, the company Adventure Ecology developed an expedition that would 'not only inform, but would also captivate, activate and educate the world that waste is fundamentally inefficient design.' Adventure Ecology sought to promote how 'with more efficient design and a smarter understanding of how we use materials, principally plastic, waste can be transformed into a valuable resource, in turn helping to lessen our plastic fingerprints on the world’s oceans.' The PLASTIKI vessel was influenced by the principles of ‘cradle-to-cradle’ design and biomimicry. It brought together a multi-faceted team from the fields of sustainable design, boat building, architecture and material science. The journey from San Francisco to Sydney took 168 days and acheived signifcant media attention.