EWEN PARK OUTDOOR LEARNING CENTRE

PUBLIC ART CONCEPTS

Prepared for:

CANTERBURY BANKSTOWN

Prepared by:

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PUBLIC ART SITES

CONTEXT

Two artworks explore the Cooks River ecology and water quality from different monitoring measurement systems.

Results of Cooks River monitoring are used to inform the community of the ecological conditions of the catchment and guide investment decisions to make a difference.

Water quality measurement is important for assessing the baseline water quality of the Cooks River. Over time, these parameters can show trends in changes to the water's physical and chemical parameters which may be attributed directly to such things as pollution, nutrient enrichment, heavy rainfall and droughts.

SITE 1 - MACRO MICROCOSMS

Phytoplankton are photosynthesizing organisms that inhabit the upper sunlit layer of almost all oceans and bodies of fresh water on Earth. Phytoplankton form the base of marine and freshwater food webs and are key players in the global carbon cycle.

Macro Microcosms interprets these earliest of forms of microscopic life that evolved into all plant life.

Included in the phytoplankton groups are diatoms. Benthic diatoms dwelling in the river water and sediment are collected and sampled at test sites along the Cooks River to understand the ecological health of the water

Diatoms are indicators sensitive to nutrient and salinity pollution in waterways. Slight changes in water quality will cause change to diatoms communities and therefore these microscopic cells are more sensitive to pollution events than aquatic macroinvertebrates. For this reason, they are seen as one of the most important ecological indicators to assess waterway health.

Encourage people to interact with the river foreshore and rconsider the Rivers's social, cultural and environmental oast,present and future contexts

SITE 2 - pH

The artworks creatively interpret the testing of the Cooks River pH levels.

Physico-chemical water quality – describes the temperature, oxygen, clarity, pH and conductivity of water. It influences how suitable the water is for different forms of life.

EWEN PARK OCL SITE PLAN:
Sam Crawford Architects + Sue Barnsley Design

SITE 1 - MACRO MICROCOSMS - *RIVER FORESHORE EWEN PARK*

ARTWORK CONTEXT

Microalgae evolved over 3 billion years ago and contribute to over 50% of the oxygen in the atmosphere. Algae are a diverse group of mainly aquatic organisms that have the ability to conduct photosynthesis.

Macro-Microcosm artwork innovatively pushes environmental education and science communication boundaries through contemporary artistic interpretation. The work intends to engage and encourage the community to consider, experience and understand the essential role of microscopic foundation species in supporting water health and quality.

Transition movement of freshwater and tidal estuarine brackish and saltwater zones tell the story of complex connected biodiverse systems throughout the Cooks River valley catchment.

Key artwork aims include:

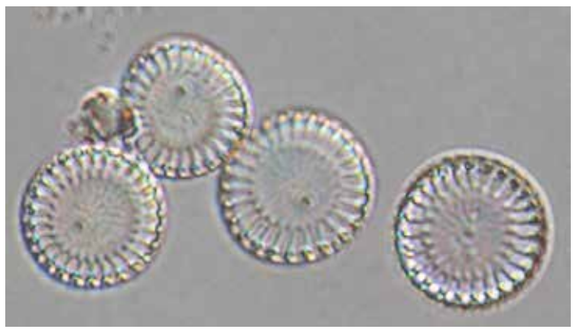
- Contemporary art exploring water biology and quality monitoring testing

- Raise awareness of the hidden wonders of microscopic life in the river

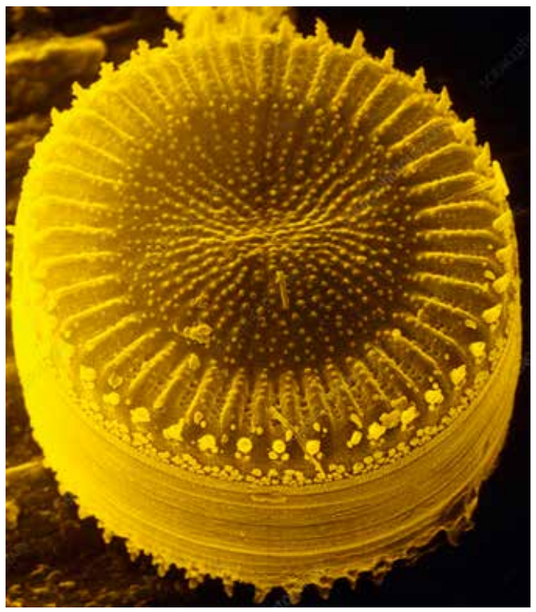
- Support education activities and interpretive tours associated with the Outdoor Learning Centre

- Create nodal areas to view, experience and contemplate river ecology and evolution

- Awareness of water quality and provision of spaces for potential citizen science water sampling

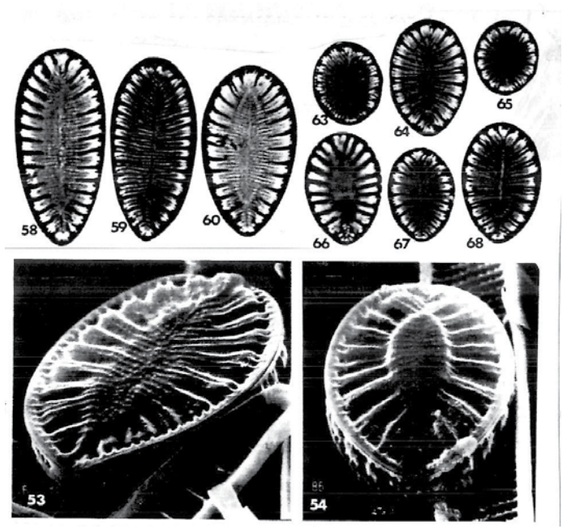


Cyclotella-meneghiniana - above
Image source: https://botany.natur.cuni.cz/algo/praktika/10/Cmeneghiniana.jpg



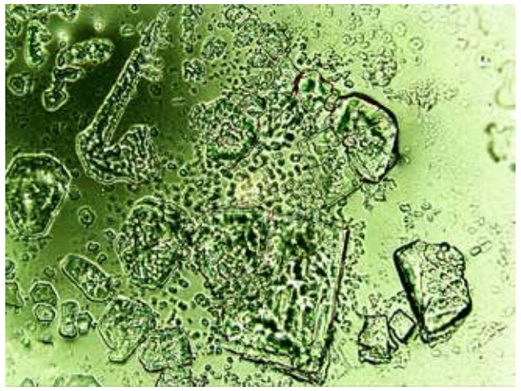
Cyclotella-meneghiniana - right
Image source: Professor Anne Smith / Science Photo Library - https://www.sciencephoto.com/media/15794/view/false-col-sem-of-cyclotella-meneghiniana

Diatoms such as Cyclotella meneghiniana are a type of single-celled algae distinguished by an intricate, glassy, silica-based cell wall or frustule. The frustule consists of two valves, which fit together like the halves of a box; one valve is slightly larger than the other & acts as the “lid”.

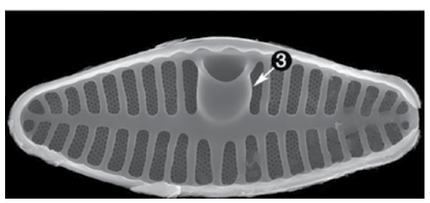


Surirella brebissonii
Citation: “Krammer, K. and Lange-Bertalot, H. 1987 . Morphology and taxonomy of Surirella ovalis and related taxa. Diatom Research 2(1):77-95.”
Image source: http://symbiont.ansp.org/dntf/details.php?id=058130

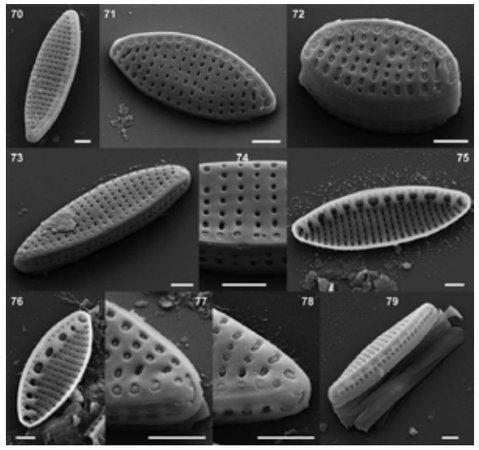
Cryptomonas
Free-swimming, asymmetrically mango-shaped cells with two flagella emerging from a “gullet” at one end of the cell. Each cell has two yellow-brown chloroplasts. Periplast plates made of protein surround the cells of many cryptophytes.
Image credit: Cryptomonas, Lake Tuakitoto, X1600. Photo: Otago Regional Council & Manaaki Whenua



Cooks River Ewen Park water sample under the microscope.Image source: Graham Chalcroft / Vertebrae



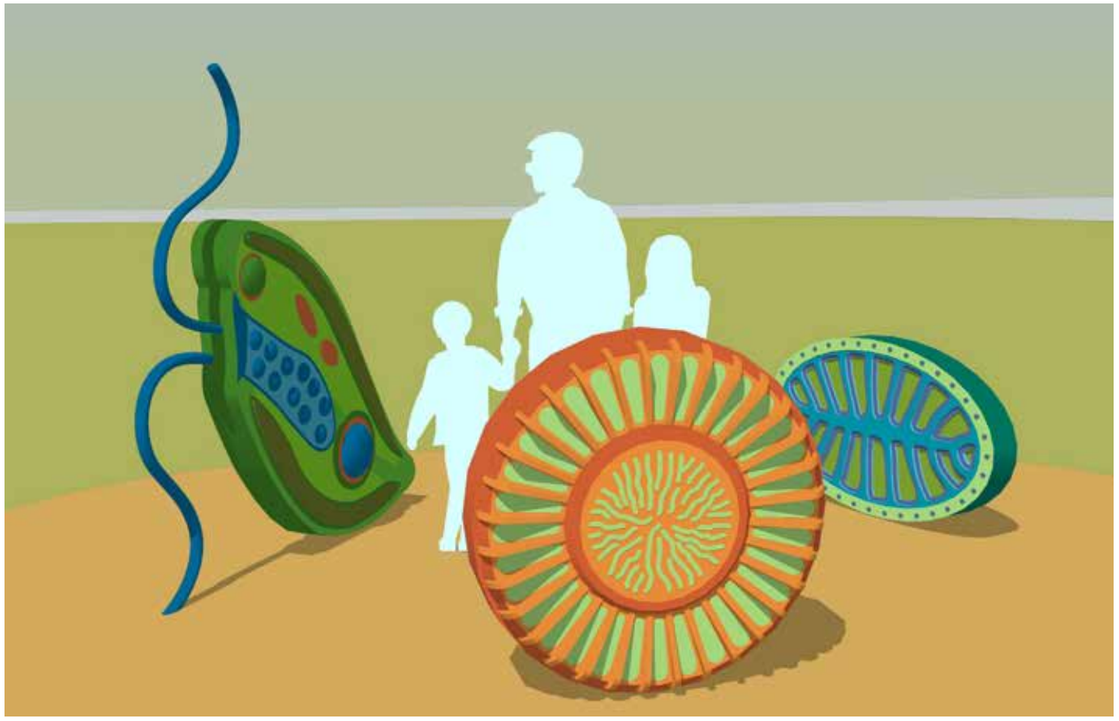
Planothidium frequentissimum
Image source: https://diatoms.org/species/planothidium_frequentissimum



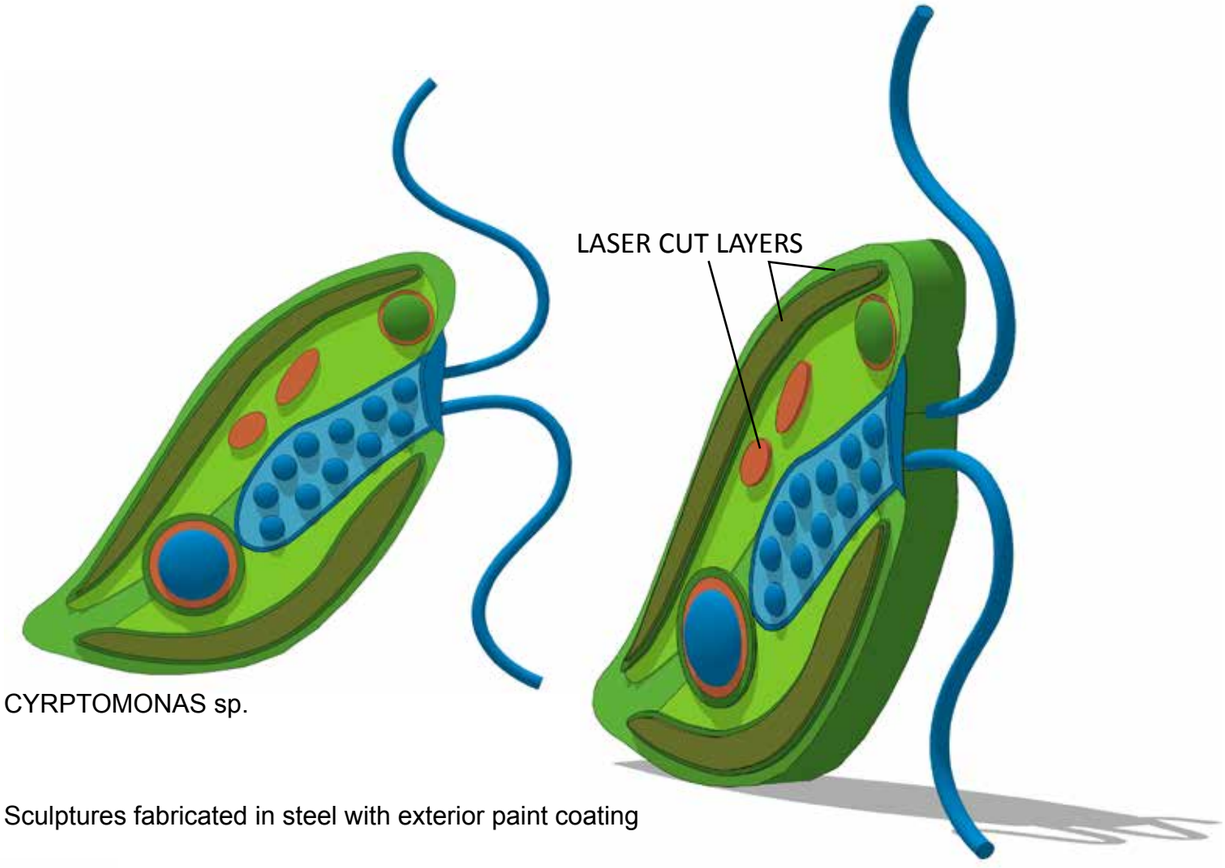
Nitzschia inconspicua
Morphology and identity of some ecologically important small Nitzschia species / March 2013 / Diatom Research 28(1):37-59
Image source: https://www.researchgate.net/figure/79-Nitzschia-inconspicua-type-material-from-the-Raaber-Bahnhof-Grunow-Collection_fig5_260219615

SITE 1 - MACRO MICROCOSMS - *RIVER FORESHORE EWEN PARK*

Phytoplankton and benthic diatom species selected are species recorded in the Cooks River Alliance Health River Data Sheet. The nominated artwork forms are key species representative of the river's microbiological community.



FABRICATION COMPONENTS - indicative cut metal layers and paint patterns



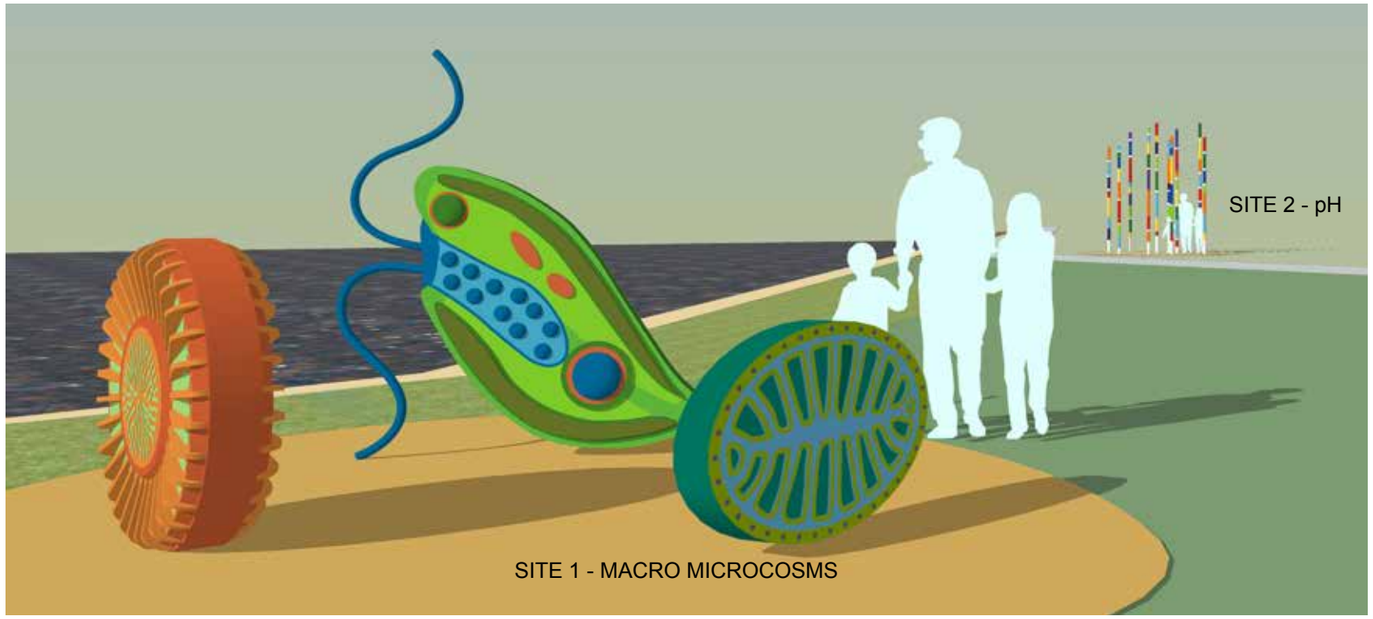
CYRPTOMONAS sp.

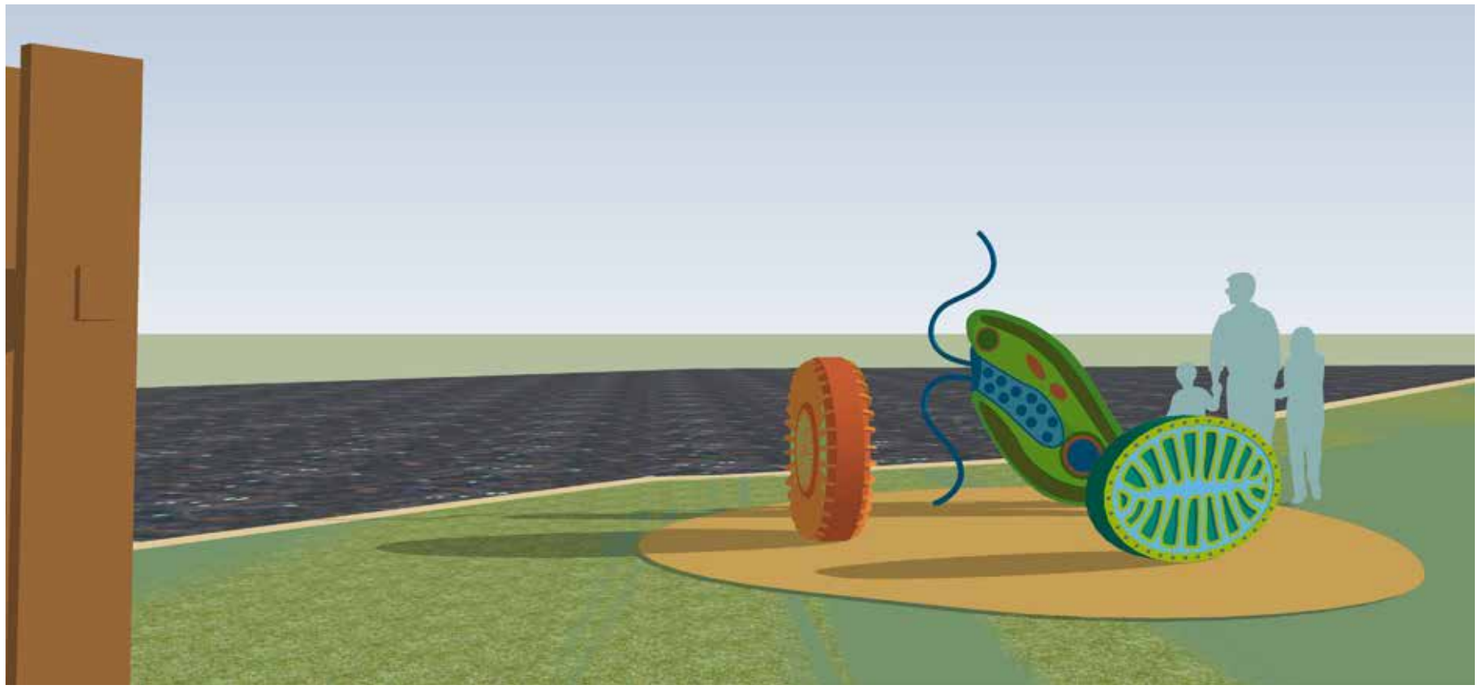
Sculptures fabricated in steel with exterior paint coating

EXTERNAL VIEW OF LAYERS/RECESSES

INTERNAL VIEW OF LAYERS/RECESSES

SITE 1 - MACRO MICROCOSMS - *RIVER FORESHORE EWEN PARK*





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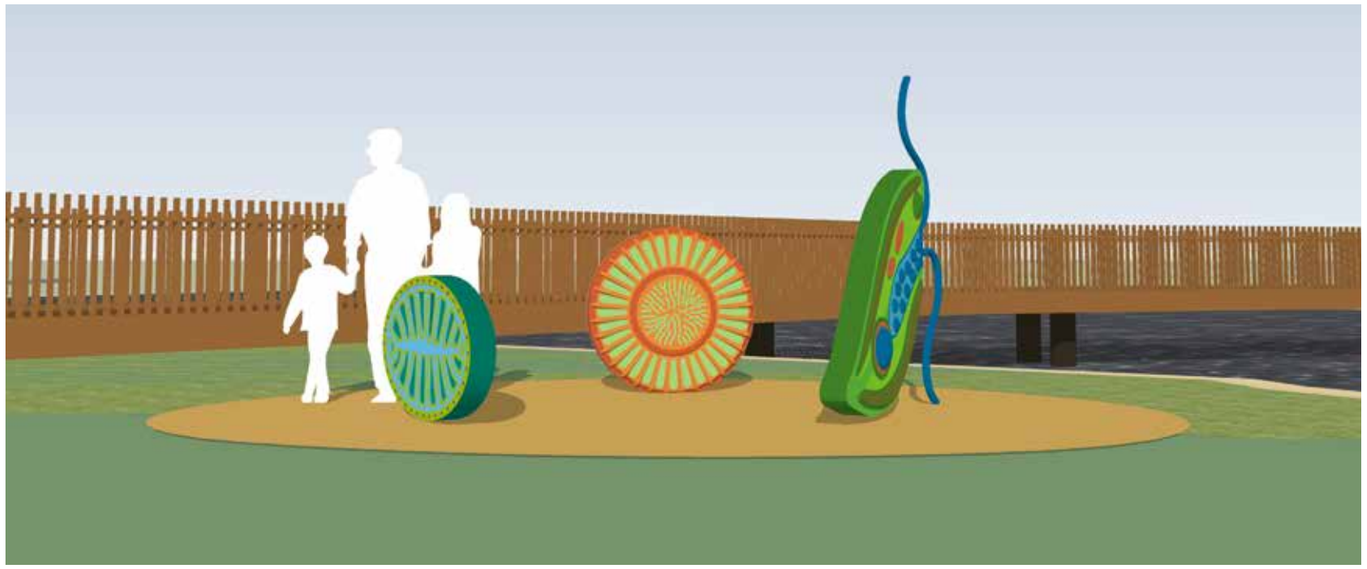
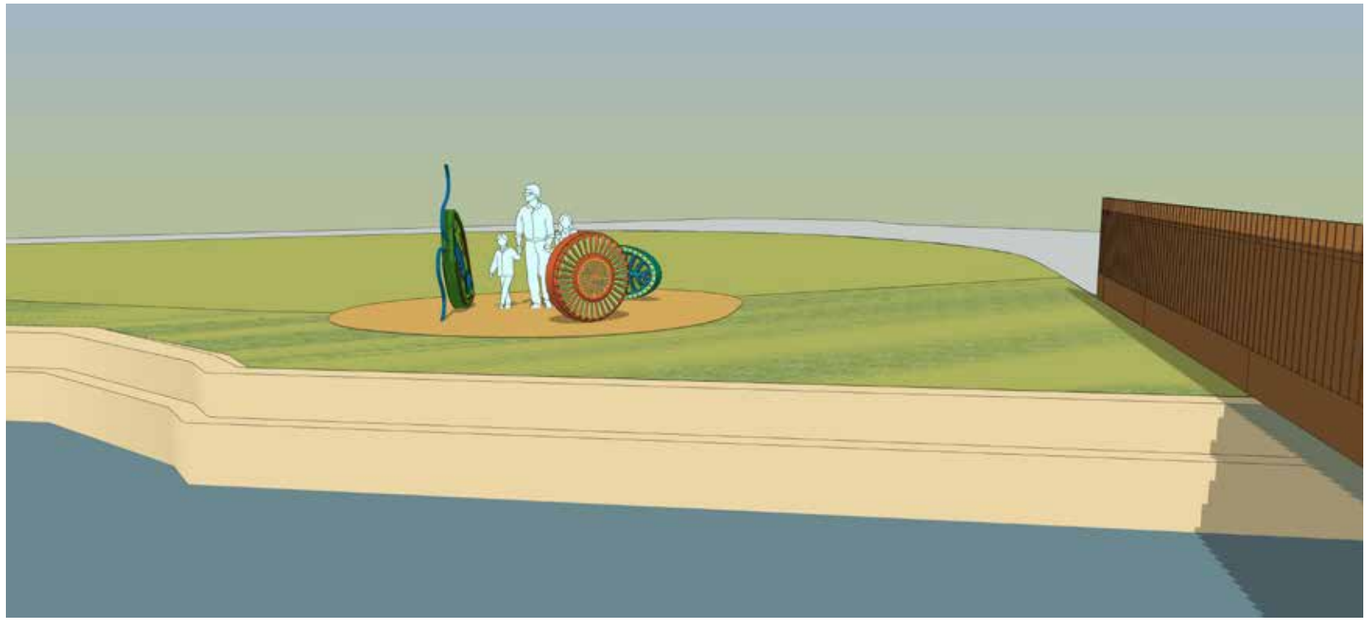
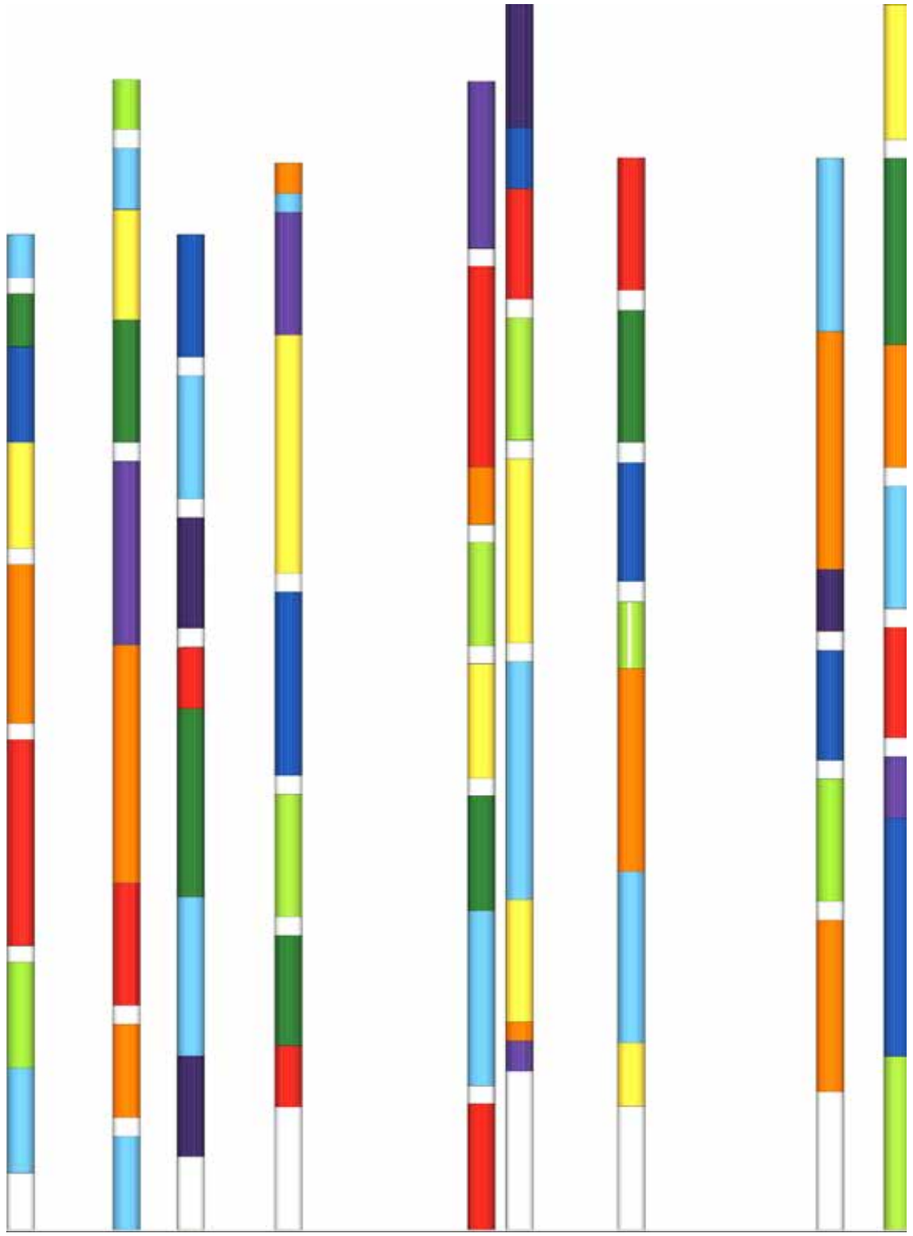




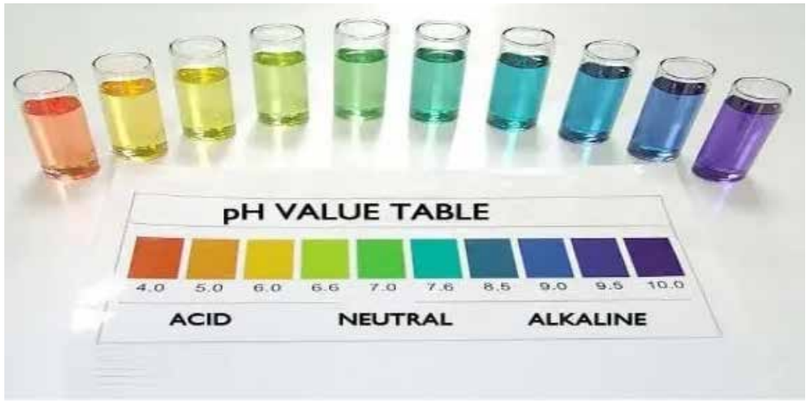
SITE 2 - pH *RIVER FORESHORE EWEN PARK*

ARTWORK CONTEXT

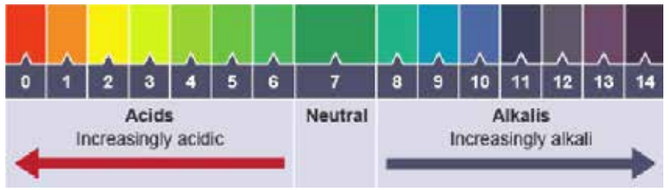
Several water quality monitoring methods are employed to measure the physical and chemical parameters of the Cooks River freshwater and estuarine ecological conditions. Of these, pH level testing provides the focus for the artwork. The colour range values of the universal indicator used to test pH scale offers a creative basis to visually represent the river's chemical composition.

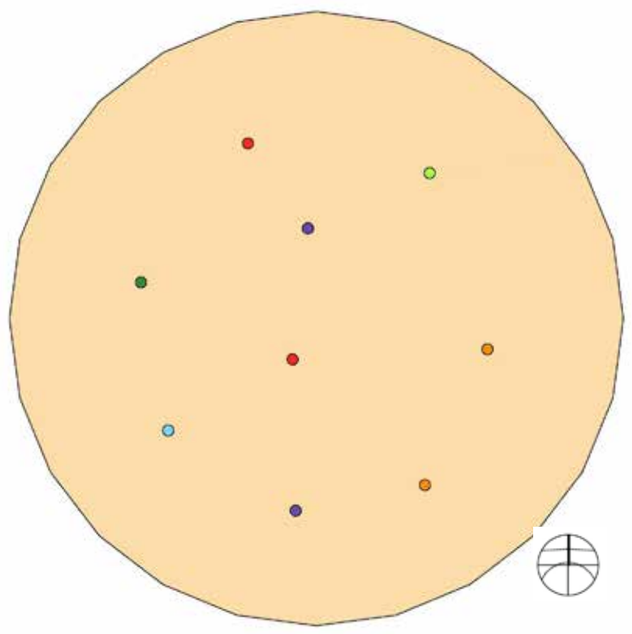


ELEVATION - indicative only. Scale 1:20 @ A3

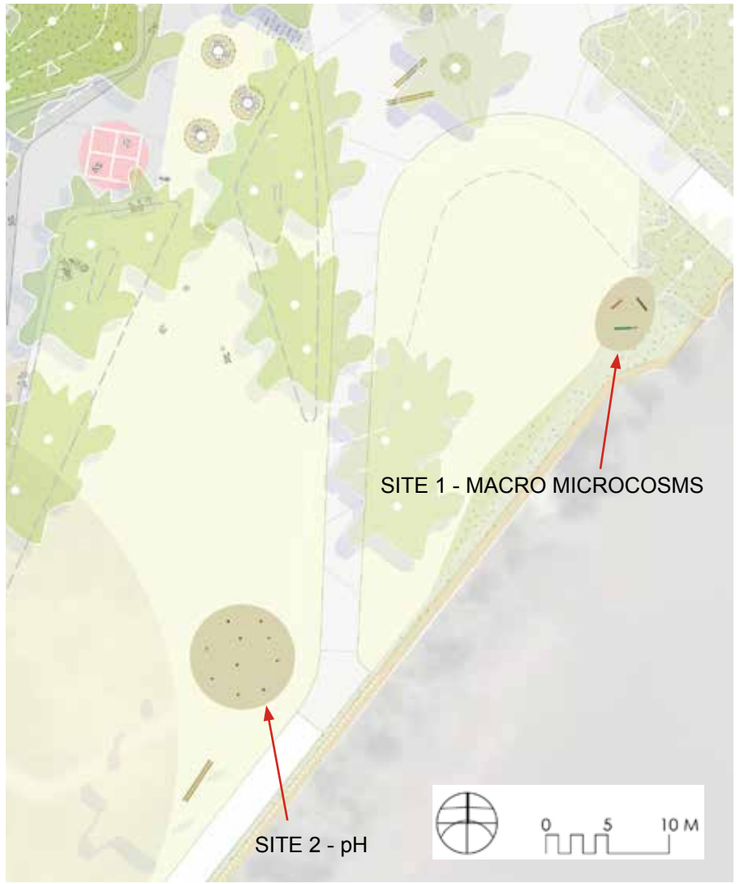


pH is a measure of the relative amount of free hydrogen and hydroxyl ions in a solution such as water. Universal indicator supplied as a solution or as universal indicator paper shows how acidic or alkaline a solution is using the pH scale running from pH 0 to pH 14 with each number assigned a different colour.





PLAN SET OUT - indicative. 1:50 Scale @ A3

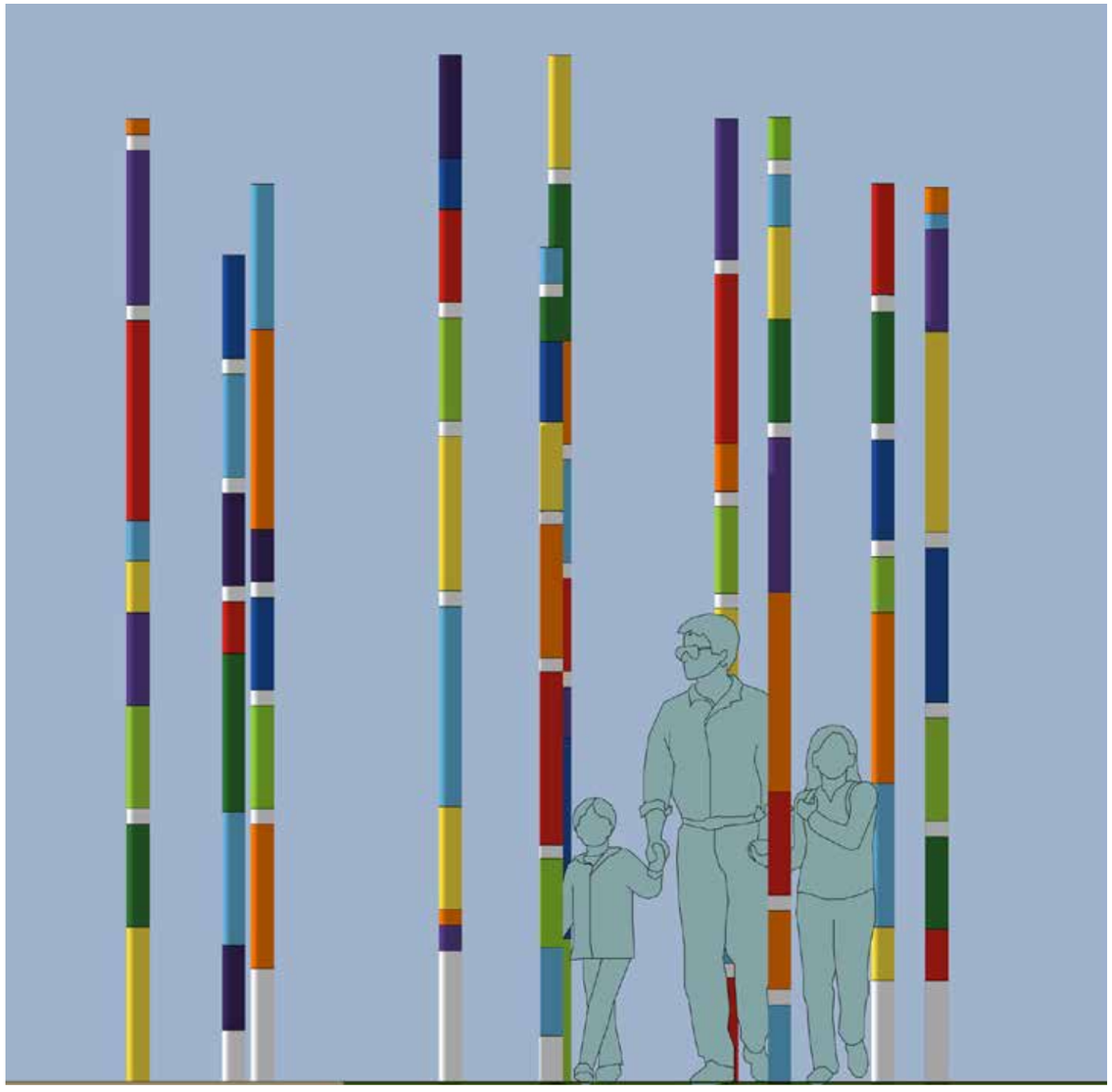


ARTWORK SITE LOCATIONS. Scale 1:500 @ A3

SITE 2 - pH *RIVER FORESHORE EWEN PARK*

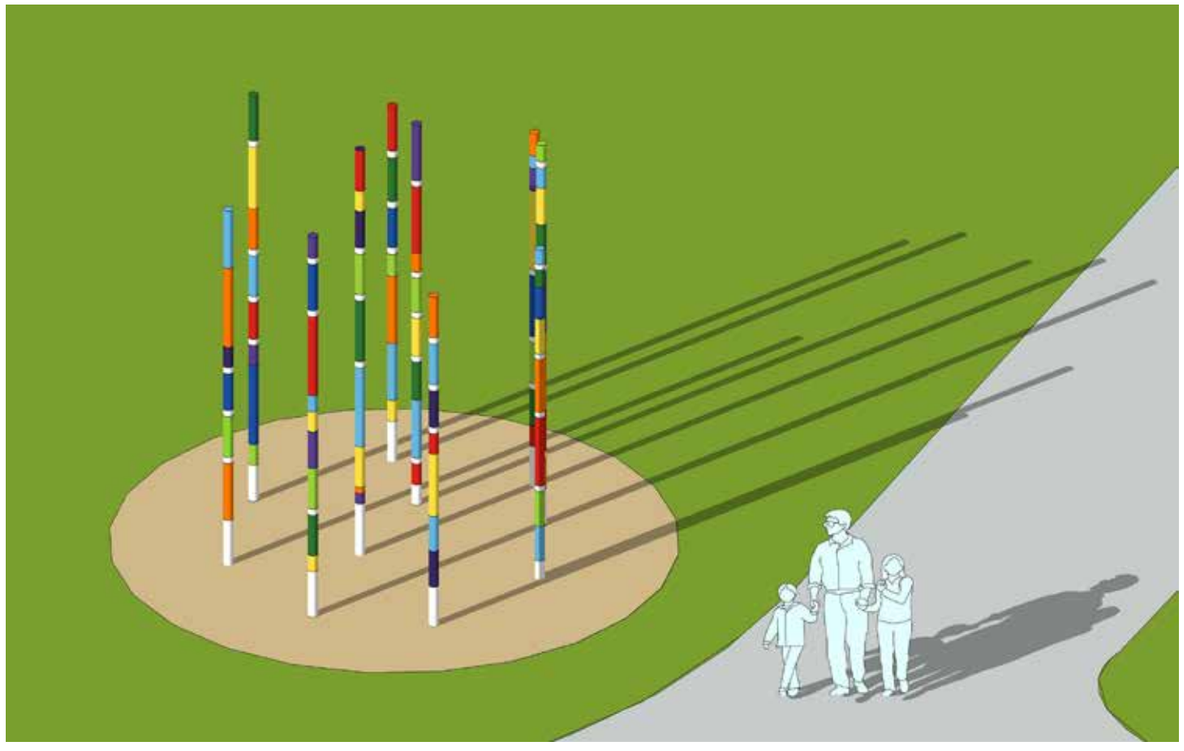
ARTWORK DESIGN

The artworks colour bands represent a range of pH scale values to indicate water acidity and alkalinity. The seeming randomness of colour band sequencing interprets fluctuations in pH levels recorded across estuarine and freshwater monitoring locations sampled at different times of the year. The vibrant and colourful abstract nature of **pH** artwork functions as a wayfinding marker.



- Steel poles painted with pH scale colour bands
- Max height of poles approx. 4000mm
- Decomposed granite base covering concrete footings

pH ARTWORK AS WAYFINDING MARKER



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