

Uncovering the Once Discovered: Infozone Residency + Exhibition Project, State Library of Queensland.

The Artist: Matthew Gardiner



Photography: Christian Alexander

Matthew Gardiner graduated in 1997 with a BFA Photography from the Victorian College of the Arts. He trained in new media whilst working with Drome Pty Ltd, under Peter Hennessey + Patricia Piccinini's mentorship.

His works are a hybrid of origami and technology. Gardiner has directed Folding Australia (Australia's first international Origami Convention), built a full scale Origami House from 1 km of paper, toured *Oribotics* in Belgium and Holland, completed an Australia

Council residency in Tokyo, been a season presenter on ABC Sunday Arts, installed over 7000 paper cranes at Melbourne's Federation Square, presented a paper at the 4th Origami Science and Mathematics Conference in California + premiered *Oribotics [network]* at the '07 Melbourne International Arts Festival.

Gardiner collaborates with composers, musicians, technicians, and the industrial sector, and has exhibited his work in Australia, Europe and Asia.

Artist's statement:

Paper has structural memory. The creation of any fold causes the breaking and deformation of the paper fibres. The resultant crease line constitutes a permanent memory of the fold. Unless the paper is returned to pulp and cast as a new sheet, the paper will not forget the fold.

In 1953 scientists James Watson and Francis Crick published a research article revealing the structure of DNA—the building blocks of life. The landmark discovery of genetic structure laid the pathways for a boom in the scientific exploration of genetics, including the Human Genome Project. Subsequent scientific discoveries revealed that proteins created by DNA begin as strands that fold rapidly into their functional shape. The 'origami of nature' takes microseconds to complete thousands of folds, and a single folding error can profoundly effect the survival of the life form.

In 2004, at Melbourne's *Next Wave Festival*, I presented *Oribotics*, the first generation of folding origami robots, or 'oribots'. Primitive, mechanical blossoms, the *Mechaniflorum Quinqueplicaticum*, clicked and whirred their way through a fragile + finite lifespan. Their folding process was slow but beautiful, and their original mechanical design quickly corrupted the paper memory. Witnesses of this exhibit were touched by the visible fragility of the flowers, and commented that the blossoms appeared to be withering. The death of that generation of oribots followed; they are now preserved in a static condition.

2005 saw the birth of a hardier, more robust species, the Atom Generation (named after Astro Boy), during an Australia Council residency in Takadanobaba, Tokyo. This species was first exhibited at Melbourne's *Asialink Centre*, in a work titled *Oribotics [laboratory]*. At the core of each generation of oribots is a mechanical structure of folds. I often liken the structure to a genetic program. Somewhat like DNA, the structural program is responsible for the oribot's expression of movement and shape. The expression determines the mechanical actuator design, whilst the degree of stress in the structure determines the lifespan of the oribot. Through my research, I discovered that the key to the longevity of an oribot was to reduce the amount of stress required to generate movement—a key that keeps this generation of oribots alive today.

Each generation of oribots has been fed with a digital flow of information; the origin of the information has been a natural source. In the installation *Oribotics [laboratory]*, the oribots were connected to live weather information from 55 cities around the world. Users—or those interacting with the oribots using their mobile phones—could remap the cities to any oribot, changing the flowers' appearance, and their sound scape. In *Oribotics [network]* (2007), the constant flow of internet news was transduced into a feed of changing colour and rhythm to a more complex oribot with multiple blossoms. Users—in this case either online, or working via mobile devices—were able to have secondary, long-term effects on the oribot ecology by modifying the colour mappings of individual words. As words were consumed by the digester software, they were encoded into colour according to past user input. Such a flow of information is impermanent in its consequences for the oribots, apart from incrementally causing the motion to gradually break down and destroy the flowers' electronic and mechanical components.

The present exhibition at the State Library of Queensland features the 2005 Atom Generation of robotic blossoms. They are linked to localities of Queensland, and they reflect the history of Queensland through an electronic photographic archive. The installation asks visitors to choose a location of meaning to them, be it their home town, a favourite place, or another place of personal significance. The work will search the photographic database, and electronically fold a projection of the relevant photos over the installation, bringing the oribots to life with light.

March 2008

For further information see:

www.oribotics.net/

Lang, Robert J, ed. "A Brief History of Oribotics", 4th Origami Science Mathematics and Education proceedings. A K Peters Ltd.

Gardiner, Matthew. "The code in the fold. Origami as Art and Science", Bell on the Hand, Future Design Institute, Tokyo 2007.

Troup, Cynthia. "Mechaniflorum Quinqueplicaticum M. Gardiner et sp. Nov", UN Magazine 01. 2005: pages 27–28.

Oribotics Matthew Gardiner 7 April – 27 June 2008

This exhibition is one of a series of screening programs held in the State Library of Queensland's Infozone.

Artists are invited to explore the State Library and investigate new ways of interpreting and responding to the collection.

This interventional collaboration between the State Library and contemporary artists reflects a new direction for the State Library.

Libraries are a social experience, as well as an artistic nucleus for communities to gather and discuss communal issues. Infozone Residency + Exhibition Project is presented by the State Library of Queensland in collaboration with Artworkers Alliance.

■ **Artist Talk: 4 April at 5.30pm**
at the State Library of Queensland,
Cultural Centre, South Bank, Brisbane

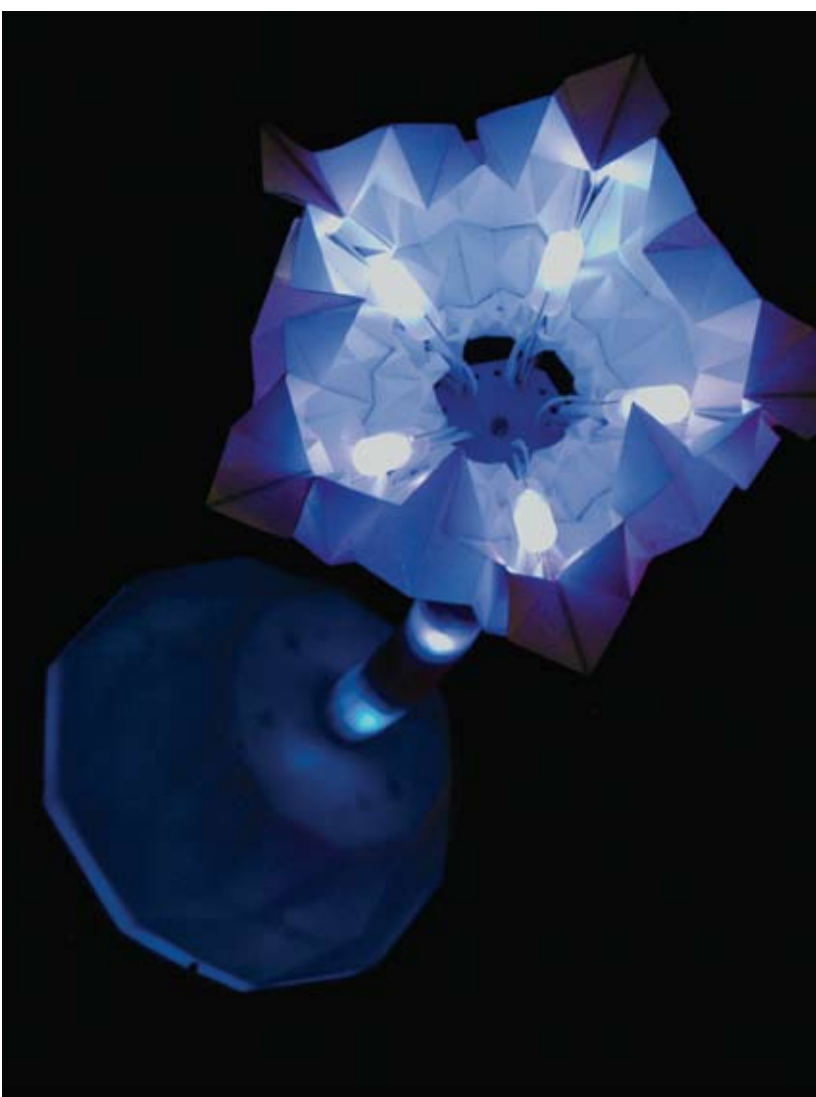
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www.slq.qld.gov.au

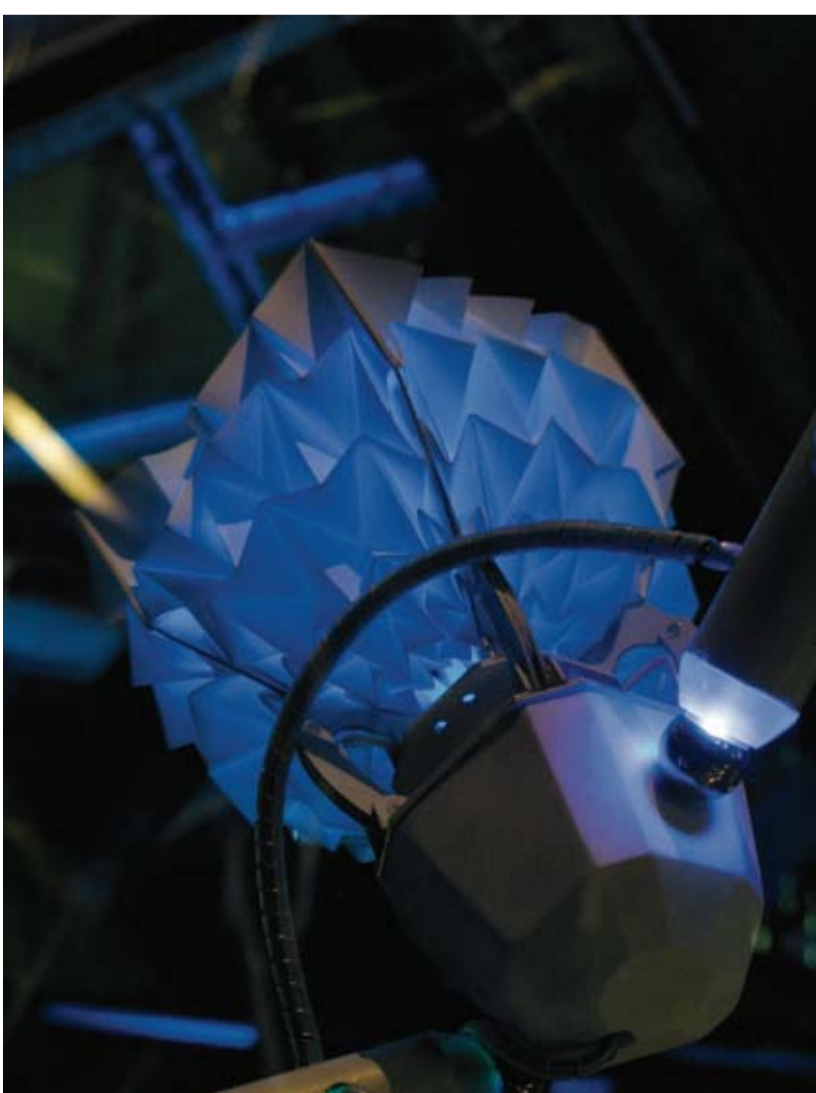
01 *Oribotics [net]* (2005) Photography: Matthew Gardiner



02 *Oribotics [lab]* (2005) Photography: Matthew Gardiner



03 *Oribotics [net]* (2005) Photography: Yatezak



All images courtesy the artist.