

Cardiff's Artstation marries computers, craft and cybernetics to create strange, unworldly paperworks,

# Paperweight Lighthouses

AT ITS ENTRANCE, Brighton's Ship Street Holy Trinity Church gives only scant information about what might be inside. Dilapidated outer walls and a few posters hint at its contemporary deconsecrated role: home to Fabrica, the city's leading artspace, with a rolling timetable of innovative cross-media gallery set pieces, installations and, occasionally, exhibits.

Even if you know something of the work that goes on inside Fabrica's building, the first time you step across its arched doorway is something of a revelation. There in the pewless hall is a remarkable space, retaining much of the stillness churches are imbued with. The aged wooden floors, high ceiling and looming empty room amplify the ambience. For the most part the atmosphere is a fine backdrop to the exhibitions that find their way within Fabrica's four walls. Chris Drury built one of his vortex willow-works at the room's centre a couple of years back. Bill Viola's *The Crossing* showed here in 2001, and soon after, the gentle organic curves and waves of Japanese fibre artist, Machiko Agano, wove a web spread the length and breadth of the gallery. For all these, the space was central to the making of the work.

In the order of things, Fabrica's next set piece after Viola and Agano was entitled *Pulp*. It brought in an art partnership whose modus operandi extended this so that buildings and structures became the canvas of their work. Artstation, the Welsh-based duo of Glenn Davidson and Anne Hayes, has for many years been wrapping the interiors of buildings in extraordinary forms, somewhere between giant organic creepers and internal digestive systems, which issue from the ground up, curving round pillars and ballustrades, reclining the length of a room and confusing the sense of floorspace as they burst through from one level to the next. In 2000, the two constructed a series of organomorphic bones issuing out of the foyer of the Royal Festival Hall. In Brighton, their contribution saw a partial snail's shell curving out of the font at the end of the Fabrica space into the air. Since Brighton there's been Belfast, and this year work in the low countries, followed by Spain. Strange as the forms appear, arguably even stranger is that they do all this with recycled industrial paper,

working out measurements to the millimetre with some of the highest tech hardware around. It's as if craft has met computers and the result turns out to be public space interior design.

*At this stage, I am still unsure what to expect – I have had sketchy details of Artstation's creative processes explained to me, but as yet I cannot even imagine what the final installation will look like. Glenn Davidson arrived this afternoon, and spent a couple of hours wandering around the space, getting a feel for the atmosphere... Neil, a student of Virtual Environments at Salford University also arrived with large amounts of technical equipment, all of which will be explained to us tomorrow. I'm left feeling intrigued, and quite excited by the project, whatever it turns out to be.*

ELLY PLATT, VOLUNTEER IN BRIGHTON

Artstation was originally formed in 1989 out of the ashes of various other process-led projects in which the couple had already been absorbed for much of eighties. Anne and Glenn had met while at Cardiff College of Art in the late seventies, and as with Artstation, these displayed an immersion in how the process of working in an art context could act as an instrument of communication. This meant a leaning to the educational sphere, a dimension that remains central. The art college experience and the zeitgeist of that early period informs a significant element of what Artstation has become, similar in slant to the avant-art topography traceable back to the sixties, which today forms a central plank of the new art establishment ideological rhetoric, from Tate Modern exhibition policy to the tenets of art college pedagogy. With Artstation, however, there is a feeling this geography has been investigated by them more thoroughly than by many of their peers.

Glenn: 'Most of the works we create owe much to performance art, video art, interactive art and that most elusive, philosophical underpinning/form of art: conceptual art. As art students from the 1970s we were fed a rich diet of conceptual art and the contents of Marxist ideology and also feminism.' They reference Beuys, with whom clear sympathies reside, and specifically his 'social sculpture' thinking and its defining of life as art, as process, a way of becoming that continues to influence subsequent generations. Another related

part gigantic digestive tracts, part interior design



strand, considering the material dependence on industrial paper, is the Arte Povera tradition, a tradition Glenn notes, ‘that visits the reusable nature of material to aesthetic and political ends. The final installation has no intrinsic commodity value. It cannot be traded.’

Perhaps, however, their single formative influence is cybernetics. It hovers in their background after being uncovered in 1987, a part in the process of transforming themselves into Artstation. In Britain they had been presenting what was described as an interactive performance for 80 people, where the focus of concentration of the group was the content of the work itself. *Locomotion* was about group and individual perception, about self observation, pattern recognition and the interaction of groups and environment.

Arriving in Holland with only an early Atari computer and some experiences of running workshops and performances, they turned up at a bi-annual cybernetics conference entitled ‘The possibility of impossible worlds’. Impressed, the cybernetics crowd saw the self-referential feedback explicit in *Locomotion* as wholly cybernetic. They were asked back and offered research fellowships at one of the cortical centres in the nervous system of the cybernetics network, that is Gordon Pask’s Department of Support, Survival and Culture. Pask, who died in 1996, is something of a legend in the cybernetics world.

Also at the institute, by chance or design, they happened to cross paths with Joachim Mowitz, a mathematician using cybernetic principals who, informed by his own research into programming geometry, proposed and wrote Splicer, the ‘unwrapping’ software the pair quickly came to use.

‘Our introduction to cybernetics in 1987 gave us the language to re-examine what we had been doing. The first beneficial effect was to understand how we did not fit entirely into the fine art tradition from which we came. Much of this contemporary tradition was conceptual or issue/time/based work, and was still very closeted in the white gallery space. We are old enough to have seen the first attempts of the Arts Councils to support fine art as process. This movement grew from the alternatives to the painting and sculptural tradition of art production. Its ultimate goal, as we see it, was to reconnect the public with art as process, thus countering dwindling art gallery attendees. Conceptual Art remains to this day the most shape-shifting of modalities, and interestingly though affected and reflected within fashions, remains firm in its relationship to art rather in the manner math does to science.

‘The conceptual component in works of art creates the most significant bridge between cybernetics and the work of Artstation. This brought on a change of perception’: seeing art not as commodity production but as a working process and a living system, with rules, requirements, boundaries.’

‘Value,’ says Glenn, ‘has to be considered as a whole system.’ Thus the entrée into cybernetics.

Cybernetics, the theory of organisation and control, emerged in the aftermath of World War Two out of a series of events known as the Macy Conferences. Springing from the minds of two intellectual heavyweights, Norbert Wiener – who published his influential *The Human Use of Human Being*, applying the theory to both psychology and social issues – and the polymath Hungarian ‘Martian’ John Von Neumann, who used cybernetics to advance both robotics and the development of computers. It is his work in cybernetics that is the seedbed of the subsequent development of artificial intelligence (AI). While the mainstream of the discipline found its home in AI and hard computational science there is also an undercurrent of soft cybernetics, centred around the systemic psychological and cultural approach of Gregory Bateson, along with a small group of others, which found favour among the American counter-culture in the early seventies. Artstation’s absorption in the field stems from discovering the work of Gordon Pask and Heinz Von Forster, two of the leading contributors to this expanded interpretation of cybernetics. If much of their work has led down the path of software and hardware design – in that these are systems that can be organised to work optimally, integrating feedback as a learning mechanism – this stream of, implicitly ecological, cybernetics remains very much alive and kicking.

Particularly well known is the work of the Santiago school, originating around Humberto Maturana, and continued by the formers’ fellow Chilean, Francesco Varela. If Gregory Bateson pronounced cybernetics the biggest bite in the tree of knowledge for a long time, Varela, who died in 2001, was seen by some to have extended this to body systems, entitling his book on the cybernetics of the immune system, by the same name, *The Tree of Knowledge*. In a sense, when Glenn and Anne discovered Gordon Pask, and took themselves off to his department in Amsterdam, they too, were eating at the tree of knowledge. It seems their work has not been the same since, and it comes as no surprise that Artstation are active participants at an upcoming cybernetics conference in Santa Fe, centred around this Chilean school of cybernetics.

Glenn describes Pask as someone who was working on how to improve thinking about thinking. To this end he had developed conversation theory, an approach that saw in all interactions, be it environments, objects or people, the imprint of ‘conversation’, at least as metaphor. ‘Gordon had coined the term interaction of actors (known as IA) in contra-distinction to artificial intelligence AI, to explain developments of his 60s based work, conversation theory. Conversation theory is a theory of how systems interact and how they understand that they interact. Its most evocative and



Artstation at the RFH

captivating aspect for us was the wonderful topological models like digestive systems – mathematical 3D models that were implied by the mathematics of the theory. Filled with the heavyweight problems of singularities, process/product relationships and topological ambiguities, conversation theory proposed how consciousness works. The operational processes of consciousness have a complimentary architecture – the digestive systems. Such modelling and the implications of Pask’s work left the mechanical artificial intelligence world to put men on the moon and eyes into robots – simple stuff according to Gordon. Our guess is that millennia from now AI will utilise Gordon’s extraordinary models for machines that really will think and know they are thinking and Alan Turing will finally test positive.’

The central tenet of Pask’s department was that useful solutions to problems were best internally structured, solutions from within rather than from outside. They developed what were known as ‘user-languages’ with their various study groups in businesses, health and education sectors. ‘User-language,’ states Davidson, ‘rather like systemic family therapy, seeks to evolve solutions to problems from within a subject’s experience. Knowledge, culture and physical locations of organisations were re-examined and re-ordered in a manner that new connections and knowledge were generated. We formalised our intuitive approaches to work, consciously manipulating workshops and installation processes. Site-specific works utilise the specifics of buildings, local groups and histories to create process and aesthetic outcomes.’

‘This interaction of actors and the language process is precisely how we became users of cybernetic terms. By the time we became involved with cybernetics, Pask’s programmes were using the cybernetics of complex problem solving. The word complex had special meaning. This was complexity of the mechanical, the chaotic and the unpredictable. It includes how economies work, biological systems, ecologies,

health and many of the other perplexities of modern post-industrial societies. These were conceived to help entrenched paradigmatic methodologies of government but were also broadly applicable to the commercial world. The programme was well funded and exciting. It hosted artists and philosophical thinkers, mathematicians, computer programmers, social scientists and pedagogues.’

*The first formal meeting with the Fabrica team and Glenn was to discuss in detail how the project will take shape. Glenn showed us slides of one of his previous projects, an installation constructed in a gallery in Sydney. He talked us through the processes involved – the measuring of the gallery, using those measurements to construct a 3D model of the space on a computer, designing a virtual model of the installation. The computer model is then used to find a series of co-ordinates, which are used to create patterns to be cut out of paper. These are joined together to create the installation, which is then inflated to fill the gallery space. He also explained the problems incurred in creating previous installations, such as the inaccuracy of measurements or the delicate nature of the materials they work with. I was particularly interested in the way he researched and created the designs, often drawing on elements of local history and the present day, incorporating local issues into the work. ELLY PLATT*

During the Fabrica installation Artstation gave a talk, where the issue of craft emerges. Both Glenn and Anne’s energy and enthusiasm comes across when they discuss the modelling capacities of their computers. And as artists they are clearly more immersed in the powers of technology than in the craft element surely attendant in the slow, repetitive craft process of making the paper form. This is slightly surprising since from at least one angle, Artstation might be paper crafts people using digital tools to realise a new dispensation for a chosen material. Glenn confirms that the material is incidental; he is not particularly interested in paper as such. Material neutral is the term he uses. ‘We never set out to look at paper as a medium, having stumbled across a

paper mill which is now closed down. This provided waste paper in Cardiff, which was both abundant and free. The computer is really the medium and it is the descriptive power of the 3D environment we use.'

The surprise is reiterated by a woman present, a paper artist, or craftsperson, who had been drawn to the work, apparently thinking – wrongly – that Artstation were also fellow paper artists. She remarks on how the two have 'taken a very humble material and transformed it into something very noble.' Glenn will have none of it: nobility bespeaks an implicating of craft practice in the individual materials, hardly Arte Povera. 'Fundamentally, Artstation is not involved in a crafts process. The work does however have a craft element to the way in which the installations are formed. It is defiantly a process, which requires honing of a multitude of skills. Here the debate is about what skills and to what ends they are used. Our work with architectural paper structures means that quality control is a real issue. Progressively: as the works appear ever more on the public stage costing more to create, there's the expectation by both the host organisation and ourselves as professional artists that the work exists for some period. This forces us to engage with the extreme fragility of the material; we want to push the use of the material to its limits in order to describe more complex form, which then communicates the development of ideas.'

*We began the day by preparing the gallery for the creation of the sculpture – making large tables for the creation of the paper patterns, and rolling boards for the vast roll of paper we would be using to create the installation. Some of the templates we had to make were over nine metres long, so we needed a large space with which to work. The size of the installation was finally starting to dawn on me – we would be totally dwarfed by the final work, which would be three to four metres high.*

*After lunch, we began work on the first templates for the paper pieces. The computer programme used by Anne and Glenn to create a 3D representation of the installation gave a printout of the 2D and 3D shape of each template, as well as a list of 60 co-ordinates to plot on each sheet of paper to create the template. Overall, there were 30 templates, but some required more than one piece to be cut out.*

*We layered and stretched the paper onto a table, with the piece for the template on the top. We plotted the series of X and Y co-ordinates onto the paper using a tape measure stretched along the edge of the table, and a T square. The process took a long time at first, as interpreting the data was initially quite daunting, and the template-making is a very precise art; the measurements need to be accurate to 1mm, so that the pieces can be joined together to create the installation. Working with another volunteer, Anna, we finally completed the second of the patterns, Anna reading out the co-ordinates while I plotted them on the paper. We then joined the points together to create the outline of the template, making a small nick at each of the points so they could be identified on the paper pieces, then cut out the template and the pieces beneath. We marked the 3D numbers onto the paper pieces; these would indicate where the pieces would be joined to one another.* ELLY PLATT



Despite Glenn's reservations and in the spirit of cross-boundary communication, it surely seems possible that crafts and cybernetics might yet be cross-stitched together, their apparently disparate topology meeting on a future-synergies canvas. There may be no inferred connection in Artstation's digestive paperhouses, but in their presence, and with knowledge of the conceptual backdrop, their work is a seductive invitation into beginning to think about how the two could be informally linked, especially since each hover around the word and the notion of process, albeit for wholly different ends. There is the possibility that things are to be learnt from both parties, crafts from cybernetics, and cybernetics from crafts.

*I stayed on at the gallery in the evening for a meeting and discussion with the other volunteers who will be helping out at the gallery when the installation is finished, and I was glad I did, as I found out a lot more about the process, even after working with the team for almost two weeks. Glenn demonstrated the graphics programme on the computer that was used to design the installation, and seeing it explained using simple 3D shapes – how they can be manipulated and integrated into each other – I was able to understand the basic process behind the design of the more complex forms involved in the work.* ELLY PLATT

The usual take on Artstation is of how they are breaking down the art-technology divide. This is true as far as it goes, but Artstation's stated aim is that technology is only a means to a communicative end. This said, Pask's conversation theory has been applied to considerable computational ends, and Mowitz continues to work with the couple, most recently on *Beyondless*, the Amersfoort installation in Holland, in early 2002.

There is history to be found here in the evolution of computer modelling, its development from the early eighties to the kind of hi-tech box of tricks employed inside Brighton's Holy Trinity Church. And perhaps also a story of how working with computers has changed Artstation. When you see two artists mapping the co-ordinates of a walled space to the millimetre, the next evolution of this technology presents itself as an



interesting theme. Artstation are taking the virtual realm of cyberspace, and pulling out hitherto virtual forms, into our physical world. A kind of reverse engineering. This realisation of previously impossible forms, courtesy of simulation modelling, may be happening across a range of media, be it industrial design, architecture, 'Bionicle' Lego or the marriage of art with engineering. But Artstation's organicism relates to elements that appear not only disregarded by other more high profile practitioners – think for instance of Anish Kapoor – but those which the art-mind is almost wholly unconscious about.

What is also particularly interesting is the apparent singularity of the mix. The confluence of process and systems art, computer design, crafts and cybernetics, and recycling and further others, overlaps into a powerful admixture. But there is also the site where the process of communication concludes: the buildings. With the built environment in mind, Glenn states a definite interest in urban planning: 'Towns are ecological systems, with boundaries, topologies, laminations and meshes of simultaneous events. We can say that planning of urban space is largely undemocratic, influenced by vested interests in commercial companies, access and communication requirements, and urban politics. Yet it affects most of the population. One project is to work with urban planners on their dream city and town plans, jointly modelling these in 3D environments. Conversely the paper sculptures are interior design, sited inside the fold, which comprises our urban topographies; 'The work itself interacts and intervenes in the physical and architectural space of a building or institution. The direct and overt use of environment and context is part of the circularity, feedback – a cybernetic principle.'

When asked, he accords that buildings look better with their work in them. 'This is because we all become lazy in our interaction with architectural space over time. Our works re-activate and correct this perceptual condition. Perhaps in this therapeutic sense we are involved in a form of interior design.' Whether these

forms might become permanent seems to intrigue Glenn: 'The light, transient and ephemeral nature of the work in many ways counters heavy permanent structures. The longevity of physical materials, which could simulate these qualities, are unknown. However, light, water and mist perhaps could be configured in this way. Paper is easier of course and allows work in very delicate spaces like Belfast City Hall and the Royal Festival Hall heritage buildings.'

*I am still unsure how the end of the installation will finally appear or be constructed. The diameter of the cylindrical structure becomes larger as it curves down towards the floor and culminates in a series of triangular points. The structure looks complex as a computer simulation, and I am aware that we have a large number of pieces – around 30 – to cut from one template, which means that we will probably have a tricky task ahead of us, both in terms of making the pieces and in joining them together, and how all these pieces will fit together or fit onto the main body of the structure still mystifies me. When I first started the work the whole process of building the installation with a computer, to the paper pieces, to the process of joining them to create the installation overawed me, but I have come to understand the processes... so I'm confident everything will become obvious eventually.* ELLY PLATT

'Fabrica was a treat,' says Glenn six months on, 'a wonderful replenishment.' Released from the usual load that their work involves, it emphasised the artist and the artistic. 'I totally enjoyed it, and still get a lot of emails from people we worked with – who learnt about the city of Brighton and the consequences of the planning choices. We created a framework to do that, which is great.' The reason it was all these things was that it was very unusual. Working in artspace is a rare treat, Glenn mentions, these days. Mostly their work is in public spaces, which bring with them a host of their own problems. The Belfast work carried out in the City Hall is graphic evidence of this, the piece only getting the go-ahead after much uncertainty. This last February another recent piece being the Amersfoort, *Beforeless* installation, it explored the meaning of inclusion, and the artist as intermediary in bringing together different groups, continuing to fulfil Glenn's absorption in the dynamics of communication.

Communication is an ordinal key to resolving our planet's woes. Much current art may begin to explore inside the 'a' of the communication alphabet, but in the main the challenge of looking at communication (and the communication of communication) in any mature form, is not a concern adequately met by the current crop of art celebrities. A testament of a sort about how much further along Artstation are in the nature of their communication was made by one visitor to the Belfast piece. They simply said, 'It's like looking at Buddhism.'

[www.artstation.org.uk](http://www.artstation.org.uk)