All that is solid... melts. The liquefaction of form.

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Abstract.

"Idly, he wondered what these geometric forms really represented - he knew that only a few seconds earlier they had constituted an immediately familiar part of his everyday existence - but however he rearranged them spatially in his mind, or sought their associations, they still remained a random assembly of geometric forms."

JG Ballard, The Overloaded Man, 1967.

This paper explores the liquefaction of solid matter through a number of research projects developed by the author and collaborators at i-DAT [Institute of Digital Art and Technology]. These 'Transmedia Publishing' activities fall under the remit of the 'Liquid Press' research and production facility established in the i-DAT SoftLab in Portland Square at the University of Plymouth. The Liquid Press consolidates a series of new media publishing activities which explore the construction and dissemination of emergent media in the form of 'trans-media digital content'; 'liquid' media that can flow through a range of media forms, including: e-books, software, net.art, and broadcast media.

The Liquid Press responds to the changing world of publishing as it moves from paper/TV/WWW/CD/DVD to digital generative and mobile media forms, and from fixed to live and dynamic media. The Liquid Press explores the convergence of these technologies and the kinds of collaborative spaces that emerge through human interaction within them.

The paper also explores the impact of these processes on the understanding of solid forms, objects and environments. The assimilation of the 'liquid' (the state of matter between solid and air), transforms our relationship with traditional forms and structures (physical and social) and dissolves the tightly woven fabric that defines our cultural values.

Keywords: liquefaction, Transmedia, Liquid Press, dynamic, transformation, emergent.

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On Montage.

Montage is a fundamental catalytic concept of the 20th Century, being both a codex for deciphering the structure of 20th Century culture and method by which it was assembled. From Kurt Schwitters Das Merzbild 1919, Vannevar Bush's "As We May Think" to the ubiquity of the hyperlink, montage has provided a strategic tool, a step by step assembly guide and a conceptual model for the way things work and can be made to work. It is effectively a generic and ubiquitous template for: constructing and deconstructing media forms; assembling and mutilating the body; the construction of cyborgs; the construction of code; the building of cars... etc. One might even assume that it is something to do with the way we may think. As a paradigm it has served us well, but the signs of stress are now showing and we may be in a moment of shift. The technologies we have built in our own image are starting to show disturbing characteristics that cannot be sustained by or sustain our understanding of montage.

"-seeing, feeling and thinking in relationship and not as a series of isolated phenomena. It instantaneously integrates and transmutes single elements into a coherent whole". (Moholy-Nagy, 1946, p12)

A prime motivator in my creative ambitions was the belief that by harnessing new technologies one could realise Nagy's ambition for a 'coherent whole', the total Wagnerian experience. For a while it seemed that the consolidation of media forms (animation, image, text, video, etc) within and through the computer were the mechanisms by which this particular holy grail could be reached. However, at some point in the new Century, not only did the technology seem to rebel and generate a whole new world of asynchronous incoherence, but the desire for a coherent whole seemed somehow less important. If montage was the mechanism for defining coherence through juxtaposition, layering and editing, then the lack of desire for coherence could possibly make montage redundant. It is as if the fabric generated through montage has been placed in a blender and liquidised.

The technologies being embraced by the LiquidPress spring from, respond to and define new technological opportunities, forms, content and experiences: the advent of mobile and locative media, interactive and intelligent database/archives, dynamic, responsive, autonomous and ubiquitous systems. In doing so its territory is not just the content that flows through these 'frameworks', but the frameworks themselves. It is the very fact that the frame and the content are now indistinguishable that undermines the functionality of montage. Juxtapositions are fleeting and transient, rarely permanent.

In this context the friction generated by particles of meaning and fragmented forms, as they cluster and reform through dynamic liquefaction, produce a heat which fuses and melts content/form on a second by second basis. Each particle of information is called into being in a dynamic and responsive way before fusing and falling apart to re-cluster around new events. Cause and effect are now arbitrary factors as these particles anticipate through an independent autonomy each one undergoing a sea change.

Being entrenched in the old paradigm it is difficult to express the emergent properties of the new. Like a three dimensional organism viewing a four dimensional organism we can see fleeting glimpses through our peripheral vision, but grasping the whole, no matter how coherent, is beyond us. So in an attempt to kiss goodbye to montage this paper is assembled through a montage of past projects, the intention being that the meaning should emerge within the peripheral vision of the reader.

A Philosophers Bone.

"Full fathom five thy father lies;
Of his bones are coral made;
Those are pearls that were his eyes:
Nothing of him that doth fade
But doth suffer a sea-change
Into something rich and strange."
The Tempest, ACT I, SCENE I. William Shakespeare.

The notion of trans-for-ma·tion ((trnsfr-mshn, -fôr-) n. in and through emergent (digital) 'media'. 'a. The act or an instance of transforming. b. The state of being transformed') as enabling an evolution of form, a transformation from solid to the immaterial, the object to the process and the script to the algorithm. The projects discussed in this paper exhibit 'symptoms' of the transformative qualities of digital media whilst retaining critical references to traditional contexts. Each projects struggle with the process of transformation and the impact these have on the evolution of: the institution that presented them (gallery, museum, etc); the participants and collaborators; the manifestation of the digital 'artefacts', and the symptoms of transformation and liquefaction are described below.

The projects mapped out show increasing symptoms of the emergent paradigm. Conveniently they do this chronologically, Autoicon attempts to replicate the creative montage processes of the artist Donald Rodney, the Search for Terrestrial Intelligence attempts to deconstruct the hegemony of the eye and the truth behind technologies that do our seeing for us, the Artefact project provides a leaky database which provides generative montage in conflict with the sanctity of the V&A's archival system, and Arch-OS attempts to liquefy buildings through base data.

"It is a Stone and no Stone, and is found by every body in plane fields, on Mountaines, and in the water, and is called Albida; heerein all physitians agree, for they say that Albida is called Rebio. They name it in hid and secret words, because they perfectly understand the materia; some say it is blood, others say it is a man's hair, others say it is eggs, which has made many fooles and unwise men, that understand no more then the letter, and the meere sound of words, seeke this art in blood, in eggs, in hair, in the Gaull, in Allum, in salt, but they have found nothing, for they did not rightly understand the sayings of naturalists, who spake their words in hid language. Should they have spoken out plainly, they would have done very ill for divers reason, for all men would have used this art and the whole world would have been spoiled, and all agriculture perisht."

Pseudo-Arnoldus de Villanova, A Chymicall treatise of the Ancient and highly illuminated Philosopher, Devine and Physitian, 1611.

Autoicon:

"There were no corpses in the time-tombs, no dusty skeletons. The cyber-architectonic ghosts which haunted them were embalmed in the metallic codes of memory tapes, three-dimensional molecular transcriptions of their living originals, stored among the dunes as a momentous act of faith, in the hope that one day the physical recreation of the coded personalities would be possible."

(Ballard J.G.1992)

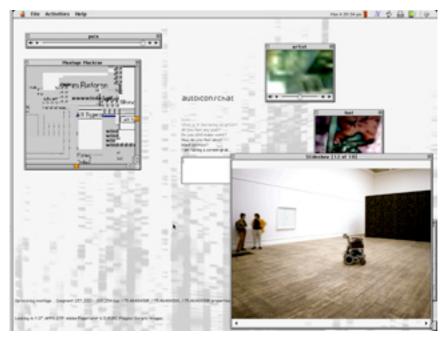


Fig 1: Autoicon CD Rom.

In 1988 the magazine 20/20, in a review of one of his exhibitions, announced the death of the artist Donald Rodney. Donald was not dead but dying, the premature announcement predicted the inevitable result of a Darwinian curse which has afflicted Donald since birth. Sickle Cell Anaemia is a long slow degenerative disease which resulted in Rodney's incarceration in hospitals and various technological apparatus. The result of this lifetime of physical atrophy was a creative mind that had a chillingly surgical perspective on the human condition. His physical condition provided an emotive palette for the acute and richly disturbing creations that populated his shows, with pieces literally etched from his body. Rodney must now move to a higher plane of evolution.

"Donald Rodney's work provided a uniquely constructive bridge between the politically engaged black art movement and the more formal and diverse concerns of later decades. All this work, in what ever style gave expression to a distinctive black way of seeing. His courageous work around sickle cell is rooted in this commitment. He was creative, innovative and experimental to the end." (Stuart Hall 1998)

Rodney's body had, for many years, existed in a close symbiotic relationship with the medical technology that has kept him alive. On a regular basis his body was invaded by steel devices to drain internal juices, only to be replaced and replenished by sanitised fluid. Enclosed bone structures were excavated and replaced by metal and plastic, a continual process of scarring and restructuring. And left behind; a data trail of information; photographs, X-ray's, scans, measurements, data, scars, and imprints. It is rare to find such a perfect, detailed, body documentary. This 'document' defines another body, a body that exists in data-space, a body of images and measurements.

AUTOICON was one of the many projects Rodney was working at the time of his death, the intention was to integrate the body of medical data with an 'expert system' synthesised from interviews, and a rule based montage machine that would allow Autoicon to carry on generating works of art.

The Autoicon will be endowed with Rodney's memories and experiences, fleeting images of the past, captured in a dynamic digital album of live 'media'. The inclusion of an artificial intelligence allows visitors to enter into conversation and discuss the development of new ideas and projects, that can evolve and be maintained in the organic Rodney's absence. This generative element of the system challenges traditional notions of artistic creativity and autonomy.

As Donald's creative processes were 'constrained' by his physical condition, to an extend his creative mind was always removed from the manifestation of the artifacts, which were instead physically realised by Donald Rodney PLC. In many ways it is this relationship between the artificial body and the artificial intelligence that gives Autoicon its critical poignancy.

The Rodney Autoicon uses human rules to make creative decisions with found material. The Autoicon also has a body within which it operates. Autoicon inhabits a technological world constructed from scientific paraphernalia, a "world in which being and appearance" converge in a new creative dynamic.



Fig 2: Autoicon Montage Machine.

S.T.I.:

The S.T.I. Consortium was initially funded through a research and development grant provided by SciArt organisation (founded by the Wellcome Trust, The Arts Council of England, The British Council, NESTA, The Scottish Arts Council and Calouste Gulbenkian Foundation), and more recently through the Institute of Digital Art and Technology. The S.T.I. Consortium brings together artists, scientists and technologists from a number disciplines and international research Centres to collaboratively develop software agents that analyse satellite images (the product of digitally captured dynamic data). In this way the project turns the technologies that have previously been looking into deep space for evidence of Alien Intelligence back on to our space in a search Terrestrial Intelligence.

The S.T.I. Project has been constructed by a Development Committee, which consists of eight individuals, they are: Mike Phillips (Project Co-ordinator), Geoff Cox and Chris Speed from STAR @ University of Plymouth: Dr Guido Bugmann and Dr Angelo Cangelosi from the Centre for Neural and Adaptive Systems (CNAS), @ University of Plymouth: Christa Sommerer and Laurent Mignonneau from ATR Media Integration & Communications: Dr Nick Veck: Technical Director, National Remote Sensing Centre. The S.T.I. system code(1) has been developed in association with limbomedia.com and Mei Cen. The OnLine version of the S.T.I. Project can be found at: www.sti-project.net

S.T.I. establishes a common ground for the consortium by sharing the collective knowledge of remote sensing, imaging technologies, autonomous agents (AI and Neural Networks), and On-Line interaction. The Project fuses this knowledge into a challenging exploration of planetary data analysis, through a process of experimental prototyping of a number of autonomous data analysis agents that reside on the S.T.I. website.



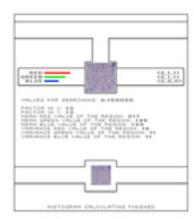


Fig 3: S.T.I. Database/search engine.

Vision dominates our culture and lies at the heart of scientific and artistic endeavour for truth and knowledge. Increasingly the dominance of the human eye is being challenged by a new generation of technologies that do our seeing for us. These technologies raise critical questions about the nature of the truth and knowledge they elicit, and the way in which we interpret them. The S.T.I. Project goes beyond the irony of the search for terrestrial intelligence on Earth by engaging with our understanding of the 'real world' through our senses, whether real or artificially enhanced. Will these autonomous systems 'know' the 'truth' when they 'see' it?

The S.T.I. Project engages in critical issues surrounding the shift from the hegemony of the eye to the reliance on autonomous systems to do our seeing for us. This shift has an equal impact on scientific processes and creative endeavour. By turning away from 'outer space' to an examination of 'our space' the project also engages public interest, as expressed in the popular imagination through science fiction (X files, etc), in the alien within our midst. Do we recognise ourselves when seen through our artificial eyes.

From this perspective the evolution of our spatial-temporal perception can be seen to be dynamically linked to the technologies we use. The 'global embrace' of McLuhan's extended nervous system, through enabling electronic networking/broadcasting technologies gave the 'linearisation of time', another 'dimension', the ability to pass through many streams of 'geographical' time. Digital technologies enable the experience of synchronous and asynchronous interaction through time and space. These experiences and the new understandings that they inevitably engender cannot be reduced to the image. Attempts to reduce this new reality to two dimensions will inevitably result in an active denial of this new awareness. Images of the Earth from space, proof at last that the world is flat.

"Reality has always been interpreted through the reports given by images; and philosophers since Plato have tried to loosen our dependence on images by evoking the standard of an image-free way of apprehending reality. But when, in the mid-nineteenth century, the standard finally seemed attainable, the retreat of old religious and political illusions before the advancement of humanistic and scientific thinking did not - as anticipated- create mass defections to the real. On the contrary, the new age of unbelief strengthened the allegiance to images."

(Sontag, 1977)

The information contained within the S.T.I. images attempt to fertilise new thought through a collaborative investigation, and critique false assumptions that encourage a new scientific mysticism based on the worship of false information icons. Whilst such icons provide a glimpse of 'a' truth the illusions they reveal are dominated by an information aesthetic that renders them little more than highly gilded religious icons that disguise the truth, and worse still save the viewer the trouble of thinking about it.

The S.T.I. database is expanding rapidly. the project is mapping the planets surface and producing new data which may one day prove the existence of terrestrial intelligence. The system may be revealing the archetypal images of a collective consciousness or the genetically engrained images from a Martian colonisation. Whether this intelligence is recognised by the software agents or by their human collaborators when it is found is yet to be seen. The truth is in here.

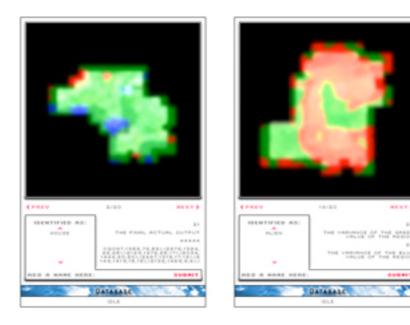


Fig 4: The 'Truth'.

Artefact:

"... artefacts do not exist in a space of their own, transmitting meaning to the spectator, but, on the contrary, are susceptible to a multiform construction of meaning which is dependent on the design, the context of other objects, the visual and historical representation, the whole environment; ... artefacts can change their meaning not just over the years as different histriographical and institutional currents pick them out and transform their significance, but from day to day as different people view them and subject them to their own interpretation."

(Saumarez Smith, 1989.)

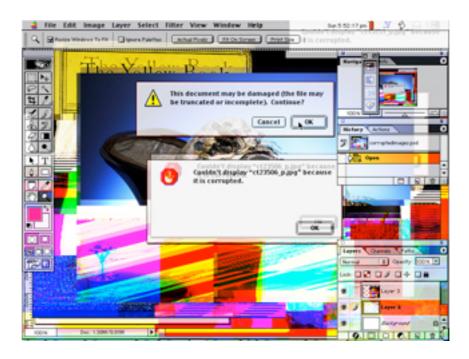


fig 5: Artefact: broken database image.

The 'Artefact' Project takes this fluidity as its starting point. The 'Artefact' can be viewed from two perspectives:

- the internet, where it is interactive and can be manipulated and reinterpreted...
- the gallery (Gallery 70 at the V&A), which can only be viewed in its protective display case.

The Artefact and its interpretation panel slowly evolve as visitors to the website play with it and reinterpret its meaning.

At the core of the Artefact Project is a 3D database drawn from the V&A Collection. For the duration of the show the 'Artefact' evolves through a generative breeding of this 'genetic' information. At some point in its evolution the 'Artefact' will become the collection.

artefact or artifact ('a:tl,faekt) n. 1. Something made or given shape by man, such as a tool or a work of art, esp. an object or archaeological interest. 2. Cytology. a structure seen in tissue after death, fixation, staining, etc., that is not normally present in the living tissue.

[C19: from Latin phrase arte factum from ars skill + facere to make]

The liquidity of the 'Artefact' and the attempts that have been made to fix meaning through classification and labelling provided the catalyst for this project. A 'multimedia' database of objects from the V&A collection will be made, incorporating 3 dimensional information, images, and text taken from information panels, this database can be added to over the duration of the show. This database will be the core of the online engine for the 'Artefact' project. This engine then generates new 3D objects through a process that converges elements from the database within an On-Line multi-user VR environment. For the duration of the show the 'Artefact' project will evolve through a generative breeding of the 'genetic' information contained in the database. Deprived of being able to touch and handle the evolving virtual/impossible 'Artefact' in the real world/museum, individuals would be able to virtually 'touch' and manipulate the 'Artefact' within the On-Line multi-user environment on the Internet. Through this process of manipulation the 'Artefact' would evolve and take on further significance as it is reformed and re-classified through user input. This user input could be collaborative through individuals working together simultaneously manipulating and redefining, or sequential allowing a new form to emerge over a longer period of time. New narratives will evolve around the virtual 'Artefact', new functions will be decided, more virtual 'Artefacts' may be grouped and linked through a consensual process of interpretation. The ambition is to enable a generative process to evolve through the re-interpretation of the objects, where meaning attributed to an 'Artefact' allows new 'Artefacts' to be formed through associative links.

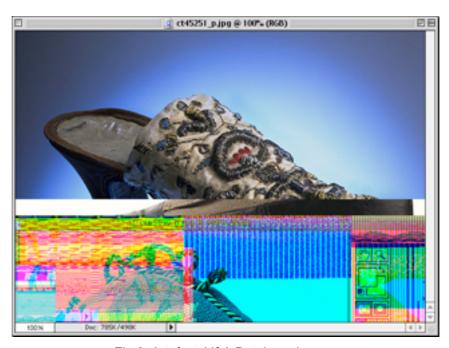


Fig 6: Artefact: V&A Database Image.

This virtual collection of the V&A would slowly evolve and multiply, becoming more alive than the 'real' collection of 'dead' artefacts located within the existing gallery cabinets. An additional cabinet containing the projected images of the virtual 'Artefact' would enhance the materialisation of the immaterial by denying actual physical contact to the museums visitors. Questions would be raised about the nature of all of the 'Artefacts' located in the museums cabinets, which are real and which are Virtual Artefacts.



Fig 7: Artefact: screen grab.

The selected objects were emailed from the V&A online database for 3D modelling and inclusion in the 'Artefact' 3D engine. Serendipity dictated that all the images were corrupted in transmission and arrived in a dismembered state. Each image had become fused with other emailed images and the computers graphical interface. The 'genetic' information derived from these selected images can be seen mutating within the 'Artefact' Project.

Each of these objects is modelled and incorporated into the Artefact generative system. As online users interact with the objects generated by the Artefact system the 'genetic' information is transmitted to the Artefact located in Gallery 70 at the V&A.

How to Make Buildings Disappear.

"The ultimate legacy of modern science is a world view in which "reality" is expressed in abstract mathmatical symbols and formulae. It is a world in which being and appearance part company forever and there can be no trust in the efficacy of the seen, the visible."

(Olsen 1991)



Arch-OS Core.

Arch-OS is an 'Operating System' for 'Cybrid' architectures. Cybrids, a term coined by Peter Anders, are "native to the increasingly mixed reality in which we now live. They integrate physical and cyberspaces within new entities comprising elements both material and virtual. In so doing they marry the affordances of digital media – among them virtual reality, telepresence and on-line environments – with the grounding stability of matter. In cybrids physical and virtual domains become interdependent: actions in material and virtual spaces mutually affect one another." Arch-OS, 'software for buildings', has been developed to manifest the social, technological and environmental life of a building and provide artists, engineers and scientists with a unique environment for developing transdisciplinary research and production.

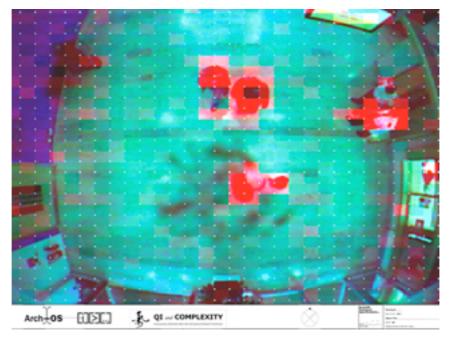


Fig 8: Arch-OS Vision Tool.

Arch-OS combines a rich mix of the physical and virtual into a new dynamic architecture. Arch-OS uses embedded technologies to capture audio-visual and raw digital data through a variety of sources. This vibrant data is then manipulated and replayed through audio-visual projection systems and broadcast through various networks. By making the invisible and temporal aspects of a building tangible Arch-OS creates a rich and dynamic set of opportunities for the emergence of liquid forms. The Arch-OS system is essentially an Operating System for Architecture, one ability of this OS is to unite and control existing software applications running within a building. It is easy to forget the level of code that exists within most buildings; code controls the lifts, heating, ventilation, alarms, security systems and door locks. Arch-OS provides a common interface that establishes a coherent language that makes all levels of a buildings software infrastructure accessible. One output of this common language is the ability to map all the data sets within a building.

The Core Model (developed by Adam Montandon) represents the combined activities of the code at work within the Arch-OS system. The Core Model is available as a live 3D model of this code and can be downloaded as a screen saver or as an online 3D model. Every computer in the Portland Square building has the option of using the Core Model screensaver. This generates a dynamic recursive environment within the building. Sitting in the building the inhabitants can see a live, real-time 3D representation of the building, the space they occupy, on their screen. They can even pinpoint the data that is being generated by their viewing of the Core Model over their local network. The Core Model can be seen as a reconstruction of the dynamic data generated by the building. By revealing the data to the occupants who generate it the system enables a symbiotic relationship to emerge between the inhabitants and the building.

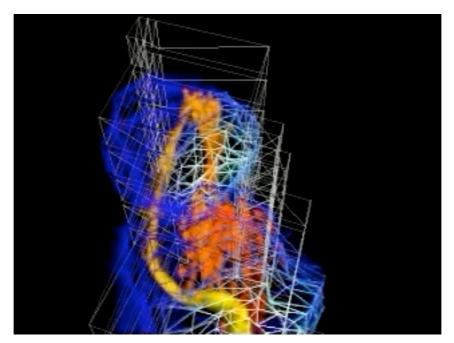


Fig 9: Core.

Arch-OS Core Vision data as composed by George Grinsted:

"Source ID: vis atria a

Value: [6, 7, 7, 20, 10, 8, 12, 4, 2, 6, 8, 8, 12, 15, 2, 6, 9, 4, 6, 7, 6, 4, 2, 1, 11, 2, 5, 3, 4, 1, 2, 7, 7, 5, 3, 4, 5, 5, 5, 10, 5, 3, 12, 5, 4, 8, 11, 7, 7, 9, 4, 11, 6, 6, 9, 5, 7, 3, 0, 1, 5, 8, 5, 10, 6, 3, 4, 10, 1, 13, 14, 6, 3, 7, 14, 6, 0, 8, 6, 3, 18, 2, 7, 5, 6, 8, 9, 7, 3, 5, 8, 10, 9, 2, 11, 5, 3, 8, 2, 8]

Last Recorded: 14:56:43 13/04/2004

Source ID: vis_atria_b

Value: [49, 42, 41, 40, 42, 43, 45, 51, 47, 45, 45, 41, 37, 45, 45, 41, 49, 37, 43, 42, 43, 45, 48, 45, 49, 41, 44, 43, 48, 43, 48, 43, 45, 43, 41, 48, 48, 45, 45, 42, 44, 38, 40, 44, 50, 49, 45, 45, 47, 47, 45, 44, 37, 43, 44, 45, 42, 44, 49, 43, 47, 45, 42, 49, 45, 42, 43, 43, 51, 45, 50, 44, 43, 45, 45, 45, 45, 45, 42, 47, 45, 42, 47, 47, 43, 43, 42, 51, 54, 48, 44, 50, 42, 48, 38, 44, 47, 49, 50, 56]

Last Recorded: 12:50:59 07/08/2004

Source ID: vis_atria_c

Last Recorded: 03:13:34 01/09/2004

Source ID: vis lobby a

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The model provides a lens into this new post montage dimension, the data-liquid through which the inhabitants flow is recursive and responsive, it is predictive and behavioural. It simultaneously integrates and tears apart the fabric of the building. By embracing this process and becoming part of the flow the inhabitants reunite their being and appearance and the efficacy of the visible is dependent on a dialogue through which a new trust may grow.

The conclusion remains inconclusive, but the symptoms are evident, the prognosis is liquid.

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& 4, Dongbianmen Watchtower Chongwenmen, Beijing, China. Portland Square Plymouth University,

The Digital Media Studio, Central Academy of Fine Arts, School of Software and Peking Univ. The

Institute of Digital Media, Beijing Normal Univ. Three location telematic video system.

Bio:

Mike Phillips is the director of i-DAT [The Institute of Digital Art and Technology] at the University of Plymouth. Private and public sector grant funded R&D orbits digital architectures, transmedia publishing and generative media. Recent projects include Autoicon (inIVA), STI Project (The Search for Terrestrial Intelligence - SciArt), 'Artefact' (V&A) and Arch-OS, an architectural operating system.

Projects and other work can be found on the i-DAT web site at: http://www.i-dat.org.

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