



3CM - CHRIS SPEED:
NAVIGATES AROUND THE GLOBAL VILLAGE...

YOU ARE HERE...

"A GRAPHIC REPRESENTATION OF DATA ABSTRACTED FROM THE BANKS OF EVERY COMPUTER IN THE HUMAN SYSTEM. UNTHINKABLE COMPLEXITY. LINES OF LIGHT RANGED IN THE NONSPACE OF THE MIND, CLUSTERS AND CONSTELLATIONS OF DATA. LIKE CITY LIGHTS RECEDING."

W. GIBSON. 1988

...SPACE, THE FINAL FRONTIER... A NEW MEETING PLACE FOR ARCHITECTURE, ART, MULTIMEDIA, VR, AND ARTIFICIAL INTELLIGENCE. MEDIASPACE 4 EXPLORES SOME OF THE ISSUES OF CONVERGENCE, THROUGH WEB SPACE, VR SPACE, DOCUMENTARY SPACE, AND NEURAL MAPS OF GALLERY SPACE. A COMMON GROUND WHERE THE WALLS DIVIDING ENTRENCHED DISCIPLINES SIMPLY CRUMBLE AWAY.

"IT'S ABOUT CREATING IMAGINARY WORLDS THAT HAVE A SPECIAL RELATIONSHIP TO REALITY - WORLDS IN WHICH WE CAN EXTEND, AMPLIFY, AND ENRICH OUR OWN CAPACITIES TO THINK, FEEL, AND ACT."

BRENDA LAUREL, 1993

WELCOME TO A PLACE WHERE GRAVITY WILL NOT ALWAYS WIN...

27CM - DAN LIVINGSTONE:
THE SORCERERS APPRENTICE - A PROPOSAL...



7cm - CULVER EPPS:

"OBJECTIVE" AND "SUBJECTIVE" VIRTUAL REALITIES...

13cm - KATE BRYANT:

PALIMPSEST - A DIGITAL DOCUMENTARY...

19cm - DONALD RODNEY:

'PSALMS' - AN AUTONOMOUS WHEEL CHAIR...

25cm - THE VIRTUAL ADVISOR...

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Mike Phillips.
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Fax:

01752 232540.

Email:

mikep@soc.plym.ac.uk

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Wain 13.2% GMT
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regeneration and also the place to meet and make the building more

European building sector also has a very high level of energy efficiency and high building quality. The building sector is also a very important part of the economy, and the building sector is also a very important part of the economy, and the building sector is also a very important part of the economy.

These may be the main reasons for the building sector's success. The building sector is also a very important part of the economy, and the building sector is also a very important part of the economy, and the building sector is also a very important part of the economy.

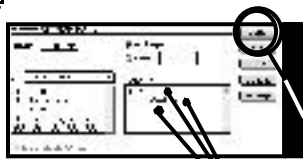


Table of data from the software interface.

SHOWS HOW SYSTEMS ARE GENERATED WITHIN PLYMOUTH CITY CENTRE... I HAVE REMOVED ALL THE B



AN INVESTIGATION OF THE INTERACTION BETWEEN "REAL" SPACE & COMPUTER INTERACTION AND ARCHITECTURE GENERATED FROM VIRTUAL REALITY.

"OBJECTIVE" AND "SUBJECTIVE" VIRTUAL REALITIES...

C **U** **L** **V** **E** **R** **E** **P** **S**
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ONE OF THE MAJOR PROBLEMS CONFRONTED BY ARCHITECTURE IS ITS INTEGRATION INTO THE INFORMATION AGE. STUCK IN THE RIGMAROLE OF ARCHITECTURAL HISTORY AND THE NEED TO CATEGORIZE EVERYTHING INTO TIME ORIENTATED CRITERIA, IT SEEMS STRANGE THAT THE ENGAGEMENT OF ARCHITECTURE AND THE ABILITY TO CREATE SPACE WHICH TRANSCENDS TIME IS NOT TAKEN MORE SERIOUSLY. MARCOS NOVAK, PROFESSOR OF ARCHITECTURE AT AUSTIN, TEXAS HAS WRITTEN MANY PAPERS ON THE EFFECT OF VIRTUAL REALITY SYSTEMS AND THE DEVELOPMENT OF SPACETIME ARCHITECTURE. ONE OF THE MAJOR CRITERIA IN HIS WORK IS THE CONNECTION BETWEEN ARCHITECTURE AND MUSIC, ARCHITECTURE BEING THE EMBODIMENT OF SPACE AND MUSIC THE EMBODIMENT OF TIME. NOW WE EXIST IN A POST-EUCLIDEAN WORLD AND, AS A CONSEQUENCE OF RELATIVITY, NOVAK SEES THE DEVELOPMENT AND INTEGRATION OF TIME IN ARCHITECTURE AS OF THE UTMOST IMPORTANCE. NOVAK'S CONCERNS MAINLY LIE IN THE CONNECTION BETWEEN OUR ABILITY TO EXPRESS OUR OWN ARCHITECTURAL DOMAIN THROUGH COMPUTER DISTRIBUTION AND THE EFFECTS THIS MAY HAVE IN OUR MORE LOCAL ARCHITECTURES.



BUILDINGS... THE BOTTOM LAYER IS JUST HOW PEOPLE MOVE... THERE ARE THE INTERFERENCE POINTS...

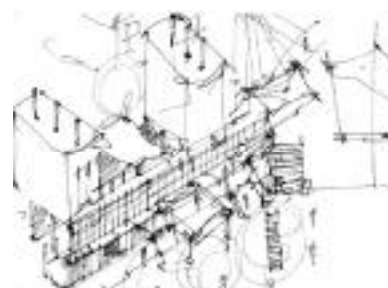


"IN THIS EFFORT TO EXTEND OUR RANGE AND PRESENCE TO NONLOCAL REALITIES, ARCHITECTURE HAS BEEN A BYSTANDER, AT MOST HOUSING THE EQUIPMENT THAT ENABLE US TO EXTEND OUR PRESENCE. THE TECHNOLOGIES THAT WOULD ALLOW THE DISTRIBUTION OR TRANSMISSION OF SPACE AND PLACE HAVE BEEN UNIMAGINABLE, UNTIL NOW. THOUGH WE LEARN ABOUT MUCH OF THE WORLD FROM THE MEDIA, ESPECIALLY CINEMA AND TELEVISION, WHAT THEY PROVIDE IS ONLY A PASSIVE IMAGE OF PLACE, LACKING THE INHERENT FREEDOM OF ACTION THAT CHARACTERIZES REALITY, AND IMPOSING A SINGLE NARRATIVE THREAD UPON WHAT IS NORMALLY AN OPEN FIELD OF SPATIAL OPPORTUNITY. HOWEVER, NOW THAT THE CINEMATIC IMAGE HAS BECOME HABITABLE AND INTERACTIVE, THAT BOUNDARY HAS BEEN CROSSED IRREVOCABLY. NOT ONLY HAVE WE CREATED THE CONDITIONS FOR VIRTUAL COMMUNITY WITHIN A NONLOCAL ELECTRONIC PUBLIC REALM, BUT WE ARE NOW ABLE TO EXERCISE THE MOST RADICAL GESTURE: DISTRIBUTING SPACE AND PLACE, TRANSMITTING ARCHITECTURE." MARCOS NOVAK - TRANSMITTING ARCHITECTURE.



ONE OF THE MAIN STUMBLING BLOCKS IN NOVAK'S WORK IS THE ABILITY TO ACCEPT THAT THE GENERATION OF A COMPUTER BASED ARCHITECTURAL SPACE IS WORTHY OF THE TERM ARCHITECTURE AS WE KNOW IT. MANY OF US BELIEVE ARCHITECTURE TO LIE IN THE BUILT FORM, SOME BUILDINGS CONTAIN "ARCHITECTURE", SOME CONTAIN NOTHING MORE THAN THE WALLS, THE FLOOR AND SHELTER. HOW CAN WE DISTINGUISH BETWEEN THIS FORM AND ANOTHER? JUST AS WE CAN DETERMINE WITHIN OUR LOCAL REALITIES WHAT IS "ARCHITECTURE" AND WHAT IS NOT, NOVAK CHALLENGES THE BASIS THAT "ARCHITECTURE" LIES IN ITS THEORY AND PROCESS NOT NECESSARILY ITS OUTCOME, THAT "ARCHITECTURE" IS MORE OF A GENERATIVE PROCESS AND THAT THE FRAMEWORK IS THE ONLY THING AN ARCHITECT CAN BRING TO A SCHEME.

"THE ARCHITECTURE OF CYBERSPACE OFFERS THE OPPORTUNITY TO MEND THE RUPTURE BETWEEN HOW WE KNOW THE WORLD AND HOW WE CONCEIVE AND EXECUTE ARCHITECTURE. IT ALLOWS A FAR GREATER LATITUDE OF EXPERIMENTATION THAN ANY PREVIOUS ARCHITECTONIC OPPORTUNITY. IT IS ONCE AGAIN POSSIBLE TO SEEK TO KNOW WHAT IS KNOWN AND TO CONCEIVE A CORRESPONDING ARCHITECTURE, WITHOUT ALWAYS FALLING BACK UPON THE SACRED GEOMETRIES OF AGES PAST. THIS ENGAGEMENT ONLY MAKES ARCHITECTURE MORE RELEVANT TO THE WORLD, MORE IN KEEPING WITH WHAT IS SENSED AS A NEW CONDITION. IN FACT, ARCHITECTURE'S ROLE IN ARTICULATING SPATIALLY THE OUTLOOK OF AN AGE IS STRONGLY REASSERTED." MARCOS NOVAK - TRANSMITTING ARCHITECTURE.



WHICH ARE STARTING TO GENERATE THE THINGS I WANT TO LOOK AT... THERE ARE THREE PARTS: THE PH

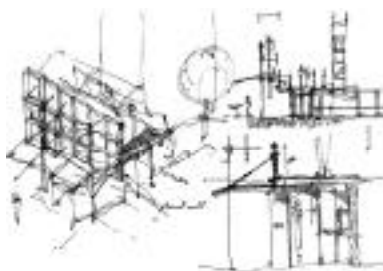


THE PROBLEM WITH THE THEORIES OF NOVAK IS THAT HE HOLDS HIS IDEAS OF ARCHITECTURE SOLELY IN THE REALMS OF WHAT IS VIRTUAL, NEVER REALLY EXPRESSING THIS IN ANY FORM OF REALITY. THIS IS MAINLY DUE TO THE PROCESS OF ARCHITECTURE IN WHICH HE FINDS HIMSELF, ARCHITECTURE OF THE VIRTUAL IS GENERATED BY MATHEMATICAL PROCESSES INSTEAD OF THE PROCESSES OF THE NORMAL ARCHITECTURAL REALITY, NAMELY "STICKS AND STONES".

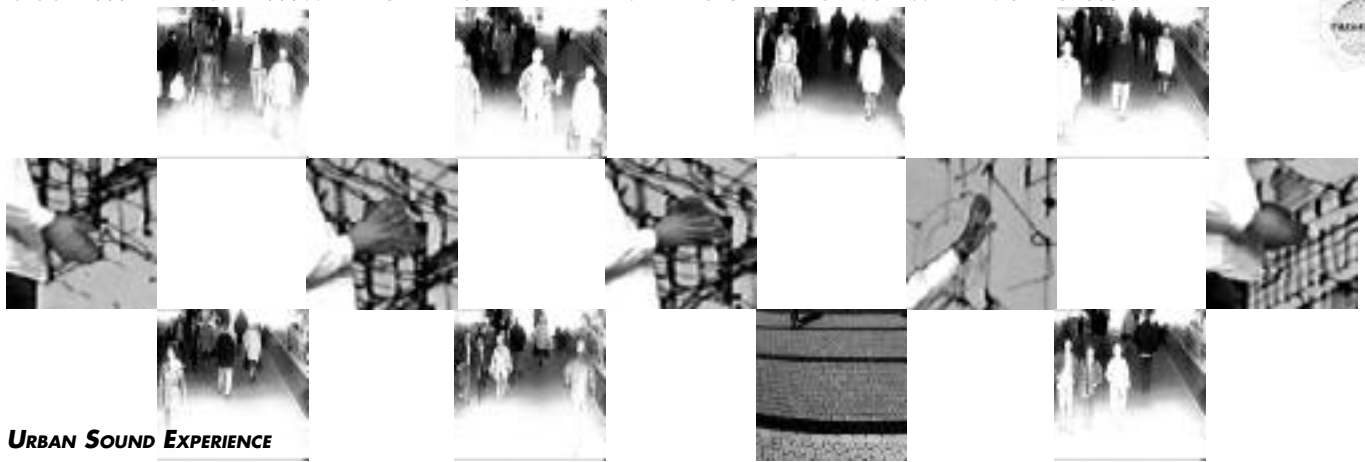
...THIS IS THE BASIS OF THE PROJECT...



THE TWO FORMS OF ARCHITECTURE MUST BECOME INTERTWINED BEFORE YOU CAN ACCEPT THE VIRTUAL ARCHITECTURAL IDEOLOGY AS ACCEPTABLE, AND ALSO THE EXPERIENCE OF SUCH SPACE COMES BEFORE EXPRESSING AN INFORMED IDEA OF IT. THIS INVOLVES THE UNDERSTANDING THAT ARCHITECTURE AND LIFE ITSELF EXISTS IN A FORM OF VIRTUAL REALITY. EACH ONE OF US EXISTS IN A VIRTUAL REALITY WHICH IS UNIQUE, FOR IT IS OUR ABILITY TO INTERPRET RAW DATA AND INFORMATION INTO SIGHT AND SOUND AND COMMUNICATE THOSE EXPERIENCES WHICH HELP FORM OUR IDEAS OF SPACE AND PLACE. THIS I HAVE TERMED OUR "OBJECTIVE" VIRTUAL REALITY. THEN THERE IS THE VIRTUAL REALITY WHICH WE HAVE SEEN THROUGH OTHER MEDIA FOR THE PAST TEN YEARS OR SO: COMPUTER GENERATED SPACES AND STRUCTURES. ARCHITECTURAL IDEAS WHICH, TO THE PRAGMATIC "OBJECTIVE" VIRTUAL REALITY MIND HAVE NO PLACE OR SPACE AS WE CANNOT COMMUNICATE THEM THROUGH A SPECIFIC OF LANGUAGE. YET IT IS THIS NON-LOCAL SPACE, AS NOVAK TERMS IT, WHICH TRANSCENDS LANGUAGE AND REINFORCES THE SPACES WHICH WE ALREADY KNOW. THIS I HAVE TERMED "SUBJECTIVE" VIRTUAL REALITY. IT IS THESE "VIRTUAL" REALITIES WHICH ARE THE BASIS OF THIS THESIS. THAT THE JUXTAPOSITION BETWEEN THE TWO IS NOT A KEYBOARD OR A COMPUTER MONITOR OR A LEAP OF THEORETICAL FAITH, BUT MORE AN ACCEPTANCE THAT THIS IS JUST ANOTHER TECHNICAL DEVELOPMENT OF "ARCHITECTURE".

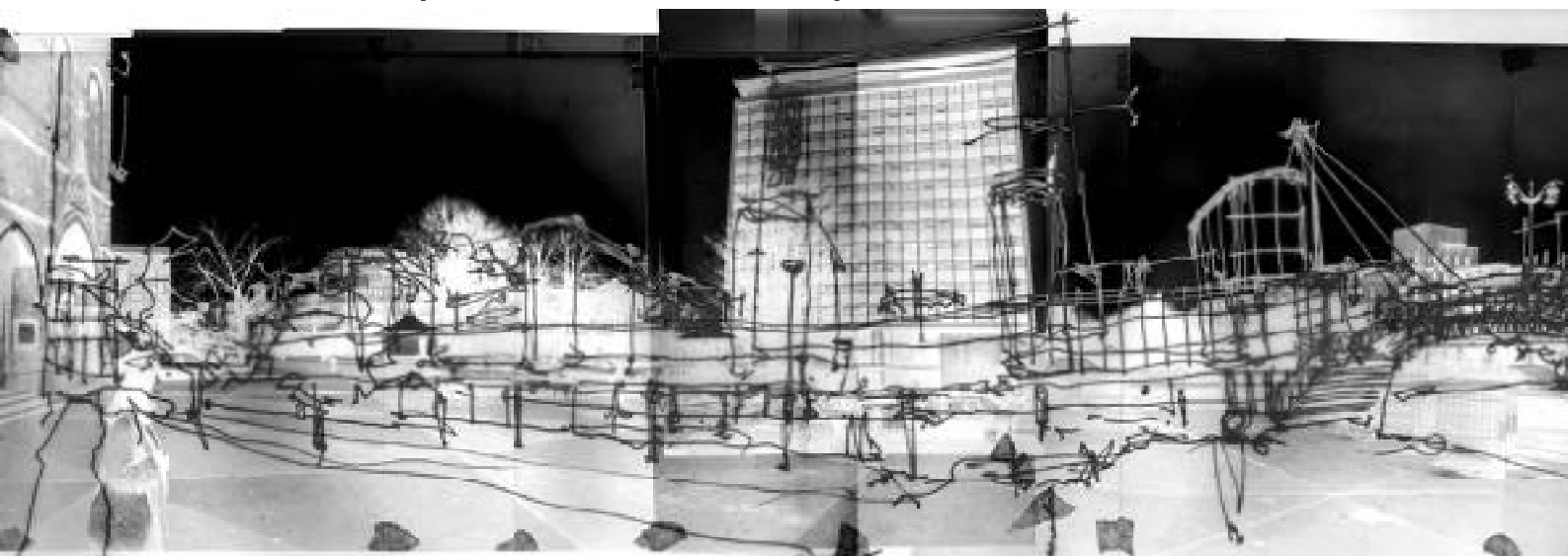


PHYSICAL... THE VISUAL... THE AURAL...WE EACH HAVE A DIFFERENT PHYSICAL PRESENCE WITHIN SPACE...



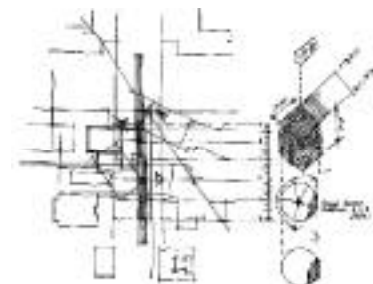
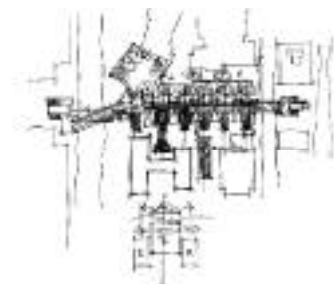
URBAN SOUND EXPERIENCE

EACH MEMBER OF SOCIETY EXPERIENCES A PLACE THROUGH MANY DIFFERENT MEDIA, AND THE BRAIN CREATES INFORMATION OF AURAL, VISUAL AND TACTILE EXPERIENCE TO CREATE MAPS OF SPACES. SOME OF THESE SPACES PLEASE OUR EYES, SOME OUR EARS AND SOME OUR TOUCH. IT IS THESE EXPERIENCES WHICH LEAD US TO COMMUNICATE HOW WE FEEL ABOUT SOMETHING **...IT SMELT HORRIBLE...IT LOOKED NICE...I LIKED THE FEEL OF IT...** ALL THESE ADJECTIVES LIE IN THE ABILITY OF OUR BRAIN TO COMMUNICATE OUR "OBJECTIVE" VIRTUAL SPACE. MARCOS NOVAK CONSIDERS THIS AN EMBODIMENT OF SPACE, WE ONLY EXPERIENCE WHAT WE KNOW IN THE REALM OF WHAT WE CONSIDER NORMAL, THE ABNORMAL IS THEREFORE BEYOND REASON AND CANNOT BE EXPERIENCED TO THE LEVEL THAT IT CAN BE COMMUNICATED. TO NOVAK THE COMMUNICATION CAN COME THROUGH MUSIC; JUST AS "SUBJECTIVE" VIRTUAL SPACE CAN TRANSCEND LANGUAGE SO MUSIC CAN CREATE THE LINK NECESSARY TO THE "OBJECTIVE". EACH OF US CONSIDERS BEAUTY IN DIFFERING SOUND [OPERA, JUNGLE, HARDFLOOR, THRASH, CLASSICAL] BUT RUDIMENTARIES EXIST WITHIN ALL THE STRUCTURES OF MUSIC.



EACH PLACE IS DIFFERENT AND CAN BE COMPARED TO ANOTHER THROUGH SOUND, VISUAL AND A TACTILE NATURE. THIS PROJECT IS CONCERNED WITH THE SOUND PROCESSES OF SPACE, AND AIMS...

- (A) **TO CONSOLIDATE THE "SUBJECTIVE" AND "OBJECTIVE" SPACES**
- (B) **TO GENERATE AN ARCHITECTURE WHICH IS TRUE TO THE SPACE IN WHICH IT IS CREATED**
- (C) **TO DEVELOP AN ARCHITECTURE WHICH EVOLVES WITH, AND IS THEREFORE A PRODUCT OF, TIME**

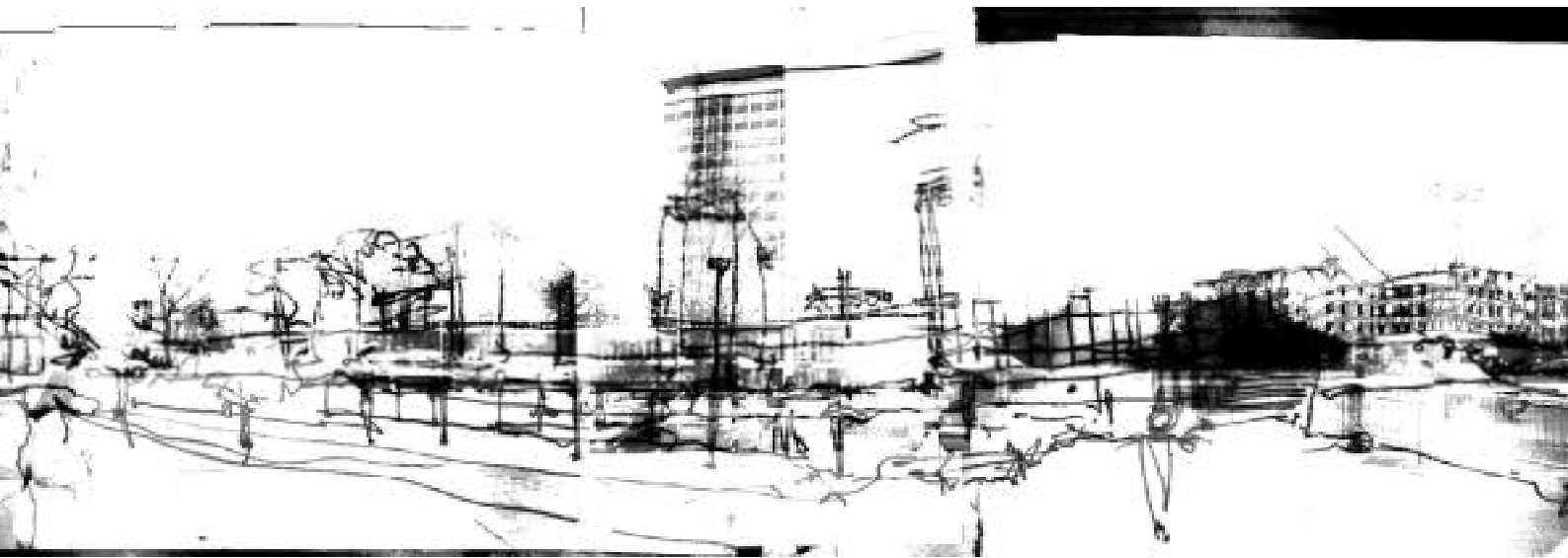


WHEN YOU ARE IN A ROOM ON YOUR OWN... AS SOON AS SOME ONE COMES IN, THE WHOLE PHYSIC



SAMPLING

SOUND IS EVERYWHERE: NO MATTER WHERE YOU ARE SOUND ENVELOPS AND DEFINES OUR SPACES. FROM A HUGE AUDITORIUM DESIGNED FOR PERFECT REPRODUCTION OF SOUND, TO THE STREETS IN WHICH WE SHOP, SOUND HELPS US DEFINE OUR EXPERIENCES AND REINFORCE OUR "OBJECTIVE" VIRTUAL SYSTEM. IF YOU WERE ABLE THEREFORE TO MAP THIS SOUND IN A FORMAL SENSE AND USE THIS TO GENERATE ANOTHER SEQUENCE OF EVENTS FROM A "SUBJECTIVE" VIRTUAL SYSTEM, THERE WOULD BE A JUXTAPOSITION AND A BASIS FOR EXPLORATION. MOVEMENT THROUGH ANTE SPACE DEFINES ROUTES OF LEAST RESISTANCE AND THE EFFECTS DIFFERING BUILDING TYPES HAVE ON THE POPULOUS AT LARGE. THEREFORE, ASSUMPTIONS CAN BE MADE ON THE POSITION AND REASON FOR POINTS OF INTERFERENCE. BY USING THE TERM INTERFERENCE, IT IS IMPLIED THAT NODAL POINTS WITHIN THE PUBLIC REALM EXIST AS CROSS-OVER POINTS AND AREAS OF PUBLIC GATHERING AND DISPERSAL. ALTHOUGH AREAS SUCH AS THIS APPLY TO MOST URBAN SPACES, THE PATTERNS VARY DUE TO BUILDING DENSITY, PEDESTRIAN FLOW AND VEHICULAR ACCESS/ROUTES THROUGH CITIES.



THE POSITION AND DISSECTION OF ANTE SPACE GENERATES POINTS OF DENSITY: THESE AREAS OF DENSITY HAVE SPATIAL, AURAL AND VISCERAL PRESENCE. THEREFORE, IT CAN BE TAKEN THAT THE PATTERNS GENERATED BY THE PHYSICAL PRESENCE OF THE HUMAN/MACHINE GENERATES PATTERNS OF AURAL DISTINCTION WITHIN PUBLIC SPACE, AS BOTH HUMANS AND MACHINES GIVE AURAL PRESENCE TO SPACE. THE MAIN FACTOR OF FLUCTUATIONS OF THE AURAL PATTERNS OF SPACE IS TIME. CHANGES IN TIME GENERATE DIFFERENT SPATIAL, AURAL AND VISCERAL EXPERIENCE AND PATTERNS CAN ARISE FROM THESE CHANGES.

THEREFORE THE PROJECT AIMS TO ABSTRACT THE CHAOTIC AURAL EXPERIENCE AND MAP THIS INTO A SPATIAL AND VISCERAL INTERPRETATION OF THE ORIGINAL MOVEMENT PATTERN.



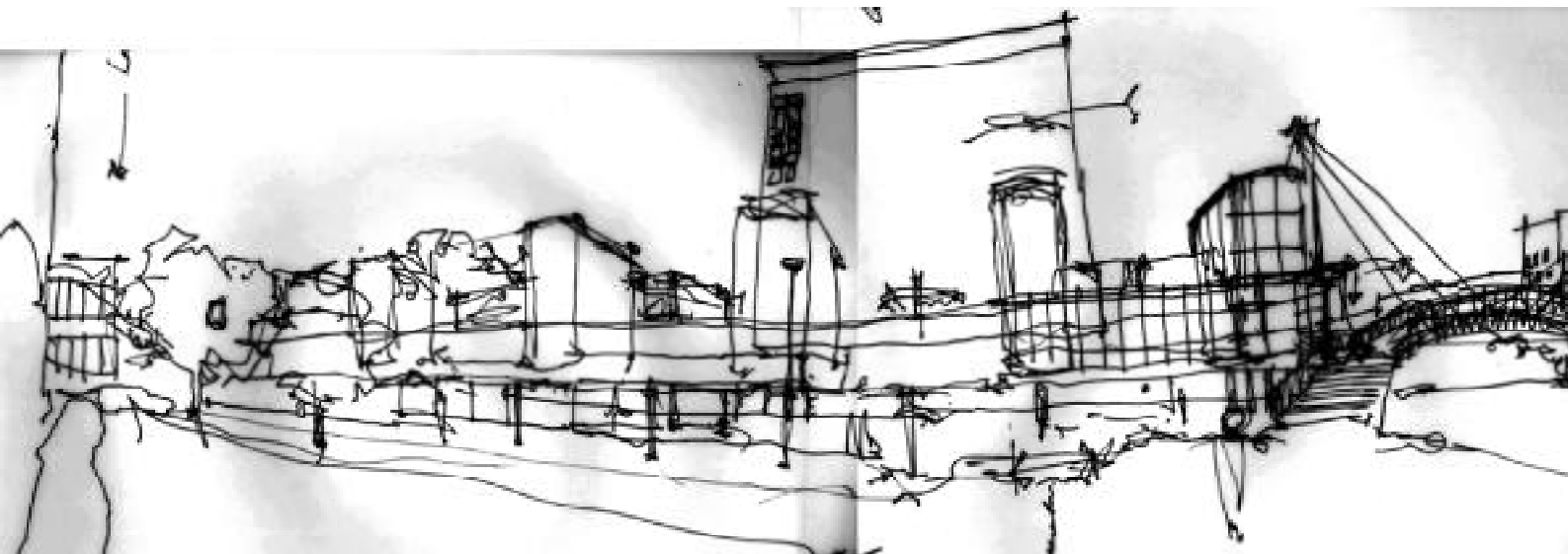


THE EXPERIMENTAL SITE FOR THIS PROJECT IS THE CIVIC CENTRE, PLYMOUTH.

THIS IS DONE THUS: SOUND MUST BE CAPTURED AND REFORMED INTO AN ARCHITECTURAL FORM.

A SAMPLE OF 1 SECOND DURATION IS TAKEN EVERY MINUTE FROM NO FIXED POSITION WITHIN A PUBLIC REALM. THIS CAN BE DONE EITHER BY PLACING FIXED NODES WITHIN AN URBAN ENVIRONMENT OR VIA THE INTERNET. NODES COULD BE POSITIONED WORLDWIDE AND A CENTRAL INFORMATION SOURCE COULD DECIDE THE POSITION TO ABSTRACT THE SOUND FROM. TO THE SYSTEM, JUST AS TO THE BRAIN, THIS IS RAW DATA IN THIS FORM...

-13895 288 -8668 -13517 59 -10788 -1353 -371 -13383 -13680 -669 -15510 -13408 -878 -17417 -13321 -1309

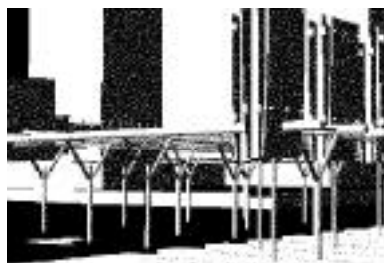


CONTAINED WITHIN EACH SOUND ARE CERTAIN AMOUNTS OF INFORMATION CONCERNING THAT SOUND; THE ATTACK AND DECAY OF THE SOUND (THE FREQUENCY DISTRIBUTION IN Hz) AND THE TIME ACROSS ANY SUB-WAVE CONTAINED WITHIN EACH WHOLE SOUND. THIS INFORMATION CAN BE USED TO REINTERPRET EACH SOUND INTO 3 DIMENSIONS.

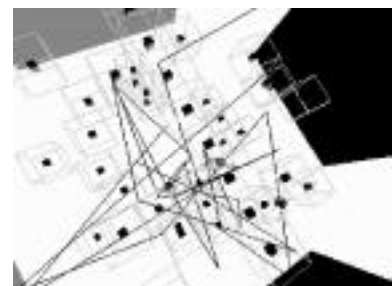
X-AXIS ATTACK OF SUB-WAVE / Y-AXIS DECAY OF SUB-WAVE / Z-AXIS TIME BETWEEN START & FINISH OF SUB-WAVE

THIS INFORMATION CAN THEN BE PLOTTED USING A COMPUTER TO GENERATE A 3-DIMENSIONAL LINE THROUGH SPACE. THIS LINE THEN IN TURN GENERATES A SPACE WITHIN WHICH THE SOUND EXISTS, NOT AS WE KNOW IT, "**OBJECTIVE**", BUT AS IT COULD BE KNOWN, "**SUBJECTIVE**".

EACH SAMPLE WHICH IS TAKEN FROM AN URBAN SITE WILL LAST FOR NO MORE THAN 1 SECOND AS THE AMOUNT OF INFORMATION CONTAINED WITHIN EACH SAMPLE CAN BE MASSIVE.



THE PROJECT CAN BE EXPERIENCED IN VRML FORM @
[HTTP://HOMEPAGES.ENTERPRISE.NET/CULVER](http://homepages.enterprise.net/culver)
 CULVER EPPS IS AN ARCHITECT BASED IN ELY, CAMBRIDGESHIRE.



PALIMPSEST - AN EXPLORATION INTO DIGITAL DOCUMENTARY

KATE BRYANT

Palimpsest is an experimental digital documentary produced on CDROM, which allows the user to explore the two central themes of the evolution of the city and shopping.

The title Palimpsest was chosen deliberately to emphasise the overlying nature of the growth and development of a physical environment, the city, and a personal activity within it - shopping. The completed project sits somewhere within the boundaries of documentary, art and design and computer games.

"PALIMPSEST - PAL'IMP-SEST, N. A MANUSCRIPT IN WHICH OLD WRITING HAS BEEN RUBBED OUT TO MAKE ROOM FOR NEW "
(Chambers Twentieth Century Dictionary, London, Chambers Harrap Publishers Ltd, 1993)

'Palimpsest' explores the possible future of documentary within the new media framework of digital technology and takes an evolving aspect of 20th Century urban life as the subject to document.

"WE ARE ENTERING AN ERA OF ELECTRONICALLY EXTENDED BODIES LIVING AT THE INTERSECTION POINTS OF THE PHYSICAL AND VIRTUAL WORLDS, OF OCCUPATION AND INTERACTION THROUGH TELEPRESENCE AS WELL AS THROUGH THE TELECOMMUNICATION-INDUCED FRAGMENTATION AND RECOMBINATION OF TRADITIONAL ARCHITECTURAL TYPES, AND OF NEW, SOFT CITIES THAT PARALLEL, COMPLEMENT, AND SOMETIMES COMPETE WITH OUR EXISTING URBAN CONCENTRATIONS OF BRICK, CONCRETE AND STEEL."
(Mitchell, W.J. City of Bits, Cambridge, Massachusetts, The MIT Press, 1995)

The city is both the subject matter and a living example of Palimpsest. So, in order to control the range of the project, the city, and the closely related activity of shopping, have been chosen as exemplars.

"SHOPPING IS VERY DEMONSTRATIVE"

Lord Melbourne to Queen Victoria (quoted in Adburgham, A. Shops and Shopping, London: George Allen & Unwin Ltd, 1964)



Essentially the project is a wide ranging collection of documentation and observations of the paradigm shift that is emerging within the city, brought about by new technology: computers, information systems, communications networks. The patterns of life within the urban environment have over the last decade begun to change dramatically with the increase in use of technologies such as fax machines, answering machines and mobile telephones. The growth of the Internet and use of email, the Web, rapid expansion of fast communications networks, laying of fibre optic cables and so on, are similarly reconfiguring our space and time relationships.



The creation of a documentary is no longer limited to photographic or moving images. Digital Media brings a commonality to a very wide range of inputs and increases the breadth and depth of a digital documentary.



Palimpsest sees photographic documentary loose its traditional single viewpoint, and film or television documentary move on from the idea of a continuous uninterrupted stream. In contrast to earlier documentaries where the route was effectively linear, Palimpsest requires the user to choose her own route and in the process create a unique narrative.



"THE TOTAL SUMMATION WE CALL KNOWLEDGE AND SCIENCE IS A WEB OF IDEAS POINTING TO, AND RECIPROCALLY EDUCATING EACH OTHER. HYPERTEXT AND ELECTRONIC WRITING ACCELERATE THAT RECIPROCITY. NETWORKS REARRANGE THE WRITING SPACE OF THE PRINTED BOOK INTO A WRITING SPACE MANY ORDERS LARGER AND MANY WAYS MORE COMPLEX THAN OF INK ON PAPER. THE ENTIRE INSTRUMENTATION OF OUR LIVES CAN BE SEEN AS PART OF THAT 'WRITING SPACE'."



AS DATA FROM WEATHER SENSORS, DEMOGRAPHIC SURVEYS, TRAFFIC RECORDERS, CASH REGISTERS, AND ALL THE MILLIONS OF ELECTRONIC INFORMATION GENERATORS POUR THEIR WORDS OR REPRESENTATION INTO THE NET, THEY ENLARGE THE WRITING SPACE."

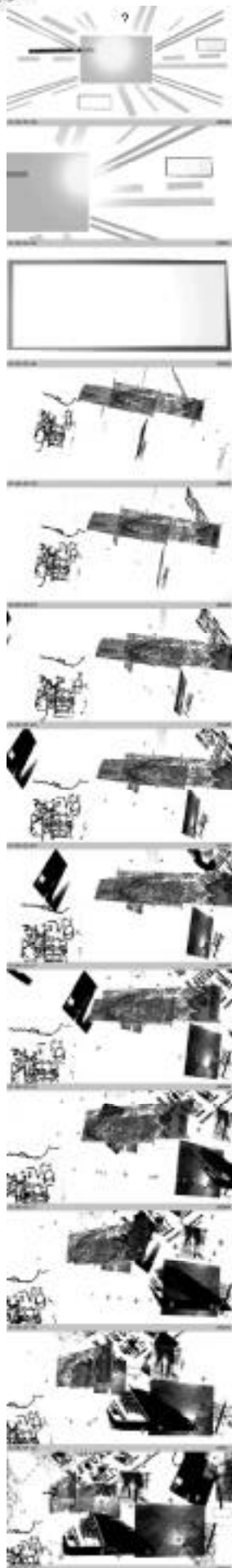
(Kelly, K, Out of Control, London, Addison Wesley Inc, 1994)

Four thousand years BC the Egyptians created the first form of paper, made from the sliced stems of rare papyrus plants. Papyrus paper became an expensive commodity and was used only for official, religious and legal documents. Because the paper was so valuable it was continually reused, old writing was erased and new inscriptions layered over the top.



Traces of the old writing remained, leaving an echo of past rituals, a 'Palimpsest'.

The word 'Palimpsest' was chosen as the title for this project because it is a metaphor for many of the issues that the project encapsulates; the continuation and evolution of the documentary form; evolutionary



processes within the city; the development of digital media to the point where a 3D multimedia database is possible. Combining these and other influences instantly creates juxtapositions of old and new and highlights the central theme of this project, that of Palimpsest.

"ARCHITECTURE IS PROBABLY A HOAX, A FANTASY WORLD BROUGHT ABOUT THROUGH A DESIRE TO LOCATE, ABSORB AND INTEGRATE INTO AN OVERALL OBSESSION A SELF-INTERPRETATION OF THE EVERYDAY WORLD AROUND US. AN IMPOSSIBLE ATTEMPT TO RATIONALISE THE IRRATIONAL. IT IS DIFFICULT TO BE EXACT ABOUT INFLUENCES, BUT THOSE INFLUENCES THAT ENTER OUR UNCONSCIOUS CONSCIOUSNESS ARE WHAT I CALL 'GHOSTS'.

OUR LIVES EXIST WITHIN A COMPLEX WEB OF THESE INFLUENCES; WHICH WE EITHER ACCEPT OR REJECT; THOSE WE FIND ACCEPTABLE ARE TURNED TO ADVANTAGE; THEY BECOME OUR PREOCCUPATIONS, PREJUDICES OR PRECONCEPTIONS. SYSTEMATIC ANALYSIS IS SUCH A PRECONCEPTION.

GHOSTS HELP TO REINFORCE AND ESTABLISH ATTITUDES, TO BUILD A VERY PERSONAL LANGUAGE, A COMPLEX LABYRINTH OF IDEALS, CONSTRAINTS, THEORIES, HALF-REMEMBERED RULES, SYMBOLS AND WORDS THAT, ULTIMATELY DIGESTED, AFFECT OUR CONCEPTS."

(A Guide to Archigram 1961 - 74 London:Academy Editions, 1994)

As Palimpsest suggests a layering, I have used this as a metaphor to visually represent information within the project. The interface for this project has been designed as an interactive 3D form, containing fragments of information that convey varying views and visual perspectives of the subject matter. Within the 3D model there are three set points (interfaces) where interactions may take place; from each interface, part of another interface is visible.

All of the information used has been sorted according to a set of rules, much like rules within a database, which has resulted in the creation of three interfaces, one for each category:

- **SPACE**
- **TIME**
- **MOTION**

During this century there has been a definite blurring of space and time, changes which can be attributed to the machine, and by extension computer technology. Space now encompasses the distance to galaxies at one extreme and the dimensions of atoms at the other. There is a slowly evolving architecture of electronic, computer-based environments, which undermine the stability, permanence and our perceptions of the physical world.

TIME



DOCUMENT DOK' UMENT, N - A PAPER, ESP OF AN OFFICIAL CHARACTER, AFFORDING INFORMATION, PROOF OR EVIDENCE OF ANYTHING; EVIDENCE, PROOF (ARCHAIC); INSTRUCTION (SPENSER, ETC); WARNING (OBS.)
 A PERSON WHO COLLECTS AND CLASSIFIES DOCUMENTS. - ADV DOCUMENTAR'ILY. - N DOCUMENT'ARIST A PERSON WHO MAKES DOCUMENTARIES. N DOCUMENTARIZA'TION OR -S. - VT AND VI DOCUMENT'ARIZE OR
 - N. A FILM OR RADIO OR TV PROGRAMME ABOUT REAL PEOPLE OR EVENTS, WITHOUT FICTIONAL COLOURING OR PROFESSIONAL ACTORS. - N DOCUMENTA'TION INSTRUCTION (ARCHAIC); PREPARATION, SETTING FORTH
 SUPPOSED; THE WRITTEN INFORMATION ON THE STRUCTURE AND OPERATION OF HARDWARE OR SOFTWARE (COMPUT). - DOCUMENT READER (COMPUT). A FORM OF OPTICAL CHA
 CHAMBERS TWENTIETH CENTURY DICTIONARY

"ALONG WITH CONSTRUCTION TECHNIQUES, THERE'S ALWAYS THE CONSTRUCTION OF TECHNIQUES, THAT COLLECTION OF SPATIAL AND TEMPORAL MUTATIONS THAT IS CONSTANTLY REORGANISING BOTH THE WORLD OF EVERYDAY EXPERIENCE AND THE AESTHETIC REPRESENTATION OF CONTEMPORARY LIFE. CONSTRUCTED SPACE, THEN IS MORE THAN SIMPLY THE CONCRETE AND MATERIAL SUBSTANCE OF CONSTRUCTED STRUCTURES, THE PERMANENCE OF ELEMENTS AND THE ARCHITECTONICS OF URBANISTIC DETAILS. IT ALSO EXISTS AS THE SUDDEN PROLIFERATION AND THE INCESSANT MULTIPLICATION OF SPECIAL EFFECTS, WHICH ALONG WITH THE CONSCIOUSNESS OF TIME AND OF DISTANCES, AFFECT THE PERCEPTION OF THE ENVIRONMENT."

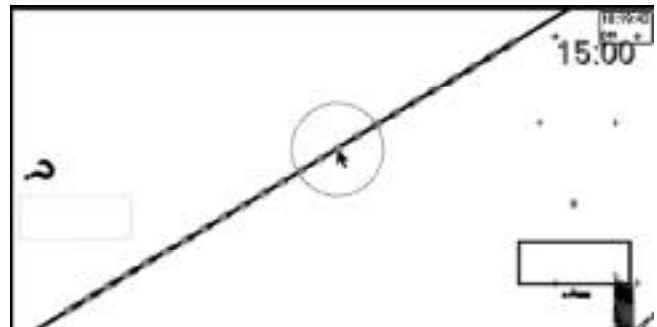
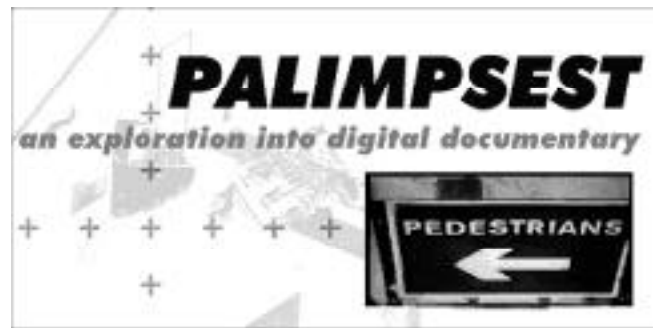
(Virilio, P. The Lost Dimension New York, Semiotext(e), 1991)

"I AM THE CAMERA'S EYE. I AM THE MACHINE WHICH SHOWS YOU THE WORLD AS I ALONE SEE IT. STARTING TODAY, I AM FOREVER FREE OF HUMAN IMMOBILITY. I AM IN PERPETUAL MOVEMENT. I APPROACH AND DRAW AWAY FROM THINGS - I CRAWL UNDER THEM - I CLIMB ON THEM - I AM ON THE HEAD OF A GALLOPING HORSE - I BURST AT FULL SPEED INTO A CROWD - I RUN BEFORE RUNNING SOLDIERS - I THROW MYSELF DOWN ON MY BACK - I RISE UP WITH THE AEROPLANES - I FALL AND I FLY AT ONE WITH THE BODIES FALLING OR RISING THROUGH THE AIR"

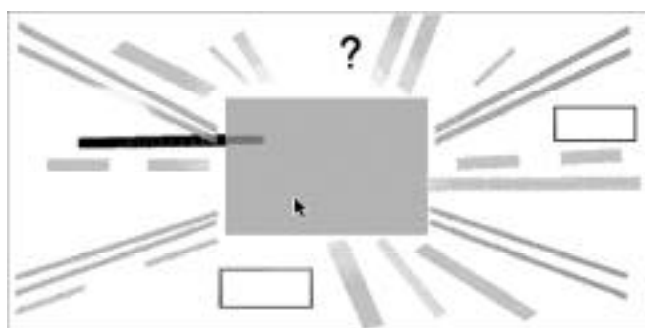
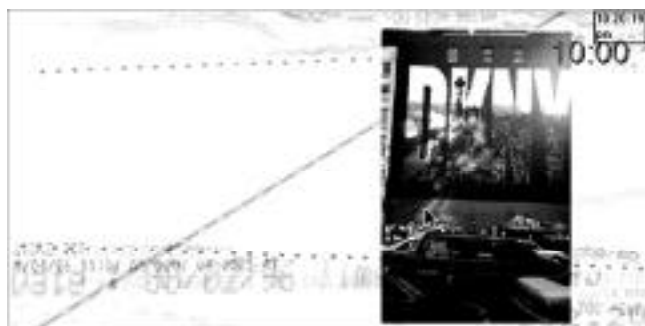
Dziga Vertov 1918 (Virilio, P. War and Cinema, The Logistics of Perception, Verso, London 1989)

By gathering together many images Palimpsest continues to extend this vision of the 'camera's eye'. Digital documentary is needed to overcome the possible over simplification of subjects, events and ideas. Palimpsest is a database containing a variety of information, and depending on who we are, what we have experienced we take away different interpretations and views. Photography has always attracted a debate between those who stress the photographic image's privileged status as a trustworthy mechanical analogue of reality and those who stress its constructed, artifactual and ideological character. The former position stresses the automatic means by which a photograph is produced, the latter the extensive decisions, conventions, codes, operations and contexts which are in play both when the photograph is made and when it is made sense of by a viewer. Barthes, R. 'The Photographic Message' in Image Music Text, London: Fontana, 1977

The question of validity of the image, a point raised by Barthes, is overcome within Palimpsest by the recording of multiple viewpoints. Each fragment of information



-VT (ALSO -MENT FURNISH (EG A SHIP) WITH DOCUMENTS; TO SUPPORT OR PROVE BY DOCUMENTS OR EVIDENCE. - ADJ DOCUMENTAL (-MENT) DOCUMENTARY. - N DOCUMENT'ALIST A SPECIALIST IN DOCUMENTATION; -ISE TO PRESENT IN, OR MAKE DOCUMENTARIES. - ADJ DOCUMENT'ARY, RELATING TO OR FOUND IN DOCUMENTS; (OF FILMS, TV PROGRAMMES, ETC) AIMING AT PRESENTING REALITY, PRESENTING FACTS NOT FICTION. H, OR USE OF DOCUMENTARY EVIDENCE AND AUTHORITIES; DOCUMENTS OR OTHER MATERIAL PROVIDED IN SUPPORT, AMPLIFICATION OR AUTHENTICATION; (IN FICTION) REALISTIC REPRODUCTION OF RECORDS, REAL OR CHARACTER READER WHICH CONVERTS THE CHARACTERS INTO CODE AND FEEDS THEM AUTOMATICALLY INTO THE COMPUTER. [FR. FROM L. DOCUMENTUM, FROM DOCERE TO TEACH]. LONDON:CHAMBERS HARRAP PUBLISHERS LTD, 1993



within the project is a different record, and within the program they form a collection of data that when viewed, interrogated and interacted with, gives an experience, an ignition, a knowledge, a wisdom. Think of Crick and Watson's insight into the structure of DNA, a vision ignited by the fusion of a variety of images, texts, spoken words and 3D models of the same molecule - a view from a new perspective.

The engine for the presentation of this project was created in Director, which meant that the 'database' had to be designed in advance. The nature of the data is such that there is little need for cross referencing (one of the common features of a standard database). The engine was inspired by the CD-i game Burn:Cycle, where a series of high-resolution stills (the 3 interfaces in the 3D environment) are linked by low resolution cinepaked QuickTime movies. The three interfaces each relate to Space, Time and Motion, which are similar to the structuring of information within a database. I developed this loose set of rules through pinning all the assets (photographs, notes, printouts of frames, files) to a wall and looked for obvious groupings or categories that did not focus too closely on specific topics. Initially I worked on the idea of grouping assets according to the cyclic process of a shopping trip, ie, environment, journey, selection process, method of payment. I discarded these groupings for two reasons, a) they reduce the project to the subject of shopping and b) I felt that this would impose too rigid a structure that may result in people skipping sections altogether. It became apparent that every piece of information related to (a change in) our perception of space, time and motion. The paradigm shift that is occurring within the urban environment today is disrupting our traditional perceptions and the categories of Space, Time and Motion and as categories they are broad enough to accommodate every scrap of information gathered.

The assets are ordered within the 'database' according to this set of rules, which are visually represented by having three separate interfaces, one each for Space, Time and Motion. I then set about breaking the assets down further, deepening the visual hierarchy, so that each interface makes a distinction between the old and new patterns, highlighting our Janian position during this period of rapid and diverse change:



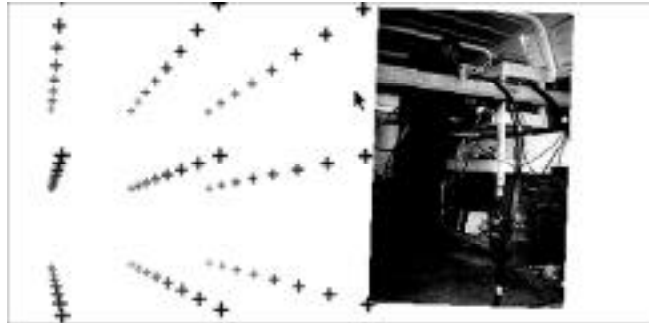
- **OLD TIME**
- **OLD SPACE**
- **OLD MOTION**
- **NEW TIME**
- **NEW SPACE**
- **NEW MOTION**

These new sub-categories meant that the visual language within the project needed to communicate this further separation. All the data about the 'old patterns' such as walking, visiting shops, using cash and so on is in colour because it is physical and real, people are moving through real time and space where the spectrum of light touches them and illuminates their environment.

Of the changes taking place today in the cities it is the changes underground that are the most significant. They will inevitably effect our lives whereas although a new road may be a convenience, it is not necessarily a total change in lifestyle. This expansion of digital networks is invisible and although you may see a van and some road works they are generally inconspicuous and the nature of their work may not even be recognised; the surface technology is the same as that for gas, water and electricity. Once the concrete has set, the city does not display the new; it is invisible, hidden within walls, under the pavement. The concrete is perhaps the final visible record of the change within the urban environment. The opening sequence of the project includes a loop (originally cine film) showing the roadworks surrounding the laying of fibre-optic cables near my home, where I inscribed in the wet concrete the title of this project - Palimpsest.

"THE FUTURE CITY WILL BE EVERYWHERE AND NOWHERE, IT WILL BE A CITY SO GREATLY DIFFERENT FROM THE ANCIENT CITY OR FROM ANY CITY OF TODAY THAT WE WILL PROBABLY FAIL TO RECOGNISE ITS COMING AS THE CITY AT ALL"

(Frank Lloyd Wright, quoted by Frampton, K, in *Modern Architecture*, London, Thames & Hudson 1994)

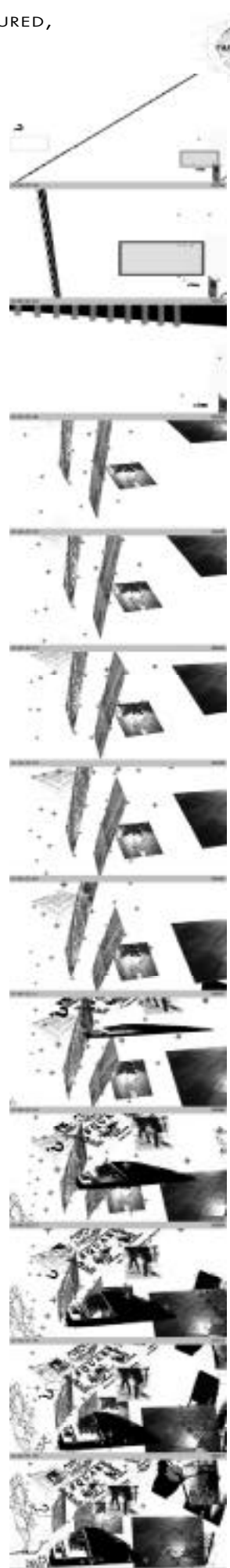


KATE BRYANT IS AN INTERACTIVE MEDIA DESIGNER/PRODUCER WORKING IN LONDON...

RED... WITHOUT STRUCTURE A BUILDING WOULD SIMPLY FALL DOWN... MUSIC IS INCREDIBLY STRUCTURED,



PLYMOUTH, LONDON AND NEW YORK...SHOOTING ON 35MM FILM...TO BE RESHOT ON VIDEO...CREATE LOOPS THAT SUGGEST A CONTINUOUS PROCESS...6 MONTHS...CONSTANTLY ON THE LOOK OUT FOR INFORMATION...A 35MM COMPACT CAMERA AND WALKMAN AT ALL TIMES, AND SINCE CHRISTMAS, A CINE-CAMERA...RECORDED AUDIO...NUMEROUS TRIPS INTO TOWN...AMBIENT SOUNDS...SPECIFIC SOUNDS...SOUNDTRACK...SAMPLED LOOPS...POLAROID SPECIFICALLY TO PHOTOGRAPH CREDIT CARDS...PASSED A PAIR OF WOMEN CONDUCTING A CONSUMER SURVEY...RETAINED ALL THE RECEIPTS AND TICKETS THAT I PERSONALLY GENERATED...TEXT AND AS SPOKEN WORDS...GROUP OF MY FRIENDS GO ON A SHOPPING TRIP TO SAINSBURYS...VIDEO CAMERA...STAFF AT JESSOPS RECORD HALF-AN-HOUR OF HI-8 TAPE ON THE WINDOW CAMERA...OUTRO SEQUENCE...TWO PEOPLE ARE BROWSING THE WINDOW...TURN THEIR BACKS ON THE CAMERA...WALK OUT TOWARDS THE CENTRE BACK OF THE FRAME...AUDIO OF THE SHOP STAFF...THE ALARM SYSTEM...TAPE FROM THE SURVEILLANCE CC-TV CAMERA @ MY CORNER SHOP...ADVERTISEMENTS FROM TELEVISION AND RADIO...COMMISSIONED COGNITIVE MAPS...JOURNEYS TO THE LOCAL SHOPS...PROCESS OF COLLECTION OF INFORMATION...PROCESS OF DIGITISING THE ASSETS...WROTE THEM ALL TO CD...TIME...LINE...LINEAR...JUST A 24-HOUR SECTION...INCREMENTED WITH CUBES...TIME CAPSULES...RANDOM PIECE OF INFORMATION...GENERATED ON THAT PARTICULAR HOUR...ASSETS OF 'OLD' TIME SLIDE IN GENTLY... 'NEW' ASSETS FLASH...MOTION IS THE THIRD INTERFACE...ROAD MARKINGS...WHITE DOTTED LINE...DOUBLE YELLOW LINES...CONVERGE... 'OLD' VIDEO ASSETS...HALF SPEED... 'NEW' ASSETS PLAY AT FULL SPEED...A METAPHOR... ROAD... MOTORWAY... 'SUPERHIGHWAY'... 'INFOBAHN'.....MOVEMENT OF THE MOUSE...SINGLE CLICK...SOUNDS...NEW INFORMATION... 3 '2 BAR' SOUND LOOPS...RANDOMLY...ONE AFTER THE OTHER...CONTINUOUS SOUNDTRACK...QUIETLY IN THE BACKGROUND... '4 BAR' SOUND LOOP...VOLUME INCREASES...APPARATUS...POWER MACINTOSH 7500/100...CANON A1 35MM SLR...CANON SURESHOT 35MM COMPACT...CANON AUTO ZOOM 318M SUPER-8-CINE...POLAROID 635CL...PANASONIC WALKMAN...SONY WALKMAN PRO...PROLOGUE CONDENSER MICROPHONE...PANASONIC M140 VHS...SONY CCD-TR650E HI8...ADOBE PHOTOSHOP...MACROMIND DIRECTOR...STRATA STUDIO PRO BLITZ...APPLE, SHIFT, 3...



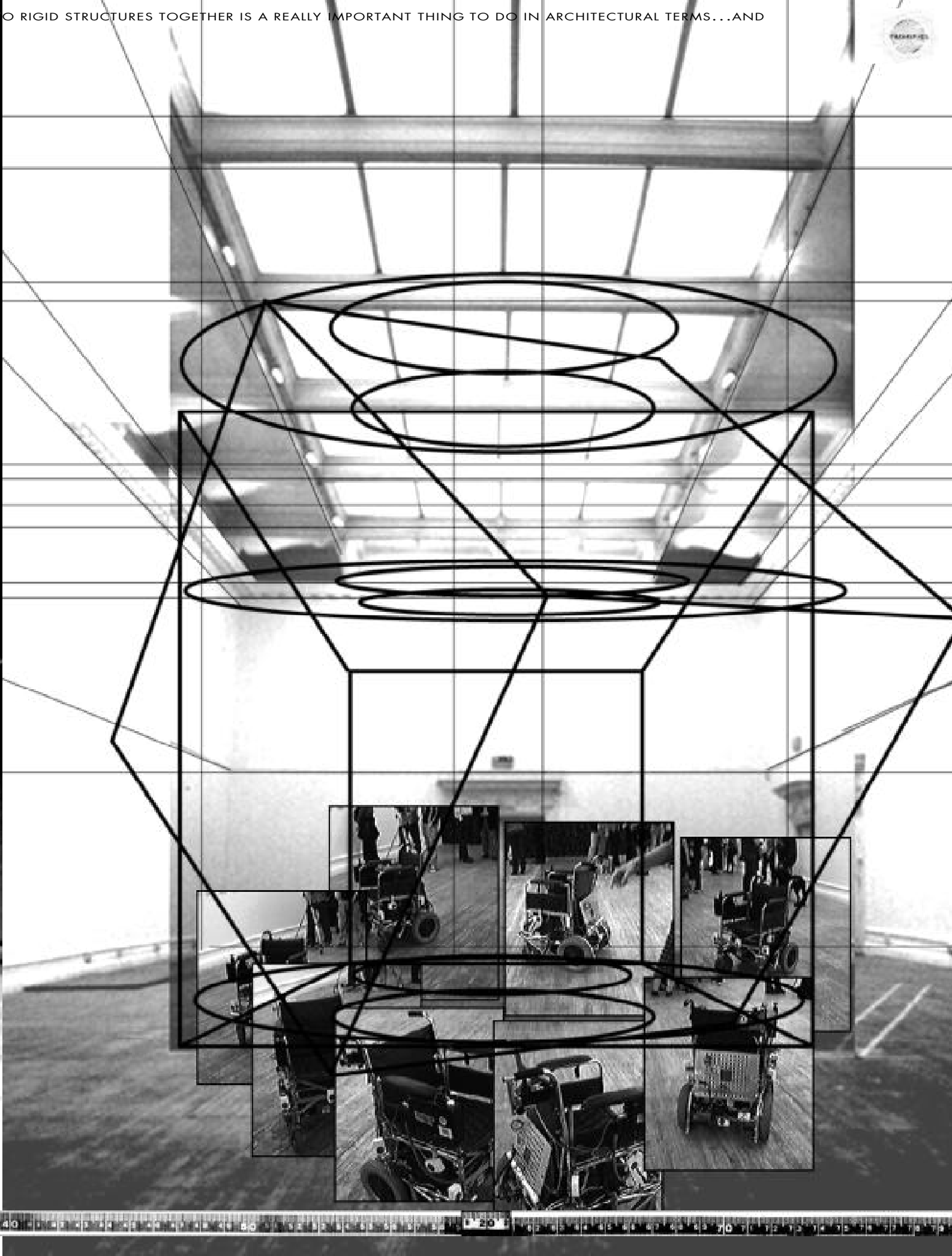
PSALMS

Donald Rodney's exhibition at the South London Gallery 'Nine Night in Eldorado' (10 September-12 October 1997), is a collection of new work, installation, sculpture, and photography. 'Nine Night in Eldorado' included 'Psalms' an autonomous wheelchair...

The electric wheelchair has been modified and equipped with a number of sensors, controlled by a neural network housed in an on board computer. As it wanders aimlessly around the gallery space, it tries to perform a repeated sequence of circles, spirals and figures of eight. As it navigates, using its inadequate senses, it tries to learn from its environment, struggling to avoid other occupants of the space, hesitantly negotiating its way. Ignored, it executes its futile rituals...

"...Our fear of automata is again harnessed in Psalms, as the empty wheelchair courses through its various trajectories on a sad and lonely journey of life, a journey to nowhere. Its movements repeat like an ever recurring memory, a memory of another life and another journey, that of Donald Rodney's father..."

(Exhibition brochure, Jane Bilton.)



Δ delta; ϕ phi; PI post-fest; pre-fest pre-fest.

...the following people for their very helpful advice:
Dr Alan Simpson (School of Electronic, Communica & Electrical Eng, UoP)
Peter Nurse (School of Manufact, Materials & Mech. Eng, UoP)
Peter Frere (Lucas Advanced Engineering Centre, Birmingham)
Dr David Keating (Dept. Cybernetic, University of Reading)
with thanks to Mike Phillips (Interactive Media Group, SoC, UoP)
Staff at the South London Gallery,
and especially the Donald Rodney Production Group PLC
for their endless patience under a grade of abuse
he's worth it [?] you know who you are...



Rodney has built up an international portfolio of shows since the 1980s, including, Chisendale Gallery, the ICA (London and New York), the Barbican, the Ikon Gallery and the Arnolfini. His prolific output continues despite having suffered from sickle cell anaemia from infancy. His physical condition has provided an emotive palette for the acute and richly disturbing creations that populate his shows, with pieces literally etched from his body.

'Nine Night in Eldorado' has been supported by the Arts Council of England, the London Arts Board and Canon UK. 'Psalms' was able to be built thanks to the generous support of the Henry Moore Foundation and The Mobile Robotics Laboratory in the Centre for Neural and Adaptive Systems.

from words by:
Jane Bilton,
Guido Bugmann (gbugmann@soc.plym.ac.uk),
Mike Phillips,
Donald Rodney.

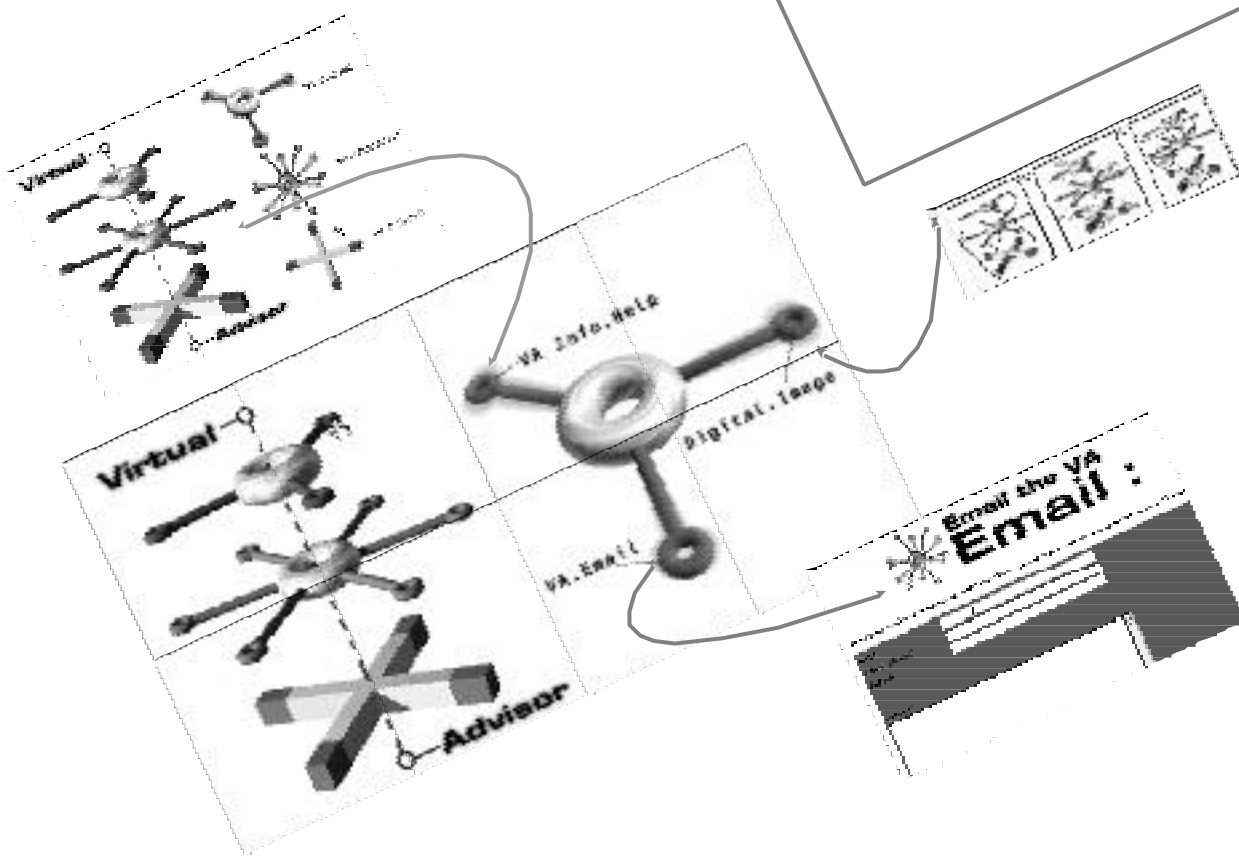
SOME ONE WILL EFFECT THE VIRTUAL WORLD. THE THING HAPPENING IN THE VIRTUAL WORLD WILL EFFECT

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d_y shaft_d1, d_phi shaft_d1 / *H12/2* threatened // ——— float max_room_xcm = 600, max_room_ycm = 600,
/ ——— sensor ——— int keyboard, color, sensor int min_range_check = 20, max_sensor_array = 1500 int echo[max_sensor_array] 10
0*P1/4 sensor_dir[3]=P1 sensor_dir[4]=P1/2 sensor_dir[5]=P1/2 sensor_dir[6]=P1/2 sensor_dir[7]=0 sensor_dir[8]=P1/4 sensor_x[1] = 0 se
26 sensor_y[1]= 51 sensor_x[7]= 26 sensor_y[7]= 37 sensor_x[8]= 26 sensor_y[8]= 7 /*H12/2*/ // ——— pyrometer card int portn = 256
act = 0, max_act = 0 float xsize = 0.97 float ysize = 0.97 float xcentre = 0.5 float ycentre = 0.5 dejected int nodes_id int Hough
9600, 8, 1 int port = 1 /*H111*/ // ——— defines buttons ———===== defcon incurable program button "return" "space"
s, private "gosub get_sonar_data" button "Sensor", "gosub sensor_sonar8" button "Viden", "gosub get_camera_data" bu
5 shaft", "gosub reset shaft_position to zero" button "Shift_pos", "gosub get shaft_position data" button resentful button "Track
axislabel "Steps", "Data" graph_default_range 0, buried 0, max_steps, 255 makewin Data graph_default_axislabel "Range",
21 win_default_range 0,0,1, 1 makewin image gosub build and /*SH111*/ /*SS111*/ procedure track_position float arrow = ma
ke, // in the final program, he will find out by himself. alien x_wc = max_room_xcm/2 y_wc = 100 phi_wc = P1/2 old_x_wc =
gosub reset gyro old_x_shaft=x_wc old_y_shaft=y_wc old_phi_shaft=phi_wc //pak / ——— /*SH2/2*/ // initialize the
get position data, plot, compute controls / ——— ——— win_active Room print "PRESS ANY KEY TO artificial STC
ati = 1 / win_line x shaft, y shaft, WHITE gosub predict current shaft position gosub get gyro data w phi gyro = 0 gosub get_sonar
ati phi_wc = phi_shaft / ——— frightening positions are estimated at time present ——— / later this will be a weighted average
arrow, w=0.1 * arrow, BLUE win_move x_wc, y_wc win_line x_wc, arrow*cos(phi_wc), lifeless / w=1 * arrow*sin(phi_wc), B
re) // left speed = 15 // right speed = 15 / gosub feedback straight line gosub predict position of control action gosub update ne
wc = y_wc old_phi_wc = phi_wc // already done in predict.. dormant // ms_delay 100 /pak /*H12/2*/ endwhile //pak
= 0.5 float local_x, local_y, local_phi d foreign x shaft_d1 = (x shaft_old x shaft_d1 = (y shaft_old y shaft_d1 = (y shaft
phi shaft_d1 = 0.5 * d_phi shaft_d1 local_y = y shaft + delta_s*sin(phi shaft_d1 + 0.5 * d_phi shaft_d1 local_phi = phi shaft + d_phi shaft_d1 /
d y phi shaft = local_phi old x shaft = x shaft old y shaft = y shaft old phi shaft = phi shaft / win_move cold local_x local_y return /
phi shaft_d1 = (x_wc - old_x_wc) * distance_factor d dead y_wc_d1 = (y_wc - old_y_wc) * distance_factor d phi_wc_d1 = (phi_wc - old_phi
wc + delta_s*sin(phi_wc_d1 + 0.5 * d_phi_wc_d1 local_phi = phi_wc + d_phi_wc_d1 x_wc_predict = local_x y_wc_predict = local_y phi_wc
y_wc_predict, phi personal wc_predict * 180/P1 return /* classified H5:11 /sonar safety: for sonar=1 to 8 if sonar range
v major command: floor next x = node_output(first_node(next_position)) floor next y = node_output(first_node(next intimate Pe
arrow, RED win_move next_x, next_y win_line next_x, arrow*cos(next_phi), next_y, arrow*sin(next_phi), YELLOW /*H112*/ //
nal endif if dx=0 & dy < 0 phi2 = P1/2 endif phi2 = atan2(dy/dx) if dy<0 & dx<0 stranger phi2 = phi2 + P1 endif if dx=0 &
nd desired rne float sind=cos(phi2)*sin(phi_wc)-sin(phi2)*sin(phi_wc) cos(phi_wc) floor cosd = (cos(phi2)*cos(phi_wc)-sin(phi2)*sin
phi = P1 endif unnatural delta_phi = delta_phi /*SH2/2*/ // ——— speed control ——— print " ———> act_sum = " act_sum floor speed =
deserted * (0.2 + 0.8 * 0.5 * (1 + cos(delta_phi))) if phi2 = 799 speed = 0 endif float sp_gain = 0.8 left_speed_desired = (lmax(0, sp
desired) //right speed =int(right_speed_desired) float lambda = 0.4 left_speed = int(left_speed_desired + lambda*(left_speed_in
sired * kfas = " right_speed_desired, " phi2 = " 180*phi2/P1 * dphi="delta_phi*180/P1 return /*H111*/ //speed to command
distant (right_speed_desired) floor L = (left_speed_desired) // initial values find asymmetry factor = 1 // enclosed mean we wa
L error, error = 999 float DR = 0 : int count = 0 while error > 1 & count < 20 count++ R = fmin(100) L = fmin(100) d1 = "gyro
error! = DR*L error R = 0.5*DR*L error error = R_error*R error + L_error*L error // print R error, " ", L error // pak endwhile
desired == 0 direction byte += 1 endif if vacant left_speed_desired == 0 direction bizarre byte += 2 endif message_byte = 1
ch speed)) * 128 // the cost 0.1 compensates for an asymmetry depressed between left and right // in the Penny and Cilles system
dshake send byte // TC include when backwards motion is // considered in the KugWar board return /*H111*/ //stop motors: n
= 1 10 gosub handshake_send_byte / message_byte = 2 / microphone message_byte = 5 / pyrometer port handy for scope function
ed 27 gosub handshake_send_byte print "PRESS ANY dismal KEY TO STOP (but not ESC)." /pak while kbhit() != 1 int data =
sage_byte = stop_byte gosub handshake_send_byte // to stop the board sending int bla = getch() return /*H111*/ //get gyro bleak
li caustic /reset gyro: message_byte = 125 gosub handshake_send_byte float data = indifferent 180*phi_wc/P1 gosub sen
11 /get shaft position data: int b3 b2 b1 message_byte = 100 gosub handshake_send_byte // debug //gosub get float data /
y shaft = float_data /pak gosub get float data phi_shaft = P1*float_data/180 //print "left count = " left_count, "right count = ", r
end_byte floor dozed data = x_wc gosub send float data float data = y_wc gosub send float data float data = 180*phi_wc/P
ir floor data = 0 gosub send float data floor data = 90 gosub send float data return /*SH111*/ /*H111*/ //float to three bytes: p
22000.0 b3 += 1 endwhile Rest = int(float_data) if floor depraved data < 0.0 Rest = -int(float_data) b3 = b3 + apart C
el float data gosub handshake_read_byte b3=in_byte gosub handshake_read_byte b2=in_byte gosub handshake_send_byte b1=in
(b1) endif //print " -- defeated b3 = " b3, " b2 = " b2, " b1 = " b1, " - float_data = " float_data return /*H1111*/ //send
= b1 gosub handshake_send_byte return /*H1111*/ //handshake_send_byte: int in_byte, serial_count=0 / print " in byte = serial_b
ck byte inport) / print " %d, " in_byte if (in_byte != ok_byte) & (serial_count < serial_count_limit) goto secluded send byte loop
isolated supply." beep prk endif return /*H1111*/ //handshake_ hopeless send byte: int in_byte, in_byte1, serial_count=0 /
int count < serial_count_limit) : if (in_byte1 != in_byte) goto read_inport endif / print " -> %d, " in_byte if serial_count >= serial_count
yte our port, ok byte return /*SH111*/ /*H1111*/ build //dg 20,15 STANDARD NODE TYPE dg 40,30, recluse STANDARD
odesstyle Hough, GREYSC_DISP, secluded STYLE drawgrid Hough dg 8,3, STANDARD_NODE_TYPE nig Average grid nodesstyle
steps_nb_max, GPBF_NODE_TYPE mg Trajectory grid nodesstyle Trajectory, GREYSC_DISP STYLE drawgrid Trajectory dg 1,4, LIN
in Trajectory connect Trajectory Next position uw gosub in_a_circle return /*H1111*/ // singular update network set_node_output
r undregrid Trajectory gosub update anxious Next position ug /*H1111*/ //in_a_circle: floor xc= 0.5*max_room_xcm flo
in(max_room_xcm,max_room_ycm) for i = 0 to steps_nb_max-1 theta = floor((i)*2*P1/floor(steps_nb_max)) theta_next = floor((i+1)* insign
ata_next=P1/2 /print "theta = ", theta /pak nodes_id = first_node forsaken (Trajectory) if nodes_id > last_node(Trajectory) n
set anomalous weightshetnodes nodes_id, first_node(Next Position), x[next] set weightshetnodes nodes_id, first_node(Next Posi
xt Position) = ione 2, sin(phi[next]) set weightshetnodes nodes_id, first_node(next Position)+3, cos(phi[next]) / internal print i, "

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[illegible]







source
type
media
url



