1. Introduction

1.1 Cycles

Globally, cities form the 'natural' habitat for millions of people. Anthropocentric in design, the city is the culmination of the mechanistic paradigm. [Capra 1982]. City dwellers are dissociated with the cyclical processes of nature, not recognizing the interdependence of all phenomena. [Ibid].

Simmonds [1983] states that we are the victims of our mechanistic constructed surroundings.

The cycles of nature are in constant repetition, and is governed solely by the concept of time. In this discourse the concept of time will be employed as the structuring element of architecture, defining our current epoch in the time line of humankind. Architecture absorbs the entire life of a specific period or era, it stands as a withess and informant to the time of construction.

Mostly invisible to the uninformed, mankind is disconnected from nature, only ascribing a use-value thereto. The alienation from environmental values and cultural connections is more prominent in an urban society. The dependence on nature is largely taken for granted. [Young 2003]

001_Whirlpool galaxy, 28 million light years away. Space as seen in the past. *[National Geographic. February 2003.]*

002_Hurricane Gladys, *spin* in nature. *[A. B. C. Whipple. Planet Earth: Storm. 1982.]*

003_Scent in the microgravity of space. *[Madere, J.]*

004_Goldfish symbolising new life in springtime as microcosm of nature, Irak. *[Avakian, A. National Geographic. 1999. vol 196.]*

In re-establishing the man-nature connection, the evolving urban environment is the determining factor. [Simonot 2003]

According to Capra [1982], deep ecological awareness is ultimately a spiritual awareness were the individual is elevated to feeling part of the cosmos as a whole.

Spatial experience in cities is dictated by the existing built fabric. At a given moment, it is fixed and permanent, disregarding any adaptability or linkage with natural processes. In the aspect of linear time, a city is dynamic in its existence, perpetually in a state of becoming. [Dewar e.a. 1991]. The processes of a city could be described as a self-evolving entity that moves along in a historical continuum. The question that perpetrates itself is what essence is there to capture in architecture, what are future generations supposed to remember, represent and monumentalize. [Bouman 2003]

All buildings are a pinpoint of the time when constructed. It conveys the manner in which it was built as well as the stylistic expression. Every building is therefore a summation of time, or rather, a monument of its specific time. It is obvious that architects differ in their execution of the summation of time, or rather what to summarise. A monument of a specific epoch in architecture does not dwell on the design of historical stylistic impressions, but rather on an architecture of its own time. Architecture that is 'embedded in the deeper historical stratigraphy of human achievement as well'. [Brownlee 1997:89]

Architecture in reality represents or constitutes an organism in itself, with its own character and its own continuing life. [Giedion 1947]. The architecture of today is inseparably linked to town planning or urban design, because everything depends on the unified organization of life. Conscious planning is demanded. [Ibid].

The built environment stands in comparison to the individual as a time-capsule, constantly managing its daily [routine] existence. Every individual dwells at the centre of his or her experienced universe and knows its perceptual realities from its unique point of reference. [Woods 1992]

005_Historical Urbanism. *[Kostof, S. 1991. The city shaped. Italy: Thames & Hudson]*

006_Grainsilo, Standerton. [Photograph: *Author]*

007_Corrugated cladding, refurbishment, Johannesburg CBD. [Photo: *StudioMAS]*

The lives of urban dwellers are also dictated by the moment-by-moment adjustment to their environment. [Simmonds 1983]. In the continual evolving process of our cities, the emphasis ought to shift from an individual's personal adjustment to the continual adjustment of the constructed environment.

Contemporary architecture is defined by the virtual projection of the end product. The developer actively encourages the shortest possible project life-span to gain the maximum return on investment. Developers have become the dictators governing the expression of the current built environment. According to Van Berkel et al [2002:82], both capitalism and photography have conspired to force architects to freeze architecture in time and suppress the reality that '*..all buildings are the mothers of ruins'*.

That one photograph-moment that captures the apparent essence of a project, both for developers and architects, signifying the end of the project phase and the beginning of the buildings'. [Bouman 2003]. In architecture, time is captured and stands still, disregarding the cyclical processes of nature or the ravages of time.

Architecture becomes the photomontage of delivery. [Ibid.]

Time is collapsing, seconds become shorter, cycles seem to get ever closer. Time management is at the order of the day. How much more time may be claimed by traffic jams, or for a moment to take action. Social integration can only be established by respecting others' time and not only their culture.

This brings us to the notion of shared time and its significance in architecture. According to Bouman 2003, it is fundamental to repair the synchronicity, not of clock time, but of the experience of time. It is obvious that relaxed time is the deceleration of everyday time, not being dictated by pressing deadlines. In what manner can spatial perception decelerate time for the user? [Ibid].

The society of today is described as a culture that is based upon consumerism or 'bottom line' thinking. The syncronicity that Bouman proposes is what Woods establish with his new city. The parallels of centricity, synchronicity and synergy is the preamble situation of a future culture that is based upon the experiential. The living in the 'now'. [Brown 1992]
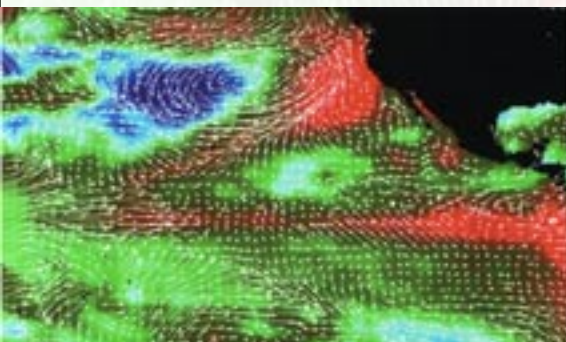
Satellite data depicting El nino temperature and wind anomalies in May 1997. *[Jet Propulsion Laboratories, National Geographic, March, 1999 vol 195 no 3.]*
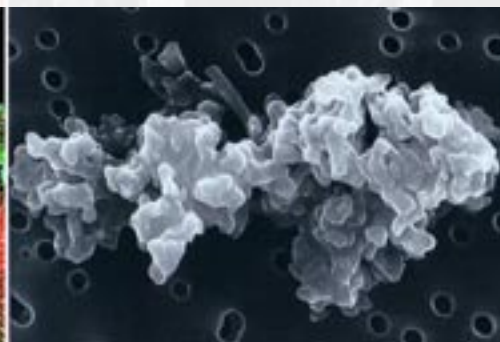
A constant rain of microscopic interplanetary dust particles delivers a variety of compounds, which almost surely contributed to the primordial soup of the substance of Earth. [*National Geographic, March, 1998 vol. 193 no. 3.]*

VW Pheatons gliding across a beauty queen promenade, a 25m long neon tunnel where the paint job is checked for blemishes. The finished cars are displayed in a glass parcade. *[Champa, P. Surface, issue 43]*

This discourse is envisioned as a robust environment that is designed from the perspective of ever evolving require-ments in future 'space time'.

1.2 time

The concept of time is usually believed to be a number and quantity that is continuous [Chronos]. According to Rahim 2001:31, the abstraction of quantifiable time should shift to the non determinate, qualitative duration of tempo-rality where the past, present and future are simultaneous. Rahim 2001:31 describes time through Newtonian science, whereby every event or happening in nature is predictable and predetermined by initial conditions.

According to Kellerman 1989:30, time definition is dependent from individual to individual and also to a specific age group. It can be a myriad of different potentialities, for example an experience, a major dimension, an ordering framework or an event of biological significance.

Experiential time refers to an individual's time in terms of the duration of personalized images. The calendar and clock is our organizing mechanism of events.

Kellerman classifies inner perceptions of time as an uninterrupted duration and as a series of differentiated occurrences along past, present and future.

Time is also multivalent and can be either passive or active. Passive time is defined as clock, charts and history or as the silent agent as an effect. Active time on the other hand is that of time as a cause, it directs and generates.

One of the cornerstones of the time-space duality is the notion that time is a limited resource; it is finite and depends on the individual's life span. Societies on the other hand operates on an unlimited time-basis ithrough the accumulation of knowledge from generation to generation.

Lalibela, pilgrimage site for Ethiopian Christians for 800 years. 12 Stone churches cut from volcanic tuff. *[Steinmetz, G. NG, July 2001.]*

Stark circle of rock measuring about 30 m in the Tenere desert below the masif Adrar Madet in Niger. Roughly 2 km away in each of the four cardinal directions arrows point away form the circle, whose origin, purpose, and age remain a mystery. *[Steinmetz, G. NG, March, 1999]*
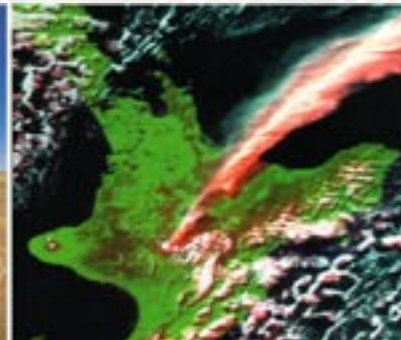

Towering ash plume from mount Ruapehu, New Zealand 17 June 1996. *[National Geo-graphic, January, 1997 vol. 191 no. 1]*

Brisingid sea stars through a 'deep-sea-hubble', ecosys-tems such as these may hold a clue to early life on earth. *[Kristof, E. NG, February 2003]*

LEBBEUS   WOODS

Lebbeus Woods can be described as a modern day futurist. Challenging the mundane of reality to visions of what the city and its inhabitants should be. Woods considers him-self as an experimental architect, dwelling upon the notion of centricity, or even centri-city. It rep-resents the dynamism of the indeterminate appear-ing in order to challenge the static certainty of the Cartesian, while the urban field is unified in tension. It is largely the *idea of invention*. Invention by a cul-ture that is not inhibited by consumerism, but rather a heterarchial society where the members of such a society value cooperation more than competition, ask question where answers seem impossible. Lebbeus Woods [1999 The New City]
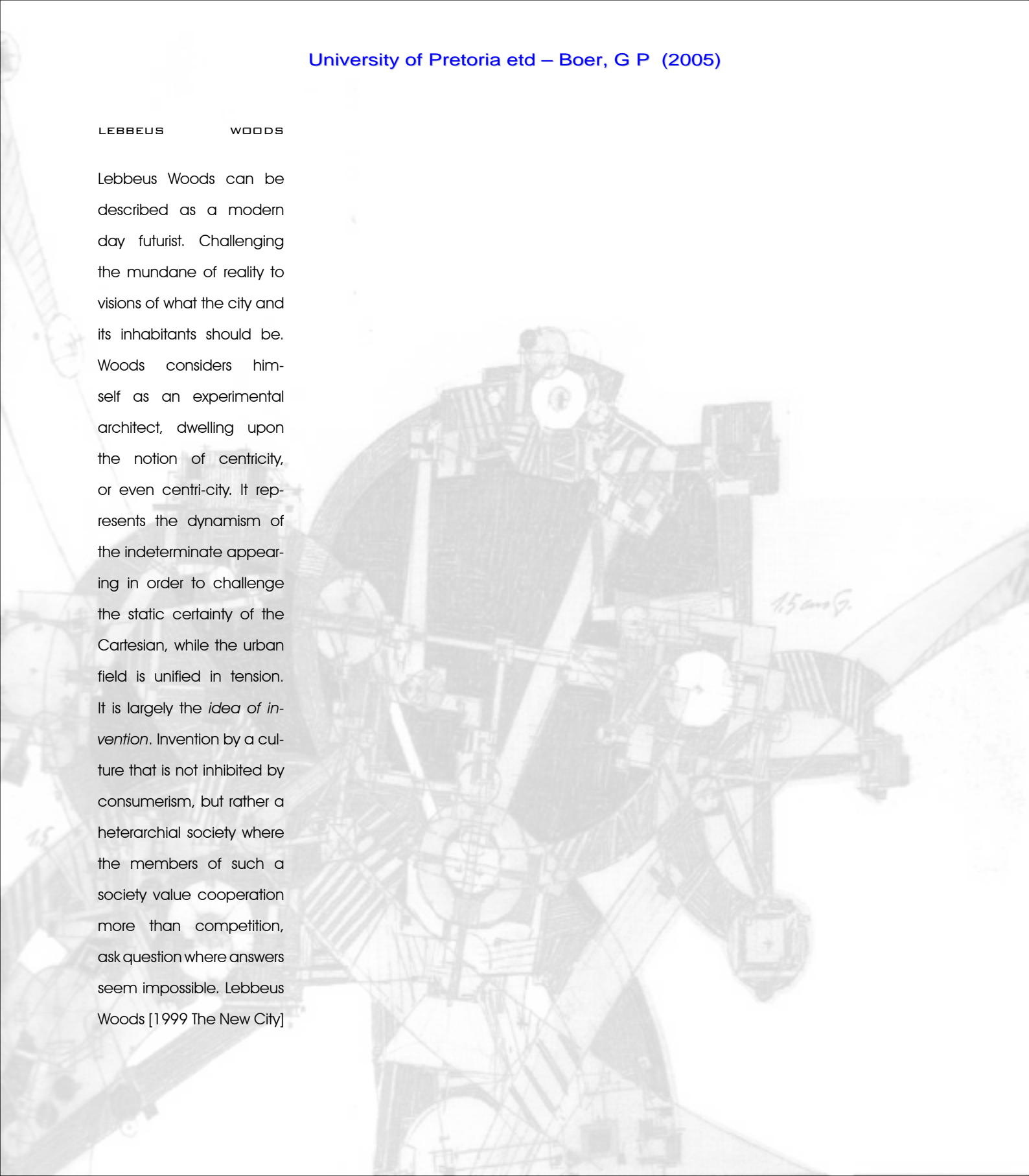
"Architecture more than ever clings to history and language for its origins. Visions of ethereal energies and exotic matter have not yet roused architects from their comfortable ruminations in the past. Only perhaps when the rest of the world is utterly transformed by new understandings of its substance and dynamics will architecture be released from questionable certitudes of an imagined history." Lebbeus Woods [1999 The New City]

All things restless; changing in time and space. Lebbeus Woods [1999 The New City]

1.3 Design exploration

The University of Pretoria [UP] exists as an island in a supposedly urban environment. The campus consists of a myriad different faculties each having its own agenda. The advent of the eco-systemic approach in society requires an integrated approach to education.

The School for the Built Environment is currently largely disparate in its operation. The interaction, or personal network establishment, is solely hampered by the available facilities on campus.

The Department of Architecture is in need of alternative accommodation to suit the ever increasing number of prospective students, especially post-graduate students.

Ideally the exposure, education of and interaction with architecture will not be limited to the students of this department. Every person on the UP campus ought to be enriched, challenged or confronted by this interaction and exposure to design education.

The departments of Construction- Economics and Management moved from Boukunde to the South Campus of the UP in 2000 due to a lack of available accommodation. It is therefore proposed that both departments utilise the existing 'Boukunde building'.

The integration with other departments of the Built Environment School will be instrumental in providing graduates with a more rounded or systemic approach to knowledge and life.

The building will have a fourfold function as visitor centre, office, workshop and lecturing facility with the re-establishment of a studio culture.

Parking for staff and students remains to be a major cause of concern for the UP. The ever increasing student numbers intensify the problem. According to the Strategic Plan of the UP, the parking problem has become systemic in nature and will be addressed in a manner consistent with the scope of the problem. A sub problem of the thesis proposal will therefore be the provision of vehicular parking over and above the requirements of the building proposed.

1.4 Client

The University of Pretoria is established as principle client. According to the Strategic Plan of the University of Pretoria, it is a resource constrained institution that cannot admit more students than its resources allow it to serve. The University is subsequently developing a Growth Strategy by which it will manage the growth in student numbers. The preferred growth rate is 1 ½% per annum in student numbers. Over the past four years the growth in student numbers was 6% [Potgieter 2004]. The Growth Strategy will focus on the growth of the Universities' stature rather than its student numbers. It favours postgraduate enrolment over graduate enrolment.

1.4.1 requirements

The requirements of a project for the School of the Built Environment is envisioned as an integrated approach to a structure that should possess the ability to adapt to alternate future programmes. This establishes the notion of generic space that can be altered to changing needs over time.

The proposed project is a building for tertiary education, accommodating the University of Pretoria's departments of Architecture, Landscape Architecture, Interior Architecture and the future post-graduate courses of Urban Design and Industrial Design. Cognisance should be taken of the ever evolving nature of faculties, and their ever changing programme or requirements.

Passion   Energy   Quality   Choice

1.5 Exploration context

1.5.1 Urban exploration

The University of Pretoria exists as a fenced island in the midst of the greater urban environment. It is territorial in function, being homogenized internally and alienating externally.

The boundary of the campus is defined by an 'iron curtain' of palisade security fences that is interrupted by student access gates. [Potgieter 2004]. The issue of concern is the level of permeability of a campus with limited and controlled access points. Bentley et al [1985] describes permeability as the extent to which an environment allows the flow of people from place to place. This, in turn is the key measure of responsiveness. It is obvious that the permeability of the campus is affected by the imposition of the security measures.

The safety of people and property on and around the campus remains the most important objective for the UP. The security of a campus can be implemented in a manner that is not only a lackey to its pragmatic function, but also serve to enrich its 'urban' setting.

In the proposed project, the manifestation of permeability on the campus of UP will focus on eliminating the segregation between the campus and surrounding areas. This will both respond to as well as increase the level of activity around its periphery.

JUPITER

1.5.2 Theoretical exploration

Development trends are essentially focused on the design of static structures that can only accommodate a specific programme or use. The thesis proposal emphasizes the ephemeral nature of design, or rather moments in time-space that embody the cyclical pattern of nature governing our existence.

The 'moments' in space-time can only be communicated through a user's sense perception. The thesis will therefore dwell upon the sensory experience of movement through a structure.

The end-users of the thesis proposal will be the designers of the future built environment. As discussed in the introduction, a building can be seen as a photo image of time. It follows that designers, as 'time-regulators', can for their own designing life-span capture and question the prominence of time.

The physical manifestation of the thesis proposal will ultimately be in the designs of its users.

The metaphysical concept of time and the movement through space-time, will manifest through the cyclical or routine use of the structure from day to day.

The materials employed in the building should convey a recognition of nature to its historical reality, thereby promoting a pre-site context for the structure. [Juel Christiansen].

1.6 Design Philosophy

The thesis proposal, as any architectural endeavour, forms part of the external environment. The environment is the all encompassing rhythm of time in which we find our self in. The manner in which the project interrelates to buildings, man and the bio-physical environment will be investigated. Is the interaction merely fatuous and fickle, or is there a deeper meaning to what we as humans perceive to be our living environment? Within each setting a myriad of potentialities exist; the potential constantly shifting to reach a state of equilibrium. A very elusive state of equilibrium. A pendulum.

The designs' compass is set on time. Linear time, as per-sonified in the different movement patterns of man and his interventions. The prominence and overlapping areas of these patterns are a definite guide to the design. The project will investigate the development of a current, glo-bal location that is site specific, but still linked with global networks. [Van Berkel, Bos 2002].

The ephemeral nature of colour in the changing shades of season. *[Wolinsky, C. National Geographic, July 1999, vol. 196, no.1]*

Globally, nature is actual and relevant in man's life. Mankind has achieved the greatest improvements by consciously striving for a harmonious integration with nature [Simonds 1983]. The understanding that man can possibly possess of the complex interrelated and interdependent abiotic and biotic elements are limited. The slightest change in the web of life has a ripple effect, so that a micro scale action can have a macro scale reaction. Unfortunately, our understanding of nature is coupled to a time frame that is larger than our lifespan.

The complexity increases.

The design philosophy for the School of the Built Environment will therefore focus on a mutual symbiotic integration with nature. Man and nature being in tune with each other.

1.7 Accommodation schedule

The accommodation schedule is perceived as a general design guideline and not as a fixed programme that has to be adhered to. The building will rather focus on the adaptability of a programme to suit the ephemerality of buildings.

The building will consist of :

Foyer/ reception

Information facility

Public exhibition space

Coffee shop

Galleries

Media centre / Bookshop 100m²

Toilets

Copy centre

Vertical / Horizontal movement corridors

Social areas

External social areas [smoking areas]

6 Lecture halls

• Audio visual facility

Personnel room

Offices:

• The Head of Department

    Secretary office

      Safe

• 20 Lecturer offices

• Computer laboratories

Workshops

Archive storage

6 Studios

Parking

Soft X-ray image of the sun [Universal Records 2002]

Burrowing through block modules. [UN Studio: Move.]

Part of a fly's eye.   Transparency, semi-, or closed. [UN Studio: Move.]

Abell 1689, light being bent due to gravitational pull from amassed galaxies. [Cowen, R. National Geographic. February 2003.]

The farther out we look into space, the father back in time we see. Veil of fossil radiation dating 300 000 years after the big-bang that permeates space. This is the limit of our view when the universe emerged from a state of hot plasma and became transparent. [National Geographic, October 1999, Vol. 196, no. 4]
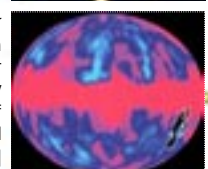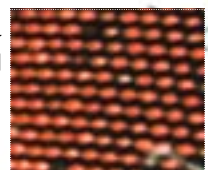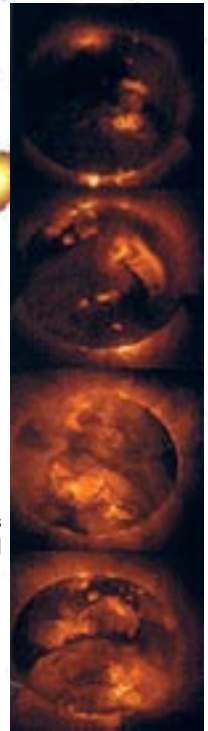
1.7.1 FOYER

The foyer and permanent exhibition spaces will be combined to form a platform of an 'urban campus'. The building should be transparent enough in this area to be inviting to the public and visitors. Security control will also be simplified if the public arenas are situated in close proximity of the entrance. The reception desk can be used as secretarial / receptionist desk during the day and as security station at night.

The exhibition space is utilized as a platform for educating, becoming an informal space where exposure to design is the primary function. The coffee shop and restaurant can also be used for evening functions.

The coffee shop should provide an informal social l space for students and visitors, with a limited but basic menu. The kitchen should preferably have direct access to the outside.

The library and bookshop can also be incorporated into the public area, and should accommodate a large extent of shelving and also reading space.

1.7.2 ADMINISTRATIVE AND OFFICE AREAS.

The office areas should be designed with the idea of integration between lecturer and student and not as a separate area.

A personnel room should be provided with a small kitchen attached. Preferably the space should also have an external outside area.

1.7.3 GALLERIES

The number of galleries should be scattered throughout the building, providing 'soft light' and an acoustical measure for sound attenuation. The galleries should also function as social interaction spaces.

1.7.4 LECTURE HALLS

Lecture rooms should be acoustically sound and provide seating for a minimum of 100. Audio visual facilities should be incorporated into each lecture hall. Network services should be robust to allow ease of access.

Light being bent due to gravitational pull from amassed galaxies.
[Cowen, R. National Geographic. February 2003.]