

a school of the **digital arts**, for durban.

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architecture design dissertation.

november 2008.

A dissertation submitted to the School of Architecture, University of KwaZulu-Natal, Durban, in partial fulfilment of the requirements for the degree of Master of Architecture.



declaration.

gareth erskine smith.

I hereby declare that this document is my own unaided work. It is being submitted to the school of Architecture, Town Planning and Housing, University of KwaZulu-Natal, Durban, for the degree of Master in Architecture, and has not been submitted before for any degree or examination at any other University.

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signed on 27 August 2009

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A b s t r a c t

The purpose of this research document was to determine a relevant response and appropriate architecture for the design of a School of the Digital Arts for Durban, South Africa.

The nature of this architecture was generated through the investigation of current literature, case and precedent studies and personally conducted interviews with a number of informed professionals. The reason for these recommendations was ultimately the design of the facility for research and education, the goal was always the eventual application of the findings into a design.

The proposed design aims to establish a centre to educate and showcase digital art, media and associated technologies and in turn improve the status of art and design in Durban. The design is strongly connected to present digital media, information and communication and the possibilities that they hold for the future.

The close connection to the industry is one of the principals on which the school is based and therefore the siting of the proposed design became important, it attempts to add to the urban domain and development of the southern part of the Florida Road Precinct by enhancing diversity and a creation of a gateway into the precinct.

A c k n o w l e d g e m e n t s

Firstly, I would like to thank my entire family for their support throughout my studies. You have all helped in keeping me going in some way! In particular to Mom and Dad for your continuous sacrifices and never ending support. Thank you so much.

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And finally a particular mention of the interviewees who assisted in the research of this document.

LAN - Local Area Network

- A **local area network (LAN)** supplies networking capability to a group of computers in close proximity to each other such as in an office building, a school, or a home. A LAN is useful for sharing resources like files, printers, games or other applications. [www.compnetworking.about.com 2008]

Wi-Fi - Wireless Network

- **Wi-Fi**, which stands for *wireless fidelity*, in a play on the older term Hi-Fi, is a **wireless networking** technology used across the globe. In a Wi-Fi network, computers with wifi **network cards** connect wirelessly to a wireless router. The router is connected to the Internet by means of a **modem**, typically a cable or **DSL modem**. Any user within 60metres of the access point can then connect to the Internet Wifi technology uses radio for communication, typically operating at a frequency of 2.4GHz. [www.wisegeek.com 2008]

DAC - Department of Arts & Culture

- The vision of the Department of Arts and Culture is to develop and preserve South African culture to ensure social cohesion and nation-building. [www.dac.gov.za 2006]

NAC - Nation Art Council of South Africa

- The National Arts Council of South Africa (**NAC**), formed in 1997, is a statutory public entity with the Department of Arts and Culture (DAC) as its executive authority. The council's vision is to promote, through the arts, the free and creative expression of South Africa's cultures and its mission is to develop and promote excellence in the arts, through the funding of artists and institutions. [www.nac.org.za 2007]

THINK - The South African Graphic Design Council

- Think, the South African Communication Design Council, was established in 2001 with its founding sponsor Sappi to serve the needs of the design professional in South Africa. Think is the only organisation in this country that specifically caters for the communication design industry. Its mission is to provide an appropriate voice for the profession of communication design in South Africa and strive to advance excellence in the communication design profession. [www.think.org.za 2008]

A c r o n y m s

C.B.D. - Central Business District

FADA - Faculty of Art, Design & Architecture at
the University of Johannesburg

ITU - Information Technology University,
Copenhagen

KUA - Copenhagen University

WOSA - Wits School of Arts at University of the
Witwatersrand

1.1 RESEARCH BACKGROUND

There were an estimated 4.5 million computer users in South Africa at the end of 2005, and it grew to 5.3 million by the end of 2006 [Goldstuck, 2005]. This shows the increasing number of South Africans using personal computers. The users of the internet in South Africa increases to 5.1million in 2006, the increase of internet users corresponds with the increasing number personal computers [Goldstuck, 2005]. The statistics show that the personal computer is becoming a regular item in the South African household and that more and more people have access to the internet.

Digital technology has revolutionised the way we produce and experience art today. Not only have many forms of art such as printing, painting, photography and sculpture been transformed by digital techniques and media, but entirely new forms such as net art, software art, digital installation and virtual reality have emerged as recognised artistic practices, collected by major museums, institutions and private collectors the world over [Paul 2003: 89].

The competition in the corporate ladder has become more competitive, and companies are looking to new forms of advertising to promote their product, using interactive methods to gain new customers. These new methods and forms of technology which the designers have turned to

have been made possible by these advancements in digital technology and media.

1.2 RESEARCH PROBLEM

1.2.1 Digital Arts Background

The increase of digital media used to market and promote products and brands, means that there is a need for a better understanding of the market related trends, as well as the digital technologies which help the campaigns and make products available. We have moved in to the information age and the competition between brands is more evident than ever. Companies have realised that the building of a brand through advertising, packaging and design, is the key to the success of the company. Currently in Durban, the need for digitally taught artists is increasing, as Durban's arts, culture and design sector grows. With the increasing awareness and appreciation for the arts and culture in Durban, a facility such as the School of Digital Arts would offer a place for the promotion of digital based arts in the area. This would aim to improve the status of Durban as the art and design centre of the country.

There are tertiary institutions which offer the arts, but as times change and new technologies are developed, the studying and learning of the arts must follow the times, therefore there is an increasing need for the teaching of this developing art form. The school of Digital Arts would be a

state of the art facility for the education of digital arts in Durban, and one which has the ability to adapt and change with the developments of the technologies in the future.

1.2.2 Design Background

The nature of a creative school calls for a social environment which facilitates social interaction, but at the same time creating a state of the art facility for the education of digital arts. The handling of the public in the building presents its own complexities, in terms of the secure access and movement flows and patterns through the building.

The designer is faced with the challenge of a brief that is dominated by specialised requirements. The challenge is how to balance the need of specialised requirements with the need to create inspiring spaces which encourage the learning processes, through interaction and collaboration. The broad research question for this document therefore is: What is an appropriate design for a school of Digital Arts for Durban?

1.3 KEY QUESTIONS

- Should the School of Digital Arts be an independent institution in a free standing building?
- What particular design strategies can be implemented to facilitate inter-disciplinary and multi-disciplinary interaction?

- What are the specialised requirements of the facility and what are the spatial and environmental needs?
- How does one determine a successful response to Durban's climate, when many facilities owe themselves to artificial conditioning?
- What is the best site for a school of the digital arts in Durban taking into consideration the importance of the public and industry accessibility and exposure?
- Even though a public component is important, it a school which aims to educate students, the question of secure access arises. How can the facility engage with the public but control and limit the access of the visitors?

1.4 AIMS AND OBJECTIVES

The main aim and objective of the research is to inform the design of a school of the digital arts for Durban and to create a state of the art institution for the technology of digital based art in Durban.

The facility will accommodate functions which will exhibit and display the students' work, as well as the work of practising contemporary digital artists, therefore educating the public and helping to develop the increasing awareness and appreciation for the arts and design culture in Durban.

1.5 WORKING HYPOTHESIS

The working hypothesis informing this document is to create an institution with a strong link to industry. Professionals from the industry lecturing at the school and creating 'real' briefs and projects in a corporate-like working environment to prepare the students as best as possible for employment. This will create more adequately prepared students, and therefore will help to distinguish Durban as the Art and Design centre of South Africa.

2.1 INTRODUCTION

In this chapter, the method of data collection will be defined and explained. The collection and synthesis of this data is to answer key research questions in relation to the development of a design brief for a new School of Digital Arts for Durban.

2.2 RESEARCH PLAN

The focus of the research is qualitative rather than quantitative. The research does not primarily set out to find ideal answers to the key questions by means of statistical data, but rather to gain an understanding through the analysis of information in order to inform the design decisions.

The study of primary data through the use of interviews and case studies allows for the comparative evaluation of secondary data collected. It also allows the author to experience the area of research first hand, therefore presenting unbiased information.

The secondary research is carried out as a literature survey, investigating elements of different international and local examples which are relevant to the author design or environment. It allows for a global perspective to be applied to the areas of investigation, which will then be evaluated in terms of application and relevance for the study area.

2.2.1 Primary Data

The primary research is aimed at obtaining qualitative information, thus interviews and case studies were used to gather this data. The interviews were semi-structured, tending towards informal discussions with professors, lecturers and students in design fields relevant to the study area. Interviews were also conducted with architects who were involved in the design of selected case studies.

Case Study 01: Wits School of Arts, Wits

Architect: John Fassler

Location: Braamfontein, Johannesburg

Year: 1949 – 1952 [renovated in 2002]

Case Study 02: Faculty of Art, Design and Architecture Building, University of Johannesburg

Architect: Stauch Vorster Architects

Location: Auckland Park, Johannesburg

Year: 2006

These two examples are intended to offer a better understanding of the departments and their needs and complexities. A school of digital arts or the grouping of digital education under one roof is a fairly recent development worldwide, and therefore the case studies had to be focused on design related educational buildings. The case studies have been examined on the basis of the following :

- Assessment of the Site
- Spatial Arrangements
- Materials used and Structural Systems
- Environmental Performance
- Services

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- Assessment of the Site
- Spatial Arrangements
- Materials used and Structural Systems
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- Services

The interviews and general discussions have been conducted with professors and lecturers involved in digital art and design industry. Architectural professionals involved in the design of buildings for the education of digital art and design were interviewed as well. These consist of:

- Discussions with Prof Gerrit Olivier, Head of School and Mrs Giselle Dalziel, Admin Manger of the WSOA. The discussions were about the education of digital arts and the future trends concerning digital arts.
- Discussions with Mr Angus Davidson, Technical & Laboratory Manager of the Digital Art department at WSOA. The discussions were about the current facilities at the Digital Arts department, ideal facilities and environment and the planning of a school concerning its networking and computer needs.
- Discussions with Miss Natasha Christopher, Senior Technician of Photography at the WSOA. The discussions were about the current dark room facilities at WSOA, the ideal facilities and environment and the future of the dark room.
- Discussions with Mr Andrew Crewe-Brown, Project Architect on the FADA Building, UJ from Stauch Vorster Jhb. The discussions were about the general concept and ideas behind the building and the performance of the building.
- Discussions with Mr Marc Edwards, Head of Department of Multi-Media at FADA, UJ. The Discussions were about course structure and needs of multi-media deign and the digital arts industry in South Africa. The discussions focused on the general workings, spatial arrangement and performance of the building.

2.2.2 Secondary Data

A literature review was carried out which consists of educational buildings as well as commercial office buildings. The rationale for the wide spectrum of building types was to cover different aspects of the proposed building, by analysing specialist buildings.

Sources for the secondary data include published materials, such as books, journal articles and internet articles. Other non published materials such as design drawings and architects will also be used in order to gain a better understanding of the spatial developments of the buildings analysed.

Below are the buildings which will be analysed:

Precedent Study 01: Electric Ladyland Offices

Architect: omm Design Workshop

Location: Kloof, South Africa

Year: 2001

2.3 CONCLUSIONS

The informal discussions allowed for the introduction of the questions and topics and were of importance as they brought up some important areas, which were not considered prior to the discussions. The case studies serve as an important role in the collection of data, as the first hand experience of the case studies, revealed more than what can be taken from a precedent study. Dynamic elements, such as lighting, atmosphere, movement, energy, volume were all able to be experienced. The interaction with the case studies is an interesting one, as the building is viewed as it were a visitor, seen for the first time. The initial reactions about the building could be viewed and thus giving insight into a visitor's perspective.

Precedent Study 02: IT University

Architect: Henning Larsen Architects

Location: Copenhagen, Denmark

Year: 2004

Precedent Study 03: ATRiuM – Cardiff School of Creative & Cultural Industries

Architect: Holder Mathias Architects

Location: Cardiff, Wales

Year: 2007

Precedent Study 04: Orestad College

Architect: 3XN Architects

Location: Orestad, Copenhagen, Denmark

Year: 2007

2.2.3 Data Synthesis

Findings and observations from the primary and secondary data are then synthesized to inform the design process and to develop and propose recommendations of a digital arts school for Durban.

3.1 INTRODUCTION

This particular chapter will deal briefly with a review of literature concerning the design of schools and an examination of the theoretical framework that will inform the design of the New School of Digital Arts for Durban. The intention of this will be to highlight particular design strategies for the proposed scheme.

The Literature review will focus in these areas:

- School Design & Planning

The Theoretical framework will focus on the following areas:

- An Architecture of the Senses

3.2 LITERATURE REVIEW

3.2.1 Introduction

Initially the literature review for this dissertation concentrated on digital art and design schools. Through the preliminary literature review it was revealed that a school of digital art is a contemporary spin off of a traditional art school and therefore was very difficult to find literature on the subject. The literature review is therefore diversified and concentrates on issues such as School Design & Planning and Technical Requirements.

3.2.2 School Design & Planning

The proposed school of Digital Arts is a tertiary educational institute, catering and although the literature examined on school design and planning is focussed on primary to high schools, the concepts and basic structures behind the theories are universal and can be applied to the proposed school.

The planning and design of a school is critical to the success of the school and the students. As Bryan Lawson writes in the book, *Architecture of Schools: The new Learning Environments*, "Critically, the success of education depends so much in the quality of the pupil/teacher relationship. This then requires an architect who is sensitive to human relationships and aware of how to promote and foster them through the built environment." [Dudek 2000: vi]

Graves, author of the book, *School Ways* separates the discussion of school design into emerging trends in school and design and current issues in school architecture. This headings has been adopted in this literature review to the better understand the underlying and fundamental issues of school design.

3.2.3 Emerging Trends in School Design

Technology in Education

There is no doubt that technology influences everything around us and therefore it's the schools' ability to change which becomes important, and this couldn't be more so for the proposed design as it is the technology upon which the school is based. Graves states that technology is important for educational institutions, as the institutions must be up to date with the times, yet one must not forget that there are advantages in face-face communication in business. There are important educational reasons to maintain the many encounters, both planned and spontaneous, that can happen only in a formal school setting. [Graves 1993: 6] It is important to note that

"... just as bookshelves do not make a library, computers and video equipment will not make a school. [Graves 1993: 6]

Flexibility

It has already mentioned above that technology is changing all the time and therefore the teaching

methods in education need to be able to adapt to these changes. This is so for the building as well, as its ability to change with these issues is important to the success of the design.

Hertzberger suggests, rather than flexibility, that a form that starts with change in mind will more readily adapt to shifting functions, calling this polyvalence. Polyvalence can be defined as one form "...that can be put to different uses without having to undergo changes itself, so that a minimal flexibility can still produce an optimal solution". [Hertzberger 1991: 147]

Graves draws parallels between school design and an office building, as the building is designed with no idea in mind about the final tenant and it is the flexible space which allows the building to adapt to different tenants and layouts. As the sizes of classes and classrooms change, the proposed design should be able to accommodate these changes comfortably. [Graves 1993: 7]

"Instead of designing ill-defined spaces, school architects are devising systems of movable partitions that allow teachers to create a variety of spaces." [Graves 1993: 8]

Together with the flexibility of these teaching spaces is the approach taken for the servicing of the building. In the proposed building, computers and visual communication systems will become the back bone of the school, making sure that all areas of the school are linked and connected allowing for efficient flow of information. The

flexibility of the services then becomes crucial, allowing the moment and reconfiguration of the teaching spaces to happen freely. Graves suggests that the decisions made about the servicing of the mechanical and electrical systems need to be made early on in the design process. [Graves 1993: 8]

Spirit

Through the nature of the design process and certain decisions like materials, common space, siting and surroundings and the basic organisation of a building somehow develops a unique institutional character which creates its distinctive spirit. Graves once again compares an office building to that of a school, saying that the office building has no specific users and the particular needs of its future tenants are unknown. In contrast the school is design for a particular educational program specifying the number and sizes of the classes/studios, common facilities, etc. [Graves 1993: 8]

"Just as importantly, every school – like every human being – should have its own spirit". [Graves 1993: 8]

This spirit, although unquantifiable and often difficult to describe, is the reflection of the school's educational approach, teachers, administrators and students. Graves suggests that character of the school should capture the essence of the school and describes some examples such as material choice, relationship

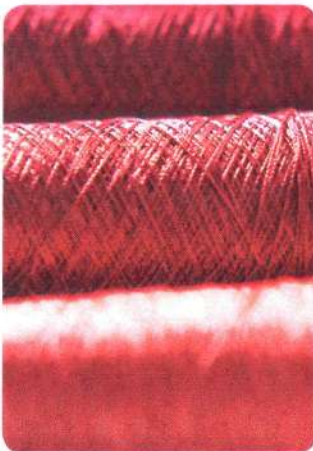
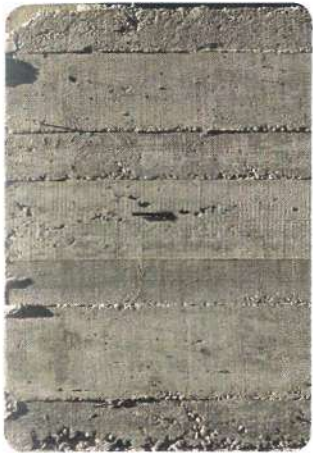
with the outdoors and the play of light. With the proposed design being a school of arts, there arises the opportunity to take advantage of such design ideas, as the nature of a school arts allows for a sense of freedom. Graves continues on similar lines about the freedom on the school stating that *"...architects search for new kinds of spaces and special spatial events to relieve the predictable character of classrooms. While the straightforward and rational structural grid will usually prevail, opportunities for spatial variety should not be missed. Educators and architects must resist such a mindset and should allow for the incidental unprogrammed spaces that can enhance the learning environment – activity nodes in the circulation system, informal gathering places, galleries, commons and courtyards"*. [Graves 1993: 9]

Community Interaction

In the past, schools were for children and facilities were locked up at the end of the school day, therefore preventing the community to access any of the facilities. Today where the use of green field sites, building costs and awareness of sustainability has become an important issue in society, the design of multi-function buildings has become a trend. Meaning that the school is used after hours for community based functions increasing its use and effectively resulting in a more efficient design. Graves states that entire communities see the see as a vital resource for adult education and cultural activities. [Graves 1993: 9] *"The school will no longer be a walled and*

isolated fortress, but will become an integrated part of the community as a whole". [Graves 1993: 9]

Graves discusses the role of a community high school and the way, in which it contributes to the surrounding community, the proposed school should act in the similar way. The difference being, that the community concerned with proposed school of digital arts is referring to the art and design community and industry of Durban. The proposed school will provide the students and local professionals with the vessel to promote their work, through spaces such galleries and cinemas and in doing so educating the public.



3.3 THEORETICAL FRAMEWORK

3.3.1 An Architecture of the Senses

When analysing the underlining fundamentals of digital art, it is with no doubt that the computer is central to the grouping and definition of digital based arts. This technological development has allowed for the progression of almost every field possible. The basis of the computer allows for a generation or manipulation of an element in a virtual space or plane, in Peter Zullner's book titled *Hybrid Space: New Forms in Digital Architecture*, he refers to this space as "hybrid space". [Zullner 1999: 8] In the proposed School of Digital Arts the computer becomes the emphasis of the school, meaning that students have continued interaction with both the computer and the virtual world of hybrid space for long periods of time. The nature of this creative digital culture is very strongly based on the visual senses. This seems to be a growing characteristic across the world, and this view is supported by the writings of Juhani Pallasmaa. Juhani Pallasmaa's theories of tactile sensory experiences, from the book *"The Eyes of the Skin: Architecture and the Senses"* [2005] will be explored to form the basis of the discussion.

Pallasmaa's theories are based on his personal experiences, views and speculations about the increasing concern about the bias towards the visual, and the suppression of our other senses through the primacy of the tactile senses. [Pallasmaa 2005: 10].

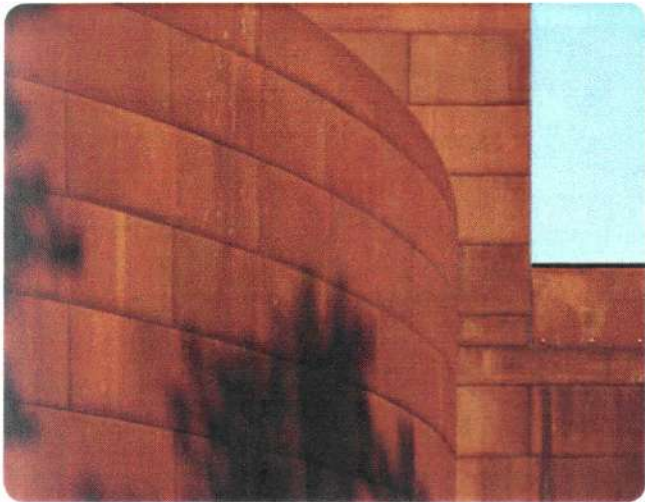
This developing bias towards the visual can be seen in Western history as Plato regarded vision as humanity's greatest gift, and during the renaissance the invention of perspective representation made the eye the centre of the perceptual world [Pallasmaa 2005: 16].

Pallasmaa states that "...all the senses, including vision, are extensions of the tactile sense; the senses are specialisations of skin tissue, and all sensory experiences are modes of touching and thus related to tactility. Our contact with the world takes place at the boundary line of the self through specialised parts of our enveloping membrane" [Pallasmaa 2005: 10]. The basic function of architecture is to provide shelter, yet architects strive to create structures which go beyond the expected and to create life-enhancing architecture. Architecture addresses all the senses simultaneously and fuses our image of self with our experiences of the world. The ability to create an atmosphere which interacts with the senses and articulates a sense of self in a creative environment such as the Digital Arts school is encouraged, as it allows one "...to engage fully in the mental dimensions of dream, imagination and desire" [Pallasmaa 2005: 11].

One quickly draws a parallel between digital art and contemporary style of digital architecture, in the use of hybrid space and how it can be used to design and manipulate form and space to create a visually dynamic structure to accommodate the school of Digital Art. When looking at the Bart Lootsma's description of digital architecture, "...



ill.3.01: Will Bruder's Las Vegas Art Gallery, weathering metal cladding
Source: www.flickr.com



ill.3.02: The element of time shown in the weathering of the steel cladding of Steven Holl's School of Art & Art History at the University of Iowa
Source: www.flickr.com

today's experimental architects are deploying novel 'hard' [manufacturing and material] and 'soft' [digital] technologies to engender an architecture of incorporation and conjunction, to test the radical generative and creative potential made possible through computer application" [Zellner 1999: 9], it is realised that the generation of form and visual stimulating images becomes the desired result of the style. Pallasmaa believes that "computer imaging tends to flatten our magnificent, multi-sensory, simultaneous and synchronic capacities of imagination by turning the design process into a passive visual manipulation, a retinal journey" [Pallasmaa 2005: 12].

Heidegger has described the hegemony of the eye as the "nihilistic eye" [Pallasmaa 2005: 22] and the reason for people to feel like a stranger or feel unwelcome in a building is as a result of the deliberate advances of sensory and mental detachment of the building. "The suppression of the other senses tends to push us into detachment and isolation..." [Pallasmaa 2005: 19], and therefore no sense of one's self in the surrounding spaces, leaving the users feeling like visitors to the building. The ability for the users of the Digital Arts School to interact with the building through the use of tactile senses is critical, as they are then able to develop an image of one self, resulting in a comfortable and familiar environment which evokes imagination and inspiration.

The writings of Pallasmaa are largely based on

the phenomenology of Maurice Merleau-Ponty, a French Philosopher. In Merleau-Ponty's book of *Phenomenology of Perception* he writes about the essences of the world existentially, as opposed to the Cartesian idea that the world is merely an extension of our own minds. He continues about consciousness, the world, and the human body as a perceiving thing are intricately intertwined and mutually engaged. [Merleau-Ponty 2005: 20] These views of Merleau-Ponty are supported in the work of Steven Holl, where he brings forth a translation of philosophical concepts that Merleau-Ponty stresses into the realm of architecture. The work of Holl therefore is closely related to the writing of Pallasmaa as they have very similar views towards the fundamentals of architecture.

The inquiry of the phenomenological framework of Holl's making of architecture is stressed upon his interpretation of the relations between building, site and situation and between body, architectural space, time and movement. [Yorgancioglu 2007: 1]

Materiality and Time

Natural materials express their age and history, as well as the story of their origins and their history of human use. All matter exists in the continuum of time; the patina of wear adds the enriching experience of time to the materials of construction. But the machine made materials of today tend to present their unyielding surfaces to the eye without conveying theory material



ill.3.03: The mythical power of the shadow which can enrich the experience of place within a building.
Source:www.flickr.com



ill.3.04: The uplifting impact of light and shadows on a space with in the School of Art & Art History Building, Unveristy of Iowa
Source:www.stevenholl.com

essence or age. [Pallasmaa 2005: 31] Buildings of this technological age usually deliberately aim at ageless perfection, and therefore do not incorporate the element time or *"...or the unavoidable and mentally significant process of aging."* [Pallasmaa 2005: 32] It is this element of time which acts on the materials and buildings to create some unique. Similar ways of thinking have been employed by architects such as Steven Holl and Will Bruder to name a few. In illustration 3.00 shows the use of steel cladding of the School of Art and Art History, at the University of Iowa by Steven Holl, where the element of time on the building is shown through the deliberate weathering of the steel cladding. The finish is natural and roots the building as well, creating interesting views of the building, attracting the eye to the imperfections and irregularities.

"Transparency and sensations of weightlessness and flotation are central themes in modern art and architecture. In recent decades, a new architectural imagery has emerged, which employs reflection, gradations of transparency, overall and juxtaposition to create a sense of spatial thickness, as well as subtle and changing sensations of movement and light. This new sensibility promises an architecture that can turn the relative immateriality and weightlessness of recent technological construction into a positive experience of space, place and meaning." [Pallasmaa 2005: 32]

The Significance of the Shadow

Shadows are important as they dim the sharpness of the vision and make depth and distance ambiguous and invite unconscious peripheral vision and tactile fantasy. Pallasmaa argues that the effects of light in architecture have been lost and light has turned into mere quantitative matter and the window has lost its significance. Luis Barragan describes windows to deprive the buildings of intimacy and the effects of shadow and atmosphere. The window or opening is the connection between the built and natural, the inside and outside and therefore has an important part to play in the atmosphere of the space. Once again the element of time in architecture is apparent, with *"... the constant, deep breathing of shadow and light; shadow inhales and illumination exhales light."* [Pallasmaa 2005: 47]

The shadow has a strong connection to Africa and African architecture. This maybe as a result of the high temperatures and amount of sun associated with Africa and therefore the shadow of a large tree becomes a place of rest. Shadows cast of over shapes and textures allow the tactile nature of the imperfections to be discovered. The relationship of the light and dark, whether it is cast from a natural or manmade has a mythical presence which is often neglected in modern western spaces, but one that ultimately enriches the experience of place, as deciphered by all five senses.

Acoustic Intimacy

"Sight isolates, whereas sound incorporates, vision is direction whereas sound is omnidirectional". [Pallasmaa 2005: 49] The study of sound in a building other than the spaces basic ability to absorb or reflect sound is one which has been left untouched in the modern western world of architecture. A space is understood and appreciated through its echo as much as through its visual shape, but the acoustic percept usually remains as an unconscious background experience. Hearing structures articulates the experience and understanding of space. Pallasmaa makes an interesting observation about the removal of the soundtrack from a movie and how it loses its sense of continuity and life. In the way music is used to evoke emotions in a movie, the acoustics of a building can help to manipulate its characteristics.

"Every building or space has its characteristic sound of intimacy or monumentality, invitation or rejection, hospitality or hostility." [Pallasmaa 2005: 50]

The play of volumes creates a hierarchy of places, allowing the sounds to bounce around. Although the acoustics refer more towards the building itself, one must not forget the influence of natural sounds can evoke. The desire to retreat to a planted garden or courtyard may be an unconscious link, because of the change in the acoustic qualities related with the space. In addition to this link, the garden presents a sense

of relaxation with an opportunity to incorporate the sound of moving water.

The Shape of Touch

"The hands are the sculptor's eyes; but they are also organs for thought." [Pallasmaa 2005: 56] The skin is by some people referred to as an organ of the body, it reads texture, weight, density and temperature of matter around us. The connection between the skin and architecture is crucial, as architecture is ultimately a shelter and therefore direct interaction with the building is almost a given. *"The tactile sense connects us with time and tradition: through impressions of touch we shake the hands of countless generations."* [Pallasmaa 2005: 56] This presents an idea about the very basics of a building, relooking at the way in which a person interacts with it. The perfection of craftsmen's object encourages the object to be touched and stroked and in doing so understanding the surface and connecting the view to the space and building. Touch is the only non-passive sense, divulges an unconscious sense of doing, revealing why traditional architectural metrics were derived from actual dimensions of the body.

3.3.2 Conclusions

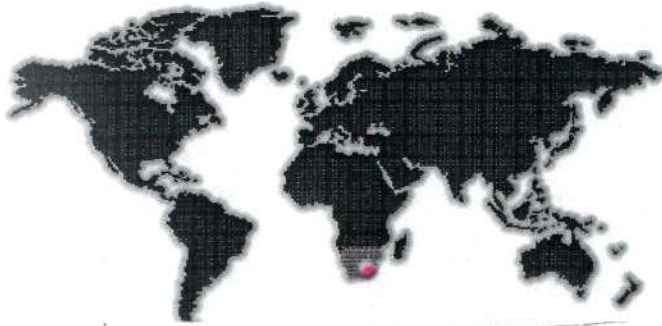
Architecture has adopted the psychological strategy of advertising and instant persuasion; buildings have turned into image products and therefore the task of architecture is design for the whole human experience, the body the mind as a totality of the senses and existence. To attribute an experiential value to a building that transcends its functional value, a building would need to provide sensory experiences. Sensory categories that form our reactions to space are the visual, the tactile, the aural and the kinesthetic. *Pallasmaa concludes by saying "... the ultimate meaning of any building is beyond architecture; it directs our consciousness back to the world and towards our own sense of self and being. Significant architecture makes us experience ourselves as complete embodied and spiritual beings. In fact, this is the great function of meaningful art."* [Pallasmaa 2005: 10]

The architecture of the proposed design should look to create a full bodily and sensory experience to both the users and visitors therefore allowing engagement of the architecture. Although the architecture should not be just visual connection with the building, *"...the sense of sight may incorporate, and even reinforce, other sense modalities; the unconscious tactile ingredient in vision is particularly important..."* [Pallasmaa 2005: 26]

4.1 INTRODUCTION

The inclusion of a wide range of local and international precedent studies offers a diversity which cannot be offered when focussing on one particular building typology. The rationale for the wide spectrum of building typologies was to cover different aspects of the proposed building, by analysing specialist buildings. The buildings analysed range from a high school building in Denmark to an office park in South Africa. The examples will be analysed using specific criteria, yet the normal aspects of the buildings, such as spatial relationships, structure, concept, etc will not be overlooked.

By evaluating the different precedent examples one is able to draw conclusions. These will help inform the development of a design programme for a School of Digital Arts for Durban.

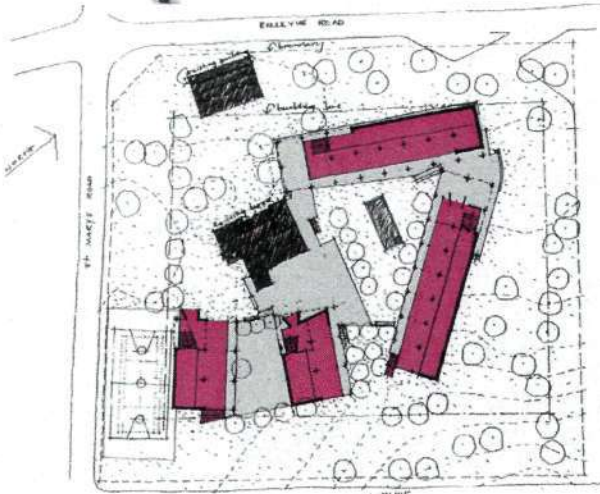


4.2 PRECEDENT 004 - Electric Ladyland Offices

Location: Kloof, South Africa

Architect: omm Design Workshop

Date Completed: 2001



ill.4.01: Site plan. not to scale

Source: [Barac, 2007:68], edited by author



ill.4.02: Viewing of the green courtyard space which the buildings look out onto through the protected glazed facades.

Background

The reason for this precedent study was to analyse a building designed in response to the context of Durban, South Africa. The building is situated in a sensitive area in Kloof, which is wedged between a retail development and a suburban neighbourhood. The office development is called the Bellevue Campus, yet it is referred to as the Electric Ladyland Offices in the Built Environment. The complex was developed on an existing residential plot and the original house is situated in the centre of the development and has become the focus of the addition.

Client Brief

The brief essentially was to design a series of lettable commercial accommodation in the residential setting, yet the specific requests from the client were, *"an innovative, robust and versatile building to accommodate a range of uses"* [OMM Design Workshop 2002: 10]

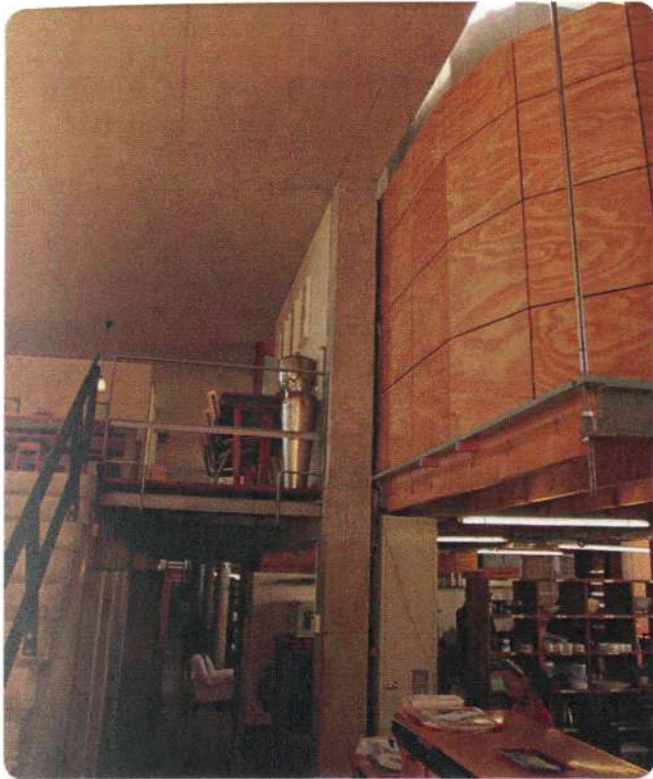
Planning

The original campus layout which is shown in ill 4.00 consisted of two existing structures and four new pavilion buildings, yet since the article

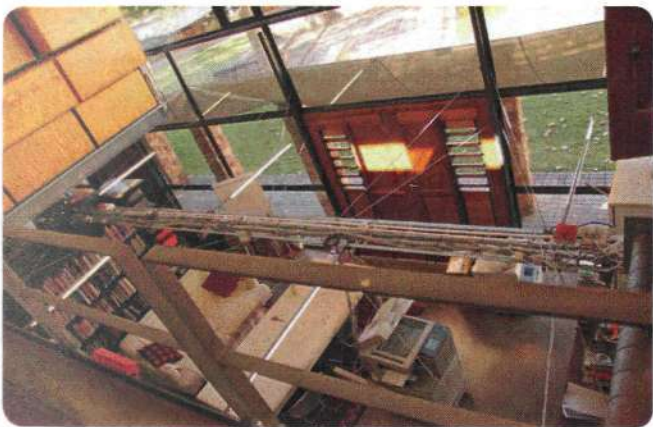
was published in the journals an additional three pavilions have been erected. The buildings are arranged in such a manner as to create a semi-public and private courtyards, which the focus of the campus is based on.

"Rather than logos or gestures more usually associated with corporate branding, the street facade is low key. Emphasis is focused instead on the triangular courtyard garden at the heart of the site." [Barac 2007:66]

These pavilions are long and narrow, reduced to about 10-12 meters in width with large openings on the longer sides, allowing for cross ventilation throughout the building and helping to alleviate humidity. Deep overhangs shade the facade reducing solar-gain and allowing for fully glazed treatment of the façade, linking the working spaces to the introverted courtyard. The building has adopted the fairly common, double corridor model for the circulation of the buildings, with a central corridor running almost the entire length of the building. This approach has been successful; the offices on either side then have the opportunity of views, natural light and ventilation. The ability of the building to use



ill.4.03: The inventive hanging mezzanine system developed, using shutter boards and threaded rods, which are fixed in the concrete roof.



ill.4.04: A view down onto one of the double volume spaces created by the removal of one of the mezzanine floors.

this common commercial model together with the mundane program in an innovative way, in developing an uplifting experience has resulted in a successful building.

The building is separated into two parts in section; the concrete superstructure and the then light mezzanine floors which are suspended from the superstructure and fixed into the roof with the use of threaded bolts. The mezzanine floors are constructed from the used ply shutter boards and give the building flexibility allowing for changes over the many different clients which might occupy the space [ill 4.03]. This flexibility also allows for the creation of space in the building, by the removal of a few mezzanine floors resulting in interesting volumes and views with in the structures [ill 4.04].

“...here principles of thermal mass and cross ventilation are incorporated without fanfare or fuss; this architecture wants to do more, in a social and cultural sense, than simply temper the inevitable damage that buildings do to the planet.” [Barac 2007: 68]

The building looks to reconfigure the relationship between office and nature and looks to create a balanced environment and in turn restores the well-being of the workers and increasing creativity.

Structure & Materials

The buildings are long linear forms, with a simple column grid which holds the concrete roofs.

The roofs are split in to two parts with overlap to allow for clear storey lighting and to improve ventilation through the places [ill 4.10]. The structural elements of the building are clearly visible in the design and treated as a limited palette of materials, principally concrete, timber, brickwork and glass. The palette of materials creates a very tactile atmosphere to the campus, as every material is represented in its natural state. The richness of the buildings is insinuated by the amount of nature light and the visual links with the well proportioned and planned courtyard.

Conclusions towards the design of the School of Digital Arts

- The highly inventive approach to the design of the building, where certain elements of the building perform beyond the original function which they were intended, and in turn create an adaptable building which adapts to the different users as for changes in climatic conditions.
- The selection of rich, tactile and well wearing materials in the case study are successful in creating an up lifting sensory experience. This is something which can be learnt from, in the design of the school, creating a tactile learning environment which appeals to all senses.
- The relationship between the office environment and the outdoor courtyard is probably the best attribute in this precedent



ill.4.05: The poetic use of concrete shown in the creation of form

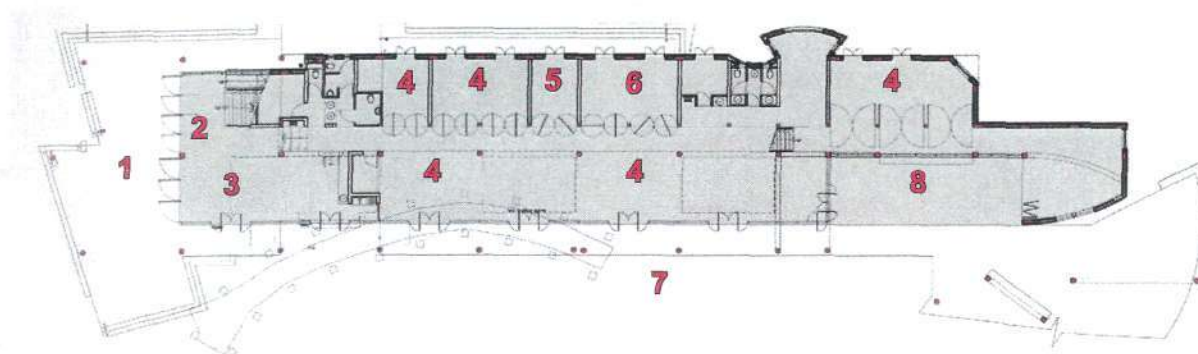


ill.4.06: Showing the use of water in the courtyard, creating a focal point

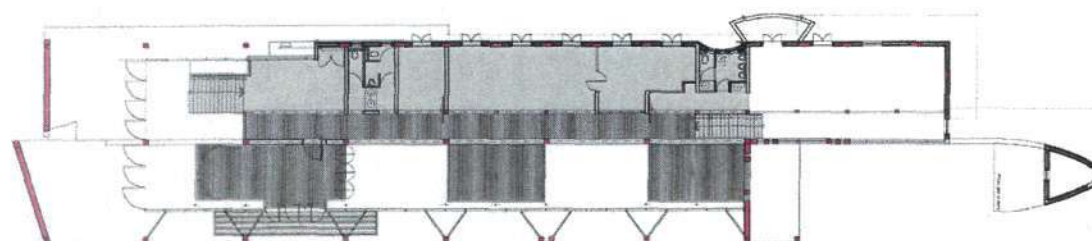


ill.4.07: A view of the internal courtyard and gardens, used during breaks as a retreat from the office

study. A similar relationship between the interior spaces of the school and an outdoor space would be encouraged, as the space would become a focal point of the school as well as improving the natural ventilation through the internal spaces.

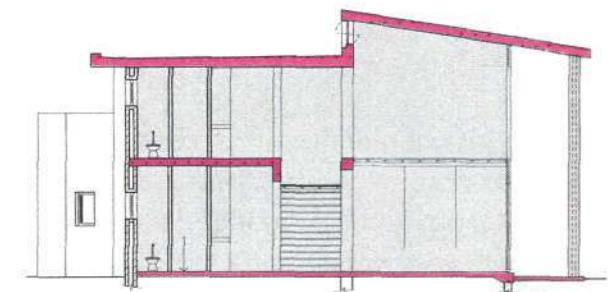


iii.4.08: Ground floor plan. not to scale
 Source: [Barac, 2007:68], edited by author



iii.4.09: First floor plan. not to scale
 Source: [Barac, 2007:68], edited by author

1. covered entrance
2. reception/lounge
3. coffee bar
4. office
5. spray room
6. lounge
7. open courtyard
8. design studio
9. boardroom
10. lobby
11. partners' secretary
12. partners' office
13. copywriters' studio
14. open deck
15. void



iii.4.10: Section. not to scale
 Source: [Barac, 2007:68], edited by author



4.3 PRECEDENT 002 - IT University

Location: Copenhagen, Denmark

Architect: Henning Larsen Architects

Date Completed: 2004

4.3.1 Background

The IT University (ITU) is situated in Orestad, the same district of Copenhagen as the fourth precedent study, Orestad College. The University is built on undeveloped land and marketed as a "city-within-the-city," *Orestad is a new district being added to Copenhagen*" [Larsen 2004: 66]. The University was housed in provisory premises until, it was reaching its capacity and therefore the need for a new purpose designed building. It is to the northern part of this new district where Henning Larsen has designed the new building for the Information Technology University (ITU).

The ITU is a teaching and research-based tertiary institution which was started in 1999 and is concerned with information technology. It is funded to undertake both theoretical research and applied research into the interaction and growing importance of IT to society [www.itu.dk, 2008].

4.3.2 Client Brief

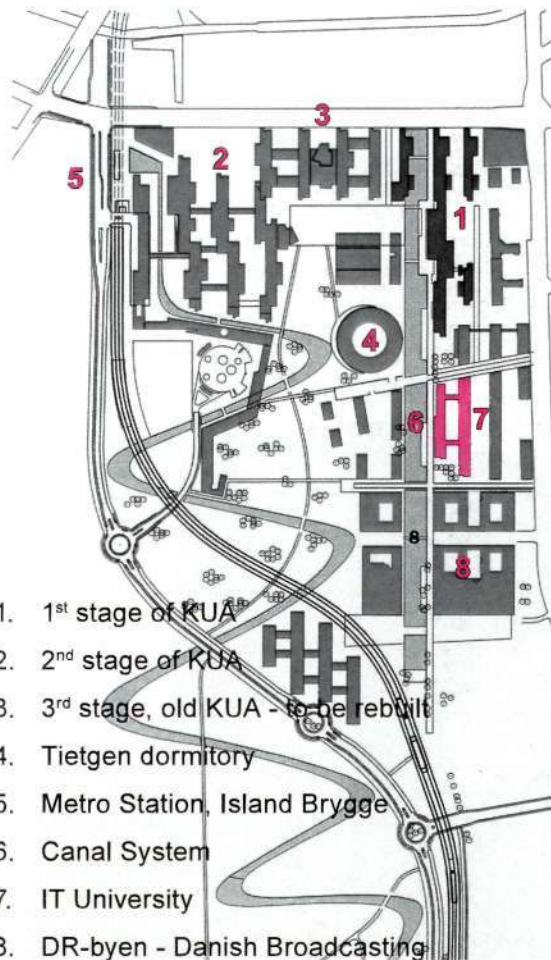
IT education is marked by group work, group projects and a high degree of interactivity between the students themselves, and between

the students and the researchers. The clients brief to the architect was therefore to establish a building that supports and encourages social activities with many open study areas, where the extensive use of portable computers and wireless networks make it possible to work anywhere in the building with rich possibilities for informal and spontaneous contact. [www.designbuild-network.com, 2008]

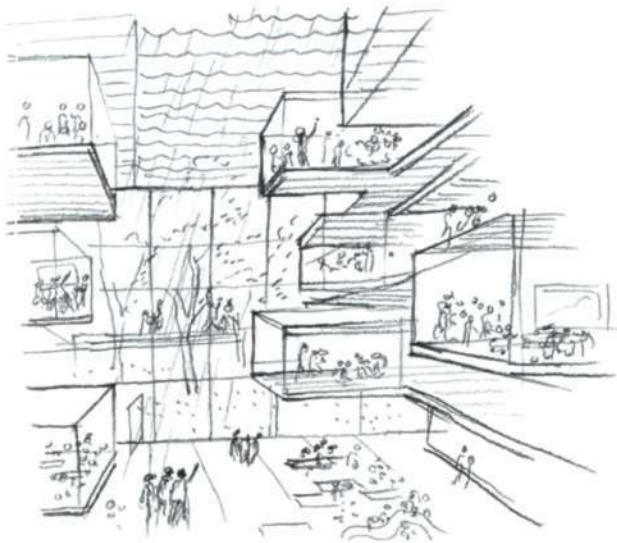
4.3.3 Planning

The ITU continues the pattern of north-south running blocks, which was established with the expansion of Copenhagen University (KUA), which can be seen in Illustration 4.11. [Selmer 2004: 480]

The building takes its form in two six story parallel wings that are stretched out on each end, with cafes and social spaces at their tips "...placed this way to better engage the neighbourhood growing around the university" [Larsen 2004: 68]. The wings are separated by a central atrium. Conceptually the building is organised around this central atrium and becomes the vibrant heart of the building. It can be compared to a contemporary square, where the two wings

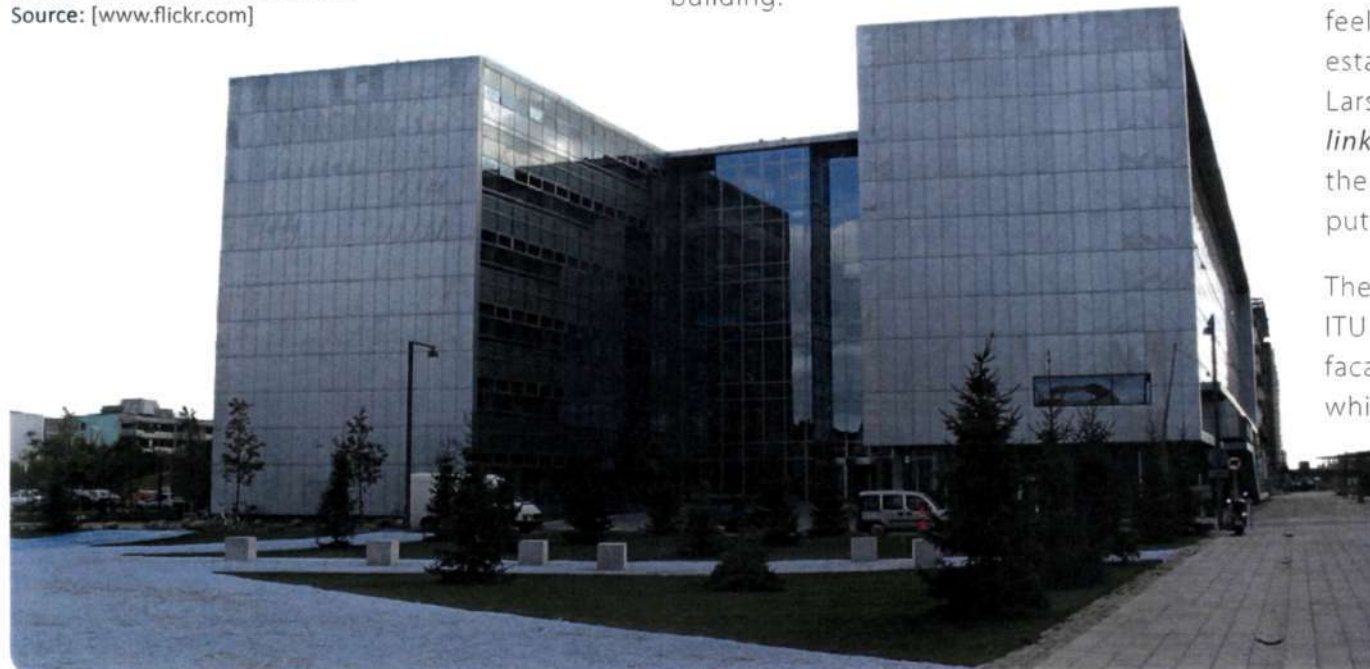


ill.4.11: Educational complex of Orestad
Source: [Selmer, 2004:481], edited by author



ill.4.12: Larsen's concept sketch for itu, showing the draw-like boxes which command the central atrium space
Source: [www.itu.dk]

ill.4.13: View of the north entrance
Source: [www.flickr.com]



become the form generator. The entrance to the "square" is situated between the two wings at either end of the building. The entrance is celebrated with a wall of full height glazing.

The individual functions are placed in an open and three-dimensional structure which are separated into three distinct zones. The zones being the ground floor comprising of all the common functions; the teaching zone which comprises of the teaching spaces and open study areas which surround the volume of the atrium. The other zone is found at the ends of the wings which house the research, staff and administration functions. The service and circulation cores intersect between the zones and result in a very simplistic yet totally appropriate layout to the building.

"The teaching facilities are in open study areas around the atrium and the research departments are in quiet zones at the ends of the building" [Henning Larsen Architects 2004: 473]

The composition of the cantilevered meeting boxes, the open study spaces and the exploration of the voluminous architecture in the atrium have developed, what is a very simple and structured design into something inspiring and unique.

The approach and concept of Larsen's design might be seen to be rather contradictory when looking at the response to the urban environment in which the building is situated. It is part of a developing urban framework, which there is not much to respond to and therefore one may feel that ITU has taken on the responsibility to establish its own urban framework. Instead of Larsen responding to *"...the city's primary and linking feature..."* [Selmer 2004: 482], which pass's the west side of the building, the focus has been put on the "square-like" atrium space rather.

The internalised and introverted approach of the ITU design are reflected in the reserved outer facades, in clear contrast to the inner facades, which in a natural way are given a meaning and quality by virtue of the life and contact they support. [Selmer 2004: 482]

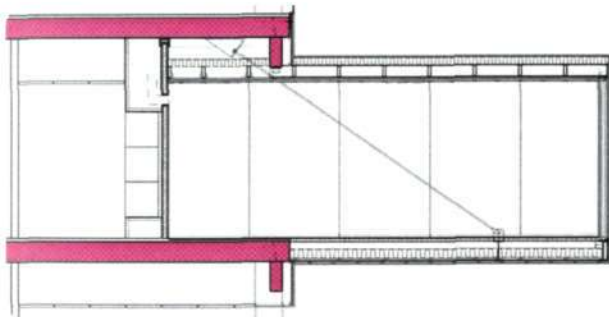
The building has been criticised for its weak relationship between itself and the city and this can also be said about the



ill.4.14: Itu's lack of connection with the passing canal
Source: [www.flickr.com]



ill.4.15: Interior view of the atrium showing the meeting boxes
Source: [www.flickr.com]



ill.4.16: Detail of the cantilevered meeting box
Source: [Selmer, 2004:478]

buildings response to the Danish climate, as the building resembles a sealed box. It is documented that the Danish national summer vacation may be moving a week later to take advantage of some sunny days in August and yet the ITU makes no connections to the outside or climate except for the glazed roofed atrium which allows the light to flood into that space. [Selmer 2004: 482]

4.3.4 Structure & Materials

The ITU adopts simple column and beam structural system. This system allows an uninterrupted floor plate, yet at the cost of the depth of the floor plate. The generator of this grid size is maybe based on an office and seminar room setup, which allows for both arrangements to function in the same size grid. This was a simple solution for the building, as it was a rectilinear form. The bookends of the building and the circulation core are handled in reinforced concrete bring the building its lateral strength. The bridging structure between the two wings is then dealt with using steel which is a lighter material.

An interesting addition to the central atrium was the digital art installations on the face of the meeting boxes, which cantilever into the atrium. The installation by John Maeda creates a dynamic and interactive visual composition on the atrium. [Henning Larsen Architects 2008]

4.3.5 Services

The service approach is a traditional one where the services such as the air-con plant rooms, etc

are placed in the basement and ducts are located in the circulation cores which link the various floors. The ceiling voids which are made possible by the structural systems allows for the services to be run along the underside, therefore allowing for flexible room setups. The entire building looks to be air conditioned, meaning that the large volume of the central atrium is included and therefore almost adding another third to the volume in which needs to be handled. In Denmark with the Scandinavian climate this may not be a huge factor, as it is the bitter cold of the winters which the buildings look to respond too. In Durban's climate the ITU's approach to its climate would not be acceptable.



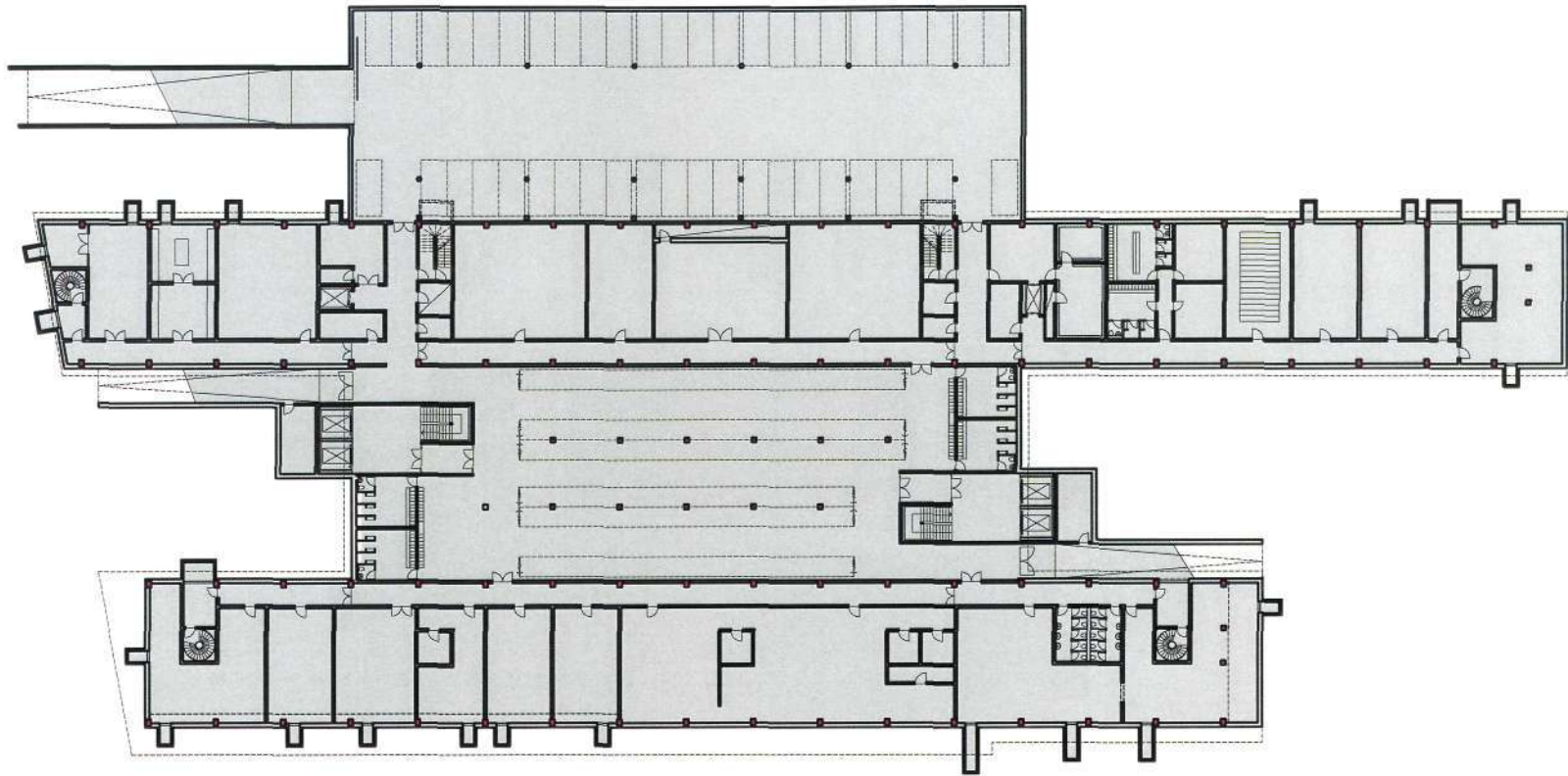
ill.4.17: View of the central atrium space portraying the volumetric scale.

Source: [Selmer 2004, 480]

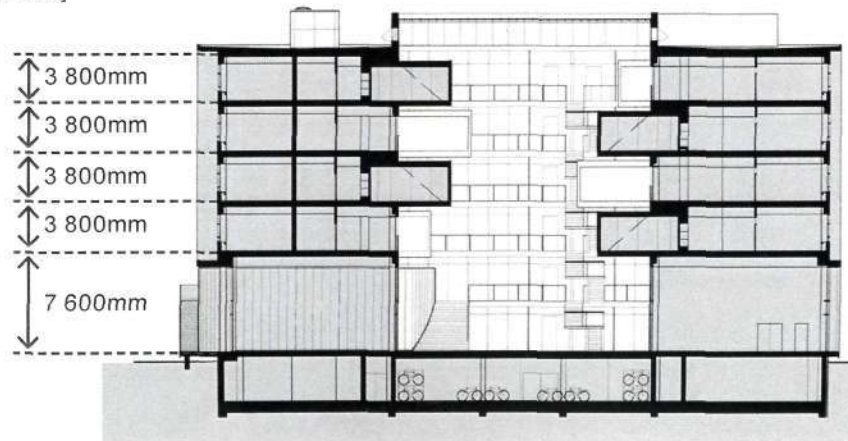
4.3.6 Conclusions towards the design of the School of Digital Arts

- The building should look to respond to the Durban context, in site and as well as climatic response.
- The simple response to the spatial arrangement of the functions in the building. The way, in which these spaces have been laid out to achieve a privacy gradient, offering spaces for different needs and functions.
- The design of the building focuses around the atrium and the interior of the building. The creation of the dynamic atrium space which houses the meeting boxes and the informal study area to the perimeter of the space are of critical importance in a school of arts, as the nature of the arts is one that revolves around discourse.

Overall it seems that fundamental issues such as climatic response and basic user and function conditions have been compromised to achieve an introverted building those focus is towards to the creation of a dehumanising central atrium and a preoccupation with the form. Although it seems to be a bad example in the precedent studies there are many positives which can be taken from and learnt from it and illustrates the complexities in combining and creating informal and formal social and study areas in a tertiary institution.



ill 4.18: Basement floor plan. not to scale
Source: [www.itu.dk]

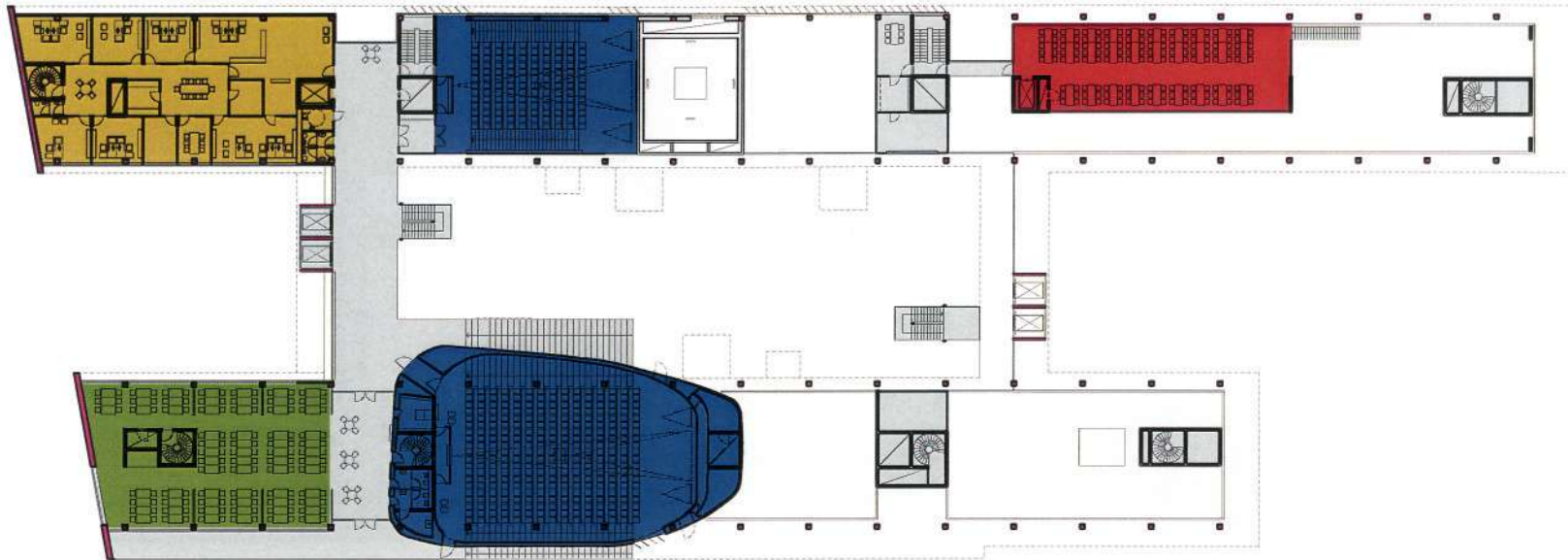


ill 4.19: Section. not to scale
Source: [www.itu.dk]



ill 4.20: Ground floor plan. not to scale
 Source: [www.itu.dk]

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**



ill 4.21: First floor plan. not to scale
Source: [www.itu.dk]



ill 4.22: Second floor plan. not to scale
Source: [www.itu.dk]

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**



ill 4.23: Third floor plan. not to scale
Source: [www.itu.dk]



ill 4.24: Fourth floor plan. not to scale
Source: [www.itu.dk]

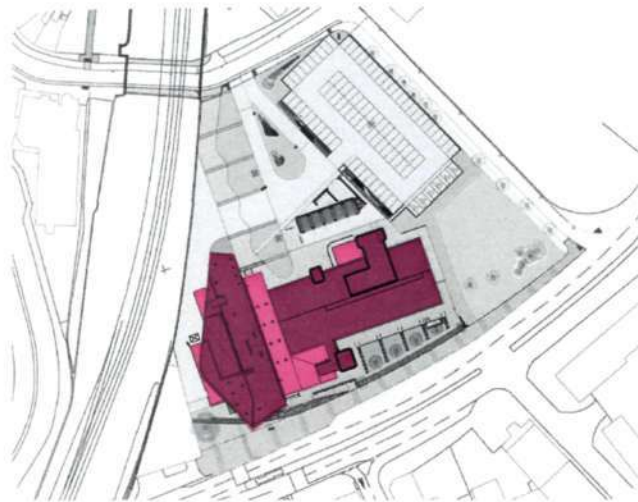


4.4 PRECEDENT STUDY 003 - ATRium Cardiff School of Creative & Cultural Industries

Location: Cardiff, Wales

Architect: Holder Mathias Architects

Date Completed: 2007



ill.4.25 Atrium site plan

Source: [www.holdermathias.com]



ill.4.26 Exterior view from the road

Source: [www.worldarchitecturenews.com]

4.4.1 Background

The new building for the Creative Disciplines faculty of University of Glamorgan is The Atrium – Cardiff school of Creative & Cultural Industries which is situated in the CBD of Cardiff in Wales. The project was an addition and renovation of an existing building in Cardiff (the former telephone exchange offices for BT). [Holder Mathias Architects 2008] The new building brings together Art & Design, Media & Communication and Drama & Music from five previously buildings into a newly designed building. [www.artshub.co.uk 2007]

4.4.2 Client Brief

The clients were after a building which facilitated the amalgamation of the different creative disciplines *"...to create a multidisciplinary cultural environment that can provide specialist hybrid undergraduate, postgraduate and research degree programmes."* [www.artshub.co.uk 2007] The brief called for a structure that would encourage an eclectic mix of teaching and research in the theory and practice of media, design and the arts.

4.4.3 Planning

The architects, Holder Mathias Architects, response to the brief was

"...a building and environment which did not look like a university building, rather more a professional complex, which helps to better, prepare the students for the outside world."
[www.worldarchitecturenews.com 2008]

In the plan form this is a distinct separation of the new and the old, [which can be seen in the plans, illustration 4.31] where the new glass atrium becomes the buffer between the new and the old and becomes the formal entrance to the school.

The new building houses the more public, specialised and larger spaces, such as the cinema, the theatre, rehearsal studios and sound recording and broadcasting rooms. The old BT building has been renovated and houses the academic functions of the school, such as the staff offices, library and the studios. In terms of the flow and the separation of functions in the school, the plan works well, yet the setup of the academic section of the building, is very much like



ill.4.27 Exterior view of the circulation core, with the new aluminium cladding applied to the old structure.
Source: Holder Mathias Architects



ill.4.28 Exterior view of the ATRIUM showing the new in the foreground and the old in the background linked by the glass atrium.
Source: Holder Mathias Architects

a cellular office setup and doesn't not offer that inspiration quality that a creative centre of this nature should maybe portray. This maybe comes as result of the very structured space of the old BT building in which the studios have been inserted. Although the building has been separated into the two areas, that of specialised functions and academic functions, there is a practical reason for the separation as well. All the specialised facilities are mainly sounded base, such as the theatres, sound recording studios, broadcasting studios, etc and therefore these areas need to be acoustically protected. The grouping of all the specialised facilities makes the construction of that part of the building a lot easier and results in well designed and functioning facilities.

Holder Mathias Architects have maintained the existing form of the old building, in which the circulation cores are portrayed as separated elements in terms of form and have bridged the old and new with a steel and glass structure, celebrating the entry of the building and creating dramatic atrium hence giving the building its name of the ATRIUM.

4.4.4 Structure & Materials

The BT offices used a concrete slab and column construction and it shows its flexibility as the new school was just inserted, with very few adjustments to the original structure. The new extensions use a concrete column and slab construction, yet is a lot more specialised with the addition of acoustic joints between

structural members, to prevent the travel of noise and vibration through the structure. The atrium which links the new and the old has been dealt with using steel structure, clad in glazing. The same goes for the atriums roof, glazed roof allowing light to flood the large entrance to the building.

The exterior of the building has been clad with aluminium panels, which strengthens the concept of creating a professional complex rather and a university building, as the building might be taken as a new corporate office block instead of a new state of the art, media and art university building.

4.4.5 Services

In the new section of the building, because of the specialised nature of the functions were needed for specialised services and hence one can see many ducts which connecting the floors when studying the plans. Services such as air con, network cables, audio-visual cables and power make up the majority.

"A high-bandwidth network will carry data and media throughout the building, between studio galleries and computer labs, and will be backed by ubiquitous wireless connectivity, freeing students to work on laptops and handheld devices in Atrium's many flexible and open social spaces" [University of Glamorgan, 2008].



III.4.29: The Atrium space which links the new & old, the space which the building is named after
Source: Holder Mathias Architects



III.4.30: View of the ATRIUM from Cardiff CBD
Source: Holder Mathias Architects

4.4.7 Conclusions in respect to the design of the School of Digital Arts

- The simple grouping of functions has been a success in the design, with the separation of the studios/offices and specialised/acoustic functions being divided by the glass clad entrance atrium. This is evident in section where the auditorium/theatre/cinema requiring larger ceiling heights than the studios. Lessons in the spatial arrangement can be learnt from this precedent, as the reduction of unnecessary servicing in the design, well result in a cost effective and environmentally friendly design.
- The design reveals an important design issue, for the buildings needs for adaptability and the importance for flexible designs. The precedent has shown that a building ability to change from its original use of a telephone exchange to creative and cultural school, the proposed School of the Digital Arts should have the ability to adapt, even though it is purpose designed. A building can easily stand for 100 years and therefore might out live its original function.
- The atrium is designed as a buffer zone between the new and the old and operates successfully as an entrance to the building. This space runs perpendicularly to the old structure, separating the public to the street and the staff/students from the parking at the rear of the building into a dynamic space

which doubles up as the reception, function space, and security lobby. The success in handling students, staff and public is noted and can be applied in the design of the School of Digital Arts especially to promote the students work through interaction of the building interface.

Overall the School of Creative & Cultural Industries has many positive aspects that should potentially be incorporated into the proposed School of Digital Arts as many parallels can be drawn, especially between the subjects taught and the spatial and functions requirements of those spaces.



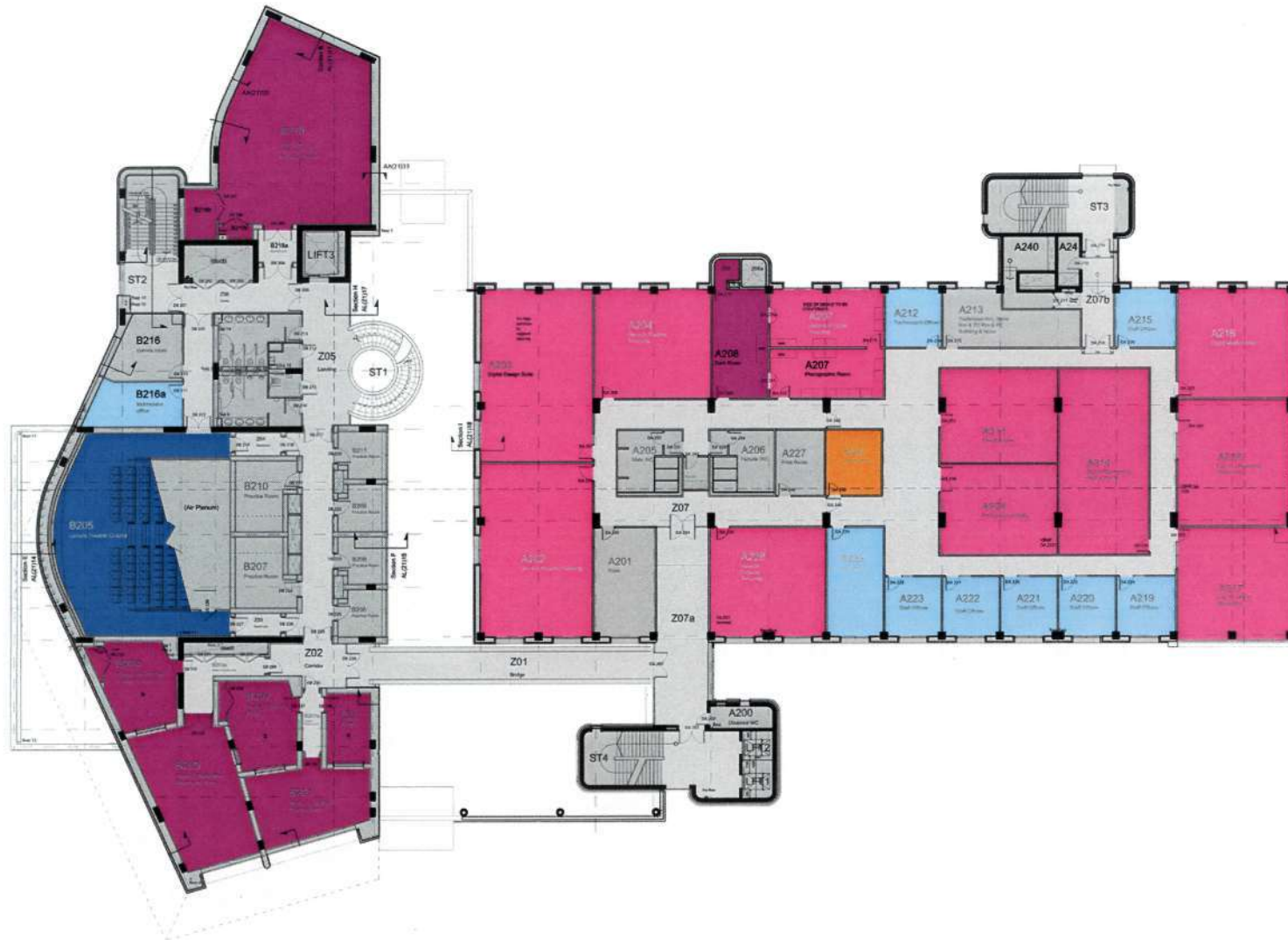
ill.4.31 Ground floor plan. not to scale
 Source: Holder Mathias Architects, edited by author

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**

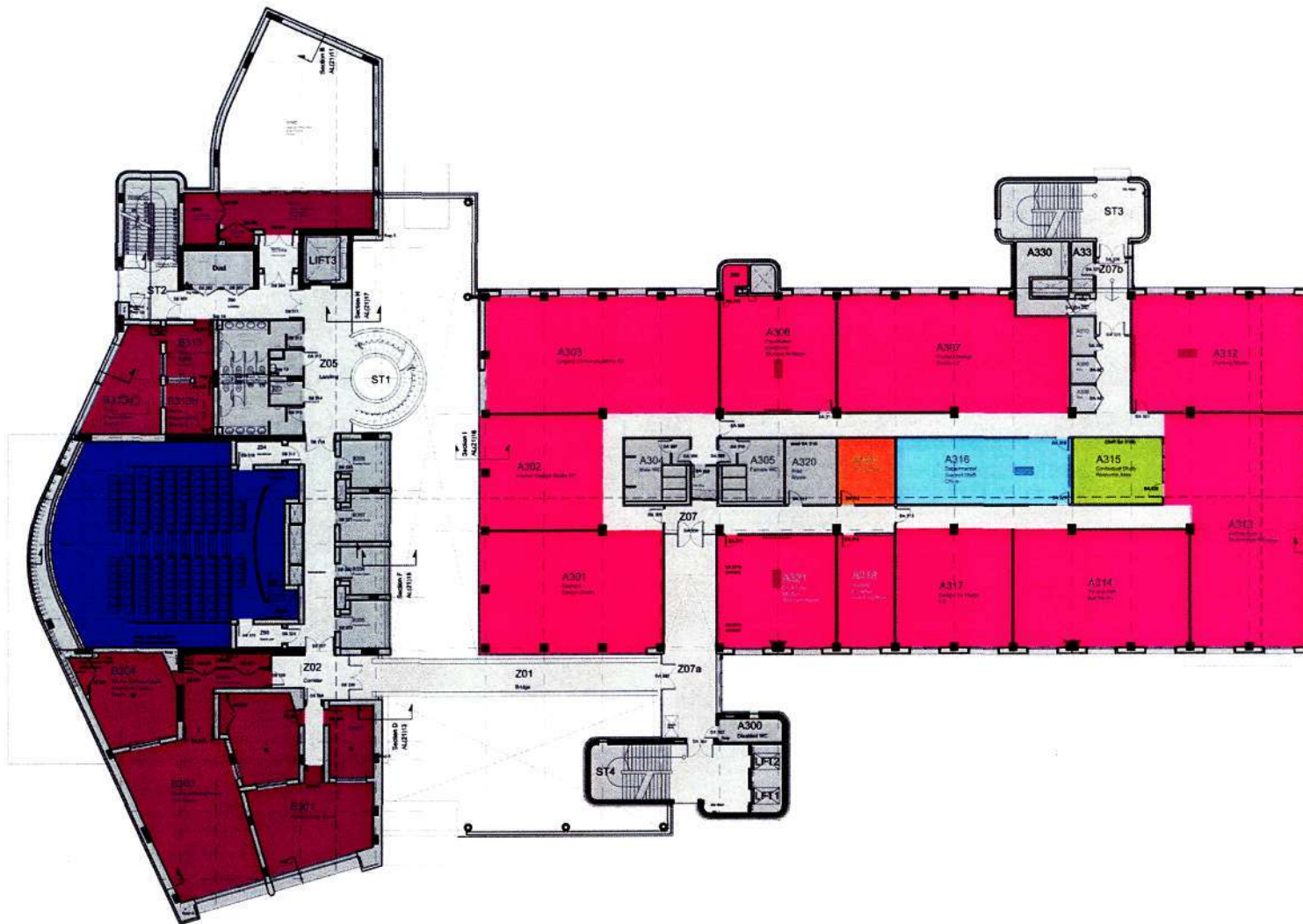


ill.4.32 First floor plan. not to scale
 Source: Holder Mathias Architects, edited by author

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**

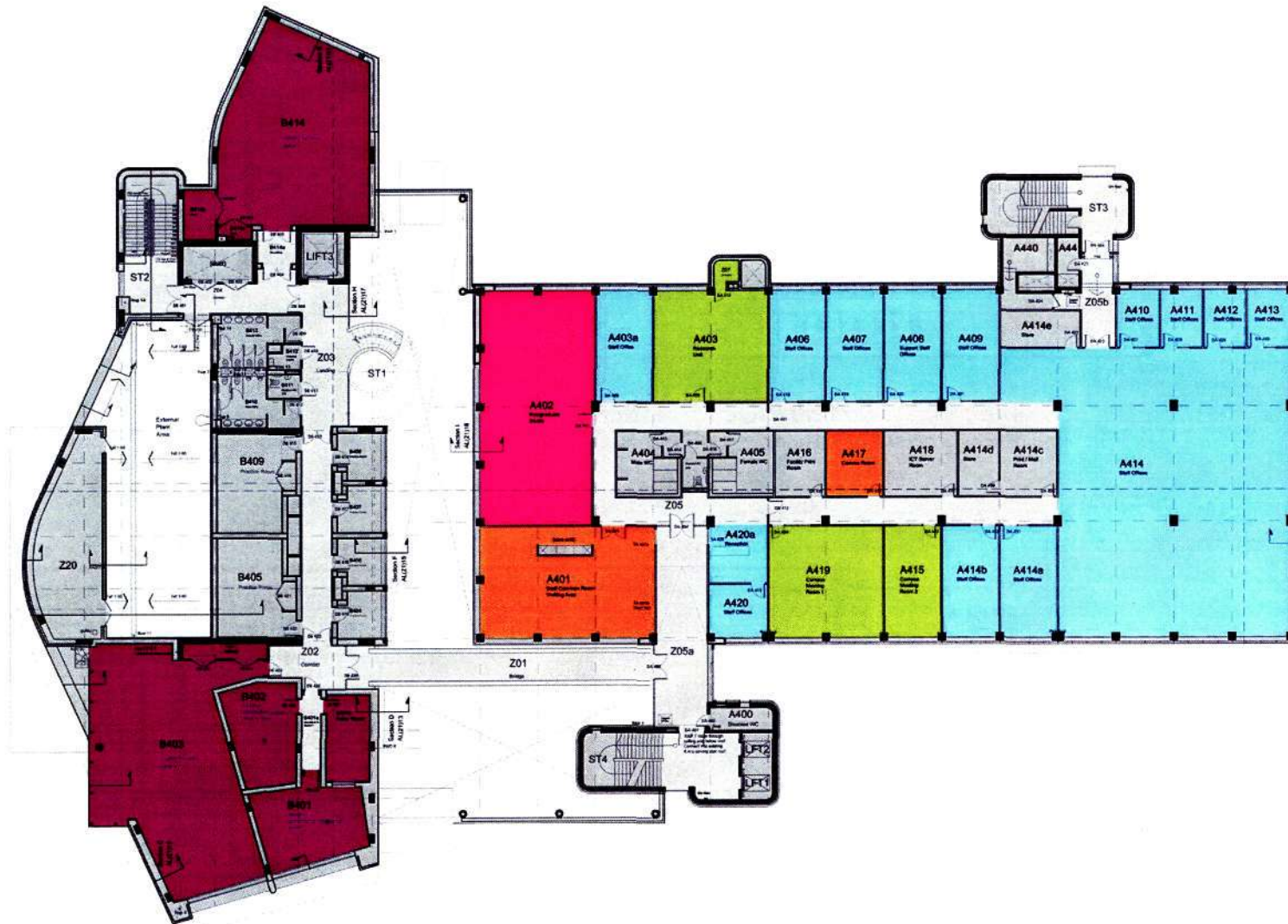


ill.4.33 Second floor plan. not to scale
 Source: Holder Mathias Architects, edited by author

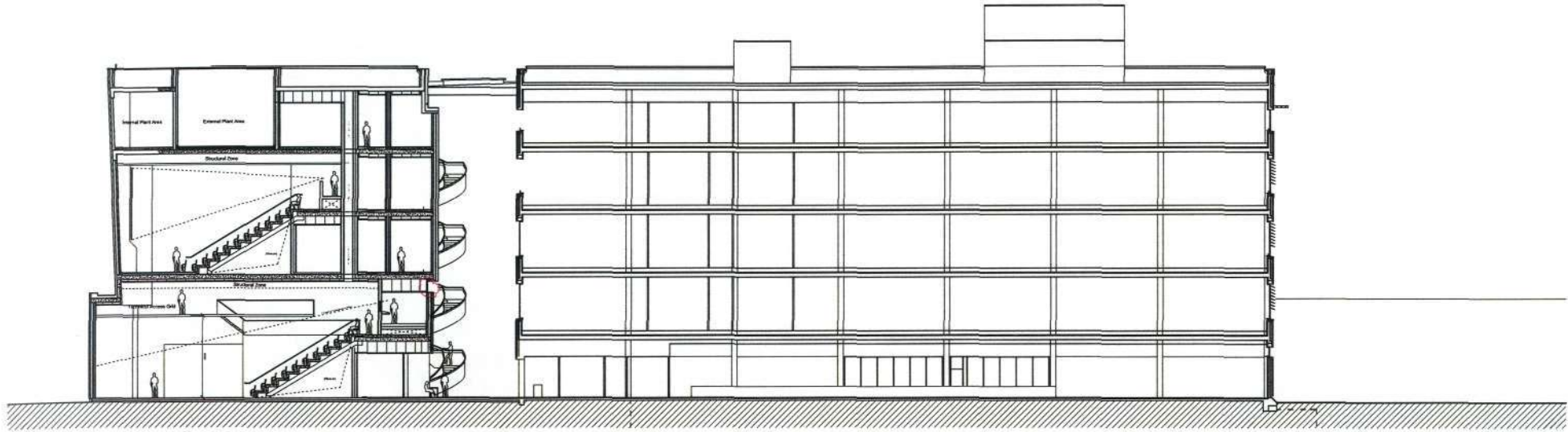


iii.4.34 Third floor plan. not to scale
 Source: Holder Mathias Architects, edited by author

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**

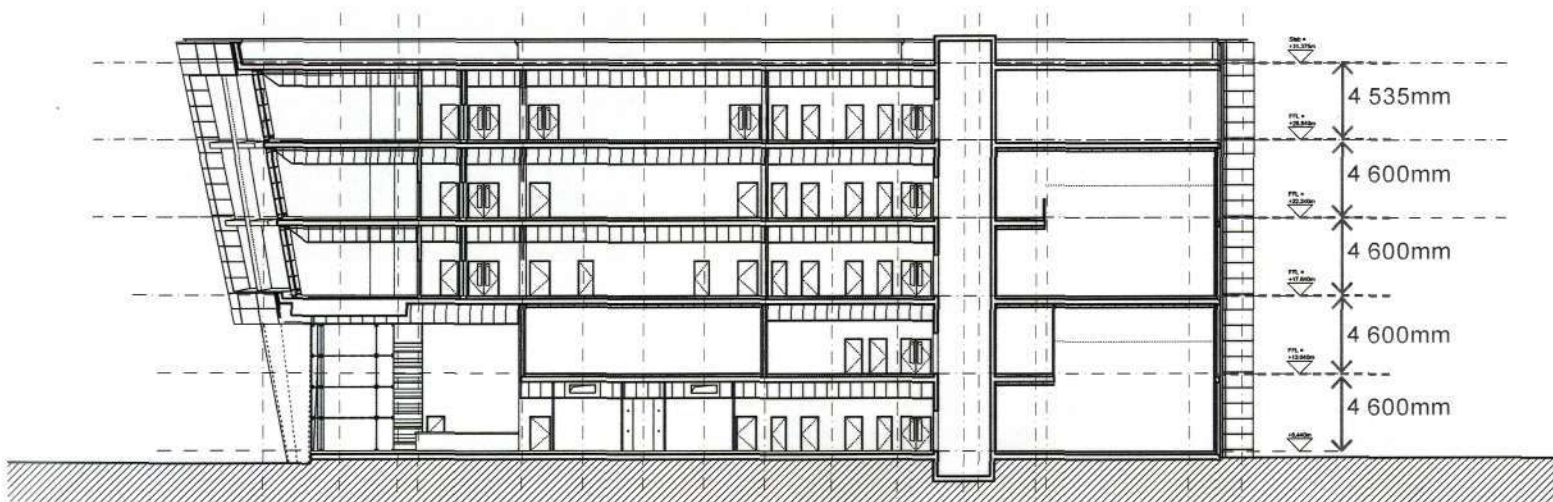


ill.4.35 Fourth floor plan. not to scale
 Source: Holder Mathias Architects, edited by author



ill.4.36 Section. not to scale

Source: Holder Mathias Architects, edited by author



ill.4.37 Section. not to scale

Source: Holder Mathias Architects, edited by author



4.5 PRECEDENT STUDY 004 - Orestad College

Location: Orestad, Copenhagen, Denmark

Architect: 3XN Architects

Completed: 2007



ill.4.38: A view of the school from across the canal, showing the vertical glass louvres deep floor plates.

Source: [www.worldarchitecturenews.com, 2008]

4.5.1 Background

The Orestad College is the latest college or secondary school in Copenhagen. Orestad is a result of an expanding population and economy; it is a totally new planned city located minutes away from Denmark's capital Copenhagen. Copenhagen has seen a remarkable growth of the 16-19 year group and hence the need for new schools in the area [www.3xn.dk, 2008]. The school offers studies in the fields of social science, science and human science.

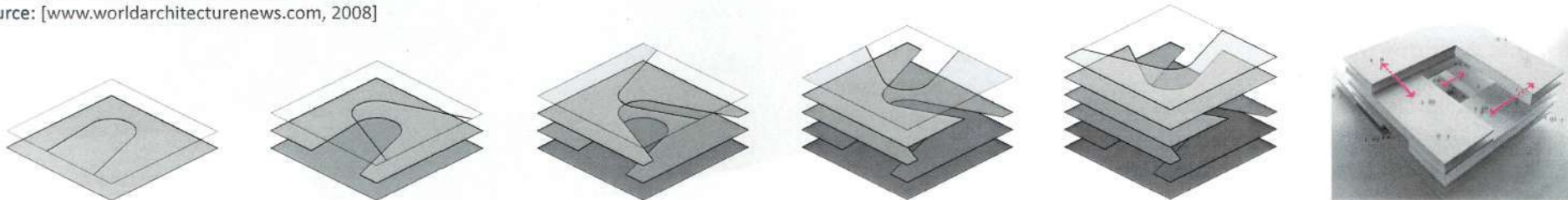
4.5.2 Client Brief

In 2005 the Danish Government reformed the schooling "...aims to strengthen and renew the students' professional capabilities" [www.3xn.dk, 2008]. The brief called for an educational facility which broke the mould of the traditional schools

and as a result "...the brief was deliberately formulated without traditional terms for rooms, and left much to the architects' interpretation" [www.3xn.dk, 2008]. The proposal was therefore not so much a response to a specifically defined space for a task, but rather to a task itself.

4.5.3 Planning

The brief called for a new and original approach to the design of the school and this is most evident in the formal and spatial structuring of the building. The interior is characterised by four boomerang shaped floor plates which have been rotated in relation to each other like a shutter of a camera, which can be seen in the conceptual illustration [Ill 4.39]. They form the overall framework for the college, and provide space for the four study zones. The zones are organised



ill.4.39: 3xn's concept for the building, showing the development of the boomerang idea

Source: [www.3xn.dk, 2008]



ill.4.40: showing the openness, creating by the multi volume spaces
Source: [www.worldarchitecturenews.com, 2008]

vertically with each zone on a floor

"...providing organisational flexibility, with the option of micro adjustment to create different spaces, learning environments and group sizes"

[www.3xn.dk, 2008].

The architects have reviewed the spatial requirements of a functioning school; the only traditional elements which are still present are the classrooms which have been positioned to the perimeter of the floor plates, *"...therefore the school is experienced as one large room and teaching and individual study, in principle takes place everywhere"* [Selmer: 2007, 151].

The careful positioning of these classrooms has acted as the active generator of the remaining spaces in between. These spaces are used as informal gathering or learning spaces and are *"...supplemented by a series of newly developed room furniture, which accommodate the need for the flexible and temporary room arrangement*

and learning environments required by varying group sizes and needs"



ill.4.41: the x-zone, a large circular void, with the main staircase wrapping around it
Source: [www.flickr.com, 2008]

[www.3xn.dk]. The space needed for these areas in plan [Ill 4.48] seem to be over generous but the openness allows for the flexibility for sizes and encourages the interaction of students and creates spaces which can inspire [www.worldarchitecturenews.com, 2008]. Graves supports these views and states *"...good architects search for new kinds of spaces and special spatial events to relieve the predictable character of classrooms."* [Graves 1993: 9] Selmer states that there many parallels can be drawn between an "office landscape" [Selmer: 2007: 151] and the new approach adopted in this design. This maybe the result of the initial brief as the building would aim to strength the professional capabilities of the students.

The staircase serves as the heart of the college educational and social life; it becomes the primary connection between the floors and therefore becomes the primary virtual connection in the school as it is the place to sit, watch and be seen [Ill 4.40]. This zone is referred to as the *"...X-zone; a spatial expression of the colleges' ambition to promote interdisciplinary expertise between study zones with physical and visual links"* [www.3xn.dk, 2008].

4.5.4 Structure & Materials

The bespoke structure if the building is result of the concept, creating openness and visual linkages between spaces. This approach towards the structure resolution means that each floor has few permanent elements and can be laid out and



ill.4.42: A view of the informal working and socialising areas
Source:[www.worldarchitecturenews.com, 2008]

arranged almost completely at will and therefore allowing for flexibility of spaces [www.3xn.dk]. The “mega columns” are multi-functional as they form the main load bearing system as well as housing the service cores, such as elevators, staircases, toilets and vertical service ducts. The floor plate construction uses large steel I-beams which creates a matrix structure that spans from column to column. The result of the randomly placed columns to achieve the openness and flexibility meant that it impacted on the depth of the floor plates.

The material palette is a limited one, keeping with the Scandinavian style of simple and minimal and textural, comprising mostly of white plaster and paint as the backdrop with a grey polish screed for the floors and humanised surfaces which were touchable with a Scandinavian pine. Accent colours were then added for a dramatic contrast with the glass louvers and seating in the informal study zones.

4.5.5 Services

The college has been referred to as the “Virtual College” [www.3xn.dk] as every student is required to have a laptop when starting at the college and is linked to the wireless internet where ever the student maybe located in the school. The obvious advantage of wireless internet and networking in a school in terms of services is the lack of cabling which has to be dealt with, but Mackenzie states what there are other advantages to wireless, “*Mobility, portability, interaction, ubiquity and*

affordability are all enhanced when signals pass through the air [wireless] rather than through strands of copper or optical fibre” [Sheller: 2006: 137].

The school seems serviceless at first glance, but through investigates of the plans and sections; it shows that the structure and the services have been well integrated. The deep floor plates allow for the services to run through the floors with access panels scattered around on the floors. The deep floor plates allow for the hiding of aircon ducting and as result of experiencing the school as one large room [Ill 4.43] means that the entire school requires air conditioning, which seems to be a compromise for the overall concept of the building. Service ducts have been integrated in the centre of the massive columns, which has been handled in a similar way to the rest of the design, an innovative manner.



ill.4.43: A view of the informal working and socialising areas
Source:[www.worldarchitecturenews.com, 2008]



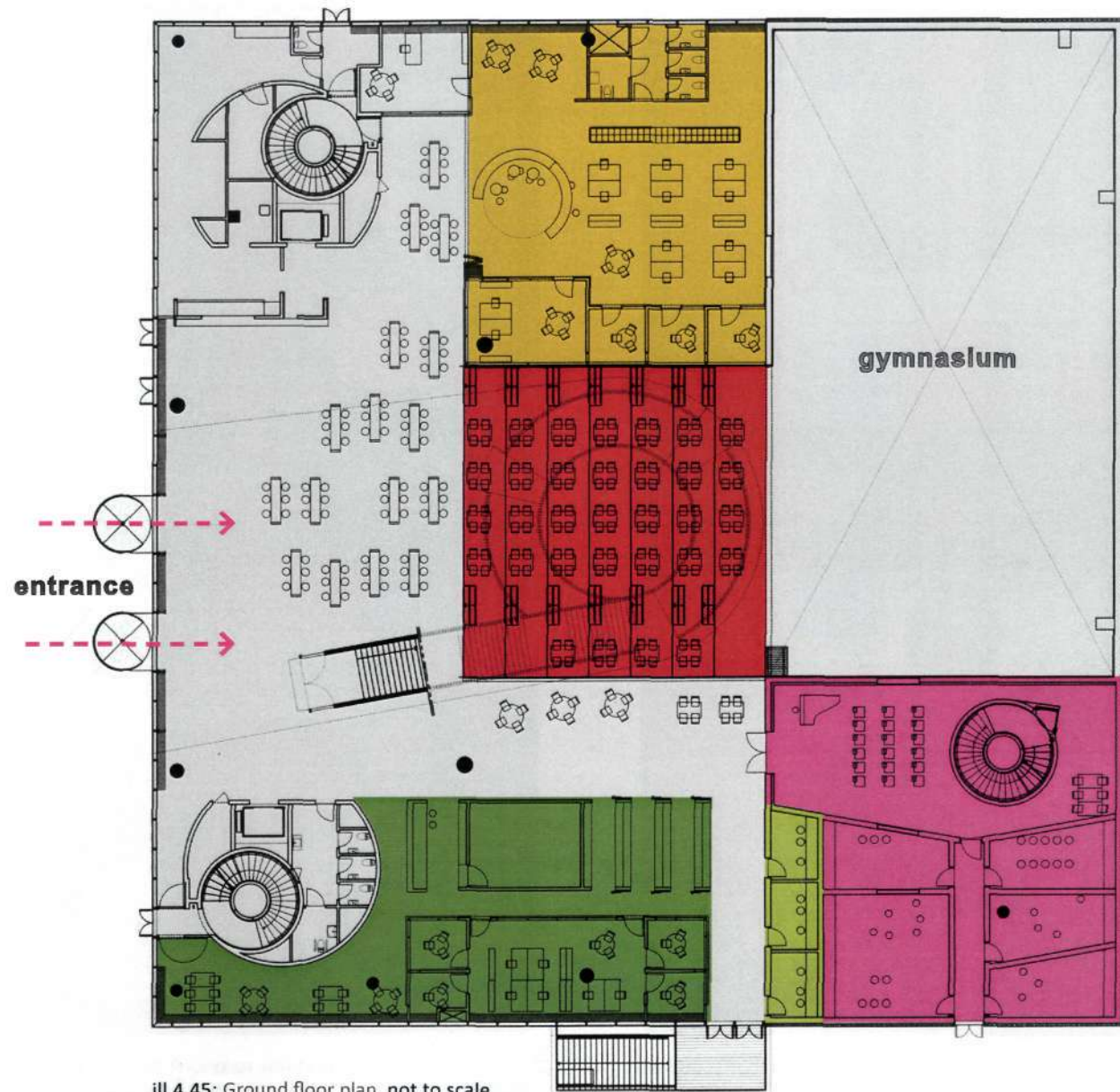
ill.4.44: A view of the informal working and socialising areas
Source:[www.worldarchitecturenews.com, 2008]

4.5. Conclusions towards the design of the School of Digital Arts

- Spaces which are planned to orientate a social environment and promote interdisciplinary interaction, with ample informal space for students to work and interact.
- The use of flexible furniture which can be used to create gradients of activities and generate interesting spaces, conducive to learning. The ability for flexibility developed by the furniture has allowed for teaching to almost happen anywhere. This has been enhanced by the Wi-Fi network, allowing for connectivity from anywhere in the building, meaning that learning continues outside the 'classroom'.
- The comparison with the corporate model has worked well, the freedom of choice which encourages independence and enhances the professional capabilities of the students.
- The Digital Arts school should be placed in a urban environment with a mixture of residential and commercial buildings that prevents the isolation found in this precedent. The building will allow for control engagement to educate the public about digital arts and to promote the students work.

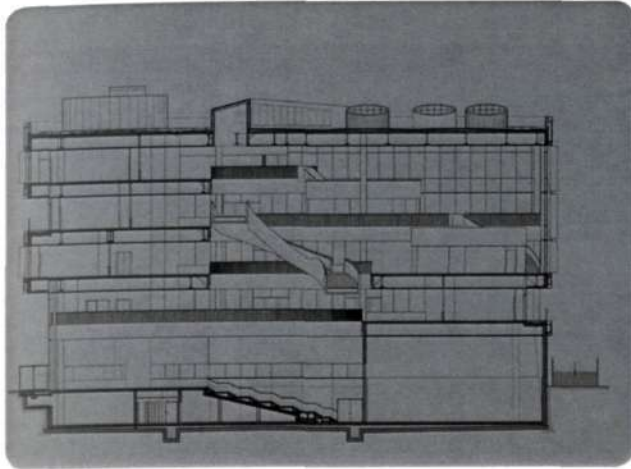
Overall the project is a success as it answers its brief, which called for a building which reinterprets the traditional approach towards school design

and illustrates innovated responses to the issues which will be answered in the proposed Digital Arts School.

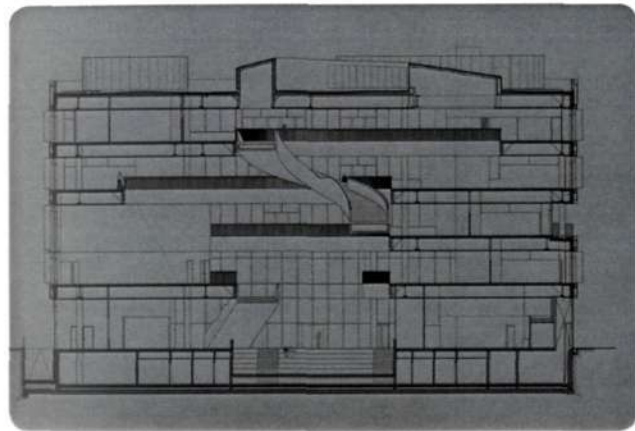


ill.4.45: Ground floor plan. not to scale
 Source:[Cainer, 2007, 96], edited by author

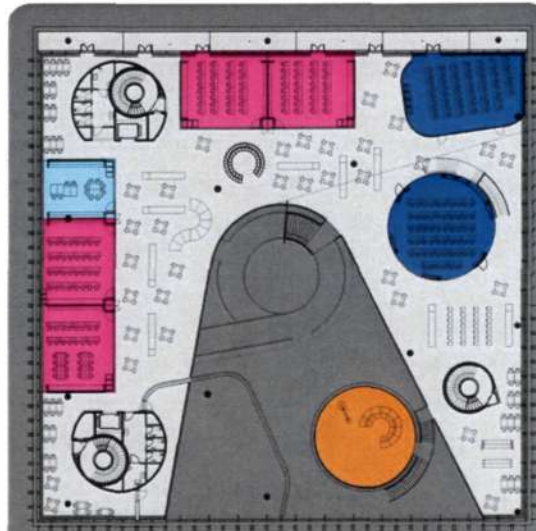
circulation staff area auditorium specialised functions classroom/studio canteen social space administration research/meeting area library



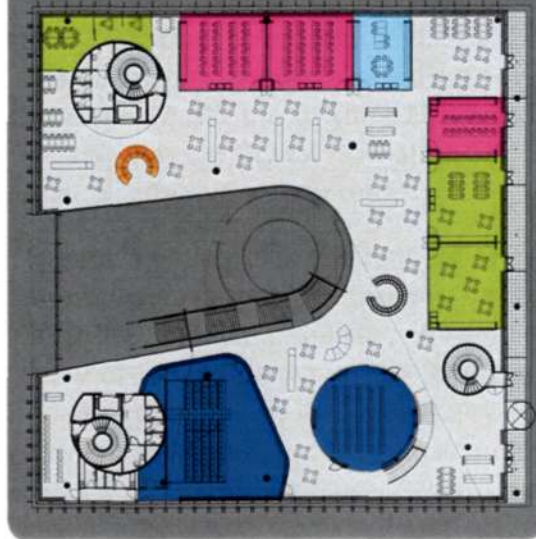
ill.4.46: Section AA. not to scale
Source:(Selmer, 2007:148)



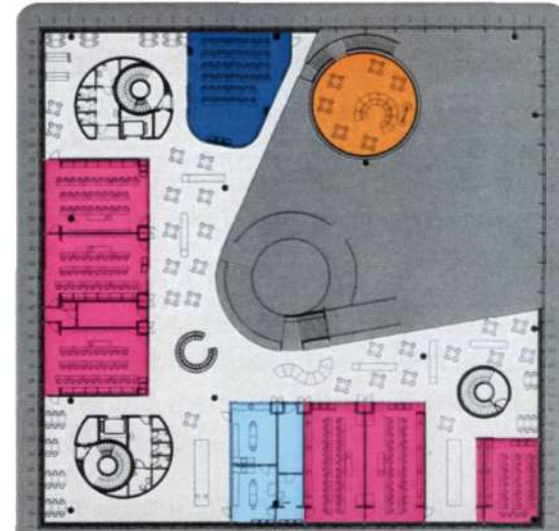
ill.4.47: Section BB, depicting the volume of the central circulation zone with the spiral staircase. not to scale
Source:(Selmer, 2007:148)



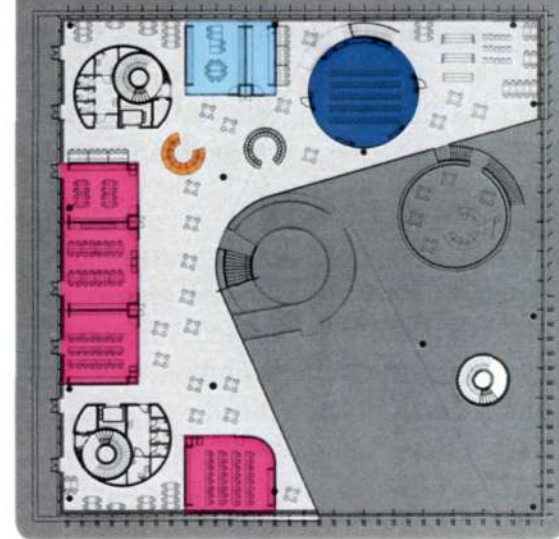
ill.4.49: Second floor plan. not to scale
Source:(Cainer, 2007, 96), edited by author



ill.4.48: First floor plan. not to scale
Source:(Cainer, 2007, 96), edited by author



ill.4.50: Fourth floor plan. not to scale
Source:(Cainer, 2007, 96), edited by author



ill.4.50: Third floor plan. not to scale
Source:(Cainer, 2007, 96), edited by author

Conducting a study into relevant buildings housing art and design education, with similar fields of study is necessary in order to draw conclusions and develop guidelines for the design of a school of digital arts.

The two case studies were selected as they were the most applicable and relevant examples in South Africa. The reason for selecting these examples is that first hand information could be collected through site visits and interviews. The two cases differ vastly and therefore provide a wide range of architectural issues, which can be compared to formulate conclusions.

The first case study was the Wits School of Arts [WSOA]. The school of arts consists of two different buildings which the WSOA moved into in 2002. The main school which accommodates the fine arts, sculpture and photography as well as the administration of the school is situated in the Dentistry Building designed by John Fassler in 1949. The Digital Arts is situated in the old Convent Building which is located adjacent to the Dentistry Building. Both buildings are situated on the main Wits University Campus in Braamfontein. This case study was of particular interest as it is the first of the established tertiary institutions in South Africa which offers courses allowing for a digital arts specialization within the existing Master of Arts (MA) program. They also, as of 2008 are offering specialist degrees in Digital Animation and Interactive Media, therefore the school became a good example to carry out a case study.

The second building is the Faculty of Art, Design and Architecture Building on the University of Johannesburg Auckland Park Campus, designed by Stauch Vorster Architects, in 2005. Through the merging of the old Rand Afrikaans University, Vista University and Technikon Witwatersrand into the University of Johannesburg in 2005, there was a need to house all the vocational and professional [art and design] programs into one faculty and one building. The new faculty building had to address two very important issues; to create an architectural language and style which represented the new university and its new approach towards education and to house the diverse departments within the Faculty, under one roof, to ensure greater interaction, collaboration and cooperation amongst departments [www.uj.ac.za/fada 2008]. This building was important in that it addressed the issues of a multi-disciplinary approach to the building, the grouping of departments and the social and professional interaction which it promotes. In this instance many lessons were learnt through the mistakes in the design of this facility.



5.2 CASE STUDY 001 – Wits School of Arts [WSOA], University of the Witwatersrand

Architect: John Fassler

Location: Braamfontein, Johannesburg

Year: 1949 - 1952



ill.5.01: Entrance to the WSOA Digital Arts Building

The WSOA campus buildings are steeped in history as both buildings were previously designed for other occupants and functions. As mentioned previously the two buildings were the old Dentistry and Convent high school buildings which became vacant and available to WSOA in 2002. The study focussed on the old Convent building as it now houses the Digital Arts department of WSOA and became an significant in analysing the spatial uses of the building and how they were able to renovate the spaces to suit their needs as best as possible. Through discussions of the spaces with various staff members and first hand experiences of the spaces it became clear the space were used as best as possible from the existing structure. The advantage of this process was that the discussions then focused on ideal environment and spatial requirements, which therefore resulted in the formulation of guidelines and conclusions.

5.2.1 Analysis of Siting

Situated on the south east edge of the east campus of Witwatersrand University, the WSOA borders the main road into Johannesburg CBD, Jan Smuts Avenue. The siting of the buildings

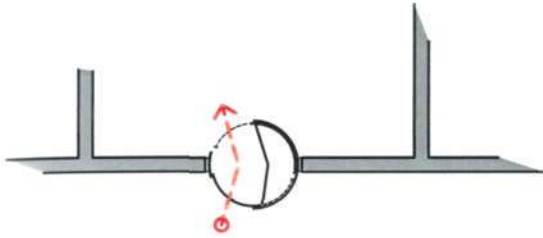
does not have a large role to place in this case study because of two reasons: as the building are existing buildings which are part of the university campus and the school has been inserted into the existing fabric; the develop of campus security has altered the linkages between the campus and the school with the city.

5.2.2 Spatial Arrangement

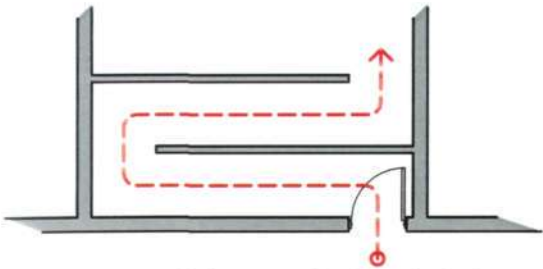
The old two storey Convent building has been renovated to accommodate studios, lecture rooms, photography studio, staff offices and sounds recording studios. The school is orientated around a series of internalised corridors with the photographic studios, sound rooms, and lecture rooms situated on the ground floor and the studios and offices on the first floor.

The Studios

The studios which were reviewed at WSOA were the digital animation and interactive media studios. The nature of the courses in Digital Arts requires a large input from staff members and a strong interaction between student and staff; hence the numbers of students in these classes are limited to between 8 to 12 students



iii.5.02: Existing entrance to the darkroom.



iii.5.03: Recommended entry method into the darkroom.



iii.5.04: A processing room in the WOSA dark room. Requires separate drainage for disposal of chemicals

on average in a class. This has an impact on the spatial and technical requirements of the spaces. The desks have been arranged together in sets of 4, meaning that people are always talking and interacting. Myerson & Ross in their book *The 21st Century Office* refer to this setup as a neighbourly office and state,

“...in the people-centred economy of the 21st century, imaginative new offices are emerging in which social interaction is encouraged rather than frowned on. The neighbourly office is designed as a social landscape to bring people together in a community purpose” [Myerson & Ross 2003:131]

This approach seems to be more appropriate to the creative design environment and it has been used extensively within the advertising, design and architectural firms around the world. In discussions with students at WSOA about the setup of the studios, it was confirmed as their responses were positive towards the neighbourly studio set up. Further discussions revealed the negatives towards their learning space and soon it was evident that these issues were general issues across the school. The need for break away areas was brought up, spaces allowing students to break away from work and to escape to more inviting and relaxed environment, allowing for natural lighting, long vistas and a strong connection with the outdoors, if no outdoor space can be provided. As Clive Wilkinson from Clive Wilkinson Architects states, when being asked about his design on new offices for TBWA/

CHIAT/DAY advertising firm, *“...more attention must be paid to light and flow, so that people have an opportunity to go someplace pleasant and take a break. All the public spaces in the new office are by the windows” [Pearson, 1999:105].*

The Darkroom

The purpose for this chapter is to explore existing cases and to analyse the advantages or disadvantages of certain decisions which other architects have made. Through the discussion with Miss Christopher and the analysing of the WSOA darkroom, it was clear that there were four elements to the design of the darkroom which were important, those being:

- the entrance into the darkroom and the controlling of light,
- the drainage and the handling of chemicals,
- the specialised lighting setup and
- the ventilation of the dark room

The current entrance to the dark room is similar to a revolving door, see illustration 5.02. The problem with this system is that if the entrant does not operate the door correctly, light will be let into the darkroom and therefore possibly destroying any photos, which are in development. The ideal entry into a dark room is a maze-like setup; see in illustration 5.03, therefore allowing the entrant into the darkroom and at the same time preventing light into the space. The other



ill.5.05: The inadequate lighting conditions for a professional photographic studio.



ill.5.06: The photographic studio, which is used as a general teaching space as well. The room is adequate for a studio, yet the specialised requirements are lacking, eg. lighting rigs, etc.

need is for a secondary double door entry, allowing for the movement of large equipment in and out of the darkroom, which is only used for this application [Christopher, 2008].

The drainage of the chemicals is an important issue in the design of a darkroom, there is no separate of chemicals and normal grey water in the WSOA dark room and Christopher stated, that in a time where environment impact is high on the agenda, the contamination of grey water is acceptable and therefore the chemicals should be handled in a separate system to grey water [Christopher, 2008].

The lighting of the darkroom is critical for the quality of the photos being developed, Feininger states

“The illumination of a darkroom must provide for two kinds of light: ordinary or white light for print inspection and cleaning up after work, and coloured safelight for developing and printing.”

[Feininger, 1974]

The specifications of the lighting will be dealt with in the detailed requirements chapter.

As chemicals are used in the darkroom, the ventilation is important, to extract the vapours and to supply fresh air into the space.

The Photographic Studio

An old school classroom has been converted into the photographic studio. The spatial

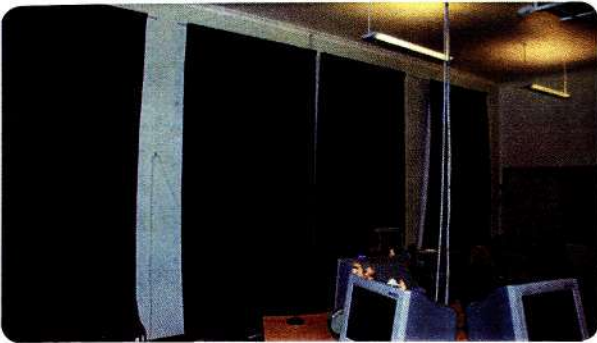
requirements for the room are perfect for a studio as a larger room allows for larger subject matter and scenes to be photographed. In Illustration 5.06 the high ceiling can be seen, which is an important requirement for a photographic studio . The minimum height requirement is 3.5m. This allows for larger angles to be used in the setup of scenes. Although the spatial requirements for the studios are perfect, it’s the equipment and the setup of the space that lacks definition. As a result the room has been used as a multi-purpose space, because of this lack in definition, which is needed in a studio setup. Therefore, but analysing what changes could be made in this space to convert it into a fully functioning photographic studio, one would be able to draw conclusions and guidelines for the design of a photographic studio.

The studio is an important space with props and subject matter needed to be moved in and out the space, both from other rooms in the building as well as from the outside. This is something which was not present at WSOA, as they had a single door as access to the space, with no access to a loading zone which connected to the outside.

The lighting and lighting control is something which could be improved or controlled better. The introduction of black blinds was the means, in which the exterior lighting was controlled. In Illustration 5.05 it can be seen that the blinds do not give the students the opportunity to fully control the lighting conditions within the



ill.5.07: The blacked out windows of the digital arts building, showing the need for controlled lighting in certain areas of the school.



ill.5.08: The cabling is dropped from the ceiling, allowing for flexibility in the studios.



ill.5.09: The clustered setup of desks used in the post-grad animation studios.

space. Therefore the solution may be to have no windows in the space, allowed for the conditions to be dictated with the specialised lighting on lighting rigs.

An infinity curve is the one element which is important for the studio, as it elevates any lines, shadows and depth behind the product or subject matter which is being photographed. In the discussions with Natasha Christopher, Senior Technician of Photography, mentioned that a 180 degree infinity curve would be the ideal setup, and the ability to accommodate larger scene setups.

5.3.3 Materials and Structural System

The building is constructed from load bearing brick as the building is only two storeys tall, with concrete floor slabs. The structural resolution is a simple one, as the building was a convent high school before. The materials are hard wearing for the school and have aged well.

5.3.4 Environmental Performance

When it comes to strategies to reduce the building's environmental impact, the Digital Arts building does not perform well. It is result of the building not being a purpose design structure. Many rooms which are positioned on the north facade of the building were probably classrooms receiving north light. These have been changed in the studios and can be seen in Illustration 5.07 that all the windows have been covered with blinds to reduce the direct lighting in to the

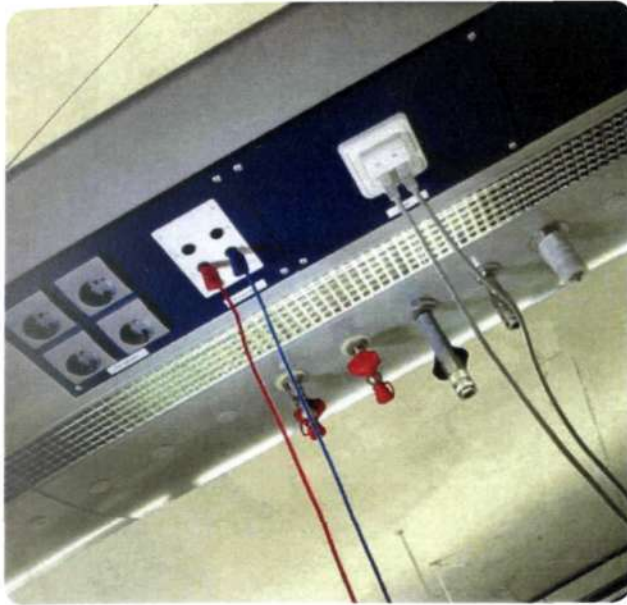
spaces.

5.3.5 Services

There was no choice in the network configuration when it came to the Digital Arts building as they were dealing with an existing structure. The cables were run upwards in to ceiling places and holes were drilled into walls in order to connect certain studios. The cables are then dropped through the ceiling to a grouping of desks, seen in Illustration 5.08. Angus Davidson, the Network and Laboratory Manager of the Digital Arts School describes the configuration as being a make-shift configuration and yet in saying this, because of the size of the building is working well [Davidson, 2008]. Central to the system is the LAN Managers office and server room where the administration of the system is handled. "It is important that all the servers and network points are situated in one place, as it becomes much easier to control and administrate", [Davidson, 2008]. The setup which is being used it very successful in this case, but it is questionable when applied to a larger situation where the school is separated into departments.

"A one gig network is an absolutely minimum, as they students are working with huge file sizes and need to access them as quickly as possible from anywhere in the school" [Davidson, 2008]

The quote above refers to the speed of the network, which connects the computers to the central server. The high speed network allows



ill.5.10: The service carrier running above the workbench has easy connects / disconnects allowing for flexibility of the room setup.

Source: [Waldner Firmengruppe: n.d., 36]

for students to have individual storage space on the server for the storage of the larger files, this is crucial as there is no ownership over singular computers as they are shared amongst the class. Another area of the services that is a necessity is electrical points for the computers. The studios have been fitted with power skirting around the room, for easy access to power if the computers were laid out around the perimeters of the room. As seen in Illustration 5.09 the layout of the computer stations are in groups which is a contradictory decision when considering the addition of power skirting. The ideal situation may be to have an exposed services approach where the cables and power run along cages attached to the ceiling which allows for flexibility in the spaces, allowing for cables to be dropped to a work station. This approach has been used in many research laboratories, seen in Illustration 5.10.

5.3.6 Conclusion

In this case it is difficult to determine the successfulness of the case study, as the school has been housed in an existing structure. It is possible in a case like this; to glean some recommendations from the weakness of the examined design.

Studios

- The sizes of the classes are relatively small, as result of the high interaction needed between students and staff

- Open plan studio setup is beneficial to the interactive process of design. Creating a social landscape
- Close connection between studios and a student break away areas are necessary, connection to the outdoors is encouraged
- Projection facilities are required in all studios, allowing studios to hold crits sessions and review students work
- Natural lighting and ventilation is required in all studios
- Flexibility is key to any teaching space

The Photographic Studio

- No windows or openings in the studio, allowing for total control of lighting conditions
- Minimum ceiling heights of 5m is required with the use of a lighting rig
- 180 degree infinity curve is needed, meaning that larger angled photos can be taken

Other Note Worthy Points

- Well coordinated network design, which is able adapt to the flexible studios
- The need of a central design element, which the design is base around and therefore connects the school, creating interaction and spirit with the proposed school



5.3 STUDY 002 - Faculty of Art, Design and Architecture Building [FADA], Bantus Road Campus, University of Johannesburg

Architect: Stauch Vorster Architects

Location: Auckland Park, Johannesburg

Year: 2006

The FADA building was brought about by a lengthy amalgamation process, the formation of the University of Johannesburg was finally realized by the merging of the Rand Afrikaans University and Technikon Witwatersrand. It soon became evident that a new centralised campus was required to regroup the physically dispersed facilities which existed around the Johannesburg CBD, [Soskin 2006].

The decision was taken to commission a design which houses the creative departments, consisting of architecture, interior design, clothing design, multi-media, industrial design, ceramics, graphic design and jewelry design. The result was a three storey, 17 000m² building which could accommodate 2 000 students in a holistic campus building in Auckland Park [Soskin, 2006].

longer being utilised. Through a number of land trades, the area, including two street reserves, were consolidated into one large site for the new campus [Soskin, 2006].

The site is situated along a main arterial route which links the surrounding suburbs to the CBD. The main road, Annet Road rises up as you approach the building revealing the industrial façade to the public. The Building is very prominent on the site, because of the elevation of the building over its surroundings [Illustration 5.11].

The building is orientated towards the north-east to address the road allowing for a strong connection and transparency between the activities in the studios and the fast moving traffic, this is facilitated by the use of large amounts of sun controlled glazing [Illustration 5.12].

The immediate surrounds create a very dynamic site, with a definite 'design district' developing in the Auckland Park area with SABC studios, AFDA Film and Drama School and many other design disciplines in the area. [Soskin, 2006]



ill.5.11 FADA from the road, showing its dominance over the site



ill.5.12 north east facade with the sun control devices for the studios

5.3.1 Analysis of Siting



ill.5.13: The Industrial design department display, situated near the entrance of the building, show casing the work produced by the students, encouraging multi-disciplinary interaction.

5.3.2 Spatial Arrangement

The FADA building is based on a centralised concept, where pods of studio space which are separated into autonomous departments are grouped around the atrium. This space acts as a multi-purpose circulation centre, where ramps and stairs link the three floors of the building. The original proposal for the design was a large open plan studio-type spaces where students from different courses were able to share a common studio space [Crewe-Brown, 2008]. However, this concept had differing reactions from the client and soon became clear that a departmental approach, where each department remained autonomous, may have been the solution. This naturally complicated the brief with the eight departments requiring their own space within one building in such a way so as to present the faculty as one unified whole, while still maintaining the identities of the individual departments within [Soskin, 2006].

“Space planning for this building took six months and our solution allows for some sharing of spaces, such as lecture rooms, tutorials and workshop areas, as well as the auditorium and libraries, but essentially, each department has the home they needed”

[Crewe-Brown, 2008]

Crewe-Brown describes the rationale for this decision as for the department to remain autonomous and yet work together.

The Atrium

The triple volume atrium has been termed as the heart of the building. *“The internal atrium is surrounded by a two meter wide inward cantilevered concrete ramp system supported only by circular perimeter columns restrained by the ‘two wings of the building’”* [Crewe-Brown, 2008].

The space is commanded by two concrete and glass pods [Illustration 5.14] which protrude into the vast atrium space. The pods are designed as meeting spaces for students and “function aesthetically as ‘pop out’ box elements. They are illuminated at night and are completely transparent yet private spaces.

The large floor area of the atrium is a multi-functional exhibition space used for fashion shows, art displays and exhibits. The ramp system doubles up to create interesting views platforms for the happenings below.

The atrium definitely deserves the name of ‘the heart of the building’ as it creates that dynamic and light inspirational space which a creative environment benefits from. The space had always presented to be a problem to the clients funders, which were very involved in the design process. The funders questioned the value of the space, as the atrium comprises of a large portion of the buildings size [Edwards, 2008]. Consequently the space has had a large part to play in the success of the building and therefore is money well spent.



ill.5.14: The glass and concrete meeting pods which command the central atrium space

However there are elements in the space which are questionable, such as the multi-functionality of the floor space in the atrium and the final execution of the pods.

In the visit of the building the atrium space was laying empty which maybe a result of a few factors; the building is entered at first floor level, minimising the amount of student traffic through the space, the social spaces such as the canteen and smoking balcony occur at the entrance of the building. The central atrium space was termed as a multi-functional space and although it very successful in the hosting of cultural events, it is seen that the space has been underutilised. Better planning of the building, could have lead to a very 'funky' and sociable space, when the addition of a small coffee/sandwich bar.

The concept of the concrete pods meeting spaces [Illustration 5.14] are an inventive one, which are successfully used by students constantly. Although the pods command the space successfully, the size of the pods is questioned. When compared to the way in which Henning Larsen used the similar idea of pod meeting rooms in the IT University of Copenhagen, the heaviness of the FADA concrete pods is realised. Larsen has handled the elements as light weight cantilevering pods which hang in the atrium space and create an interesting dynamic, where as Stauch Vorster was not able to achieve the lightness of the structures as they are connected to the ramps and therefore a cantilever may not be possible.



ill.5.15: A Multi-media LAN on the top floor, showing the additional blinds which have been installed to reduce the amount of glare experienced on the monitors.

The Studios and Computer Rooms

The studios, computer rooms and workshops make up the majority of the building, which are separated into the two wings. The decision was taken to the space of the building into departments and yet the aim of the architects was to encourage interaction between students from different departments through the design of the spaces. The idea of students influences other students work through the embrace of a multi-disciplinary building. The planning of department displays throughout the building was an idea from the architects, which show cases the work of the students. It is this constant connection with different images, artwork and activity throughout the building which creates a positive atmosphere within the building.

In the literature study before, Graves highlighted the concept of flexibility within a school and the success of the school of time, will be in its ability to adapt. The column grid, dry walling and the clever design of the saw tooth gutters, allow for this flexibility, yet the downside to the flexibility is that in some situations the fundamentals of certain spaces were neglected, for the flexibility of the space. The computer rooms of graphic design and multi-media are just example of these spaces, where the saw tooth roofs ran above the spaces, creating huge amounts of glare on the monitors in the space. Efforts have been made to install binds, yet it has not fixed the problem completely. Maybe through better spatial arrangement this problem may have alleviated.



ill.5.16: A view of a typical staff room setup at FADA, with the staff cellular offices surrounding a central meeting space.



ill.5.17 & 5.18: Showing the interior & exterior form of the circular shaped auditorium.

The Staff Areas

The student/staff hierarchy in a school of this nature becomes an important issue and the can be influenced by the decisions made it the design process. In this case study the building has a strong impact of this hierarchy, forming a very structure relationship. As a result there is a split between management and teaching staff. The setup of the teaching staff areas which was the interesting one, where a cellular office is shared between two staff members. The members of staff maybe from different departments, and as result of this collaboration, lectures have been combining design briefs between two classes from different departments, re-enforcing the interactive and multi-disciplinary approach.

5.3.3 The Specialised Facilities

The Auditorium

In a school of digital arts, the auditorium would be used to show case the schools work and therefore becomes an important part for the success of the school. In the FADA building it becomes perhaps one of the most impressive features, both internally and externally.

"Externally, the building has been designed to reflect the iconic and massive Gas Works cylinders across the road and is clad industrially in zinc alum sheeting." [Soskin, 2006]

Internally the auditorium seats 260 people and becomes a very interesting space because of

the circular shape. The audio visual equipment and capabilities of the space were important, as the auditorium would become the show case for many of the departments, especially for Multi-Media. Edwards setup the AV system and said that he was restricted in the purchasing of the equipment, yet the setup is still impressive. The space features a 3 projector setup with a 3 large projector surfaces, critical for graphic presentations and lectures, with a 7.2 surrounds sound system and a sophisticated microphone setup. Although the setup is impressive, Edwards stated that they would have liked a bigger curved projector wall with a specialised high power projector, capable of projecting onto a curve surface, *"....it would have been amazing to watch the student's animations and work on a huge screen, similar to an Imax installation...."* [Edwards, 2008]

The auditorium has been a success in the building, as many corporate's are hiring the space for presentations and award ceremonies. The success of the space is the link between the auditorium and multi-functional foyer space, which can be set up for snacks and drinks for a function.

Lecture Rooms

There are four lecture rooms which are located above the auditorium and are grouped together to create a zone. The courses are limited to smaller classes and therefore there is no need for raked lecture venues, but rather a seminar room



iii.5.19: A lecture/seminar venue with natural lighting and ventilation.



iii.5.20: The Green-screen room showing the infinity curve painted in green and the black blinds attempting to block out the light from the clear storey windows.

setup which can accommodate a maximum of 50 people. There are two 50 seater and two 30 seater lecture rooms. The time table is coordinated for the use of these places and according to Edwards, the setup is functioning perfectly. All the lecture venues are equipped with AV equipment and projectors. Two are the venues are air conditioned and two are naturally ventilated.

The Green-screen/Photo Studio

The decrease of the initial budget was felt in the specialised facilities; it was evident that the green-screen room was one of the effected spaces. The green-screen room doubles up as the photography studio, which is not perfect as the infinity curve background has been painted green to create the green screen and as result all photos taken in the space have a green reflection to them. Edwards mentioned that originally it was planned to have a green-screen and photo studio, yet the budget and the need for addition space, did not allow for it.

In terms of the basic requirements for a green-screen room, it is not adequate. The room is situated on the third floor, restricting the size of anything to be filmed or photographed. The room therefore should be situated with access to a loading bay, with a large sliding door allowing for easy movement of equipment. A loading area should be a requirement, allowing for the quick storage of props. As the room was situated on the third floor, the ceiling heights were decreased by

the timber trusses of the saw tooth roof, which presented two problems; restricting the filmable area and limiting the lighting equipment, to floor stand equipment and because of the saw tooth roof, there are clear storey windows in the space, therefore making the total control of the lighting conditions nearly impossible. All the windows were fitted with black roll down blinds, however to not totally black out the room. The idea environment would require a space in which the lighting conditions can be totally controlled and floor to ceiling space as at least 3.5m to allow for lighting rigs. Although there was an infinity curve installed into the space, it was a basic setup with only a floor to wall curve.

Sound Recording Rooms

The sound recording room forms a part of the multi-media department and is an important part of the animation process. It was another room which was restricted by the decreased budget. Edwards, Head of the Multi-Media department describes the space as adequate, as a professionally setup sound recording room would rival the total cost of the building.

"The ideal setup would be a separate sound proof recording room, with double glazing and a sound proof door. The space would have a special low audio air conditioning for the space, allowing for broadcast quality recording...."
[Edwards, 2008].

As the space is used for voice and sounds



ill.5.21: A view of the basic sound recording facilities and the lack of any acoustic insulation in the space.



ill.5.22: A photo taken in the photographic studio which illustrated the fixed vents. This presents a problem in terms of the climate, on cold days the studio becomes too cold to work in.

effect recordings, it is not necessary for a large recording studio for instruments, yet the studios could be used to generate income and therefore this option must be taken into account.

5.3.4 Materials and Structural System

The combination of the materials and structural design, from the exterior one is confronted with an image which successfully reflects the industrial nature of its surroundings. This relationship with the buildings surrounding was carried through and becomes the main concept for the choice of materials and colours and finally for the whole building.

This was demonstrated with the palette of materials and colours which were kept to a minimum, using materials such as off shutter concrete, glass, structural timber, galvanised and painted steel and high gloss epoxy floor screeds. The choice of simple raw materials creates a blank canvas feel to the building and therefore provides a backdrop for the students to leave their marks on.

Due to the industrial architectural style, as much of the structure as possible is left exposed. The result is that the structure created a major proportion of the aesthetic. The building can be split into two wings which are connected by the central atrium. The two wings are constructed with concrete frame structure with a 'clip-on' steel structure for the atrium. The simple and economical construction approach is an

appropriate for an educational building, allowing for future flexibility. Although the column grid does not allow for column free studio spaces, the spaces have been well designed to accommodate and does not inhibit the spaces. In the upper studios and workshops a multiple of saw tooth roofs are connected by a series of concrete gutter beams, hence the reason for the essential column grid through the spaces.

5.3.5 Environmental Performance

Sustainability was a major consideration in the designing of the building from the outset. To reduce the running costs of the building through the reduction of unnecessary air conditioning and the implementation of a forced-ventilation system and the increase of natural lighting into the studio spaces.

The air conditioning was restricted and confined to the auditorium, lecture rooms and computer rooms, and the other spaces used the forced-ventilation system. Although the attempts were made to lower the environmental impact through this system, it has not been as successful as hoped. Through discussions with Mr Marc Edwards, who stated that the system was working, yet the spaces were about 5 degrees too hot in summer and about 10 degrees too cold in winter. Edwards stated that they were in the process of spending another R4 million on the upgrading of the air conditioning system. Johannesburg experiences large temperature differences and this might be the reason of the system not working as well as



iii.5.23: The large air-con ducts which have been exposed and service the studios, creating a mechanical cross ventilation through the studios.



iii.5.24: The cabling system which has been employed throughout the school, continuing with the industrial concept by exposing all the "nuts and bolts" of the school.

expected, a similar system might be better suited for Durban conditions.

The use of natural lighting can be seen throughout the building. Creative student require large amounts of natural light, which is provided by the inclusion of massive sun screened windows and industrial-look saw tooth roofs [Soskin, 2006]. The saw tooth roofs allow the light to flood into the studio spaces and therefore create enough natural lighting, that the artificial lighting is only necessary during the evening and nights. The studios below receive light through the large glazed pop-out boxes which are controlled by the innovative suncreening. Mentis Rectagrid, an industrial flooring material has been used as the sun control devices and has mainly been installed on the north facade of the building, reducing the solar gain within the spaces.

5.3.6 Services

The services played a role in furthering the concept of the industrial building, by exposing all the services to provide the students the opportunity to view the internal workings of the building. In Illustration 5.23 the large service ducts can be seen which are used to extract air from the studios and therefore promoting forced cross ventilation through the spaces, as mentioned above.

In a school of digital arts, where all the work produced is with the aid of computers, the connectivity is a crucial to the functioning of

the school. The need of high speed network connections between different computers is extenuated by the large file sizes which are needed when working with graphics or video. The building responded to the problem by grouping the majority of the computer orientated studios and LAN's to the north side of the building and then placing a server room centrally on each floor on the north side which were directly above each other. Due to the fact that the server room requires continual air conditioning and humidity control, the decision to have a server room on each floor becomes an expensive one. The best approach would be to have a centralised server room where the entire system can be monitored from one climate controlled room and network switches placed in the major computer rooms on each floor.

The cables are handled by a series of suspended cages [Illustration 5.24] which contain not only networking cables, but cables for lighting, power, AV systems and security systems. The entire school is then connected by a grid of cable cages which run through the building, therefore allowing for flexibility of spaces.

Conclusion

In South Africa's tertiary institutions, there seems to be a trend developing with the grouping of art and design related departments or schools into one building. The FADA building is probably the first purpose built art and design faculty built in the last few years in South Africa. This particular case study has presented many advantages of this amalgamation.

The building holds a notion of the design factory which has been reflected through the choice of materials and finishes, to the spatial organisation of its parts. The autonomous departments or art mediums work together to create this factory, which is underpinned with concepts such as interaction, multi-functionality and interdisciplinary.

The building not only makes a strong visual statement, but provides the students with both a versatile learning tool and a source of inspiration. Although the design has been a success many recommendations and conclusions can be drawn from it, one wonders if the initial open-plan studio approach to the design would have created a more dynamic result. Breaking away from the fairly rigid departmental layout of the design and in doing so encouraging and developing a more professional and responsible attitude from the students.

The following recommendations and conclusions towards the proposed design of a School of Digital

Arts for Durban have been deduced through the analysis of this case study:

Studios

- Interaction to be encouraged through the use of open plan studios with the use of breakaway study areas
- Studios must be flexible and lighting and ventilation must be analysed for each particular subject and need.

Auditorium

- There are opportunities to generate income in the proposed design through the hiring of the auditorium to outside corporate and organisations and therefore position of the auditorium is important
- The audio-visual equipment should be state of the art in order to showcase the students work

Green-Screen/ Photographic Studio

- Separate studios are required, because of the green painted infinity curve needed for the filming of animations
- Both studios, the lighting is to be totally controllable and therefore no windows or openings are suggested
- Lighting rigs and a lighting/equipment control room is required in both studios

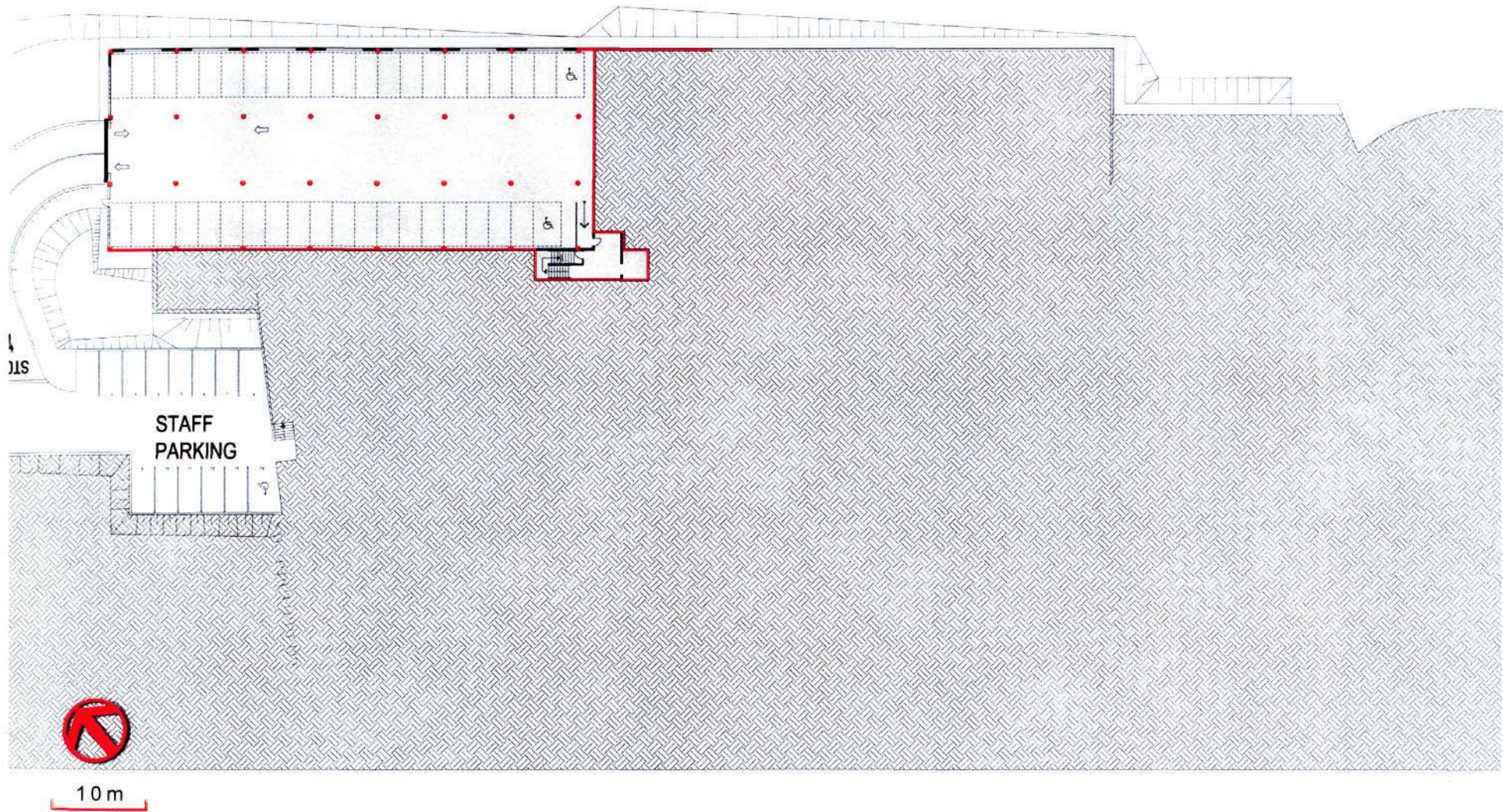
- Large doors should be installed to allow for the easy movement of equipment and studios should be situated close to a loading bay and prop storage area.
- The approach of a staff hierarchy should be analysed and the proposed design should look to facilitate this process

Sound Recording Studio

- Studio must consist of a recording room and a control room
- Studio must be acoustically protected
- A raised floor for services is required for the ease of access to the electronic cables
- Double glazing and acoustically sealed doors are needed
- The studio should be grouped with other acoustically protected spaces
- Security and access to the proposed design is to be analysed, as the school will be a private institution and therefore the approach of campus security seen in this case study will be applicable

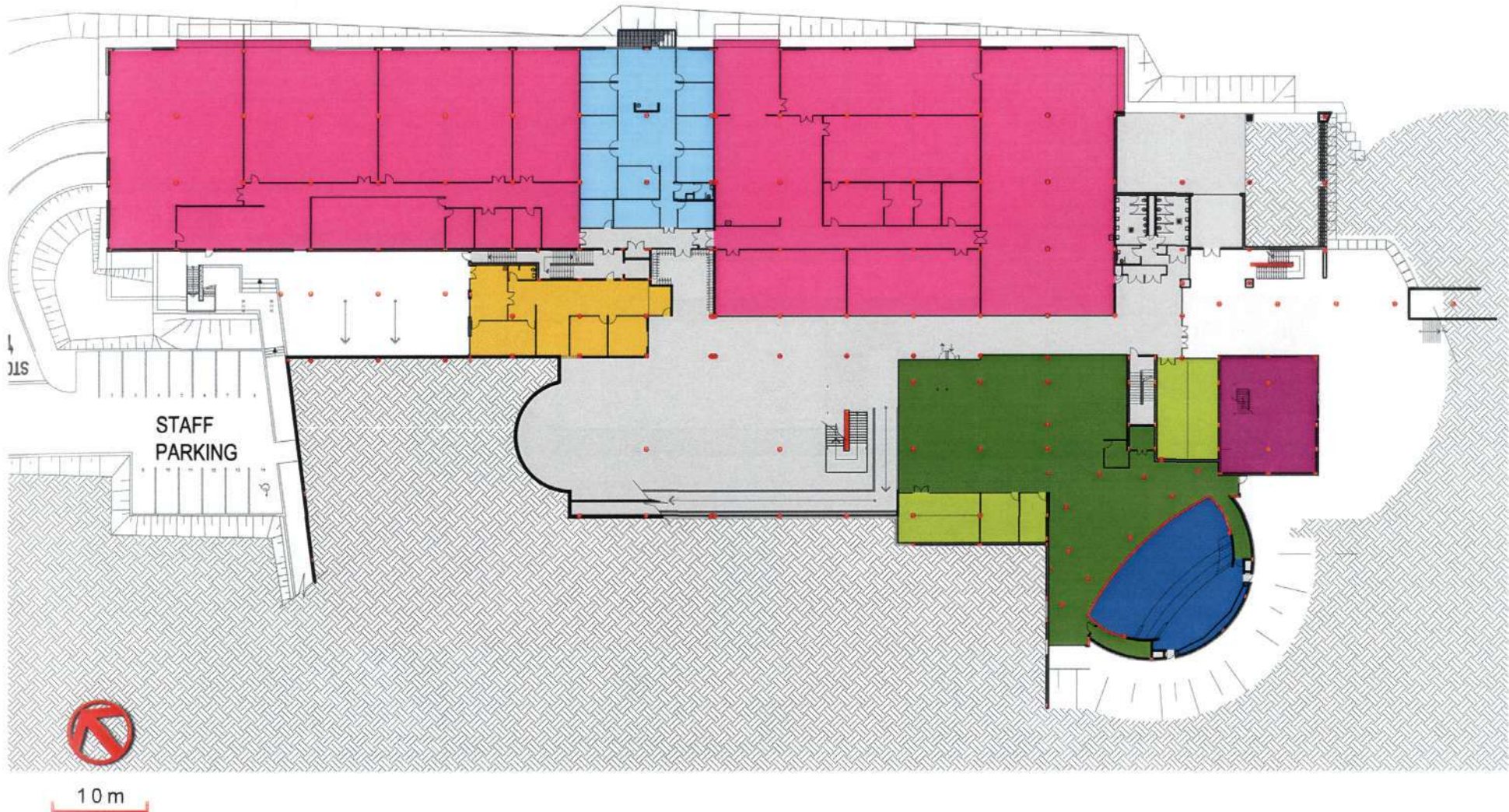
Other Note Worthy Points

- Strong connection to outdoor areas
- A large exhibition area/gallery is important to encourage public viewing of the work and therefore should be located in a secure and accessible location
- The proposed design should look to reduce artificial lighting and mechanical ventilation and encourage natural day lighting and cross ventilation where possible.
- All spaces which require mechanical ventilation should be grouped together



ill 5.25: Basement floor plan
 Source: Stauch Vorster Architects, edited by author

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**



ill 5.26: Ground floor plan

Source: Stauch Vorster Architects, edited by author

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**



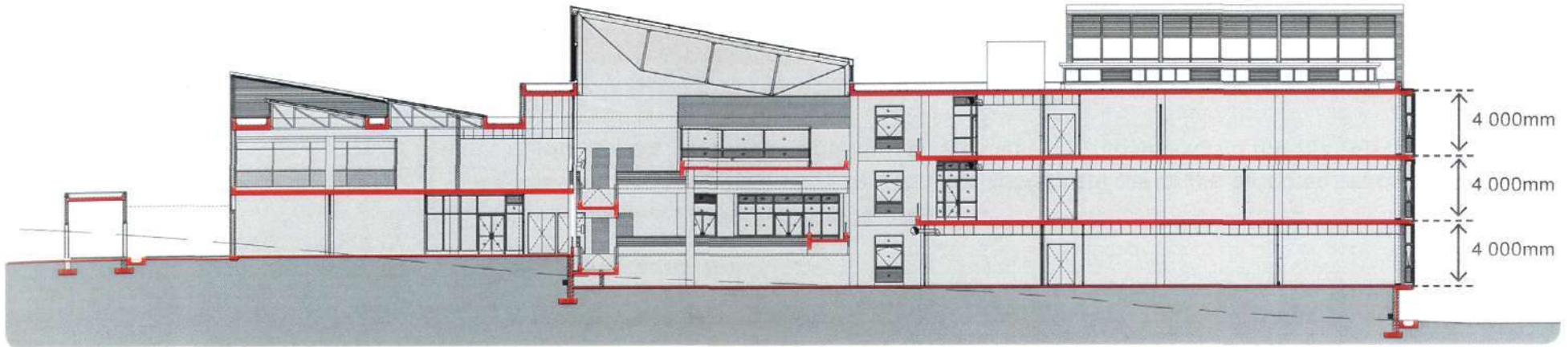
ill 5.27: First floor plan
 Source: Stauch Vorster Architect, edited by author

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**

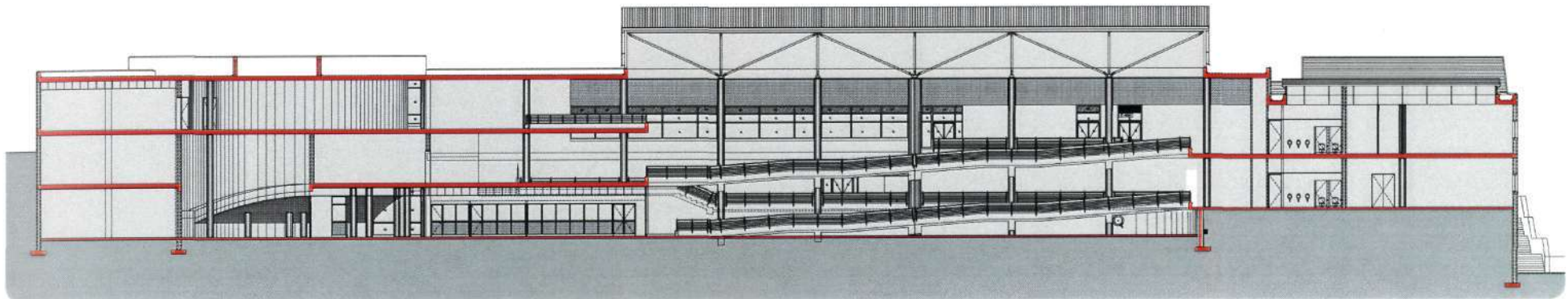


ill 5.28: Second floor plan
 Source: Stauch Vorster Architects, edited by author

circulation **staff area** **auditorium** **specialised functions** **classroom/studio** **canteen** **social space** **administration** **research/meeting area** **library**



ill 5.29: Section AA, cut through the central atrium. Showing the building steps down the site towards the road.
Source: Stauch Vorster Architects, edited by author



ill 5.31: Section BB, displaying the vast size of the atrium, with the series of ramps which link all the floors.
Source: Stauch Vorster Architects, edited by author

This chapter will briefly describe the study area of Durban, explain the site selection criteria and analyse the three potential sites. The most appropriate site of the proposed School of Digital Arts will then be chosen. The three sites are:

- The Former Drive-In Site
- Montpelier/Florida Rd Site
- Argyle/Montpelier Rd Site



6.1.1 Context

The sites are all situated in close proximity from one another, just north of the Durban CBD seen in illustration 6.01. The city is trying to encourage the development and densification of the CBD and surrounding areas, reducing the development of green-field sites and sprawling of the CBD. All three sites are situated in this zone. Being close to the CBD means that they are easily accessible, surrounded by major transport routes.

6.1.2 Criteria for Analysis

These sites will be analysed under certain criteria in order to establish its appropriateness for the development of a digital arts school. Each criterion is used to examine how the site responds to specific requirements and needs for the school. These criteria are:

- Access
- Public Transport
- Public Exposure
- Relationship with other media/art related facilities
- Surrounding context

Access

This criterion will analyse the ability to enter the site from the surrounding roads. The influence of the road network and the traffic levels and speeds

around the site will be part of the analysis. The other part of this criterion is the ease of access to the site via the main road networks from different parts of the greater Durban area.

Public Transport

With the energy and oil crisis affecting the country, public transport has to go to play a larger role in the future of transport in Durban and South Africa. With this in mind, the public transport systems around the areas of the sites need to be assessed, to determine whether the site is accessible for everyone concerned.

Public Exposure

The nature of a school which is dealing with media related issues means that the more exposure the school receives the better. Brand Communication plays a huge role in the positioning of the building and the sites will be analysed to determine their value in this regard.

Relationship with other media/art related facilities

The grouping of many similar related facilities have a positive impact on the school, the students and that specific area of Durban. The grouping of these facilities will develop an "arty" district; these districts are well known for social environments and have a positive impact on the students because of the interaction it generates. The connection between the school/students and nearby industry is a positive one.

Surrounding context

The surrounding context refers to the aesthetical value of the surrounding environments and buildings. The surrounding buildings are important to the development of the school as they generate an urban context in which the building can respond.

6.2 THE FORMER DRIVE-IN SITE

6.2.1 Site Description

Site is situated on a brown field site, a piece of left over land from the old Durban Drive-In. The site is positioned between three major zones of Durban, the CBD, the Golden Mile [the beach front] and the Kingspark sporting complex.

6.2.2 Advantages

- The site is North/South facing
- The site is in a prominent position with many main transport routes passing the site, therefore giving the site larger exposure to the moving traffic
- The site is walking distance from the Playfair Rd stop for the new Durban People Mover [See Appendix 01]
- The site is adjacent to the start/end of the M4 highway which allows the school to act

as a gateway to the C.B.D of Durban from the north

- The close connection to the site of the much talked about **The Proposed Durban Film City** presents a link between of education and industry, allowing for the possibility of sharing of the specialised facilities and expertise
- The site situated in the area of Durban which is referred to as the Golden Mile, this together with possibilities of the Durban Film City and Sun Coast Casino means that there will be larger exposure to the school

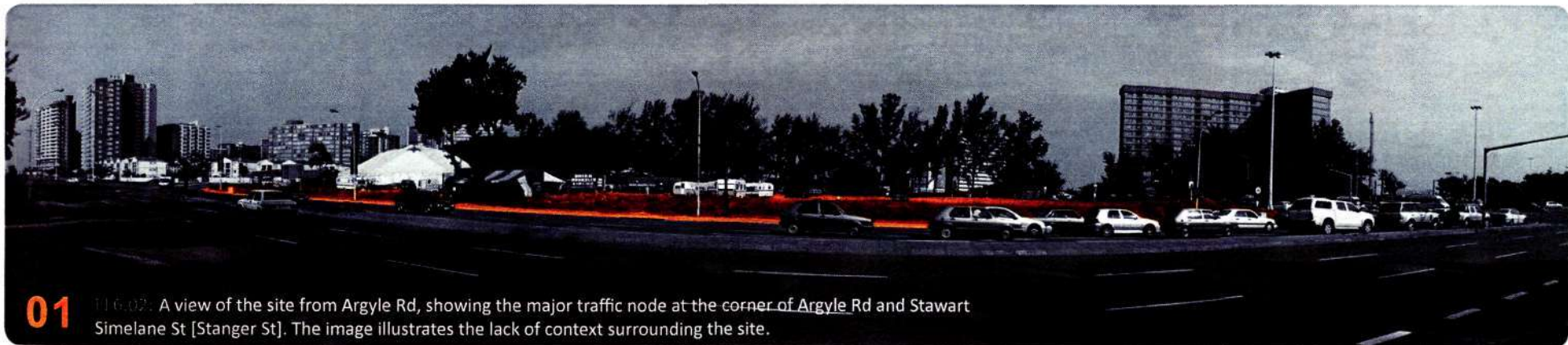
6.2.3 Disadvantages

- With it being surrounded by main transport routes, physical access to the site becomes a major traffic problem
- Architecturally the site is an island site, that there is nothing to response to and therefore becomes isolated.

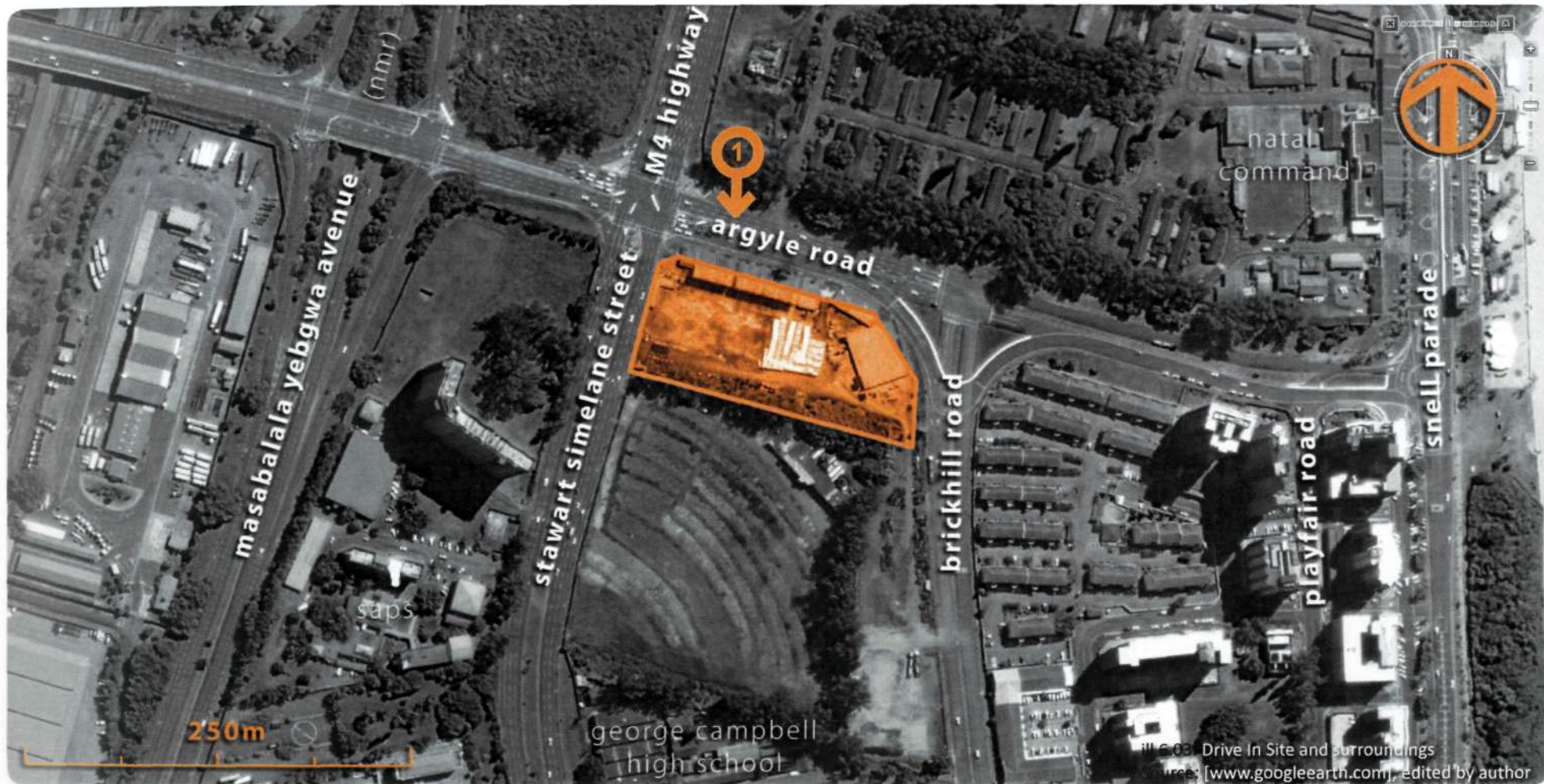
- Unfriendly pedestrian environment
- If The Proposed Durban Film City does not go ahead, there is relation to any art or media related facility in the surrounding area

6.2.4 Overall Assessment

Overall this site would be conducive to the development of the proposed school because of the position in terms of transport and its exposure to the moving traffic. Yet if the development of the Proposed Durban Film City falls through, the site becomes isolated from any kind of art/media related facility. The success of proposed *School of Digital Arts* on this site is too reliant on the Durban Film City and therefore the site is inadequate.



Factors	Rating	Description
Access	3	situated at the intersection of M4 and Argyle Road - accessible from all areas of Durban
Public Transport	3	new People Mover stops at Playfair Road [see appendix 01]/close proximity to Durban train station
Public Exposure	3	three busy transport routes passing the site
Relationship with other media/art related facilities	0	no relation with any art/media related facility
Surrounding context	0	if Film City does not happen, the site becomes an island with no context to work with
Total	9	



6.3 MONTPELIER/FLORIDA RD SITE

6.3.1 Site Description

The site chosen within the Florida Road precinct has great potential for development. It is situated to the south part of Florida Road referred to as the St Mary's Square, on a vacant site which is a park at the moment.

6.3.2 Advantages

- This part of Florida Road has the greater development potential as there are still many road facing residential houses which can be converted or developed
- The site is part of the pedestrian friendly zone of Florida Road, which has become the social district of Durban
- Already an art culture developing in the road with two galleries present

- There is opportunity for the building to act as the gateway into the Florida Road Precinct from the south

- Great opportunity for an urban design framework for the area, the southern region of Florida Road as result of many undeveloped residential properties

- The accessibility to the site and the proximity to industry in the Stamfordhill/Windermere Road area is a clear advantage to the site

- Situated on a public transport route and commuting distance from Durban Station

- Situated in a diverse context

6.3.3 Disadvantages

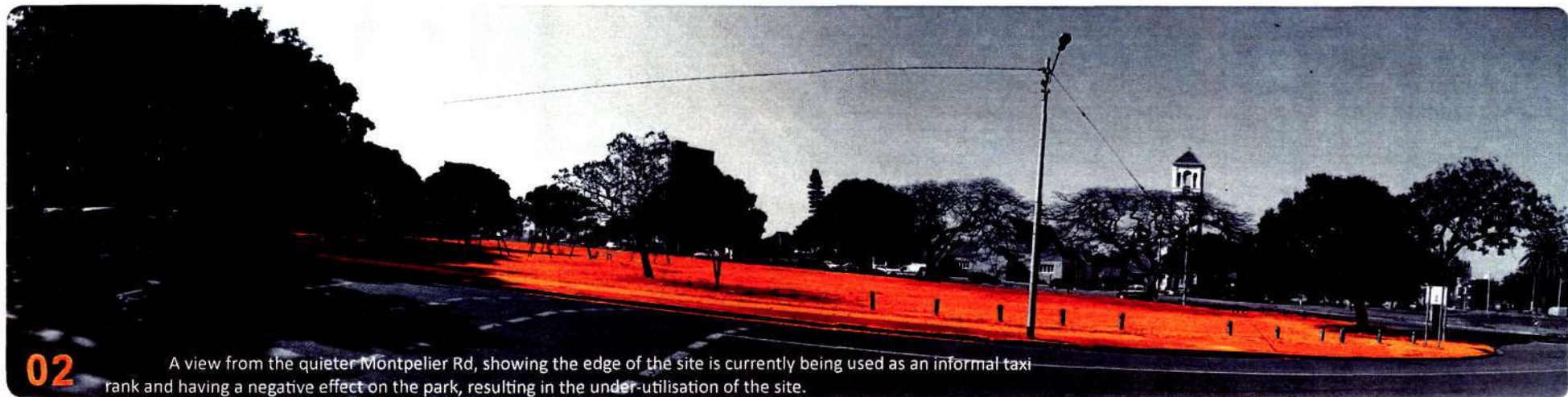
- Slender site with east/west orientation

- The size of the site may be restrictive

- The site is surrounded by roads on four sides, presenting a problem for entrances and service entrances

6.3.4 Overall Assessment

Overall this site has many positive factors to it, with the negative factors relating to the site itself which can be dealt with through the design process. The surroundings and context of this site make it a very plausible option for the proposed *School of Digital Arts*.



Factors	Rating	Description
Access	2	close to Argyle Rd ,M4 and Umgeni Rd
Public Transport	3	Taxi's and bus drop off points all along Florida Rd
Public Exposure	2	well trafficed route, good pedestrian flow pass the site
Relationship with other media/art related facilities	3	close to Stamfordhill and Windmere Rd for industry/ located in Florida Rd Precinct
Surrounding context	3	diverse context - sizes and styles
Total	13	



6.4 ARGYLE/MONTPELIER RD SITE

6.4.3 Disadvantages

6.4.1 Site Description

The site chosen is currently an abandoned piece of land, which has an old tennis court on it and is owned and used by the Durban Municipality for storage of plants and trees. It is a large site with interesting dynamic, with the very busy Argyle Road passing by on the one side and quite Montpelier Road on the other.

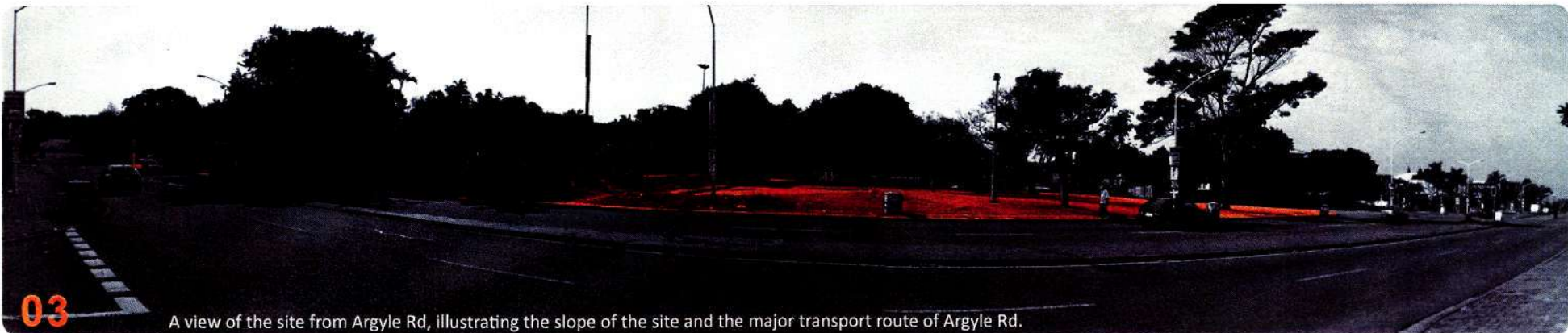
- The lack of any connection with similar building types and the size of the grain of the surrounding buildings, compared to the size required for the school which presents the major negatives for the site
- The lack of connection to similar building type which means that pedestrian movement along the edge of the site is very limited

6.4.2 Advantages

- The well trafficked Argyle Rd creates positive public exposure to the site
- Good opportunities of access to the site through the quieter Montpelier Rd
- Close proximity to Florida Rd
- Large Site

6.4.4 Overall Assessment

Although the site has presented many good advantages, the scale of the building required of the proposed school may seem isolated within residential scaled context. The site would receive good public exposed from Argyle Road, however cut off from pedestrian routes and there for not suitable for the proposed *School of Digital Arts*.



Factors	Rating	Description
Access	3	situated on Argyle Rd - very good access
Public Transport	2	situated within walking distance of major transport nodes
Public Exposure	3	Argyle Rd is major arterial route into Durban
Relationship with other media/art related facilities	2	walking distance to Bank Gallery in Florida Road
Surrounding context	1	residential scale surrounding context
Total:	11	



6.5 CONCLUSION

Through the analysis of the three sites, 6.3 Montpelier/Florida Road Site was selected, as it is seen to be the best option for the proposed School of Digital Arts based on the criterion set out.

This Chapter will explore the development of a design brief and brief derivation which will eventually generate an accommodation schedule for the design of a Digital Arts School of Durban.

The chapter will be structured into three major sections:

- Brief derivation
- The Brief
- Accommodation Schedule

The outcome of the chapter is to establish architectural guidelines to enable the best design of a Digital Arts School for Durban.

7.2 BRIEF DERIVATION

This section deals primarily with contextual information towards the development of a brief.

7.2.1 The Client

The client of the school will be a collaboration of industry institutes and professionals to form the Institute of Digital Arts. An executive board will be appointed, which will in turn become the client for the development of the school. The IDA will be backed back by the NAC [National Arts Council of South Africa] and DAC [Department of Arts & Culture]. The reason for the formation of the IDA is to develop the Vision of the school was to develop a strong link between the school and industry. IDA has a larger role to play than just the clients of the school, as currently there is only a council of graphic design [Think] in South Africa and the other digital based art forms have no governing body which can represent them. The IDA will represent graphic design, 3d & 2d animation, digital photography, multimedia, web based design and digital installation art.

7.2.2 Funding

The funding for the project will come from the NCA and DAC. The NAC mission is *"...to provide and encourage the provision of, opportunities for persons to practice the arts"* [NAC 2008]. The nature of the school means that the up keep of facilities and computers will be high, as the computers and software will be needed to be upgraded, to keep with the changes in

technology. Therefore the school will adopt the approach and philosophy which Vega, School of Brand Communication has developed. The approach is to develop a fund. This fund is primarily supported by client's contributions for advertising or promotional campaigns developed by the students of the Digital Arts School, which also enable the school to include real-world experience as part of the curriculum. [Vega, 2008] The revenue developed by the fund will help to continue the functioning of the school as a state of the art digital art facility.

7.2.3 Users

The main function of the school it to educate both the student, as well as the general public about digital arts and therefore the main users of the building is going to be the staff and students and then on another level the public which are visiting the exhibitions. Through the case studies it has been discovered that a school should provide for 300 – 500 students in order for the school to be feasible and function. The lecturer:student ratio needed for the digital arts subjects is a lot higher than other studies, as the nature of the median requires constant interaction with the lecturers, through research it has shown that 1:12 – 1:15 is ratio recommended. The staff component will comprise of 25 – 30 full time lecturers, 10 administrative staff members and as well as the part time staff members. Sections of the building will be accessible to the general public, therefore the security and the handling of the accessibility of the general public becomes important to the function of the school.

7.2.4 Environmental Requirements

Due to the nature of digital arts school, many spaces require the ability to control the lighting conditions, such as some of the studios and teaching LAN's, therefore the environmentally the school needs to respond to these conditions. Other spaces, such as the photographic studios, dark rooms, green-screen room, require total control of the lighting conditions and therefore there are no openings in those space, but they require ventilation and in the case of the dark room, the ventilation is key to the success of the space. Many of the studios are used for drawing and therefore natural lighting is needed, therefore day lighting, ventilation and orientation become key factors in the success of the building. Other than the special requirements for the building, the environmental response of the building is matter of architectural ethics, which cannot be neglected.

7.2.5 Construction Systems & Materials

In terms of construction systems, the general requirements are that the systems allow for flexibility of the spaces created and also allows for expansion. It is important that the building is able to adapt to changing times in the digital arts world, as well for other uses other than a school. These requirements suggest a frame and infill system. The materials and structure systems should also respond to the environmental conditions of the site and try to reduce the environmental footprint of the structure.

7.2.6 Site Requirements

As the school is a specialised school, accessibility to the school is crucial, as students are travelling from all over the greater Durban area. As mentioned before, the environmental impact of the school is important and therefore, the accessibility needs to be analysed in terms of private transport, but more importantly, public transport routes. The positioning of the school in relation to art and design industry and the accessibility is important, as it is this link in which the concept of the school is based.

The school has a role to play in promoting the schools work, but more importantly, Durban's art and design culture to the public and stimulating public interest in their surrounding environment. Therefore, the position and prominence of the site is of great interest. The site should be noticeable to passing public and be positioned in a central area.

Orientation of the site, although not fundamental to the choice of the site is a consideration. A site that is orientated in a way that allows the building to align with a north-south axis is preferred so that sunlight can be controlled, and south light used for natural lighting within the studios.

7.2.7 Design Objectives

The main objective is to design a state of the art teaching facilities the studying and promotes the appreciation of digital arts in Durban. A structure which reviews the needs of a tertiary education facility and is able to develop professional and equipped and students. The school should respond to its environment and urban context and therefore act as a catalyst for the surrounding area.

7.3 THE BRIEF

Ultimately the building will become a vessel for educating both students and the public about digital based arts. The School of Arts for Durban will service students, staff, professionals from the industry and the general public of Durban. The functions to be catered for in the building are:

7.3.1 For Students & Staff:

- educate students in digital based arts
- provide state of the art facilities
- expose the students to a professional and interactive environment with 'real' projects
- expose the students and their work to the public
- provide the areas for relaxation and informal work areas, encouraging multi-disciplinary studies
- create spaces which inspire and which do not

influence creative ideas

- create spaces which are tactile and interact with all senses
- create spaces with a strong link to the outside
- provide a cinema for showcasing student work
- provide parking for students and staff
- allow for controlled student access
- ensure majority of the facility is only accessible to students to students and staff

7.3.2 For the Public:

- expose the public to the students work and new forms of art
- provide a cinema to showcase work, host events and functions
- spark public engagement and add to the cultural growth of the area
- provide a world class gallery and exhibition facility for public viewings
- provide restaurant/internet cafe for public-student and industry-student relations and interactions

7.3.3 For the City:

- act as a cultural catalyst in the area
- strengthen the surrounding environment and as a gateway into the Florida precinct from the south side
- strengthen the area as Durban's cultural & social precinct

7.4 ACCOMMODATION SCHEDULE

The building will accommodate for a number of functions and will be divided up into various facilities:

- the entrance atrium
- public street edge
- administration zone
- resource centre
- student centre
- studios
- shared facilities
- auxiliary services

Zone 01 - The Entrance Atrium

With the building being part of the Florida Road precinct and contributing to the success of the precincts culture and social environment. It is important that the building engages with the street as the rest of the buildings have set a precedent of pedestrian orientated and street cafe culture and therefore the public street edge becomes important to create continuity in the road. The schools site provides excellent opportunities for restaurants and store that can complement the Digital Arts School. The establishment of this interactive are would not only assist in the development of the area but also by establishing Durban's Culture.

Zone 02 - Public Street Edge

The atrium becomes the interactive zone between the school and the public street edge. The public are encouraged to visit the exhibition where students as well as professionals work is displayed. The area becomes the public face to the school and visitors are exposed to the art culture in an informal environment. The atrium serves as a orientation device to the students and the visitors of the building, creating a sense of legibility and imageability in the school.

Zone 03 – Administration

The administrative zone should be connected to the entrance atrium, allowing for security and privacy , as well as visitors to easily locate it. Thus this area should be located off the atrium but with a secure control point.

Zone 04 - Resource Centre

The resource centre shall be accessed by the staff and students. It should be located in a position with privacy and low noise levels, allowing for good work conditions.

Zone 05 - Student Centre

The student centre is dominated by the lecture rooms and is most likely the most interactive area of the building. It is also the point of crossing between the studios and the lecture rooms and thus makes sense that the canteen is located at this point, allowing for the students to relax between lectures and create a space to interact with other students.

Zone 06 – Studios

The studio area is the largest area of the building in terms of floor area and houses the departments of graphic design, digital photography, 3d animation and multimedia. The studios will be a vibrant part of the school and is where most of the work happens. In the studios informal space will be provide for relaxing, interacting as well as multi-disciplinary work.

Zone 07 - Shared Facilities

This is the area where the specialised facilities are housed and are able to be shared between the four departments. It comprises of functions such as: the photographic studios, green-screen studio, sound recording studios, multimedia viewing pods and animation rooms. Security for this area of the school is important as it is houses highly specialised and expensive equipment.

7 | 81

Zone 08 – Auxiliary Services

Functions such as the janitors/cleaners room, electrical room, air con plant rooms and workshops fall under this area.

	Facility	Area	No.	Total	Special Requirements	Nat. Vent	Air Con	Dehumid	Force	No Sun	Views	Acoust	AV Equip.
resource centre	book & journals	170	1	170									
	issue desk	40	1	40									
	digital library zone	100	1	100									
	storage	20	1	20									
	librarian office	12	2	24									
	photocopying/scan	20	2	40									
	total:			394									
student centre	lecture room 001	1.2	50	60	50 seater								
	lecture room 002	1.2	50	60	50 seater								
	lan manager office	15	1	15									
	server room	15	1	15									
	canteen												
	internal seating	100	1	100									
	covered exterior seating	100	1	100									
	kitchen	70	1	70	extractors, gas, delivery entry								
	store	10	2	10	cold storage								
	total:			430									
animation	1st & 2nd yr lan	120	1	120	controlled lighting								
	3rd & 4th yr lan	80	1	80	controlled lighting								
	production studio	40	3	120	cellular office setup								
	staff office	10	6	60									
	general storage	20	1	20									
	total:			400									
graphics depart	open plan studios	120	3	360	natural lighting for drawing spaces								
	crit room	100	2	200	sound proof, lighting controls								
	staff office	10	6	60									
	general store	20	1	20									
	learning lan	100	1	100	controlled lighting								
	total:			740									

	Facility	Area	No.	Total	Special Requirements	Nat. Vent	Air Con	Dehumid	Force	No Sun	Views	Acoust	AV Equip.
digital photography	staff office	10	6	60									
	crit room	50	2	100	special lighting - luminated ceilings								
	general store	20	2	40									
	dark room	100	1	100	no sun, chemical drainage, special light								
	chemical cage	10	1	10									
	1st & 2nd yr lan	120	1	120									
	3rd & 4th yr lan	80	1	80									
	total:			510									
multi-media	1st & 2nd yr lan	120	1	120									
	3rd & 4th yr lan	80	1	80									
	offices	10	6	60									
	general storage	20	1	20									
	total:			280									
shared facilities	lighting studio	80	2	160	infinity curves, lighting rigs, cont. light								
	green screen room	100	1	100	infinity curves, lighting rigs, cont. light								
	loading zone	20	2	40	close to outside, large sliding doors								
	sound studio	100	1	100	sound proof, silent aircon, double glaz								
	viewing pods	50	2	100	projectors, surround sound								
	drawing studio	80	1	80	raked seating								
	animation room	100	1	100	lightbox desks								
	total:			680									
auxiliary zone	bin area	35	1	35									
	electrical room	12	1	12									
	chiller plant room	16	1	16									
	janitor room	35	1	35									
	workshops												
	digitizer room	100	1	100	large doors, linked to outside								
	c & c machine	100	1	100	large doors, linked to outside								
	total:			298									

	Facility	Area	No.	Total	Special Requirements	Nat. Vent	Air Con	Dehumid	Force	No Sun	Views	Acoust	AV Equip.
public street edge	internet café	120	1	120									
	kitchen	60	1	60									
	retail stores	50	4	200									
	ablutions												
	male toilets	15	1	15									
	female toilets	15	1	15									
	disabled toilets	7	1	7									
	total:				417								

entrance atrium	security/reception	30	1	30	AV equipment - LCD displays								
	department displays	8	4	32									
	main auditorium	1.2	300	360	raked seating, lighting control, full wall projector, surround sound								
	av room	20	1	20									
	exhibition/function area	300	1	300									
	ablutions												
	male toilets	25	1	25									
	female toilets	30	1	30									
disabled toilets	7	1	7										
total:				804									

administration	head of school office	20	1	20									
	head of department	20	4	80									
	accounts	20	1	20									
	storage/filing	20	1	20									
	admin offices	10	5	50	open plan offices								
	board room	40	1	40									
	waiting area	20	1	20									
	kitchenette	15	1	15									
	meter room	5	1	5									
total:				270									

total				5223
	circulation 20%			950
	total building			6173

Books

- BECKMANN, J(Ed.). 1998. *The Virtual Dimension: Architecture, Representation, and Crash Culture*. New York: Princeton Architectural Press.
- BRAUER, G. 2002. *Architecture as Brand Communication: Dynaform + Cube*. Basel, Switzerland: Birkhauser.
- BULLIVANT, L. 2005. *4dSPACE: Interactive Architecture*. London: John Wiley & Sons.
- CAINER, M. 2007. *Investigate Ask Tell Draw Build*. London: Black Dog Publishing Limited.
- CERVER, F. 1997. *Masters 02: Arata Isozaki, Jean Nouvel, Legorreta Arquitectos, Steven Holl*. Barcelona: Ganduxer.
- CHIPKIN, C. 1993. *Johannesburg Style: Architecture & Society, 1880s – 1960s*. Cape Town: David Phillip.
- DUDEK, M. 2000. *Architecture of Schools: The New Learning Environments*. Oxford: Architectural Press.
- FEININGER, A. 1974. *Darkroom Techniques Volume 01: The Darkroom Film Development Basic Photo-Chemistry*. London: Thames and Hudson.
- NORBERG-SCHULTZ, C. 1980. *Genius Loci*. London: Academy Editions.
- LAW-VILJOEN, B. 2006. *Light on a Hill - Building the Constitutional Court of South Africa*. Johannesburg: David Krut Publishing.
- LEACH, N. 2002. *Designing for a Digital World*. London: Wiley-Academy.
- LOVEJOY, M. 2004. *Digital Currents: Art in the Electronic Age*. London: Routledge.
- LYNCH, K. 1960. *The Image of the City*. Cambridge: MIT Press.

- MADANIPOUR, A. 1996. *Design of Urban Space*. New York: John Wiley & Sons.
- MARREIROS, S. 2007. *Australia: Architecture & Design*. London: Daab GmbH
- MYERSON, J & ROSS, P. 2003. *The 21st Century Office*. London: Laurence King Publishing.
- PAUL, C. 2003. *Digital Art*. London: Thames & Hudson Ltd.
- PHILLIPS, D. 2000. *Lighting Modern Buildings*. Oxford: Architectural Press.
- SCHITTICH, C (Ed.). 2002. *In Detail: Interior Spaces*. Basel, Switzerland: Birkhauser.
- SHELLER, M & URRY, J. 2006. *Mobile Technologies in the City*. New York: Routledge.
- STEELE, J. 2001. *Architecture and Computers*. London: Laurence King Publishing.
- PALLASMAA, J. 2005. *Architecture and the Senses: The Eyes of the Skin*. London: Wiley-Academy.
- WALDNER FIRMENGRUPPE (n.d.) *High-Tech-Schulsystem II – Trade Literature Catalogue*. Hamburg: Waldner. Pp 1 – 69.
- WIEHAGER, R. 2007. *The Nominees*. Germany: Seippel Verlag.
- WILKINSON, C & EYRE, J. 2001. *Bridging Art & Science - Wilkinson & Eyre Architecture*. London: Booth-Clibborn.
- WISE, R. 2000. *Multimedia - A Critical Introduction*. New York: Taylor & Francis Group.
- ZELLNER, P. 2000. *Hybrid Space: New forms in Digital Architecture*. London: Thames & Hudson Ltd.

Journals

- BARAC, M. 2007. Good work in the Tropics. *Architectural Review*. No.1324 June, pg 66 - 69.
- DIXON, J. 2003. Lessons in Situ. *Architecture*. No.05, pg 90 - 97.
- GRIFFIN, M. 2007. Education, New Media & the 21st Century. *Blitz Magazine Inc*. Jan/Feb No. 53, pg 01-04.
- KAMIN, B. 2007. Steven Holl Nicely Balances Expressionism and Functionalism in the University of

- Iowa's School of Art and Art History. *Architectural Record*. No.01, pg 92 - 99.
- LARSEN, H. 2004. IT University in Copenhagen. *Arkitektur DK*. No.06, pg 471 – 479.
- LARSEN, L. 2004. Open University. *Architecture*. No.05, pg 66 - 71.
- LIPMAN, A. 2003. Reaching for the stars - with Corbusier. *Leading Architecture*. Mar/Apr, pg42.
- LONG, K. 2007. The Building Trumpets its Presence in the City. *Architect's Journal*. 16/08/07, pg 24 – 35.
- PEARSON, C. 1999. After trying the virtual, Clive Wilkinson gets real with new offices for TBWA/CHIAT/ DAY. *Architectural Record*. No.08, pg 102 – 107.
- SELMER, F. 2007. Interaction Spaces. *Arkitektur DK*. No.08, pg 149 - 157.
- SELMER, F. 2007. Orestad High School. *Arkitektur DK*. No.08, pg 146 - 149.
- SELMER, F. 2004. IT University, Copenhagen. *Arkitektur DK*. No.06, pg 471 - 479.
- SELMER, F. 2004. A Town in the town? *Arkitektur DK*. No.06, pg 480 - 482.
- SELMER, F. 2003. Interspaces and Interfaces. *Arkitektur DK*. No.05, pg 272 – 275.
- STEVEN HOLL ARCHITECTS. 2006. The Art of Engagement. *Architectural Review*. No.11, pg 44 - 51.

World Wide Web Pages

- 3XN Architects. 2008. *Orestad College*. <http://www.3xn.dk>. [accessed 14-02-2008]
- ANISSIMOV, M. 2008. *What is WiFi?*. <http://www.wisegeek.com>. [accessed 01-07-2008]
- ARTS HUB. 2007. *Industry professionals to advice new Cardiff arts school*. <http://www.artshub.co.uk>. [accessed 26-04-2008]
- DEPARTMENT OF ART & CULTURE. 2008. <http://www.dac.gov.za>. [accessed 28-05-2008]
- DESIGNBUILD. 2008. *IT University*. <http://www.designbuild-network.com>. [accessed 09-05-2007]
- DESIGN INDABA. 2008. <http://www.designindaba.com>. [accessed 28-05-2008]

GOLDSTUCK, A. 2006. *PC user base in South Africa reaches 5 million*. <http://www.theworx.biz> [11-02-2008]

HENNING LARSEN ARCHITECTS. 2008. *IT University*. <http://www.hlt.com>. [accessed 05-05-2008]

HOLDERMATHIAS. 2008. *ATrium – Cardiff School of Creative & Cultural Industries*. <http://www.holdermathias.com>. [accessed 22-04-2008]

IT UNIVERSITY. 2008. <http://www.itu.dk> [accessed 10-05-2008]

MITCHELL, B. 2008. *LAN - Local Area Network*. <http://www.compnetworking.about.com>. [01-07-2008]

THINK [South African Graphic Design Council]. 2008. <http://www.think.org.za> [accessed 28-05-2008]

UNIVERSITY OF GLAMORGAN. 2008. *ATrium's Facilities*. <http://cci.glam.ac.uk/facilities>. [accessed 22-04-2008]

VEGA SCHOOL OF BRAND COMMUNICATION. 2008. <http://www.vegaschool.co.za>. [accessed 28-05-2008]

WORLDARCHITECTURENEWS. 2008. *3XN architects design and complete Orestad College in Denmark*. <http://www.worldarchitecturenews.com>. [accessed 14-02-2008]

Unpublished Thesis

DARBY, N. 1998. *A School of Design*. Bachelors of Architecture, University of Natal. Architecture, Durban.

FORBES, A. 2006. Information & Architecture. Masters' research project, University of KwaZulu-Natal. Architecture, Durban.

SACKETT, C. 2006. CUBE – Centre for the Understanding the Built Environment. Masters' research project, University of Pretoria. Architecture, Pretoria.

VAN DER STOEP, A. 2004. *A Film School for Durban*. Masters' research project, University of KwaZulu-Natal, Architecture, Durban.

Unpublished Document

ETHEKWENI MUNICIPALITY. 2005. Florida Road Heritage Precinct: Transport Assessment.

Interviews by Author

DAVIDSON, A. (Technical & Laboratory Manager of the Digital Art department at Wits School of Art), 03 March 2008. Johannesburg.

OLIVIER, G. (Head of School, Wits School of Arts), 03 March 2008. Johannesburg.

CHRISTOPHER, N. (Senior Technician of Photography at Wits School of Arts), 03 March 2008. Johannesburg.

CREWE-BROWN, A. (Project Architect of Faculty of Art, Design & Architecture at the University of Johannesburg, Stauch Vorster Architects, Jhb), 04 March 2008. Johannesburg.

EDWARDS, D. (Head of Department of Multi-Media at Faculty of Art, Design & Architecture at University of Johannesburg), 04 March 2008. Johannesburg.



Appendix B: Design Report



d e s i g n r e p o r t
a school of the **digital arts**, for durban.
gareth erskine smith.

0101 Introduction

This report documents the key elements considered during the design process of the design of school of the digital arts, for Durban.

The design of the proposed School of Digital Arts sets out to provide an environment for students and educators which is inspiring and conducive to learning.

A need exists for school for digital based design as it serves as a facility which brings the different genres of digital arts together under one roof such as, digital photography, graphic design, 2d & 3d animation as well as multi-media design. With close connection to the industry and the formation of an institute of digital arts the school will look to create private institution which presents the students with "real" projects in the work like environment, to help prepare more adequately prepared students.

The Client for the proposed school will be a collaboration of industry institutions and professionals to form the Institute for the Digital Arts [IDA]. An executive board will be appointed, which will in turn become the client for the development of the school. The IDA will be backed NAC [National Arts Council of South Africa]. The reason for the formation of the IDA is to develop the vision of the school, which is based strongly on the link's between the industry and the school. The IDA has a larger role to play than just the client of the school, as currently there is only a council of graphic design known as "think". The other digital based art forms have no governing body with can represent them. The IDA will represent graphic designers, 3d & 2d animators, digital photographers, multi-media artists, and digital installation artists.

Funding

The funding for the project will come from the NCA and DAC. The NAC mission is "*...to provide and encourage the provision of, opportunities for persons to practice the arts*" [NAC 2008]. The nature of the school means that the up keep of facilities and computers will be high, as the computers and software will be needed to be upgraded, to keep with the changes in technology. Therefore the school will adopt the approach and philosophy which Vega, School

Client

of Brand Communication has developed. The approach is to develop a fund. This fund is primarily supported by client's contributions for advertising or promotional campaigns developed by the students of the Digital Arts School, which also enable the school to include real-world experience as part of the curriculum. [Vega, 2008] The revenue developed by the fund will help to continue the functioning of the school as a state of the art digital art facility.

Users

The staff component will comprise of 25 – 30 full time lecturers, 10 administrative staff members and as well as the part time staff members. Sections of the building will be accessible to the general public, therefore the security and the handling of the accessibility of the general public becomes important to the function of the school.

Functions of the Building

There are four departments in the proposed school, which consist of digital photography, animation, multi-media design and graphic design. As result of the specialised nature of the subject facilities needed range from studios for digital photography and multi-media, green screen studios, to audio, video and special effects editing suites, to sound recording studios. The school forms part of the Florida Rd Precinct and

therefore aims to strength the pedestrian mixed used district by bridging the public/private interface with retail spaces and restaurants.

Construction Systems & Materials

In terms of construction systems, the general requirements are that the systems allow for flexibility of the spaces created and also allows for expansion. It is important that the building is able to adapt to changing times in the digital arts world, as well for other uses other than a school. These requirements suggest a frame and infill system. The materials and structure systems should also respond to the environmental conditions of the site and try to reduce the environmental footprint of the structure.

Site Requirements

As the school is a specialised school, accessibility to the school is crucial, as students are travelling from all over the greater Durban area. As mentioned before, the environmental impact of the school is important and therefore, the accessibility needs to be analysed in terms of private transport, but more importantly, public transport routes. The positioning of the school in relation to art and design industry and the accessibility is important, as it is this link in which the concept of the school is based.

The school has a role to play in promoting the schools work, but more importantly, Durban's art and design culture to the public and stimulating public interest in their surrounding environment.

Therefore, the position and prominence of the site is of great interest. The site should be noticeable to passing public and be positioned in a central area.

Orientation of the site, although not fundamental to the choice of the site is a consideration. A site that is orientated in a way that allows the building to align with a north-south axis is preferred so that sunlight can be controlled, and south light used for natural lighting within the studios.

	Facility	Area	No.	Total	Special Requirements	Nat. Vent	Air Con	Dehumid	Force	No Sun	Views	Acoust	AV Equip.
resource centre	book & journals	170	1	170									
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	kitchen	70	1	70	extractors, gas, delivery entry								
store	10	2	10	cold storage									
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	general storage	20	1	20									
	total:			400									
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	crit room	100	2	200	sound proof, lighting controls								
	staff office	10	6	60									
	general store	20	1	20									
	learning lan	100	1	100	controlled lighting								
	total:			740									

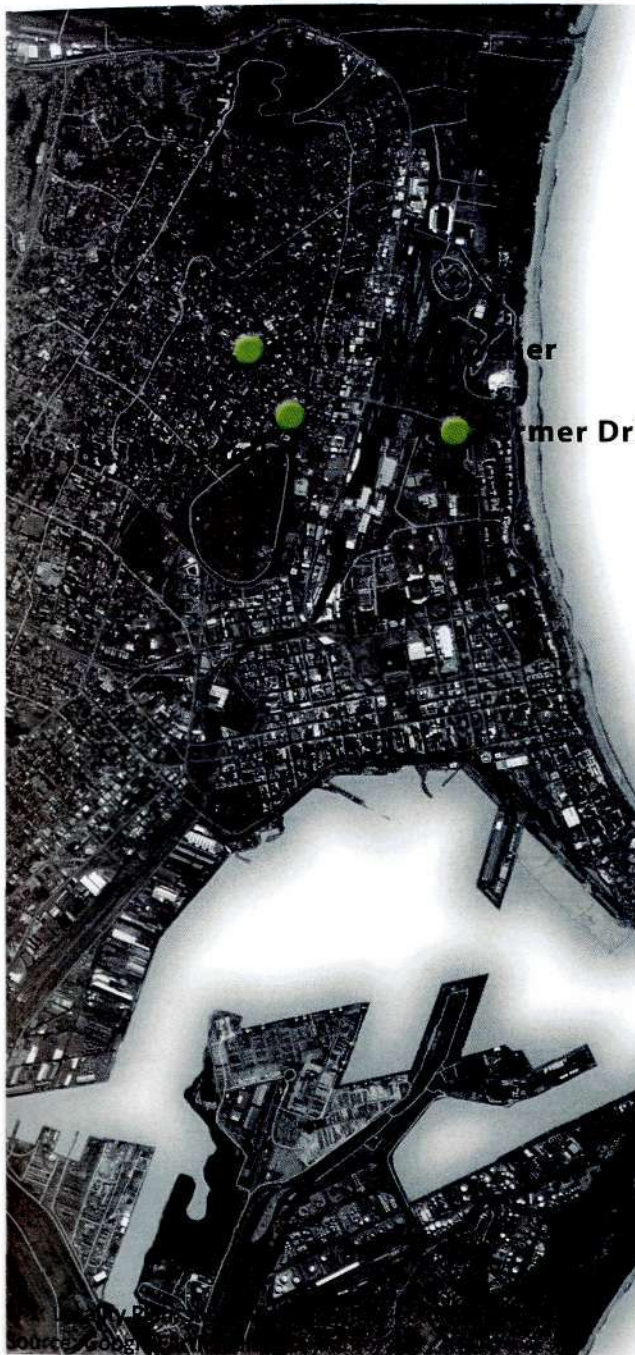
	Facility	Area	No.	Total	Special Requirements	Nat. Vent	Air Con	Dehumid	Force	No Sun	Views	Acoust	AV Equip.
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	general store	20	2	40									
	dark room	100	1	100	no sun, chemical drainage, special light								
	chemical cage	10	1	10									
	1st & 2nd yr lan	120	1	120									
	3rd & 4th yr lan	80	1	80									
	total:			510									
multi-media	1st & 2nd yr lan	120	1	120									
	3rd & 4th yr lan	80	1	80									
	offices	10	6	60									
	general storage	20	1	20									
	total:			280									
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	green screen room	100	1	100	infinity curves, lighting rigs, cont. light								
	loading zone	20	2	40	close to outside, large sliding doors								
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	animation room	100	1	100	lightbox desks								
	total:			680									
auxiliary zone	bin area	35	1	35									
	electrical room	12	1	12									
	chiller plant room	16	1	16									
	janitor room	35	1	35									
	workshops												
	digitizer room	100	1	100	large doors, linked to outside								
	c & c machine	100	1	100	large doors, linked to outside								
	total:			298									

	Facility	Area	No.	Total	Special Requirements	Nat. Vent	Air Con	Dehumid	Force	No Sun	Views	Acoust	AV Equip.
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	kitchen	60	1	60									
	retail stores	50	4	200									
	ablutions												
	male toilets	15	1	15									
	female toilets	15	1	15									
	disabled toilets	7	1	7									
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	department displays	8	4	32									
	main auditorium	1.2	300	360	raked seating, lighting control,full wall projector, surround sound								
	av room	20	1	20									
	exhibition/function area	300	1	300									
	ablutions												
	male toilets	25	1	25									
	female toilets	30	1	30									
disabled toilets	7	1	7										
total:				804									
administration	head of school office	20	1	20									
	head of department	20	4	80									
	accounts	20	1	20									
	storage/filing	20	1	20									
	admin offices	10	5	50	open plan offices								
	board room	40	1	40									
	waiting area	20	1	20									
	kitchnette	15	1	15									
	meter room	5	1	5									
total:				270									
total				5223									
	circulation 20%			950									
	total building			6173									

3.1 INTRODUCTION

This chapter will briefly describe the study area of Durban, explain the site selection criteria and analyse the three potential sites. The most appropriate site of the proposed School of Digital Arts will then be chosen. The three sites are:

- The Former Drive-In Site
- Montpelier/Florida Rd Site
- Argyle/Montpelier Rd Site



CONTEXT

The sites are all situated in close proximity from one another, just north of the Durban CBD seen in illustration 6.01. The city is trying to encourage the development and densification of the CBD and surrounding areas, reducing the development of green-field sites and sprawling of the CBD. All three sites are situated in this zone. Being close to the CBD means that they are easily accessible, surrounded by major transport routes.

mer Drive- In

CRITERIA FOR ANALYSIS

These sites will be analysed under certain criteria in order to establish its appropriateness for the development of a digital arts school. Each criterion is used to examine how the site responds to specific requirements and needs for the school. These criteria are:

- Access
- Public Transport
- Public Exposure
- Relationship with other media/art related facilities
- Surrounding context

Access

This criterion will analyse the ability to enter the site from the surrounding roads. The influence of the road network and the traffic levels and speeds

around the site will be part of the analysis. The other part of this criterion is the ease of access to the site via the main road networks from different parts of the greater Durban area.

Public Transport

With the energy and oil crisis affecting the country, public transport has to go to play a larger role in the future of transport in Durban and South Africa. With this in mind, the public transport systems around the areas of the sites need to be assessed, to determine whether the site is accessible for everyone concerned.

Public Exposure

The nature of a school which is dealing with media related issues means that the more exposure the school receives the better. Brand Communication plays a huge role in the positioning of the building and the sites will be analysed to determine their value in this regard.

Relationship with other media/art related facilities

The grouping of many similar related facilities have a positive impact on the school, the students and that specific area of Durban. The grouping of these facilities will develop an "arty" district; these districts are well known for social environments and have a positive impact on the students because of the interaction it generates. The connection between the school/students and nearby industry is a positive one.

Surrounding Context

The surrounding context refers to the aesthetical value of the surrounding environments and buildings. The surrounding buildings are important to the development of the school as they generate an urban context in which the building can respond.

3.2 SITE SELECTION

THE FORMER DRIVE-IN SITE

Site Description

Site is situated on a brown field site, a piece of left over land from the old Durban Drive-In. The site is positioned between three major zones of Durban, the CBD, the Golden Mile [the beach front] and the Kingspark sporting complex.

Advantages

- The site is North/South facing
- The site is in a prominent position with many main transport routes passing the site, therefore giving the site larger exposure to the moving traffic
- The site is walking distance from the Playfair Rd stop for the new Durban People Mover [See Appendix 01]
- The site is adjacent to the start/end of the

M4 highway which allows the school to act as a gateway to the C.B.D of Durban from the north

- The close connection to the site of the much talked about *The Proposed Durban Film City* presents a link between of education and industry, allowing for the possibility of sharing of the specialised facilities and expertise
- The site situated in the area of Durban which is referred to as the Golden Mile, this together with possibilities of the Durban Film City and Sun Coast Casino means that there will be larger exposure to the school

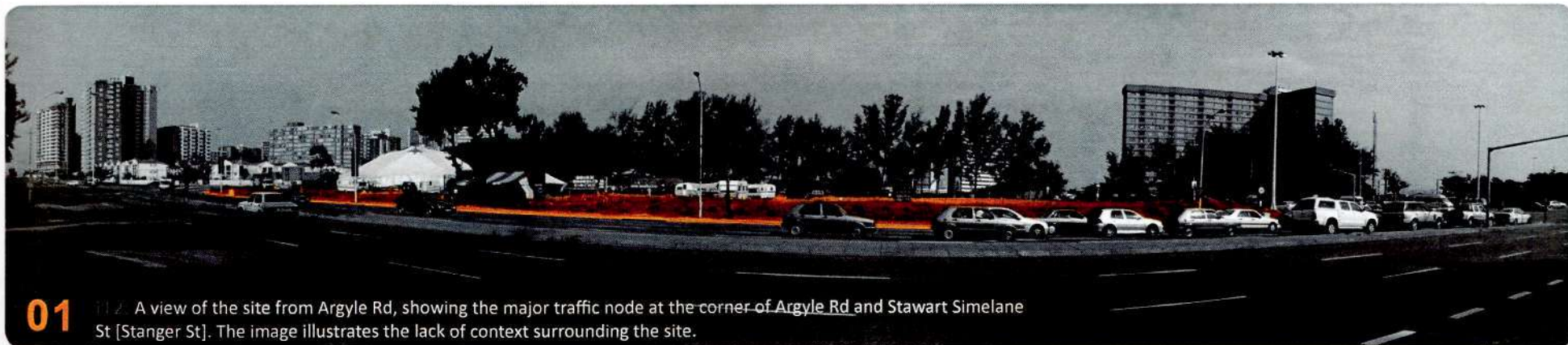
Disadvantages

- With it being surrounded by main transport routes, physical access to the site becomes a major traffic problem
- Architecturally the site is an island site, that there is nothing to response to and therefore becomes isolated.

- Unfriendly pedestrian environment
- If The Proposed Durban Film City does not go ahead, there is relation to any art or media related facility in the surrounding area

Overall Assessment

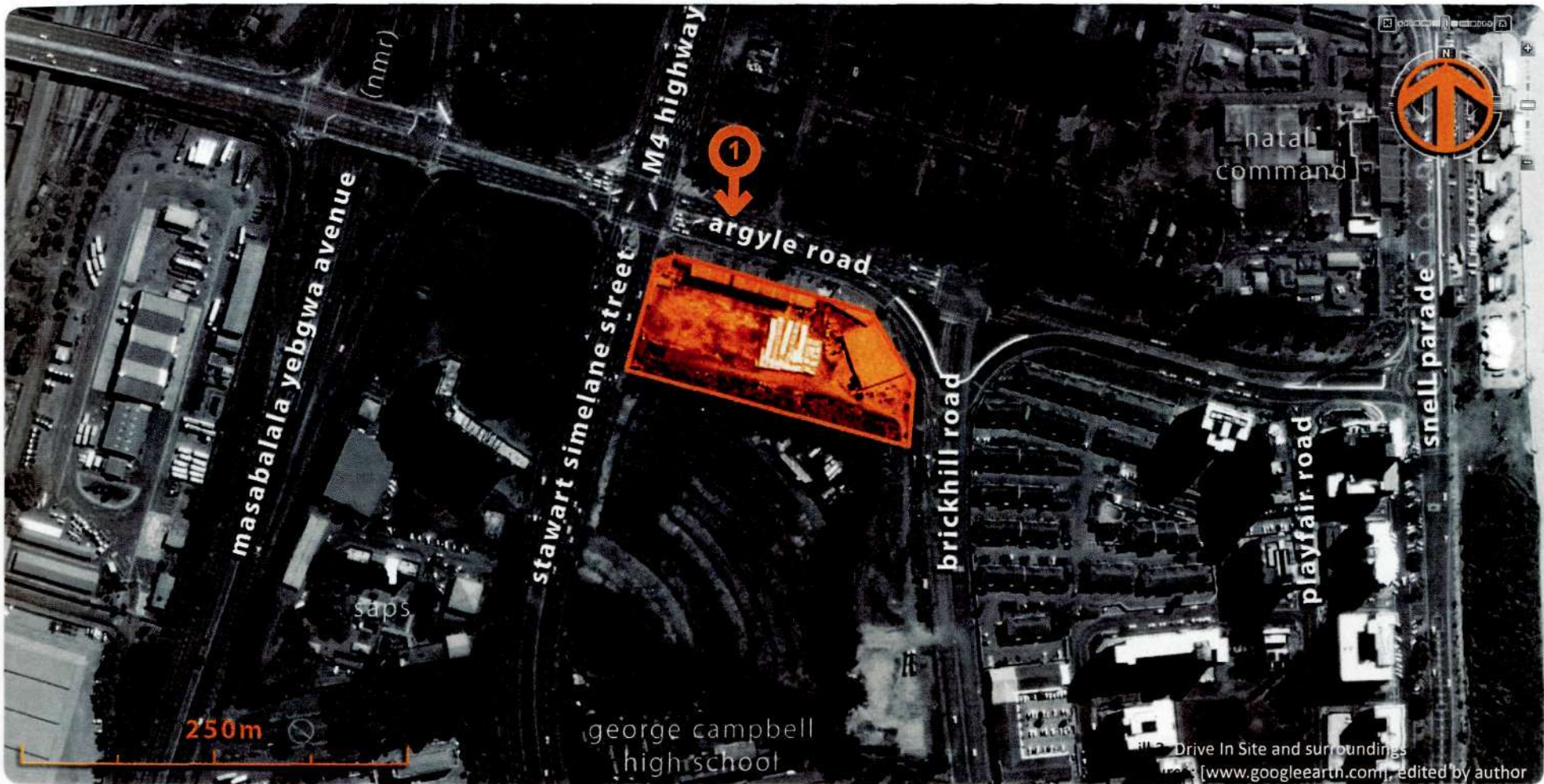
Overall this site would be conducive to the development of the proposed school because of the position in terms of transport and its exposure to the moving traffic. Yet if the development of the Proposed Durban Film City falls through, the site becomes isolated from any kind of art/media related facility. The success of proposed *School of Digital Arts* on this site is too reliant on the Durban Film City and therefore the site is inadequate.



01

A view of the site from Argyle Rd, showing the major traffic node at the corner of Argyle Rd and Stewart Simelane St [Stanger St]. The image illustrates the lack of context surrounding the site.

Factors	Rating	Description
Access	3	situated at the intersection of M4 and Argyle Road - accessible from all areas of Durban
Public Transport	3	new People Mover stops at Playfair Road/close proximity to Durban train station
Public Exposure	3	three busy transport routes passing the site
Relationship with other media/art related facilities	0	no relation with any art/media related facility
Surrounding context	0	if Film City does not happen, the site becomes an island with no context to work with
Total	9	



MONTPELIER/FLORIDA RD SITE

Site Description

The site chosen within the Florida Road precinct has great potential for development. It is situated to the south part of Florida Road referred to as the St Mary's Square, on a vacant site which is a park at the moment.

Advantages

- This part of Florida Road has the greater development potential as there are still many road facing residential houses which can be converted or developed
- The site is part of the pedestrian friendly zone of Florida Road, which has become the social district of Durban
- Already an art culture developing in the road with two galleries present

- There is opportunity for the building to act as the gateway into the Florida Road Precinct from the south

- Great opportunity for an urban design framework for the area, the southern region of Florida Road as result of many undeveloped residential properties

- The accessibility to the site and the proximity to industry in the Stamfordhill/Windermere Road area is a clear advantage to the site

- Situated on a public transport route and commuting distance from Durban Station

- Situated in a diverse context

Disadvantages

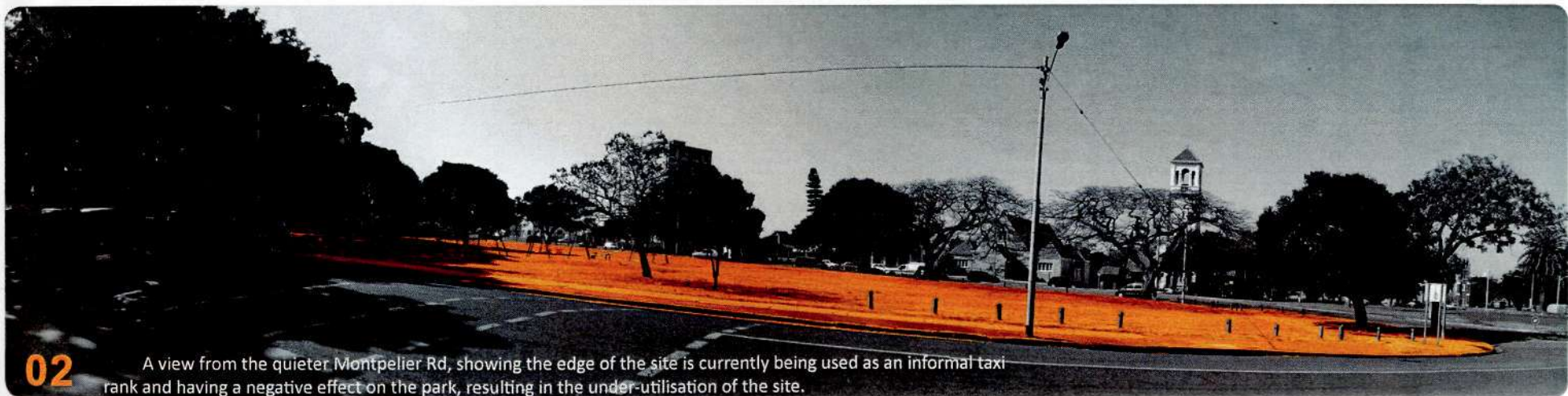
- Slender site with east/west orientation

- The size of the site may be restrictive

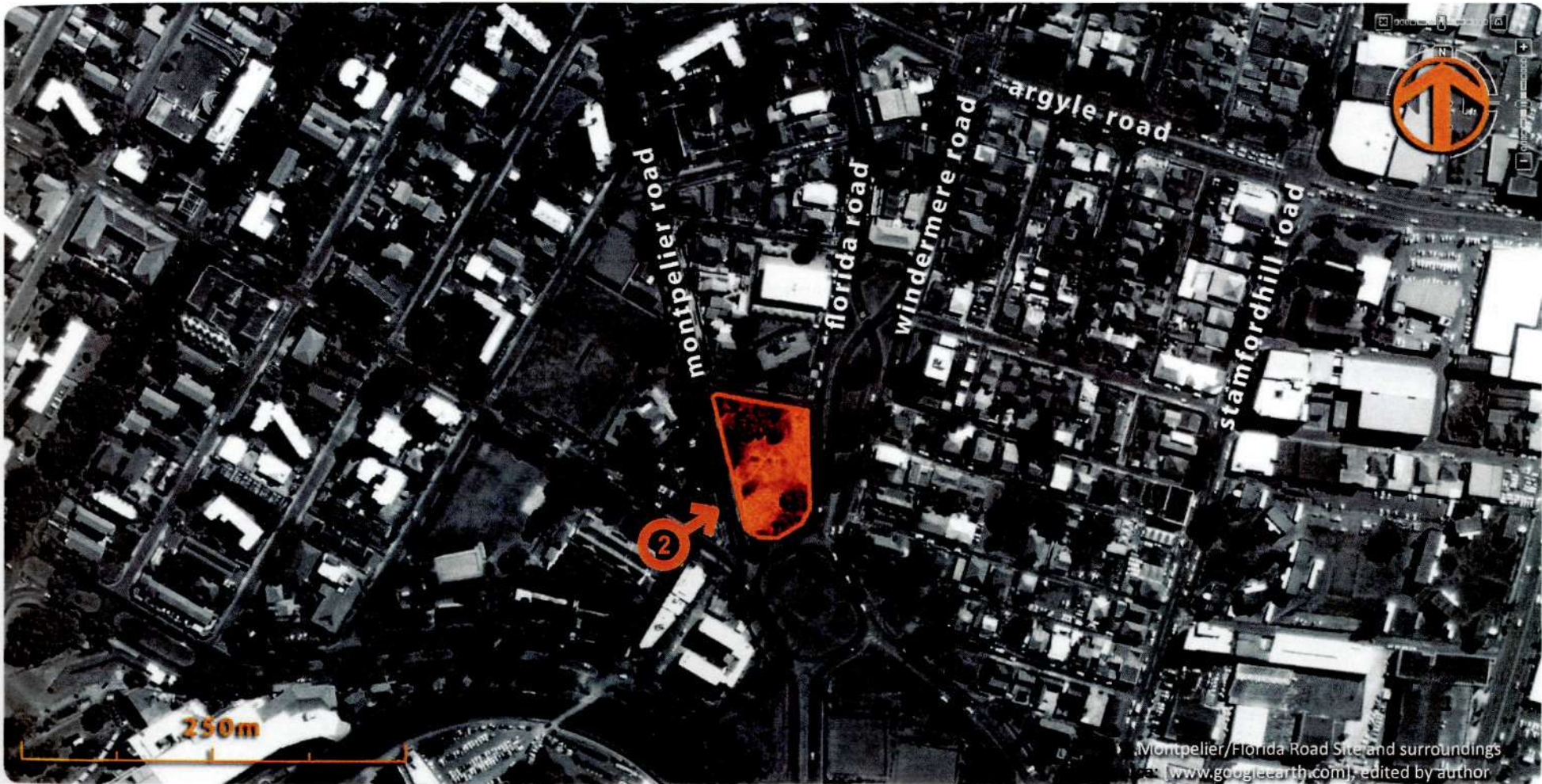
- The site is surrounded by roads on four sides, presenting a problem for entrances and service entrances

Overall Assessment

Overall this site has many positive factors to it, with the negative factors relating to the site itself which can be dealt with through the design process. The surroundings and context of this site make it a very plausible option for the proposed *School of Digital Arts*.



Factors	Rating	Description
Access	2	close to Argyle Rd ,M4 and Umgeni Rd
Public Transport	3	Taxi's and bus drop off points all along Florida Rd
Public Exposure	2	well trafficed route, good pedestrian flow pass the site
Relationship with other media/art related facilities	3	close to Stamfordhill and Windmere Rd for industry/ located in Florida Rd Precinct
Surrounding context	3	diverse context - sizes and styles
Total	13	



ARGYLE/MONTPELIER RD SITE

Disadvantages

Site Description

The site chosen is currently an abandoned piece of land, which has an old tennis court on it and is owned and used by the Durban Municipality for storage of plants and trees. It is a large site with interesting dynamic, with the very busy Argyle Road passing by on the one side and quite Montpelier Road on the other.

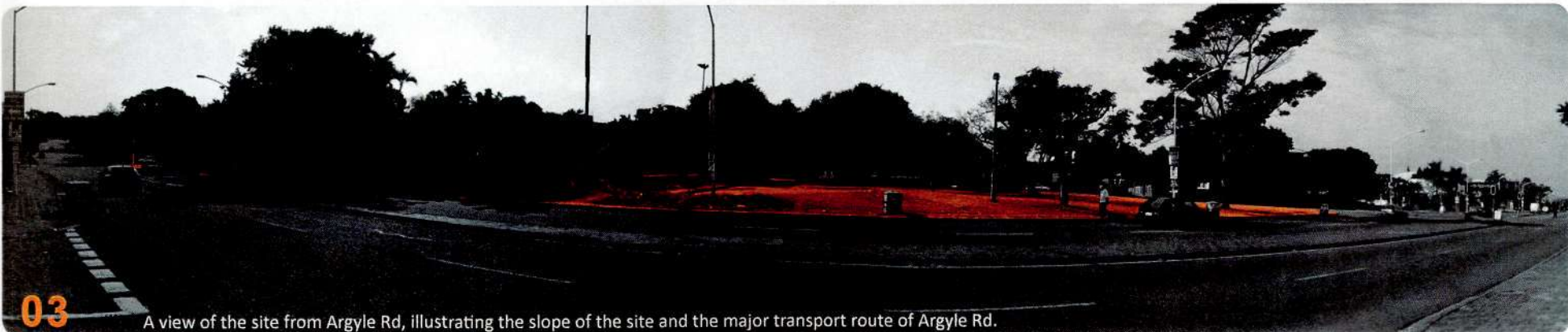
- The lack of any connection with similar building types and the size of the grain of the surrounding buildings, compared to the size required for the school which presents the major negatives for the site
- The lack of connection to similar building type which means that pedestrian movement along the edge of the site is very limited

Advantages

- The well trafficked Argyle Rd creates positive public exposure to the site
- Good opportunities of access to the site through the quieter Montpelier Rd
- Close proximity to Florida Rd
- Large Site

Overall Assessment

Although the site has presented many good advantages, the scale of the building required of the proposed school may seem isolated within residential scaled context. The site would receive good public exposed from Argyle Road, however cut off from pedestrian routes and there for not suitable for the proposed *School of Digital Arts*.



Factors	Rating	Description
Access	3	situated on Argyle Rd - very good access
Public Transport	2	situated within walking distance of major transport nodes
Public Exposure	3	Argyle Rd is major arterial route into Durban
Relationship with other media/art related facilities	2	walking distance to Bank Gallery in Florida Road
Surrounding context	1	residential scale surrounding context
Total:	11	



3.4 CONCLUSION

Through the analysis of the three sites, 6.3 Montpelier/Florida Road Site was selected, as it is seen to be the best option for the proposed School of Digital Arts based on the criterion set out.

3.5 SITE ANALYSIS

Much like the rest of Florida Rd, there is slope falling from the ridge in the north west to the CBD in the south east. There is an existing landmark of the St Mary's Church bell tower which is located directly across from the proposed school site. The bell tower and the proposed site are situated at the bottom end of the sloping landscape, this element together with the vertical presence of the tower create the opportunity to develop a portal into the Florida Rd Precinct from the south. The way in which Florida Rd and Windermere Rd converge towards Connaught Circle creates an interesting urban form. There is a listed existing colonnaded building located at the north park, the constriction of the urban form allows for dynamic views which terminate on this beautiful old building.

A study of the figure ground plan revealed a change in scale from south to north, this suggests that the proposed school of intermediate scale will reinforce the transition from the industrial scale to the smaller residential scale towards the north.

There are particular districts within the precinct. There is development of larger scale mixed-use buildings along the major transport routes, with smaller quieter districts behind. The proposed school forms part of the larger scale district with various institutions schools, offices and restaurants sharing this district.

Florida, Windermere and Argyle Road are all major roads which surround the site. These roads form major links in the city and therefore a large number of vehicles will be passing the site using these links to gain access to the CBD from the northern parts of Durban.

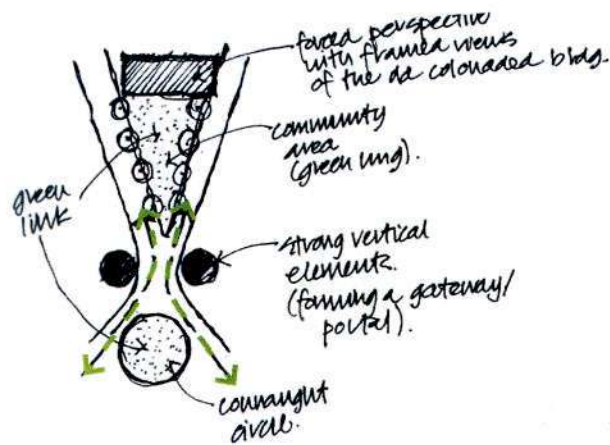
The site is orientated on the north-south axis, with the longer east and west facades exposed to the sun, meaning that solar control will be needed to be investigated. The north-west winds can be utilised to ventilate the building.



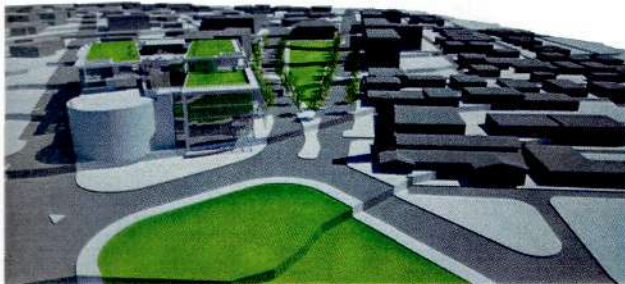
ill 8: A plan illustrating the two different types of pedestrian movement around the site. Green being the retail and restaurant activity and the grey representing the commuters movement patterns past the site.



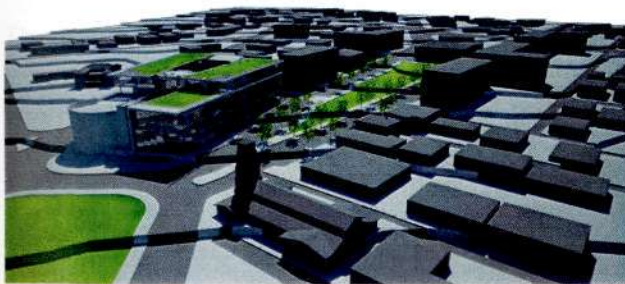
ill 9: Plan illustrating the hierarchy of the vehicle movement around the site



ill 10: A sketch of the Urban Design Concept for Southern Florida Rd Precinct, a creation of a gateway to the area.



ill 11: An 3-dimensional view of the Urban Design proposal looking northwards, showing the constriction of the urban form.



ill 12: An aerial view of the precinct showing the urban scale of the central green space.

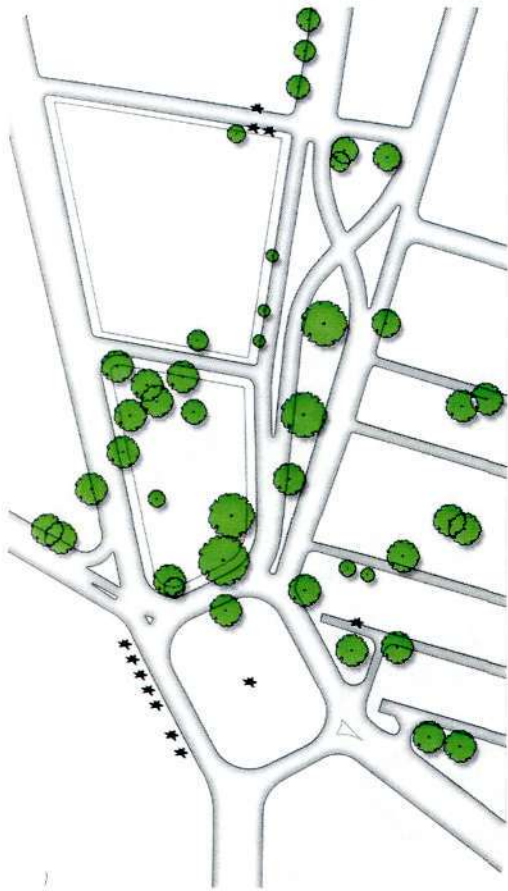
3.6 URBAN DESIGN PROPOSAL

The proposal for the area aims to define and strengthen the southern Florida Rd precinct. As mentioned before, Florida Rd is used as a link between the CBD and Argyle Rd resulting in the route becoming a major link in the city. The urban form creates a natural constriction at the start of Florida Rd and with the St Mary's Church bell tower acting as a landmark, the insertion of the School of Digital Arts has the opportunity mirror the scale of the bell tower therefore strengthening the landmarks and creating a portal and entrance to the precinct. The use of planting and materials is used to back up this concept, giving the area an identity.

Currently there are link roads between Florida and Windermere Rd. The removal of these link roads allows for the land to be transformed into a landscaped park. The triangular shaped park bordered by a series of trees creates a vista which is terminated by an existing listed colonnaded building which is positioned to the north of the park.

The precinct is fairly undeveloped, resulting in many opportunities. The proposal aims to create continuity and definition in the edges of Florida and Windermere Rd by developing 2 - 3 storey mixed used buildings, which are built up to the boundary edge. The reason for the mixed use buildings is to continue with the precedent set in the northern part of Florida Rd. Specifying pedestrian friendly functions such as retail or

restaurants on ground floor to promote the pedestrian movement along the developed edges.



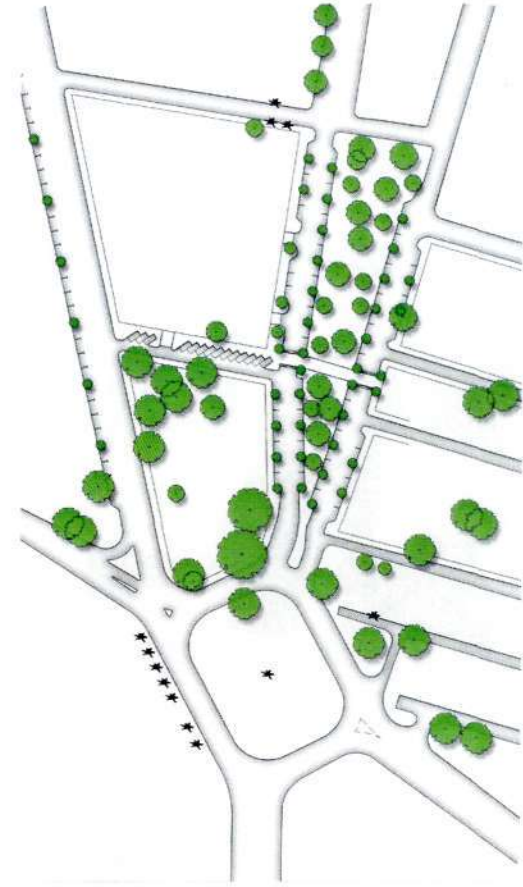
Existing Urban Framework

The existing situation with the cross over roads, results with the remaining dead space, which is not large enough to develop. The negative use of the land in the area, parking has become a problem.



Proposed Urban Framework 2006

The proposal by the eThekweni Municipality has responded solely to the lack of parking in the area. The proposal neglects any sort positive urban intervention in the area and result there is a large amount of dead space.



Proposed Urban Framework 2009

The current proposal looks to answer the parking problem and concurrently improving and uplifting the area. The cross roads have be removed to create a central park, which can host community events and therefore turning the dead space into active space.

The listed colonnaded building which commands of the park and the area

The proposal is aims to create and define the urban space and scale of the Southern Florida Rd precinct and park. This is done by the redevelopment of the residential houses into maximum 4 storey mixed-used buildings. The buildings are built to the boundary edges, creating a continuity to the edge of the precinct.

The park, is a multi-functional space with strong connection to the proposed school. The space allows for the exhibition of digital installations from both students and practising artists, promoting the work of local artists. The 'I ♥ Market' is currently held at St Mary's Church and the park is the perfect venue for markets like this one.



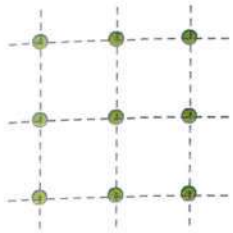
The roads and pavements in the precinct will be paved and cobbled to define the district. Urban bollards can be used for functions such as weekend markets and digital art exhibitions to limit access to the area to pedestrians.

The media-mesh screen is attached to the east side of the proposed school, allowing the community park space to relate to the school through the screening of animation and multimedia work.

The strong vertical element of the St Mary's Church bell tower and the mass of the proposed school create the gateway to the precinct

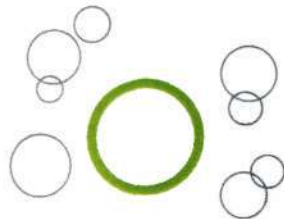
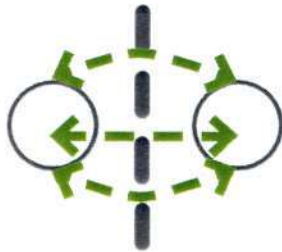
0004 Design Intentions

- To Activate the southern part of Florida Rd, promoting a pedestrian culture
- To design a building which inspires learning rather than influencing learning
- To design a school which promotes digital art, both the work of students and practising digital artists which in turn helps educate the general public
- The architecture of a building to house a computer driven profession should combine the high-tech nature of the digital age with an architecture response that people can easily relate to (Tactile architecture) and be comfortable in.
- To design an environment which is conducive to learning and which is able to adapt to different group sizes as well as development in technology
- To design a building which incorporates a professional learning environment resulting in the learners being exposed to the industry standards, creating an easier transition into the industry



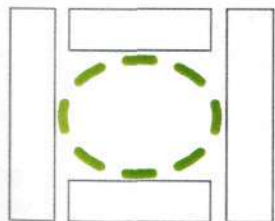
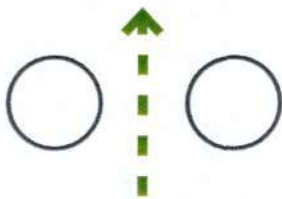
ill 14: Diagram illustrating the grid system which allows for the adaptation of internal spaces.

ill 15: Diagram illustrating the concept of transition at the interface between public and private, indoor and outdoor.



ill 16: Diagram showing the concept of informality with different spaces arranged randomly around a single element.

ill 17: Diagram illustrating the concept of gateway through prominence of larger elements.



ill 18: Diagram showing the concept of the courtyard the retreat of the green centre.

The Design Concepts are developed out of the design brief which states the consideration of certain key factors will result in a successful school of the digital arts. The concepts will be used to influence the design development of the proposed school for the digital arts.

Adaptability

The column grid of the building allows for the adaptable rearrangement of furniture and functions according to changing needs of the users, school and technology.

Interface

The interface between the public and private realms should be transitional, thereby including the public in some of the activities and promoting the work of the digital artists and the school. This concept has been further developed to include the interface between indoor and outdoor spaces, where the boundary can be blurred through the use of materials and intermediate spaces.

Informality

Informality is vital in establishing an effective and positive learning environment. The informal arrangement of functional spaces around a centrally located space encourages chance encounters and interaction between learners and educators. The studios are kept to the minimal size and the students are provided

with student chill zones, allowing for students to interact and collaborate across different subjects. An informal environment positively reinforces the establishment of the relationship between the educators and the learners, allowing for the establishment of professionalism and responsibility, replicating the work place environment in the industry.

Gateway

A collection of two spatial prominent elements which create a portal to a precinct.

Courtyard Building

To create an internal green space with the city, shielding from the noise, wind and pollution of the city. The courtyard becoming the focal point of the city and the element which ties everything together.



ill 19: The internet cafe and retail shops to activate the edge of the building.



ill 20: A 3d impression showing the volume of the space with the series of cantilevering walkways.

The Public Edge

The public edge consists of retail space, restaurants and cafes and are all located along the east edge of the school along Florida Rd. This is to continue with the retail and mixed-used environment which Florida Rd has become famous for and in turn creating interaction with passing pedestrians. This edge creates the buffer between the public and private.

Gallery & Photography Gallery Box

The gallery is strongly linked to the cafes, allowing for a unrestricted access to the public. The gallery is large double volume space is flexible to various display methods, from LCD screens hanging from the ceiling to a more traditional display methods. There is a large amount of wall space, allowing for projection of images from the lighting rig.

A secondary gallery was introduced as a mezzanine level above the cafe kitchens for the exhibition of the digital photography which requires specialised lighting for optimal effect.

The large double volume corner cafe on the south east corner of the building with the large glazed facade becomes a window to the gallery, allowing glimpses of the activities to the passing public.

The School Entrance Lobby

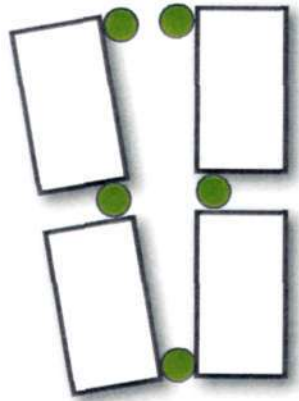
The entrance lobby and reception were design to be inspiring and dynamic face to the school with a multi-storey volume portraying the hierarchy of the space. The space is intersected with a series of steel cantilevered walkway bridges with constant movement of students to different areas and therefore making visitors feel part of the school within entering. The space is flanked by a south facing multi-storey curved glazed wall meaning that there is constant flooding of indirect south light creating a light and uplifting feeling to the interior space.

The Auditorium/Cinema & Function Area

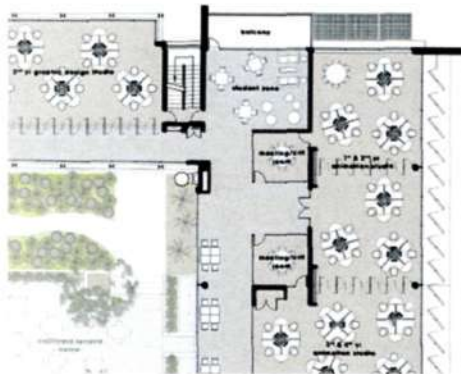
Income to a school is very important and through research of the case studies found that a well planned auditorium and cinema with a spill out function area is advantage. The auditorium and function area are closely linked to the gallery with a set of acoustic operable walls able to be moved to separate the two spaces. The link between the two is essential as public viewings and lectures will be held in the auditorium and grouping of public facilities results in a simpler security. The function area spills out to a smokers balcony which faces out onto Montpelier Rd.



ill 21: A 3d impression showing the volume of the space with the series of cantilevering walkways.



ill 22: A diagram illustrating the positioning of the service zones.



ill 23: The plan of the second floor showing the studios and chill out zones creating a comfortable working conditions.

The Courtyards

The courtyards are the focus of the scheme. The courtyards have a set of various materials ranging from paving, gravel, grass to timber decking presenting the students option of different seating location. It is this informality and comfort which creates the courtyards as a important element in the design. The spaces are design for gatherings and interactions between students, a place to escape to in the fresh air and sunlight, a sensual experience.

Service Zones

The service zones are located in the spaces between the 4 main structures of the school. The zones contain fire escape staircases, toilets and services ducts which house the electrical, air conditioning and LAN cables.

Resource Centre & Administrative Offices

The resource centre and administrative offices are stacked on top of one another and become the focal point of the school seen from the south as it is a large glazed box with a concrete and turf capping. The mediamesh is positioned on the east edge of the glazed box and acts as a solar shield to the internal spaces. The mesh is semi-transparent and therefore at night the spaces become a lightbox to passes by, with the activity and movement inside creating a interesting ever-changing facade.

Multi-Media & Photographic Studios

The blind boxes for the studios are the largest spaces in the design and require total lighting controls, resulting in no openings. The spaces are then air-conditioned as result of no openings in the spaces and therefore are able to positioned to the west where the low afternoon sun will not be a problem. The west side of the building faces Montpelier Rd, the quieter road. The studios needed a link to the delivery area for larger props and equipment.

The Studios & Chill Zones

The studios are located from first floor to the third floor along the east and north edges of the building depending on the studio. The graphic design studios are located in the steel bridge receiving good lighting for drawing. The other subjects such as animation and multi-media where the more work is done on the computer are positioned on the east edge protected by the mechanical louvres.

The chill zones are area scattered around the school which allow the students to work together in a comfortable informal atmosphere. There are many locations around the school being the students options and freedom of choice. The idea behind this is to develop a multi-disciplinary approach to the work in the school where students are able to collaborate and interact together on assignments. The concept draws slightly on the concept of hot-desking creating

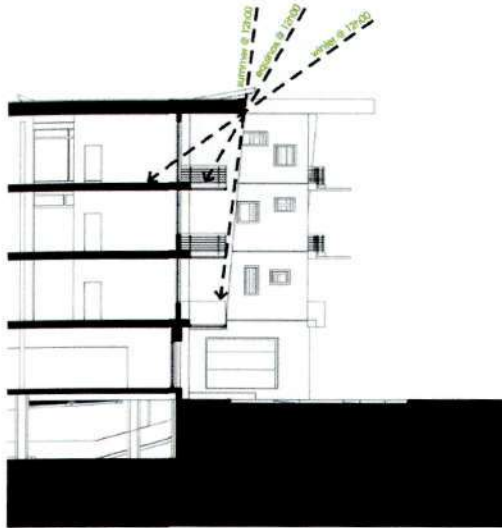


ill 23: The roof garden covered by the pergola with views over Durban CBD cityscape.

a work like environment, helping to prepare the students for work.

The Roof Garden

The roof garden is a multi-purpose outdoor area, allowing the students to use it as a social-gathering area as well as an outdoor seminar area. The area is split into two, represented by the change in flooring material, the seating area with timber decking and the other being a garden area with pavers and gravel. The area has views of the Durban cityscape creating a relaxing atmosphere for the students as well a subject matter for photographic and multi-media students to the capture the image of the city.



ill 24: A section through the north facing part of the design illustrating the overshadowing during the year.

The building form comprises of four major structures which are bridged by lighter steel structures. The configuration and form of these structures create two internalised spaces which house two landscaped courtyards, which become the focus of the school as well as being an oasis from the busy surrounding city context. The four major structures widths have been controlled to allow for maximum effects of natural ventilation and lighting into the spaces. The internal courtyards present the ability to receive lighting from both sides of the spaces, reducing the reliance on artificial lighting.

Circulation & Access

Circulation within the school is organised along the perimeter of the two courtyards, strengthening the courtyard as the focal point of the school. This intervention allows for vistas to the outdoors from almost any point within the school, whether it being of the internal courtyards or the external views of the city and surroundings.

The major vertical circulation core is situated in the centre of the building between the two courtyards. This core houses two lifts and links from the basement lobby to the top floor. Secondary vertical circulation cores are located in spaces between the four major structures. Access to the school is through the two entrance foyers located on the east and west of the building with

restricted access to the school being controlled by electronic card activated rotating doors. Staff members will access the building via the controlled staff basement parking.

Orientation

The general orientation of the school is north-south resulting in the majority of the school receiving west and east exposure. Due to the nature of the studios, with computers and glare, no specific orientation was deemed necessary and therefore the social spaces such as student chill zones and offices were given preference.

Other functions, namely the multi-media studio and green screen studio, which are large blind boxes were located on the western edge of the building. On the east deep overhangs were introduced to shield the internal spaces from direct exposure.

Shading & Illumination

Where appropriate, solar control devices have been designed to prevent excessive solar gain on the areas of the facades which have large amounts of glazing. Vertical solar screens are located on the east and west of the building. The screens on the east facade will be controlled by a mechanical motors which are connected to a computer, to ensure the screens operate optimally with the movement of the sun and



ill 25: The mechanical operable skylights and turf roof used by Renzo Piano in the design of the California Academy of Sciences.
Source: www.worldarchitecturenews.com

prevent direct sunlight into the various design studios. On the south east part of the building a large stainless steel mesh screen is installed to reduce the solar gain on the highly glazed portion of the building. The screen is designed to reduce the solar gain by about 60% and has a dual purpose doubling up as a digital screen, this screen technology is known as Media-Mesh. The Screen has a series of LED's woven into it which allows for the advertising and students work to be portrayed and therefore creating a dynamic and ever changing facade to the building.

The school has been designed to restrict the room depths to below 10m deep, maximising the positive effects of natural daylighting and reducing energy consumption in the building. Although artificial lighting will be needed fully in areas such as photographic studios, auditorium, seminar rooms where natural lighting will interfere.

The roof of the school will also contribute to the natural lighting of certain areas as sky lights has

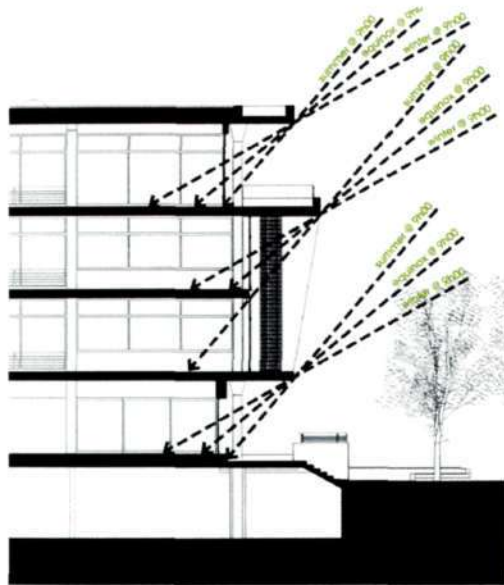
been incorporated.

Ventilation

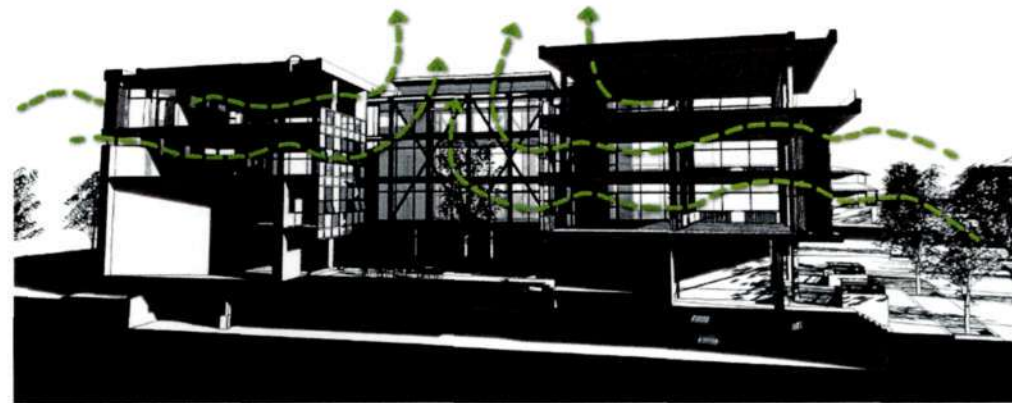
The nature of a courtyard building promotes the action of natural ventilation. In the proposed school this no different as the depths of the structures have been restricted to allow for optimal conditions for cross ventilation to occur. All spaces have high level operable windows, reducing the day time temperatures and cancelling the need for air conditioning. The provision of openable windows allows the users to control their environment, thereby increasing individual comfort levels throughout the teaching and administrative spaces.

Majority of the proposed schools roof structure consists of turf roofs with dome openable sky lights. The vegetation growing on the roof reduces the amount of hard-surfaces and adsorption of heat into the structure, therefore helping with the thermal comfort levels with in the spaces. The sky lights are rigged with mechanical motors to

allow them to open and release the hot air within the roof space below.



ill 26: A section through the east facing part of the design illustrating the overshadowing during the year.



ill 27: A sectional perspective illustrating the cross ventilation encouraged by the high level windows and openable skylights.

Form and Structure

The building is concrete slab and column structure with an efficient grid size of 7.5m x 8.5m throughout. This grid sizes allowing for efficient room sizes for studios and for the rearrangement of these studios according class numbers.

The building consists of 4 separate concrete structures bridged by a series of steel bridges. The reinforced concrete coffer slabs mean there is no need for beams allowing for easy service layouts.

Parking Area

The parking for the school is split up into two locations, being the semi-basement and the off street parking.

The entrance to the semi-basement parking is located off Third Ave, to the north of the site via a ramp. The parking itself is based around a two-way road with a single entry and exit [the ramp] with card access to educators only. Access to students and part-time evening students will be allowed in the evenings and night, for secure parking. Access to the school from the basement is through a lobby, connecting the basement to all levels of the school via stairs and lifts. The parking area will be concrete finish with concrete kerbs denoting the islands and limits of the area.

The other parking for the school is the off street

parking which was created through the urban design framework. The parking will be used majority by the students in the day and supplying the restaurants and cafes during the later hours.

Services

Electrical and air-conditioning plant rooms are located on the lower-ground floor level and are accessed from the basement. Ducts are located in the four service zones in the building and electrical, air-conditioning, LAN running through these ducts vertically and run horizontally above the circulation walkways which run along the perimeter of the courtyards and branch into the various spaces which they are required.

A main server room is located in the staff office area and is the central hub for the school's network. There are numerous secure wireless network hubs located all around the school. LAN cables are run from the server room along purpose made cables cages to areas such as studios, editing labs where higher transfer rates are required. The cages are hung from the underside of the concrete slabs above the circulation walkways and contain the lighting for the areas as well.

0102 Conclusions



The building acts as a catalyst to the new urban framework of the area, helping to further develop the art and culture directly as well as contributing to the surrounding community indirectly through the buildings interface with its surroundings.

This has resulted in a school which maintains links to the context and users around the building while creating sensually enriched and comfortable internal environments.

Overall the design process has resulted in a inspirational learning environment which is able to adapt to future changes and combines the high-tech nature of the tools needed in the digital age with a sophisticated, inspiring, interactive and professional environment needed for teaching and learning.

- BULLIVANT, L. 2005. *4dspace: Interactive Architecture*. London: John Wiley & Sons.
- CAINER, M. 2007. *Investigate Ask Tell Draw Build*. London: Black Dog Publishing Limited.
- CERVER, F. 1997. *Masters 02: Arata Isozaki, Jean Nouvel, Legorreta Arquitectos, Steven Holl*. Barcelona: Ganduxer.
- FEININGER, A. 1974. *Darkroom Techniques Volume 01: The Darkroom Film Development Basic Photo-Chemistry*. London: Thames and Hudson.
- LEACH, N. 2002. *Designing for a Digital World*. London: Wiley-Academy.
- LYNCH, K. 1960. *The Image of the City*. Cambridge: MIT Press.
- MADANIPOUR, A. 1996. *Design of Urban Space*. New York: John Wiley & Sons.
- PAUL, C. 2003. *Digital Art*. London: Thames & Hudson Ltd.
- STEELE, J. 2001. *Architecture and Computers*. London: Laurence King Publishing.
- PALLASMAA, J. 2005. *Architecture and the Senses: The Eyes of the Skin*. London: Wiley-Academy.
- WILKINSON, C & EYRE, J. 2001. *Bridging Art & Science - Wilkinson & Eyre Architecture*. London: Booth-Clibborn.
- ZELLNER, P. 2000. *Hybrid Space: New forms in Digital Architecture*. London: Thames & Hudson Ltd.

Appendix C: Design Drawings

The following are the final design drawings, including design primers, assorted plans, sections, elevations and various 3-dimension images.

Client

The client of the school will be a collaboration of industry institutes and professionals to form the Institute of Digital Arts. An executive board will be appointed, which will in turn become the client for the development of the school. The IDA will be backed by the NAC (National Arts Council of South Africa) and DAC (Department of Arts & Culture). The reason for the formation of the IDA is to develop the vision of the school was to develop a strong link between the school and industry. IDA has a larger role to play than just the clients of the school, as currently there is only a council of graphic design (Think) in South Africa and the other digital based art forms have no governing body which can represent them. The IDA will represent graphic design, 3d & 2d animation, digital photography, multimedia, web based design and digital installation art.

Funding

The funding for the project will come from the NCA and DAC. The NAC mission is "...to provide and encourage the provision of opportunities for persons to practice the arts" (NAC 2006). The nature of the school means that the up keep of facilities and computers will be high, as the computers and software will be needed to be upgraded, to keep with the changes in technology and Communication has developed. The approach is to develop a fund. This fund is primarily supported by client's contributions for advertising or promotional campaigns developed by the students of the Digital Arts School, which also enable the school to include real-world experience as part of the curriculum. (Vega, 2006) The revenue developed by the fund will help to continue the functioning of the school as a state of the art digital art facility.

Users

The main function of the school is to education both the student, as well as the general public about digital arts and therefore the main users of the building is going to be the staff and students and then on another level the public which are visiting the exhibitions. Through the case studies it has been discovered that a school should provide for 300 - 500 students in order for the school to be feasible and function. The lecturer/student ratio needed for the digital arts subjects is a lot higher than other studies, as the nature of the median requires constant interaction with the lecturers, through research it has shown that 1:12 - 1:15 is ratio recommended. The staff component will comprise of 25 - 30 full time lecturers, 10 administrative staff members and as well as the part time staff members. Sections of the building will be accessible to the general public, therefore the security and the handling of the accessibility of the general public becomes important to the function of the school.

Primary Objectives

- to design a state of the art school to facilitate the education of the digital arts in durban
- to strengthen the appreciation of an art, design cultural in durban & south africa
- to develop building which can accommodate both the general public and students and to create secure experience for both
- a centre to show case the students work and thereby creating a strong and success link between the industry and the school
- to create a professional and interactive learning environment which promotes multi-disciplinary studies
- create spaces which inspire creative thought and interact with all senses

Architecture of the Senses

The basic function of architecture is to provide shelter, yet architects strive to create structures which go beyond the expected and to create life-enhancing architecture. Architecture addresses all the senses simultaneously and fuses our image of self with our experiences of the world. The ability to create an atmosphere which interacts with the senses and articulates a sense of self in a creative environment such as the Digital Arts school is encouraged, as it allows one "...to engage fully in the mental dimensions of dream, imagination and desire" (Palismasia 2005: 11)

Materiality and Time

Natural materials express their age and history, as well as the story of their origins and their history of human use. All matter exists in the continuum of time; the patina of wear adds the enriching experience of time to the materials of construction.



It is this element of time which acts on the materials and buildings to create some unique.

The Significance of the Shadow

Shadows are important as they dim the sharpness of the vision and make depth and distance ambiguous and invite unconscious peripheral vision and tactile fantasy.

The shadow has a strong connection to Africa and African architecture.



Shadows cast of over shapes and textures allow the tactile nature of the imperfections to be discovered. The relationship of the light and dark, whether it is cast from a natural or manmade has a mythical presence which is often neglected in modern western

spaces, but one that ultimately enriches the experience of place, as deciphered by all five senses.

Shape of Touch

Touch is the only non-passive sense, divulges an unconscious sense of doing, revealing why traditional architectural metrics were derived from actual dimensions of the body.

Acoustic Intimacy

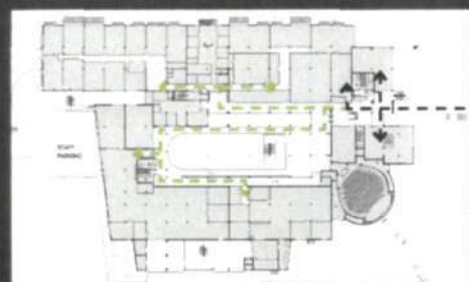
The study of sound in a building other than the spaces basic ability to absorb or reflect sound is one which has been left untouched in the modern western world of architecture. A space is understood and appreciated through its echo as much as through its visual shape, but the acoustic percept usually remains as an unconscious background experience. Hearing structures articulates the experience and understanding of space.

Building as a Landmark and Gateway

The new educational building is a symbol of development and acts as a catalyst for change in the area.

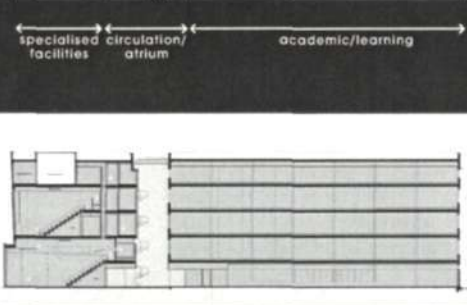
faculty of art, design & architecture (fada), uj

steuich wester architects



atrium - cardiff school of creative & cultural industries

bulder studio architects



Introduction

The decision was taken to commission a design which houses the creative departments, consisting of architecture, interior design, clothing design, multi-media, industrial design, ceramics, graphic design and jewelry design. The result was a three storey, 17 000m² building which could accommodate 2 000 students in a holistic campus building in Auckland Park.

Entry Sequence & Spatial Relationship

The FADA building is based on a centralised concept, where pods of studio space which are separated into autonomous departments and grouped around the atrium. This space acts as a multi-purpose circulation centre, where ramps and stairs link the three floors of the building. The public spaces in the design are grouped around the entrance lobby, allowing access to both students and visitors, yet restricting access to visitors past this point.

Design Ideas

The design is underpinned with concepts such as interaction, multi-functionality and inter-disciplinary studies.

Open plan studio setup is beneficial to the interactive process of design and there creating a social landscape.

Introduction

The new building for the Creative Disciplines faculty of University of Glamorgan is The Atrium - Cardiff school of Creative & Cultural Industries which is situated in the CBD of Cardiff in Wales. The project was an addition and renovation of an existing building in Cardiff (the former telephone exchange offices for BT). The new building brings together Art & Design, Media & Communication and Drama & Music from five previously buildings into a newly designed building.

Entry Sequence & Spatial Relationship

There are many similarities in the entry between the precedent and the proposed school. The university is a stand alone structure outside of any campus access. The entrance therefore becomes important. Once again it is evident that the grouping of public facilities around the entrance lobby on ground level is the favoured option.

The spatial relationship is outlayed by the precedent plan adjacent. Showing the grouping of similar facilities, in this case the grouping of all acoustically protected spaces being grouped to the new phase of the design. Leaving the academic facilities and spaces to the more structured existing building.

Design Ideas

The building does not resemble an university building, but rather a professional complex, which helps better prepare the students for the outside world.

if university - 001 >>

hennig jarewa architects

a organisational system used in many commercial buildings - the internal 'street' or atrium. This system is appropriate for a design school as openness, space, light and volume create interesting inspiring and happening spaces, which encourages interaction. The space becomes the heart, giving the building order and direction



t - systems building - 002 >>

paragon architects

the use of structural systems which offer aesthetic values while being functional, acting as solar control, the structure giving the building rhythm and creating a dynamic facade, materials in their natural conditions creating a blank canvas



orestad college - 003 >>

zxc architects

this project displays a visionary interpretation of openness and flexibility regarding team sizes and reflects international tendencies aiming at achieving a more dynamic and life-like studying environment and introducing IT as a main tool



constitutional court - 004 >>

zxc architects

the use of green gardens breaks up the judges wing of the building, allowing for a retreat out of the office, developing a strong interior - exterior link between spaces creating public gathering spaces near windows and green spaces



thomas deacon academy - 005 >>

thomas deacon academy

the concept for the design was to break down the scale of the building by dividing it into 6 colleges. each college consists of a 3 storey v-shaped ribbon, which created the sheltered 3 storey central space, each college has a network study area for social interaction and collective study, fostering a sense of community within the academy.



Theoretical Framework

Precedent Study

Qualitative Precedents



The Design Concepts are developed out of the design brief which states the consideration of certain key factors will result in a successful school of the digital arts. The concepts will be used to influence the design development of the proposed school for the digital arts.

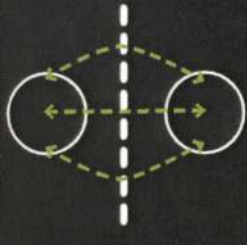
Adaptability

The column grid of the building allows for the adaptable rearrangement of furniture and functions according to changing needs of the users, school and technology.



Interface

The interface between the public and private realms should be transitional, thereby including the public in some of the activities and promoting the work of the digital artists and the school. This concept has been further developed to include the interface between indoor and outdoor spaces, where the boundary can be blurred through the use of materials and intermediate spaces.



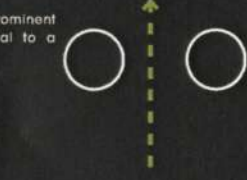
Informality

Informality is vital in establishing an effective and positive learning environment. The informal arrangement of functional spaces around a centrally located space encourages chance encounters and interaction between learners and educators. The studios are kept to the minimal size and the students are provided with student chill zones, allowing for students to interact and collaborate across different subjects. An informal environment positively reinforces the establishment of the relationship between the educators and the learners, allowing for the establishment of professionalism and responsibility, replicating the work place environment in the industry.



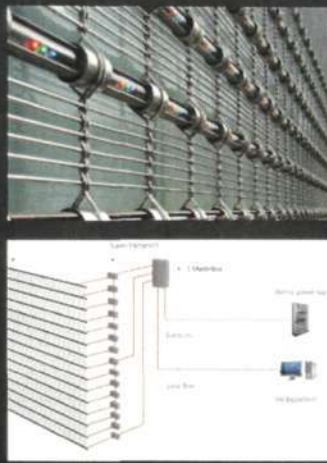
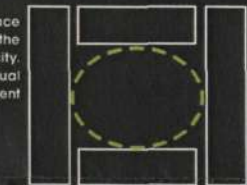
Gateway

A collection of two spatial prominent elements which create a portal to a precinct.



Courtyard Building

To create an internal green space with the city, shielding from the noise, wind and pollution of the city. The courtyard becoming the focal point of the city and the element which ties everything together.



The MediaMesh Screen

The basic concept of mediamesh is a stainless mesh fabric with interwoven LED profiles and with connected media controls installed behind it. The LEDs render the images onto the facade, providing the ability to display a wide spectrum of graphics, animated text and video. The mesh has a transparency of 75% acting as a solar shield to the glass library and administration offices. The mesh has a massive impact to the urban surroundings, allowing for digital art exhibitions to take in the park and using the mesh as the focal point to portray the artists work.

The Mechanical Skylights and Solar Screens



The solar screens positioned on the east and west facade of the building are fixed to a mechanical system which is link to computerised analytical system. There are sensors incorporated in the screens and when sensor detects direct sunlight the screens are rotated to screen the direct sunlight into the studios. The skylights work on a similar system where the temperature of the building is monitored and the skylights are opened to release the hot air.



<<Meeting/Viewing Room

The viewing rooms are small acoustically protected rooms equipped with state of the art audio visual system and computers. This space operated closely with the multi-media and green-screen studios and allows for quick play back and viewing of the film or images captured by the students. The space doubles up as presentation and crit space for small class presentations.



The Student Chill Zones

The development of Wi-Fi connectivity creates the ability for work to happen anywhere in the school. Giving the students the choice of many work areas and in turn creating an inter-disciplinary learning environment which promotes professional and responsible working morals. The chill zones are designed to be a home away from home and are positioned at crossroads of circulation routes, allowing for informal meetings between students. There was a deliberate intension to link these spaces with the outside world, through vistas as well as outdoor spaces such as smokers balconies and roof gardens.



<< Digital Art Gallery

The gallery is a double volume multi-functional space, allowing for the normal tradition exhibiting art as well digital art installations and multi-media animations. The walls are clad with a series of mesh screens allowing any surface to be used as a "canvas" shown in the adjacent images.

Digital Art School Reception >>

The reception area is a multi volume space, with steel bridges crossing the space and linking the 2 concrete wings of the school. The bridges are exposed painted steel with aluminium cladding and concealed lighting, together with the steel handrails, large expanses of glass and light creates dynamic entry to the school. The staircase is wraps around the lift shafts which are clad in a galvanized mesh, portrayed in the image to the right.



<< The Crit Rooms

The crits room are acoustically protected with all the wall surfaces available to pin up designs and work. They are flexible as shown in the sketch, allowing for the room to be setup in different ways. There are moveable walls panels which in able the room to house several crit sessions or packed away to in able a large crit or seminar. There are LCD screens which are mount on rails which are moved in front the students work, therefore allowing the ability to show the work flow from sketches and drawings to the final digital product.

The Outdoor Spaces >>

The outdoor spaces are a key element to the design, tying in with the theoretical framework as well as taking advantage of the Durban climate. The concept of the building was to have a vista to the outdoors from anywhere in the building, whether being inwards to the two courtyards or outwards towards the surrounding Florida Precinct and skyline of the Durban CBD.



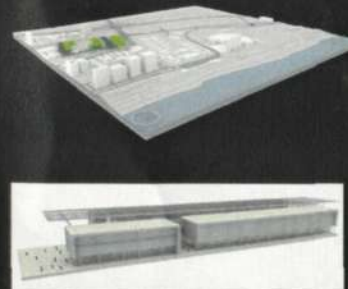
Teaching LAN & Seminar Rooms

Design Concepts

Design Ideas

Design Development

Scheme 001 was designed on a long slender site near the CBD of Durban. The reason for the change was because of the site and its remoteness to any context in the surrounding area. The building in concept was based around the central internal covered street, which became the "square" of the school and the hive of activities.

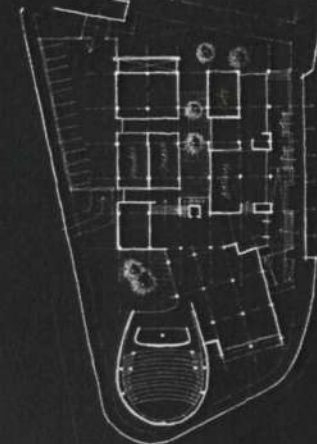
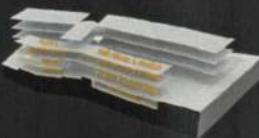


Scheme 001



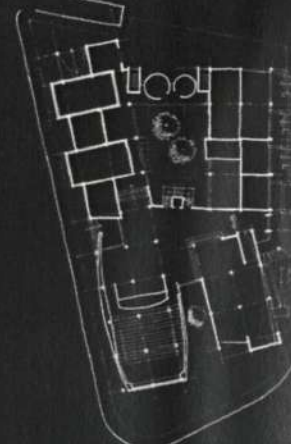
Scheme 002

- Scheme 002 continued with the concept of the internal street from scheme 001, yet had developed into planted courtyards.
- The building was angled to take advantage of the city views as well as stepping back from the Florida Rd to create a public gathering space in front of the school.
- The angle of the building meant that a lot of the site to the south and south-west of the site had been underutilised.
- The building was set on a podium to create a difference between public and semi-private areas as well as helping handling the slope of the site.



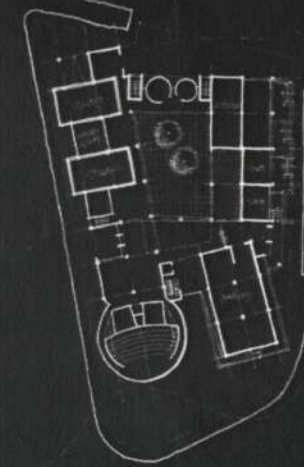
Scheme 003

- The auditorium was changed to a circular shape to acknowledge and address the corner of the site.
- The auditorium was kept on the same alignment to the rest of the building and therefore utilising more of the site.
- The visitors parking is kept on the west of the building with a very limit access to the building from the quieter Montpellier Rd. Resulting in people having to walk around to the Florida Rd entrance to the school.
- The larger blind spaces of the studios are grouped to the western part of the building, as natural lighting is not necessary.



Scheme 004

- The visitor parking was removed to allow for a larger central courtyard within the building. A larger courtyard is able to maximise the sunlight which the courtyard will receive.
- The moving of the western wing towards the building boundary allows for a more flexible entrance to the school - allowing entry from both Montpellier and Florida Rd.
- The steel bridge is introduced to enclose the courtyard and hence provide a service/delivery area to the cafe and studios.
- The circulation core is moved into the centre of the school, allowing simple access to areas of the school.



Scheme 005

- In scheme 005 the main entrance was moved down to road level, allowing for easy movement from the street.
- Retail shops were introduced next to the corner cafe, to continue the mixed-used nature of Florida Rd.
- The Gallery was moved to the south-east corner to connect with the passing traffic and traffic circle.



-  retail/commercial use buildings
-  residential buildings - possible future development
-  institutional/community/religious buildings



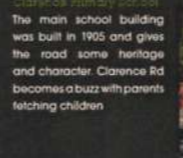
The JC Building
It is an excellent example of a contemporary building being inserted in the Florida Rd Precinct. Continuing the retail along road level with commercial above. The building responds well to the topography.



Midland Apartments
A 6 storey apartment block. Together with the Lennoxmere flats, they create a lack of continuity through the road, as they are situated across the road from each other.



The Durban Children's Society
It is a child-welfare organisation committed to protect the rights and enhance and promote the quality of life of children, families and communities in Durban.



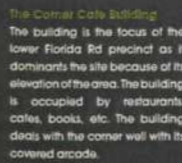
Clarence Primary School
The main school building was built in 1905 and gives the road some heritage and character. Clarence Rd becomes a buzz with parents fetching children.



Topex N24 for the site
The building is now entered from the other entrance, and therefore the Clarence Rd elevation has no interaction with the road, resulting in a dead space.



Highbrix Apartments
The apartment block is situated south of the site yet does not have much impact on the surrounding area.



The Corner Cafe Building
The building is the focus of the lower Florida Rd precinct as it dominates the site because of its elevation of the area. The building is occupied by restaurants, cafes, books, etc. The building deals with the corner well with its covered arcade.



Teddyleach
Converted homes, now being used for retail/commercial purposes.



Residential Homes
There are great possibilities for future development in the area, as there are still residential buildings in the precinct, meaning either cost effective conversions or full redevelopments are possible.



Lennoxmere Flats
The 9 storey block of flats has developed a inactive part of Florida Rd because of the lack of continuity in scale and set back from the street.



Vintage
A old house which has been converted into a fairly new restaurant/bar. Showing the progress of conversions up the street.



Bar Sag Bohamba
The building is a national monument and the restaurant has become an institution in Durban. The cafe environment has led to the success of Florida Rd.



The Old Warehouse
A converted house which is now an antique shop.



St Mary's Community Hall
The hall is used for different community functions such as gym, material arts classes in the evenings for surrounding residents.



St Mary's Church
The bell tower of the church helps generate a gateway into the Florida Rd precinct, yet the lack of a prominent structure across the road weakens the effect. The school can help develop this gateway.



Site Analysis & Context 1:1000





Locality Plan



Pedestrian Movement Patterns 1:4000

The pedestrian movement around the selected site can be split in to retail and commuter. The commuter traffic consists of workers commuting to and from work, towards the Umgeni Rd train/taxi station. The retail traffic is minimal in the southern parts of Florida Rd compared to the northern and therefore presents opportunities through urban design interventions.



Vehicular Movement Patterns 1:4000

The most intensive traffic flow around the selected site is the north-south movement, with the east-west traffic being secondary. The Florida/Windermere Rd corridor is link between Argyle Rd and the CBD. During peak hours the it is found that majority of traffic along Florida Rd is heading northward, with Windermere heading southward towards the CBD.

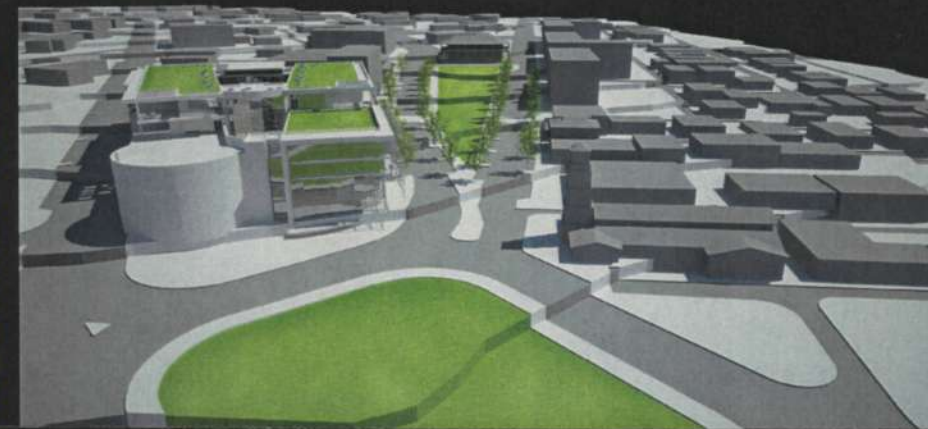


Existing Figure Ground Study 1:4000

Urban Concept

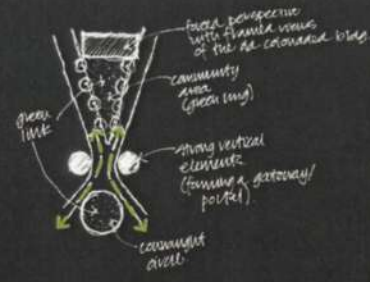
Urban Design Framework

- Strengthen and define the area into an identifiable precinct
- Create a portal into the precinct
- Create an environment that is safe for both pedestrian and motorist
- Improve and define the quality of the environment by means of planting and landscaping, high quality materials and increased activity at street level
- Provide the community with a space for community gatherings and events, creating interest of activity and ownership to the surrounding community.



3d Aerial Views

Road Changes



Urban Design Proposal

The proposal for the area aims to define and strengthen the southern Florida Rd precinct. As mentioned before, Florida Rd is used as a link between the CBD and Argyle Rd resulting in the route becoming a major link in the city. The urban form creates a natural constriction at the start of Florida Rd and with the St Mary's Church bell tower acting as a landmark, the insertion of the School of Digital Arts has the opportunity mirror the scale of the bell tower therefore strengthening the landmarks and creating a portal and entrance to the precinct. The use of planting and materials is used to back up this concept, giving the area an identity.

Currently there are link roads between Florida and Windermere Rd. The removal of these link roads allows for the land to be transformed into a landscaped park. The triangular shaped park bordered by a series of trees creates a vista which is terminated by an existing listed colonnaded building which is positioned to the north of the park.

The precinct is fairly undeveloped, resulting in many opportunities. The proposal aims to create continuity and definition in the edges of Florida and Windermere Rd by developing 2 - 3 storey mixed used buildings, which are built up to the boundary edge. The reason for the mixed use buildings is to continue with the precedent set in the northern part of Florida Rd. Specifying pedestrian friendly functions such as retail or restaurants on ground floor to promote the pedestrian movement along the developed edges.



Existing Urban Framework

The existing situation with the cross over roads, results with the remaining dead space, which is not large enough to develop. The negative use of the land in the area, parking has become a problem.

Proposed Urban Framework 2006

The proposal by the eThekweni Municipality has responded solely to the lack of parking in the area. The proposal neglects any sort positive urban intervention in the area and result there is a large amount of dead space.

Proposed Urban Framework 2009

The current proposal looks to answer the parking problem and concurrently improving and uplifting the area. The cross roads have been removed to create a central park, which can host community events and therefore turning the dead space into active space.

Urban Design Masterplan 1:1000



The roads and pavements in the precinct will be paved and cobbled to define the district. Urban bollards will be used for functions such as weekend markets and local art exhibitions to limit access to the area to pedestrian.

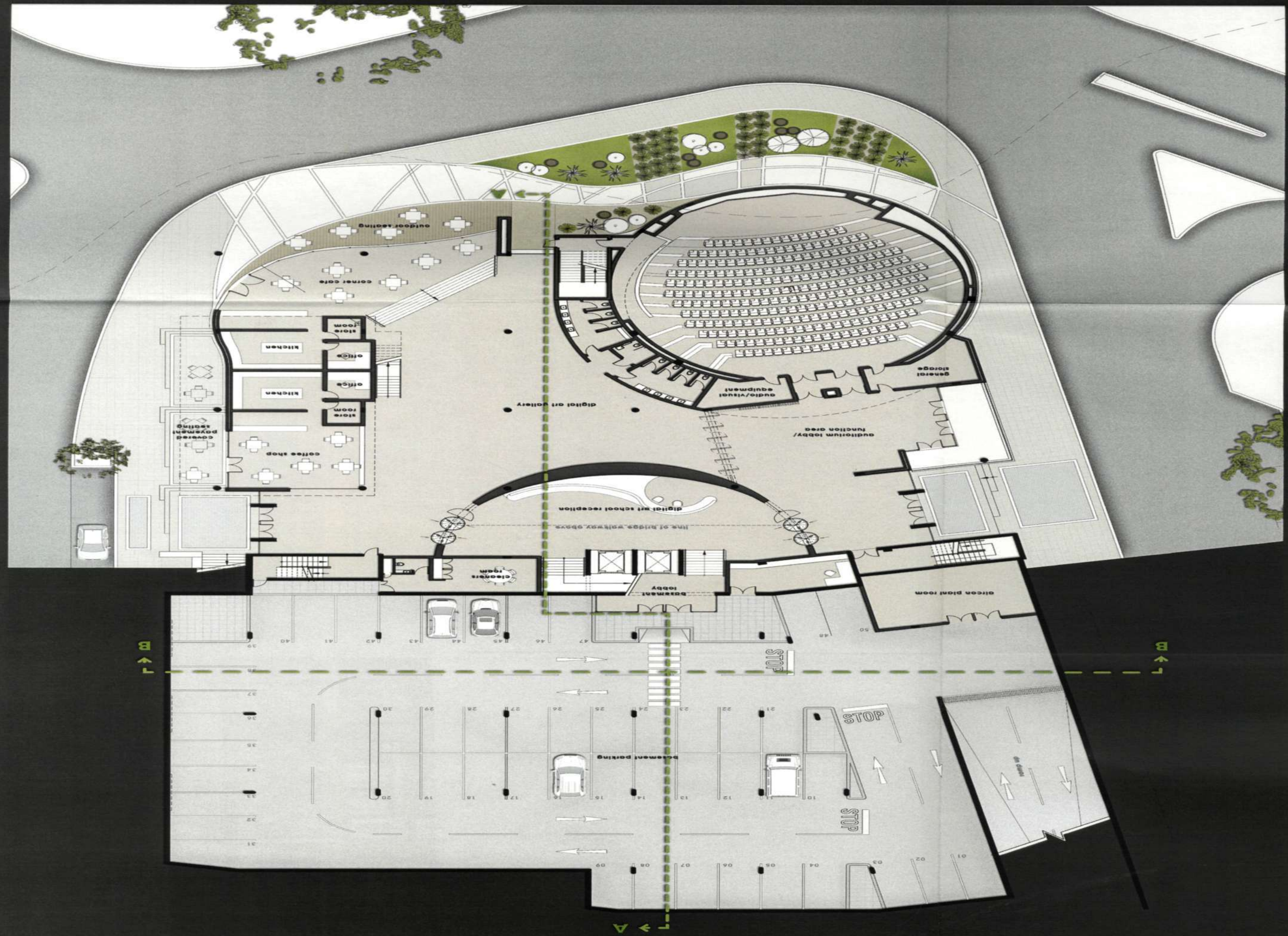
The listed colonnaded building which commands of the park and the area

The proposal aims to create and define the urban space and make it an southern Florida Rd precinct and park. This is done through development of residential houses into maximum 2-3 story mixed-use buildings. The buildings are built up to the boundary edges, creating a continuity to the precinct.

The park, in the precinct, will have strong connection to the proposed school. The space allows for the exhibition of digital installations from both students and practicing artists, promoting the work of local artists. The 'Art Market' is currently held at St Mary's Church and the park is the perfect venue for markets like this one.

The media-mesh screen is attached to the east side of the proposed school. Allowing the Community park space to relate to the school through the screening of animation and multi-media work.

The strong vertical element of the St Mary's Church bell tower and the mass of the proposed school create the gateway to the precinct.

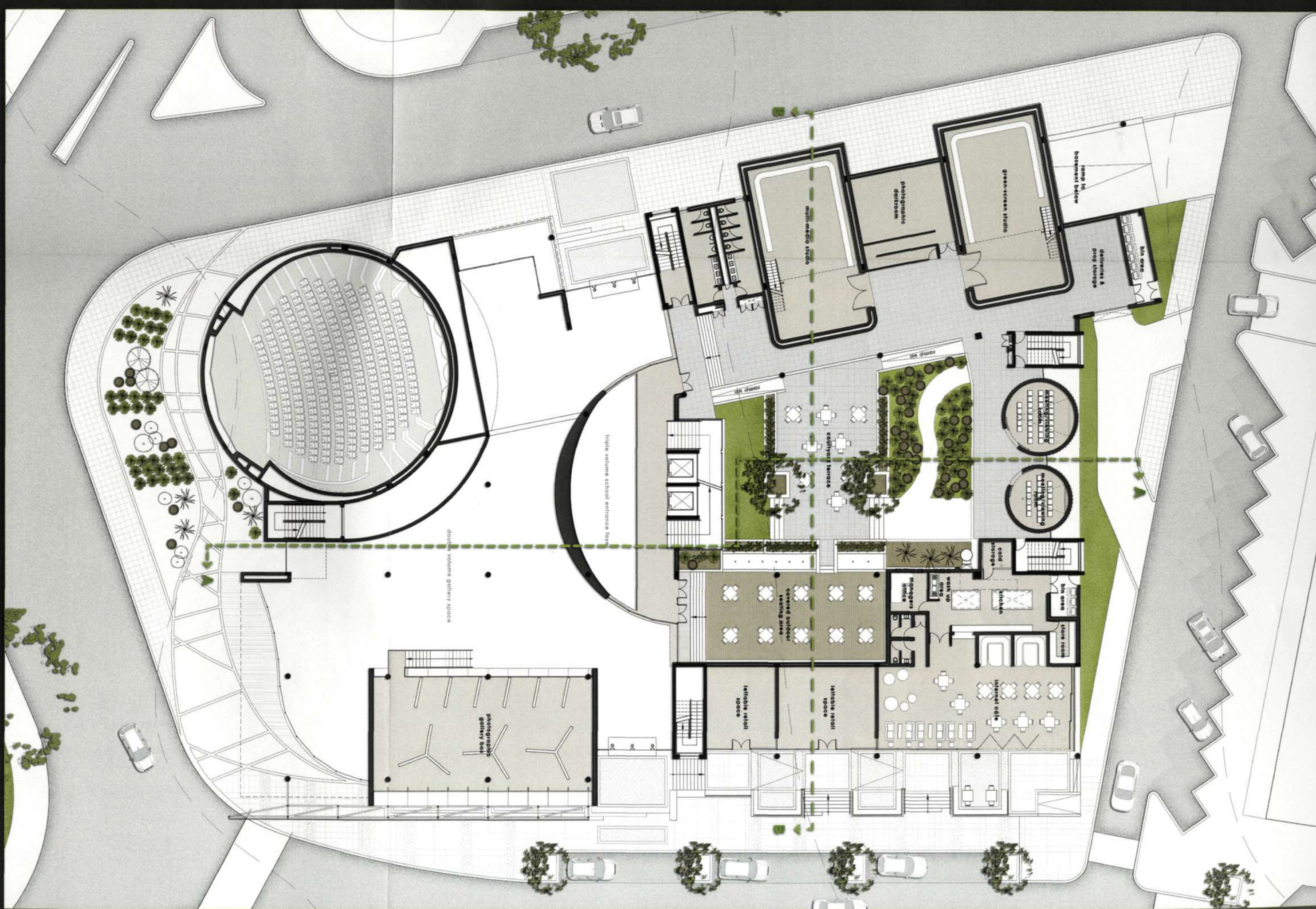


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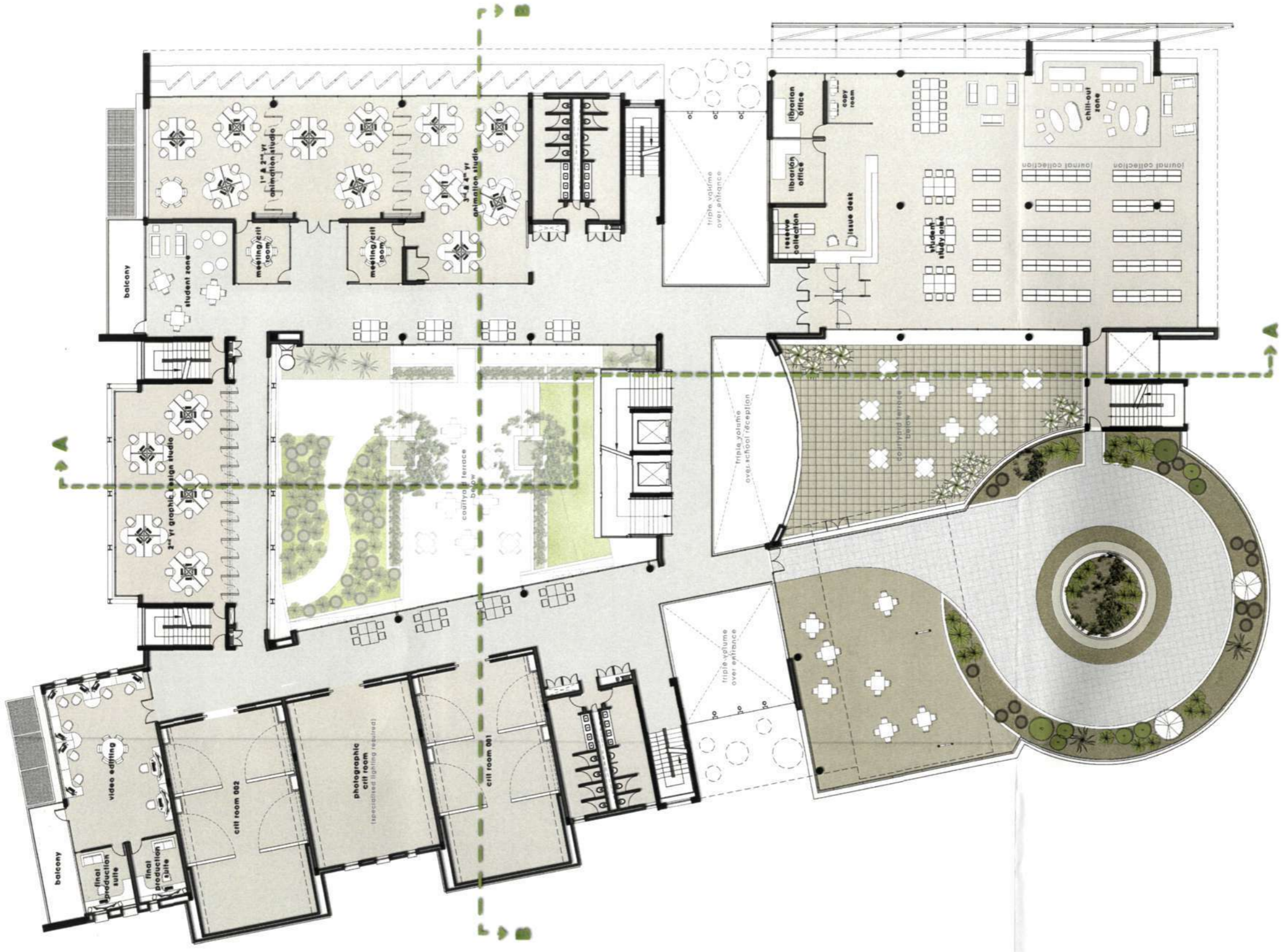
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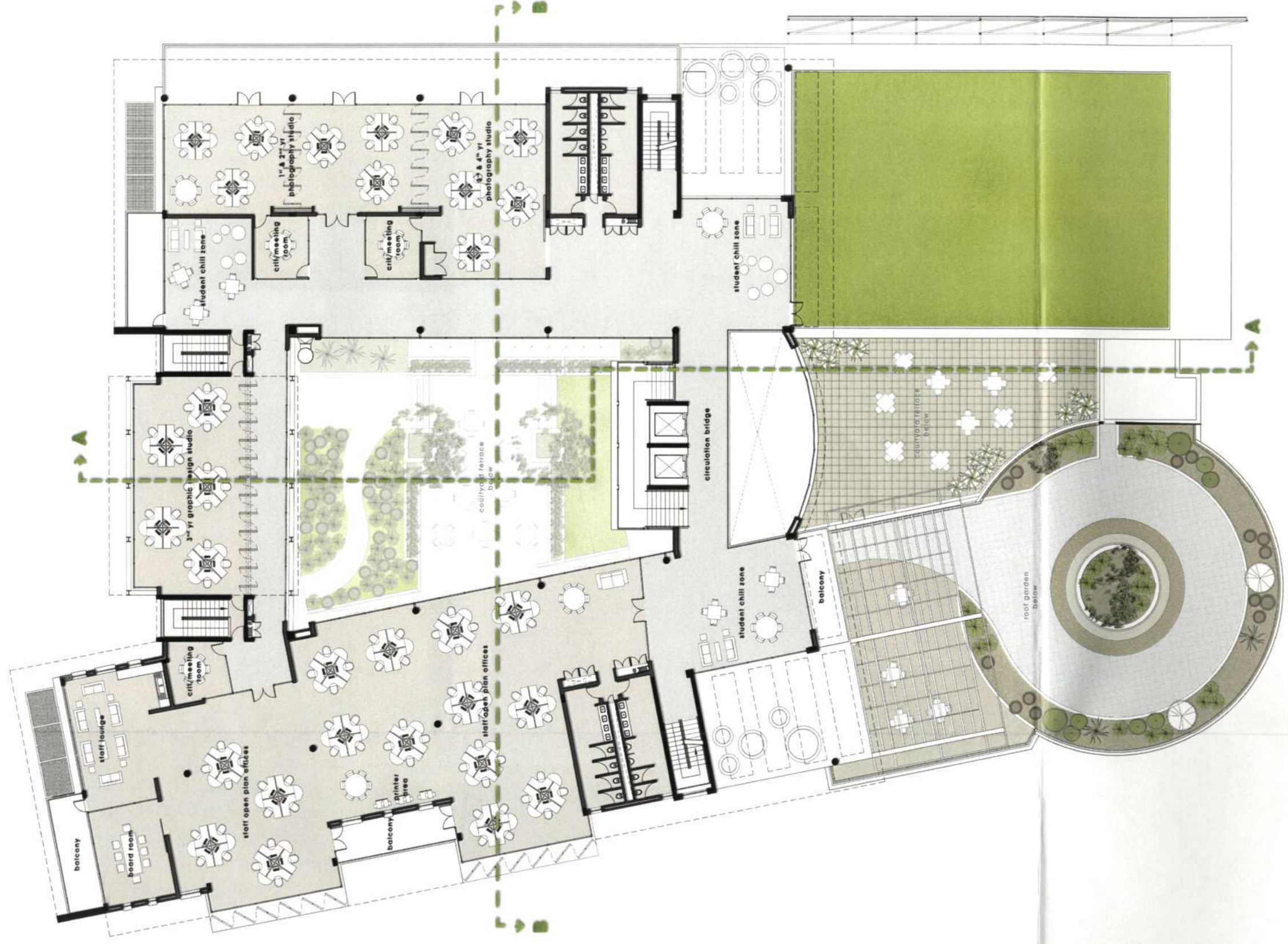
1 → A

Upper Ground Floor Plan 1:100

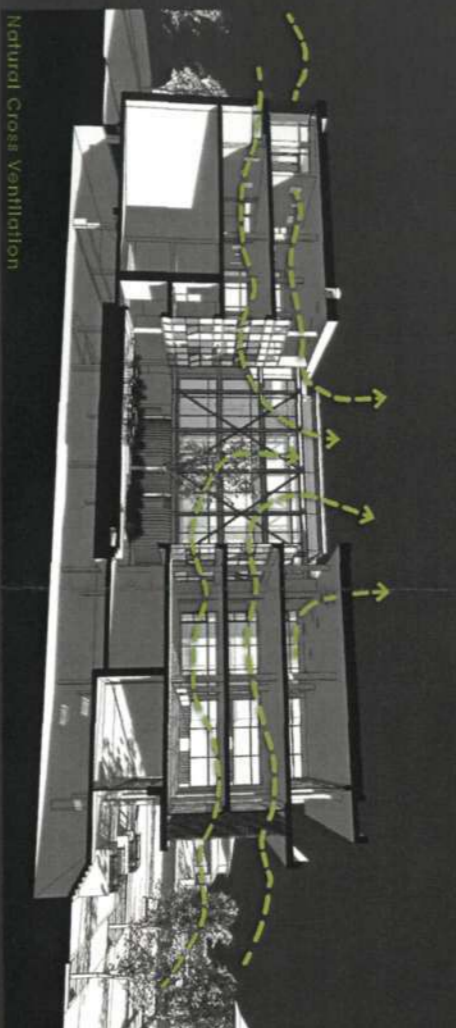
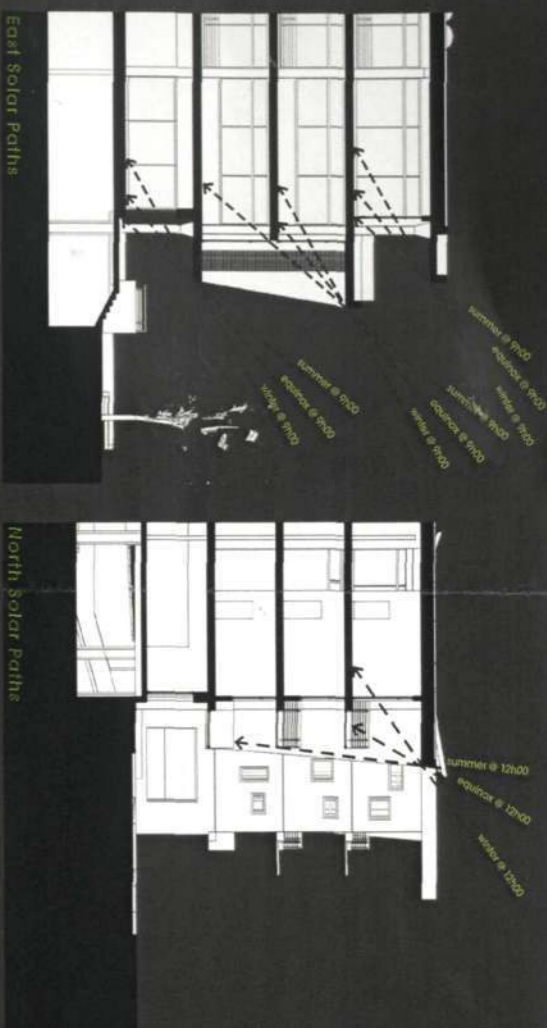








Climatic Response



Natural ventilation and lighting was important to the design from the beginning and resulted in contributing to the form generation of the design, the building was split in to 2 wings of 15metres in width to maximise the natural lighting and cross ventilation. The introduction of a centre courtyard allowed the for lighting to enter from both sides of the wings.

The roof are planted turf roofs, which help in the insulation quality of the roof structure by adding mass and a thermal resistance value. Transparent dome skylights have been incorporated into the design of the roof, allowing wells of light to soak the circulation zones of the upper floor, as well as acting as a ventilation system, the skylights are connected to a mechanical fan, which allows the domes to be opened and the warmer air to escape. This process is monitored and operated by a computer system. A similar system has been used in the Callicolia Academy of Sciences Building by Renzo Piano, shown on the right.



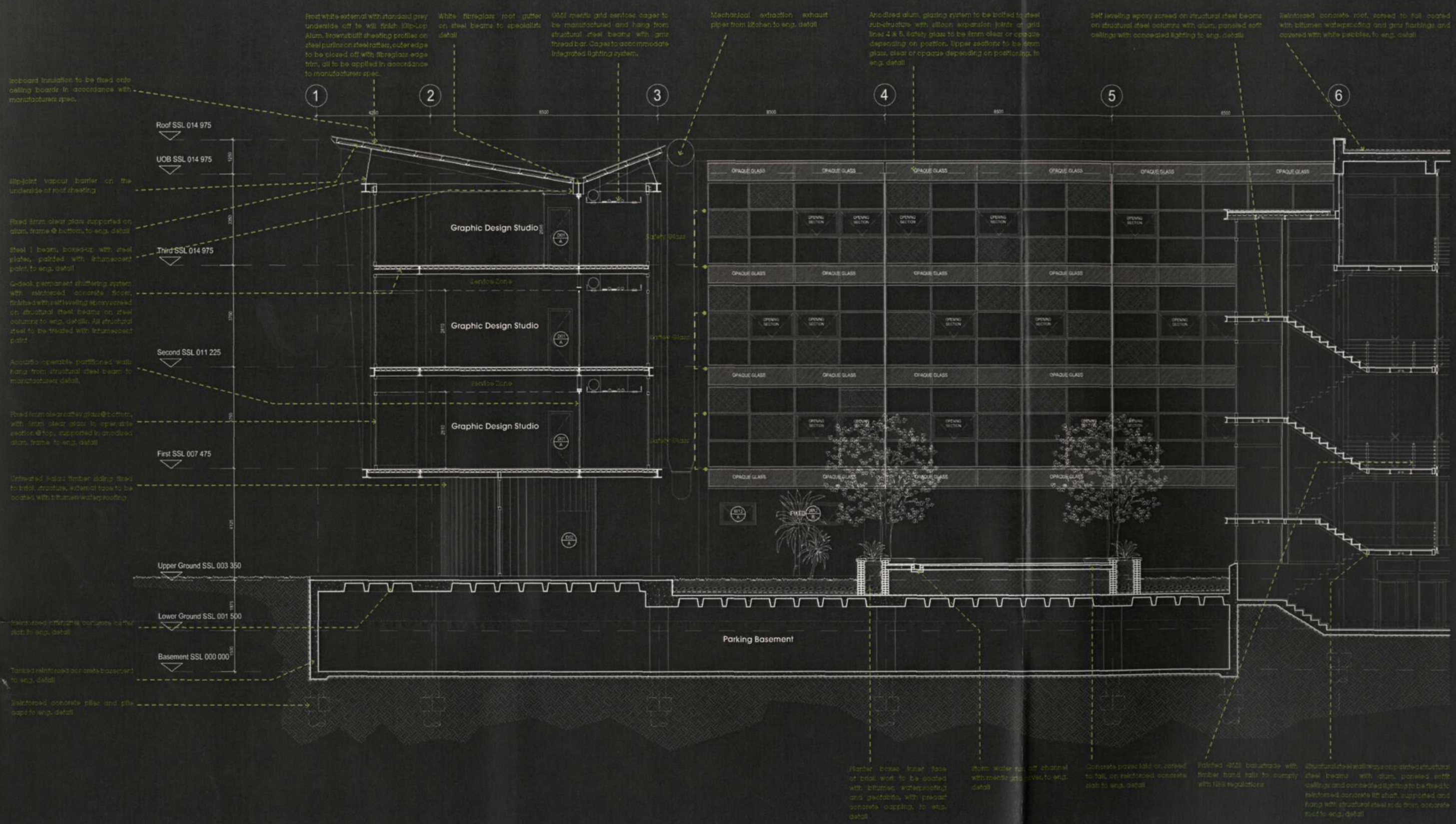
Shadow Studies



3d Perspectives



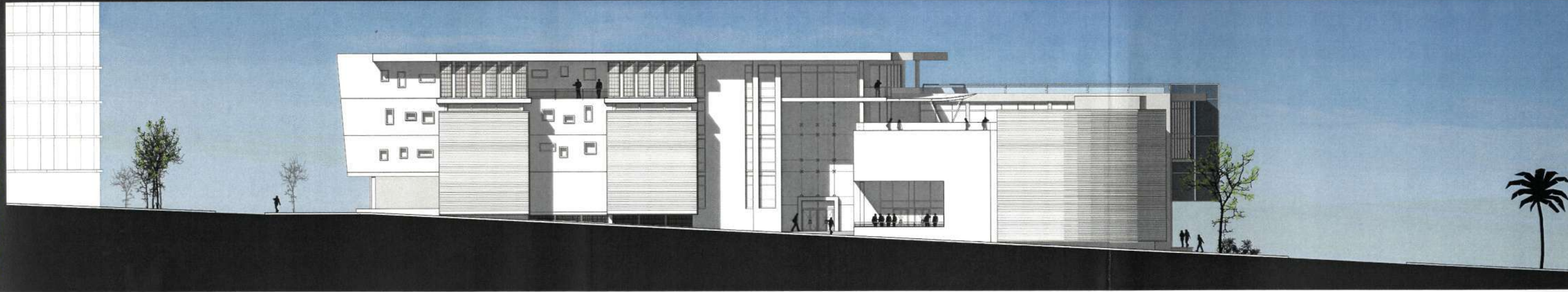
Technical Section AA 1:50



South Elevation 1:100



West Elevation 1:100



North Elevation 1:100



East Elevation 1:100



Section AA 1:100



Section BB 1:100

