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MEDIA PRODUCTION LAB architecture as urban stage [tshwane university of technology departments of journalism and public relations in the faculty of humanities]: a classroom for socio-cultural spirit and expression

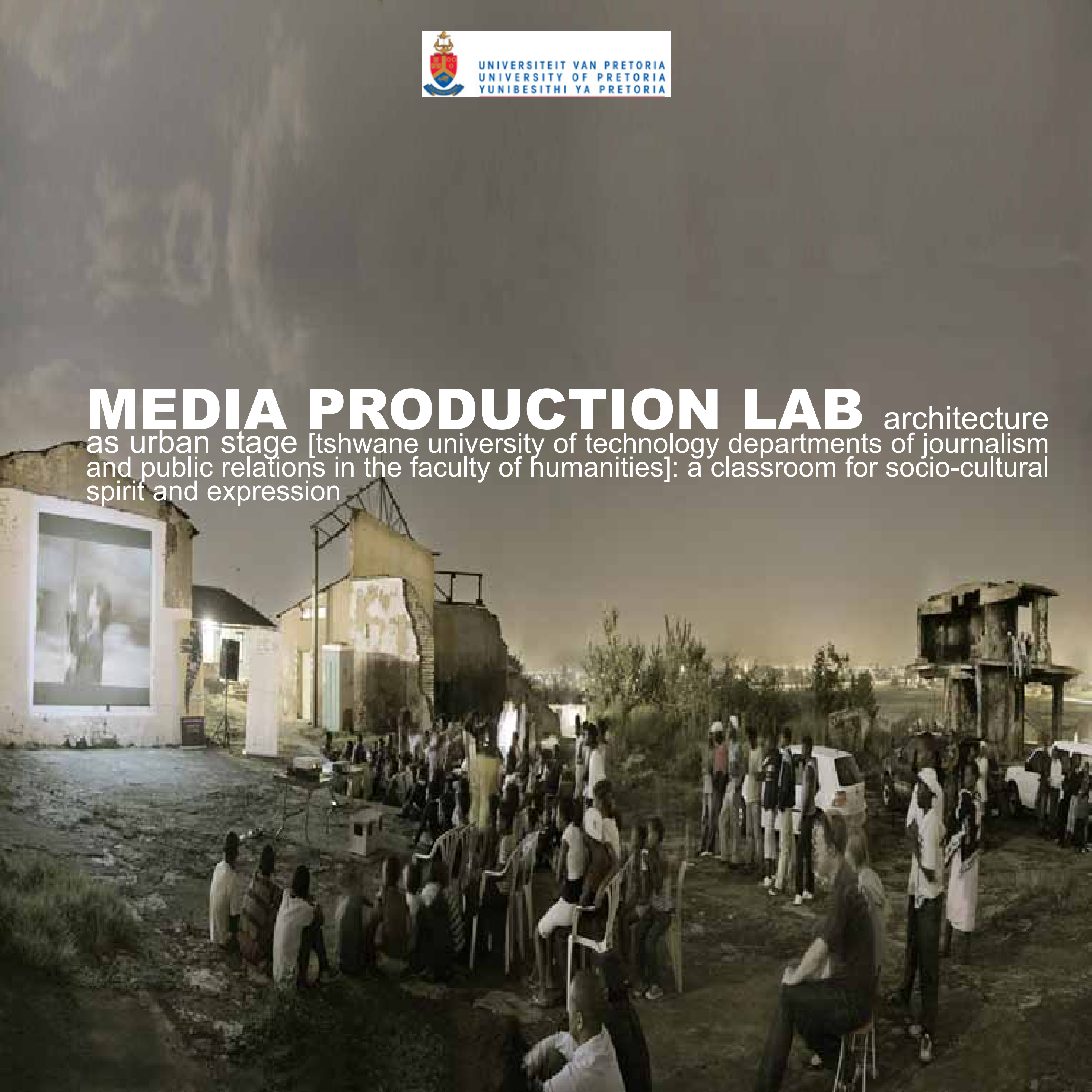

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FIG 2_Design Concept Stage 4

MEDIA PRODUCTION LAB

architecture as urban stage [tshwane university of technology departments of journalism and public relations in the faculty of humanities]: a classroom for socio-cultural spirit and expression

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the future of journalism...

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28224362
Submitted in fulfillment of part of the requirements for the degree of Masters in Architecture (Professional) in the Faculty of Engineering, Built Environment and Information Technology. University of Pretoria, South Africa
Project: Media Production LAB for the Tshwane University of Technology Departments of Journalism and Public Relations in the Faculty of Humanities
Research Field: Urban Landscapes
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Chapter 1

The primary objective of this dissertation is to build theoretical argument around architectural experience and place-making in the urban realm. How we experience architectural space in a society dominated by media, is to be questioned. The research topic, “architecture as urban stage”, investigates the production of media within the space of the city. This methodology is divided into sub questions which are addressed on urban- and architectural levels.

On urban scale the discourse explores the notions of embedded media technologies in the built environment. A sense of arrival is celebrated at the historic eastern gateway into the heart of the inner city, cultural district and urban campus. In relation to this, the question is raised whether media can contribute towards a more vibrant, productive and meaningful urban space - compared to existing spaces in the city?

Can technology extend the reach of architecture, establishing a more flexible urban realm during; e.g. different times of day; adjusting to different activities and social events? How can public space in the city create a sense of awareness, social participation and consciousness towards the production of media? Will this generate a spirit of city and campus activities, enabling the individual to express his / her unique identity and presence in the city?

Architecture as urban stage explores the combination of architectural experience with the integration of urban campus into the urban fabric. This will ensure a diverse event of activity and socio-cultural expression within the space of the city: an urban classroom for all to share.

Glossary

Architecture	art, liberal, orchestrator, director,	facilitator, translator, communicator, informative
Urban	classroom, environment, life, nature,	scenery, character, features, personality, quality, social, cultural
Stage	**act**, performance, event, concert,	journey, show, routine, presentation, scene, animation, activity
Exploration	investigates, process, look into,	inquiry, searching, questioning, inspect, consider, examine, explore, study
Media	communication, expression, educate,	information, memory, news, radio, television, message, billboard, identity
Multi-Sensory	body, being, dwell, feel, hear, see,	smell, taste, spirit, vibrance, energy, ambience, emotion, memory
Experience	time, being, participation, awareness,	exist, living, culture, psychological, meaning, imagination, education,
Space	gateway, node, threshold, precinct,	place, square, room, opening, pause, interval, movement, area, zone
ABSTRACT	ACTOR ACTION	REACTION INTERACT CONTACT

Introduction

urban classroom

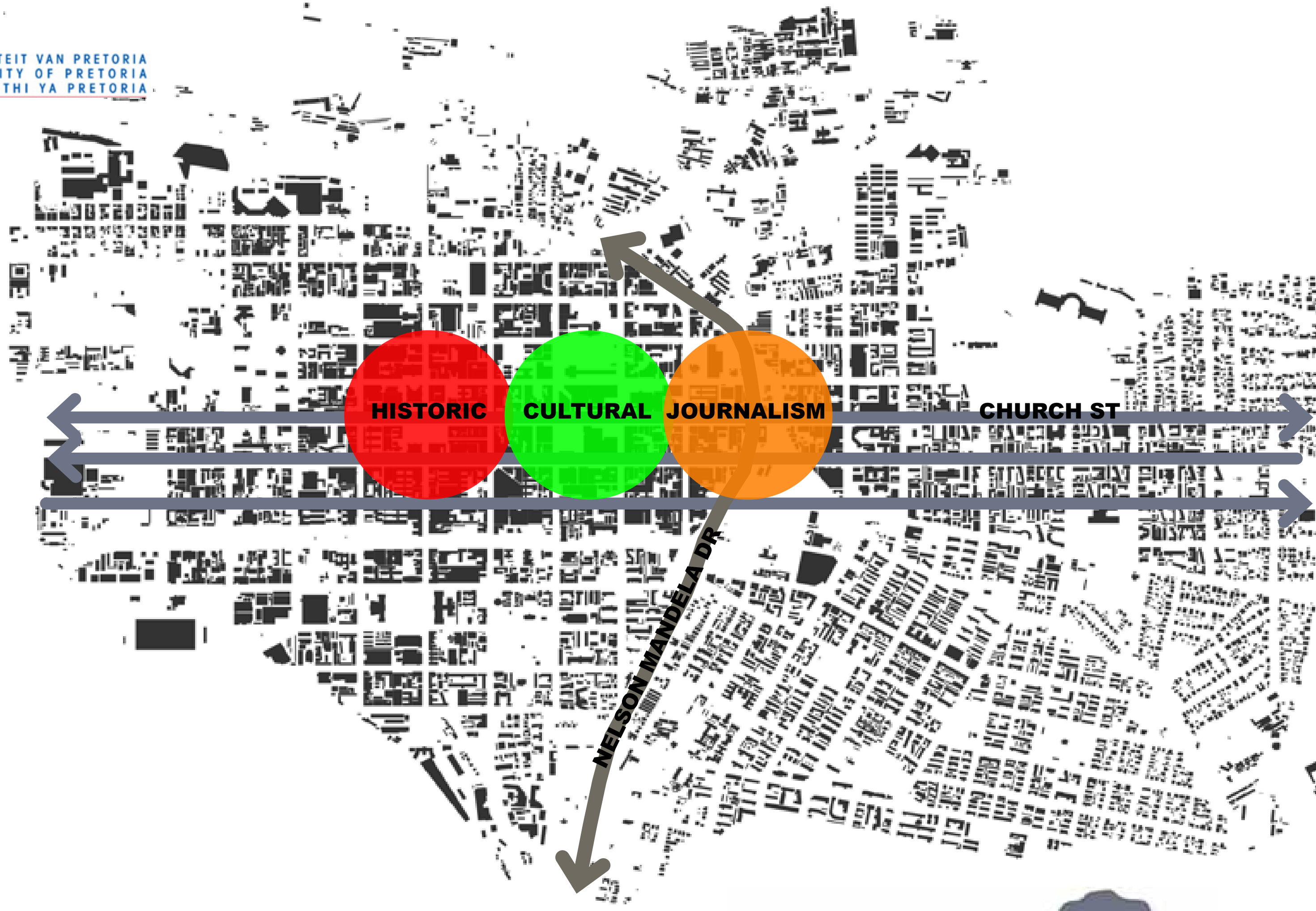
Pretoria is the administrative capital of South Africa. It is home to the largest educational institutions, main research organizations, National Reserve Bank, seat of Government, and leading businesses in the country. Like most African cities, Pretoria functions on a formal- and informal level. In addition crime, neglect and social decay have caused eastward sprawl. The migration of residential and commercial activities left the city with an inefficient, congested infrastructure and fragmented economic activities.

Western thought might argue that the city has become sterile, mono-functional and unprofitable, but in African sense the city became an ambient, economic platform for events on sidewalks and public transport nodes. Currently Pretoria's socio-cultural spatial experiences are overshadowed by this informal sector, with an identity formed by temporal events.

The chosen study area is situated along the edge of the inner City of Pretoria which forms the historic eastern gateway into the heart of the city. This specific area falls under the Inner City Development and Regeneration Strategy, and the Nelson Mandela Corridor Framework of 2005.

The primary vision for Pretoria is to become the "leading international African capital city…" Pretoria is aimed to be the "Functional and Symbolic Heart of the Capital City of South Africa and Africa, and The Centre of Culture in Africa, where all aspects of being (South) African can be celebrated." (City of Tshwane 2005: 4) Overriding factors for the inner city are the lack of identity, vibrancy, excitement and energy. (City of Tshwane 2005: 4-9)

Despite this so-called lack of identity, Pretoria encompasses a dominant educational identity in South Africa. However, the city's educational institutions exist as fortified islands, completely shutting themselves off from the rest of the urban activities. This dissertation aims to encourage education as a means to contribute towards the regeneration of the inner city.



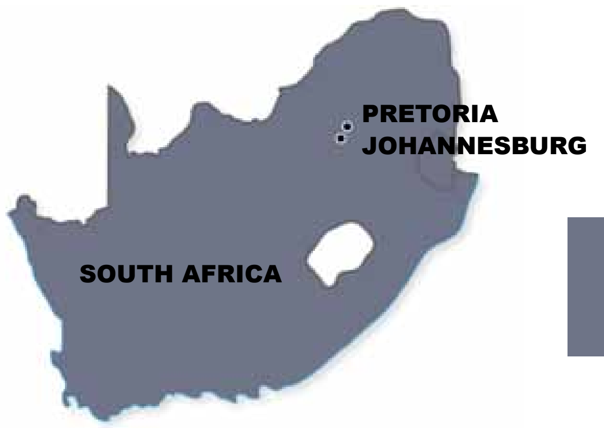


FIG 1.1_Pretoria Nolli Map
FIG 1.2_Pretoria Geographical Location Map

The chosen research topic proposes an urban campus within the space of the city to become a place for valid South African socio-cultural urban expression, contributing towards the regeneration of the inner city.

The study of human socio-cultural phenomena is generally referred to as "humanities" which introduce journalism and public relations.

- Journalism is the art of investigating and presenting authentic information regarding people, concerns, styles and events.
- Public relations is the communicative art and science of administrating and sustaining a positive image between organizations and their key public interests. (Events management, business communication)

The introduction of the disciplines of journalism and public relations in the faculty of humanities in the inner city hosts several opportunities for the faculty. The urban campus is situated amongst the most vibrant socio-cultural, political and economic energies in the city.

The role of journalism in shaping a developing country holds the key to deliverables within its context. In this way the city can become a classroom for the students which:
- Investigates human experiences and social interaction, a social art by means of communication.
- gives identity, meaning and status in the community, builds community spirit in developing nations.
- triggers human psychology or "wow" factor of emotion, intellect and amusement.
- sets agenda for community aspirations, needs and education.
- makes full use of media technology to deliver news, stories, events etc.
- human studies is realized by absorbing the self-generating life, energy, vibrancy, ambience, knowledge of the human and city.

By means of developing the current, fragmented and fortified campus block into the urban fabric as an urban classroom, will have the power to become:
- Be able to continuously adapt towards a growing contemporary urban culture..
- By means of technology this classroom will be able to absorb all the cultural, political and social energies of the city.
- Will express all these energies through media technologies to become a live experience not only in the city, but on global scale.

The synergy between humanities and theoretical argument to follow is that it's not merely a social art but also a study of the human's "being-in the world" by means of his experiential factors. This close resemblance between the two ideologies: urban stage and classroom, ensures an environment which sees itself not merely by what it is, but by the significance of what it does.

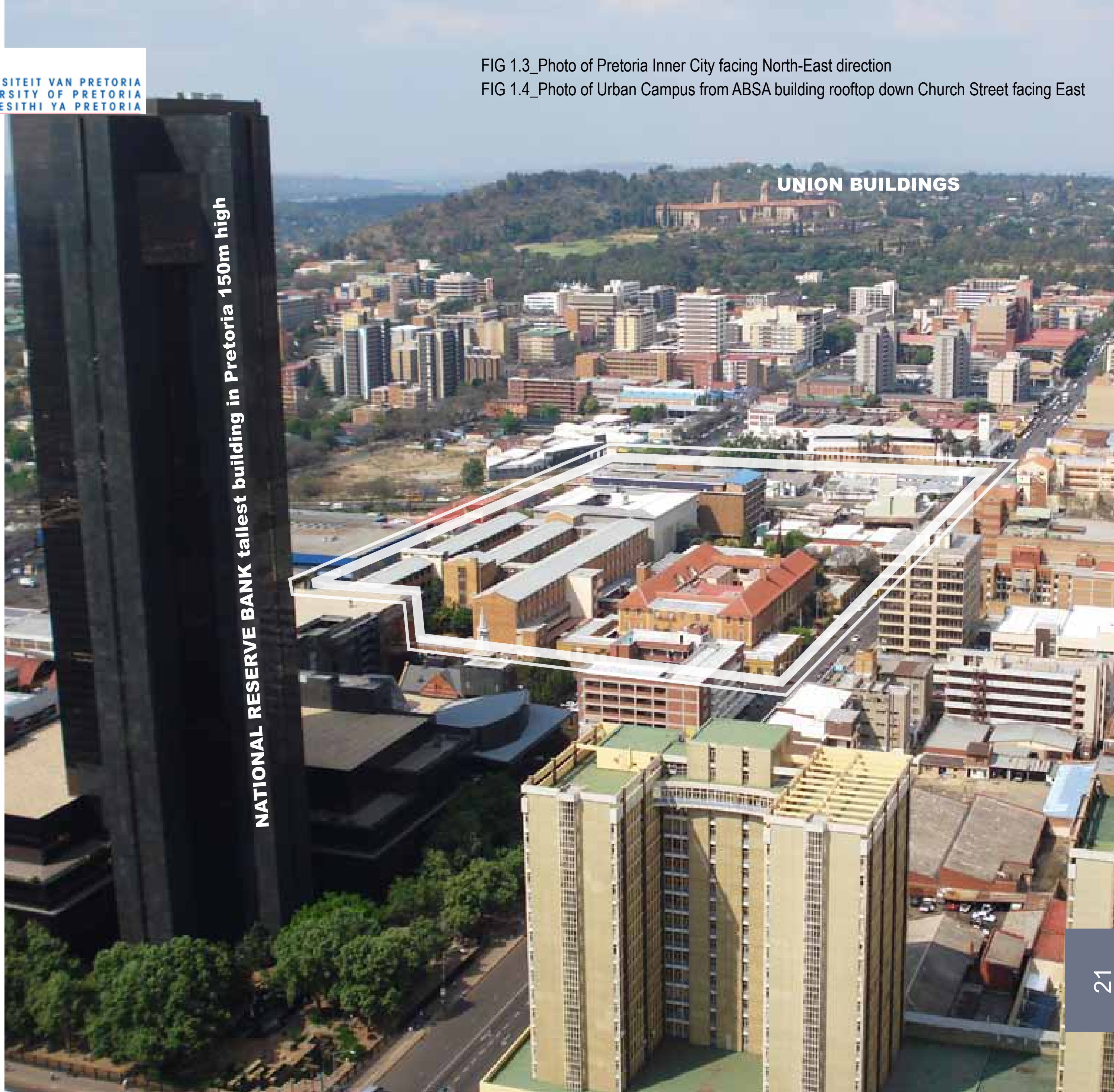


FIG 1.3_Photo of Pretoria Inner City facing North-East direction
FIG 1.4_Photo of Urban Campus from ABSA building rooftop down Church Street facing East

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Site and urban approach

The discourse investigates the development of the Tshwane University of Technology's (TUT) Science Campus with the Human Sciences (Humanities). The TUT inner-city campus is situated amongst the most vibrant socio-cultural energies in Pretoria. On metropolitan scale the integration of city block into urban fabric will be investigated and analyzed. Currently the city block is divided into two halves: consisting of the Tshwane North College towards the west, and one of three satellite campuses of TUT to the east.

The chosen architectural program proposes the integration of the campus within public realms to ensure a variety of uses through a longer daily period, to address current needs in the city, and become a people's place. This site has to encourage interaction between students, the public, professionals and variety of users. The equivalents between the existing activity and new proposed intervention have been explored to ensure the longevity of the project in the urban fabric.

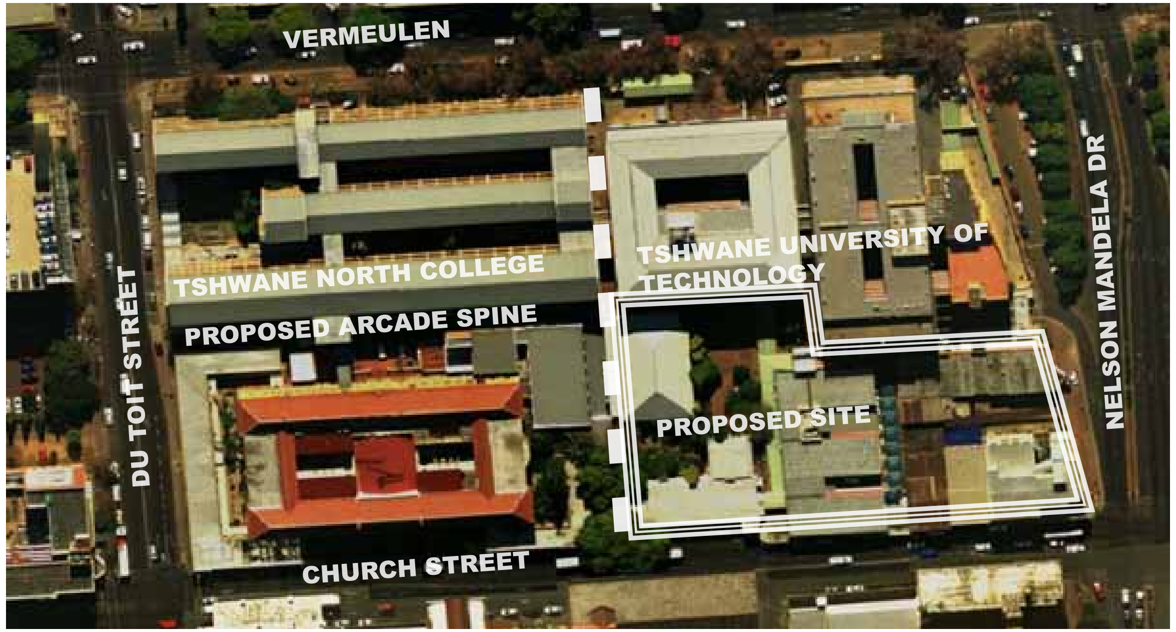

FIG 1.5_Aerial Photo of Campus Block

Client

TUT has three campuses located in and around Pretoria. The inner city campus, formally known as Arcadia Campus, is found to be the most optimal area for human studies whereas the other two TUT campuses, main campus north-west of the city and Shoshanguve in a township 50km towards the north, contributes limited resources. The location of the science campus will be able to foster maximum socio-cultural exchange for the students and consequently become their classroom of study.

The University has predominantly been funded by government organizations. By means of incorporating a private enterprise into the scheme hosts a diverse spectrum of opportunities to become a world class educational intervention. Smart business or ideal partnerships (consortium) promote and coordinate a sustainable initiative. This is directed towards the scenario where university and professional media companies can pool in on their resources, together with community participation. In addition, the "future of journalism" is to deliver successful print- and digital media in a more diverse variety of form consisting of: newspapers, magazines, telecommunication, mobile messages, advertising, television- and radio broadcasting.

Pretoria News is the city's only daily and online newspaper, owned by Independent Newspapers Inc. The presence of the SABC and Naspers (Beeld and the weekly Record) concludes this media identity in Pretoria. Operations in Johannesburg and Cape Town by the South African Media giant, Naspers have overshadowed further development in Pretoria. The integration of Naspers with the proposed faculty of humanities hold key opportunities for them. Naspers will benefit from the proposal being a future investment whilst also ensuring a prosperous breeding ground for future professionals in South Africa.

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Design intent

The primary objective for the intervention is to create an urban classroom which extends itself beyond the walls of the campus block. In order to succeed as a vibrant, interactive destination place. Additionally it will provide a much needed gateway towards the heart of the inner city and cultural district of Pretoria, whilst also celebrating the richness of the city. The architectural program encourages awareness, interaction and participation in order to succeed as a 24 hour information precinct in the city; facilitating a dialogue between the relevant campuses, high pedestrian energies and key public spaces in the nearby urban fabric. Technology is to be applied as informative tool, such as digital communications.

The urban stage set for cultural media production will become an ever-changing urban even in constant dialogue with the surrounding metropolis. The user will be made aware of various activities in the city, events, news, and collectively experience the liveliness of the cultural city as a whole. The proposed stage of events between journalism, public relations, users, urban and architecture; will become the classroom where student, scholar, tourist, citizen, by-passer and professional can share his unique identity; to be part of the everyday life of the city: " a place where I can come to, where I am proud of my people and my being in the city; for now, I am part of this city and its culture."

Theoretical abstract

The ocular bias of our current society manifests itself in urban spaces of visual seduction turning architecture into a visual journey and a digital art form of flattened images. Socio-cultural and multi-sensory spatial experiences have since been overshadowed by globalization, often resulting in detachment and alienation of the body in its environment. How does architecture set the stage for our lived experience of the city? How does an architectural technology guide and inform the user by means of various activities and spatial experiences? Can proposed stage create a creative environment which stimulates a full sensory experience, allowing for individuals to participate, express and share their unique cultural identity? Will this stage become the platform for an urban classroom which celebrates the city's cultural liveliness?

The success of the classroom is dependent upon its sustainability as an ever-changing cultural event within the space of the city, being accessible, experienced, and shared by all.

f e e l
h e a r
s e e
s m e l l
t a s t e
s p i r i t

Analogy

As I stroll down my daily path of life, towards my place of refuge, I am confronted with images of people and cars in constant flux. Despite these roaring noises and images of the city, I hear quiet whispers from brothers emerging from a near distance. Voices which call upon the city; "hurry we're waiting." What is this, what does it want from me? The sudden beat of tribal drums, starts echoing its rhythms into the vast cityscape, with shards of light rushing through...

I start engaging towards the light; grabbed by its rhythmic poetry beating through me, I can see people emerging from the sidewalk, with busses and taxies waiting upon them. What is this spirit lurking around the corner? What does it want? As I turn towards: there's a sudden vibrancy which races through me, as stroked by thunder, it raises me up to a sudden state of celebration, it grabs me; welcomes me in a warm, open embrace. How can this be that a previously enclosed place; now being an enriched ambience of unexpected experience within the city? What do I, myself bring to this place? Is it my presence, sense of being or just by accident or chance?

Throughout this ever-changing atmosphere; I see people from all over Africa gathering around images and sounds of far away distances and long forgotten memories. I feel intrigued by the building, catching glimpses of people laughing, enjoying food and drinks, shadows of people working, engaging and unconsciously participating in the event. What is this inside?

Wandering through its spaces, no longer feeling like a mere spectator, I become one with the building's dialogue, part of my city; it starts sharing its values and secrets with me, its calmness touches my soul, and heart beating within me. I start walking on this rhythmic melody in my head, the echoing voices of the building. I'm starting to breathe the air of my culture. I start to recognize faces of people I've seen before, grasping upon voices I hear every day, I feel their presence; why are they here, what brings them to this place? Their participation makes me feel like being at home, in my living room, in my car...my being in the city...

As I move on, I come to a sudden halt, turning around to reflect back upon this unique experience I have participated in. I suddenly remember who I am, where I come from. This place inspired me, brought my being in the city to me, made me proud of myself and my people, a place like home, a place I will return to; for I am truly a citizen of this city...

FIG 1.6_Photo of Author

Chapter 2

introduction
being in the word
architecture in crisis
sensory architecture
conclusion

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INTRODUCTION

The ocular centricism of our contemporary culture manifests itself in urban spaces of visual seduction, turning architecture into a visual journey and digital art form of flattened images. Architecture is the only art form capable of producing a lived experience in three dimensional realities. The way in which we experience the sense of "being-in-the-world" today has since been driven by the single sensory understanding. Ocular centricism caused architecture to distance itself from the sensual qualities of human experience which has lead to the "consequent disappearance of sensory and sensual qualities from the arts of architecture." (2000: 10)

Juhani Pallasmaa, the Finnish architectural theorist, argues that multi-sensory experience must be: "equally measured by the eye, ear, nose, skin, tongue, skeleton and muscle." (2005: 41) French philosopher Maurice Merleau-Ponty discusses how we experience our world in a pure perception through coordinated sensory dialogue: "My perception is [therefore] not a sum of visual, tactile, and audible givens: I perceive in a total way with my whole being: I grasp a unique structure of the thing, a unique way of being, which speaks to all my senses at once." (1964: 78)

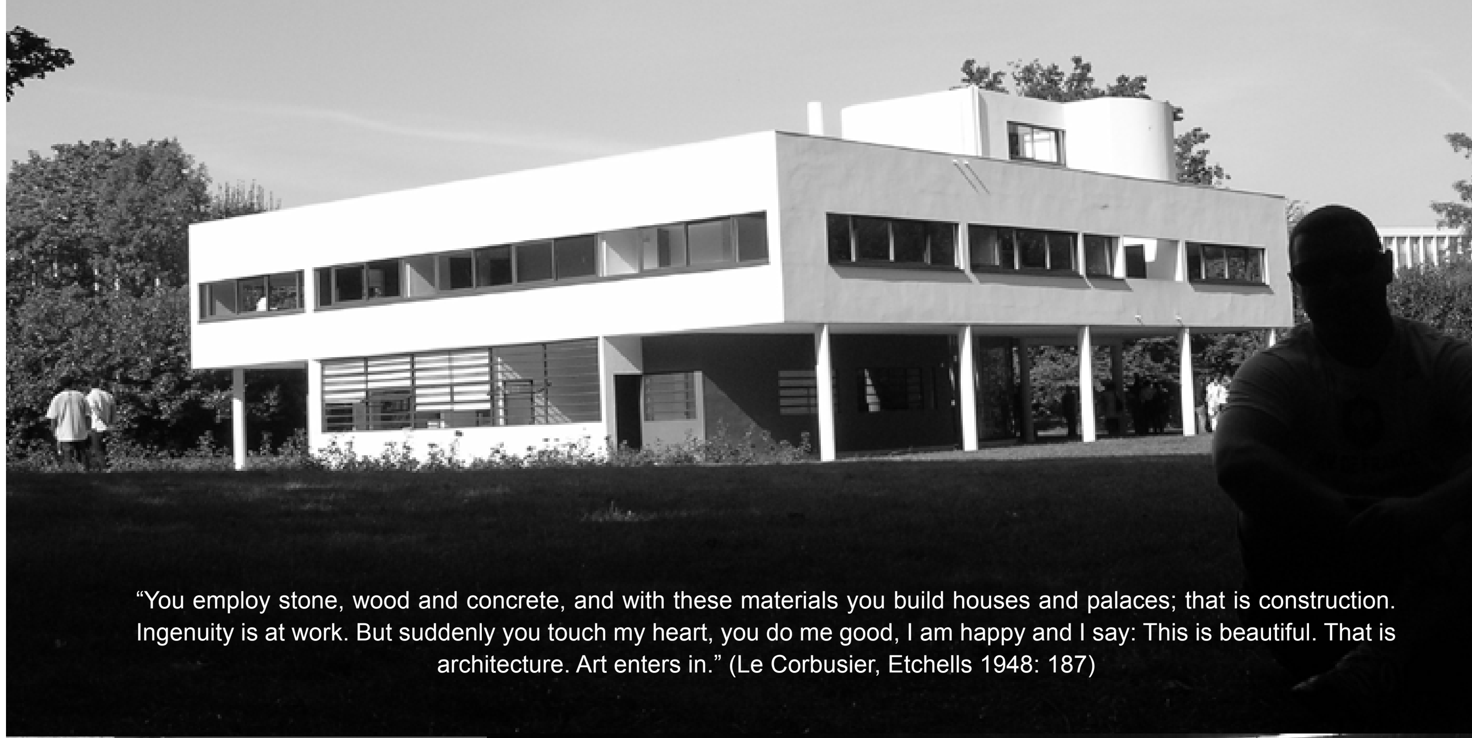
In addition, David Michael Levin suggests that "a new mode of vision is emerging" (2005: 36); while the tectonic architectural language focused primarily on vision, it might also help to rebalance multi-sensory experience.

We "are beginning to discover our neglected senses" (2005: 37) due to the impact technological and formalistic driven architecture had on our senses. Today architects are beginning to strengthen architecture through the means of "materiality, and hapticity, texture and weight, density of space and materialized light." (2005: 37)

The views in the theoretical argument investigate the problems of perceptions of contemporary architecture and public space in general. This is reflected upon the prevailing dominance of vision as well as the ambiguity of Western architectural thought process. The writings of Christian Norberg-Schulz, Martin Heidegger and Juhani Pallasmaa, are used as primary inspirational sources.

This dissertation aims to build theoretical argument around the significance of sensory architectural experience and place making in the urban realm. How we experience architectural space in a society dominated by media: the thought process of a technology-only approach is to be questioned. The perception of architectural design needs to re-emphasize a sensory architectural tectonic as decisive design generator. Thus seeking to establish an architectural design methodology and thought process to guide decision making and development.

FIG 2.1_Photo of Author, Villa Savoye, Poissy, France, Le Corbusier (1929), 2007
FIG 2.2 - 2.3_ Photo's taken by Author, Chapelle Notre-Dame du-Haut, Ronchamp, Le Corbusier (1954), 2007



"You employ stone, wood and concrete, and with these materials you build houses and palaces; that is construction. Ingenuity is at work. But suddenly you touch my heart, you do me good, I am happy and I say: This is beautiful. That is architecture. Art enters in." (Le Corbusier, Etchells 1948: 187)

BEING IN THE WORLD

The question of man's existence in the world by means of his adaption towards technology plays a primary role in urban experiences. "Technology, in this sense, e.g. refers to an overload of information, electronic media, combined with the impact of a so-called fast-food society and car orientated culture." The way in which we experience the sense of being-in-the-world forms the primary basis towards theoretical argument since our senses have been extended by technology, but also inhibited by technology.

Juhani Pallasmaa summarizes the virtues of architecture as: "Architecture, as with all art, is fundamentally confronted with questions of human existence in space and time; it expresses and relates man's being in the world." (2005: 16)

Man's existence is explained through the notions of dwelling. According to Heidegger, the primary purpose of life is dwelling; he maintains that: "...the way in which you are and I am, the way in which we humans are on earth is dwelling..." (1980: 10)

Being able to "dwell", one needs a specific environment to dwell in. Identification and orientation are primary elements towards man's being-in-the-world; it gives him a sense of belonging to a specific place. Norberg-Schulz collaborates that man dwells when "...he experiences the environment as meaningful." (1980: 5) The external environmental order consists out of a distinct character symbolizing a unique "spirit of place." (1980: 5)

Contemporary urban man often dwells by embodying an "electronic skin" as a means of being-in-the-world. Malcolm McCullough, a professor in electronic urban realms, states that "the sustainability of our culture is depended on the appropriateness of our adaption." (2004: 211) Technology has become part of the everyday, fully integrated in our daily lives; a means of dwelling in the urban realm and adapting to nature, the medium in which we create a "sense of place."(2004: 172)

Marshall McLuhan, the pioneer of media theory, explains that: "During the mechanical age we have extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time..." (1987: 3)

Technology transformed man's mobility and concept of belonging, giving him a new sense of awareness, consciousness and participation. The extension of human senses is the means in which he sustains himself, making his everyday life faster, more efficient, doing more by doing less.

The views in the next section investigate the current theoretical debate by various theorists on the state of architectural experiences in our current society. These views are also strengthened by personal experiences of architectural marvels and astonishing displays of contemporary materials.

FIG 2.4_Photo of Author, Guggenheim Museum, Bilbao, Spain, Frank Gehry, 1997
FIG 2.5 - 2.8_ Photo's taken by Author, Guggenheim Museum Bilbao, Spain, Frank Gehry, 1997

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FIG 2.9_Photo of Author, Piccadilly Circus, London, UK

FIG 2.10_Photo by Author, Zaha Hadid Exhibition, London, UK

FIG 2.11_Photo by Author, Architects Association, London, UK

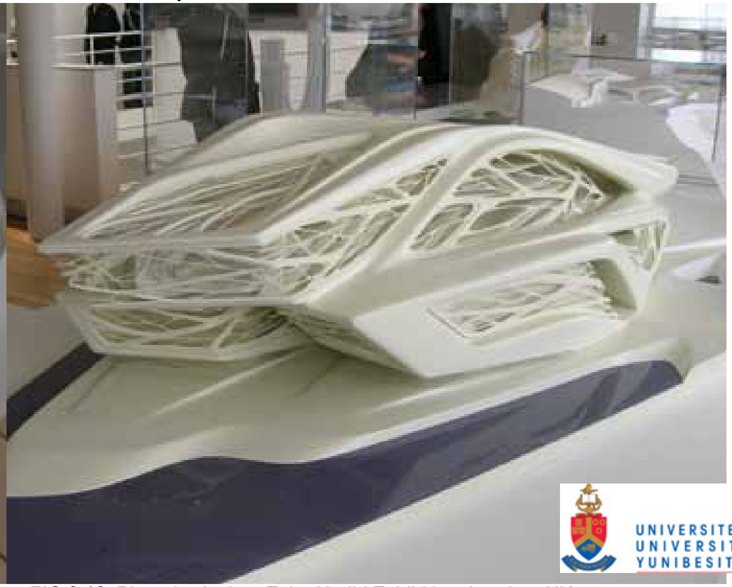


FIG 2.12_Photo by Author, Zaha Hadid Exhibition, London, UK

ARCHITECTURE IN CRISIS

Throughout history the human sensory experience has been dominated by vision. The ancient philosophical writings of Plato (428 – 427 BC) and Aristotle (384 – 322 BC) were proliferated by ocularcentrism towards the point that knowledge of vision and light became the symbol for truth.

The Renaissance again emphasized the importance of vision where a hierarchy of sense was established. The introduction of the linear perspective acknowledged vision as the noblest sense with sound, smell, taste and touch to follow. (2005: 15-16)

During the modernist period, intellectual formalistic architecture was emphasized which drew upon the realms of painting, sculpture and the production properties of the machine in particular. This had a direct impact on the thought process of Le Corbusier during the early stages of his career where he mentions: "I exist in life only if I can see"..."I am and I remain an impenitent visual – everything is in the visual"..."One needs to see clearly in order to understand" (2005: 27)

However, a separation and imbalance of sensory experiences have become distinctive in our contemporary technological culture. The hegemony of a vision dominated society is reflected in the views of Pallasmaa: "The pathology of today's architecture can be understood through a critique of the ocular bias of our culture. Architecture has turned into an art form of instant visual image...it has left the body and the senses, as well as our memories and dreams homeless." (2005: 19)

Contemporary architecture, instead of an existentially grounded plastic and spatial experience of creative expression, has adopted the psychological strategy of hyperbolic advertising and instant persuasion. This is the result of a society dominated by mass media, consumerist fashions, delivered through digital media consisting of the internet, advertising and television.

Today architecture has joined this digitally super charged hyperbole: media generated architecture of intellectual exercises. Sculptural forms of enclosed empty shells serving as little as being decorative sheds in shiny armor. Paper architecture: a "Zahanism" (author) thought process pervaded into the prestigious architectural schools of the western world.

In South Africa this often manifests along highways: fast architecture shaping a built environment of silhouette and instant gratification detached from existential sincerity. (2009: 167) David Harvey refers to this as being: "A rush of images from different spaces almost simultaneously, collapsing the world's spaces into a series of images on a television screen..." Michael de Certeau adds to these notions by saying that: "... our society is characterized by a cancerous growth of vision...transmuting communication into a visual journey."(2005: 24) This ocular centricism caused architecture to distance itself from the sensual qualities of human experience which has lead to the "consequent disappearance of sensory and sensual qualities from the arts of architecture." (2000: 10)

These intellectual contemporary monuments: formalistic expressions, canvasses in urban landscapes, terms as being “fragile” architecture of “weak structure and image.” (2000: 81)

Pallasmaa, as mentioned before, argues that multi-sensory experience must be equally measured by the eye, ear, nose, skin, tongue, skeleton and muscle. (2005: 41) According to Merleau-Ponty, we experience our world in a pure perception through coordinated sensory dialogue: “My perception is [therefore] not a sum of visual, tactile, and audible givens: I perceive in a total way with my whole being: I grasp a unique structure of the thing, a unique way of being, which speaks to all my senses at once.” (1964: 78)

The creation of a full spectrum of bodily experience in urban realms is of great importance. Bachelard speaks of “the polyphony of the senses” (2005: 41); where the eye collaborates with the body to give a strengthened sense of reality and constant interaction with environment. The five sensory systems being the: “visual system, auditory system, the taste-smell system, the basic-orientating system and the haptic system.” (2005: 42)

The expansion of touch is the haptic system which serves as basic-orienting towards the sense of direction and gravity. This provides a frame of reference for the other senses in relation towards the body.

The haptic system stretches beyond the sense of touch only and absorbs the whole body. It incorporates the usual understanding of experiencing objects through touching them with our skin as well as perceptions of warmth, cold, pressure, pain, and the kinesthetics of movement.

Ashley Montagu emphasizes the importance of the tactile realm: “(the skin) is the oldest and the most sensitive of our organs, our first medium of communication… Touch is the parent of our eyes, ears, nose and mouth. It is the sense which became differentiated into the others…” (1971: 3)

Merleau-Ponty’s notions on architectural experience can be directed or interpreted towards the spatial sequence: light, material and texture. The way spaces feel, sound and smell, has equal weight towards the visual appearance. The technological extensions of our senses might also help to re-balance multi-sensory architectural experience. Architects have slowly realized the neglect of sensory experience in technological and formalistic driven designs. Today architects are beginning to strengthen spatial experience by re-evaluating this technological thought process. (2005: 36-37)

Architecture itself has a deep “rootedness”; the only art form capable of producing a lived experience in three dimensional realities – which should be enhanced by considerations of light, texture; while considering technology carefully.

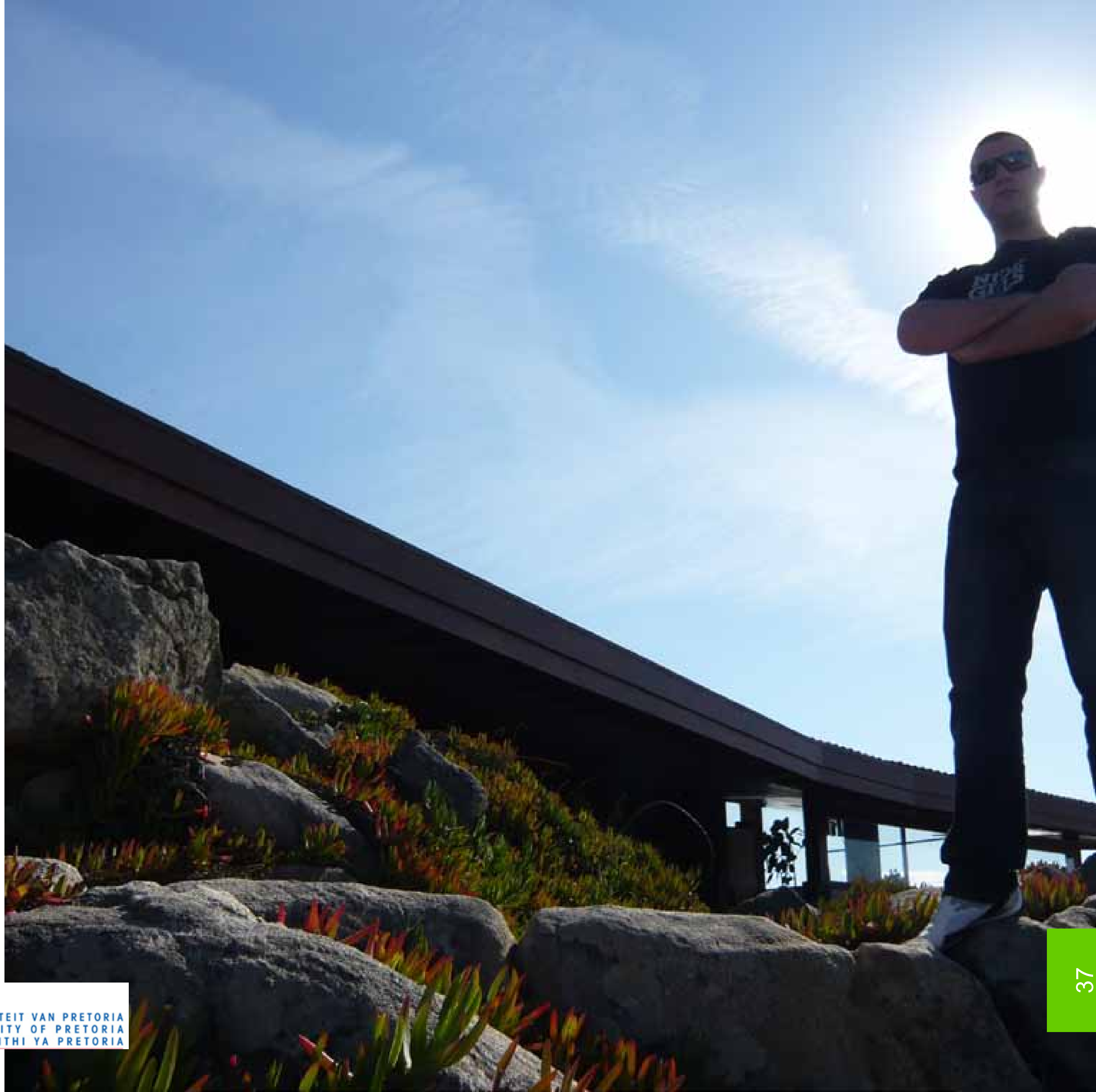


FIG 2.13_ Photo of Author, Boa Nova Teahouse, Leça da Palmeira, Portugal, Alvaro Siza 1963

The way in which we experience the sense of being-in-the-world has since been driven by the single sensory pleasure for the eye. The intention of architecture now, probably best described through the words of Le Corbusier towards the latter phase of his career, to uncover the existential truth: "The purpose of architecture is to move us. Architectural emotion exists when the work rings within us in tune with a universe whose laws we obey, recognize and respect." (1980: 6)

The question now rose: How does an architectural tectonic achieve an expression which stimulates multi-sensory experience of space and place? How the embedding of new digital- and communication technologies can be articulated by a more traditional approach; Will this new kind of vision and enhanced sensory balance, the technological "extension of our senses" be adapted by this unique architectural building methodology to give a full experience of our place and being in the city? Will this "move us"?

TOWARDS A SENSORY ARCHITECTURAL DESIGN METHODOLOGY

Sensory architectural experience focuses on the integration of bodily experience of the world, not just being a visual journey; the art should express its tectonic logic, sense of materials and empathy. Bachelard mentions that we should not only be mere spectators in the interior world of architecture. (2005: 25) Some architects responded to the notions of haptic experience; an architecture which recognizes realms of sound, smell and taste.

The architecture of Frank Lloyd Wright and Alvar Aalto identified the physical body and also both conscious and the unconscious human reactions. The works of Portuguese architect Alvaro Siza also consist of a strong humane experiential tectonic. Current sensory experiences can be seen in the works of contemporary architects such as Caruso St John, Albalos & Herreros and Glenn Murcutt. It is evident that a new mode of thinking is emerging. This year's Pritzker prize winner (the highest ranked architectural award in the world) achieved by Finnish architect Peter Zumthor is a case in point. He works in the art of sensory architecture in combination with new technologies, turning technological constructions into a positive experience.

Elements highlighted in the following section investigate a multi-sensory design methodology in terms of light, touch and sound (and ultimately media).

Light
The presence of light in modern architecture has become too overwhelming, instead of emphasizing our being in the world. According to Pallasmaa, "Homogenous bright light paralyses the imagination in the same way that homogenization of space paralysis the experience of space."(2005: 46) He elaborates on these notions and confesses that architectural light has turned into a quantitative manner and the window has lost its role as mediator between the inside and outside worlds. The shadow is an important tactile element in design as it can perceive depth and texture, smoothness and roughness of materials.

Pallasmaa continues that: "In great architectural spaces, there is a constant, deep breathing of shadow and light; shadow inhales and illumination exhales light... The shadow gives shape and life to the object." (2005: 47) Mexican architect Luis Barragan claims that contemporary public spaces would become more enjoyable through lower light intensity and uneven distribution. (1989: 242)

Le Corbusier's architecture incorporates a strong tactile experience in the forceful presence of materiality and weight. The architecture makes us aware of the ever changing external environmental conditions. He states that: "Architecture is the masterly, correct and magnificent play of masses brought together in light." (1959: 31) He expresses a lived experience through the use of plasticity and spatial experience which uncovers memory, dream and imagination.

Touch
The tactile sense is an important element as it connects our being with the materiality of the world. Materiality is an essential architectural tectonic as it provides the platform for a creative build environment and sensory experience. The architectural skin expresses temperature, density, weight and texture of the building.

Pallasmaa acknowledges tactility as a primary element towards the understanding of architecture: "The door handle is the handshake of a building." Kenneth Frampton maintains that: "The tactile returns us literally to detail, to handrails and other anthropomorphic elements with which we have intimate contact; to the hypersensitivity of Alvar Aalto, to the coldness of metal and the warmth of wood…" (1988: 8)

The possibility of touching in contemporary urban cities has been left in vain. Mechanical equipment and artificial produced materials have replaced the manifestation of the natural tectonic.

Contemporary architecture has aimed towards ageless perfection and avoids the process of aging. Pallasmaa states that we have to mentally experience a reality which is rooted in the continuity of time.

Kahn famously stated that "the brick wants to become and arch", meaning that the building should be true to its means of construction and laws of nature. Being true towards the essence of materiality expresses a sensory language of "strong structure and image."(2000: 81)

Sound
Architecture presents a silence of materiality and light in space, smells stimulate memory of place and spaces. Sound is a powerful element in spatial experience. We can almost hear architecture only by the mere sound it reflects.

The sound gives us clues and impression of space, character, materials, and people. There is a clear distinction between in- and outside events. Background experiences of auditory acoustic sounds: Pallasma argues that "tranquility" is the most essential acoustic experience in architectural space." (2005: 52)

Contradicting the previous elements of e.g. touch, the question now arises: How does media technologies compliment multi-sensory experiences. The views in the next section seek to understand how media can be invested into architecture as enhanced sensory balance.

Media

According to McCullough the unique character of embedded media technologies in urban environments goes beyond the obvious appearance of screens only: “New forms of ambient, haptic and multi-user interfaces promote the shift from objects to experiences. Instead of emphasizing the visual identity of an object...we need to address the process of identifying with an experience.” (2004: 157) It is evident that the experiential qualities of these technologies have shifted from objects to experiences, contributing towards a more diverse urban realm.

The social organizational dimensions of architecture and media technologies run parallel with each other. It reflects upon our everyday needs, provides us with memories which grant an element of non-physical values. Media technology introduces a new electronic skin of interconnected networks, new layers of cultural expression and activities within the city.

Media surfaces create a new dynamic as it is a constant flux of patterns and colors, carrying messages and information. The dynamics of embedded technology can be adjusted to different times of day and events.

Public space now has the means to facilitate cultural and individual expression, sharing information, events and ideas. The quality of public space can now be enhanced through meaningful journalism; a place where I can come to express and experience the cultural city’s activities as a whole.

Digital technologies, media screens, and skins, should be applied to extend and compliment architecture’s reach. Media technologies enable the building to adapt to various scenarios and events during day and night. Media technology introduces a new electronic skin of interconnected networks, new layers of cultural expression and activities within the city.

A unique tectonic can express the use of new technologies and still encourage the return of a more habitual and humane architecture concludes through the combination of new technologies, digital media and traditional architecture. Technology has become part of architecture and projects a new meaning to place, but is simultaneously rooted in the phenomenology of the past, embracing our being in the world, or city.

FIG 2.14 - 2.15_ Blur Building, Exposition Pavillion for Swiss Expo, Yverdon-les-Bains, Diller Scofidio + Renfro, 2002
FIG 2.15_High Line Concept, New York, USA, Diller Scofidio + Renfro, 2009
FIG 2.16_Blur: Braincoat, color coded and vibrating raincoats matching visitor profiles in Blur Building, 2002

CONCLUSION

The search for multi-sensory architecture is a multi-faceted methodology asking for different interpretations, as each individual project is unique. The fact that urban environments have no direct connection between the natural- and built phenomena challenges a unique architectural interpretation. Urban architectural space however, still possesses the power to express natural phenomena through creative design.

Aristotle (384 BC – 322 BC) maintained that the whole is greater than the sum of its parts. It is the combination between the slowness of architecture in contrast with the constant flux of people and media technologies which produces a unique experience of place.

This most essential solution can be found through the famous words of Kahn: "a building should be what it wants to be." (1980: 197) The built environment sets a fixed stage which organizes the constant flows of people, resources and information. The art of architecture lies amongst the oldest, most legible and understood forms of fixed flows in the urban environment: according to McCullough: "Quiet architecture may be our most natural technology." (2004: 64)

The study of the human's being-in-the-world has the potential to produce a space which enhances the versatility of urban space, to become a place for valid socio-cultural urban expression. To conclude through the words of Pallasmaa: the most comprehensive and import architectural experience is the "...sense of being in a unique place." (1996: 452)

The art of contemporary architecture in the South African context should NOT reflect upon the spirit of an American Dream; Gehry Sculpture; "Zahanism" (author) expressionist, Foster's heroic high tech, British classical of Chipperfield, French flair, casinos of Italian elegances; for now we have our own stage set for the production of journalism in the cultural city. Architecture with the presence of a valid South African spirit of expression; a place filled with the presence of "Madiba magic." (refer to p. 87)

"Architecture is the production of the effect of stillness, an amazing effect in the world that is endlessly moving." (Mark Wigley in Tshumi & Cheng, 2003: 107)

FIG 2.17_ Photo taken by Author, Leça Swimming Pools, Leça da Palmeira Portugal, Alvaro Siza 1966

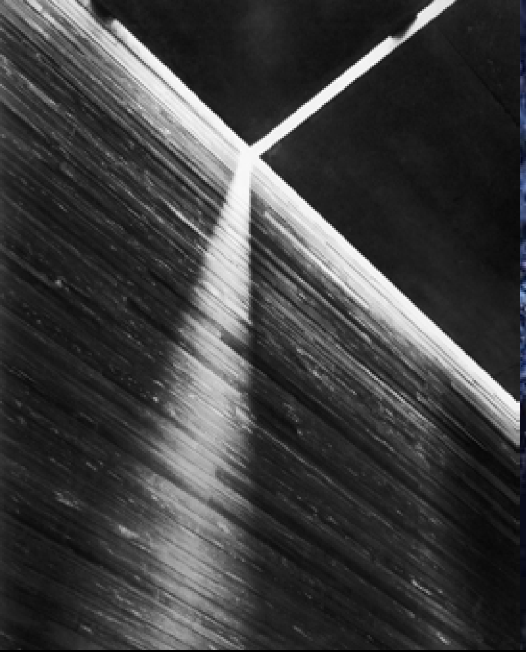


FIG 2.18_Dramatic play of shadow on textured wall

FIG 2.19_Bruder Klaus Field Chapel, Wachendorf, Germany, Peter Zumthor, 2007

FIG 2.22_Soft filtered light, Saint Benedict Chapel, Sumvitg, Switzerland , Peter Zumthor, 1988

FIG 2.23_Spatial experience enhanced with colored light

FIG 2.20-21_ Intimacy and calmness of interior space displayed through multifunctional contemporary glass facade, Kunsthaus, Bregenz, Austria, 1997

FIG 2. 24_Materiality enhanced with shadow

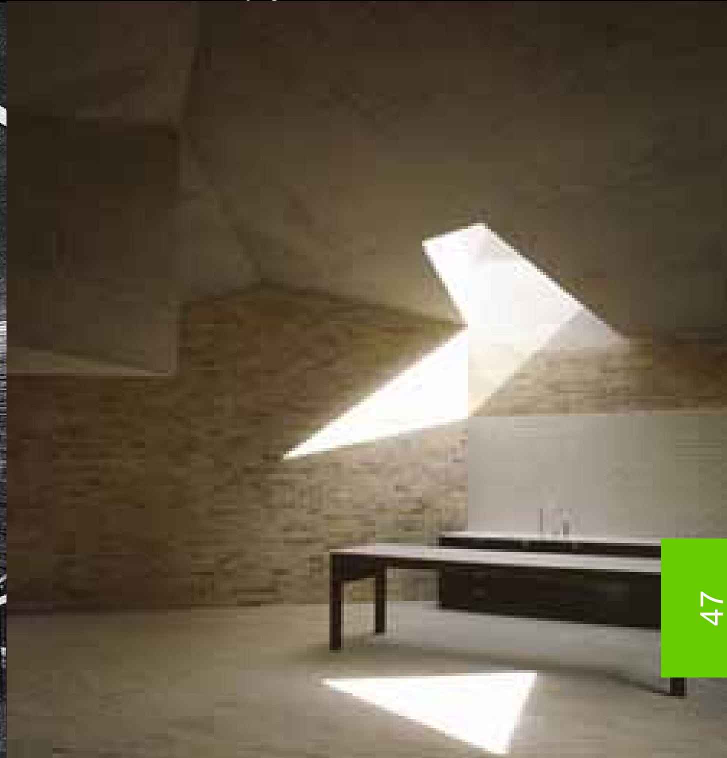
FIG_2.25_ Calm spatial quality, Thermal Baths Vals, Graubünden, Switzerland, Peter Zumthor, 1996




FIG 2.26_Tactile quality nature adds to textured surface FIG 2.27_Kolumba Art museum, Cologne, Germany, Peter Zumthor, 2007 FIG 2.30_Layering and hand crafted sculptural quality of mass and tactile materials FIG 2.31_Rythmical play of shadow texture through mass wall

FIG 2.28-29_ Poetic quality of industrial materials and soft interior light quality, Jose Hierro Public Library, Usera, Madrid, Spain, Abalos & Herreros, 2003 FIG2. 32_Life shadow adds to spatial quality FIG_2.33_ Spatial density and soft texture enhanced by light, Brick House, London, UK, Caruso St John, 2005



Chapter

3

The chosen study area is situated along the edge of inner Pretoria which forms the historic eastern gateway across the Apies River into the heart of the city. Analysis of the site presents various opportunities and constraints for the production of media within the space of the city, absorbing existing energies and activities. The site has a rich history for generating energy. By means of establishing a node on the site has the opportunity to harvest rich energies from the existing context. By means of S.W.O.T. analysis (strengths, weaknesses, opportunities and threats), a thorough understanding of the context and its primary characteristics was obtained, before the implementation of a site development and integration framework was proposed. This chapter investigates the city-, study- and site context and result of analysis will determine the proposed development framework.

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Introduction

Pretoria was founded in 1857 by President M.W. Pretorius who commissioned a church building, which was named “Kerkplaats”, or “Church Place.” (Holm 1998:58) This became the birthplace and centre of the town, symbolic of its physical presence as a place and by the social and religious customs of the community. Two main streets were established which fed into Church Place which became the vocal point. Church Street on the east west axis conducted market and trade related activities. (Holm 1998:57-59)

The historic in- and outside of the town was defined by two natural watercourses namely the Apies river and Steenhoven Spruit. (Holm 1998:28) Today these watercourses have been canalized. Openings in the Schurweberge mountain ranges formed the access or “poorte” into the town. (Holm 1998:26)

The formal urban grid is one of the main characteristics of Pretoria. The Romans *Urbs Quadranta* with two intersecting axis divided the city into four quadrants or urban districts. This is formally known as the *Cardo* and *Decamanus* which also follows the path of the sun on an east west and north south direction. The point of intersection is where the historic church square is celebrated. (Holm 1998:62)

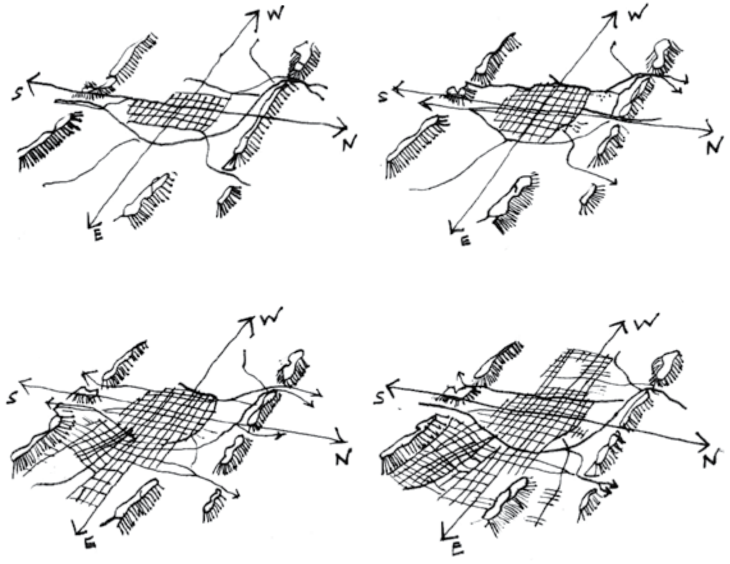
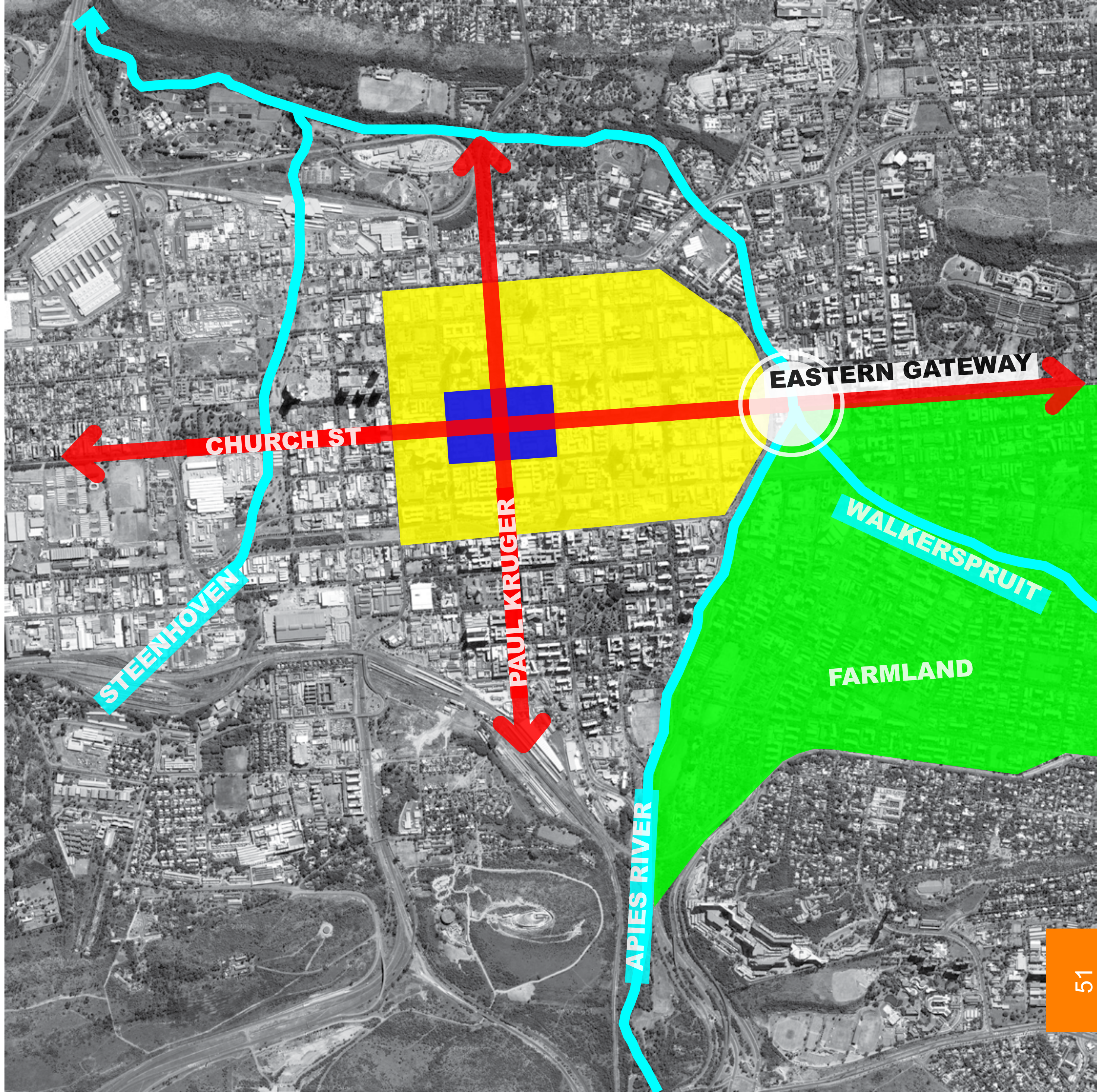


FIG 3.1_Historical origin of Pretoria - Map
FIG 3.2_Diagrams of Pretoria Settlement Pattern

- Church Square
- Cardo and Decumanus Quadrant
- Historical city
- Historical eastern gateway
- Rivers



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S.W.O.T. City Context

STRENGTHS

• The Inner City of Tshwane is approximately 50km drive north from Johannesburg and OR Thambo international airport.

• Nelson Mandela Drive is the **main carriageway** into the city and extends into the R21 which connects with Johannesburg, O.R. Thambo Airport, N1, and nearby districts.

• The **east-west axis of Church-**, Pretorius-, Schoeman-, Vermeulen Street, N4, links the highly accessible inner city through the whole of Pretoria.

• **Efficient public transport** systems make the city accessible to a variety of users. This consists of the local train network, development of the Gautrain express to Johannesburg and Airports in particular, busses and taxi.

• Residential areas of Sunnyside and Arcadia, as well as the Pretoria- and Bella Ombré train stations; being the **major feeders of pedestrian activity** into the inner city.

WEAKNESSES

• Peak hour traffic has been the major form givers along Nelson Mandela Boulevard; resulting in a fragmented buffer zone in the urban fabric and **vehicular dominance** has overlooked pedestrian activity.

• The majority of city blocks and **mono-functional** buildings are closed off from the public, with most of the cities activities which **dies after 17h00** resulting in limited nightlife.There is a lack of socio-economic characteristics; aspects such as identity, entertainment, tourism, heritage, pedestrian movement, public space and safety, in urgent need for the city to become a people's place.

• High profile investors are **not attracted** to the city. The city doesn't **communicate and market** itself on a global scale; to become the leading South African and African capital.

Primary Carriageway
Primary east-west route
Secondary east-west connections
Rail Networks

FIG 3.3_Transportation Map

S.W.O.T. City Context

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OPPORTUNITIES

- Mandela Development Corridor is a **prime location** for high profile, high intensity private investment scheme which integrates locally, nationally and internationally.

- Clustering of related activities, energies and student projects in the **cultural circle** as a connected whole.

- **Integration** of city bocks into the public realm, landmarks structures with defined edges enhance visual axes and express legibility, orientation, and create a **sense of arrival** into the city which integrate and connect to local and regional networks.

- Broadening mono-functionality to create an environment within city blocks which are legible and easily accessible for a variety of end users, **foster maximum social exchange**, variety of choice, balance between car and pedestrian, public event parking, and infrastructure across a longer daily period: a 24 hour urban realm.

- **Rich architectural language** promotes active street edges together with vibrant and attractive public spaces, emphasise heritage resources; contributes towards a longevity and sustainability of the environment.

FIG 3.4_Structuring Elements Map

THREATS

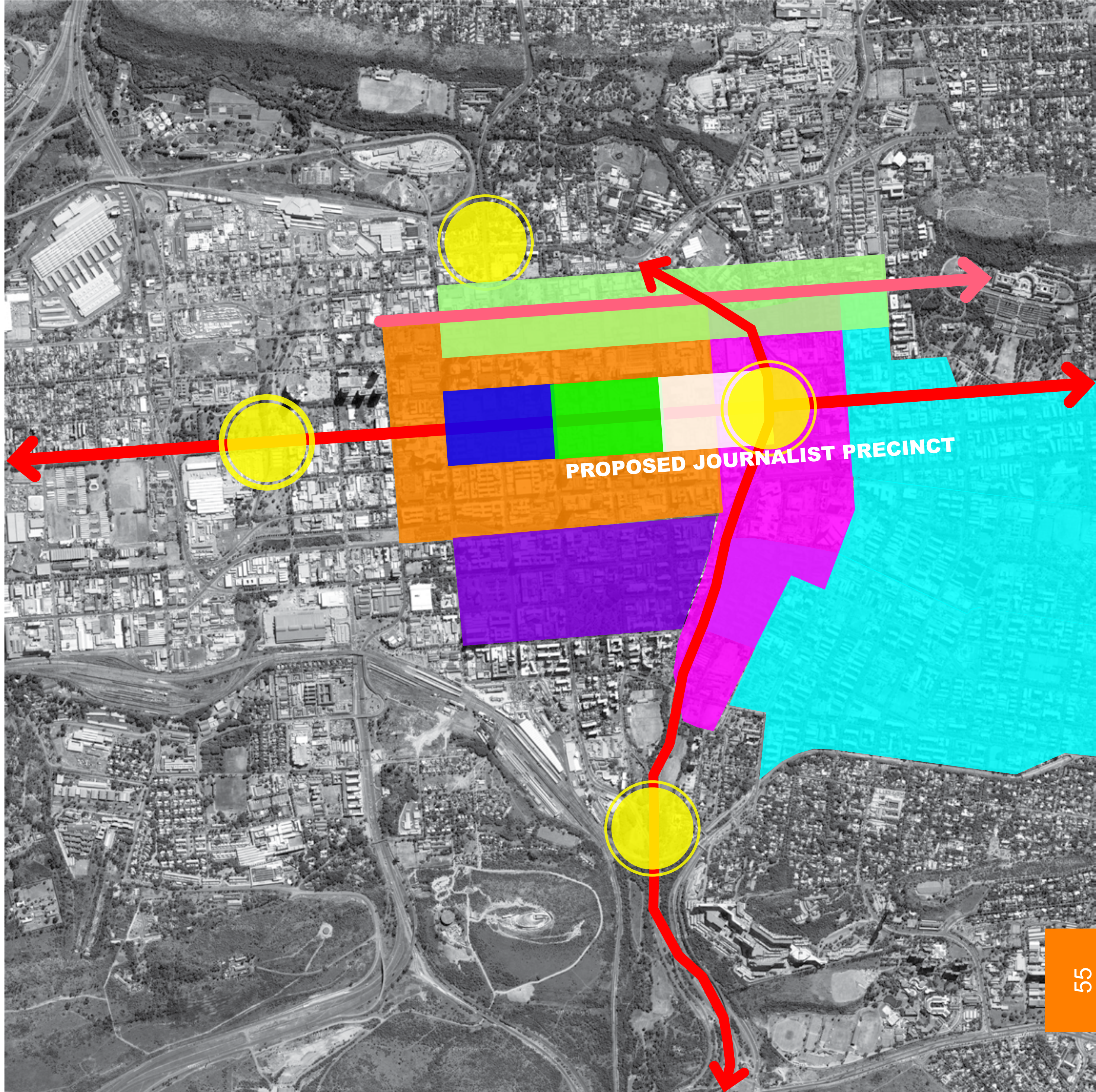
- **Crime and safety** in the area need to be addressed, especially after sunset.

- **Property release strategy** to be implemented.

- **Storm water tables** of the Apies River culvert and microclimates; a potential danger.

- Visibility, edges, pedestrian space and routes need to be upgraded.

Red	Regional connection routes
Yellow	Gateways into city
Orange	Inner city core
Magenta	Nelson Mandela Development Corridor
Blue	Church Square and Judical district
Green	Cultural district
Cyan	Residential district
Light green	Industrial district
Purple	Museum district
Pink	Government boulevard to Union Buildings



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S.W.O.T. Local Context

STRENGTHS

• The local area is **highly accessible** and bordered by mobility roads; Proes- [N4], Pretorius- to the south, Beatrix- to the east and Prinsloo Street to the west.

• The eastern edge is formed by the Apies River and Nelson Mandela Boulevard, which serves as the main **eastern gateway into the city** and upmarket development is zoned along this.

• The Southern edge, **Church Street, the most important street in Pretoria** and major distribution road with direct access into the heart of the city.

• Church Street connects to rich heritage landmarks where the **majority of pedestrian energy** lies. These include: Church Square, the historic statue of President Paul Kruger, the State Theatre, Strijdom Square, Sammy Marks Square, National Reserve Bank, and the historic Leeubrug. (Le Roux 1991:5) Strijdom- and Sammy Marks Square 5 min walk, Church Square 10min walk and the Union Buildings 20 min walk from the site.

• Du Toit Street is the western boundary, connects to the Nur Al Median Mosque and Hervormde Kerk. The Northern boundary, Vermeulen Street, an important mobility road into the city. The area consists of commercial, office, educational and residential uses.

WEAKNESSES

• Current bus stops along Church Street cause **pedestrian congestion** along the sidewalk which can be relocated.

• The campus is currently an **enclosed island** which shuts itself off from the rest of the city activities and pedestrian energies.

• There is no acknowledgement of a clear **visual axis** as the edges are not well defined along Nelson Mandela Boulevard and Church Street.

• **Vehicular access** to the site is **limited** by Nelson Mandela Boulevard and Du Toit street only, with approximately 250 on-site parking.

• **Poor pedestrian access**, with four controlled entrances along Church- and Du Toit Street which causes congestion on sidewalks.

- Regional connection routes
- Student bus route - bus stop inticated
- Secondary connectors
- Parking
- Current Vehicular entrances into campus

FIG 3.5_Transport networks Map

scale 1:5000

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S.W.O.T. Local Context

OPPORTUNITIES

- Public open space will allow for pedestrian energies from nearby areas to **filter through the city block** and not be restricted to sidewalks only.

- By means of **celebrating**: articulates the **urban edges** will eshtablish a new node towards the inner city cultural district and city centre, a **sense of arrival**.

- The proposed area will create a **vibrant interactive destination place** that will harvest pedestrian energies and invite life back to the site, inner city, and serve as a 24 hour information node.

- The richness of **heritage** in and around the proposed site should be celebrated to encourage public awareness and appreciation of its value.

- In future, the possible extension of **pedestrianisation of Church Street from Strijdom- and Sammy Marks Square** would result in richer pedestrian movement and energy along the Southern edge of the site.

THREATS

- **Heritage conservation** has a great impact on the sustainability of a new development and the general public is not aware of these rich resources which would support the development.

- The permeability of the site has to be considered as there will still be a need for **security and access**.

- Maximum floor space ratio on the city block has been reached and the new development will require **demolishing of existing structures**. (Engelbrecht, 2009)

- **SAHRA** needs to be consulted in terms of heritage if a structure is to be changed, added or demolished and buildings older than 60 years falls under the National Heritage Act.

- No **additional parking** has to be provided for the Universities as the site falls under the limited parking zone in the inner city, but parking will have to be provided for the users of the new intervention.

Car retail	Medical
Commercial offices	Retail
Educational	Religious
Institutional	Residential

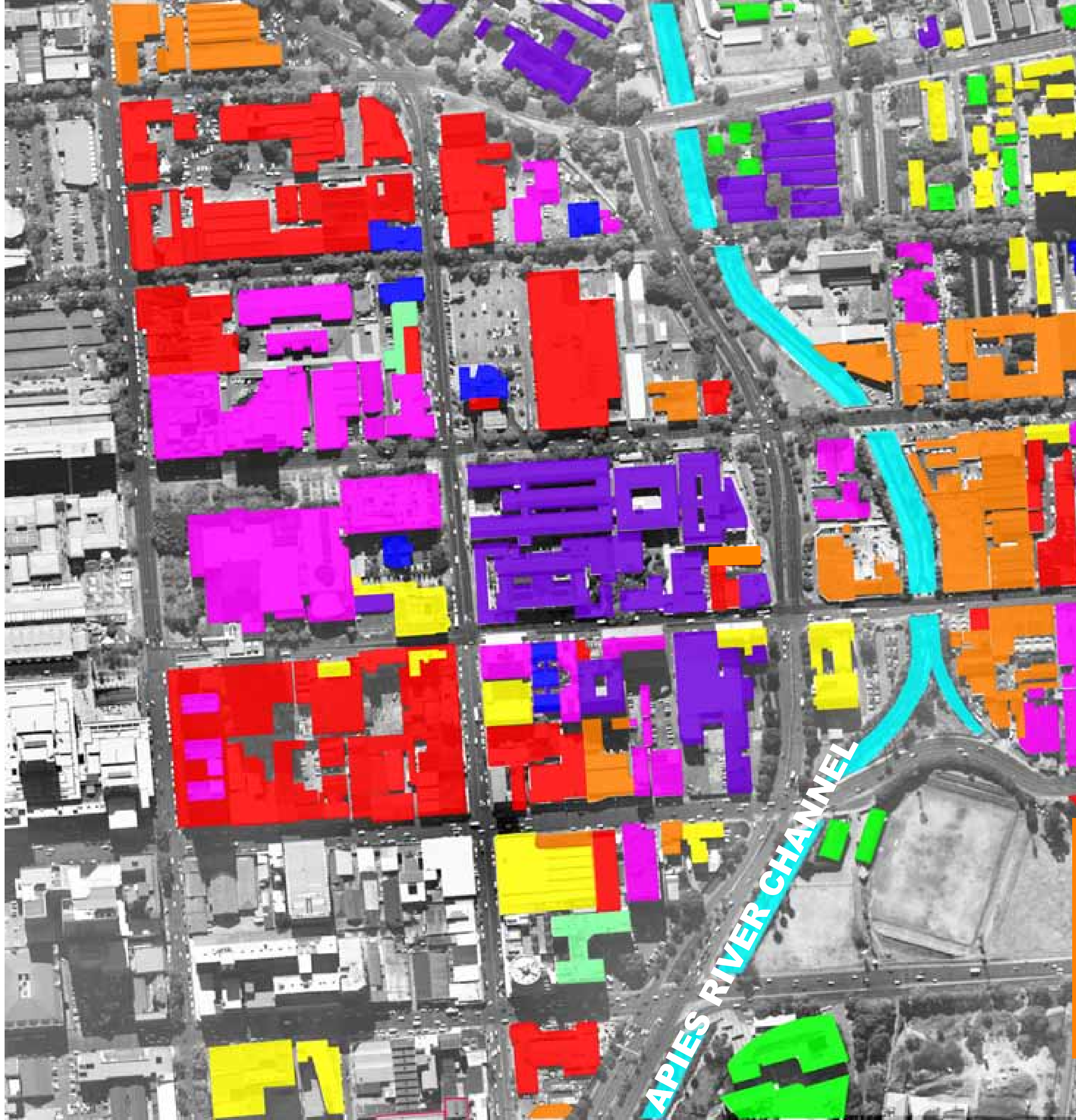

FIG 3.6_Land use Map

scale 1:5000

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Landmarks photo analysis

FIG 3.7_Landmark Map

scale 1:10000

FIG 3.8-3.9_Sammy Marks and Strijdom Square_ Taken early morning before the start of temporary events in the city

FIG 3.10_NG Church and Reserve Bank

FIG 3.11_State Theatre and ABSA building

FIG 3.12_Nur Al Medina Mosque

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S.W.O.T. Site Context

STRENGTHS

• The eastern edge, **Nelson Mandela Boulevard**, serves as **regional and national connector** which is linked to O.R. Thambo International Airport and Johannesburg.

• The site is in a **prime location** for commercial development, eastern gateway into the heart of the city and in the proximity of rich historic landmarks.

• The site is **easily accessible** from all areas and has the potential to make a valuable contribution towards the regeneration of the inner city.

• The crossing between Church Street and Nelson Mandela Boulevard is the **threshold between mobility orientated and pedestrian dominance along Church Street**.

• **Du Toit Street** is one of the city's **main sources of pedestrian movement** from the south and in particular nearby residential areas namely Sunnyside and Arcadia. Vermeulen street is an important mobility road into the city.

WEAKNESSES

• Currently the unattractive campus doesn't promote a user-friendly pedestrian network and controlled identification access systems **do not allow public interaction**.

• **Hidden passages** a potential safety concern.

• Legibility of existing build fabric and open space is ill defined, heritage resources on the site not well promoted as they are surrounded by **walls and fences**.

• Currently there is no clear definition of space and its functions, intended building functions is ineffective as well as public and private spaces on the campus is **underutilized**.

• There is no dialogue between interior and exterior space in the existing build structures of the campuses and **cold spaces located between buildings**.

• Both campuses are at maximum student and floor capacity, there are **limited government funds** and no room for expansion.

FIG 3.13_Campus Block Access and Zoning Map

- Primary Pedestrian entrances
- Secondary Pedestrian entrances
- North College
- TUT Campus
- Jeka Foams and plastics
- Carburattor city motor repairs

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S.W.O.T. Site Context

OPPORTUNITIES

• Create a legible pedestrian **square** and network which with a hierarchy of spaces and allow for freedom and access to encourage spontaneous interaction. Pedestrianization Church Street from site in future.

• **Define urban edges** of the site along Nelson Mandela Boulevard and Church Street to enhance a sense of arrival in the urban fabric.

• Use the existing fabric and vegetation to create **legible character** between public spaces and built structure.

• Existing **heritage resources** on the city block should be emphasized and facilitated for in order to enhance attractions to the site.

• The proposed program has the potential to become a **rich activity node** and play an integral part towards the regeneration of the inner city development.

• **Demolition** of buildings with no historical or architectural significance allows for open space and enriches existing and proposed buildings with importance. **Removal** of existing building clutters, additions, and isolated passages could enhance the legibility, surveillance and functions of spaces.

THREATS

• **Two plots mush be bought** from the current owners for the new development: Carburetor City and Jeka Foams. The proposed scheme should comply with the SABS 0400 building regulations and all relevant aspects.

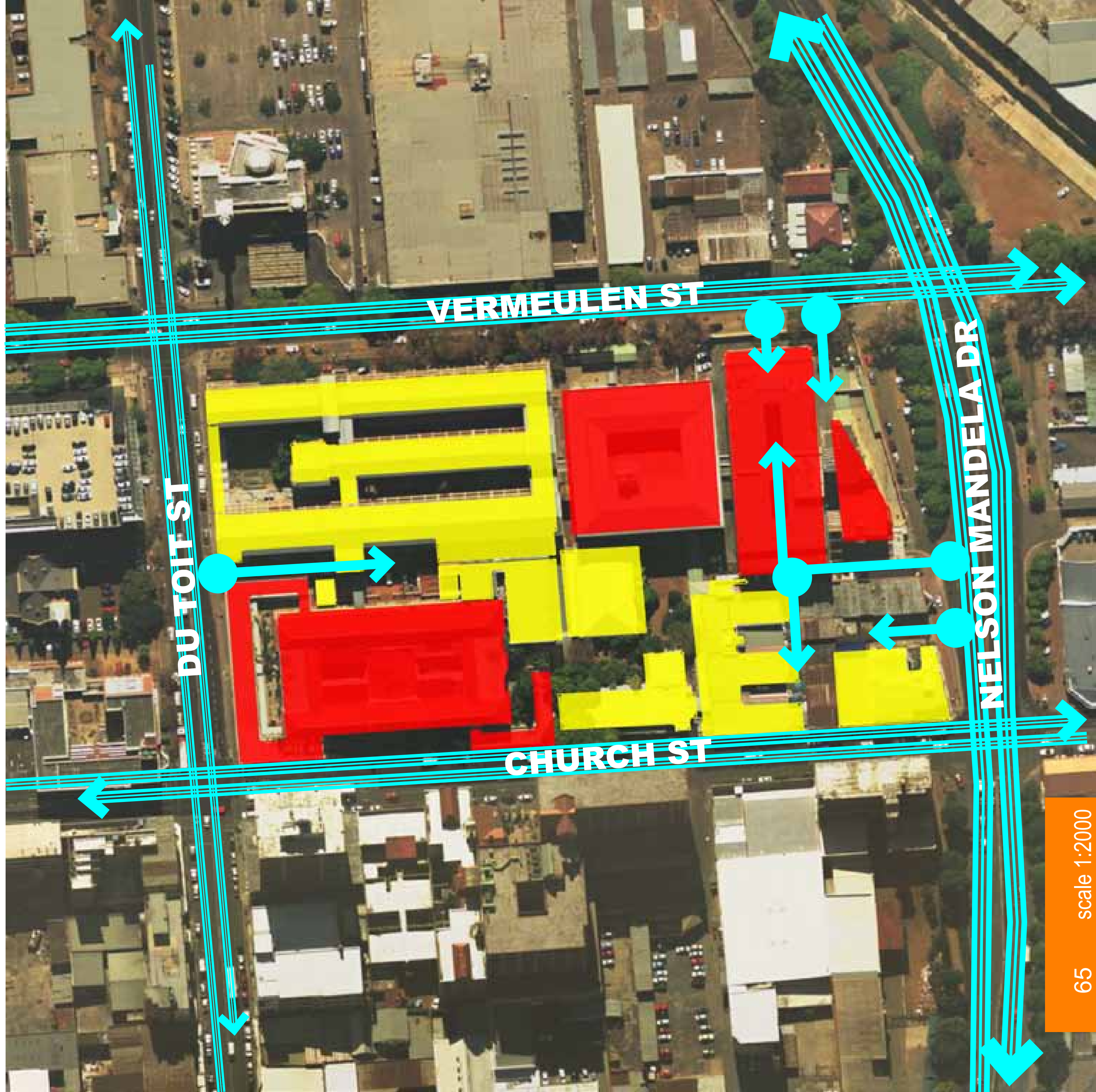
• The plots need to be consolidated for **re-zoning** certificates and other legal constraints of properties has to be granted by the Tshwane Municipality Council.

• There will be a **time lapse** of several months for the approval of property consolidation and demolishment of existing buildings.

• The existing built fabric of the campuses need to be renovated in order to respond to the proposed intervention and action plan has to be considered for the **relocation of faculties**.

Campus Heritage
Non Heritage campus buildings
Campus Vehicular routes

FIG 3.14_Campus Vehicular Network



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Campus history

The first establishments of TUT in Pretoria, started between 1897 and 1906. The first building, on the south western corner of the site, was designed by Gordon Leith + Partners in 1928. It followed the neo-classical tradition. (2002: 36; 1991: 12) The completion of three four storey buildings (south and middle blocks) in 1956 on the north western part of the site were also extended in 1963. (2002: 41-51, 83)

The TUT Science Building on the North Eastern block was designed by Eaton and Louw architects and completed in 1967 (2002: 90) On ground floor the building is constructed out of face brick with the external columns expressed. The building consists of a functional floating skin which emerges from the first floor up and wraps around the facades. This sun screening device consists of light grey hollow blocks. The floating flat roof of the five storey buildings frames the external skin. The building is built from simple materials with direct construction methods.

Note - only the relevant campus history for the proposed project was mentioned.

FIG 3.15_Gordon Leith Building West elevation

FIG 3.16_Photo of Gordon Leith Building South elevation

FIG 3.17_South and Middle blocks West elevation

FIG 3.18_Photo of Eaton Louw Building East elevation

Character photo analysis

FIG 3.19_South East Roof corner photo of campus from Church street towards Nelson Mandela Drive facing west

FIG 3.20_Photo taken from ABSA building roof facing east down Church street


FIG 3.21_SE campus corner from Church street towards Nelson Mandela Drive facing NW

FIG 3.22_Campus from Church Street facing NW


FIG 3.25_Campus from Church Street facing NE


FIG 3.26_Campus bus stop from Church Street facing SW


FIG 3.23_SE campus corner from Church street towards Nelson Mandela Drive facing W


FIG 3.24_Opposite Campus from Church Street facing W


FIG 2.27_SW campus corner facing NE


FIG 2.28_NW campus corner fromChurch Streer facing NW


FIG 3.29_Gordon Leith Building facade on Church street


FIG 3.31_Architectural Language of Eaton & Louw Building, TUT Science campus


FIG 3.32_Binding Roof Canopy


FIG 3.35_Internal courtyard, tectonic and stereotomic grid systems with direct detailling


FIG 3.36_View towards Nelson Mandela Drive


FIG 3.33_NE corner facade of Eaton & Louw Building on Nelson Mandela Drive TUT Science campus


FIG 3.34_Tectonic Sunscreen


FIG 3.37_Buildings connected with central circulation spine


FIG 3.38_Reserve Bank visual axis from Eaton & Louw mezzanine parking

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Status quo

Tshwane Inner city Development and Regeneration Strategy:

- Located within a 2.5 km radius from Church Square, the strategy focuses on intensive developments aimed at commercial, office, retail and residential. High density developments specifically located in Arcadia and Sunnyside. (City of Tshwane 2005:2)
- Identified as the meeting place for all cultures and people between Nelson Mandela Drive and Church Street; as a strategic location for a landmark catalytic development for the Inner City and for Tshwane by means of international and local attractions. (City of Tshwane 2005: 14)
- The site also falls under the Cultural Circle which is envisioned to become a series of contemporary cultural landmarks linked to a mono-rail system and pedestrian networks. (City of Tshwane 2005: 18)
- “The old Pretoria Technikon building in the inner city... should be upgraded and developed to further compliment the Capital of Culture.” (City of Tshwane, 2005: 19)

Vision for the Cultural Circle

- Identify upgrading methods on existing facilities and map all current cultural assets.
- Implement a strategy for marketing these attractions as part of tourism.
- Develop interventions suited for public gatherings, open air theatre and music festivals.
- Facilitate cultural facilities such as exhibitions, museums and theatres.
- Develop and action plan to facilitate and sponsor an Art-in-public program within the capital precinct.
- Further budget policies should focus on the development of public art.
- Attract important cultural events by means of an action plan aimed at partnerships, sponsors and inducements. (City of Tshwane, 2005: 19)

Nelson Mandela Development Corridor Precinct Framweork:

- Located alongside Nelson Mandela Drive on the eastern edge of the Inner City.
- Dual carriageway into the city and is the new main entrance to Pretoria which also allows for prime exposure.
- The focal area for future arts, culture, government, business, sports, entertainment and commercial developments.
- Suitable for high profile, high intensity private investments that maximize this highly visible location. (City of Tshwane 2005: 13)
- Courtyard type buildings should address public space. (Gapp 2006: 158)

FIG 3.39_Urban Design Vision Map

Chapter

This chapter investigates the development and integration framework of the city block into the urban fabric and inner city.

4



FIG 4.1-2_Dynanysism of new cultural event place celebrated with digital technology, Federation Square, Melbourne, Australia, LAB Architects 2004
FIG 4.3_Symbolism of memorial bridge and social interaction place enhanced with technology, Memorial Bridge, Rijeka, Croatia, 3LHD Architects 2004

FIG 4.4_Quality of event space emphasized by aesthetic quality of materials, Brogard Square, Copenhagen, SLA Architects 2001   FIG 4.5_Blue Carpet, Newcastle, UK, Thomas Heatherwich Studio 2001   FIG_4.6_Digital technology augment sense of place, Counter Void, Roppongi Hills, Miyajima Maki 2003



Urban decay

The context analysis concluded that the existing city block functions as two separate campuses with opposite ideologies. The North College utilizes their facilities to its full potential. Du Toit Street accumulates vibrant energies through existing retail and commercial activities along the street edges being integrated into the College's functional efficiency. Tshwane University of Technology on the eastern division of the site however, is of concern as fragmented open spaces and built fabric are being underutilized. The Sasol Library is currently a popular social gathering place for students. The new intervention will primarily focus on the integration of the south-eastern part of the city block.

Reference appendix A

FIG 4.7_Campus Phasing Strategy Map

Phasing strategy

Phase 1
The development of an arcade spine from Du Toit Street through the North College campus creates a visual axis towards the National Reserve Bank and NG Church. Current clusters and additions to the block should be removed to accommodate this pedestrian arcade system. This concludes the first phase of the development as it is the greatest need on the campus block.

Phase 2
Further development on North College's south eastern corner can be investigated in future. Programmatic changes can be made along the arcade. The current cafeteria spaces of the North College can be accommodated in the new intervention. Commercial and retail activities along the arcade will ensure more diverse activities and draw more energy towards the city block.

Phase 3
The edge of the Gordon Leith Building along Church Street can be activated with pedestrian activity. The buildings North-East corner, Lecture's Library and offices, can in addition be improved to create an efficient backdrop for the proposed architectural program.

Open space

The celebration of historic landmarks and buildings is of importance as it adds awareness and value to campus and new development. Open space between North College and TUT is separated by built fabric. An arcade system is proposed to guide and feed pedestrian energy through the site. The proposed arcade spine will frame views towards the Dutch Hervormde Kerk and National Reserve Bank.

The new intervention proposes an internal public square located in the heart of the campus block. New movement patterns into the public square will emphasize its importance and encourage maximum social interaction among a diverse amount of visitors and users.

Church Street accumulates the most pedestrian liveliness. The existing edge is activated with the student bus stops. Pedestrians and students need to filter through this edge into the public space. This space should be emphasized with events and functions accordingly such as restaurants and retail activities.

Refuse services and deliveries need to be taken into consideration and proper placement needs to be determined. The creation of temporary refuse in the building and the usage of existing refuse areas at the NE corner will solve the problem.

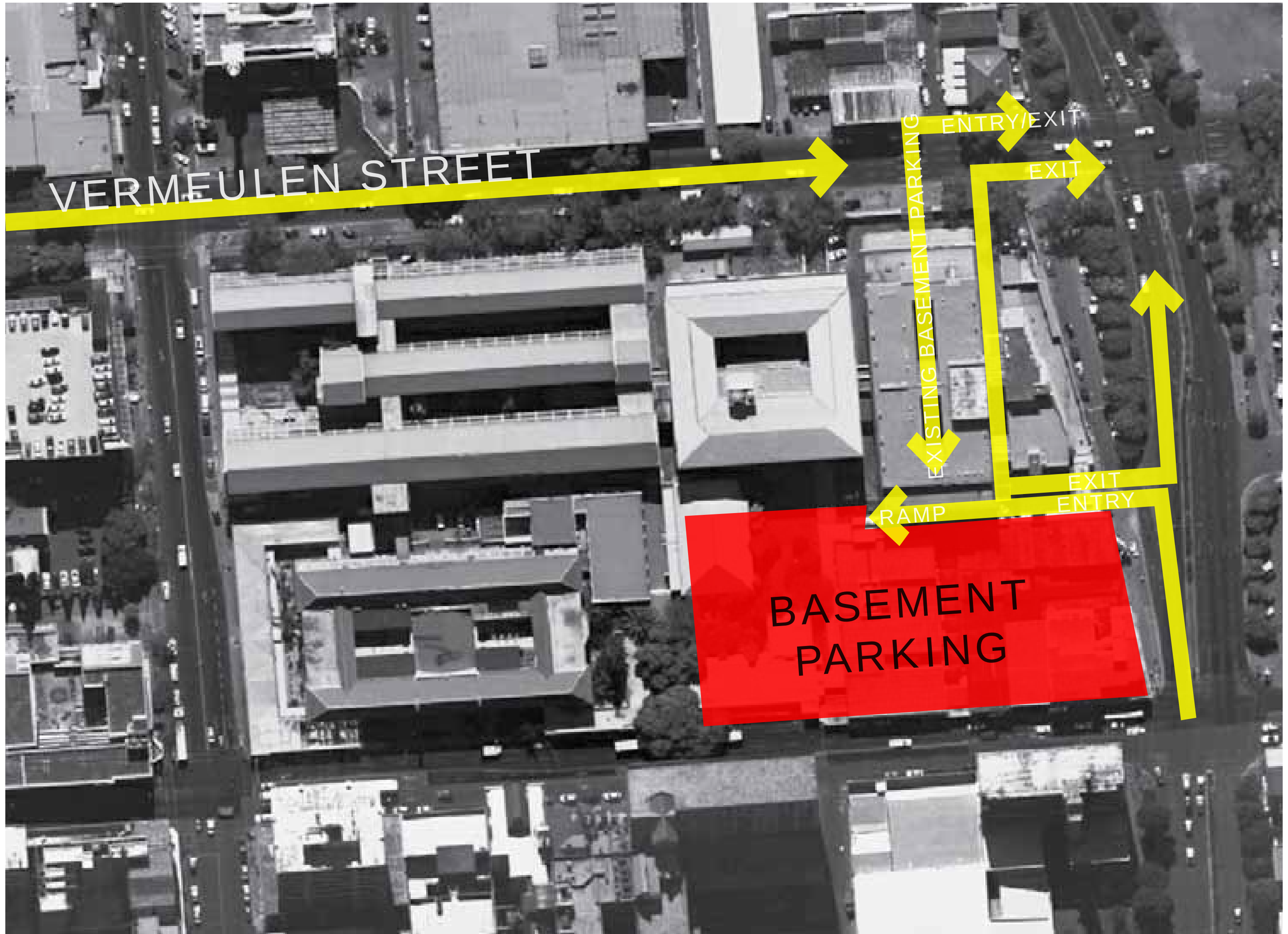

FIG 4.8_Campus Roads and Access Map

Roads and access

Entry towards mezzanine and basement parking into the TUT science building is located on this edge. Basement parking incorporated in the new intervention will solve the limitations of parking for both campuses. Existing roads provides acceptable access into the city block, however, point of exit is in the southern direction of Nelson Mandela only. By means of opening up the original entrance at Vermeulen Street, enables the turn-off at Nelson Mandela to be multi-directional. This will relieve vehicular congestion. Nelson Mandela drive is also a popular drop-off point for public transport which introduces provision for this along the edge to create vibrancy at the corner, feeding energy into the site.

The crossing over Nelson Mandela drive along Church Street is the threshold from car to pedestrian. Movement patterns along Church Street were investigated to improve permeability into the site. The current bus stop is located along Church Street's narrow sidewalk which causes congestion. Students awaiting bus services gather in the allocated bus lanes and as result. Building setbacks, landscape interventions and flattening the road surface will improve congestion along this street.

Access points into the new intervention will be strategically located at energy points to feed from new proposed open spaces.

Urban fabric

The existing urban fabric of the campus in particular is of strong geometric order. For a new intervention to take place the geometric grid is of vital importance. New structures should consist of strong geometric forms to continue the urban edge.

The South-East corner of the site is at the eastern gateway of the city. It should be emphasized to create a sense of arrival and gateway into the inner city.

The corner is approached from three directions which challenges a geometric form to occur. This corner is full of vibrant energy from car and pedestrian entering the city. Thus, the corner should be treated in such a way that it attracts and draws energy into the site.

Embedded media technologies will enhance a sense of awareness, participation and consciousness towards campus activities, internal functions and eventually the production of media.

The introduction of trading activities at the corner will attract tourists and commuters along Nelson Mandela Drive.

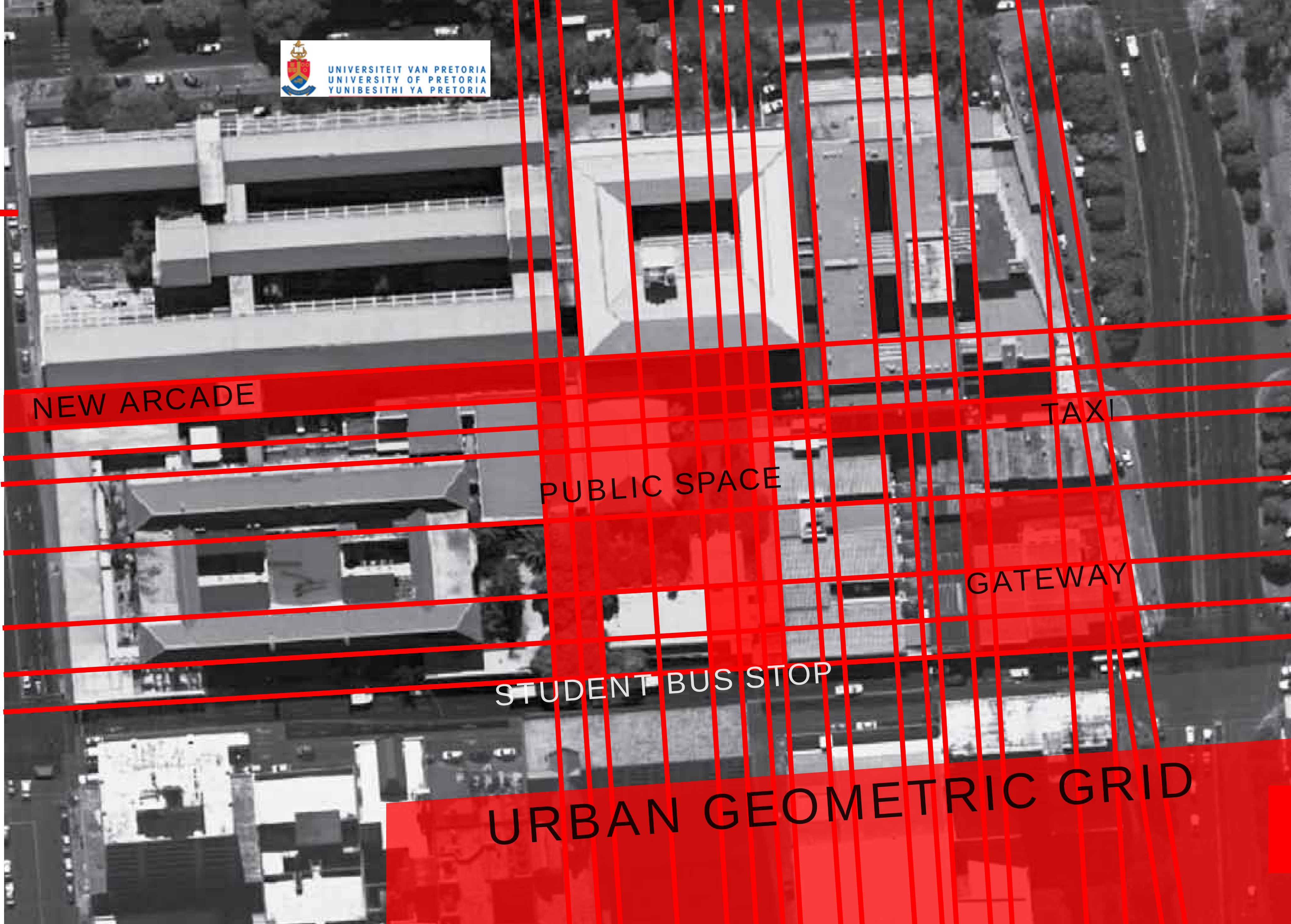

FIG 4.9_Campus Geometric Grid Map

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“The earth is the stage where man’s daily life takes place”
Noberg-Schultz, 1980:5

“Architecture sets the stage for what is experienced”
McCullough, 2005: 162

“Architecture is not all about the design of a building and nothing else, it is about the cultural setting and the ambience, the whole affair.” Michael Graves

“We must ask ourselves what kinds of time and what forms of freedom we can introduce into the world to encourage the transformation of our docile bodies into subjects with a full range of intelligence and expression.” Ed Keller in Tshumi & Cheng, 2003: 104

“Within broadcasting, airing an event ‘live’ – that is, at the precise moment of its occurrence – may be the last stronghold of auratic experience. Liveness...holds the titillation of the uncut, uncensored, and not fully controlled...” Elizabeth Diller in Tshumi & Cheng, 2003: 110

a day where media produced global south african cultural spirit...

FIG 4.10 -4.12_Photo’s of and by Author_Rugby World Cup France 2007

What is a media lab?

CCTV HEADQUATERS_BEIJING_CHINA_REM KOOLHAAS OMA

Both the Chinese Central Television Headquarters (CCTV) and the New York Times, designed by former Pritzker Prize winners, inspired thinking around theoretical argument. Costing around one billion US dollars each, these architectural monuments, decorated sheds in shiny armor, were designed for the pleasure of the eye.

“An explicit ambition of the building (CCTV) was to try to hasten the end of the skyscraper as a typology, to explode its increasingly vacuous nature, loss of program, and refuse the futile competition for height. Instead of the two separate towers of the WTC, there was now a single, integrated loop, where two towers merge.” (Rem Koolhaas, Content, 2004: 44)

The 51-storey CCTV building is part of a media park to form a landscape of public entertainment, outdoor filming, and production studios. Two glass and steel towers rise from ground level and eventually merge in a dramatic, seemingly impossible cantilever (www.oma.eu). The form of the building has been criticized for its so-called lack of cultural reference.

Xiao Mo, a retired professor of architecture from Tsinghua University maintains that: “There is a bird’s egg in the South, a bird’s nest in the North, a bird’s tree in the East, and a bird’s cage in the West. They turned our beautiful Beijing into the world’s bird capital... cost would be 5 billion, which included 1.5 billion to play around with an overhang more than 100 meters high... Then I learned that the correct figure was 10 billion... The overhang, which I had seriously underestimated as merely a game, actually had a far more profound “implication”: the main building is a naked woman kneeling with her rear end facing the audience...“ (Xiao Mo, ABBS (Chinese); translated on www.danwei.org) Less faint-hearted critics can visit the Chinese cultural website: http://www.danwei.org/architecture/rem_koolhaas_and_cctv_porn.php.

The New York Times building was designed to be symbolic of the city skyline and third tallest building in New York. This introduced a 52-storey glass box which represents the transparency and openness of media. The latest technology, energy saving and daylight research were supposedly used to make the building sustainable. Daver Steels, one of Europe’s leading structural steel manufacturers, shipped 280 tons of fully assembled tie bars direct from the UK for the tensioning of the structure. The facades consist of low-emissivity glass curtain walls and ceramic tube screens to reduce cooling loads. There is many recent speculation of New York Times facing bankruptcy and the building has also become popular amongst tower-climbers, protesting the events of 9/11 and the global energy crisis. (www.nyc-architecture.com)

NEW YORK TIMES MEDIA HEADQUATERS_NEW YORK_USA_RENZO PIANO BUILDING WORKSHOP

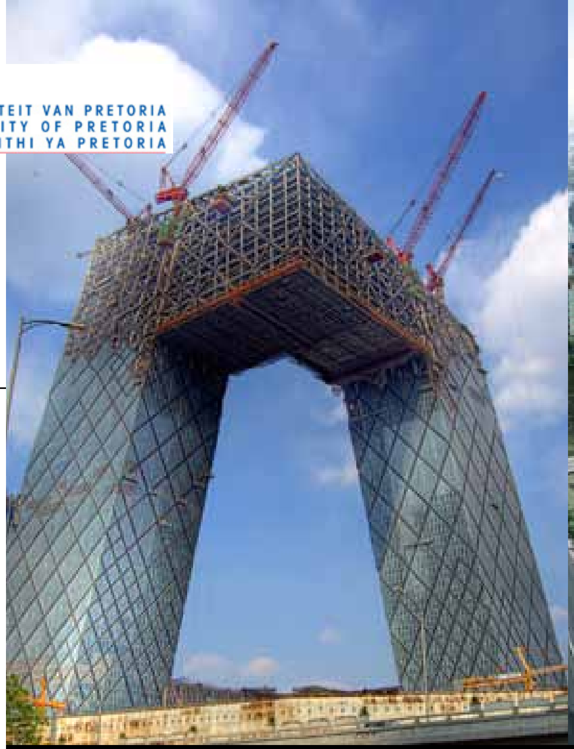
FIG 4.13_CCTV under construction


FIG 4.14_CCTV media park concept image


FIG 4.15_Facade of NY Times Building

FIG 4.16_NY Times Building’s transparent facade at night


FIG 4.17_Concept model of NY Times Building

What is a media lab in the south african context?

"We believe architecture is practical and not a fine art and it is the question of use which distinguishes architecture from the other arts..." Jo Neoro (Architecture South Africa, September/October issue 1996)

This building is specifically chosen as it is manifested in the theoretical argument of the discourse. The building represents a design idiom for media production within the South African context.

Velocity Films in Rivonia serves as an innovative interpretation of practical and social consciousness whilst drawing upon a contemporary agricultural and mining vernacular tectonic of the African Highveld. The architectural form is typologically driven which consists of an integrated relationship between its functional requirements, contextual- and climatic responses. This is also celebrated with a socially interactive working environment. The flux nature of film production and creative nature of the client resulted in functional requirements being able to adapt towards future needs comprising film production- and recording studios

The east-west axis of the building is not only determined by boundary streets, but by jacaranda trees incorporated in the design to assist with northern solar-control.

Double storey offices spaces towards the north and southern service spaces are merged with a socially interactive spine which flows into the canteen area. Office- and canteen spaces transcends onto terraces as interface between building and garden.

Materials emphasize the industrial nature of the building. Steel and concrete is used as main structural elements, while infill elements consist of brick, timber and corrugated sheeting. Robust production studios contradict the more passive timber floor and drywall office spaces. Uncomplicated industrial detailing acknowledges the limitations of available building skill and compliments the nature of a film production in progress.

Natural light, cross-ventilation and solar-control served as an important design determinant. The roof became the structuring element which introduces natural elements towards interior spaces. The central circulation spine further encourages ventilation and pergolas assist solar-control. (Joubert, 2009:40)

VELOCITY FILMS FILM PRODUCTION OFFICES JOHANNESBURG NEORO WOLFF ARCHITECTS

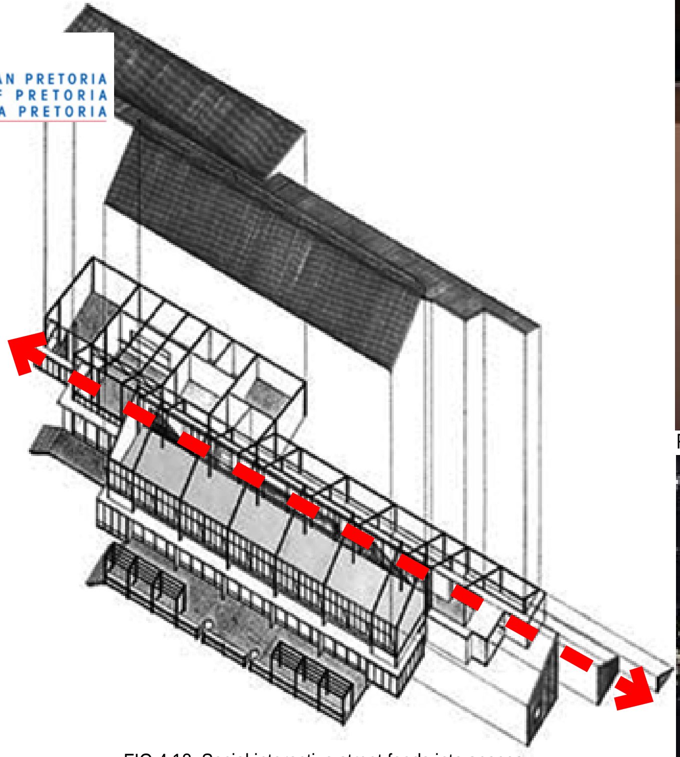

FIG 4.18_Social interactive street feeds into spaces.

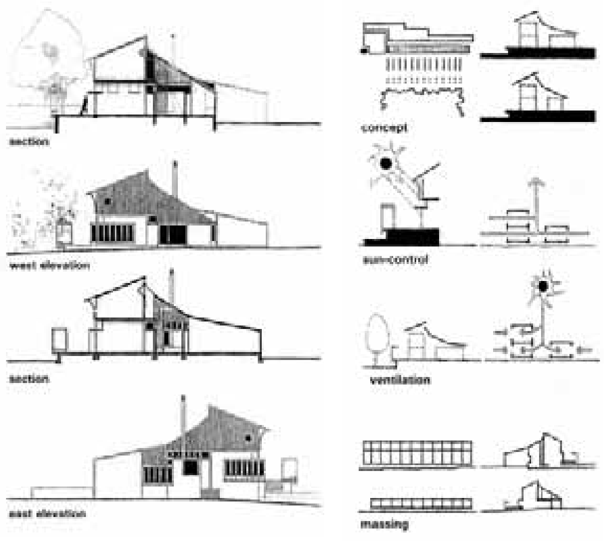

FIG 4.19_Concept Diagrams

FIG 4.20_Social interactive central circulation street spatially connected with outside

FIG 4.21_Raised studio and canteen terraces,interface between building and garden

FIG 4.22_Jacaranda trees and steel portal frame solar control on the North facade.

Design concept

The architectural design concept is based upon the spirit of an urban classroom being generated out of the context while considering the sensory experience. The concept of an urban stage which finds its origin out of the contextual influences of city and urban campus can be summarized through the following principles:

1. On urban scale the campus block is integrated into the urban fabric by means of arcade systems that feed into a central public space. These intend to draw attention and energy into the campus block, making it a vibrant destination place and gateway into the heart of the inner city and cultural district.

2. On programmatic scale the role of the urban stage is to create an internal and external experience. The building encourages social interaction, awareness and participation towards the production of media within the space of the city. Internal experiences are arranged along a central circulation spine which expresses sensory phenomena and acts as the social voice of the building. The external skin is tectonically and programmatically expressed as a series of stages and events to create an experience for the audience: public and by-passer. The media production progresses along this skin with the final product celebrating the urban gateway.

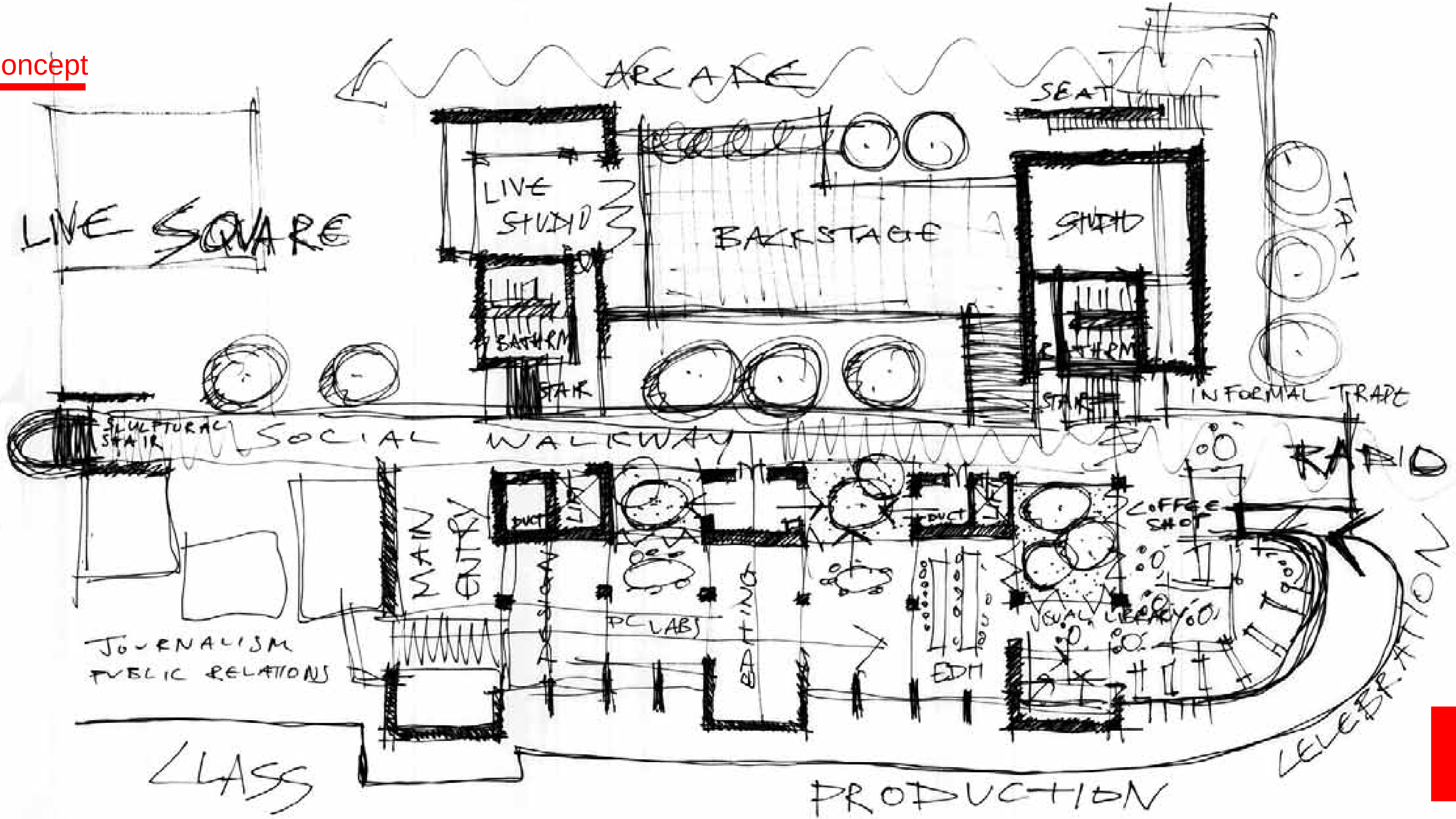

FIG 4.23_Conceptual Diagram indicated on Plan

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Design process

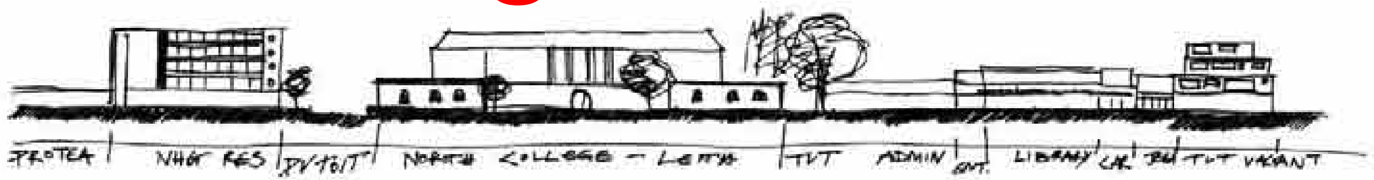


FIG 4.24_South elevation along Church Street

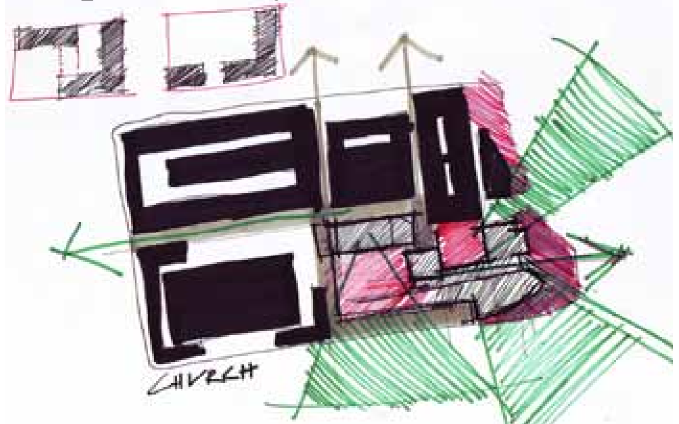
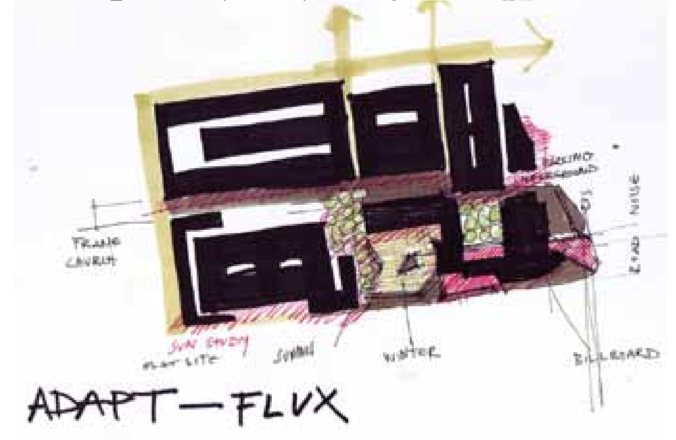


FIG 4.25-27_First Concept development diagrams



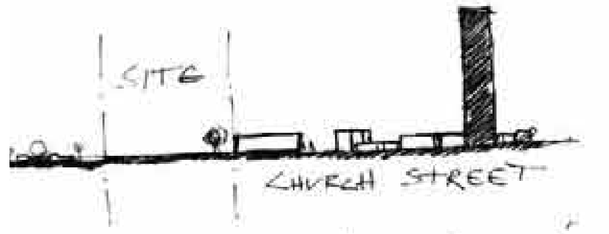


FIG 4.28_East-West Sectional diagram

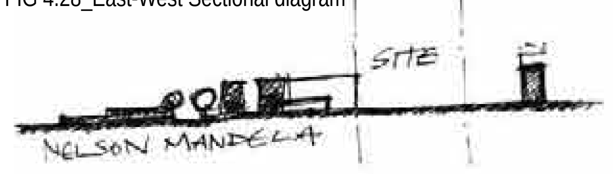
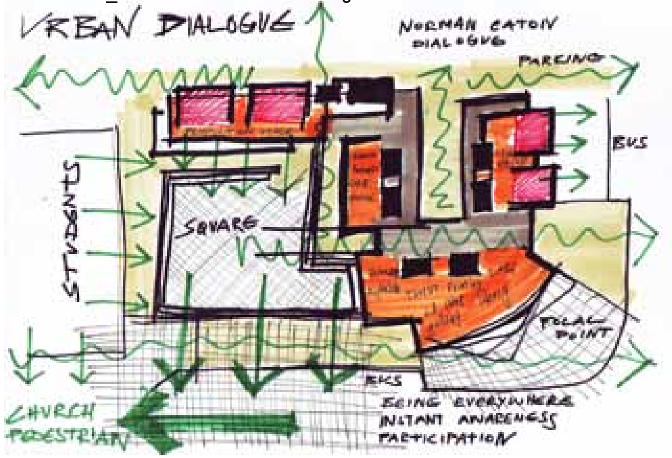


FIG 4.29_North-South Sectional diagram



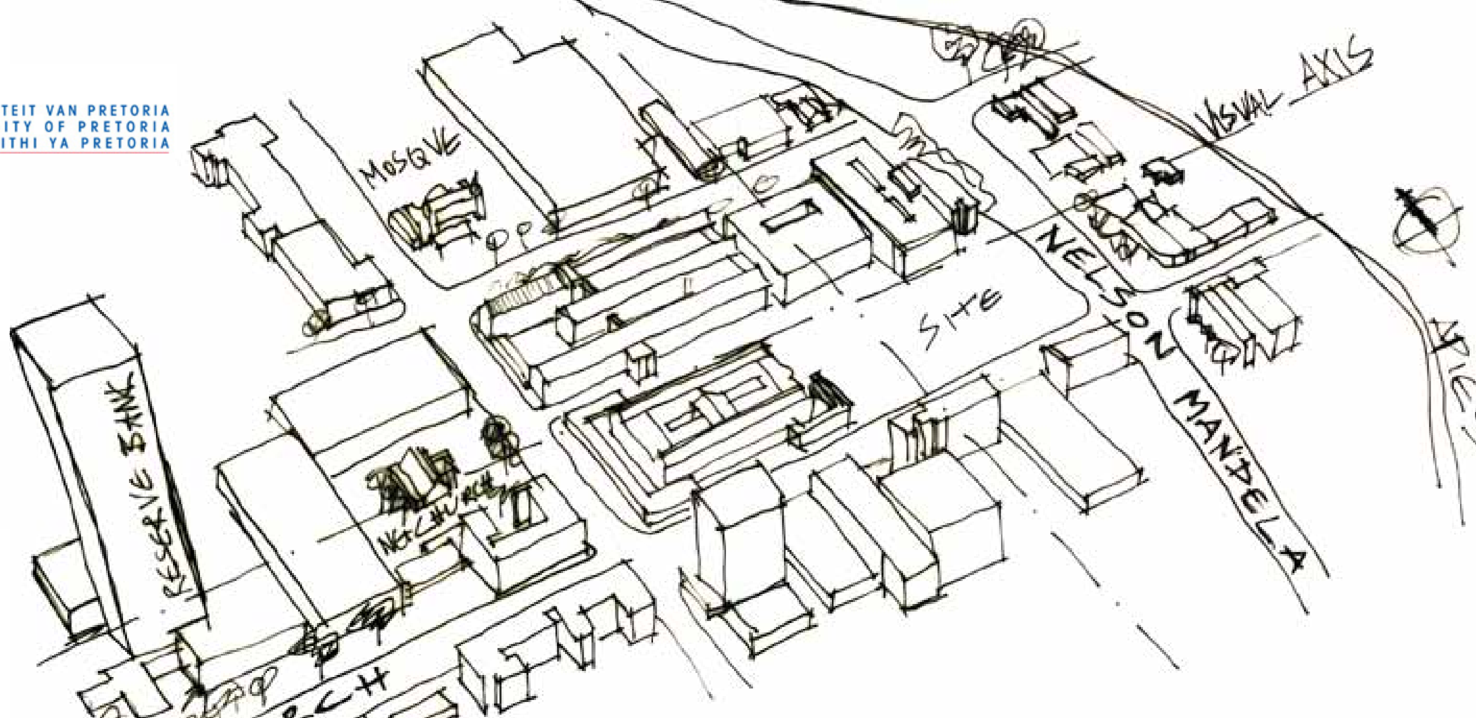
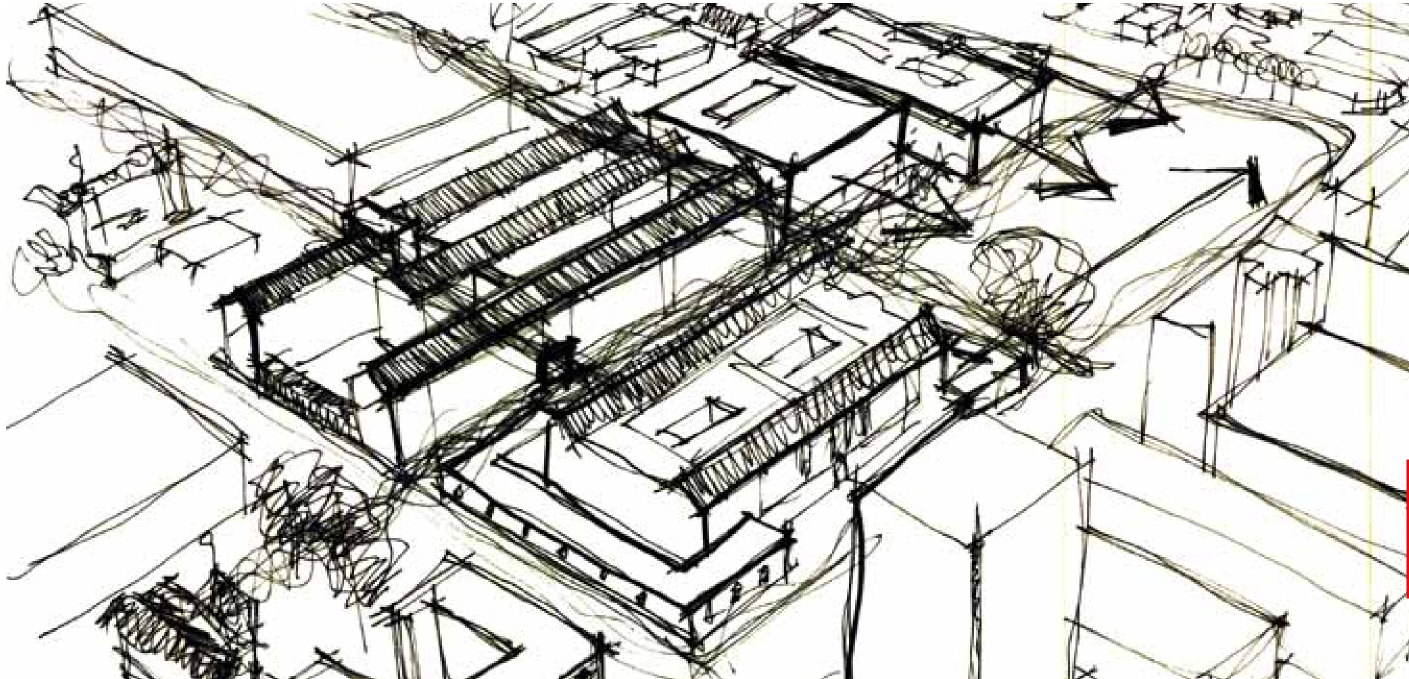
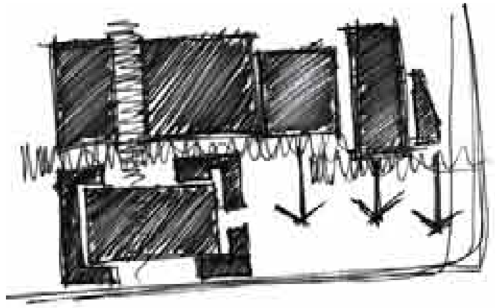


FIG 4.30_Site and context sketch indicating new proposed pedestrian arcade axis
FIG 4.31_Heritage influences on new architectural language



Stage 1

- Became the stepping stone from which further design decisions were made.
- Used existing fabric as generator for an architectural language.
- The existing (tectonic hollow brick) skin boxes with elevated ground floors of the Eaton & Louw building served as primary inspirational source.
- This building consists of a hollow brick skin framed by overhanging roofs. The three boxes are tied to a central circulation spine.
- Courtyards within the buildings emphasise internal- external experiences along this route.
- **These aspects gave birth to the idea of a "stage."**
- The concept of five loose floating boxes connected to a circulation spine, and bound to a sculptural roof element was the result of the first design.



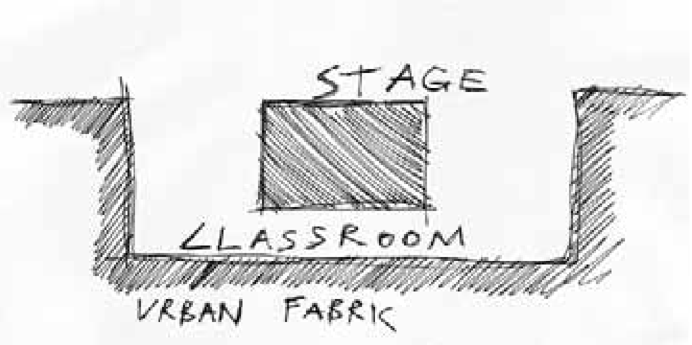
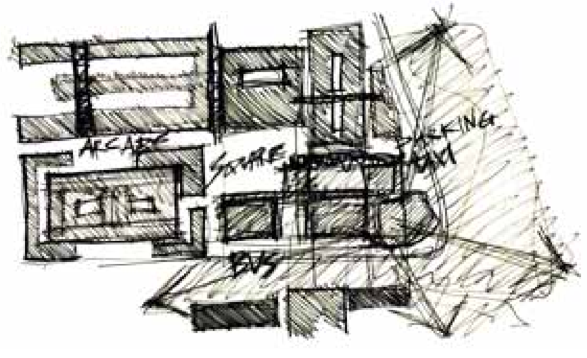
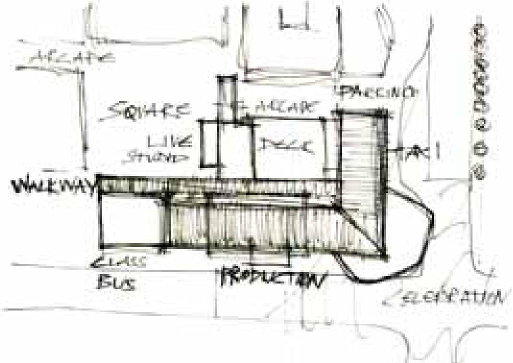
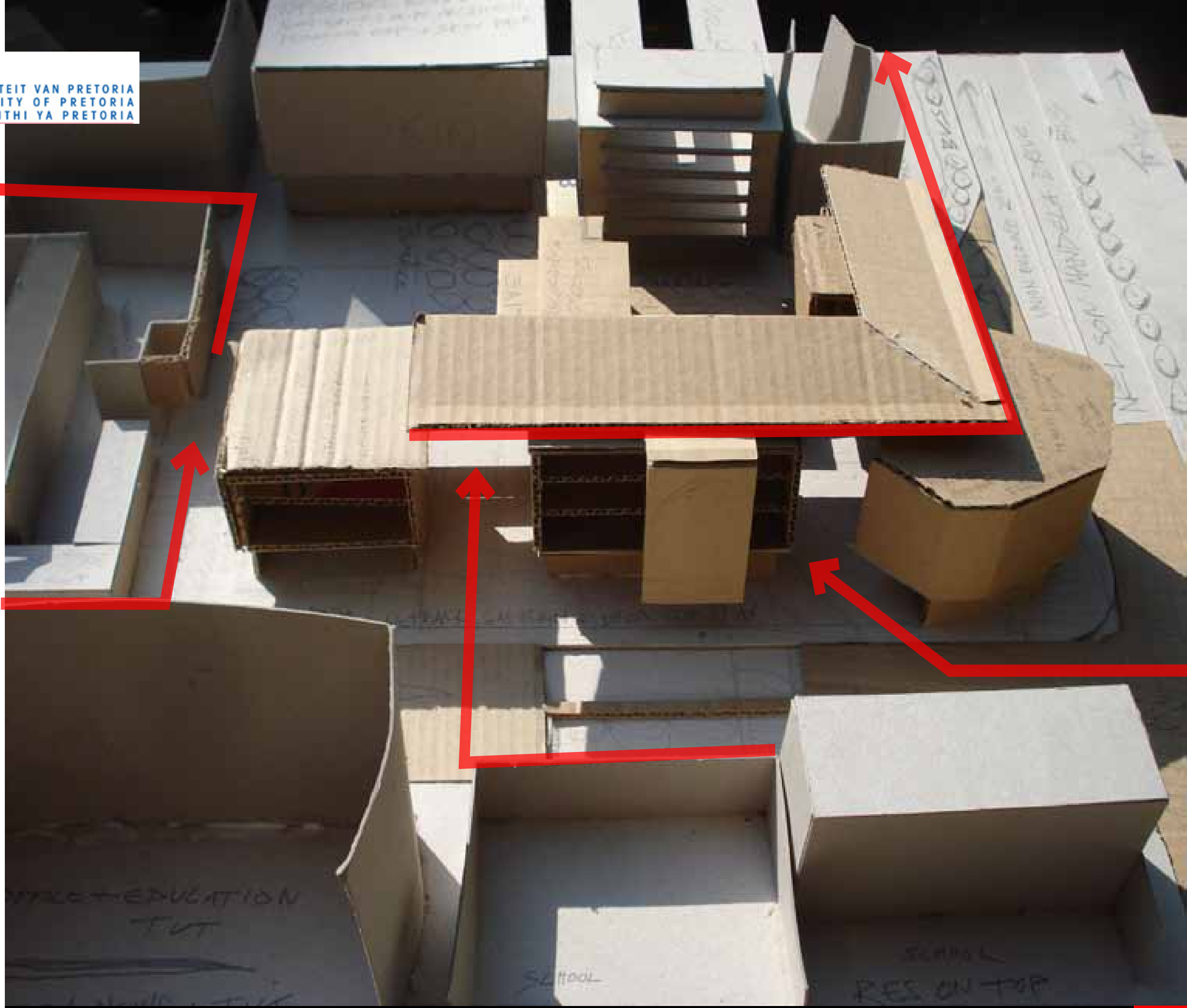


FIG 4.32-35_Stage 1 development diagrams in responce to contextual analysis

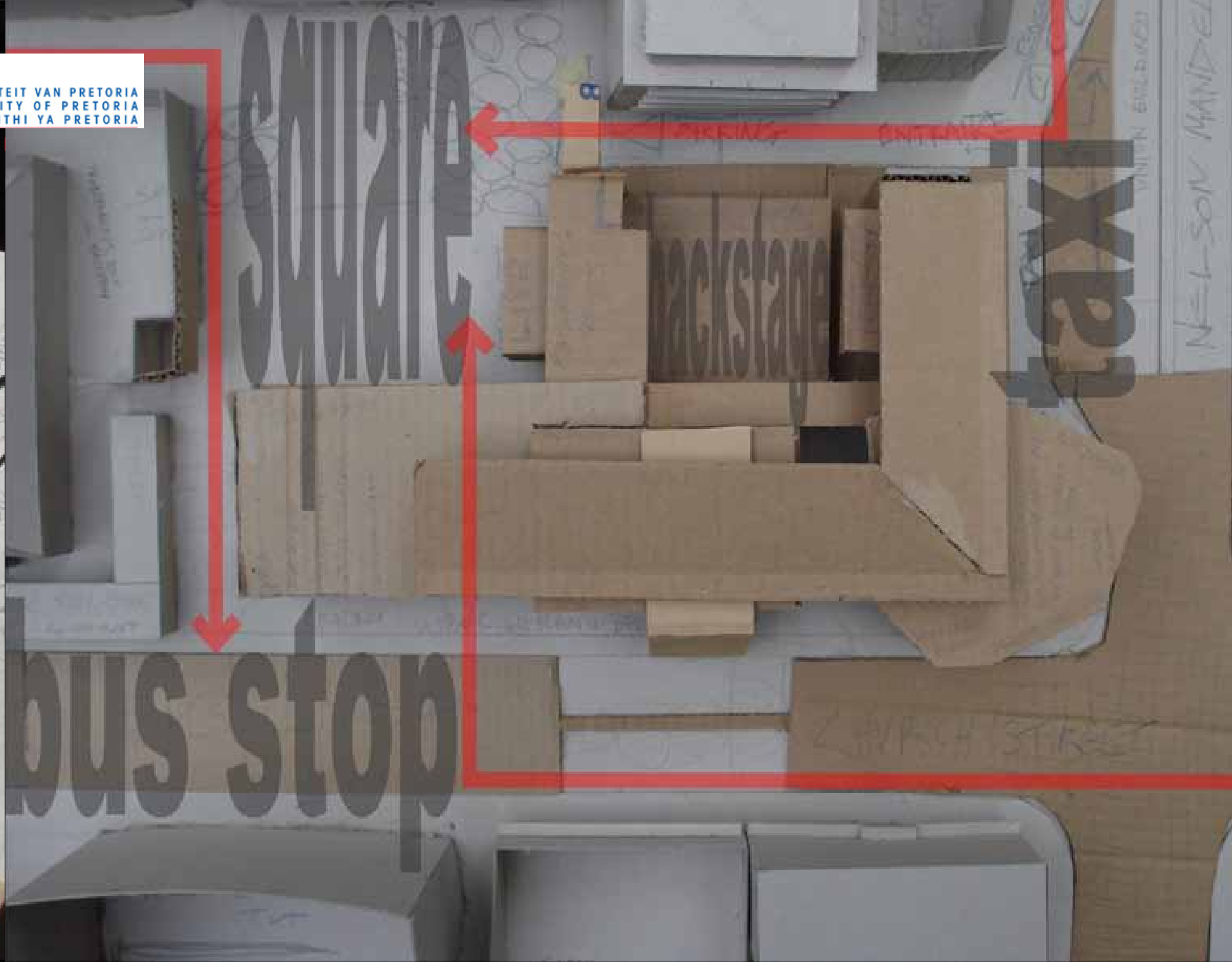






- The external skin acts as a stage which expresses the production of media.
- The floating boxes are expressed through a series of stages directed towards the public interface.
- This introduces public participation on ground level which creates exterior experiences, making the public aware of the media production in process.

FIG 4.36_Stage 1 concept model



- Three stages along Church Street display the growing dynamisms of media production: from cultural district to classroom, to production and celebration of the final product.
- An organic bound box with flat surfaces in all directions, bound to the sculptural roof celebrates the sense of arrival on the corner of Nelson Mandela and Church Street.
- This serves as a permeable edge, emphasised with a digital media screen, to attract and draw energy towards the building and into the public square.

FIG 4.37_Production progression along Church Street

- Existing mezzanine parking levels of the Eaton & Louw building resulted in a raised internal courtyard, forming the “backstage area.”
- This space is opened up, creating a dialogue with the historical facade which serves as the fourth wall of the internal space.
- The final box, enclosed recording studio, creates a sound barrier and is also activated with a public transport drop-off point which feeds energy into the public square.

FIG 4.38_Activation of stages along the edges

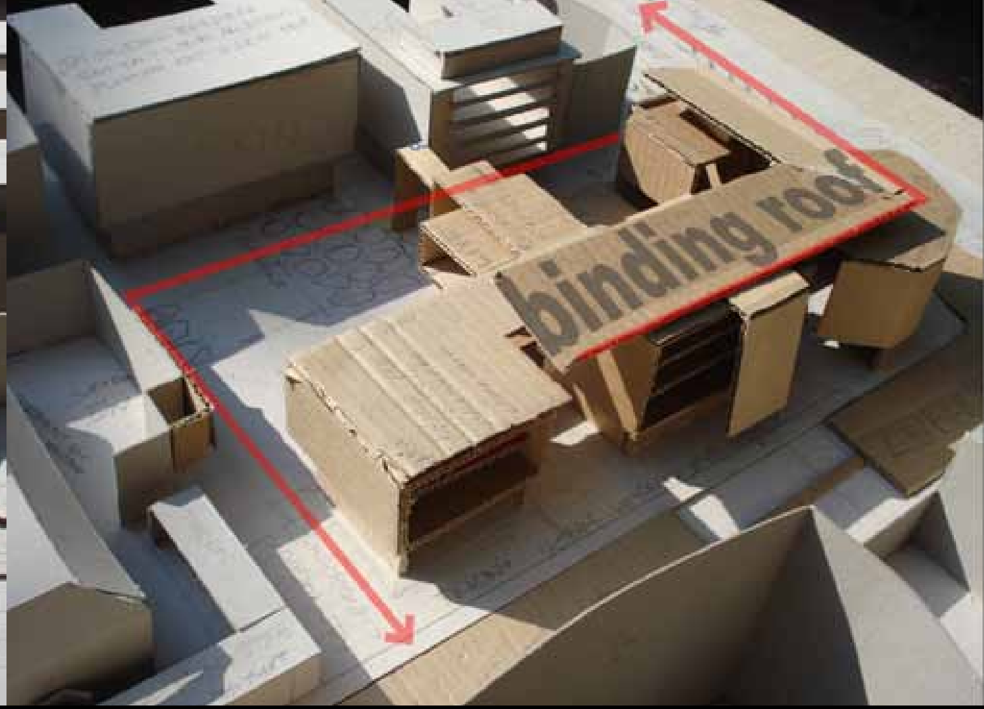


FIG 3.39_Eastern Arial view (above)

FIG 3.40_Activation of Public Square (below)

FIG 3.41_Nelson Mandela Drive celebration

FIG 3.42_Nelson Mandela Drive Aerial View

FIG 3.43_Sculptural Roof Canopy binds loose boxes (above)

FIG 3.44_Nelson Mandela Drive Aerial View (below)

Stage 2

The next investigation done was in terms of the architectural language on the facade along Church Street. The adjacent North College building is of a neoclassical architectural language designed by Gordon Leith, the pioneer of his time. This building can be summarized as a three storey core building, symmetrical facade with concrete columns at the entrance and framed under a steep clay-tile roof. Two single storey flanks (bastions) with flat roofs guide pedestrians towards the entrance. (Le Roux, 1991: 12)

These elements were re-interpreted in the construction of a second hand-built model. The idea of central expressive columns framed by a roof with wings conducting pedestrians into the internal spaces, grounded on a plinth became the decisive architectural language along Church Street.

Existing heights of the campus, surrounding context, grids, technical precedents etc. were measured and studied. This resulted in the implementation of basement parking which established a structural grid from which spacial arrangement was ordered. The stereotomic brick skin of the Eaton & Louw building influenced the implementation of a functional mesh skin along the northern walkway. This skin attached to the walkway reads as a separate mass element. The principles of Kahn also introduced the play of geometry. Internally this will add towards sensory experiences along the walkway through filtered light and reduced heat loads in summer. The floating roof elements which bind recording boxes were tied to the ground. These arms became ordering elements, framing the arcade spine and creating spatial connections with the existing context.

FIG 4.45_Concept model 2 Church Street elevation

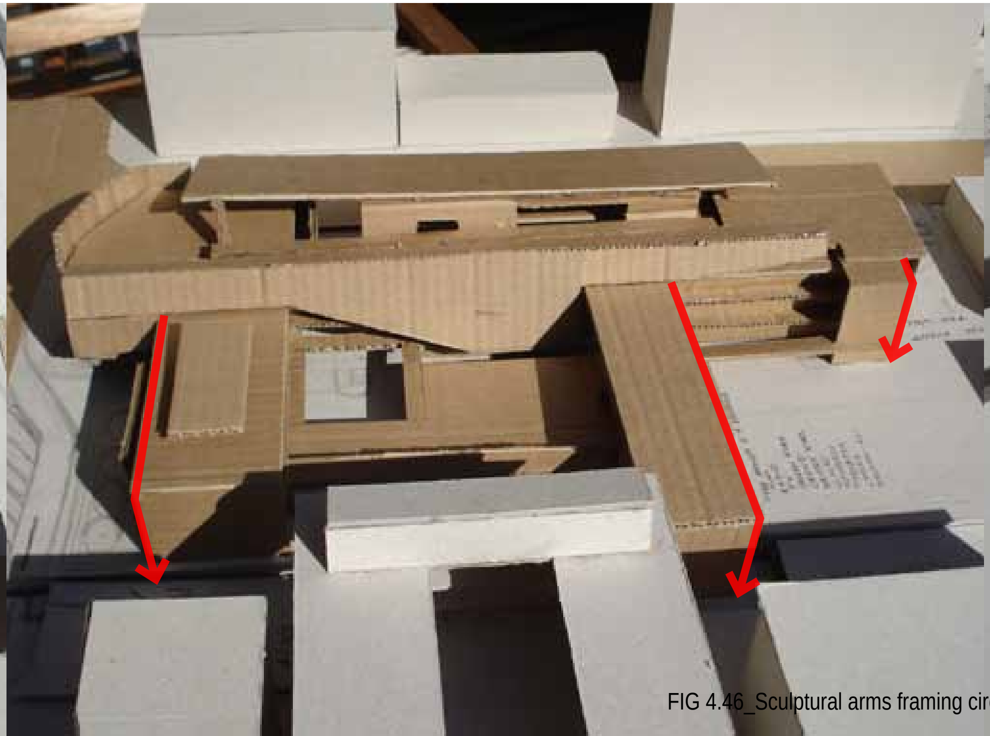


FIG 4.46_Sculptural arms framing circulation

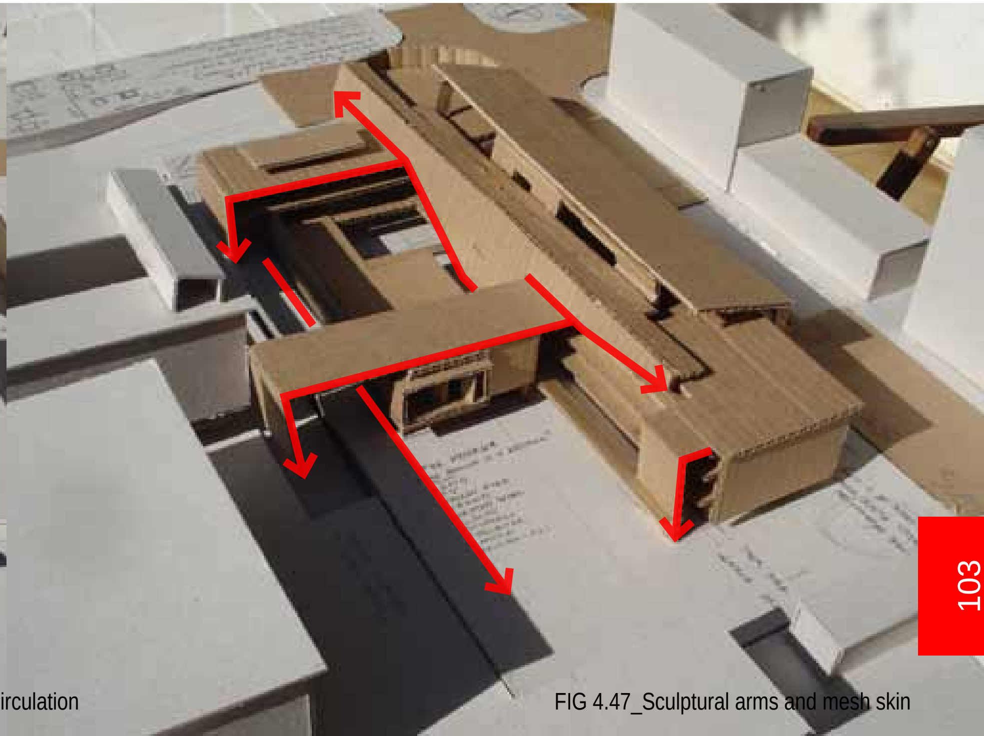
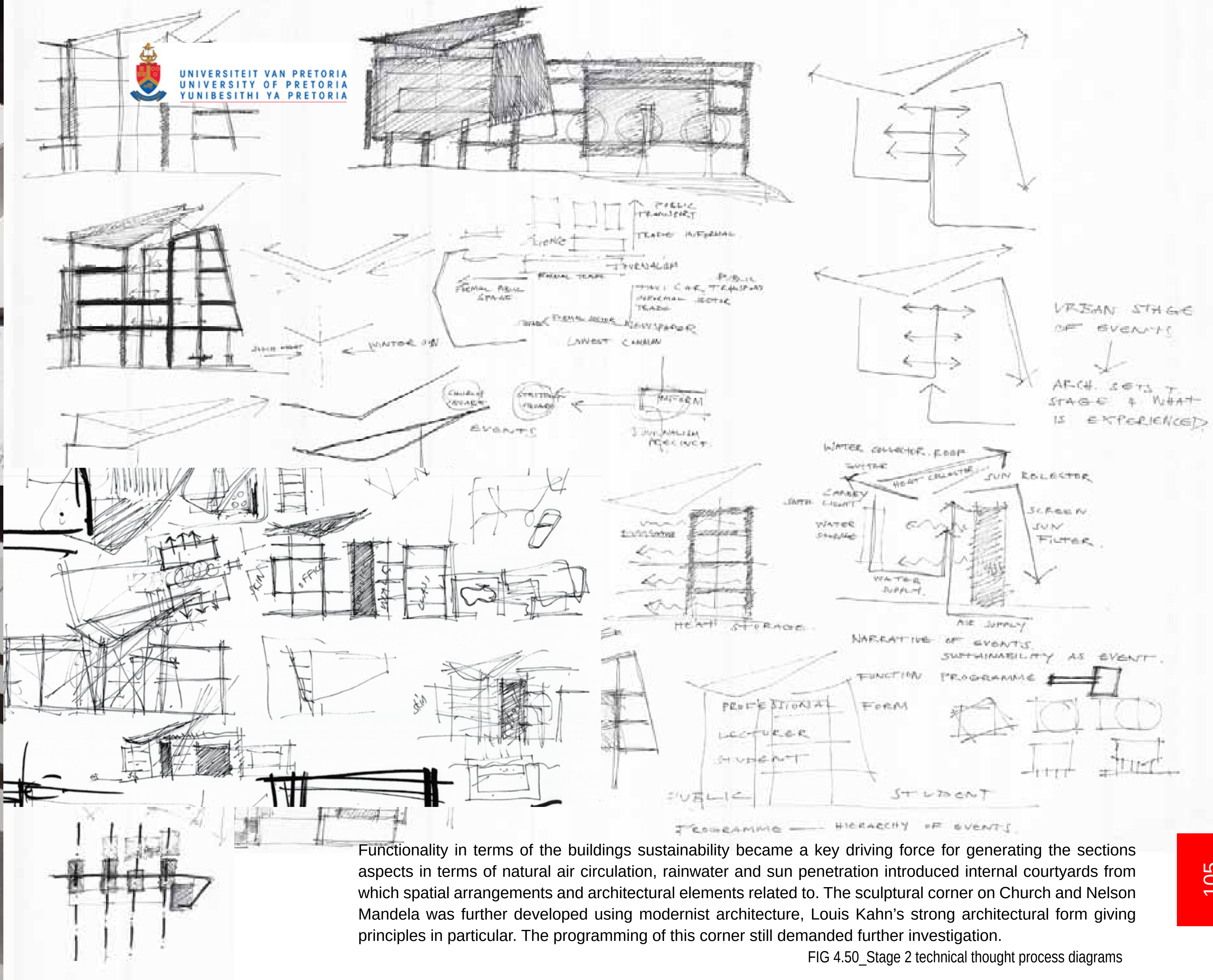


FIG 4.47_Sculptural arms and mesh skin

FIG 4.48_Concept model 2 aerial view of south eastern corner

FIG 4.49_Concept model 2 aerial view of north eastern corner



Functionality in terms of the buildings sustainability became a key driving force for generating the sections aspects in terms of natural air circulation, rainwater and sun penetration introduced internal courtyards from which spatial arrangements and architectural elements related to. The sculptural corner on Church and Nelson Mandela was further developed using modernist architecture, Louis Kahn's strong architectural form giving principles in particular. The programming of this corner still demanded further investigation.

FIG 4.50_Stage 2 technical thought process diagrams

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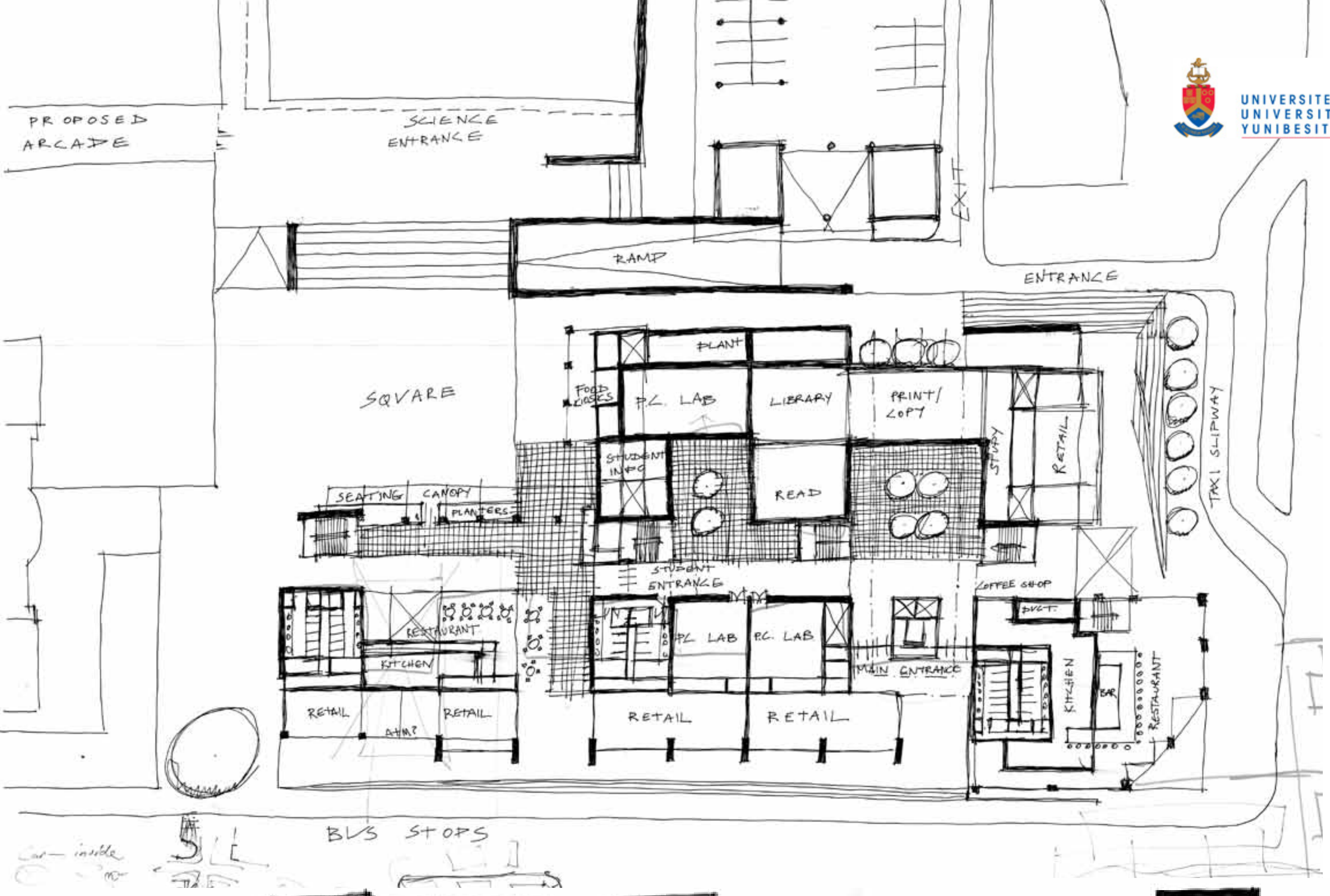


PROGRAM:

- Admin Staff Offices
- Auditoriums
- Humanities Classrooms
- Humanities Library
- Humanities Offices
- Journalism Offices
- Science Library
- Science PC Labs
- Media Production Floor
- Recording Studios
- Restaurants
- Retail
- Student Information

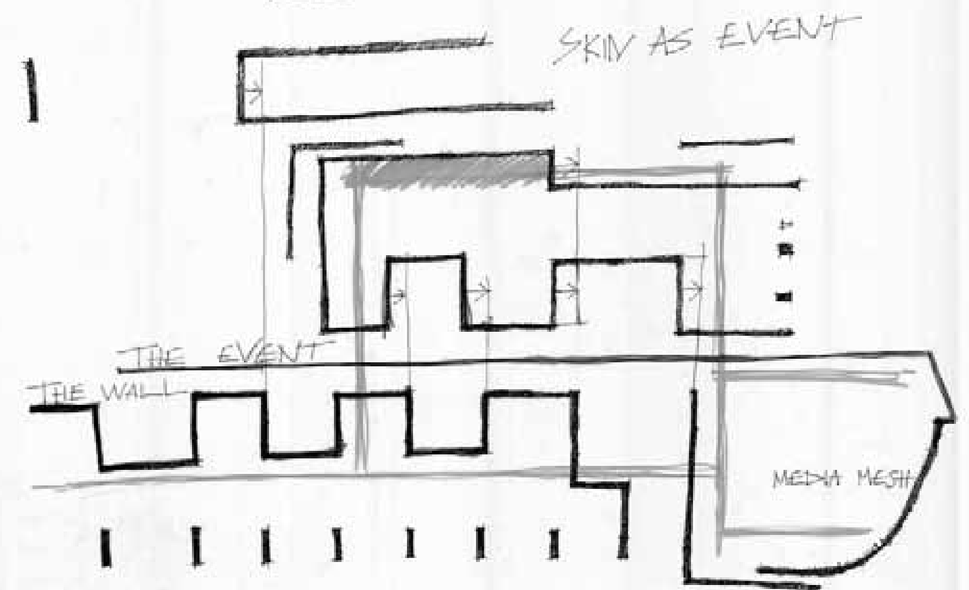
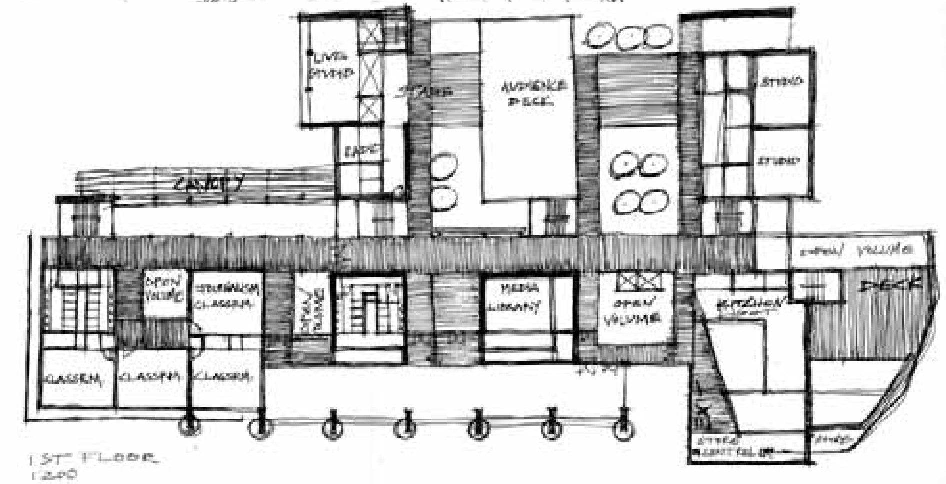
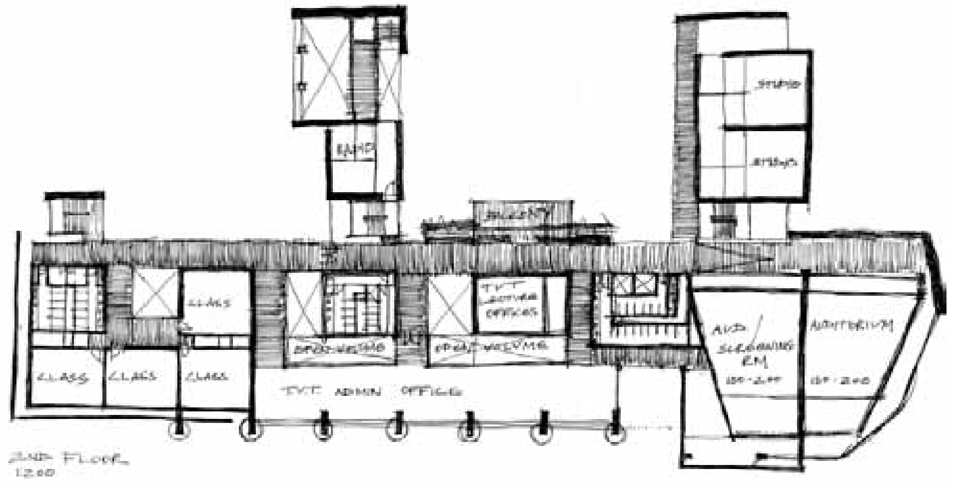


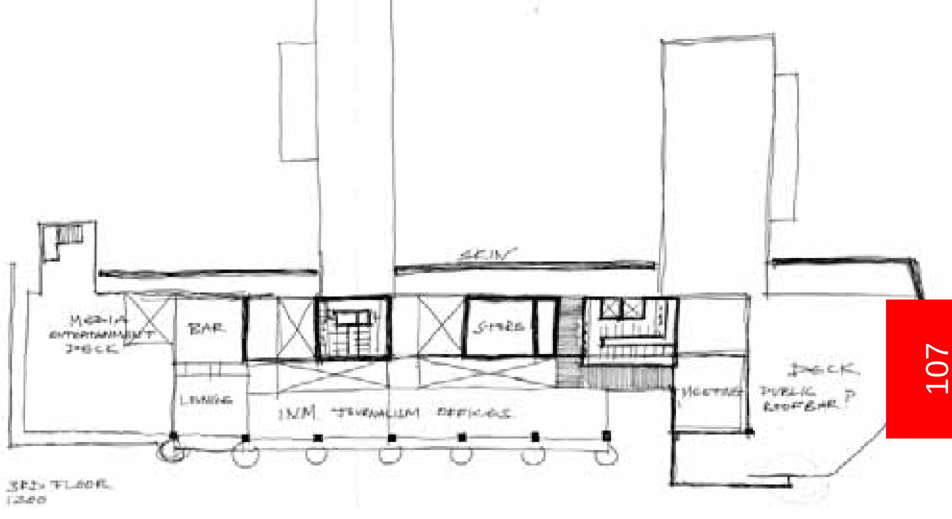
FIG 4.55_Stage 2 massing, spatial and ventilation diagram

Initial sketch plans were developed to display vertical programming of the stage and to investigate the location of services. Functional aspects in terms of natural air circulation, rainwater and sun penetration introduced internal courtyards from which spatial arrangements and architectural elements related to. The perpendicular planning displays the order of the production process: from public, to student, -lecturer and professional journalist. The urban design development forced the removal of TUT's 4 PC Labs, Admin offices, Library and lecture hall. This was incorporated in the planning process. (Interviews with Prof. Marais and Prof. Pieterse from TUT Science Campus, Piet Engelbrecht the facilities manager, and Prof. Diederichs, TUT head of journalism)

FIG 4.51-54_Stage 2 Floor Plans







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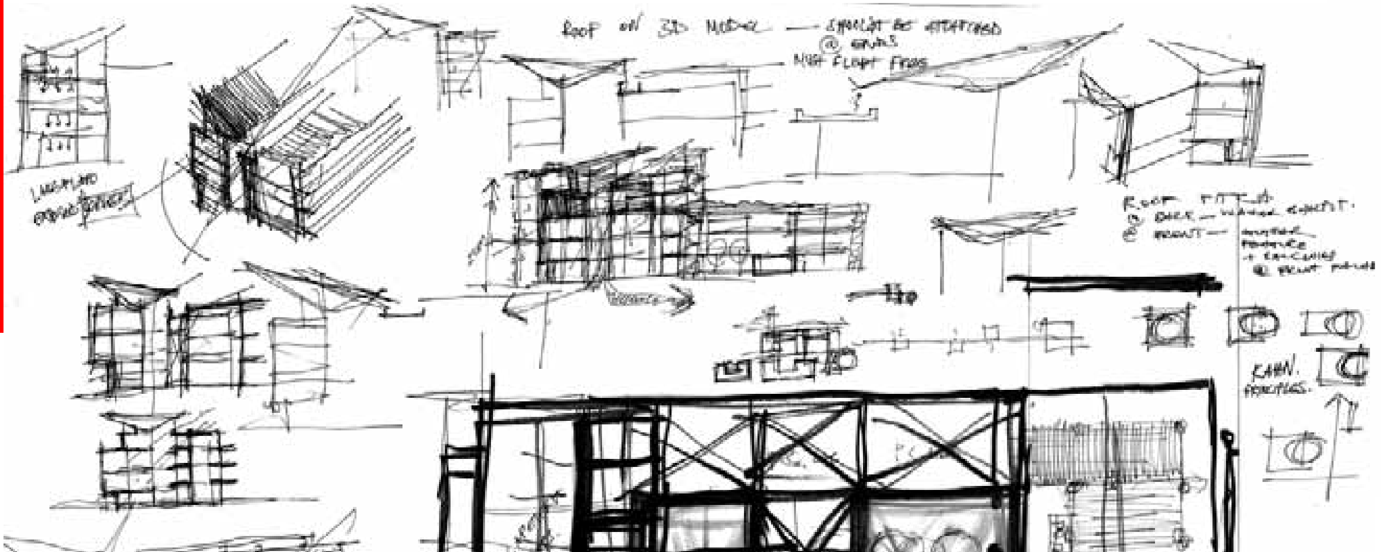
Stage 3

- Comparisons between model the two hand models concluded that the **design had lost some of its elegance and sculptural quality**.
- The next design phase analysis the human experiential perspective in **combination with the earlier** concepts.
- It was concluded that the building should only have **one entrance**. This is celebrated as the entrance to the building and public square, located adjacent to the Church Street Bus stop. The entrance creates a **central pivotal axis** and prominent pedestrian entry point where most of the existing pedestrian energies are located.
- **Vertical elements** introduce prominent hierarchies of space from pedestrian street level perspectives. This created a legible entrance and relationship with the verticality of the National Reserve Bank.
- Timber balconies express the voids between the internal functional programming and exterior mass.



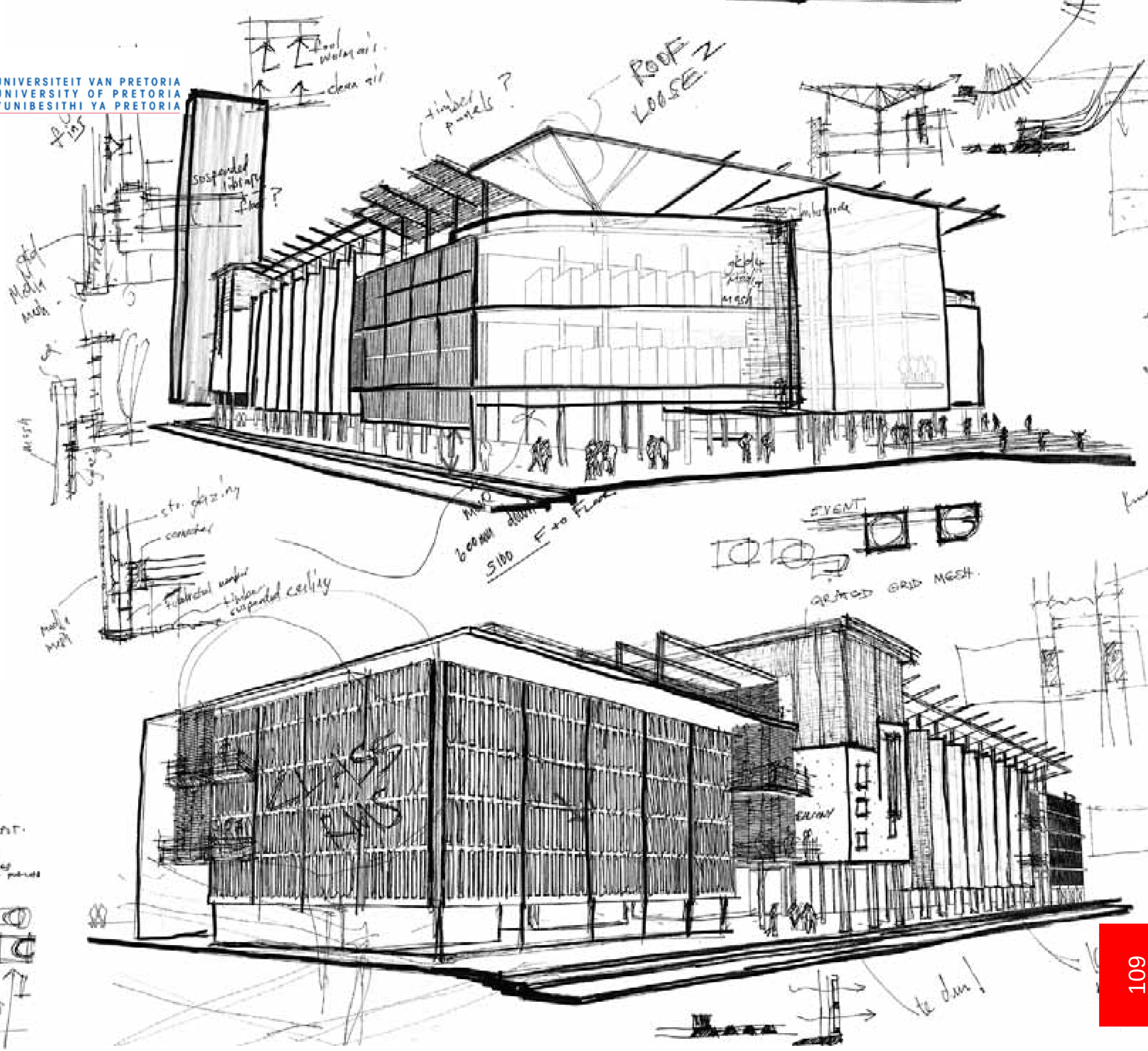
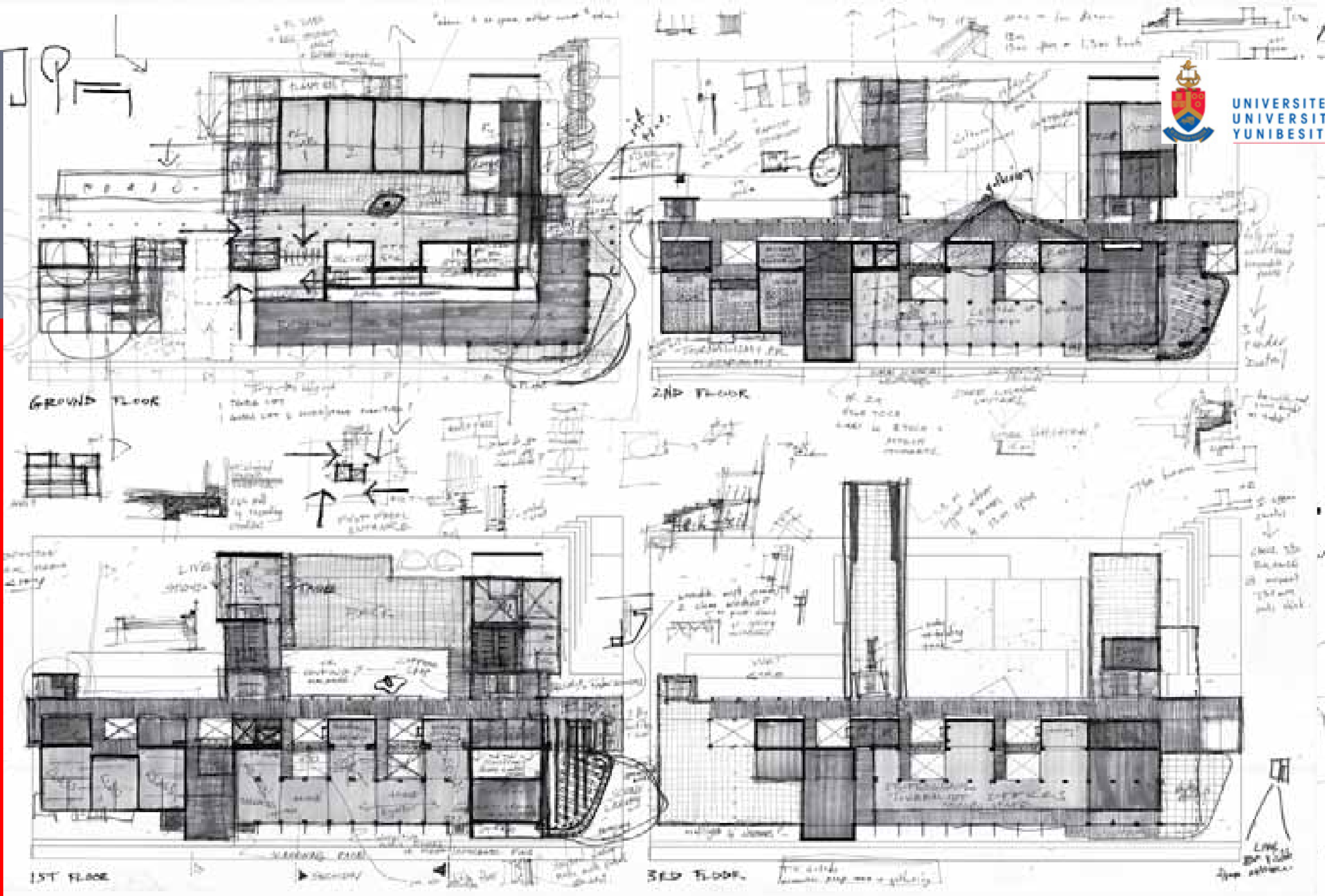


FIG 4.56_Stage 3 Design Development diagrams

FIG 4.57_Stage 3 Three dimensional Design Development



- The **roof** was redesigned to read as a **separate binding canopy**. This addresses **functionality** and exterior **spatiality**. Internal spaces along Church Street open up to receive maximum glare free **southern light** with the roof pitch **guiding rainwater** down to service cores.

- The roof becomes a prominent binding element, extending as an overhanging canopy, and **framing external space**.

- The linear walkway which reads as a **mass skin was punctured with a balcony**, introducing a social connection with the backstage area.

FIG 4.58_Stage 3 Planning development

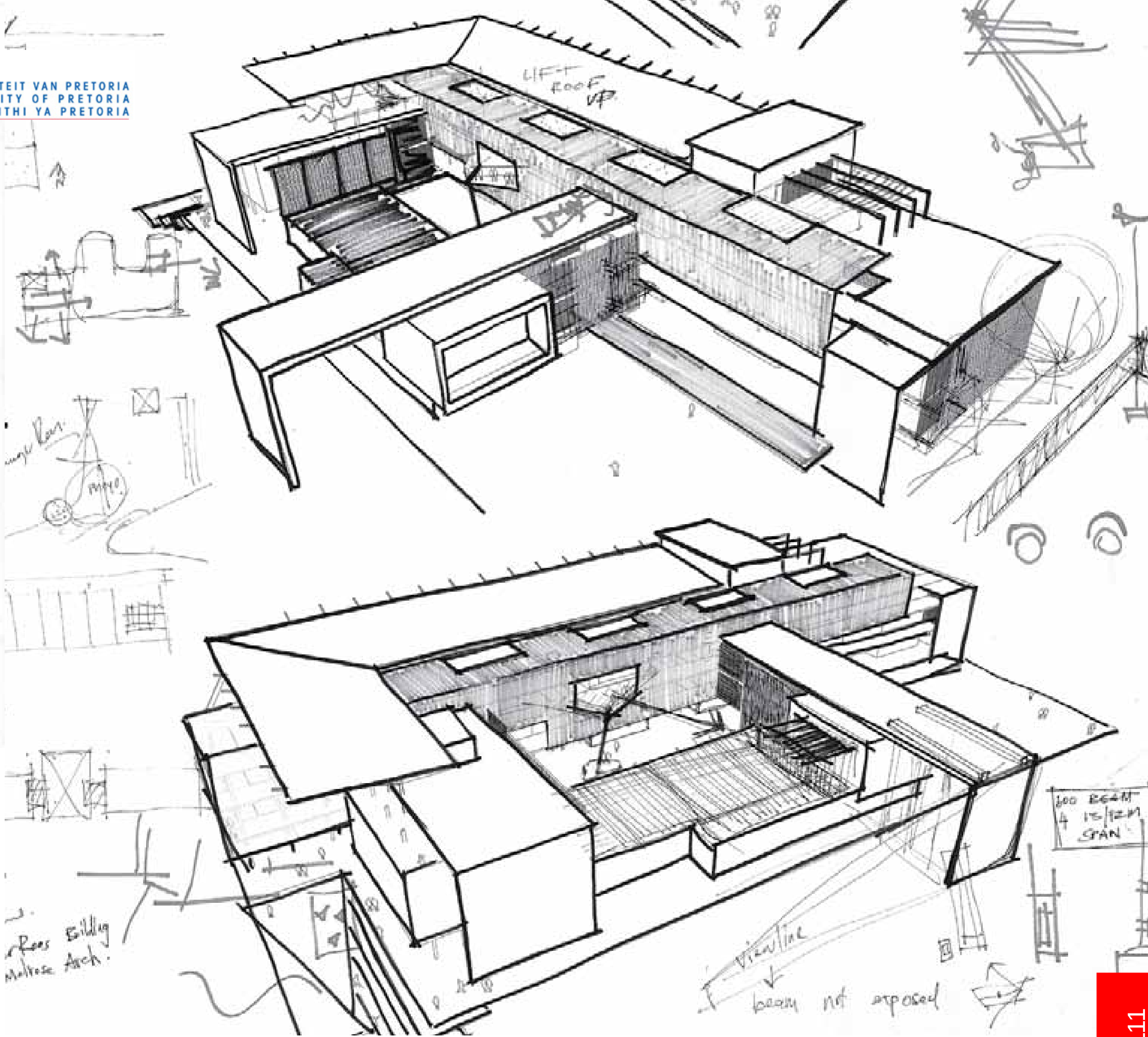


FIG 4.59_Stage 3 Three dimensional development

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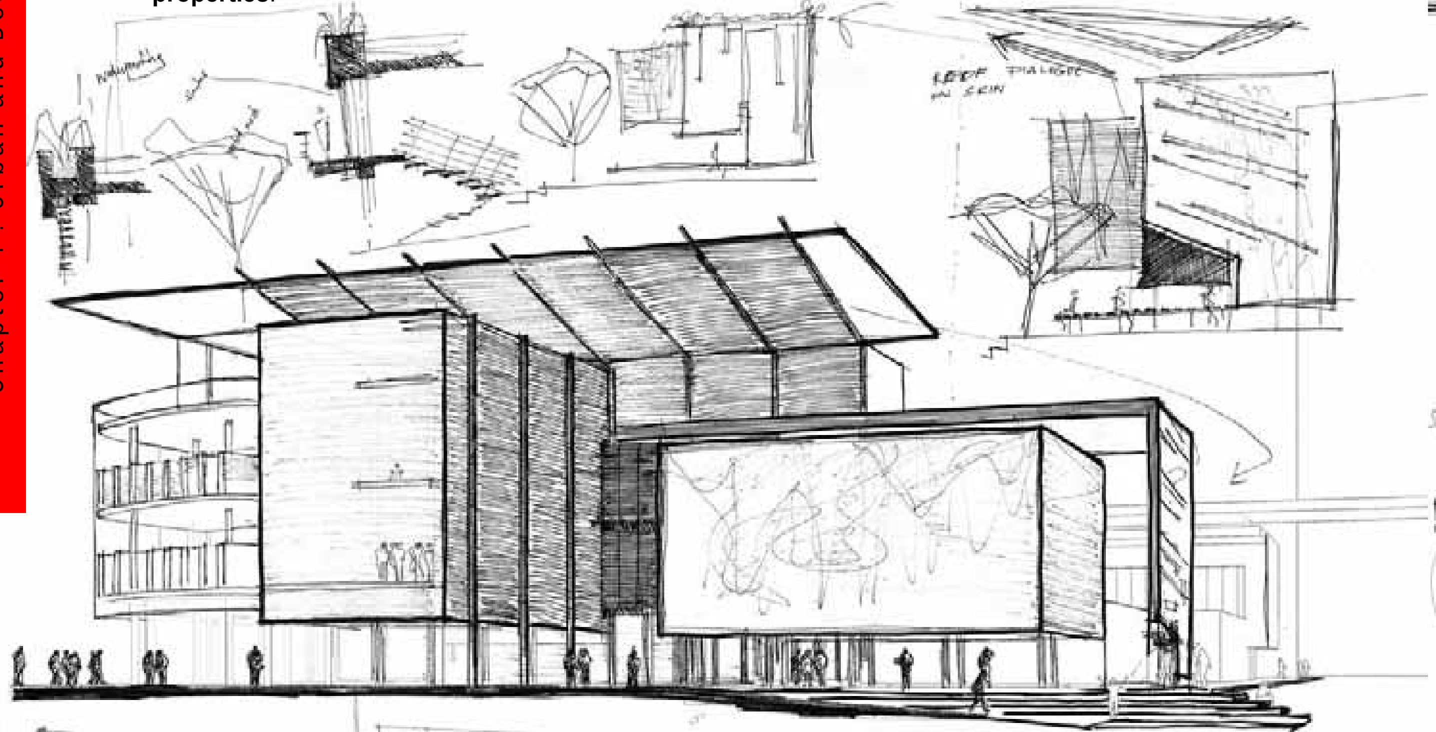
Stage 4

- Playoff between **stereotomic and tectonic elements** were investigated.
- **Mass elements pulled out** of the Church Street façade for pedestrian experience - being part of the building, walking in/under it.
- The classroom **facade** was pulled was pulled back to express the tectonic language of the **existing tree**.
- The arms which binds the floating recording studio boxes and arcade, were used as **sculptural elements**.
- The **horizontal concrete was raised** to express its stereotomic qualities.
- **Aging process** of the building expressed by guiding water down to ground level, and emphasized as event and gathering place
- Stereotomic 9m mass grid of the building wrapped with a tectonic 4.5 grid, **being true towards material properties**.



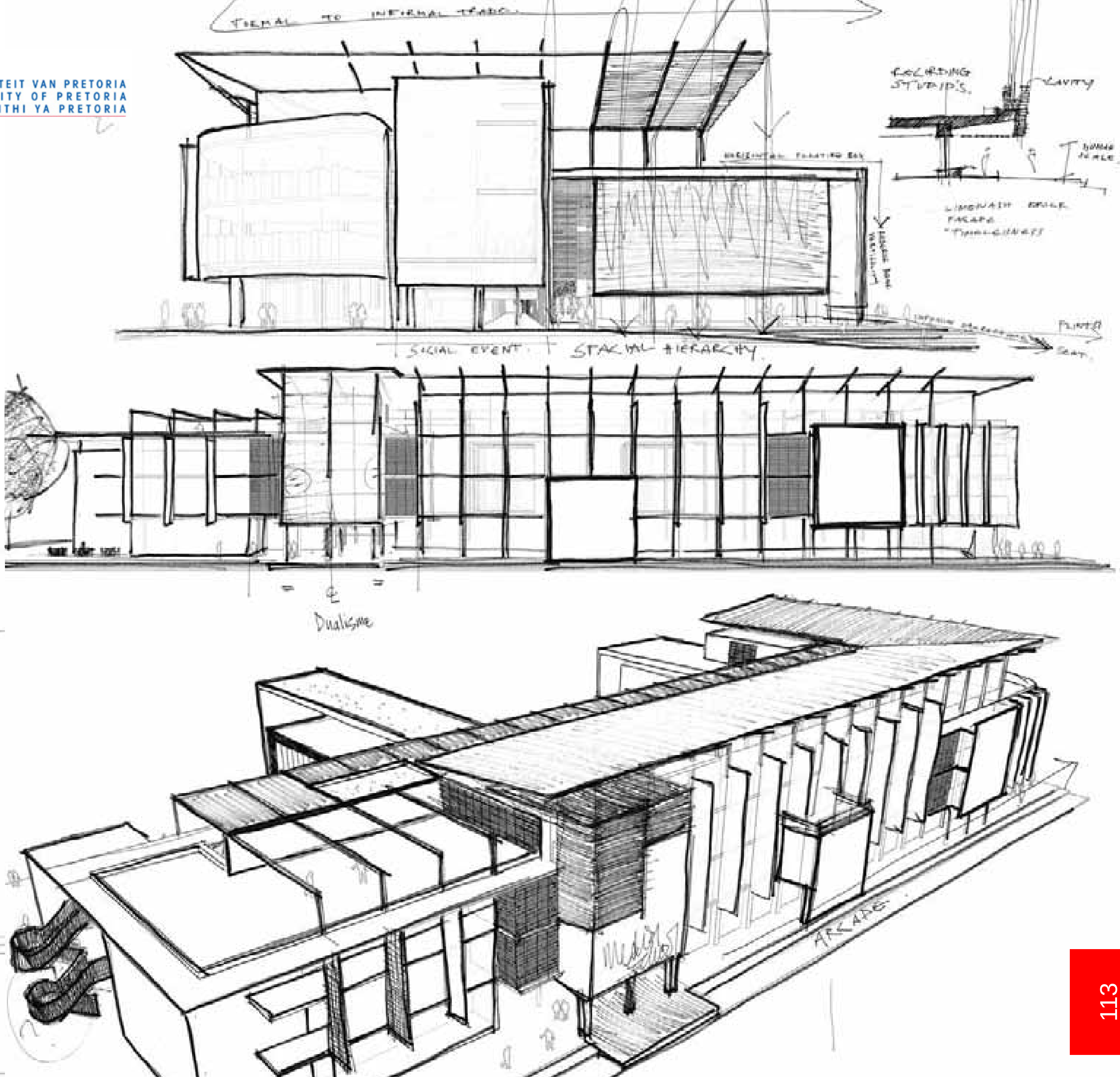


FIG 4.60_Stage 4 Three dimensional development

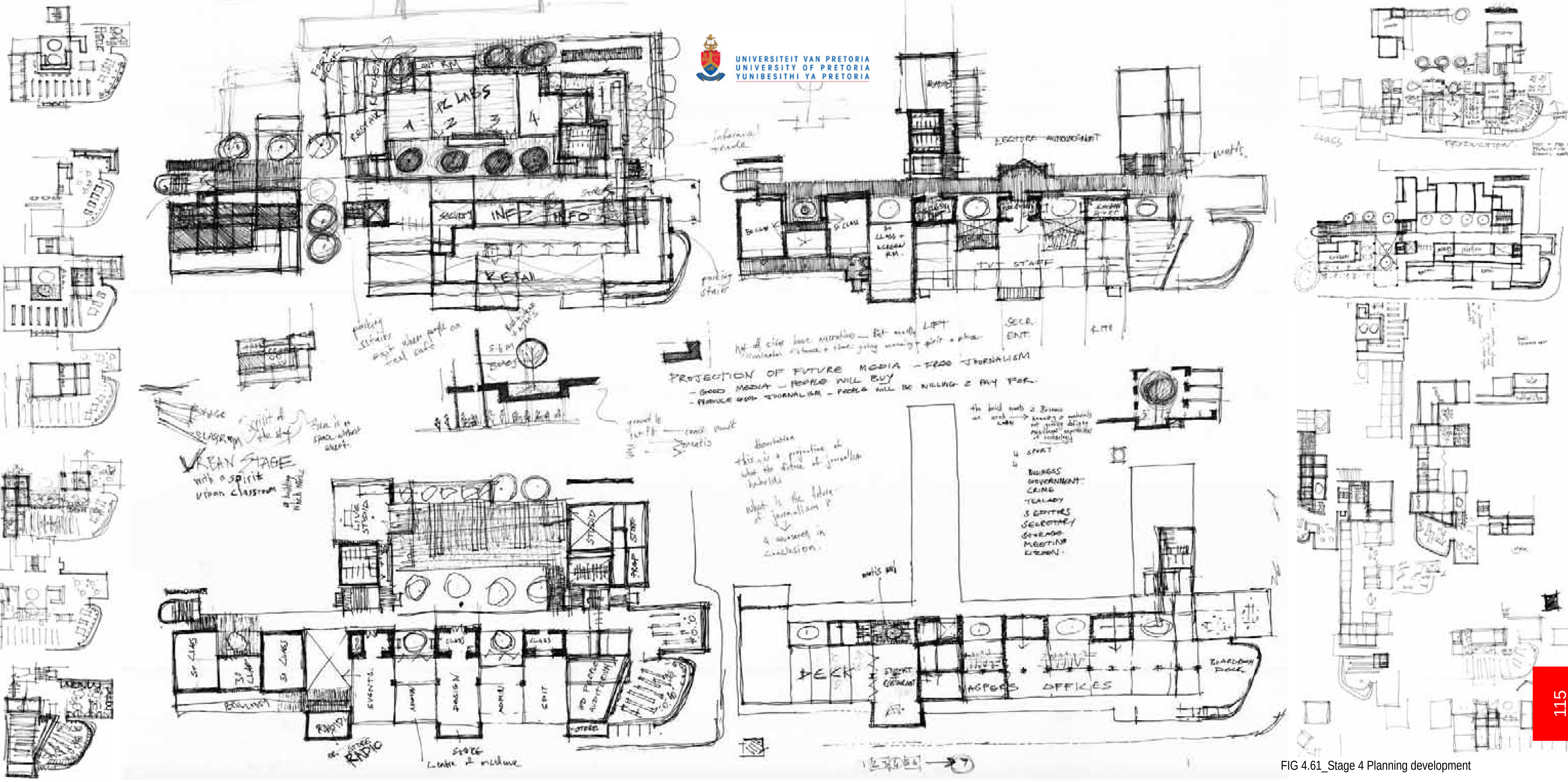
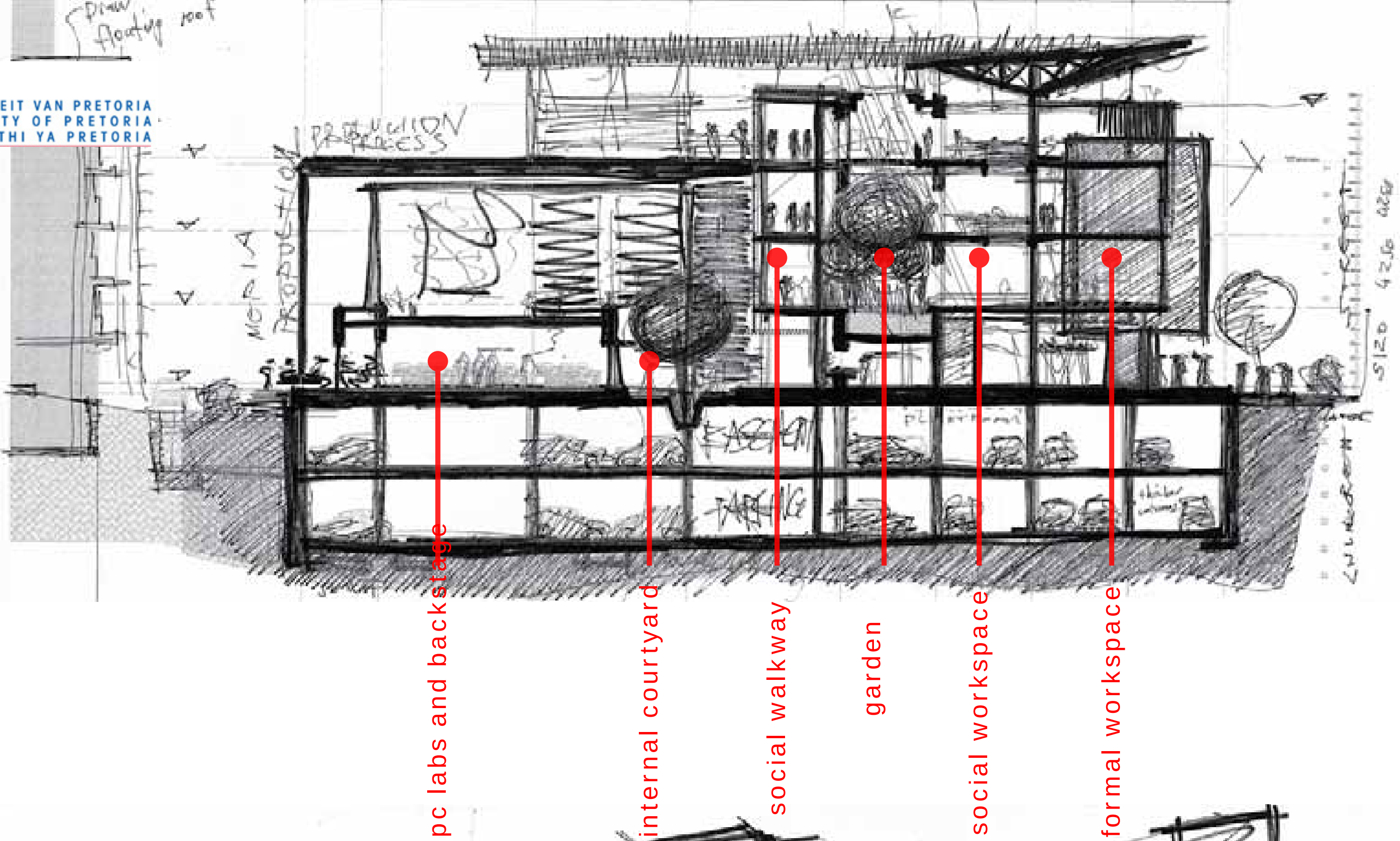


FIG 4.61_Stage 4 Planning development

Stage 5

- Programmatically this stage **concluded the design process;** as discussed with Prof. Diederichs.
- The auditorium was replaced with a **roof terrace multipurpose hall** above the classrooms: transgression from classroom to social classroom.
- **Libraries celebrated** on the prominent corner on Nelson Mandela Drive as the final product.
- **Circular rings** in the flat roofs **above garden spaces** were discovered by overlapping sketch plans.
- This however, shares a **similar interest as the Brazilian Modernism of Norman Eaton's earlier work**, one of the pioneer architects in Pretoria during the 1940's and 1950's: puncturing floating roofs with organic shapes above roof gardens.



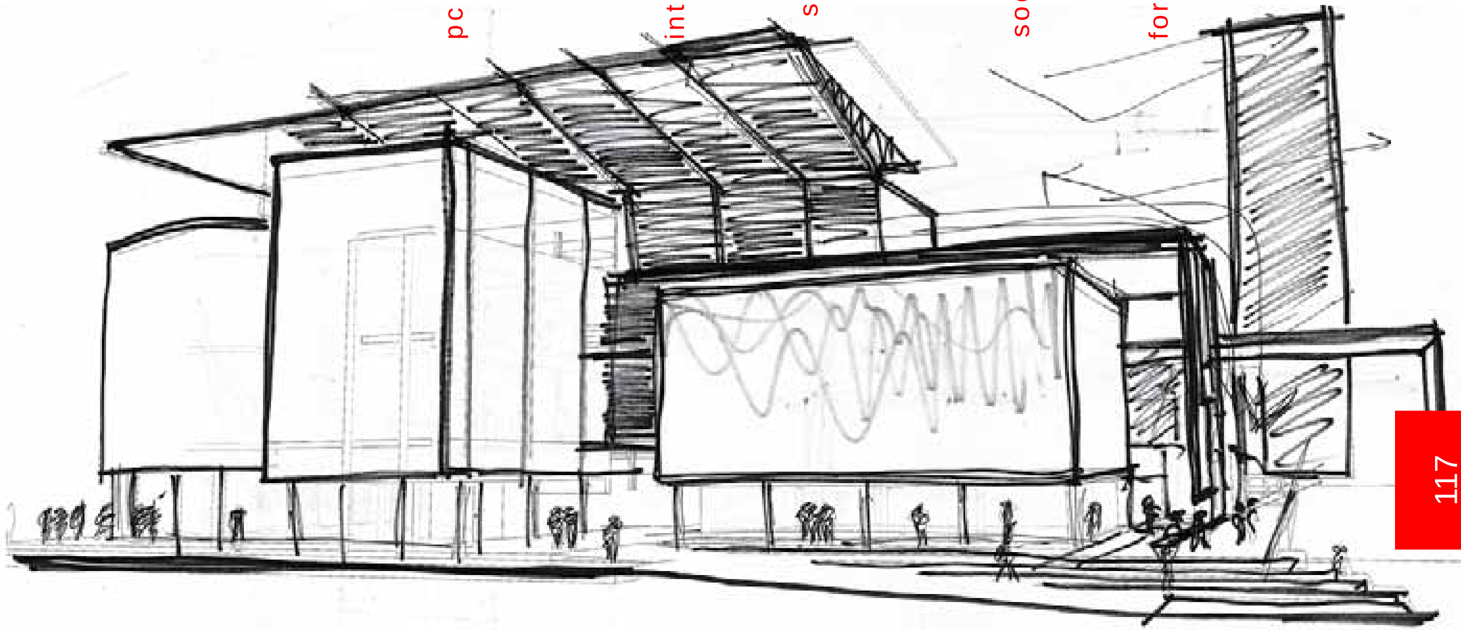
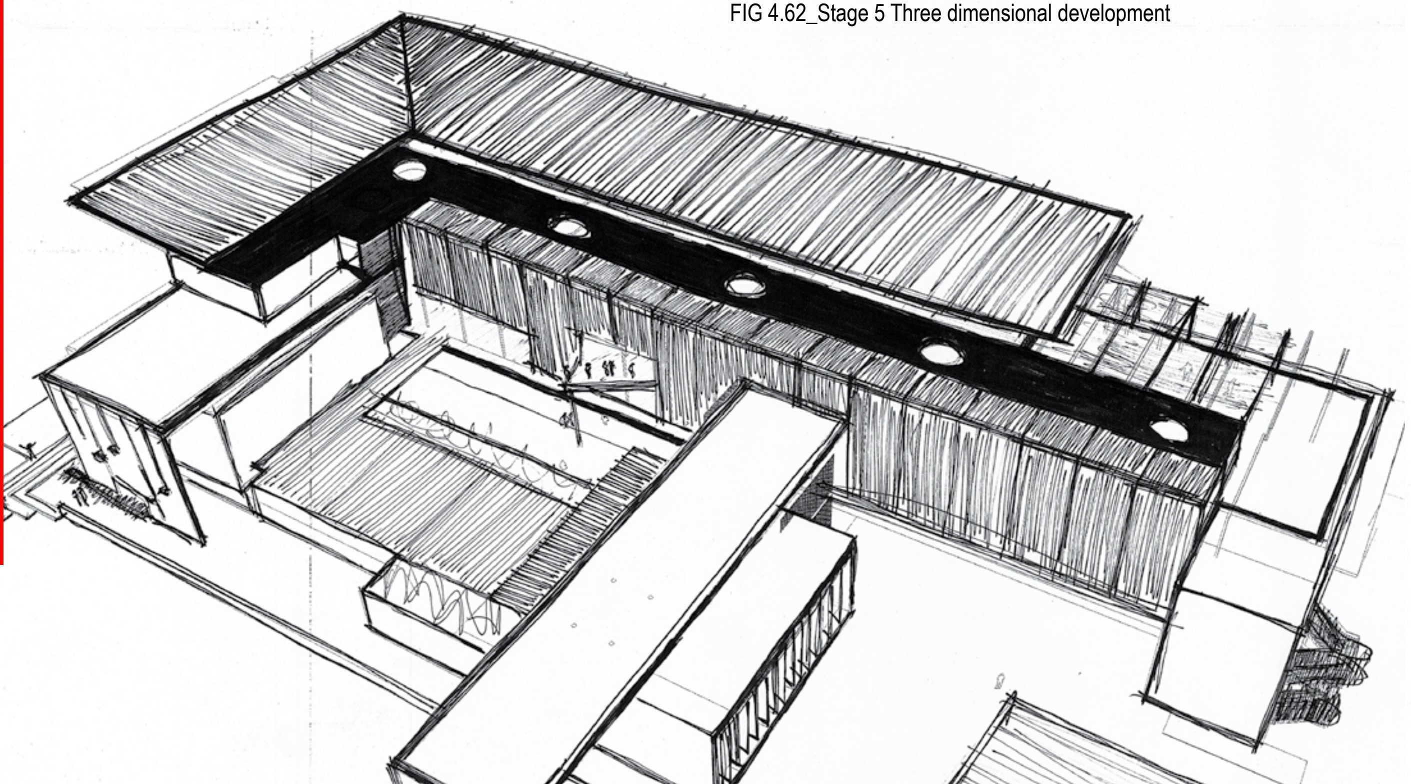


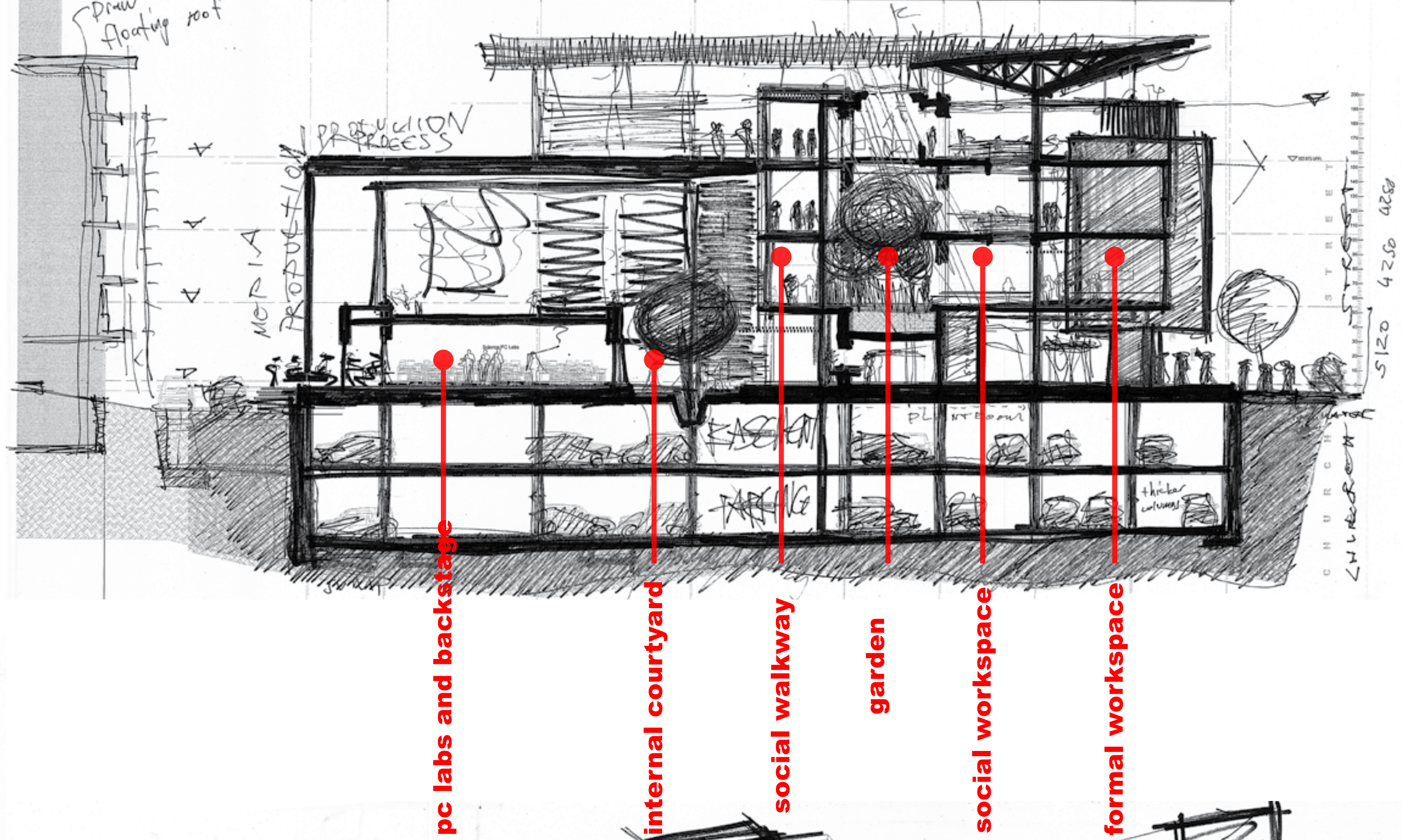
FIG 4.62_Stage 5 Three dimensional development

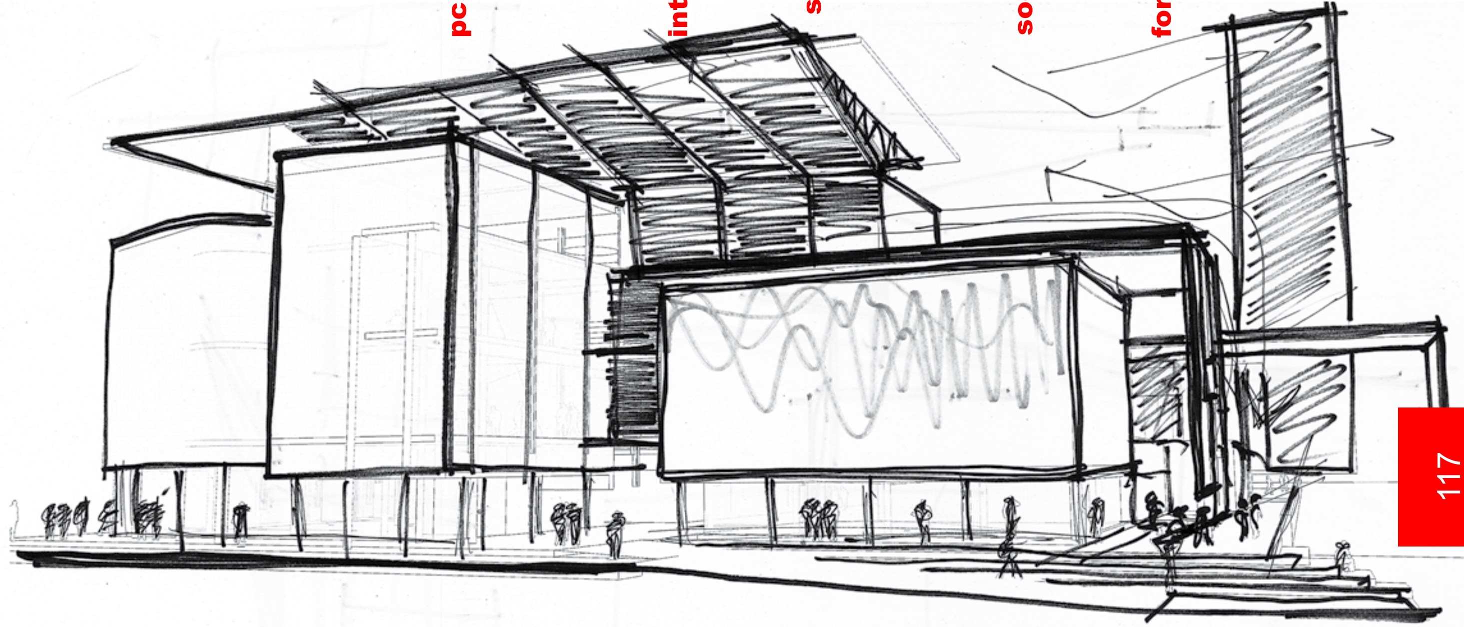
Stage 5

- Programmatically this stage **concluded the design process;** as discussed with Prof. Diederichs.
- The auditorium was replaced with a **roof terrace multipurpose hall** above the classrooms: transgression from classroom to social classroom.
- **Libraries celebrated** on the prominent corner on Nelson Mandela Drive as the final product.
- **Circular rings** in the flat roofs **above garden spaces** were discovered by overlapping sketch plans.
- This however, shares a **similar interest as the Brazilian Modernism of Norman Eaton's earlier work**, one of the pioneer architects in Pretoria during the 1940's and 1950's: puncturing floating roofs with organic shapes above roof gardens.

FIG 4.62_Stage 5 Three dimensional development







Chapter 5

This chapter conveys the technical investigation done for the dissertation. The earlier conceptual phases established a thought process which guided the functionality of various design decisions made. Precedents have been chosen for the technical documentation which also relate back to the design development. Analysis of built examples highlights the scope of the design as a whole.

Theoretical argument served as the basis from which technological decisions were made. Technological aspects were examined in terms of the current architectural language of the urban campus as well as theoretical argument to strengthen the design process of the dissertation. The current technological language of the Eaton Louw- and Gordon Leith buildings served as important precedent: experiential factors in terms of space, light, materiality, mass, aging, gravity and nature were consequently implemented to make the user aware of these phenomena.

STRUCTURAL GRID

The primary structure consists of a concrete frame and beam system which supports the floor slabs. The design of a basement parking layout during concept stage 2 played a pivotal role in the design process which had to respond according to the site geometry. Column spacing towards Church Street in the East-West direction is at 9m spacing. Structural rhythm on this facade consists of a 4.5m interval skin which wraps around the building. This is further emphasized with a 9m mass grid pulling out of the facade. Diagonal to this is the 5.6m grid according to the parking layout, allowing for more flexibility during the design process. The change in parking grid towards the northern half of the site responded towards the change in built fabric above. This resulted in a 9x9m grid with the flexibility supporting elements at 3m intervals. The primary columns (550x550mm) support the forces from the roof structure. Secondary columns (490x490mm) support the brick boxes and flat roofs above. Circular reinforced concrete columns (460mm dia.) support the sculptural facade and walkway which allows for spatial continuity.

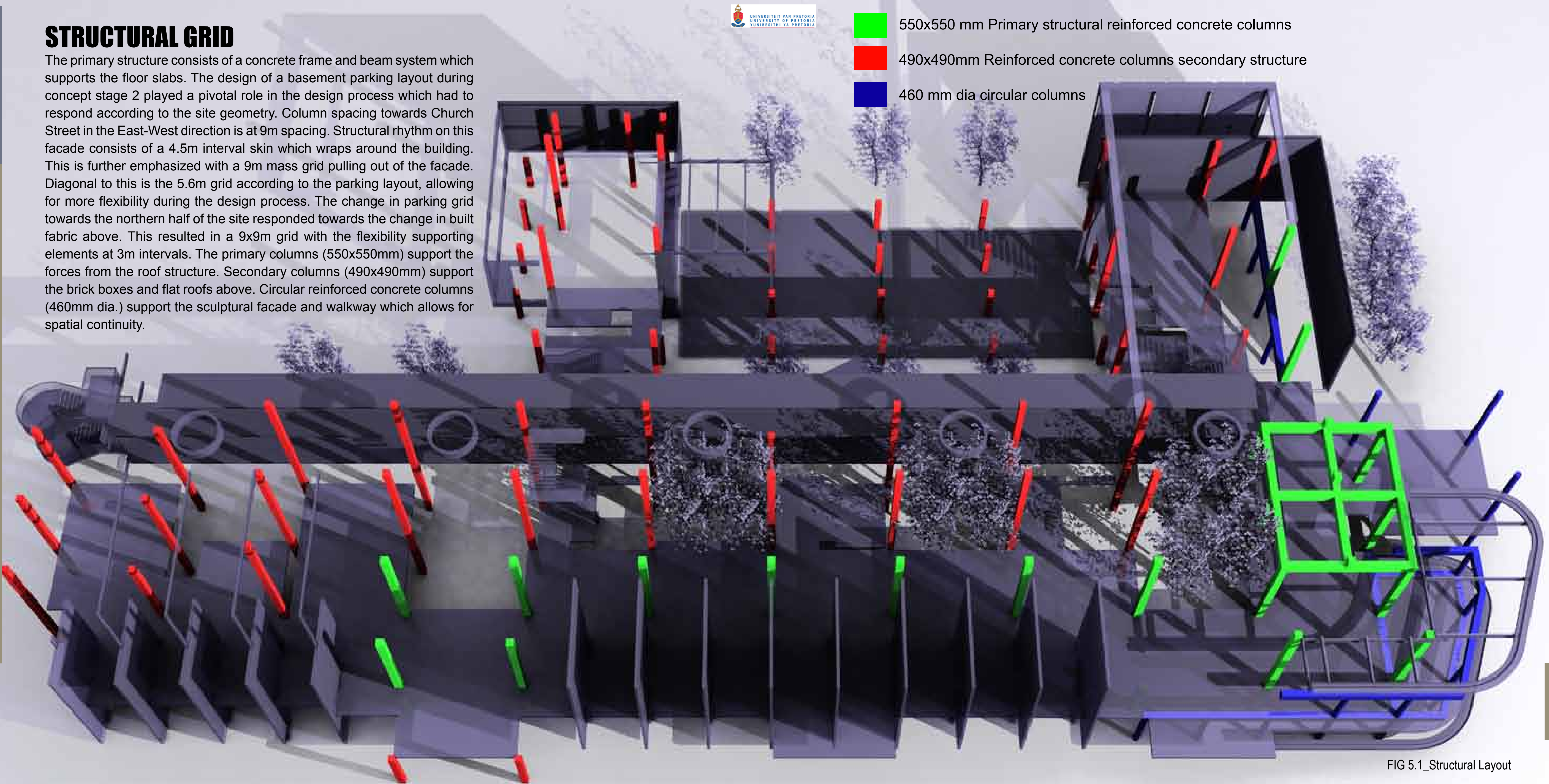


FIG 5.1_Structural Layout

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Fins

During the earlier design stages the southern facade was shaded by lightweight clip-on mesh fins connected to the primary columns for early morning and late afternoon sun penetration and glare during summer months. This was further developed, contributing towards a stronger architectural language. The idea of "fin" became the primary ordering system for the functional programming of spaces when mirrored towards the inside.

The material change-over towards concrete resulted in these fins to become structurally supportive elements, using the forces of gravity to balance the structure. This resulted in the elimination of columns in the front facade, emphasizing the urban stage's design approach of in- and external spatial transisions. Discussion with engineer concluded that this element as well as the floors will be a cast-in-situ.

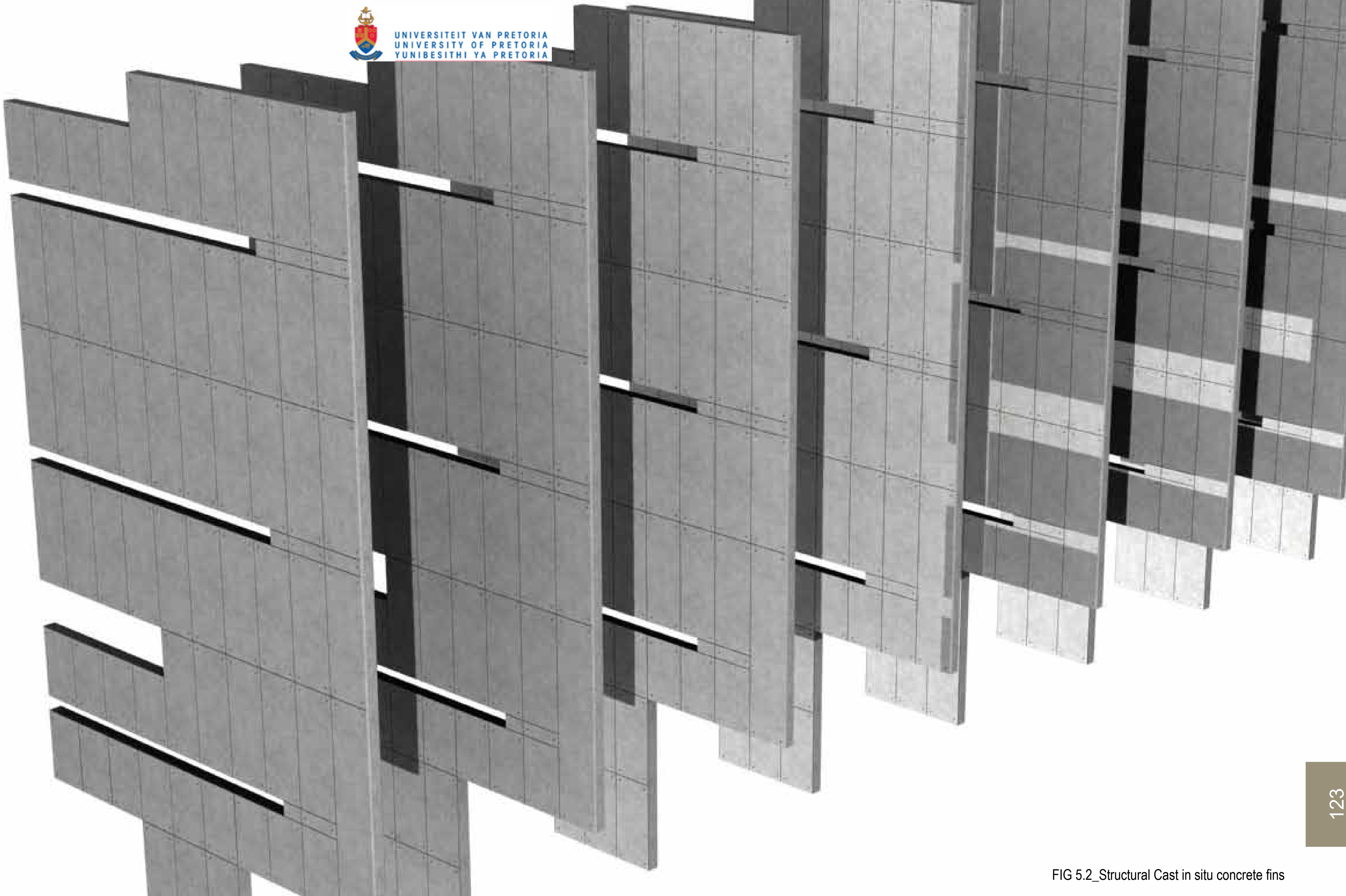
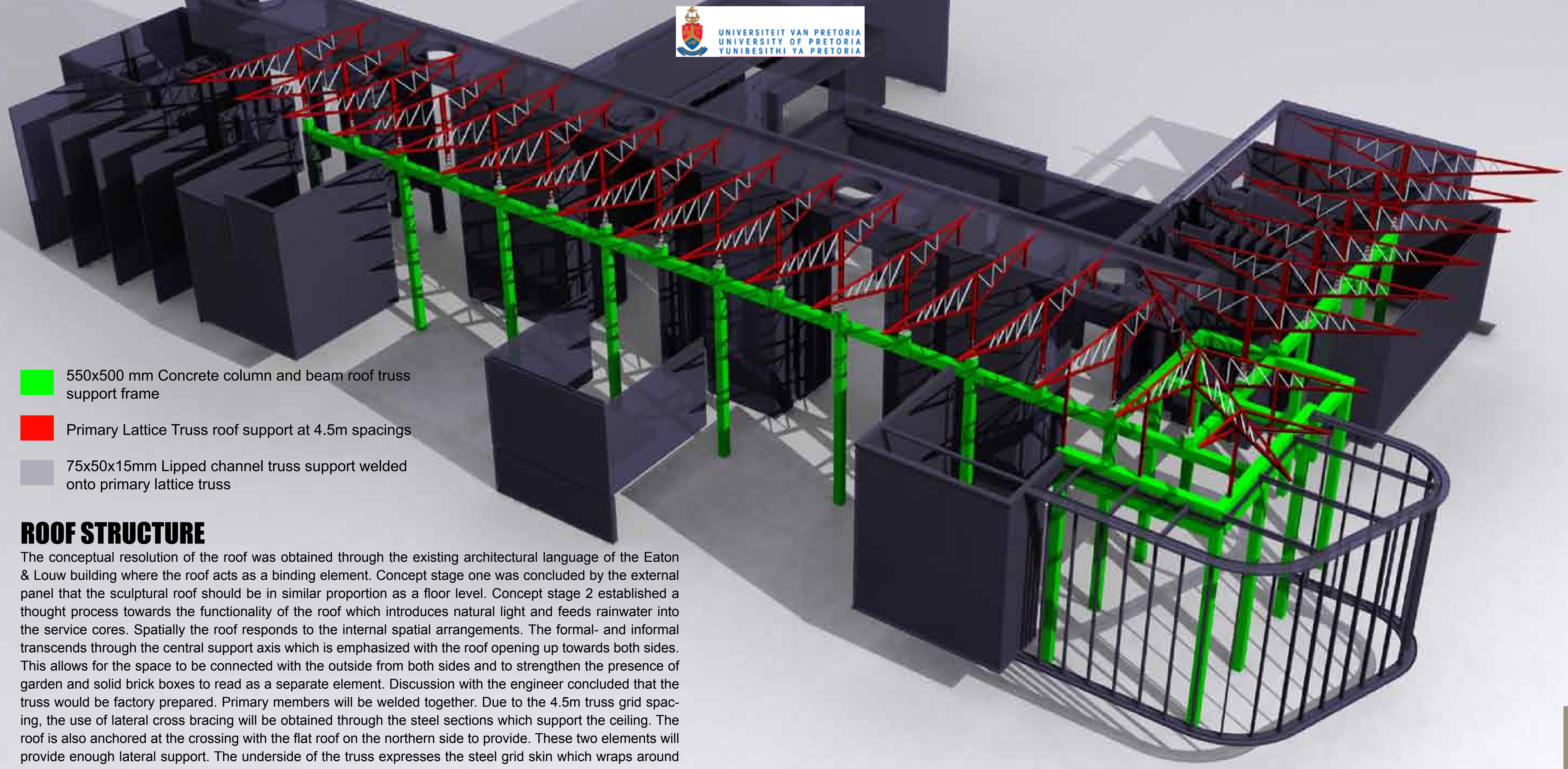


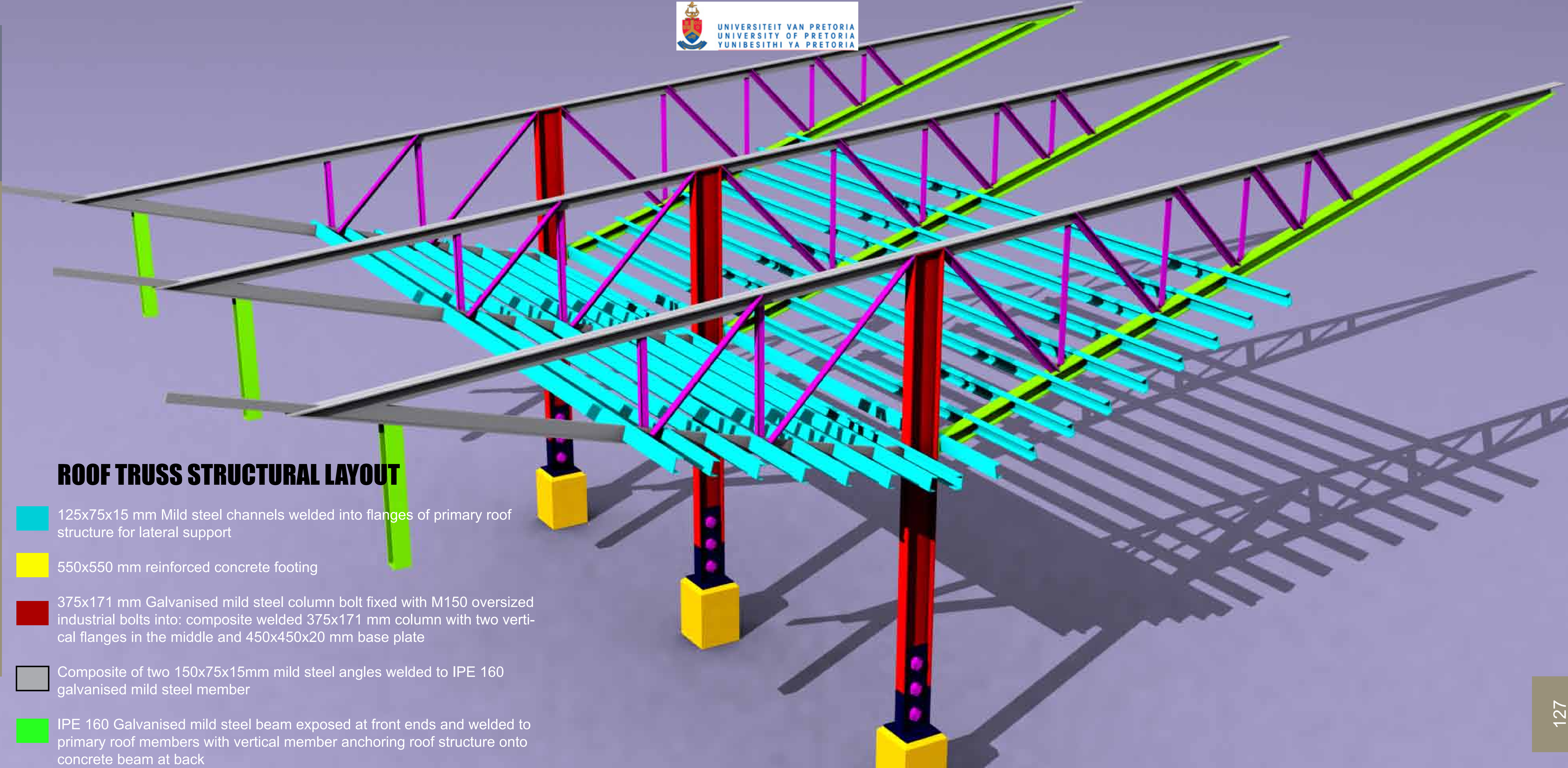
FIG 5.2_Structural Cast in situ concrete fins



ROOF STRUCTURE

The conceptual resolution of the roof was obtained through the existing architectural language of the Eaton & Louw building where the roof acts as a binding element. Concept stage one was concluded by the external panel that the sculptural roof should be in similar proportion as a floor level. Concept stage 2 established a thought process towards the functionality of the roof which introduces natural light and feeds rainwater into the service cores. Spatially the roof responds to the internal spatial arrangements. The formal- and informal transcends through the central support axis which is emphasized with the roof opening up towards both sides. This allows for the space to be connected with the outside from both sides and to strengthen the presence of garden and solid brick boxes to read as a separate element. Discussion with the engineer concluded that the truss would be factory prepared. Primary members will be welded together. Due to the 4.5m truss grid spacing, the use of lateral cross bracing will be obtained through the steel sections which support the ceiling. The roof is also anchored at the crossing with the flat roof on the northern side to provide. These two elements will provide enough lateral support. The underside of the truss expresses the steel grid skin which wraps around the concrete skeleton of the building. Initially all truss members is similar in proportion. The turn on the corner however, will require bigger truss members to support the longer spans.

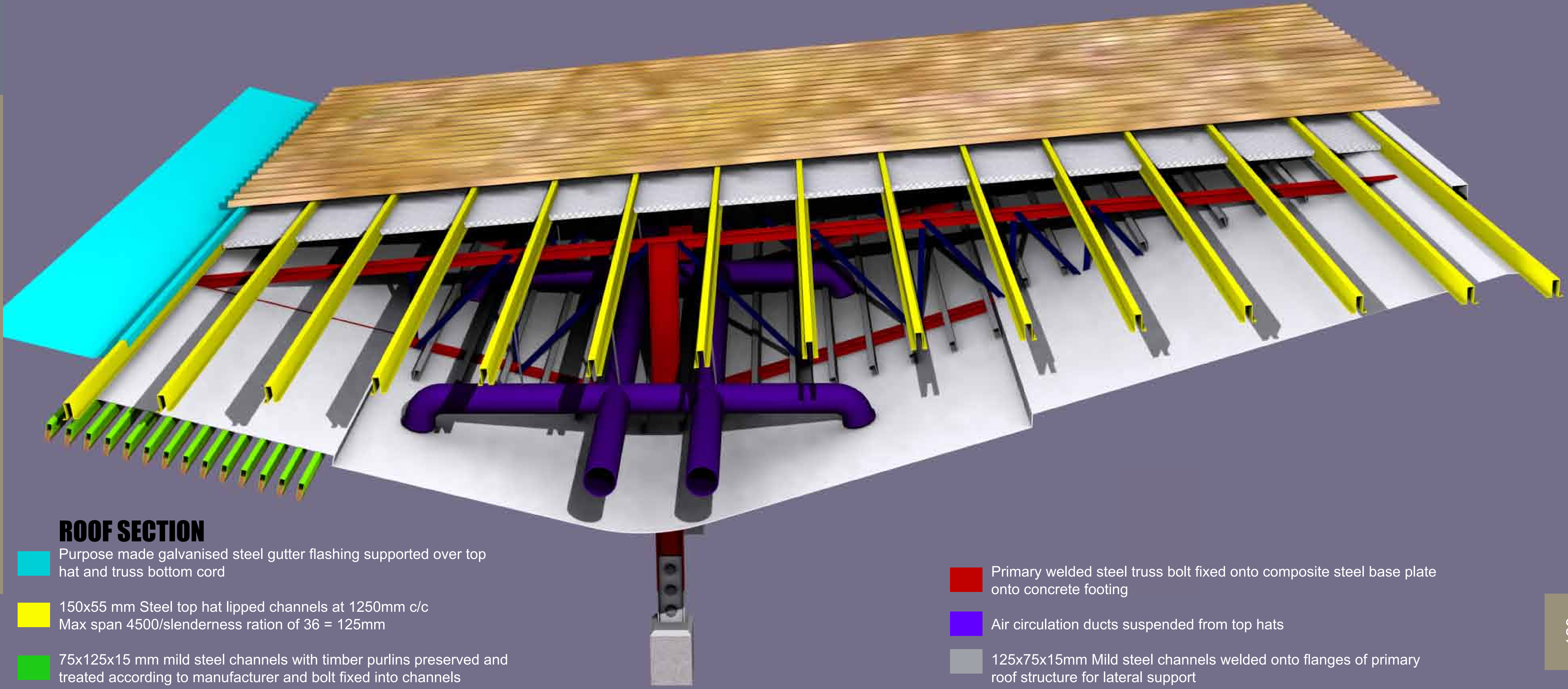
FIG 5.3_Roof structural layout and support members



ROOF TRUSS STRUCTURAL LAYOUT

- 125x75x15 mm Mild steel channels welded into flanges of primary roof structure for lateral support
- 550x550 mm reinforced concrete footing
- 375x171 mm Galvanised mild steel column bolt fixed with M150 oversized industrial bolts into: composite welded 375x171 mm column with two vertical flanges in the middle and 450x450x20 mm base plate
- Composite of two 150x75x15mm mild steel angles welded to IPE 160 galvanised mild steel member
- IPE 160 Galvanised mild steel beam exposed at front ends and welded to primary roof members with vertical member anchoring roof structure onto concrete beam at back

FIG 5.4_Roof truss structural layout



ROOF SECTION

Purpose made galvanised steel gutter flashing supported over top hat and truss bottom cord

150x55 mm Steel top hat lipped channels at 1250mm c/c
Max span 4500/slenderness ration of 36 = 125mm

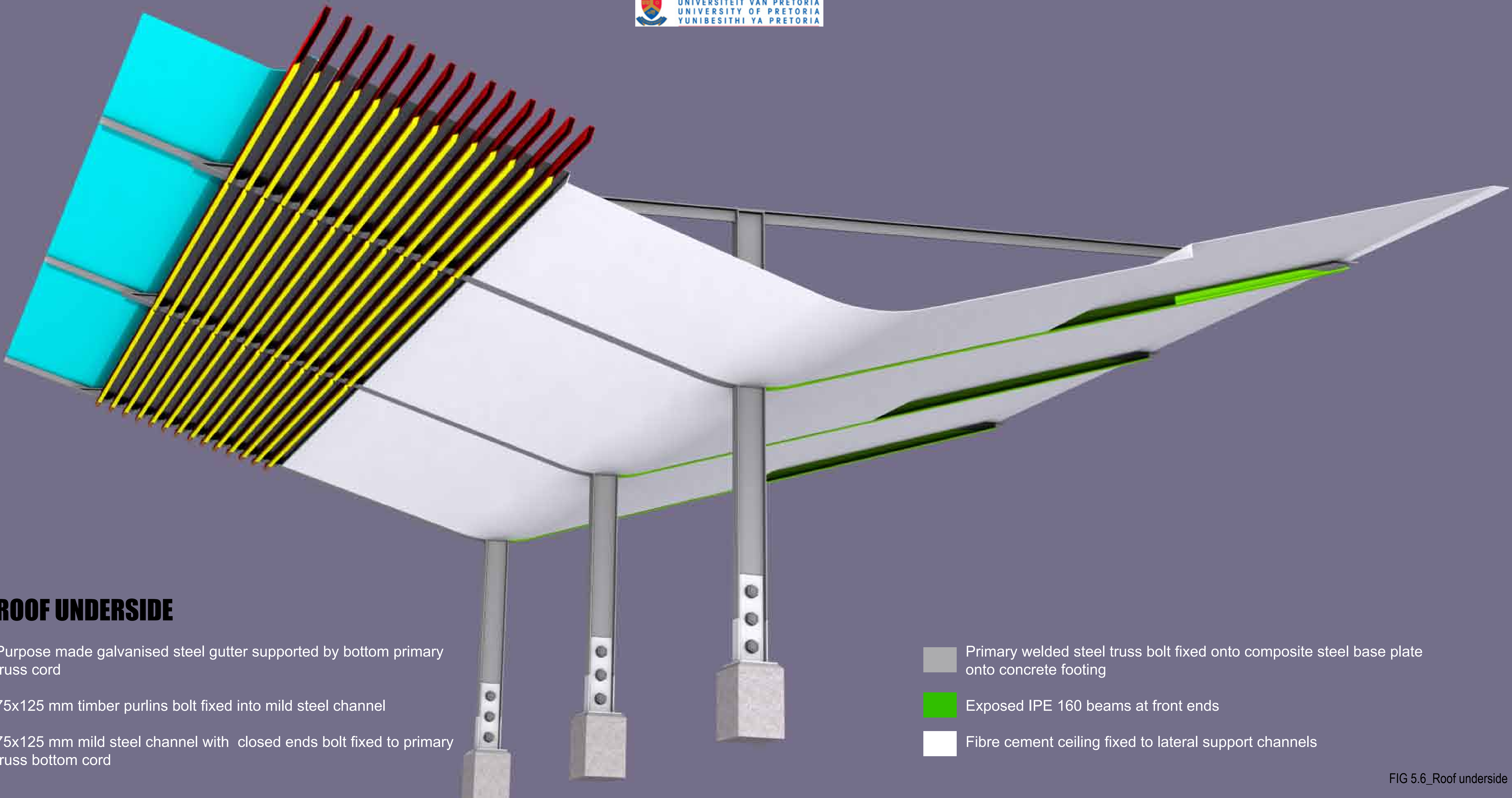
75x125x15 mm mild steel channels with timber purlins preserved and treated according to manufacturer and bolt fixed into channels

Primary welded steel truss bolt fixed onto composite steel base plate onto concrete footing

Air circulation ducts suspended from top hats

125x75x15mm Mild steel channels welded onto flanges of primary roof structure for lateral support

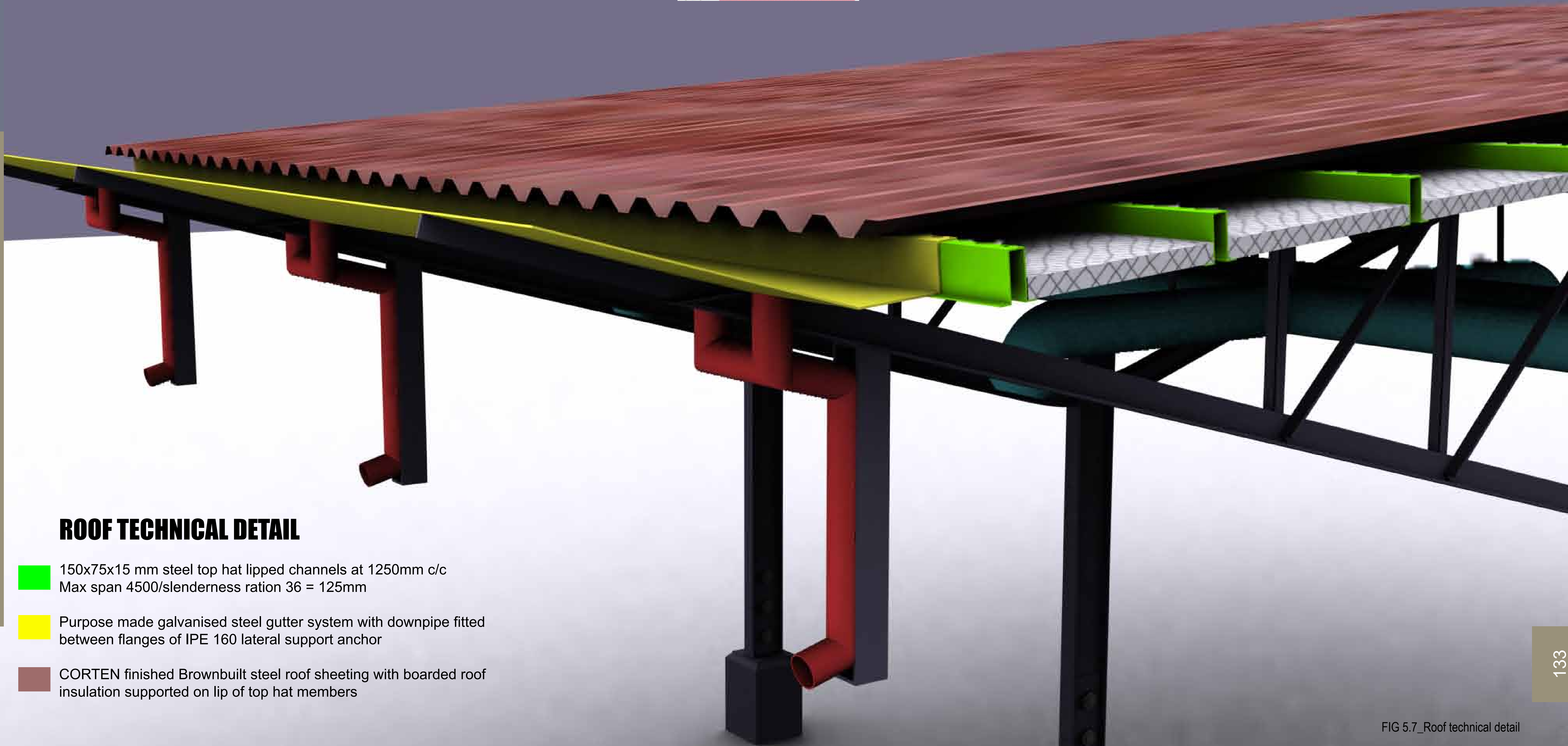
FIG 5.5_Roof section



ROOF UNDERSIDE

- Purpose made galvanised steel gutter supported by bottom primary truss cord
- 75x125 mm timber purlins bolt fixed into mild steel channel
- 75x125 mm mild steel channel with closed ends bolt fixed to primary truss bottom cord
- Primary welded steel truss bolt fixed onto composite steel base plate onto concrete footing
- Exposed IPE 160 beams at front ends
- Fibre cement ceiling fixed to lateral support channels

FIG 5.6_Roof underside



ROOF TECHNICAL DETAIL

- 150x75x15 mm steel top hat lipped channels at 1250mm c/c
  Max span 4500/slenderness ration 36 = 125mm
- Purpose made galvanised steel gutter system with downpipe fitted between flanges of IPE 160 lateral support anchor
- CORTEN finished Brownbuilt steel roof sheeting with boarded roof insulation supported on lip of top hat members

FIG 5.7_Roof technical detail

Infill and circulation support systems

Brick infill plays an important role in the experiential qualities of the building. This adds to spatial experience which transcends from a tectonic into stereotomic elements which form the entrance into a transparent open floor volume. The wall has been designed to read as a separate mass element and not as infill between the concrete structures.

The thick mass punctured by openings was obtained through the language of the Gordon Leith building. Together with the concrete frame of the building, this resulted in a thick-cavity. Functionally the thermal qualities towards the north side of the building are satisfied within the context of the Pretoria climate. The cavities within the walls provide space for acoustic insulation of the recording studio on Nelson Mandela Drive.

The circulation network is separated from this mass wall, structurally consisting out of an interconnected steel beam frame connected to the concrete structure of the building. The transition between mass and tectonic is emphasized with a translucent element which creates a social connection with circulation spaces above.

The external circulation network is wrapped with a mesh skin which reads as a separate mass element from the outside. This was obtained through the tectonic brick mass skin of the Eaton & Louw buildings, emphasizing experiential qualities in terms of being a light filter and controlling solar heat. Together with this, the circular rings above garden spaces, creates shadows which falls onto the mass wall, enhancing sensory experiences.

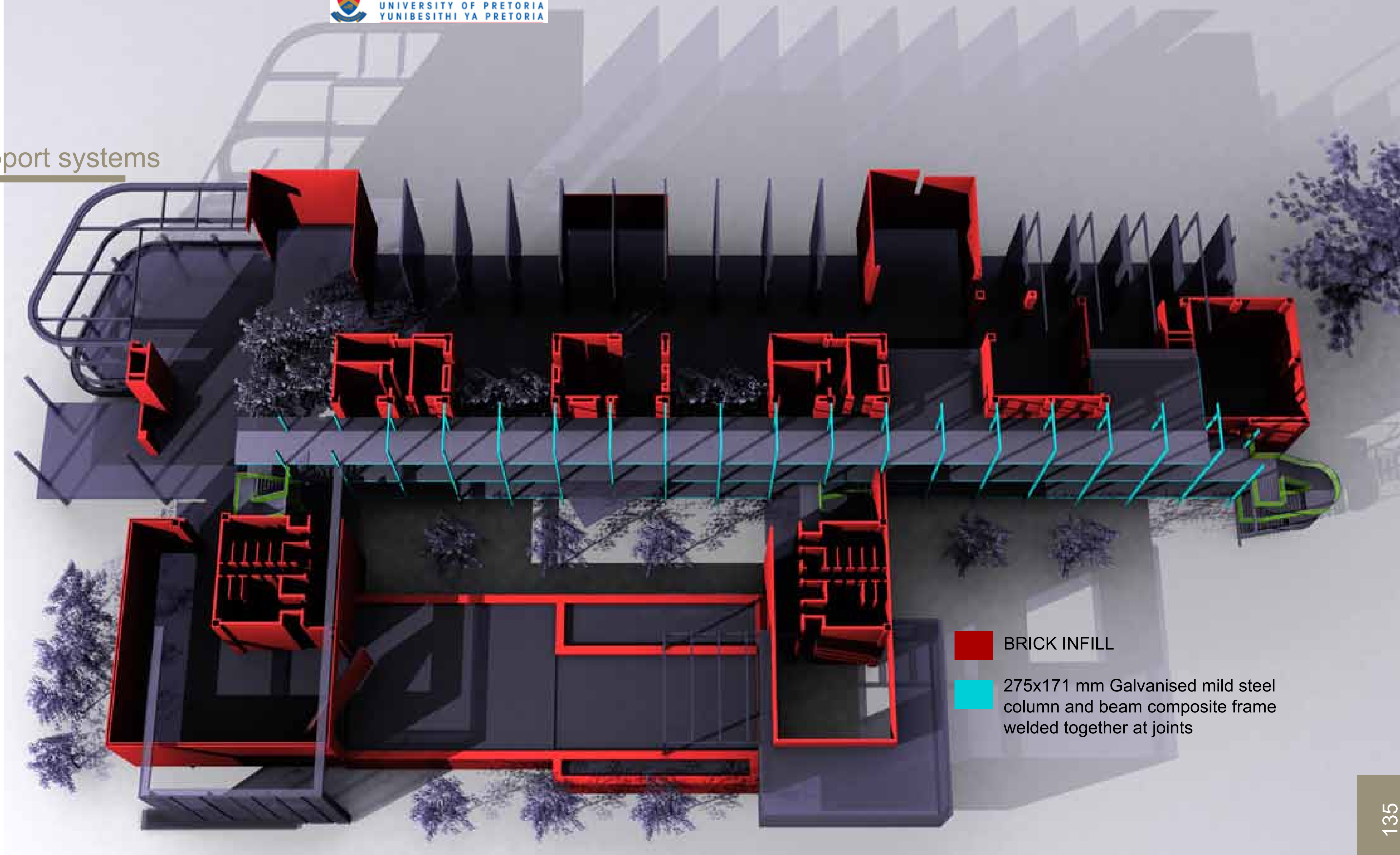
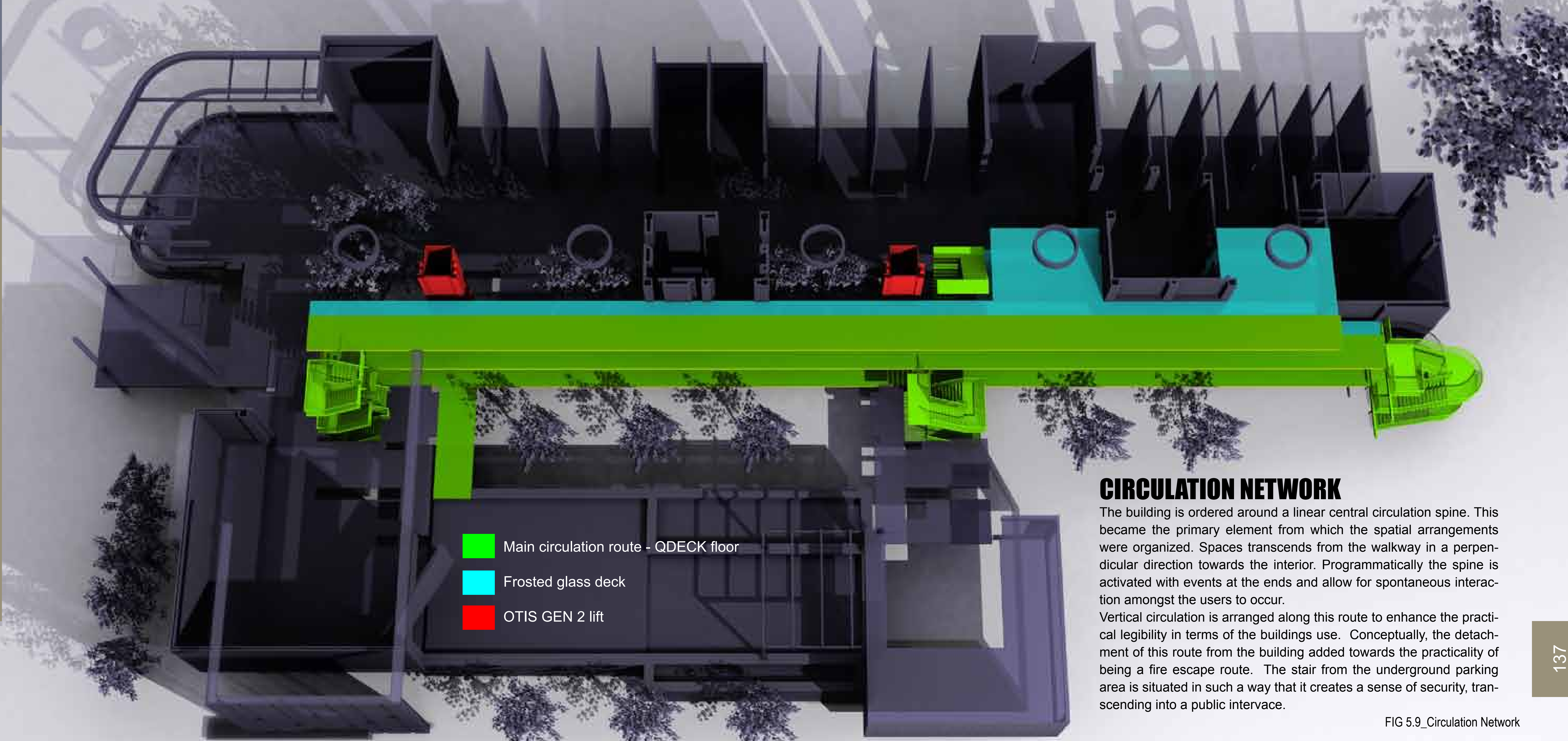


FIG 5.8_Brick infill and circulation support



CIRCULATION NETWORK

The building is ordered around a linear central circulation spine. This became the primary element from which the spatial arrangements were organized. Spaces transcends from the walkway in a perpendicular direction towards the interior. Programmatically the spine is activated with events at the ends and allow for spontaneous interaction amongst the users to occur.

Vertical circulation is arranged along this route to enhance the practical legibility in terms of the buildings use. Conceptually, the detachment of this route from the building added towards the practicality of being a fire escape route. The stair from the underground parking area is situated in such a way that it creates a sense of security, transcending into a public intervace.

FIG 5.9_Circulation Network

Service cores

The stereotomic brick boxes adjacent to the walkway provided the opportunity to use as an integrated service core for the office areas. This allowed for ease of access and maintenance. The requirements of downpipes within the mass cavity walls of the brick boxes is calculated which feeds rainwater into underground storage tanks. Firefighting equipment such as hose reels and fire hydrants is integrated into all service cores providing legible and ease of access in case of emergency.

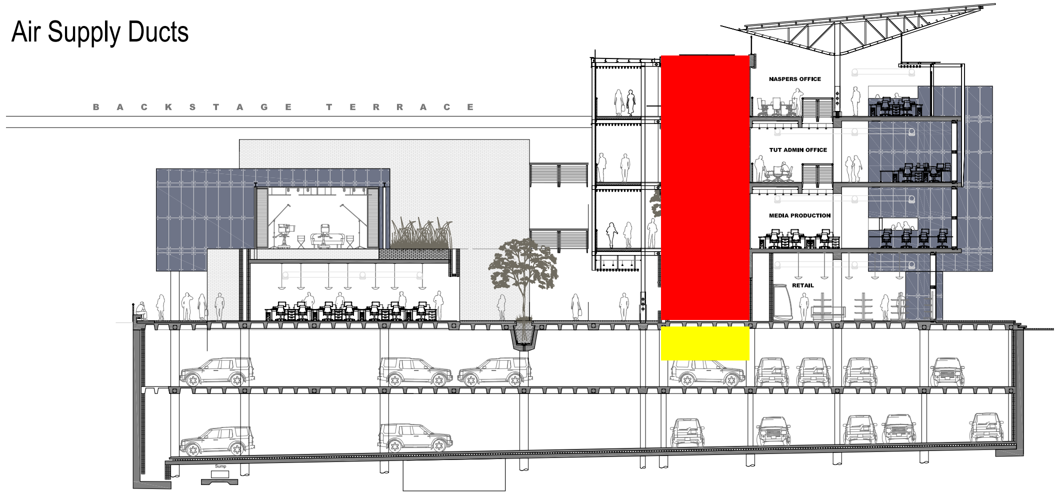
Fresh air supply runs within these cores to feed office spaces, Due to the openness of the building which creates natural air circulation, a mechanically ventilated fresh air system is implemented. Natural and fresh air intake unit is located at the western end of the building. Pipes feed this air into a water tank, cooling the air before it's distributed into the building. This does not provide air-conditioned air, but will assist with fresh air requirements.

Programmatically the office service core is separated from the wet core to optimize natural ventilation and maximum floor area. The natural rainwater system is discussed in the next section.

Service Core

Air Supply Ducts

FIG 5.10_Air service core diagram



Water systems

The site falls roughly 1m from Church Street towards the Eaton Louw building (north). Hard surface above the new proposed underground parking provided the opportunity to slope the whole surface area and collect storm water accordingly. This was not used as the roof dimension of the intervention was enough to harvest natural water for refuse rooms and air-cooling plant. Storm water from the roof surfaces is collected, stored and filtered in a storage tank directly below the ablution facilities and underground parking floor.

Daily amounts of water can be pumped with a submersible pump, driven by solar energy, into a holding tank located directly above the ablution facilities. This will provide enough head pressure to fill all water closets and refuse rooms. The holding tank method can be implemented for an evaporative cooling system (sprinklers) around public square. This however, will not be used as it is a potential health risk.

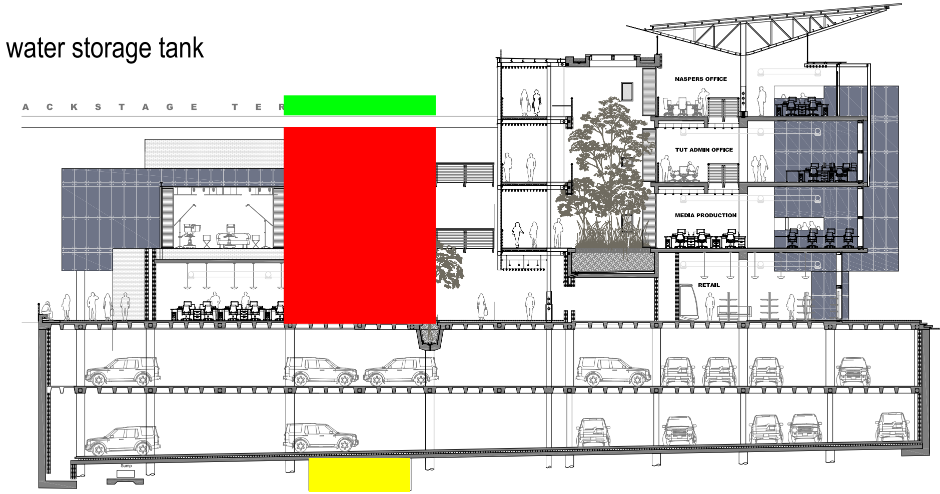
The supply of hot water for kitchen areas and be obtained by means of solar water heaters. To avoid heat loss, these units are located above all kitchen areas, where roof up stands provide the additional visual barrier. (Ryker, 2007: 71) All other storm water on the site is connected to the municipal outlet in order to release overflow, daily use and prevent floods.

Wet Core

Undergroung water storage tank

Holding tank

FIG 5.11_Wet core diagram



Precedents

This building is specifically chosen as it challenges the monolithic, enclosed architecture of the context in a humane and contemporary manner. The idea of urban stage benefits from the buildings transparency which encourages social consciousness and interaction.

While similar in proportional experience; the dissertation draws heavily upon the circulation network of the law Faculty which is designed to be a city of buildings organized along a street. Spatially it becomes a series of courtyards arranged along a public walkway. This provides the primary ordering system to which spatial programming relates to. The concept of "campus within a campus" (Deckler, 2006: 107) also shares similar interests with the dissertation as safety and security is of concern.

The linear route has been expressed to create a narrative between interior and exterior spatial experiences. This route is separated from the building which leaves interior spaces unhindered, whilst also serving as a social interactive space.

The dissertation shares the same interior scale of the law faculty. Open-air courtyards inside the building expresses a village like scale of naturally planted squares surrounded by colonnades carrying shading elements. These courtyards also provide a sense of orientation, time of day, and allow air circulation.

The entrance is located at the narrowest point of the circulation route which provides views through the building. This hosts an example of mass to opening ratio.

The rigid window placement in the mass outer wall also compliments a rich architectural tectonic relationship between the stereotomic mass. Auditorium and lecture rooms push out of the rigid building as sculptural forms which contrasts the linear envelope is of interest as well.

The transparency and openness of the library compliments the dissertation as it creates a sense of interaction, awareness, participation and encourages the idea of event.

LAW FACULTY UNIVERSITY OF PRETORIA STUDIOKRUGERROOS ARCHITECTS

FIG 5.11_External walkway and roof canopy
FIG 5.12_External walkway
FIG 5.13_Sculptural staircase
FIG 5.14_Internal courtyard
FIG 5.15_Internal courtyard and staircase
FIG 5.16_External balcony

TOLPLAN HEAD OFFICE LYNNWOOD_PRETORIA_THOMAS GOUWS ARCHITECTS

These precedents were chosen to display the means in which architects addressed facade transition, roof, gutter and structural spans.

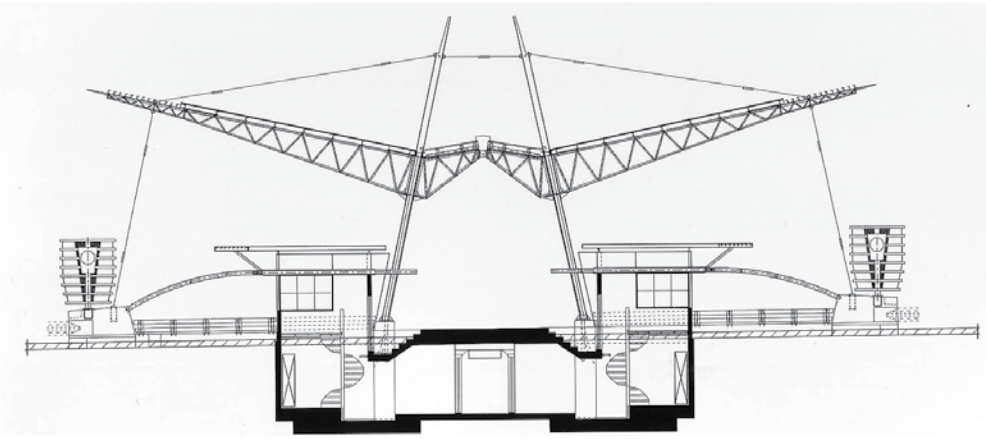
The first precedent, Tolplan Head Office, is chosen by means of its facade articulation. Rectangular columns transgress out of a brick wall into horizontal fins with steel sections supporting a lightweight mono-pitch roof which reads as a separate plane. This allows for a spatial connection whereas exterior space transcend into the interior. The fins also act as an early morning, late afternoon shading element in the summer. Weaver's nest builds on the spatial transition of the Tolplan office. The external circulation spine is experienced as dwelling within nature. This progresses into a solid mass, played down to human scale which opens up into a "dramatic sky room" connecting to the outside.

Regular geometry adds to the design, strengthening its legibility and coherence. The liveliness of the roof serves as the pavilion's binding element. This frames spatial transitions between built fabric and natural landscapes.

The structural spans of the Tolplan Office and Weaver's Nest, leaves internal spaces unhindered and allows for the space to open up towards the outside.

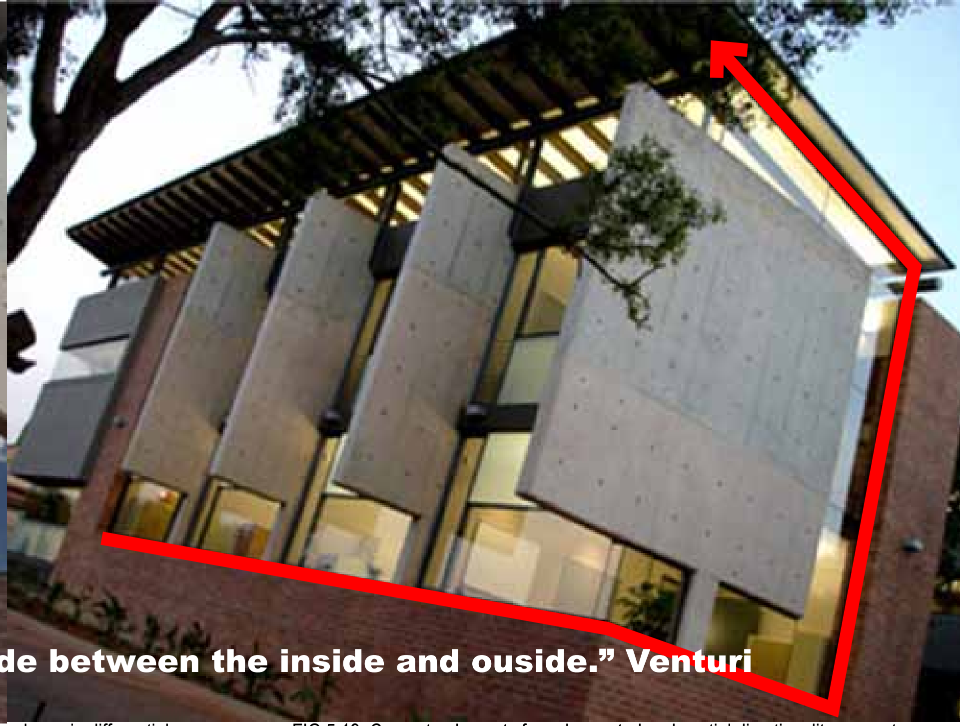
The Diamond Hill Toll Plaza's floating roof canopy is achieved with a steel lattice truss construction which leaves the road unhindered by structural supports. The exposed underside adds a industrial, yet sculptural quality to the canopy.

FIG 5.17_Sculptural roof with gatture edge line



DIAMOND HILL TOLL PLAZA_N4_GAUTENG_MATTHEWS & ASSOCIATE ARCHITECTS

WEAVER'S NEST CAPE TOWN_SONJA PETRUS SPAMER ARCHITECTS



"The wall is the devide between the inside and ouside." Venturi

FIG 5.18_Honesty towards properties of material mebers shown in differential grids.

FIG 5.19_Concrete elements for solar control and spatial directionality supports a lightweight framing roof element.

FIG 5.20_Sculptural roof with gutter edge line

FIG 5.21_Open circulation transcends into human scale mass with binding roof as opening guiding internal and spatial directionality.

NIEHAUS ART GALLERY CLAREMONT_CAPE TOWN_NORBERT ROZENDAL

The library facade's technical resolution of the Media Lab draws upon the structurally glazed facade and adjustable shuttering system of thie IDMM Link building.

The facade is treated with a Pilkington four-point structural glazing system. Spider clamps attached to supporting frames with steel posts as support, allows for the glazed panels to articulate around a curve. The structure of the mechanical regulated shutter system is re-interpreted with a GKD Media Mesh infill as layering and shading element for the curved glazing skin of the Media Lab.

The material tectonic applied in the dissertation draws heavily upon the Tolplan Office. The Niehaus Art Gallery also compliments the intended theoretical approach towards the aging qualities of architectural design. The weathered materiality is strengthened with attention to detail consisting of flush joining in order to read as a singular solid mass element. These two precedents with its combinations of timber, steel, glass, concrete and bricks provided a platform from which architectural materials were used in the design process.

Transparent glass floor is a popular architectural element in contemporary design. This consist of laminated glass or reinforced glass panels combined with a steel various frame supports. Frosted glass blurs visual images, but still transmits natural light. This system was implemented as it complements the design concept and social qualities of media production.

FIG 5.22_Niehaus art gallery

FIG 5.23_Niehaus art gallery roof detail

FIG 5.24_Niehaus art gallery roof and sculptural facade

FIG 5.25_IIDMM facade

FIG 5.26_Frosted glass deck underside

FIG 5.27_Frosted glass deck support detail

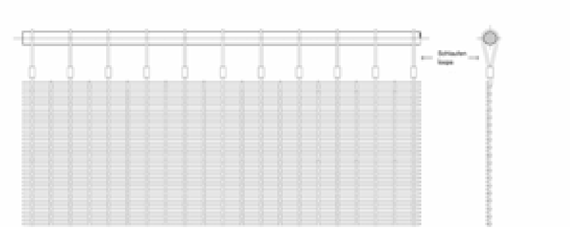
IIDMM LINK BUILDING CAPE TOWN_GABRIEL FAGAN ARCHITECTS

FROSTED GLASS WALKWAY

Gkd creativeWEAVE mesh facades

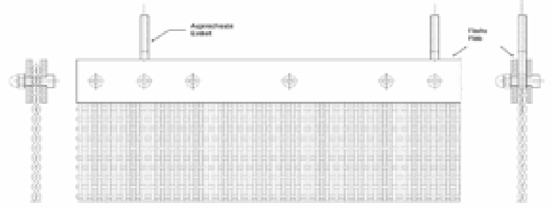
The southern facade displays the various facets of media production from being a student to a professional journalist. The corner of Church Street and Nelson Mandela Drive displays the final product to create a sense of arrival into the cultural district and inner city. By embedding this technology into the architectural design communicates the idea of urban stage giving it a more dynamic quality than merely a static display system, delivering constant cultural messages.

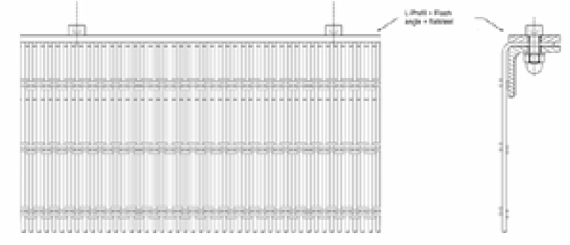
Media Mesh is essentially a transparent stainless steel wire mesh with interwoven LED (light emitting diodes) light profiles which uses 20 times less energy than the average light bulb. This enables the screen to reflect images, text and even video. The grouping of the three primary colors creates image pixels. The resolution of the image is dependent upon distance of view and pixel density. This is determined by the vertical and horizontal spacing of the lamella or stainless steel tubes encapsulating the LED profiles.



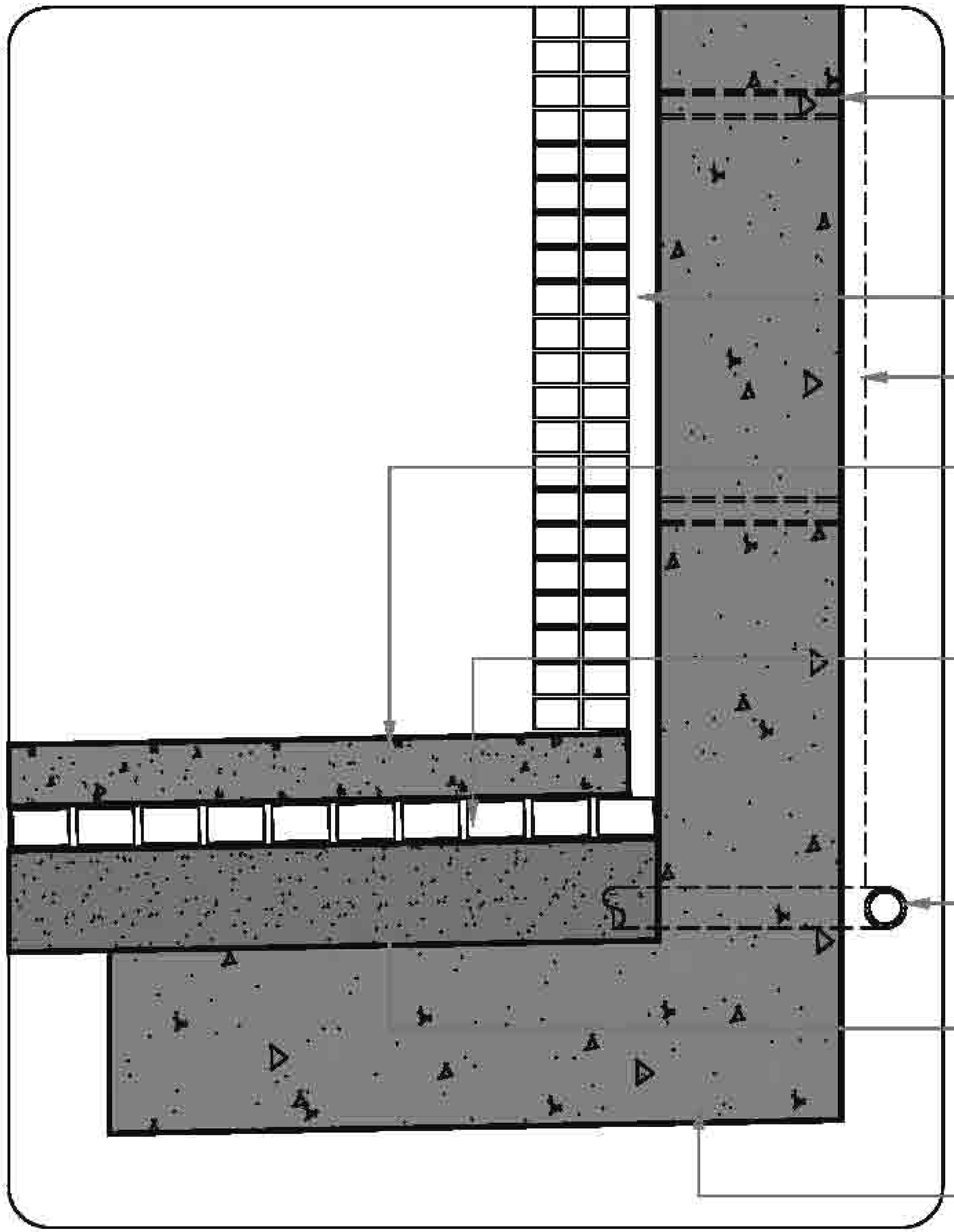
Adequate viewing distance can be obtained from 20-30 meters away. The transparent nature of the mesh allows for internal experiences to still connect with the outside, keeping the integrity of the design to form part of. The advantages of Media Mesh include:
-diversity in size and means of application
-adds to sensory qualities of the building
-daylight display capabilities
-weather resistant
-low power use, maintenance and long life span

Discussion with the GKD representative, Catherine van Blerck, concluded that the media mesh along the curve facade must span vertically and the top and bottom brackets of the mesh be supported in a steel frame. (www.gkd.co.uk)



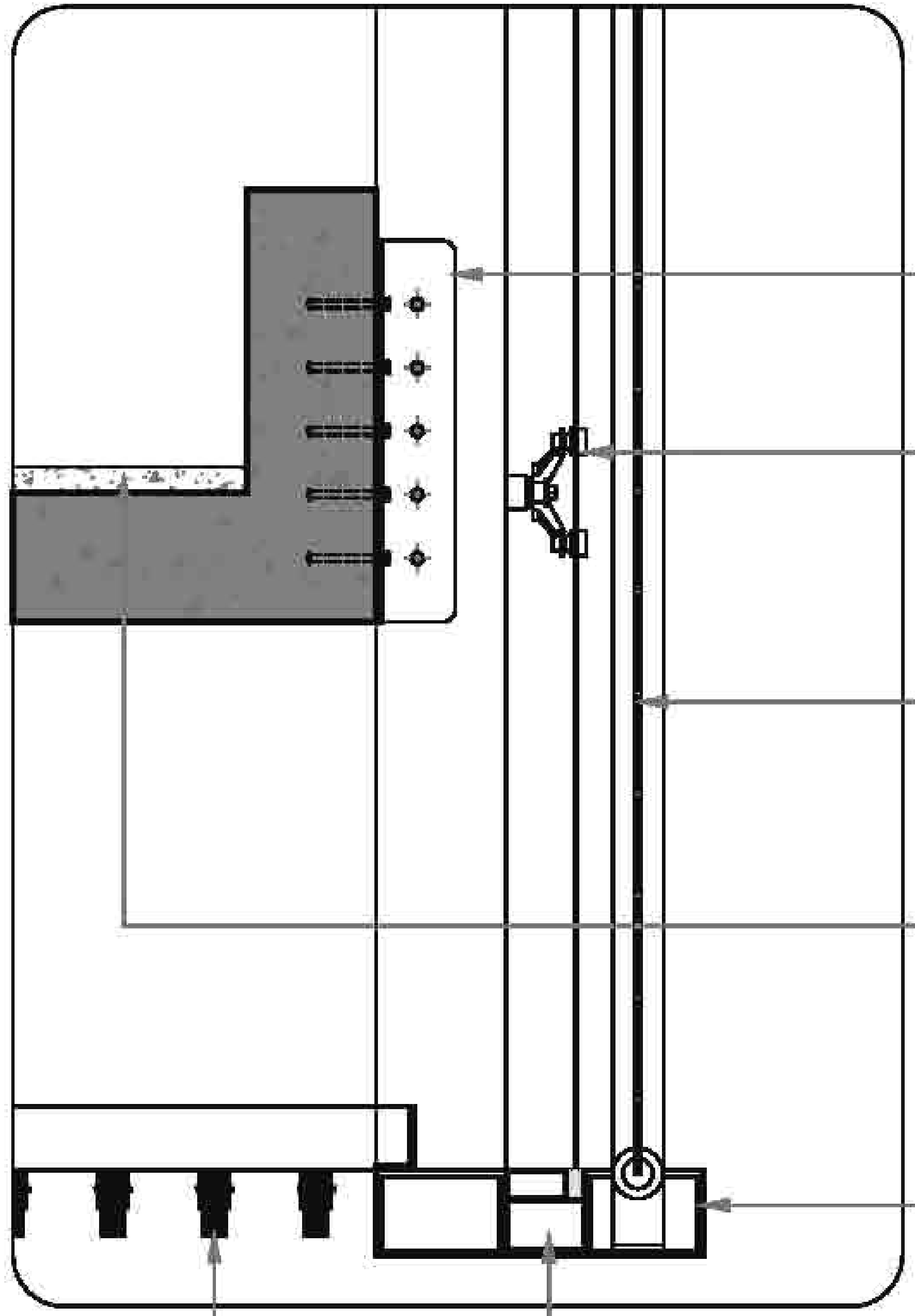


Chapter 6



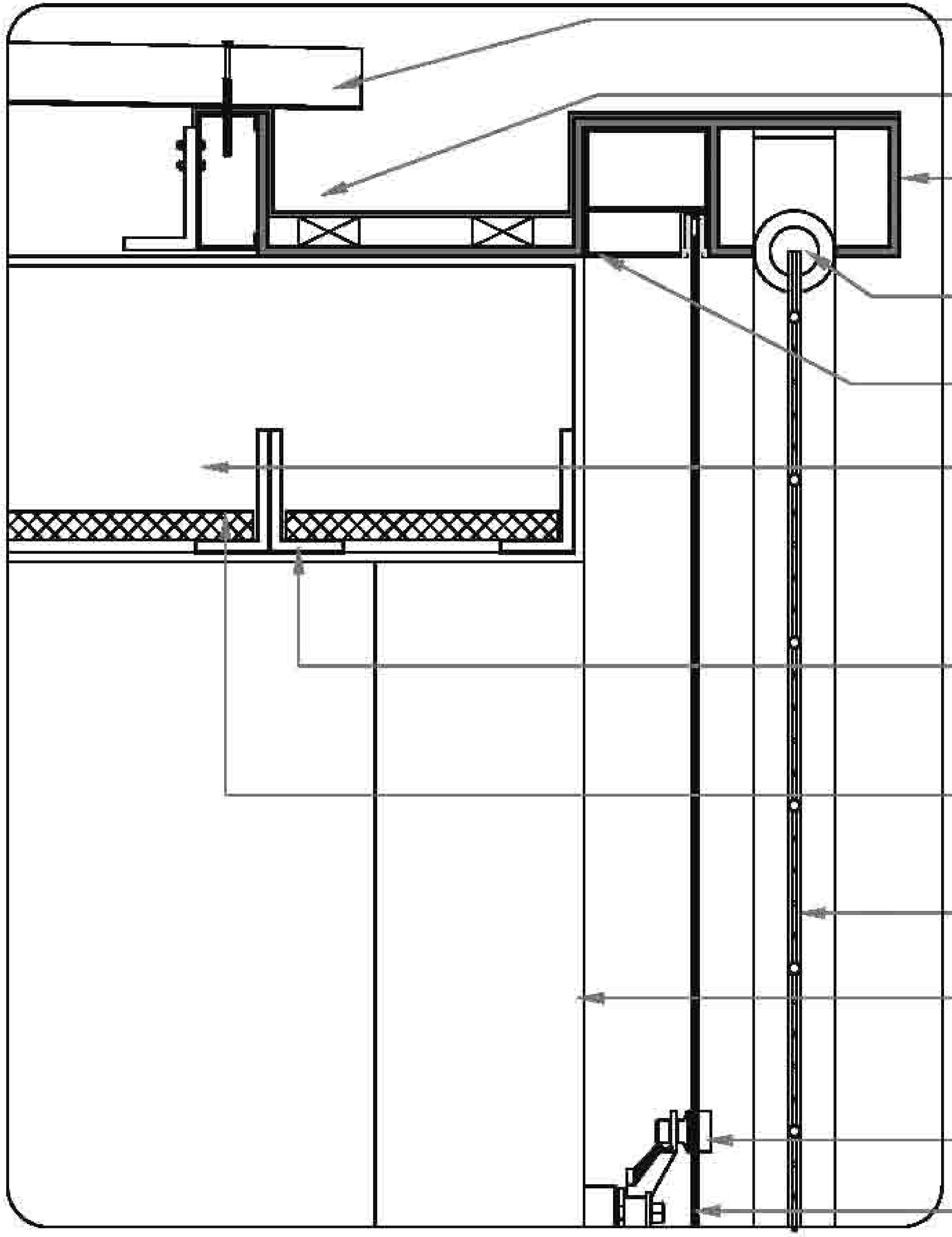
Detail_Drained cavity basement

DETAIL 009 1:20



Detail_Media Library facade and bottom support frame detail

DETAIL 012 1:20



RCP 8 Translucent roof sheet profile fixed to purlin support system with approved fasteners at every third interval

Purpose made box gutter supported on top of structural box unit to fall as per eng

Purpose made structural steel composite box unit as per engineer welded onto mild steel support frame

Purpose made structural steel vertical support bracket as per engineer and GKD MediaMESH manufacturer

Purpose made Aluminium frame fitted into structural box unit for spider arm structural glazing end support

Beamsize:
Maximum span 7500mm/slenderness ration of 20: 5000/20=375mm galvanised steel I-BEAM

150 x 75 mm steel cold-formed lipped channels fixed to i-beam roof support with mild steel a angle cleat as per engineer

Poly Carbonate roof panel sheeting supported in between lipped channels onto I-BEAM section to create mechanically ventilated cavity for solar heat control

GKD AG4 MediaMESH vertically supported by GKD mesh fixing bracket to mild steel galvanised frame

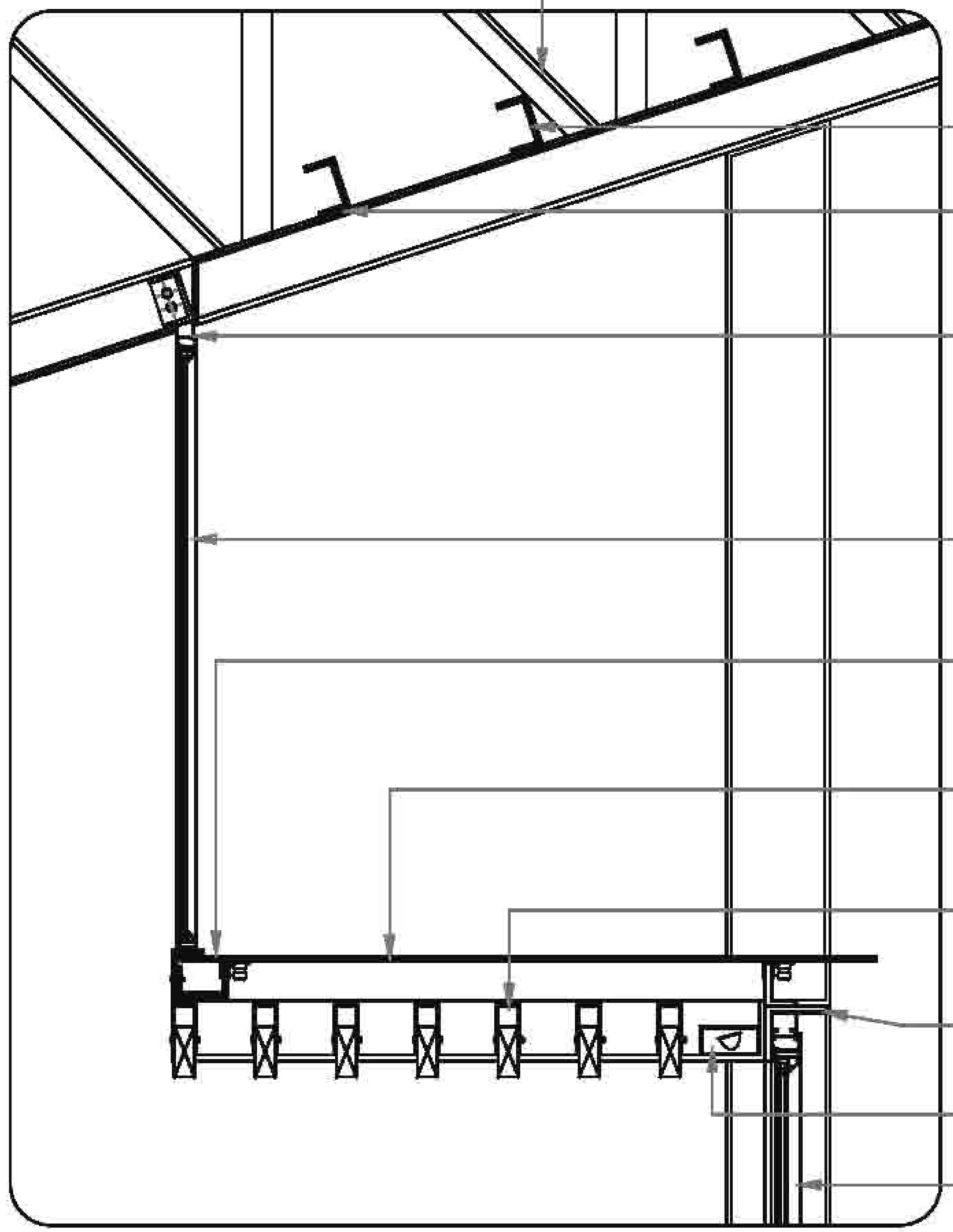
250 x 100mm galvanised hollow steel section for structural glazing support welded to I-BEAM and composite structural box as per engineer

Pilkington 4 point spider arm structural glazing facade system with arms adjusted to fit curve as per manufacturer

Glass panel intersection with site applied silicon sealant and backing rod as per manufacturer

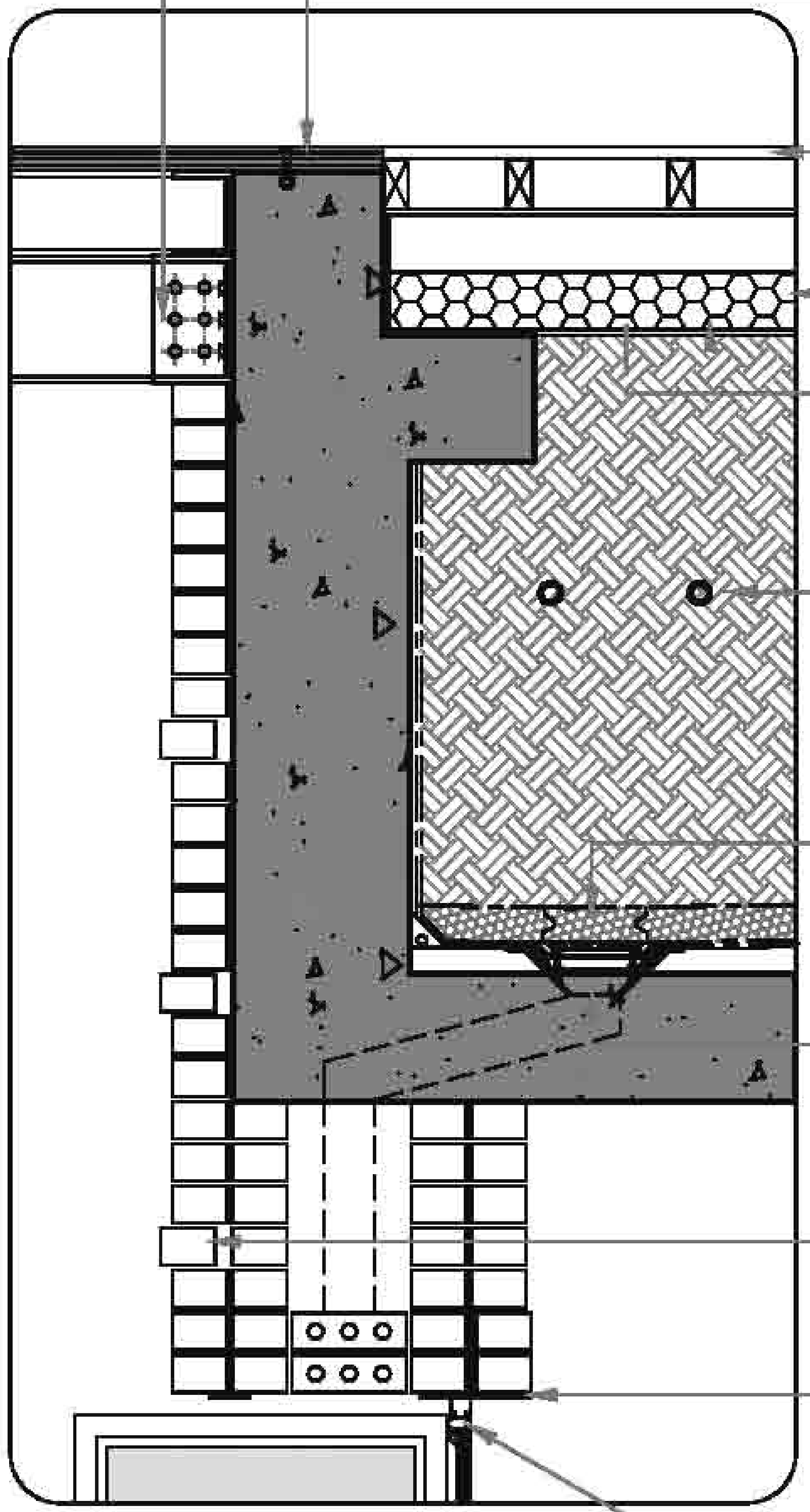
Detail_Science Library facade and top support structural box

DETAIL 011 1:10



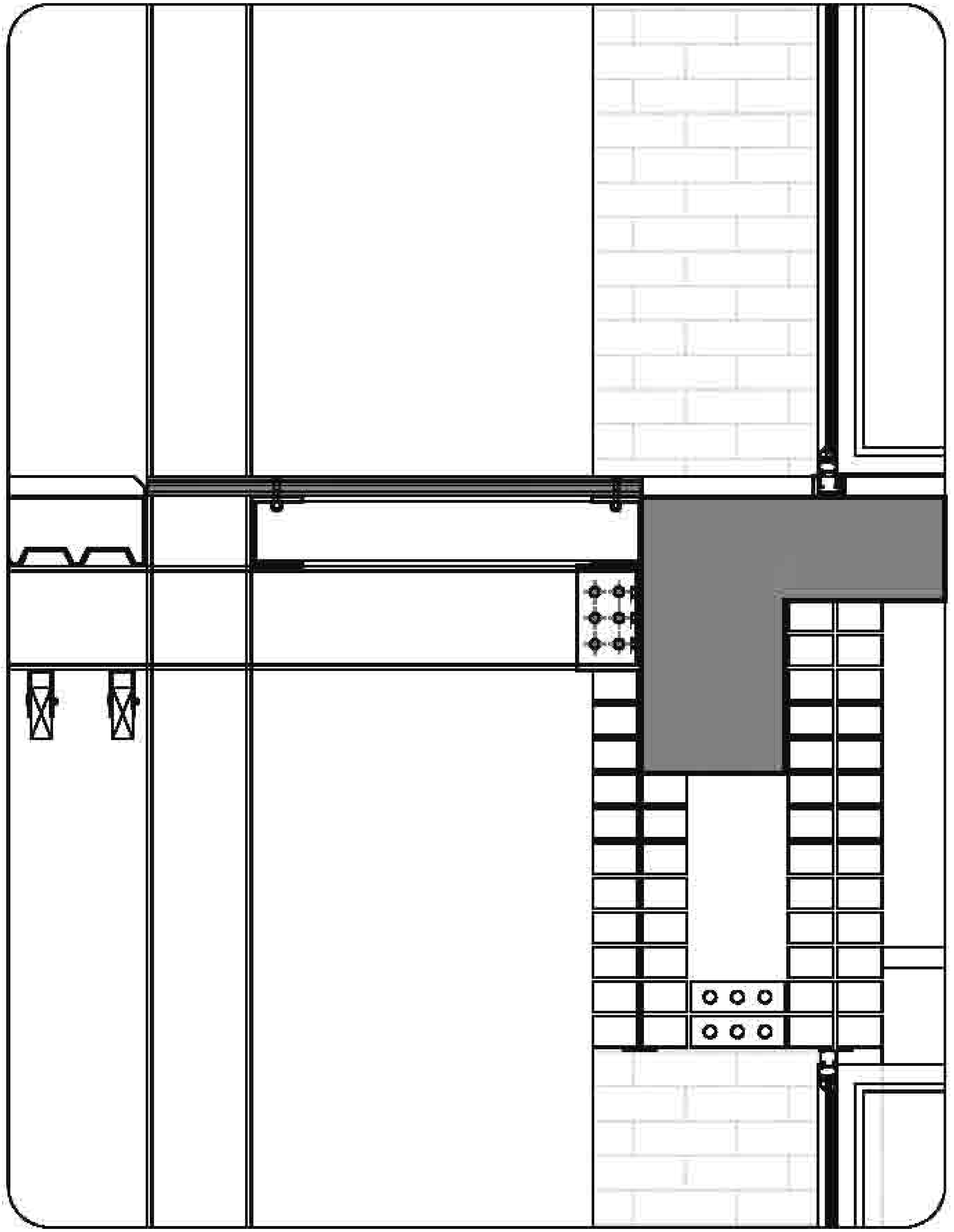
Detail_Roof and glass canopy junction

DETAIL 009 1:20



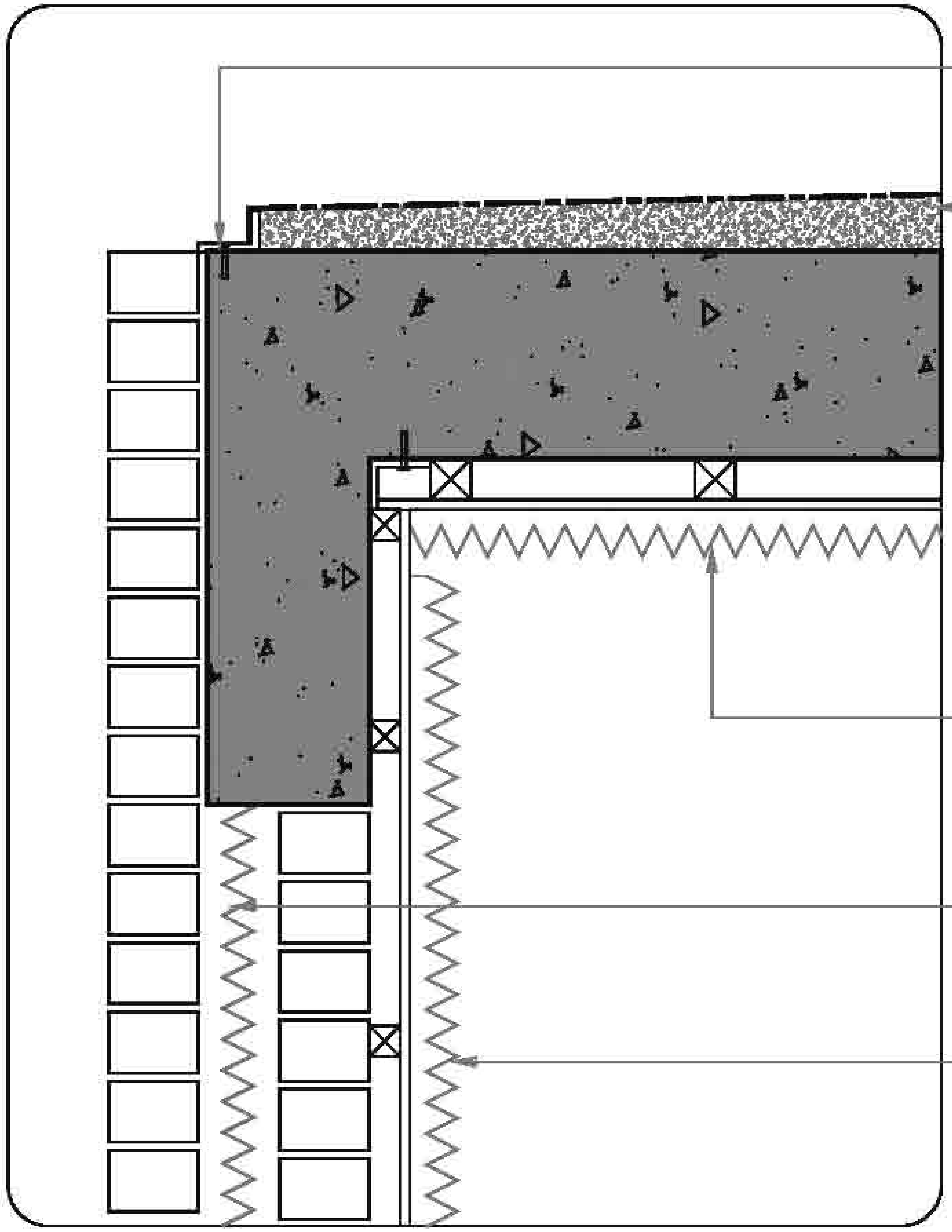
Detail_Internal planter box and garden deck

DETAIL 008 1:20



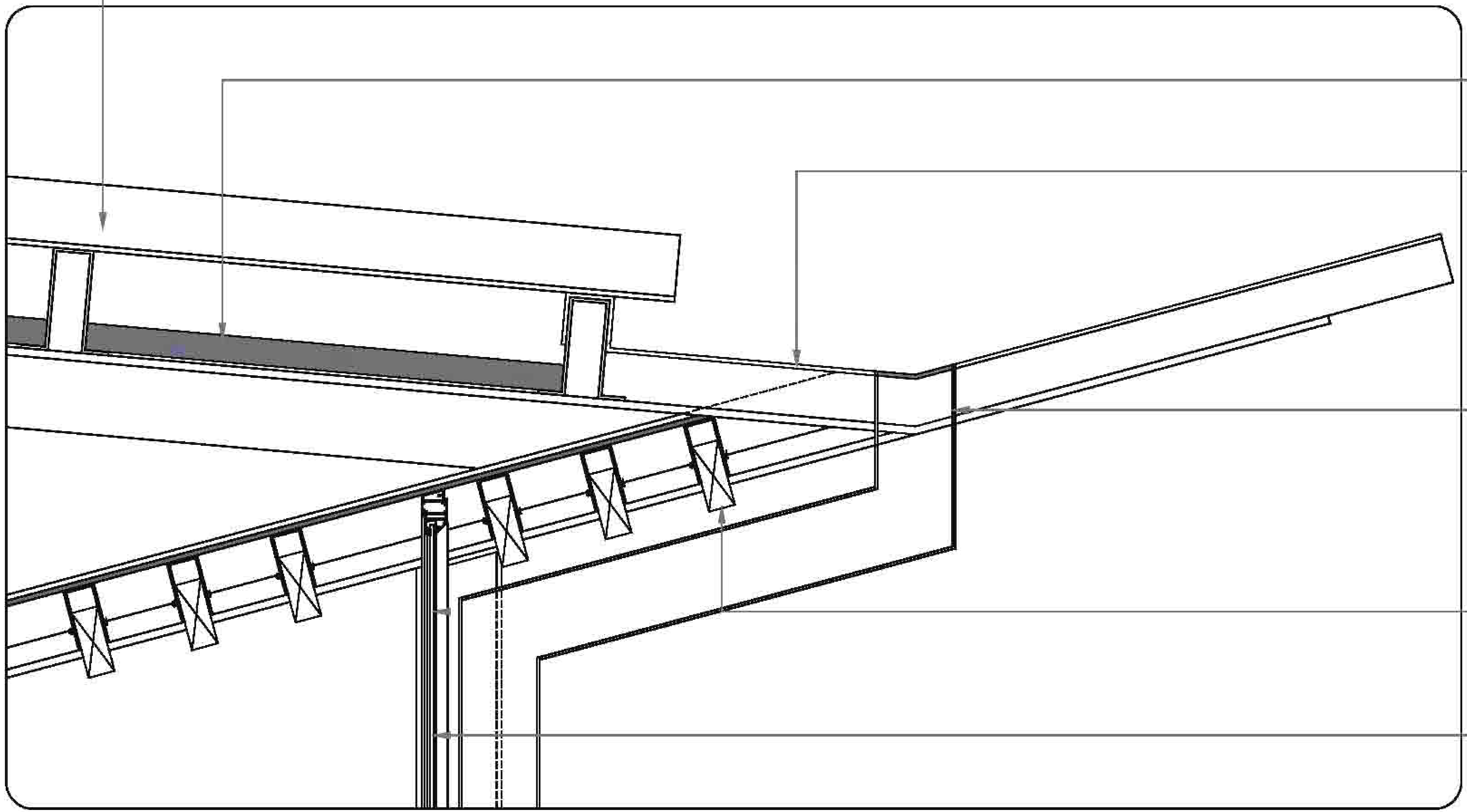
Walkway juntion detail

DETAIL 004 1:20



Detail_Aging Process of brick wall - Recording studio roof accoustic wall and ceiling detail

DETAIL 007 1:10



CORTEN finished BROWNBUILT roof sheets fixed to 175 x 75 top hats

Sagex boarded roof insulation panles supported over lip of top hat sections

Purpose made structural gutter galvanised mild steel flashing supported on top of steel angle bottom truss member

Purposed made gutter downpipe as per manufacturer specifications

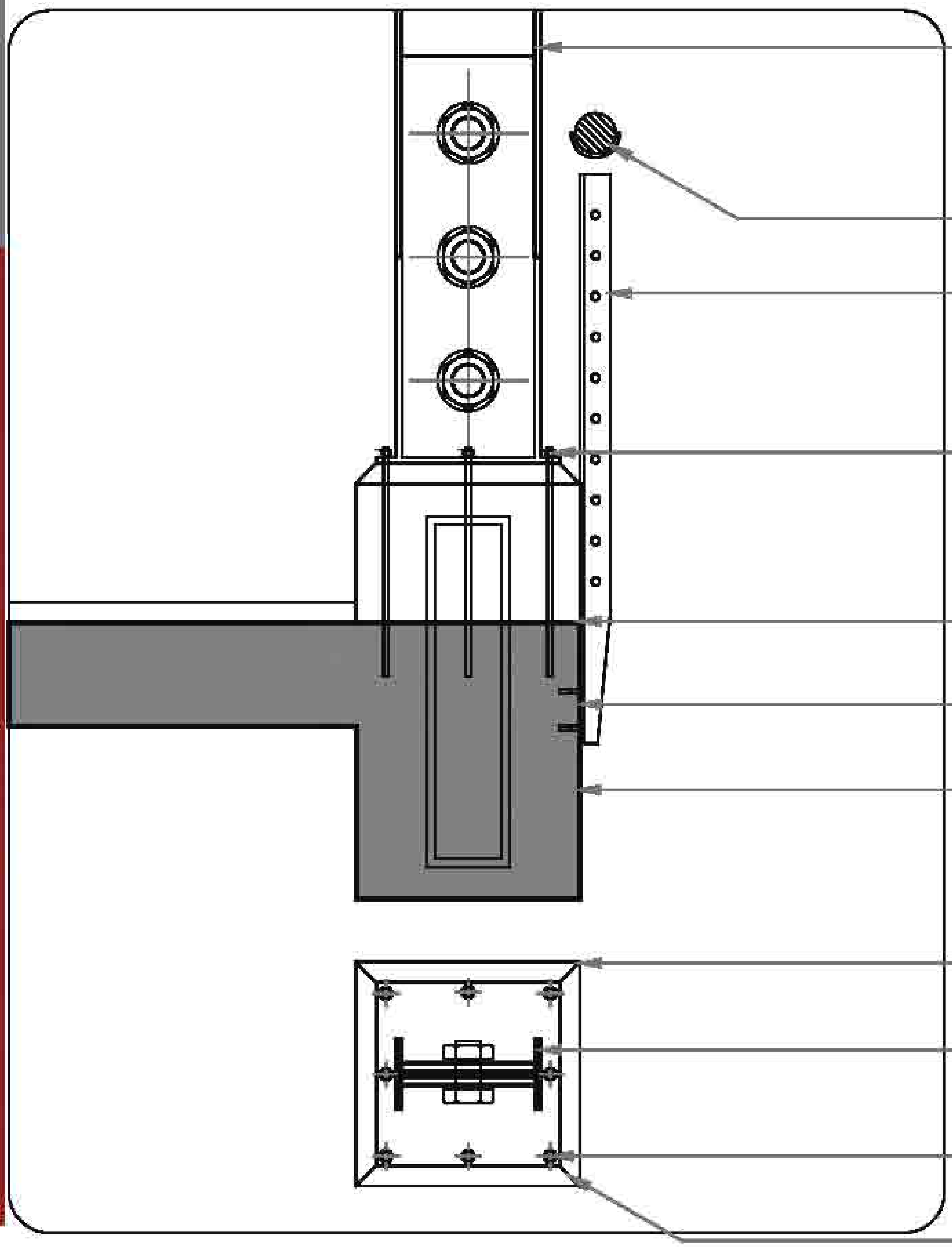
Two 150 x 75 x 15mm steel angles welded together as per engineer for top and bottom main support

125x75x15mm steel channels with closed ends blolt fixed to main stuctural member with timber purlins preserved and treated to manufacturer bolt fixed into channel frame

Aluminium window frame fitted to steel angle bottom truss member

Detail_Main roof underside and support

DETAIL 006 1:10



356x171x51mm galvinised steel comumn connected with oversized industrial M150 bolts to purpose made steel composite unit welded to 450 x 450 x 20 mm base plate

150mm diameter timber handrail preserved and treated as per manufacturer fixed onto steel tubing welded to balustrade

75 x 50 x 15mm galvanised mild steel balustrading lipped sections with 10mm diameter stainless steel rods and welded to 10mm base plate fixed to 255mm cast in situ reinforced conc floor slab with m10 galv mild steel bolts

eight holding bolts in anchor grout in concrete base bolt fixed to steel base plate with expansion grout under base plate

Lipped balustrade fixed to reinforced cast in situ concrete floor with stainless steel countersunk selftapping screws

255mm reinforced cast in situ concrete floor slab with exposed formwork finish as per engineer

column reinforcing into reinforced concrete beam

550 x 550mm reinforced concrete base 750mm upstand

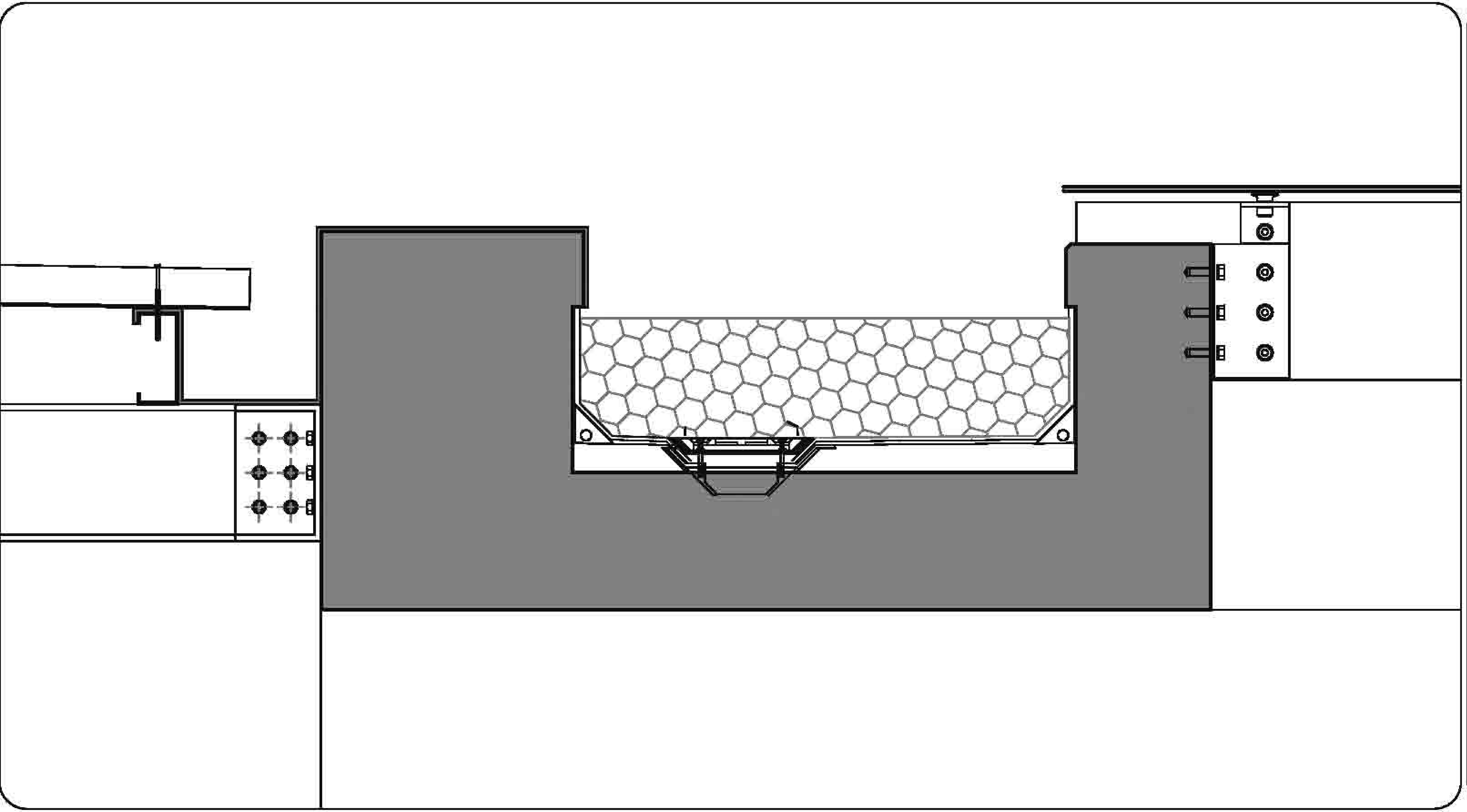
356x171x51mm galvinised steel comumn connected with oversized industrial M150 bolts to purpose made steel composite unit welded to 450 x 450 x 20 mm base plate

eight holding bolts in anchor grout in concrete base bolt fixed to steel base plate

expansion grout under base plate

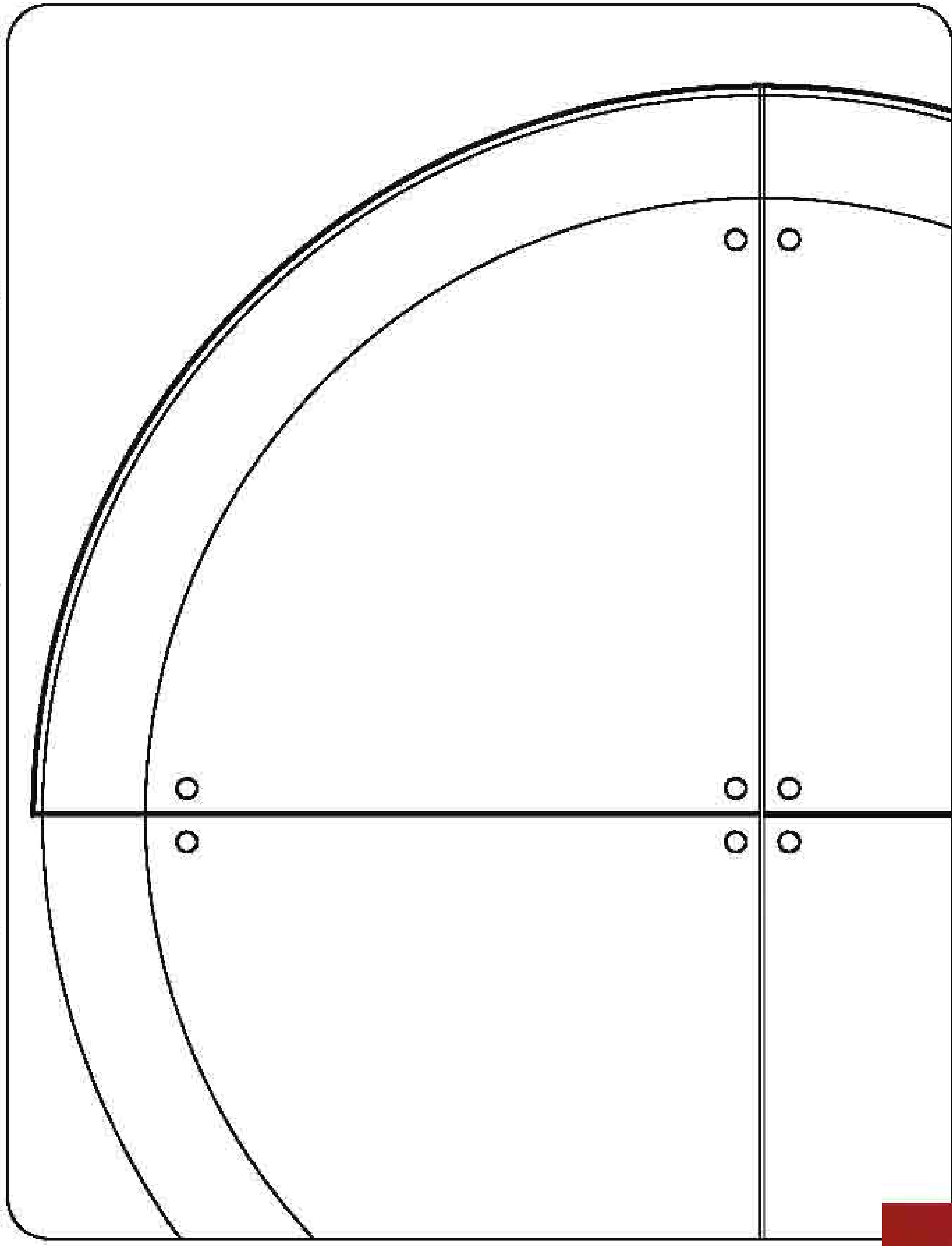
Planter box detail

DETAIL 005 1:20



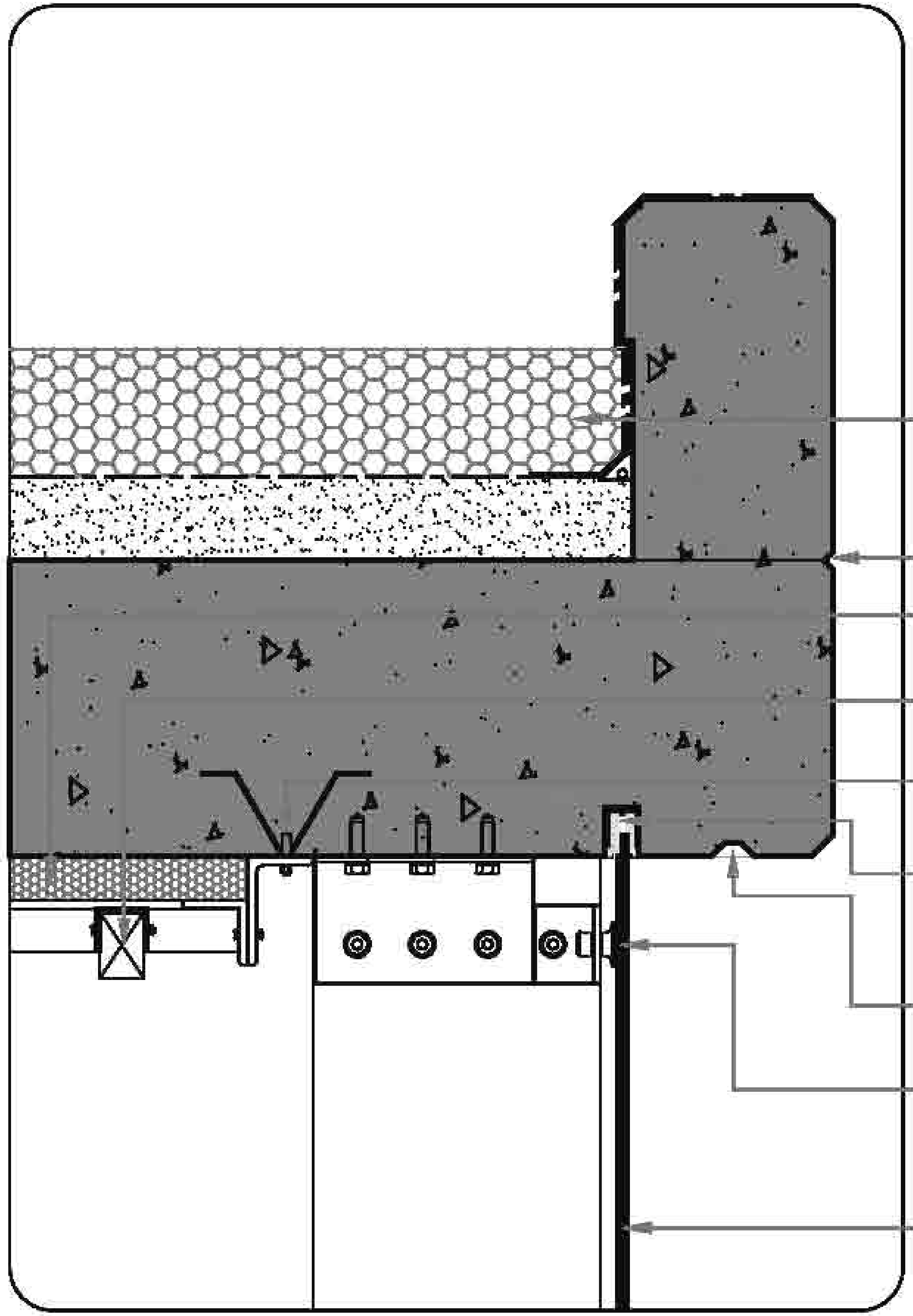
Science Library facade and top support structural box detail

DETAIL 002 1:10



Planter box detail

DETAIL 003 1:20



20mm crushed stone aggregrate layer onto approved waterproofing membrane on min 50mm screed to fall 1:50

Day joint

SAGEX boarded roof insulation as per manufacturer

75 x 50mm timber purlins fixed into welded steel angle frame at 2250mm c/c

125 x 75mm mild steel angle fixed with ceiling lug casted into concrete slab and bolt fixed to supporting framework

silicone sealant and neoprene guides in 50 x 50 x 3mm aluminium glazing channel at min 25mm cover with shims at between reinforced concrete lab installed as per manu- facturer

Drip

Pilkington Planar stainless steel bolt onto 80 x 80 x8mm springplate with splice bolt assembly onto 19mm armouplate fin with 1mm fibre gasket seal

12mm armourplate glazing with silicone sealent and backer rod between glass plate connections

Detail_Live recording studion roof and glazing junction

DETAIL 001 1:10


UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
A
B
C
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GUTTER SIZE main roof area only
DOWNPIPE calculations for main roof area only
Winter solstice at 12h00
Summer solstice at 12h00
M E D I A P R O D U C T I O N L A B
C H U R C H S T R E E T
Floor Slabs:
Beam Upstand Size:
BASEMENT LEVEL 1
BASEMENT LEVEL 2
BASEMENT NOTE:

S E C T I O N D - D


I
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C
B
A
CHURCH STREET
BACKSTAGE TERRACE
DETAIL 005
DETAIL 006
41°
Winter solstice at 12h00
Pilkington Planar Pin joint flush glazing system with armourplate supports
Floor Slabs:
GUTTER SIZE main roof area only
DOWNPIPE calculations for backstage roof area only
DOWNPIPE calculations for main roof area only
COMPOSITE WALKWAY
BASEMENT LEVEL 1
BASEMENT LEVEL 2
BASEMENT NOTE:
Drained cavity system
116 750
113 275
109 025
104 773
104 095
100 100
100 000

SECTION C-C


UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
A
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DOWNPIPE calculations for backstage roof area only
DOWNPIPE calculations for main roof area only
Winter solstice at 12h00
41°
64.5°
Summer solstice at 12h00
116 760
113 275
109 025
104 775
104 085
100 000
100 100
I A N A R C A D E
Floor Slabs:
BASEMENT LEVEL 1
BASEMENT LEVEL 2
BASEMENT NOTE:
Drained cavity system
C H U R C H S T R E E T

S E C T I O N B - B


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UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
DOWNPIPE calculations for backstage roof area only
DOWNPIPE calculations for main roof area only
L I V E R E C O R D I N G S T U D I O
LIVE STUDIO
E N T R A N C E
C H U R C H S T R E E T
BASEMENT LEVEL 1
BASEMENT LEVEL 2
BASEMENT NOTE:
Drained cavity system
Beam Upstand Size:
Floor Slabs:
DETAIL 001
DETAIL 002 & 003
116 760
113 276
109 026
104 775
104 085
100 000
100 100

S E C T I O N A - A

T H I R D   F L O O R   P L A N

S E C O N D F L O O R P L A N

F I R S T   F L O O R   P L A N

GROUND FLOOR PLAN

BASEMENT NOTE:

Drained cavity system

Storm-water sump with level sensors to municipal storm-water connection

Min 150mm mesh reinforced structural concrete floor slab with 1:50 fall towards water catch-pit on 0.45 polyolefin membrane

290x140x90mm concrete bricks with 20mm joints for water drainage on top of 250mm no fines cast in situ concrete floor slab at 1:50 fall to sump

450mm cast in situ reinforced concrete retaining wall with flow-drain punctures at 1m² and geo-pipe on cast in situ reinforced concrete footing

TOTAL ROOF AREA:

Total Roof Area
Roof 1 (main) = 1650 m²
Roof 2 (flat roof) = 580 m²
Roof 3 (terrace) = 320 m²
Roof 4 (walkway) = 380 m²
Roof 5 (1st floor) = 350 m²
Total catchment area= 3260 m² + 1500 m² (Live square) = 4760 m²

TANK SIZES
Storage tanks: 5 x 6 x 2 = 50 000 x 3 (tanks) = 150 000 l
Holding tanks: 2 x 4 x 0.5 = 4000 x 2 (ablution cores) = 8000 l

DESIGN POPULATION ±2000 persons daily
WC usage 1450 x 8 l = 11 600 x 20 (weekdays) = 232 000 l
Maximum monthly rainfall (January 136mm) = 0.136 x 4760 = 647360 x 0.85 (evaporation) = 550 256 l
Turnover of 318 256 l
Minimum monthly rainfall (July 3mm) = 0.003 x 4760 = 14 280 x 0.85 (evaporation) = 12133 l
Shortfall of 219 862 l
(South African Weather service thirty year average)

DOWNPIPE calculations for main roof area only
Total Roof Area: roof 1 (main) + onto roof 2 (flat roof) + roof 3 (terrace) + roof 4 (walkway) = 1650 + 580 + 320 + 360 = 2910 m²
Downpipe required = 100mm²/1m²
Total downpipe required: 2910m² x 100 = 291000mm²
200mm diameter downpipes in 250mm brick cavity wall = 31415.93mm²
Downpipes required: 291000mm²/31415.93mm² =9.26
10 x 200diameter downpipes in 250mm brick cavity columns required

DOWNPIPE calculations for backstage roof area only
Total Roof Area: 350 m²
Downpipe required = 100mm²/1m²
Total downpipe required: 350m² x 100 = 35000mm²
200mm diameter downpipes in 250mm brick cavity wall = 31415.93mm²
Downpipes required: 35000mm²/31415.93mm² =1.11
2 x 200diameter downpipes in 250mm brick cavity columns required

PARKING NOTE:

Basement Level 1: 150 parking + 4 disabled + 18 motor = 170 parking bays
Basement Level 2: 150 parking + 4 disabled + 16 moto = 170 parking bays
Total Parking bays - 340 (300 + 8 disabled + 32 motor

P A R K I N G L A Y O U T

SITE PLAN 1:1250

SITE PLAN 1:1250

BASEMENT NOTE:

Drained cavity system

Storm-water sump with level sensors to municipal storm-water connection

Min 150mm mesh reinforced structural concrete floor slab with 1:50 fall towards water catch-pit on 0.45 polyolefin membrane

290x140x90mm concrete bricks with 20mm joints for water drainage on top of 250mm no fines cast in situ concrete floor slab at 1:50 fall to sump

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= 31415.93mm²
Downpipes required: 291000mm²/31415.93mm² =9.26
10 x 200diameter downpipes in 250mm brick cavity columns required

DOWNPIPE calculations for backstage roof area only
Total Roof Area: 350 m²
Downpipe required = 100mm²/1m²
Total downpipe required: 350m² x 100 = 35000mm²
200mm diameter downpipes in 250mm brick cavity wall
= 31415.93mm²
Downpipes required: 35000mm²/31415.93mm² =1.11
2 x 200diameter downpipes in 250mm brick cavity columns required

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= 170 parking bays
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P A R K I N G   L A Y O U T

GROUND FLOOR PLAN

FIRST FLOOR PLAN

SECOND FLOOR PLAN

THIRD FLOOR PLAN

A
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DOWNPIPE calculations for backstage roof area only
DOWNPIPE calculations for main roof area only
Winter solstice at 12h00
Summer solstice at 12h00
119 780
113 275
109 025
104 775
104 085
100 000
100 100
L I V E R E C O R D I N G S T U D I O
DETAIL 001
DETAIL 002 & 003
LIVE STUDIO
Frosted Glass on steel frame
Beam Upstand Size:
Floor Slabs:
E N T R A N C E
C H U R C H S T R E E T
BASEMENT LEVEL 1
BASEMENT LEVEL 2
BASEMENT NOTE:

S E C T I O N A - A


A
B
C
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Winter solstice at 12h00
Summer solstice at 12h00
41°
84.5°
88°
DOWNPIPE calculations for main roof area only
PEDESTRIAN ARCADE
CHURCH STREET
RECEPTION
SECURITY CONTROL
RETAIL
Mechanical pivot wall
Roof light: Pilkington Planar Pin joint flush glazing system with armour-plated supports to fall
Floor Slabs:
Editing Cubicles: Sound insulated with acoustic foam wedges and timber flooring on acc. insulation
BASEMENT LEVEL 1
BASEMENT LEVEL 2
BASEMENT NOTE:
Drained cavity system
100 000
100 100
104 085
104 775
109 025
113 275
116 750

S E C T I O N   B - B


I
H
G
F
E
C
B
A
CHURCH STREET
BACKSTAGE TERRACE
DETAIL 005
DETAIL 008
100 100
100 000

S E C T I O N   C - C


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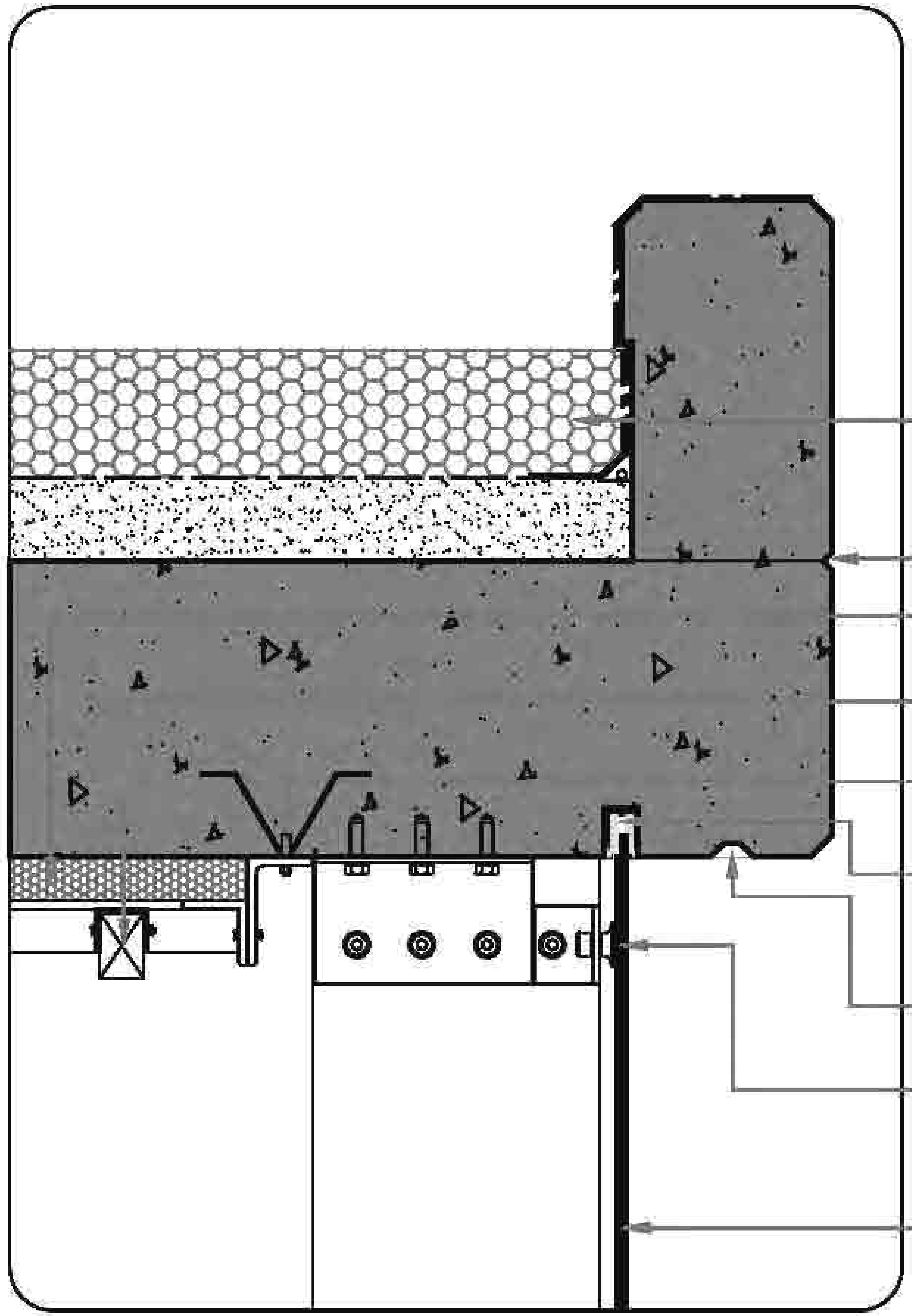
UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
MEDIA PRODUCTION LAB
GUTTER SIZE
Total Roof Area
DOWNPIPE
Winter solstice at 12h00
Summer solstice at 12h00
Floor Slabs:
Beam Upstand Size:
BASEMENT LEVEL 1
BASEMENT LEVEL 2
BASEMENT NOTE:
DETAIL 007
CHURCH STREET

S E C T I O N   D - D



20mm crushed stone aggregrate layer onto approved waterproofing membrane on min 50mm screed to fall 1:50

Day joint

SAGEX boarded roof insulation as per manufacturer

75 x 50mm timber purlins fixed into welded steel angle frame at 2250mm c/c

125 x 75mm mild steel angle fixed with ceiling lug casted into concrete slab and bolt fixed to supporting framework

silicone sealant and neoprene guides in 50 x 50 x 3mm aluminium glazing channel at min 25mm cover with shims at between reinforced concrete lab installed as per manu- facturer

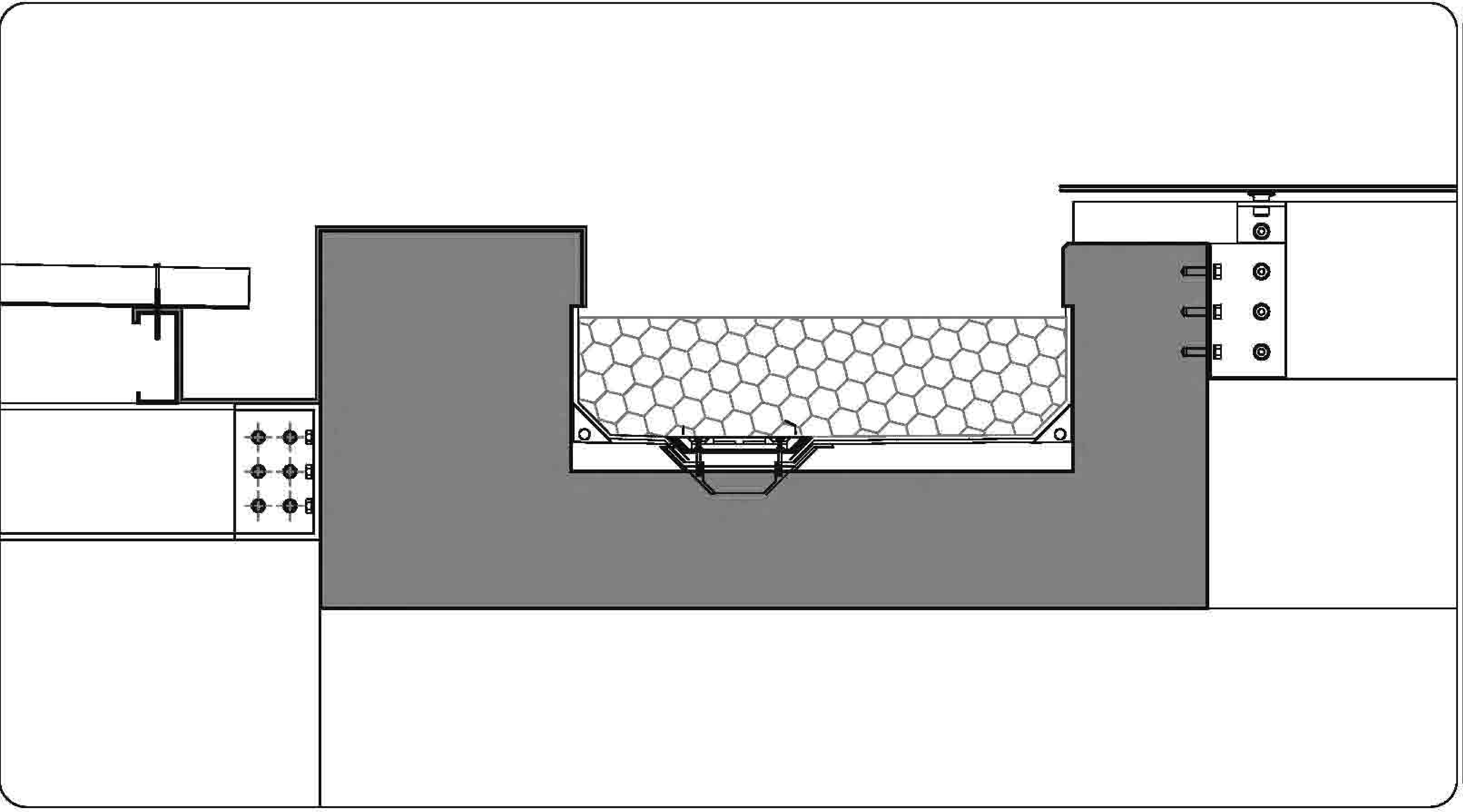
Drip

Pilkington Planar stainless steel bolt onto 80 x 80 x8mm springplate with splice bolt assembly onto 19mm armouplate fin with 1mm fibre gasket seal

12mm armourplate glazing with silicone sealent and backer rod between glass plate connections

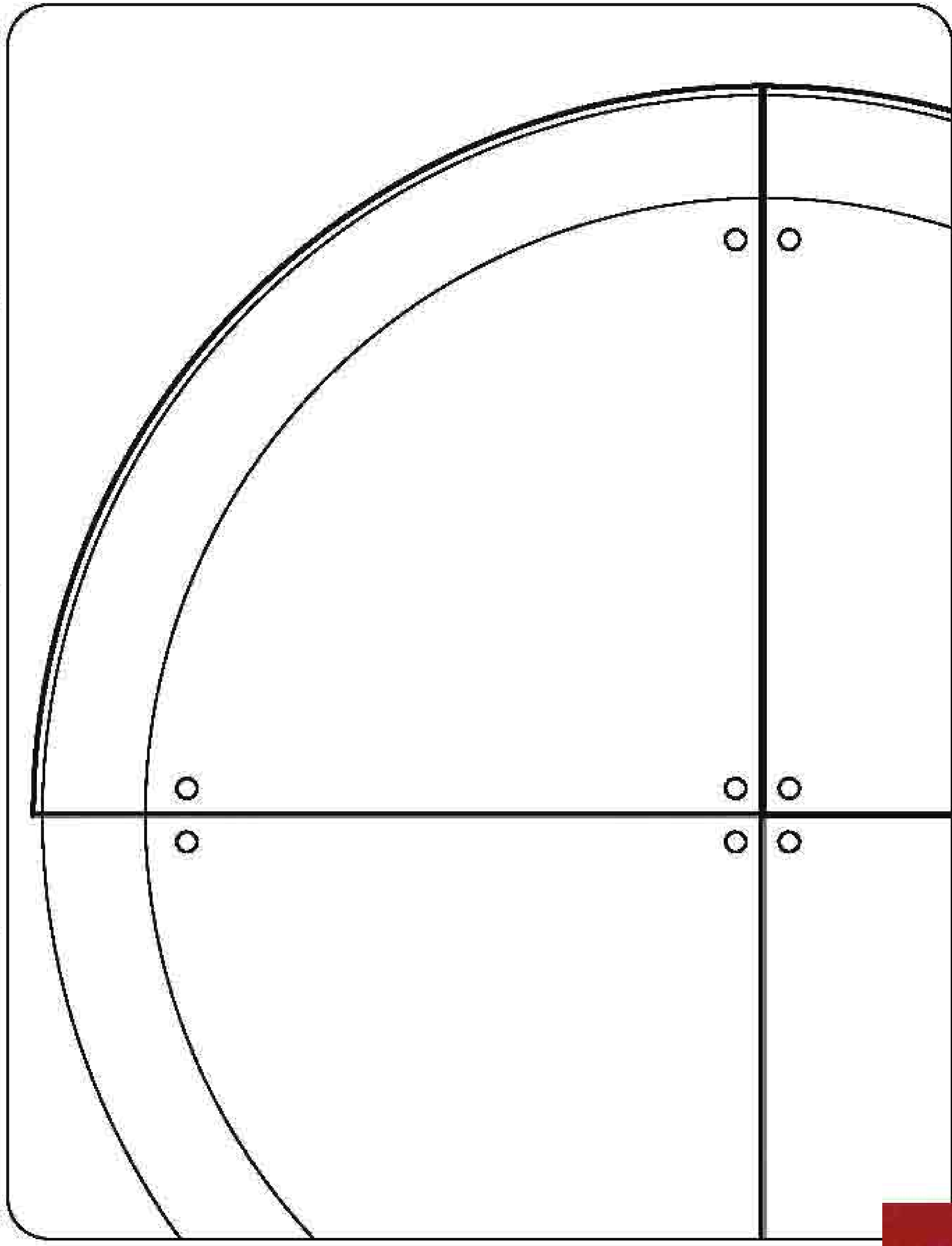
Detail_Live recording studion roof and glazing junction

DETAIL 001 1:10



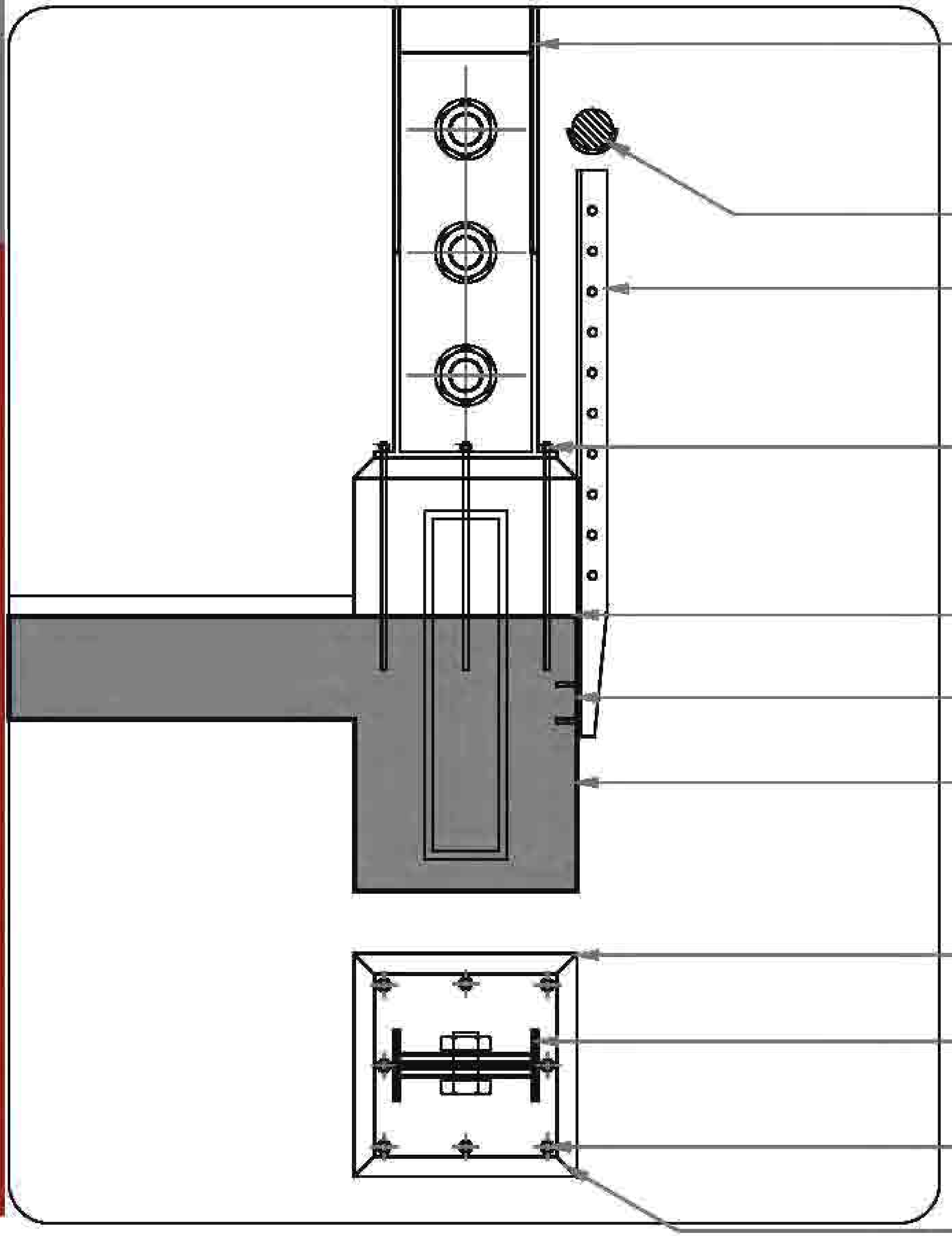
Science Library facade and top support structural box detail

DETAIL 002 1:10



Planter box detail

DETAIL 003 1:20



356x171x51mm galvinised steel comumn connected with oversized industrial M150 bolts to purpose made steel composite unit welded to 450 x 450 x 20 mm base plate

150mm diameter timber handrail preserved and treated as per manufacturer fixed onto steel tubing welded to balustrade

75 x 50 x 15mm galvanised mild steel balustrading lipped sections with 10mm diameter stainless steel rods and welded to 10mm base plate fixed to 255mm cast in situ reinforced conc floor slab with m10 galv mild steel bolts

eight holding bolts in anchor grout in concrete base bolt fixed to steel base plate with expansion grout under base plate

Lipped balustrade fixed to reinforced cast in situ concrete floor with stainless steel countersunk selftapping screws

255mm reinforced cast in situ concrete floor slab with exposed formwork finish as per engineer

column reinforcing into reinforced concrete beam

550 x 550mm reinforced concrete base 750mm upstand

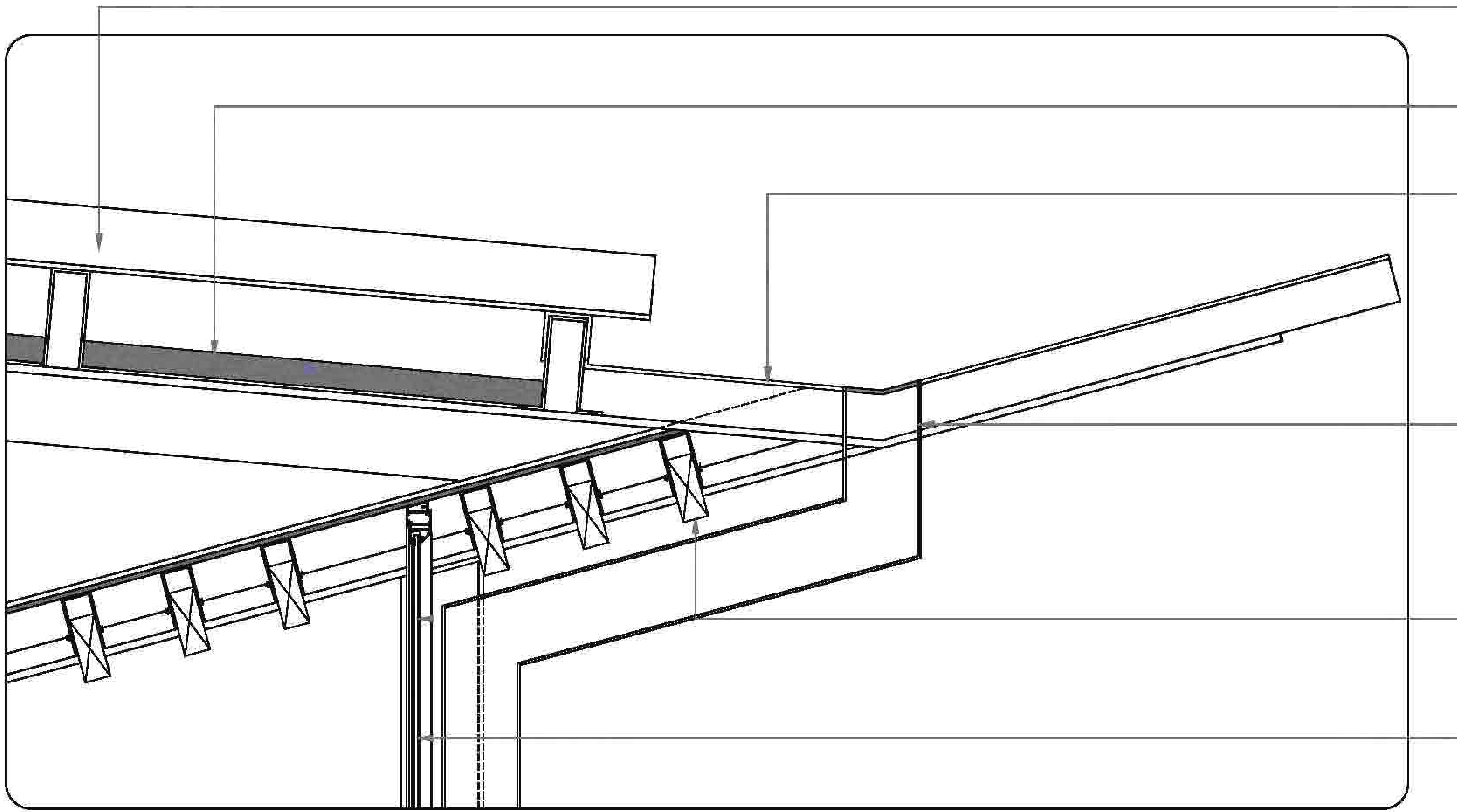
356x171x51mm galvinised steel comumn connected with oversized industrial M150 bolts to purpose made steel composite unit welded to 450 x 450 x 20 mm base plate

eight holding bolts in anchor grout in concrete base bolt fixed to steel base plate

expansion grout under base plate

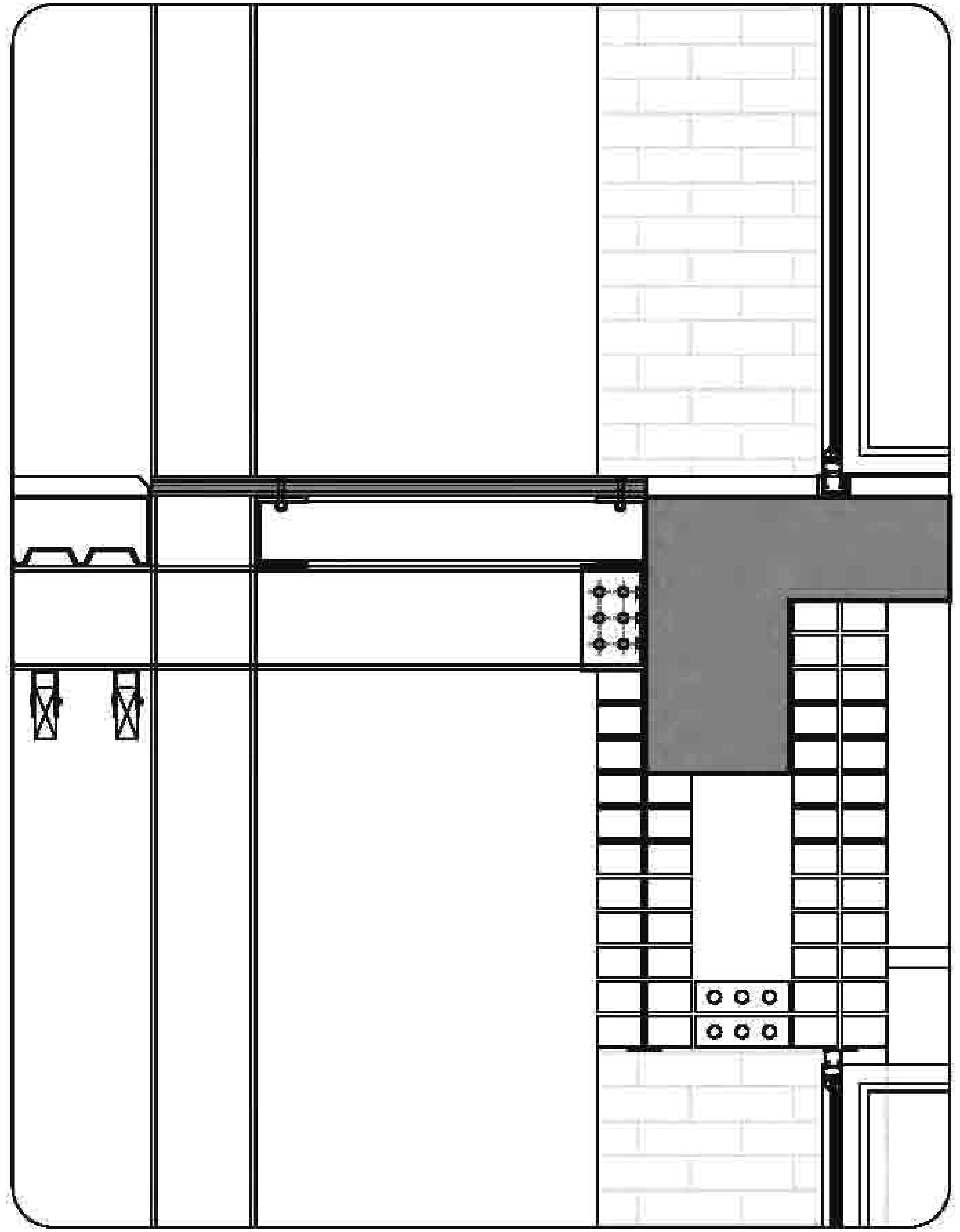
Planter box detail

DETAIL 005 1:20



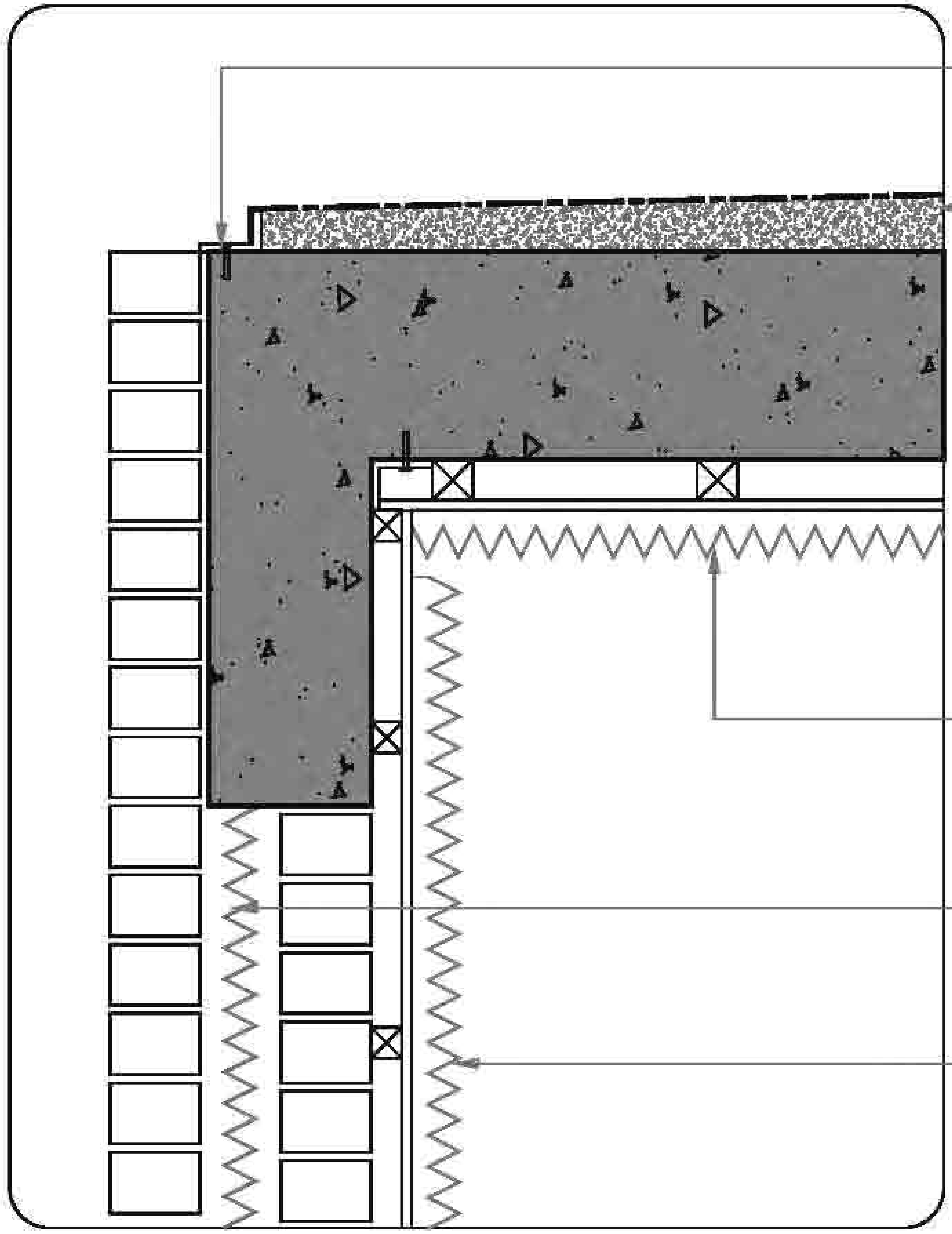
Detail_Main roof underside and support

DETAIL 006 1:10



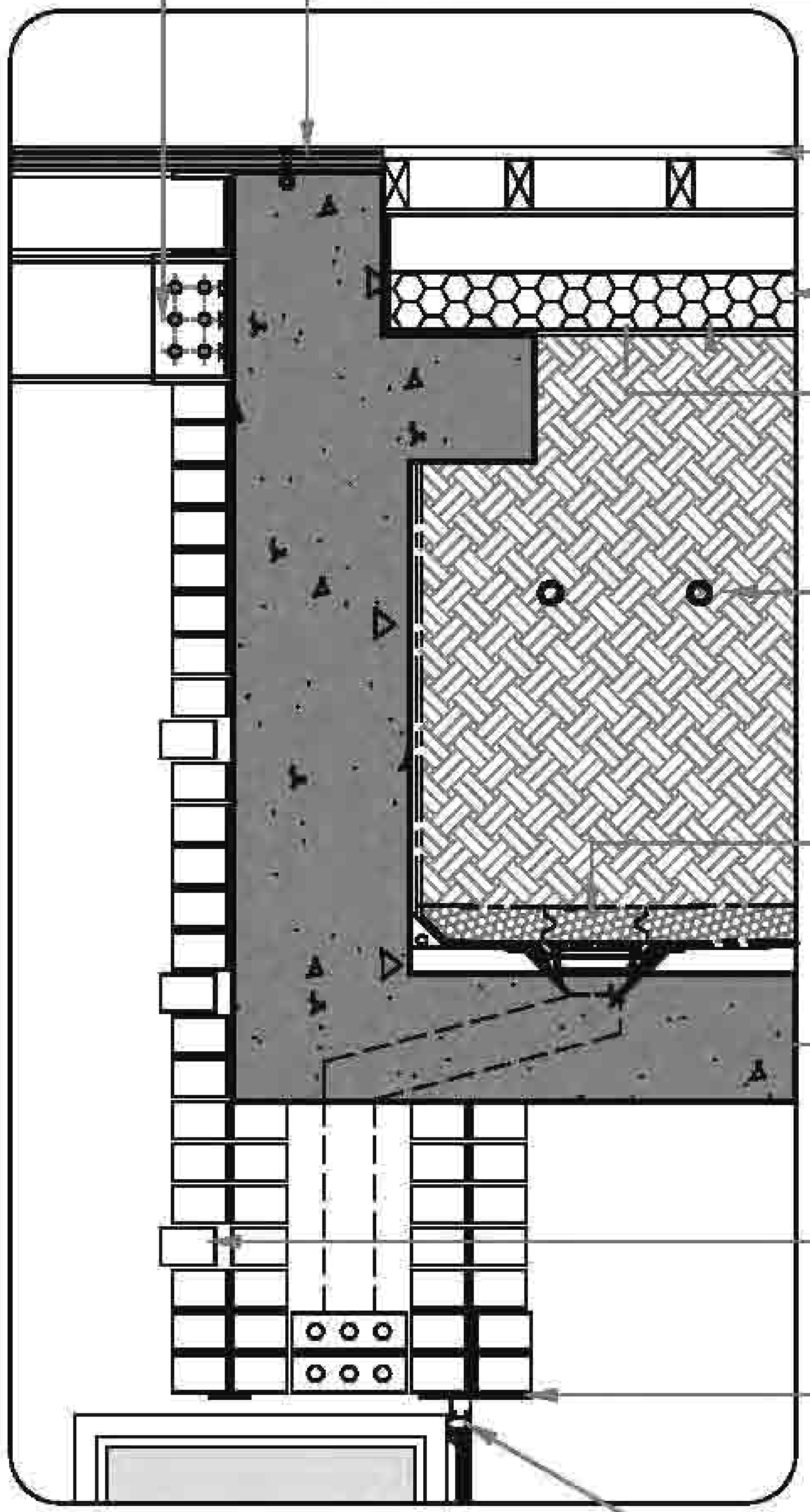
Walkway juntion detail

DETAIL 004 1:20



Detail_Aging Process of brick wall - Recording studio roof accoustic wall and ceiling detail

DETAIL 007 1:10



254 x 171mm mild steel [illegible] section fixed to concrete up stand and angle-cut for flush joint finish

4 x 12mm laminated frosted glass floor deck fixed with counter-sunk bolts onto rubber backing supported on steel frame

Timber floor deck fixed supported with 50x25mm timber battens onto 275x171x12mm steel I-Beam ont0 concrete footing

BEAMSIZE: Span of 5500mm/slenderness ration of 20 5500/20 = 275mm galvanized steel I-BEAM

75mm thick layer course aggregate of 20mm crushed stone laid above garden soil

Drip system installed as per manufacturer and garden soil for trees and shrubs growth and support in concrete planter box

Geo-textile membrane on 75mm thick layer of 20mm crushed stone with min 30mm concrete screed to 1:50 fall

Full-bore outlet casted into concrete planter box with connecting water outlet pipes in brick cavity wall

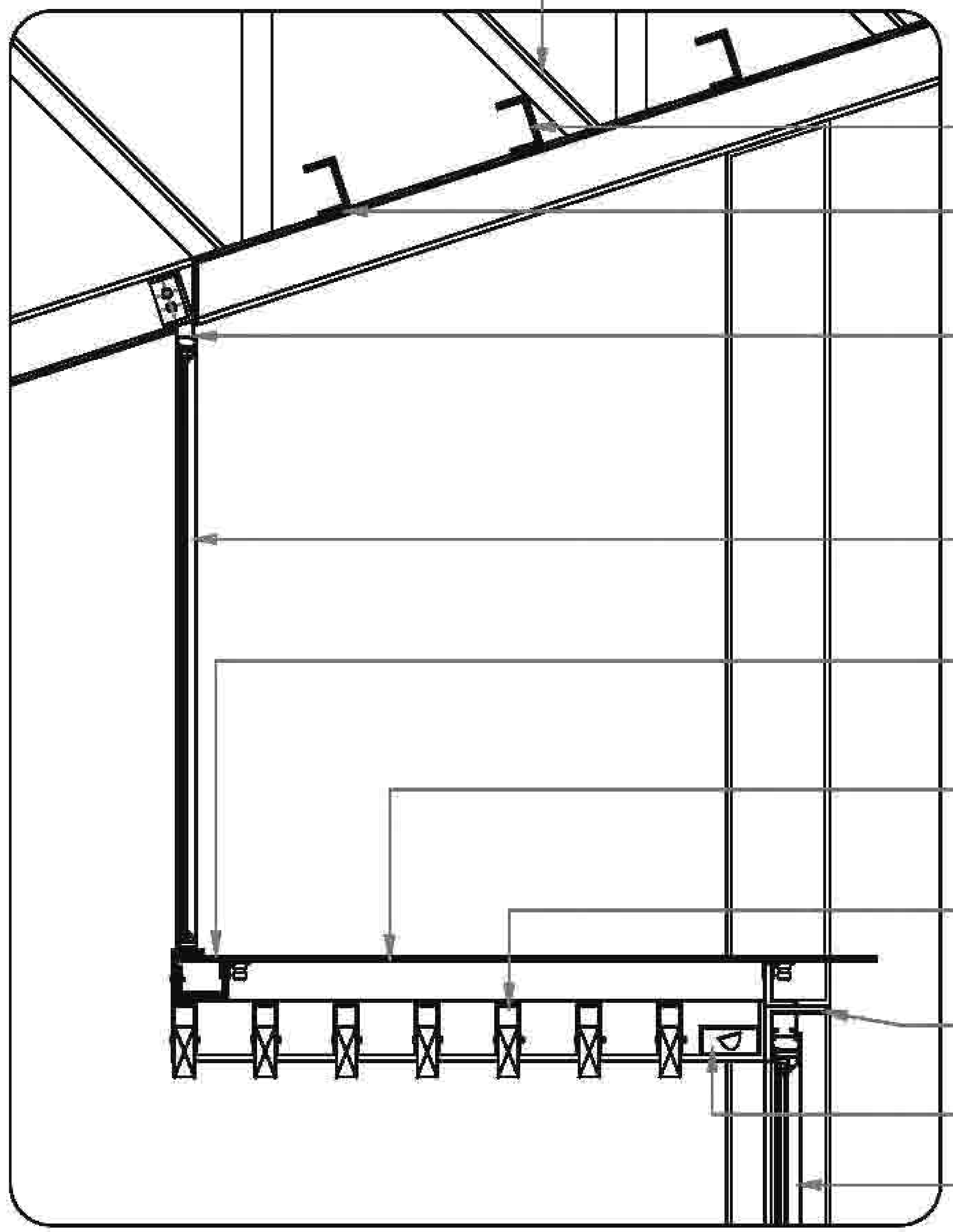
25mm extruded brick for shadow line

175 x 80mm mild steel angled fixed to supporting concrete and column brick work

Aluminium door and window frame supported with 50 x 50 x 15mm galvanised steel angle frame

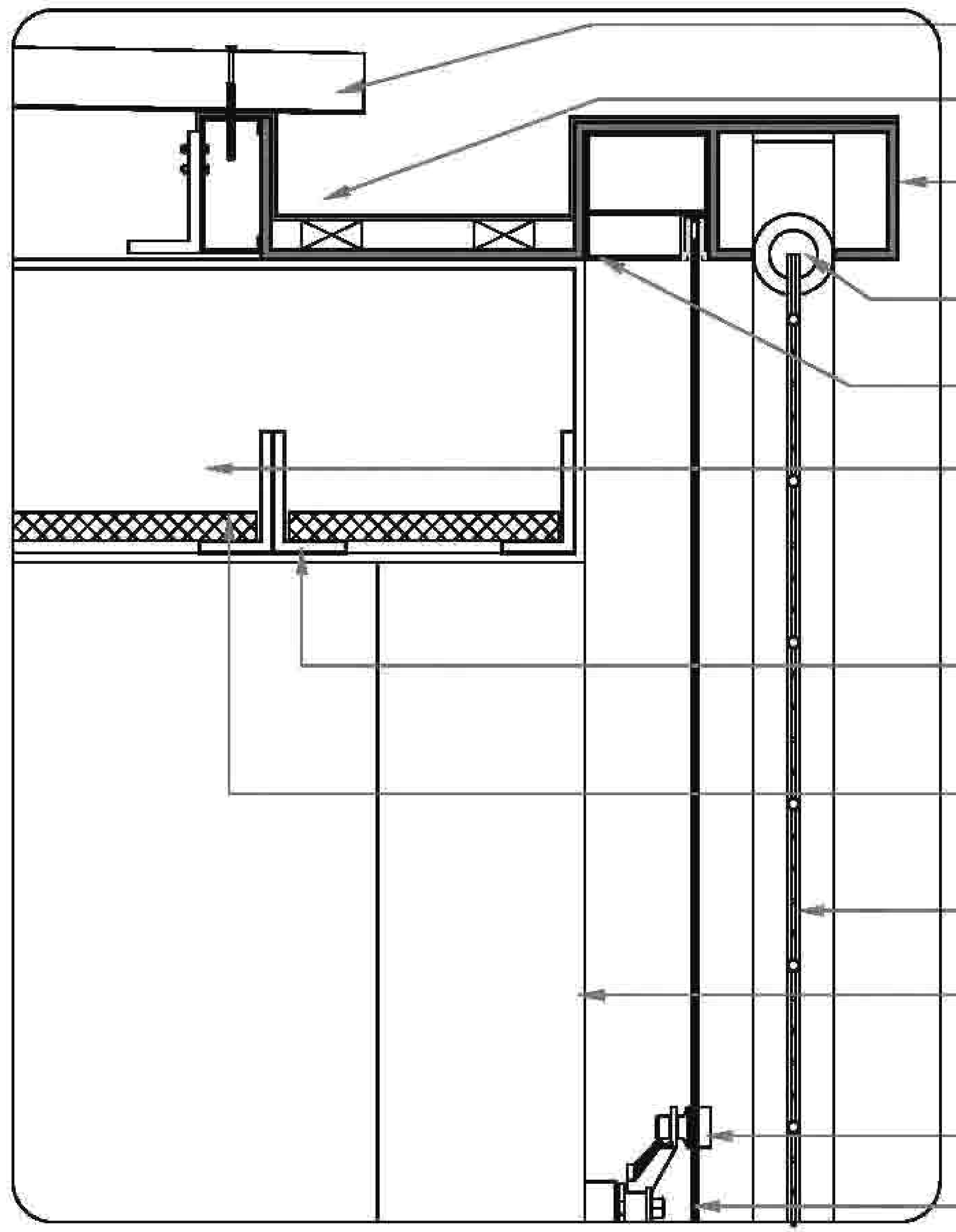
Detail_Internal planter box and garden deck

DETAIL 008 1:20



Detail_Roof and glass canopy junction

DETAIL 009 1:20



RCP 8 Translucent roof sheet profile fixed to purlin support system with approved fasteners at every third interval

Purpose made box gutter supported on top of structural box unit to fall as per eng

Purpose made structural steel composite box unit as per engineer welded onto mild steel support frame

Purpose made structural steel vertical support bracket as per engineer and GKD MediaMESH manufacturer

Purpose made Aluminium frame fitted into structural box unit for spider arm structural glazing end support

Beamsize:
Maximum span 7500mm/slenderness ration of 20: 5000/20=375mm galvanised steel I-BEAM

150 x 75 mm steel cold-formed lipped channels fixed to i-beam roof support with mild steel a angle cleat as per engineer

Poly Carbonate roof panel sheeting supported in between lipped channels onto I-BEAM section to create mechanically ventilated cavity for solar heat control

GKD AG4 MediaMESH vertically supported by GKD mesh fixing bracket to mild steel galvanised frame

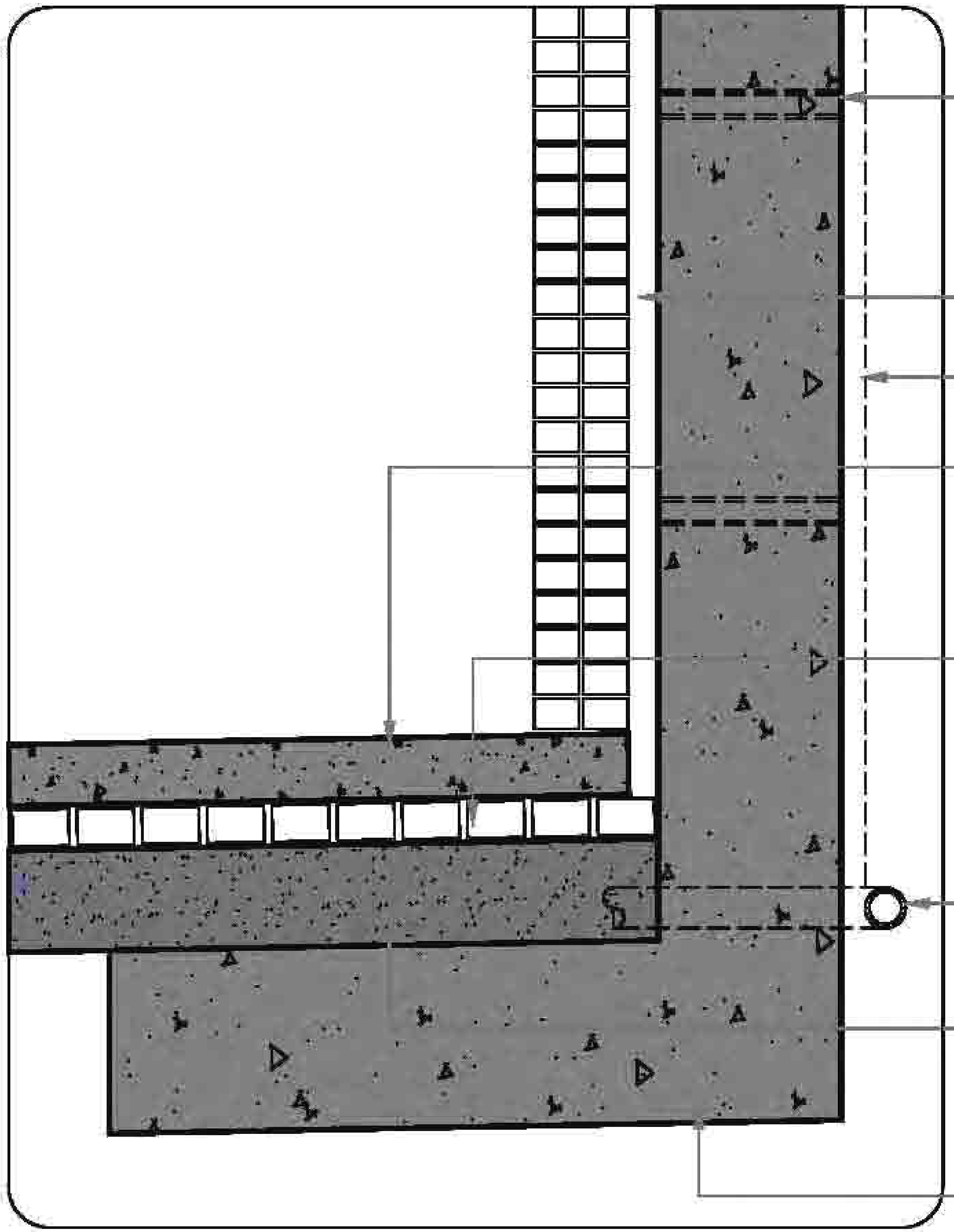
250 x 100mm galvanised hollow steel section for structural glazing support welded to I-BEAM and composite structural box as per engineer

Pilkington 4 point spider arm structural glazing facade system with arms adjusted to fit curve as per manufacturer

Glass panel intersection with site applied silicon sealant and backing rod as per manufacturer

Detail_Science Library facade and top support structural box

DETAIL 011 1:10



Flow-drain punctures in retailing wall at 1m² spacing 450mm cast in situ reinforced concrete retaining wall

Min 75mm cavity

Geo-textile membrane

Min 150mm mesh reinforced structural concrete floor slab with 1:50 fall towards water catch-pit on 0.45 polyolefin membrane

290x140x90mm concrete bricks with 20mm joints for water drain

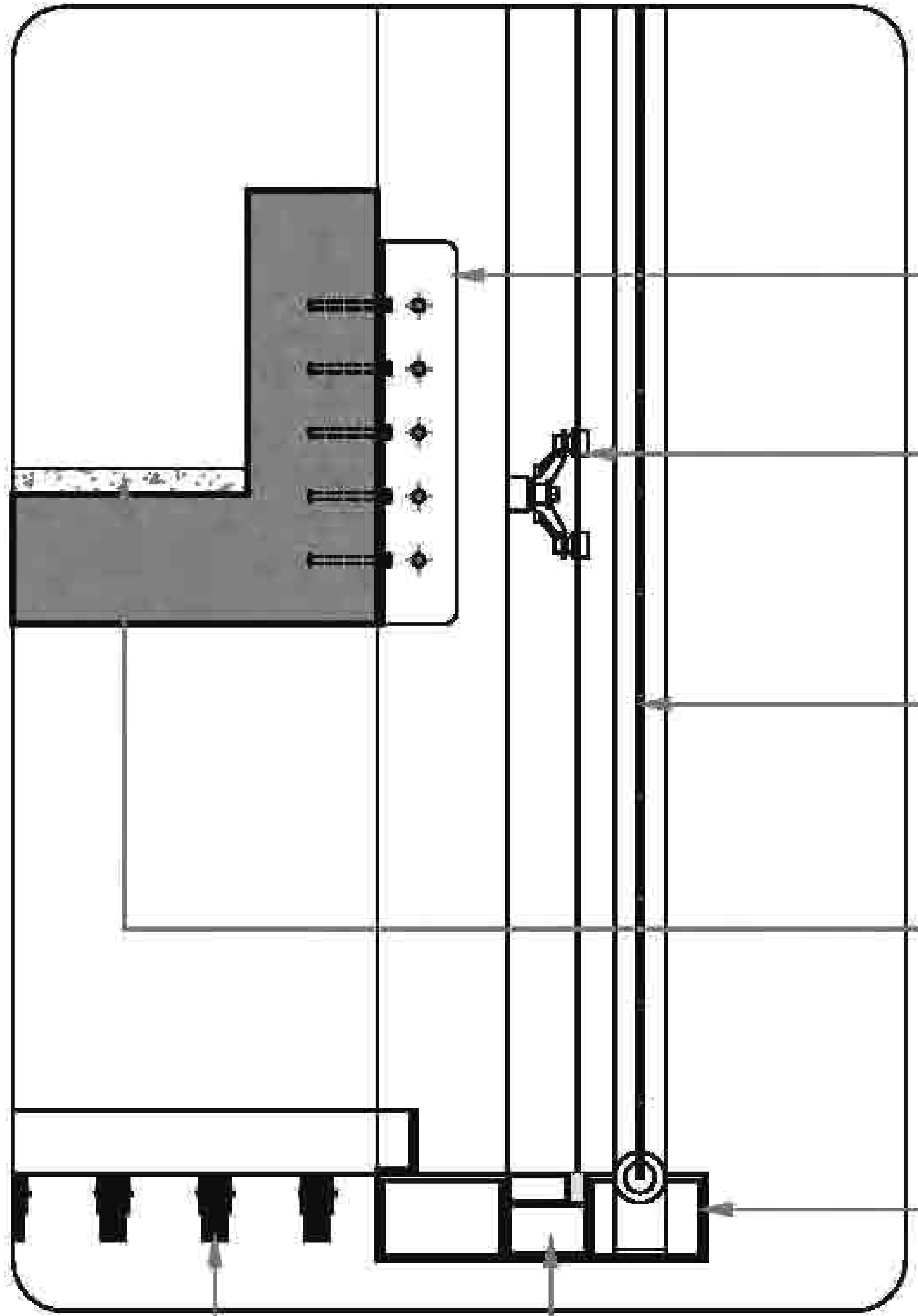
Geo-pipe on cast in situ reinforced concrete footing for water pressure

250mm no fines cast in situ concrete floor slab at 1:50 fall to sump

Reinforced concrete footing

Detail_Drained cavity basement

DETAIL 009 1:20



Two 150 x 90 x 15 galvanized mild steel angles fixed with bolts to glazing support frame and reinforced concrete up- stand as per eng

Pilkington 4 point spider arm structural glazing facade system adjusted to fit curve as per manufacturer

GKD AG4 MediaMESH vertically supported by GKD fixing bracket to mild steel galvanized frame as per manufacturer

255mm reinforced concrete floor slab as per eng approved with polished and pigmented screed onto concrete floor slab

Purpose made structural steel box frame for glazing and GKD AG4 MediaMESH end support welded onto vertical steel support frame as per engineer

Purpose made Aluminium frame fitted into structural box unit for spider arm structural glazing end support

Laminated timber bolt fixed into steel channels and welded onto purpose made suspended intermediate steel angle support frame at 2750mm c/c to fit media facade curve

Detail_Media Library facade and bottom support frame detail

DETAIL 012 1:20

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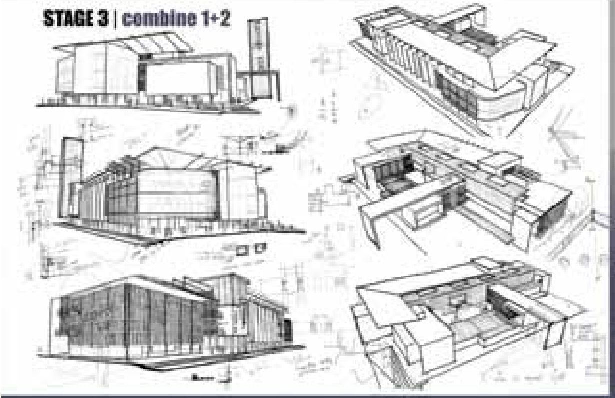
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Chapter 7

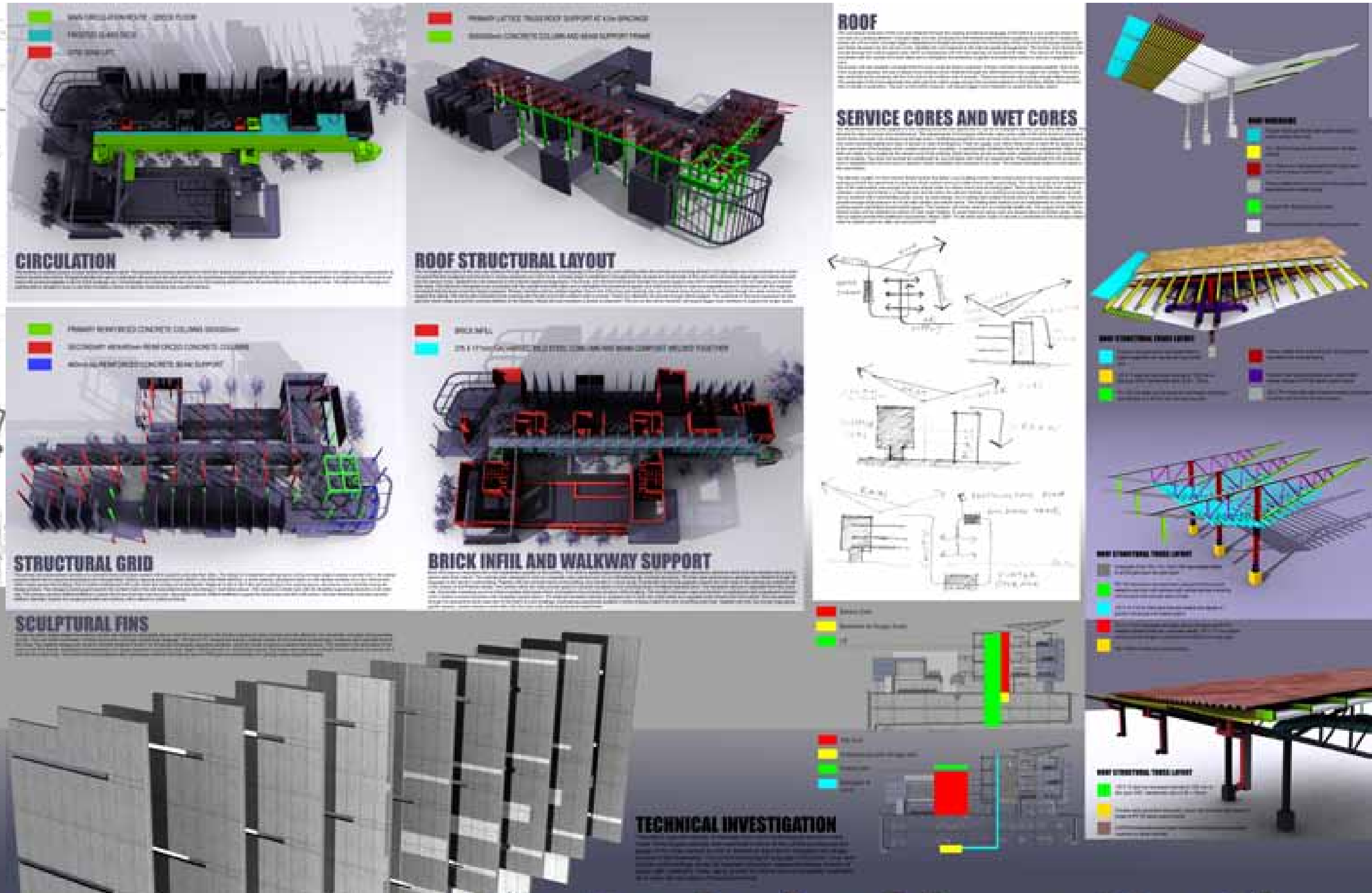

SITE PLAN | scale 1:500
CHURCH STREET
HISTORY
CULTURE
JOURNALISM
CLIENT | TUT (tshwane university of technology) and NASPERS MEDIA LTD
NEW FACULTY | TUT departments of JOURNALISM and PUBLIC RELATIONS in the faculty of humanities
SITE | TUT arcadia campus - cnr of NELSON MANDELA drive and CHURCH street
APPROACH | INTEGRATE fragmented, mono-functional, fortified campus block INTO urban fabric, incorporate demolished TUT buildings into new intervention
GOAL | JOURNALISM PRECINCT - eastern gateway into heart of inner city and cultural district
OUTCOME | vibrant interactive destination place - an URBAN CLASSROOM for socio-cultural spirit and expression within the space of the city for all to share
media production lab
STAGE 1 | conceptual responce to site analysis
STAGE 2 | RATIONAL
STAGE 3 | 2 failed, combine 1+2
STAGE 4 | spatial layout
STAGE 5 | spatial experience
CONCEPT | an URBAN STAGE generated out of the context while considering sensory experience
CONTEXT | STEREOTOMIC eaton & louw elevated hollow brick skin boxes with floating roof CANOPY and gordon leith NEO-CLASSICAL architecture - symmetrical facade, concrete columns, steep clay-tile roof flanks (bastions)
FUNCTION | external SKIN programatically and tectonicaly EXPRESS the production of media through a series of stages along the urban edges
FORM | STRONG GEOMETRIC ORDER in response to campus heritage
TECHNOLOGY | APROPRIATE TECHNOLOGY in relation with eaton & louw architects + gordon leith & partners
architecture as urban stage



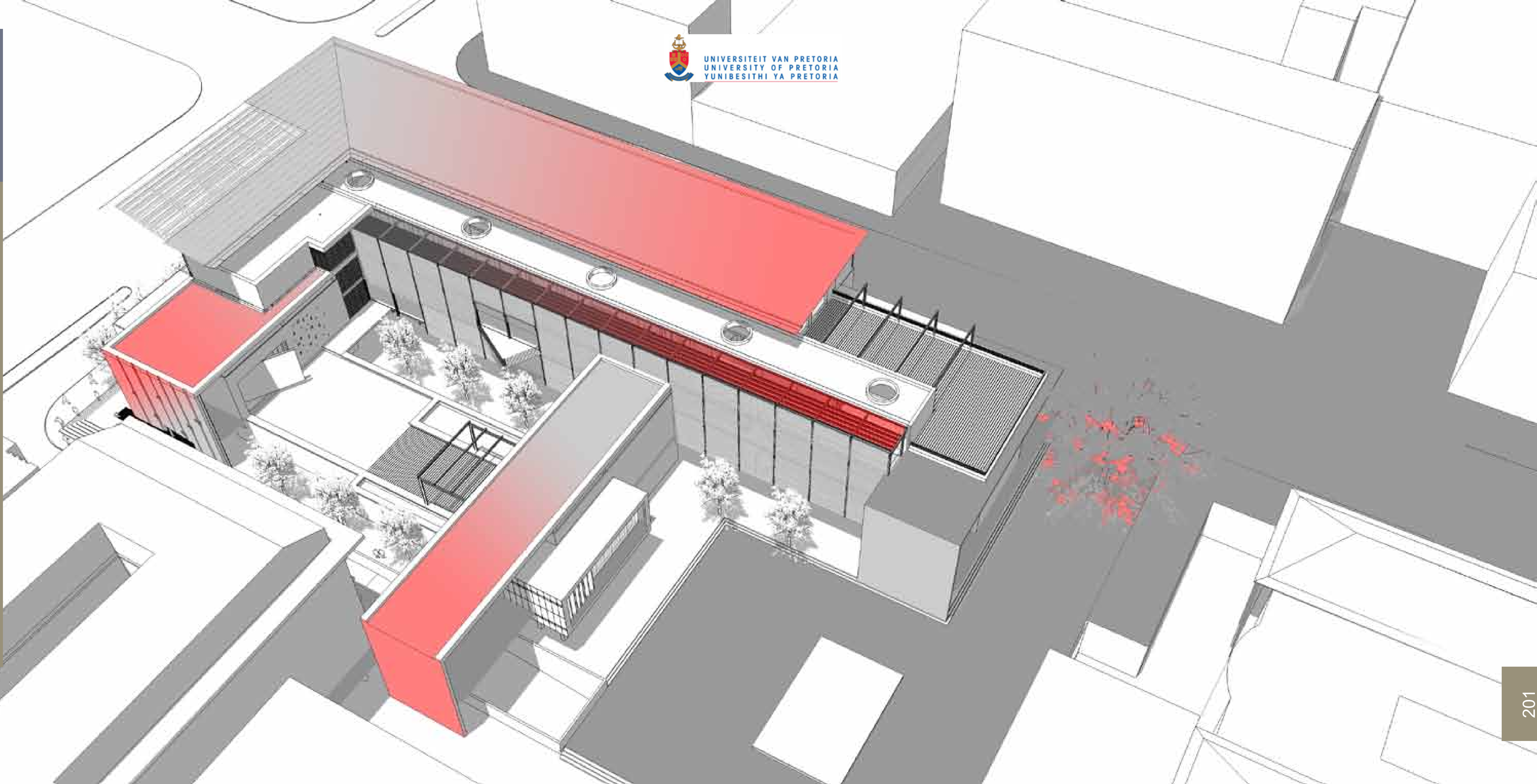
JOURNALISM | Investigates human experiences, social interaction, a **SOCIAL ART** by means of communication. Gives identity, meaning and status in the community, builds **COMMUNITY SPIRIT**. Tiggers human psychology or "wow" factor of emotion, intellect and amusement. Sets agenda for community aspirations, needs and **EDUCATION**. Makes full use of **MEDIA** technology to deliver news, stories, events etc. Human studies is realized by **ABSORBING** the selfgenerating life, energy, vibrancy, ambience, knowledge of the **HUMAN AND CITY**.

OUTCOME | Be able to continuously **ADAPT** towards a growing contemporary urban culture. By means of technology this classroom will be able to absorb all the **CULTURAL**, political and social energies of the city. Will **EXPRESS** all these energies through media technologies to become a live experience not only in the city, but on **GLOBAL** scale.

urban classroom spirit



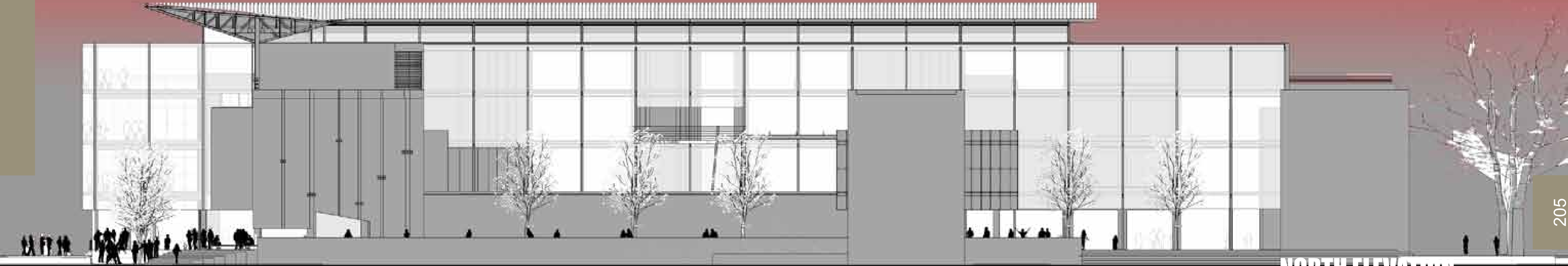
technical investigation



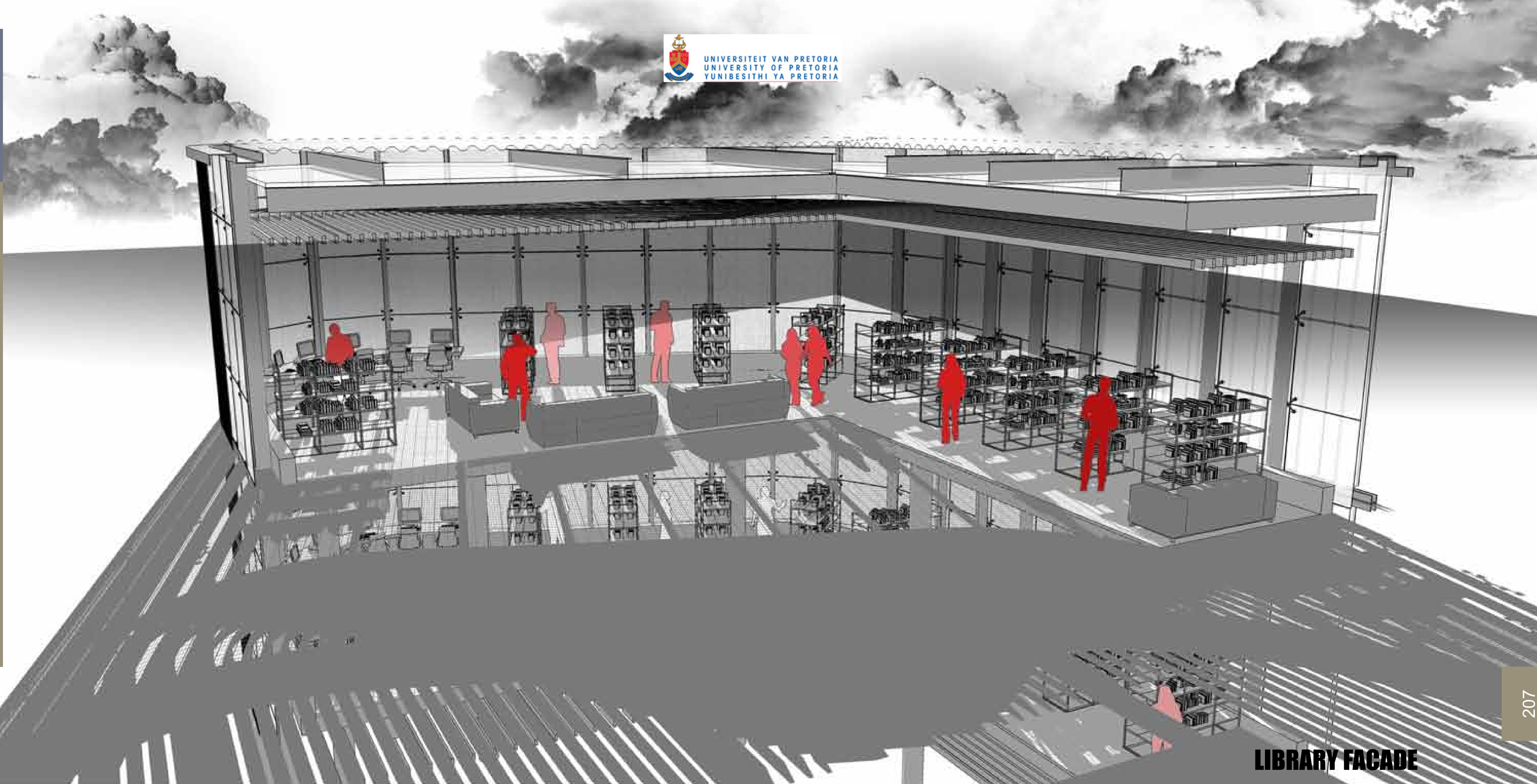
EAST ELEVATION

WEST ELEVATION

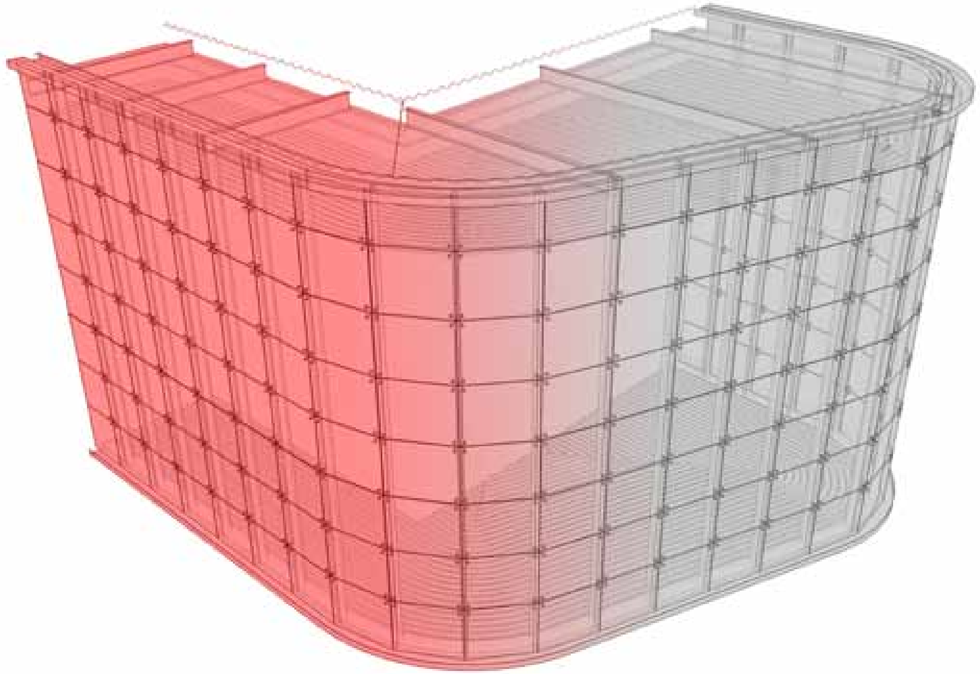
SOUTH ELEVATION

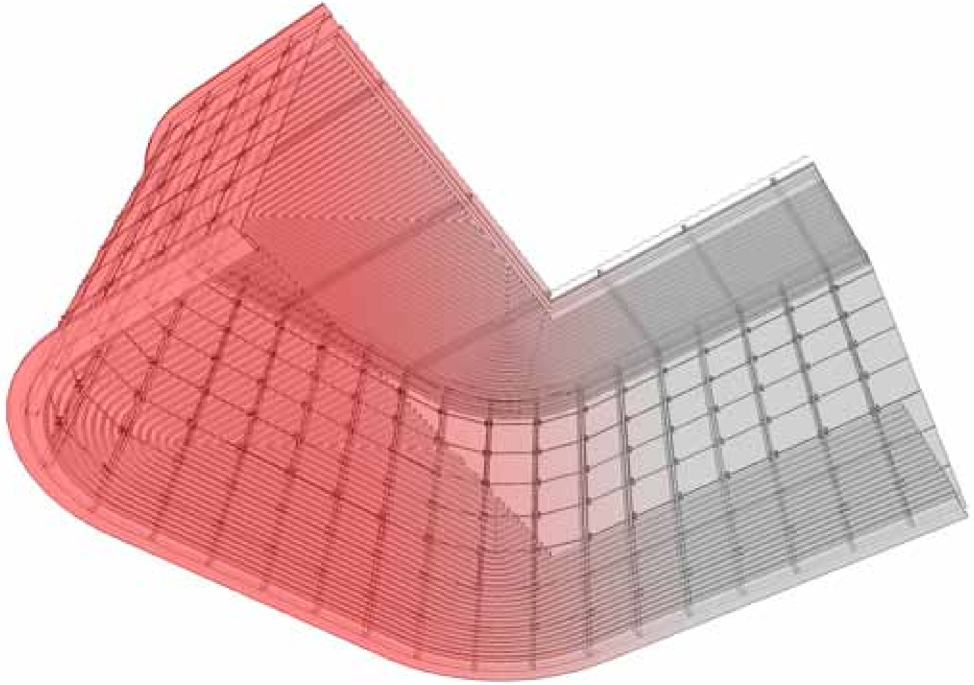


NORTH ELEVATION

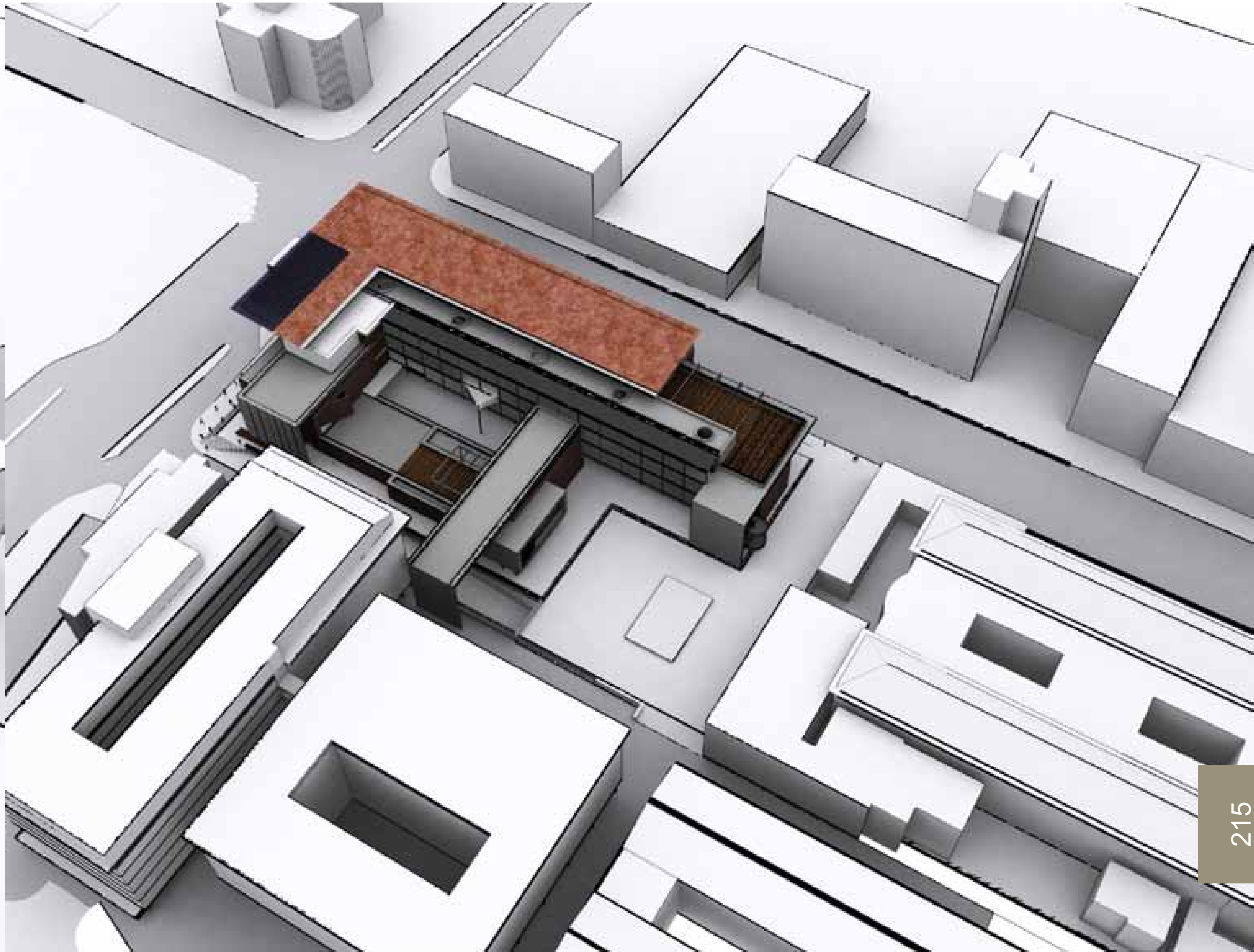


LIBRARY FACADE





WALKWAY



Appendix: A

This was conducted after interviews with Prof. Marais (Executive Dean of the Science Faculty TUT) and Mr. Piet Engelbrecht (TUT Facilities Manager) on 20 March 2009.The campus aims to build a 4-6 storey parking garage on the North-West corner of Church Street and Nelson Mandela Drive in future. The parking lot would consist of the surface areas of buildings 1-3. It is understood that they want to buy Buildings 2 and 3, consequently the current owners raised the prices for their property. The campus also considered selling building 1, but the need for parking is too high. A parking lot on the corner of Church and Nelson Mandela does not fall under the Nelson Mandela Development Corridor Framework and Inner City Regeneration Strategy.

BUILDING 1
Address: NW corner of Nelson Mandela Drive and Church Street
Owner: Tshwane University of Technology
Current use: Few small retail shops along Church Street, otherwise majority of building is abandoned
The building, previously been used as a brothel, was extended illegally without the approval of the City Council of Tshwane. TUT has been aiming in the demolishment of the building for several years now because of the need for parking. The facilities manager, Mr. Piet Engelbrecht, stated that the dilapidated building has been vacant for five years now due to a structural safety concern. The building does not comply towards the necessary safety, fire and inclusive design requirements of the SABS Code of Standards. During the time, the interior has suffered from a severe case of vandalism, stripping of electrical wiring, furniture, timber, steel etc.
Conclusion: Definite Demolition

BUILDING 2
Address: 440 Church Street
Owner: Jeka Foam and plastics
Current use: Double storey face brick building currently used for retail purposes, owner requested R3m for the purpose of the building (Moore, 2006:10.9)
Conclusion: Demolition advisable (Moore 2006:10.9)

BUILDING 3
Address: 436 Church Street
Owner: Auto Spares and Accessories Pretoria and Carburettor City
Current use: Service and repair of vehicles
After an interview (20 March 2009) with the company director, Mr. Vic Theron, the current economic status has caused a downdraught in the motor industry. The company currently provides motorcar spares, service and repairs with their workshops leading towards Nelson Mandela Boulevard.
Conclusion: Demolition advisable (Moore, 2006:10.10)

BUILDING 4
Address: Arcadia Campus 175 N.M. Drive
Owner: Tshwane University of Technology
Current use: Sasol Library
The current building opened its doors in 1995 (Oberholzer, 2002: 176), the student library functions more as a social interaction and study area. The facility has reached its maximum capacity.
Conclusion: Facility unable to meet its need, easily relocated, demolition advisable. (Marais, 2009) (Moore, 2006:10.10)

BUILDING 5
Address: Arcadia Campus, 175 N.M. Drive
Owner: Tshwane University of Technology
Current use: Administration building
Added to the campus in 1995 (Oberholzer, 2002: 177), the building accommodates offices for the ad ministration staff of the University. It has been concluded that the function of the building can be easily relocated or accommodated in a new development as it requires no direct interface and interaction with the street.
Conclusion: The Facility can be easily relocated. (Marais, 2009) (Moore, 2006:10.11)

BUILDING 6
Address: Arcadia Campus, 175 N.M. Drive
Owner: Tshwane University of Technology
Current use: examination hall
The single storey examination hall has been added to the campus in 1995 (Oberholzer, 2002: 177). Not used as examination hall, only used for a classroom.
Conclusion: Faculty can be easily relocated. (Marais, 2009) (Moore 2006:10.11)

FIG 7.1_Campus Building Removal Map

Conclusion

Architecture should be the result of a sensory balance, even when technology plays a major role in the outcome. Sensory experiences are not simply rooted in hapticity, but in culture and context. The quality of the urban realm forms a fundamental part of any sensory approach towards architectural place-making. Sense of place can only be achieved once the human dimension and vibrant energy of the human spirit is present. The introduction of media as an extra layer of urban expression and activity will set the stage for a new form of spirit: a classroom for all to share. Media can contribute towards a more vibrant urban space and hopefully good architecture if one considers the sensory realm. The success of any scheme can only be measured through the views of the community. Physical built models became a means of travel in the city. Regular encounters with everyday citizens attracted immediate attention. The concept of media production within the space of the city augmented instant vibrancy and excitement which soon resulted in crowds of people gathering: “When can I come?” “When will they build” “Can I come build?” This significance of a physical built form should not only be placed upon what it is, but on what it does: to deliver the cultural message of the city.

“The Medium is the Message”

Marshall McLuhan

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"...ek is tot alles in staat deur hom wat my krag gee." (Fil 4:13)Baie dank aan Jesus Christus wat altyd by my is_Ma en Pa vir al jul liefde en ondersteuning_boet en sus_al die vriende en familie in die Kaap - I'll be with you soon, Rian my mater, Andries my travel partner, Morné en Marguerite Pienaar, Clayton+Cliff+Lila, Prof. Diederichs. Last but not least: the old faithful golf clubs, Virgin Active and the Foo Fighters. Elvis has left the building...