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TREADMILL

a haptic machine for idiosyncrasy and collective public space

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HOW TO READ THIS BOOK?

BEGIN ANYWHERE. Open the book and read at will. All articles are short and succinct,yet it forms part of a collective whole. Connect passages with these symbols.

The content is divided into chapters that express ideas of subject and object. Although these notions have been historically seperated in Western thought, they are in reality intertwined and co-exist.

The map on the following page illustrates the overall structure for this dissertation and has been organised in the order of research discoveries. The findings are mapped according to subject and object categories and inch towards a middle ground.

The layout of the book is linear in order of contextual studies, theory, design and technical development but it is highly recommended that the book is read in non-linear fashion by connecting passages with these symbols.

This symbol indicates that an article express ideas of subjectivity

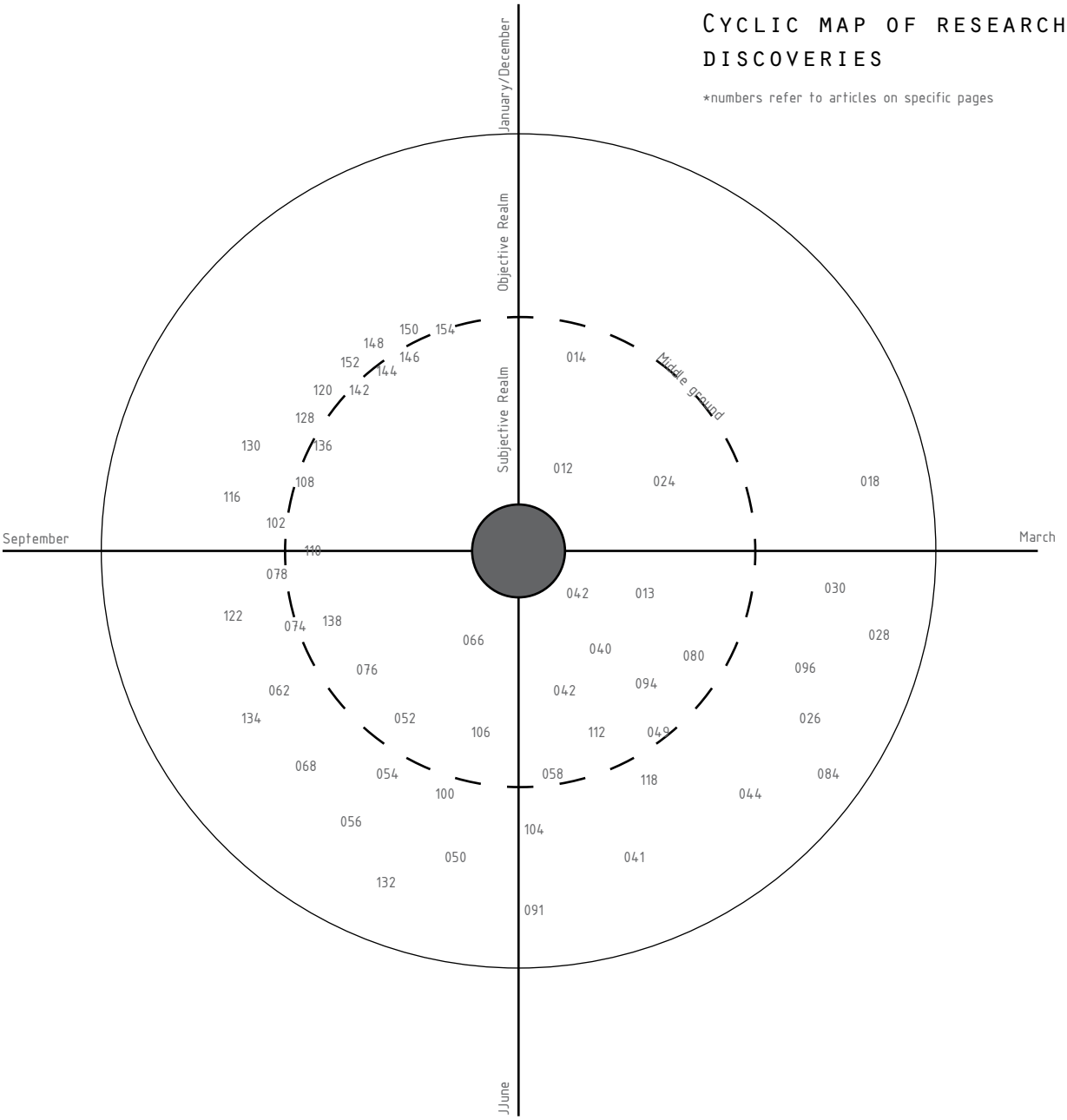
This symbol indicates that an article express ideas of objectivity

This symbol indicates that an article express ideas of both realms

Use this symbol to connect articles with similar ideas eg. p. 34

Cyclic map of research discoveries

*numbers refer to articles on specific pages



Subjective – relating to the self, mental projections and the subconcious world

Objective – exterior to the self, context and the concious world

The middle ground – the simultaneous experience of subjectivity/objectivity

ABSTRACT

The investigations in this dissertation oscillate between objective and subjective notions in order to engage with reflective questioning. Mental projections are superimposed onto reality when the act of architecture takes place. It is my belief that space is the synthesis of subject and object. It is the middle ground we search for.

The marginal context of the Pretoria West inhabits the middle ground through a paradoxical survival. A very strong experience of timelessness in the context is played off onto images and structures of time. The perception of meaning and triviality enhances this timeless nature.It is within this enigma that architecture can nurture idiosyncrasy and collectivity.

Treadmill is a haptic machine superimposed as a mental projection onto the existing silos of the Pretoria West Milling Complex along Mitchell Street. Public swimming pools become a medium through which the self is explored and create a platform for objective or unprejudiced collective interaction.

INTRODUCTION 1

The dissertation is inspired by traditions drawn from film, literature and art in both the Modern and Post Modern movements. Northern and Southern influences are combined, interpreted and synthesized into an African Urban Environment. In the contemporary culture of the spectacle, this approach aims to see realities that are free of a simulation, where nothing matters anymore. Roemer van Toorn (1998) writes that it is more fruitful to seek the unmasking of institutional values, than hide and reside in our society of the spectacle.

> *The present epoch will perhaps be above all the epoch of space. We are in the epoch of simultaneity: we are in the epoch of juxtaposition, the epoch of the near and far, of the side-by-side, of the dispersed. We are at a moment, I believe, when our experience of the world is less that of a long life developing through time than that of a network that connects points and intersects with its own skein. One could perhaps say that certain ideological conflicts animating present-day polemics oppose the pious descendants of time and the determined inhabitants of space.*
> *- Michel Foucault (1984:32)*

THE UBIQUITIOUS MACHINE

The reality of architecture as a problem solving tool is questionable. Primarily, architecture create platforms for social diaspora, by adding value to experience. Eric Owen Moss (1993:63) compares architecture to a railroad car :

> *The beauty of this machine is that sometimes it works, and sometimes it breaks. Its not a deity nor an idol. It is both an asset and a liability. The machine is not a solution. Its a solution and a problem, concurrently. The machine is tactile and not prefabricated. It does not make the world better. It makes the world worse and better.*

Problems are not neccessarily quantifiable. Moss argues that there is measure, measure can't measure. Understanding the condition of a problem is the hallmark to problem solving. Yet we keep on using and re-using architectural language which is dead.

Architecture is the ubiquitious machine. The omnipresent subconciousness of society, producing and reducing meaning. Architecture can provide the middle ground between order/measure and the infinite; between surface and the depth.

Architecture is inherently a problem and an opportunity, yet it can't solve itself within itself. It is primarily founded on external influences. I do not aim to solve non-architectural problems. The aim is to make an inquiry into the nature of architecture through reflective questioning.

THEORETICAL TOOLS

This study does not aim to construct a narrative, but rather use the ideas/concepts stemming from narratology and grounding these notions against physical parameters. Events, memory and time are thoroughly grounded in the nature of narratology. These notions bring about a thought process that concerns space and the impact spatiality has on humans. However independent these implications might be from space, it allows the exploration of multi dimensionality within space, stretching from history, through the present towards the future. At the other end of the scale, techne, or the art of making, questions and represents the multi-dimensionality of events, memory and time. These tools are referred to as plot mechanics.

SUBJECT AND OBJECT

A study in process explores design as a complex, non-linear collaborative process of reflective questioning, aiming towards intellectually grounded and argumentative design inquiries. The position of the architect in relation to building or design is questioned. It is a collision between thought and space, subject and object.

Objectivities concern notions exterior to the self such as a context and the concious world, while subjectivities address the self, mental projections and the subconcious realm.

More specifically in the project, the object refers to the Pretoria West Mill while subject alludes to interventions made. The experience of the two realms become the middle ground.

Narratogoly and techné are the primary concepts used to document the collision. Where narratology explores dimensionality, techné questions dimensionality. In this process I am soliciting a relativist ideology where the construction of understanding and meaning is produced and reproduced.

As the first spectator of a design, the architect should engage in reflective questioning. Is it possible to be objectified by space? Outcomes of any project continuously change and are updated. The collision of the subject and object creates a middle ground.

Architecture arrives in between subject and object. It is the search for the middle ground. The manifestation of ideas and concepts are subjected to a void, enclosed by qualities of tectonic expressions, giving meaning to the ideas, culture and context. As the middle ground, architecture does not exist in a singular condition. It is an ever shifting ideal, constantly producing and reproducing meaning. The nature of subject and object is not bound to scale, it perpetually dwells between intangible and tangible qualities; between mind and matter; between soul and the senses.

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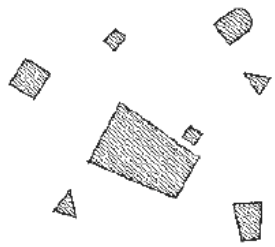
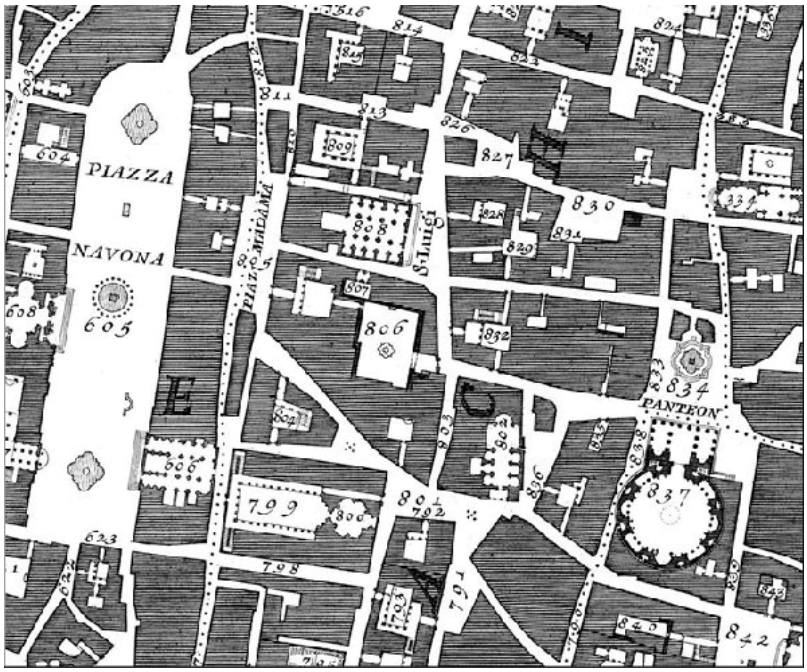
Medieval city
figure-ground plan



Contemporary suburb
figure-ground plan

_1.1 Figure Ground studies indicating the difference between space as object and building as object.



_1.2 Nolli Map : The nolli map of Rome indicates how buildings shape the space in between buildings. This is in stark contrast with suburban buildings, which are freestanding objects in space. The proximity between buildings generates the subjective/implied space and may transform or objectify the in between space.

The process of adapting existing structures may be defined as an oscillation between subject and object. On first impression a structure could be understood as an object in space. Mental projections applied to the object changes the nature of the structure. Through a series of adaptations, the mental projections grow and may also be objectified by the original object.

Tschumi (1996:123) argues that bodies may violate space through their intrusion into the controlled order of architecture. Bodies carve unexpected spaces, through fluid and erratic motions. However, we may rightly question the reverse condition : Can space violate bodies? The violence inflicted by narrow corridors on large crowds could perhaps objectify people.

Reprogramming space requires an investigation into the nature of subject and object. The continuous reproduction of meaning shifts between these poles. It is a matter of perpetual reinterpretation of space. The mental projections include ideas of memory, imagination, time, emotion, meaning and meaninglessness. This type of inception is spliced with process. It feeds of the continuity of life and continuously sculpts thought. All of a sudden, four-dimensional space seems small.

The layered hypermesh [see fig 1.3] is an exploration of the concept of subject/object and reinterpretation. The drawing was conceived between Ilze Mari Wessels and the author through a series of exchanges. The intent was to create a layered understanding of an ascent through staircases. The process solicits a continous reinterpretaion of the drawing as it changes. The parameters include :

1. Change orientation of drawing
2. Activate edges of drawing
3. Do not feel the need to complete the drawing.

The exploration morphed into more than just staircases, exploring the extraction of motions and flow, fluid movements, intersections, stairs, roads, paths, and the ascent of the imagination through roots of reading - especially books.

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_1.3 Layered Hypermesh

INVESTING IN PUBLIC CULTURE

The project is deeply rooted in civic society and public life. Architecture has the ability to invest in public society through common means, enabling people to relate to personal and collective memory and imagination.

Investing in public life while re-appropriating industrial space presents an opportunity to celebrate industrial heritage. Contextualizing this narrative in the third industrial revolution questions the dying industrial programmes of Pretoria West while signifying the start of a new era. Finally, the project solicits an exploration in vertical public space and poolside culture through acts of memory and imagination.

PROBLEMS AND AIMS

Adaptive re-use is a trivial term. The way architecture blindly emposes itself onto existing structures is often superficial while the process of engagement is often static. The aim is use a hermeneutic approach to reproggramming space. This concerns an interpretation based approach between subject and object.

The aim is to create a reinterpretation of the silos which is both meaningful and meaningless. The programme aims to create interpretational based spatiality for the individual and public by augmenting the current conditions of the context. Thus connecting people with their context in terms of time/timelessness; memory and imagination; meaning and meaninglessness.

The client : Parks and Recreation/Civic Society

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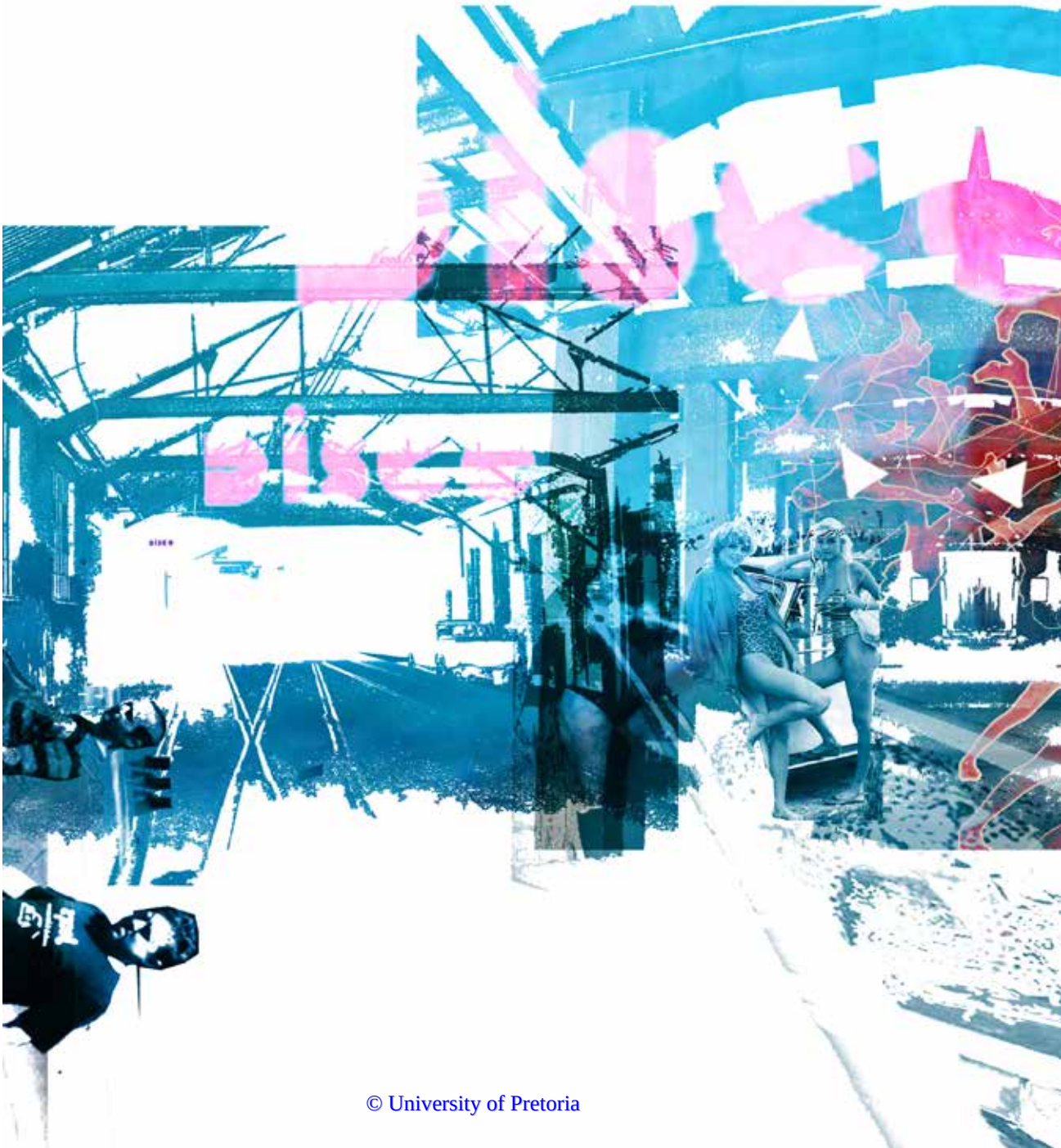
2

HARDBOILED WONDERLAND

*Please note - this is a summary of Appendix A : Hardboiled Wonderland
- The Hardboiled Wonderland book is the full contextual study with the spatial development, based on Raoul Bunschuton's book *Urban Flotsam*.

The context of Hardboiled Wonderland can be understood objectively as a run down industria, covered with hard barriers and tough physical conditions. Subjectively the context slowly reveals a wonderland in the form of an arcadian dreamscape. Much like Poliphilio's dreamworld, this place of uncertainty relies strongly on exploration and discovery.



_2.1 Poliphilio's arcadian dreamscape, reinterpreted within Pretoria West Industria. The montage was created with pictures taken on site.

THE INDUSTRIAL WASTELAND

Pretoria west is located 2km's west of Church Square in the Pretoria Central Business District (CBD). The neighbourhood is part of the 1892 planned western extension of the city and was aimed at middle and working class housing. The developing steel industry in Pretoria in 1930 industrialized the southern boundaries of Pretoria west due to its proximity to the railway. The small town character stands in contrast to the monumental industrial structures in the neighbourhood.

The psyche of Pretoria West Industria is also that of the Wasteland. T.S. Eliot's modernist poem, *The Waste Land* [1922] has striking similarities to the abondoned Industrial landscape of Pretoria West. The most resilient resemblance is that of time.

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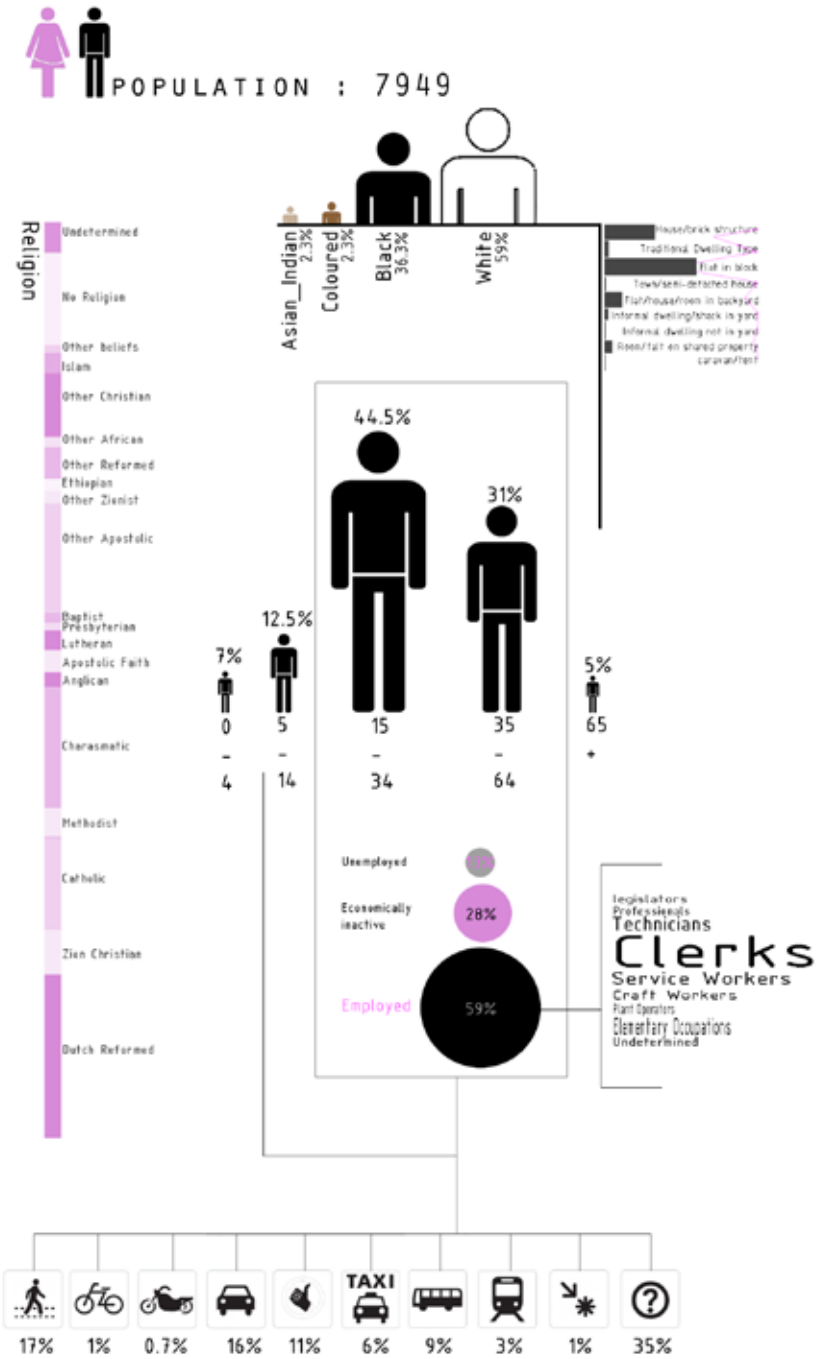
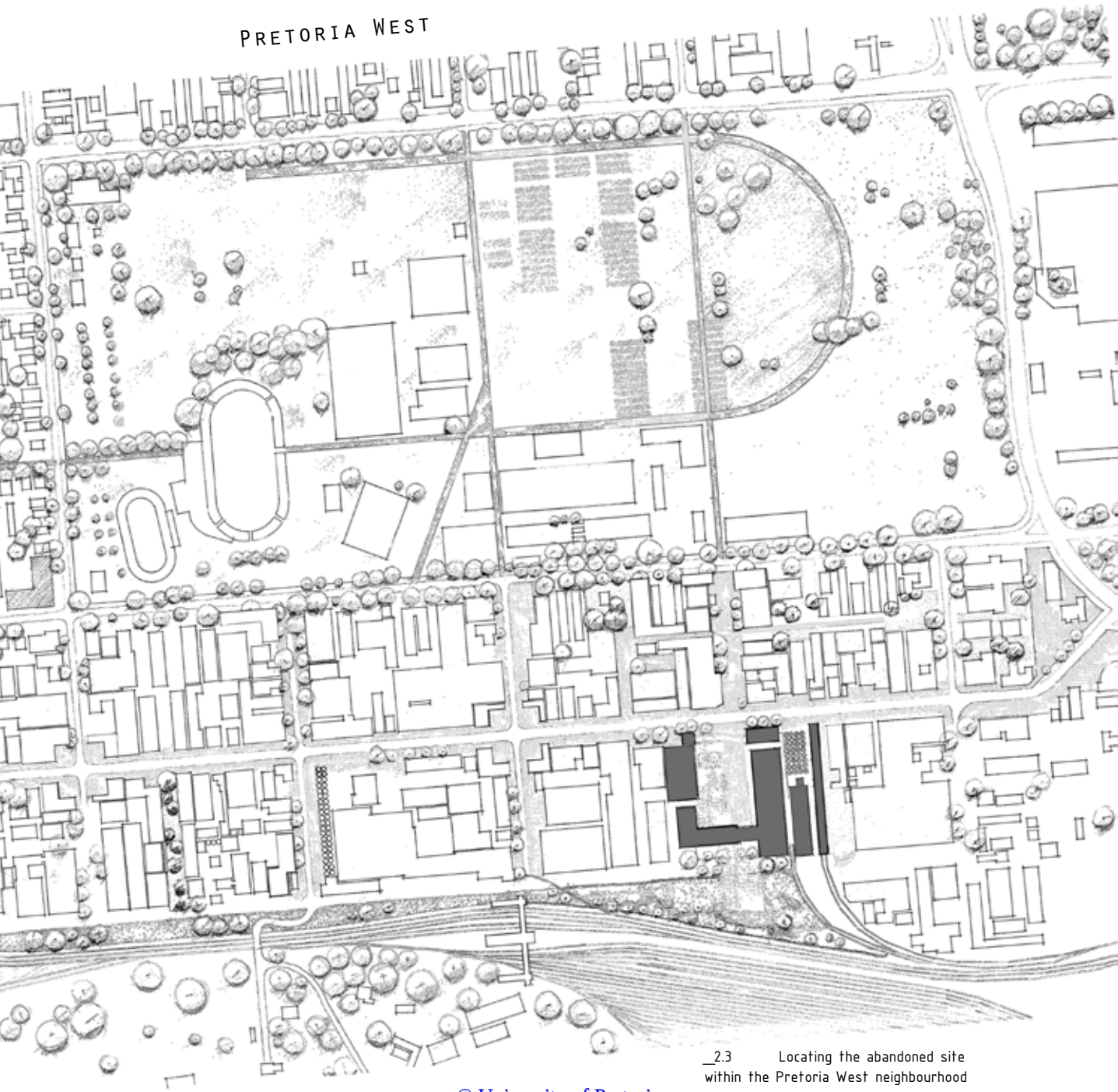
URBAN GRAIN STUDIES

DEMOGRAPHIC STUDIES

Who lives in Pretoria West?





_2.3 Locating the abandoned site within the Pretoria West neighbourhood

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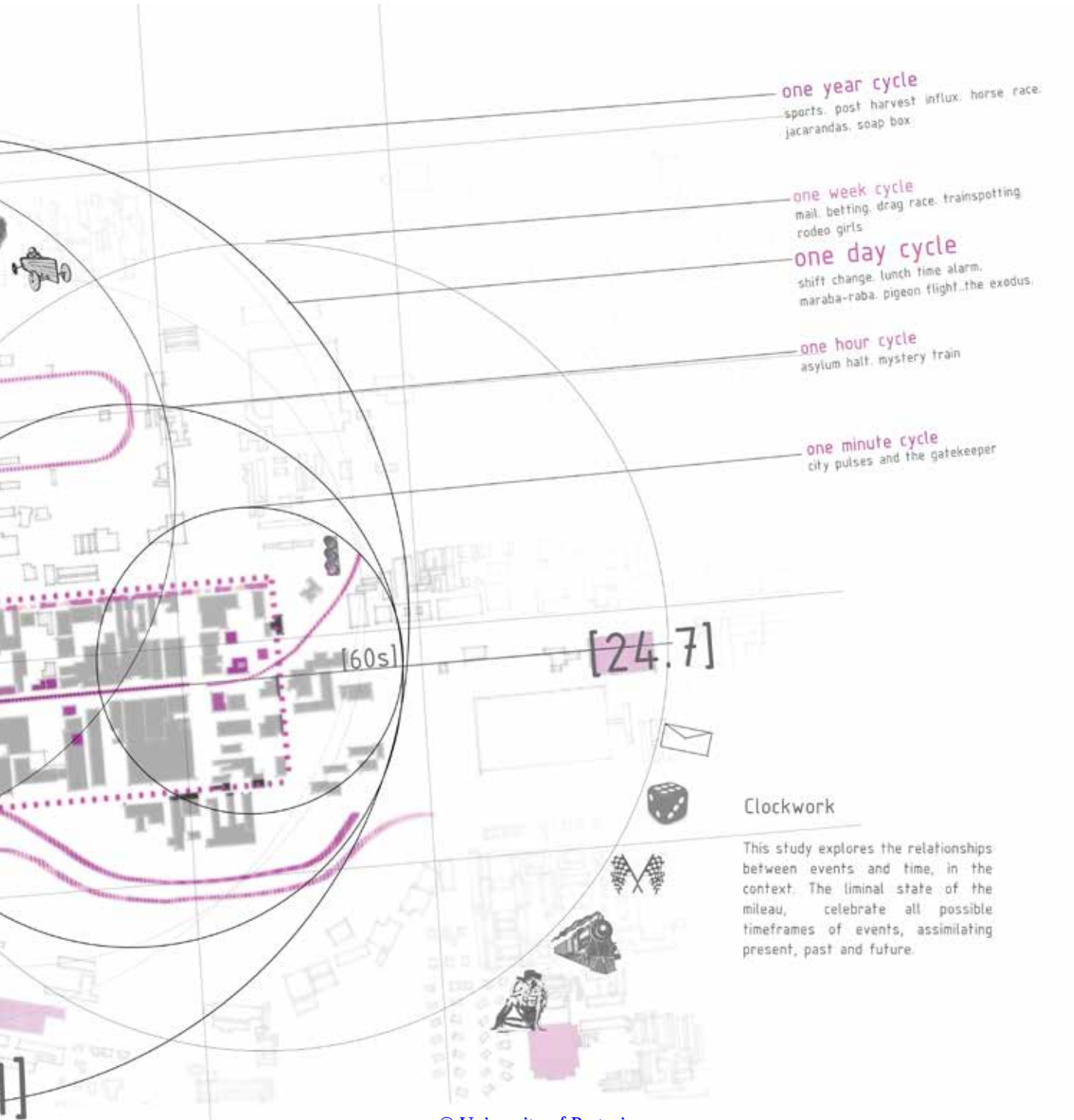
CLOCKWORK

This study explores the relationships between events and time in the context. Occurences are mapped on different timeframes and assimilate the present past and future

Notable everyday events include the Moraba-raba game played during lunch hours by factory workers; the daily exodus of city and street life towards the suburbs, leaving Mitchell Street ghostly at night and the ritualised feeding of pigeons due to grain deliveries.



Clockwork

This study explores the relationships between events and time, in the context. The liminal state of the mileau, celebrate all possible timeframes of events, assimilating present, past and future.

AUGMENTED CLOCKWORK

The events are used as a platform for spatial development of the context. Designing spaces for the everyday occurences augments the events and accelerates the current condition within the context. Three proposed developments include : Moraba Square, Asylum Park and the Racecourse Promenade.

__2.4 Moraba-raba game played at night in the square

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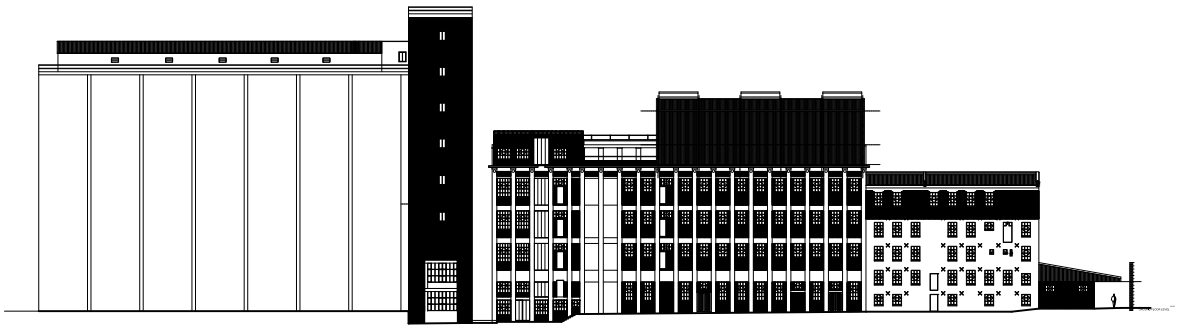
_2.5 Moraba square

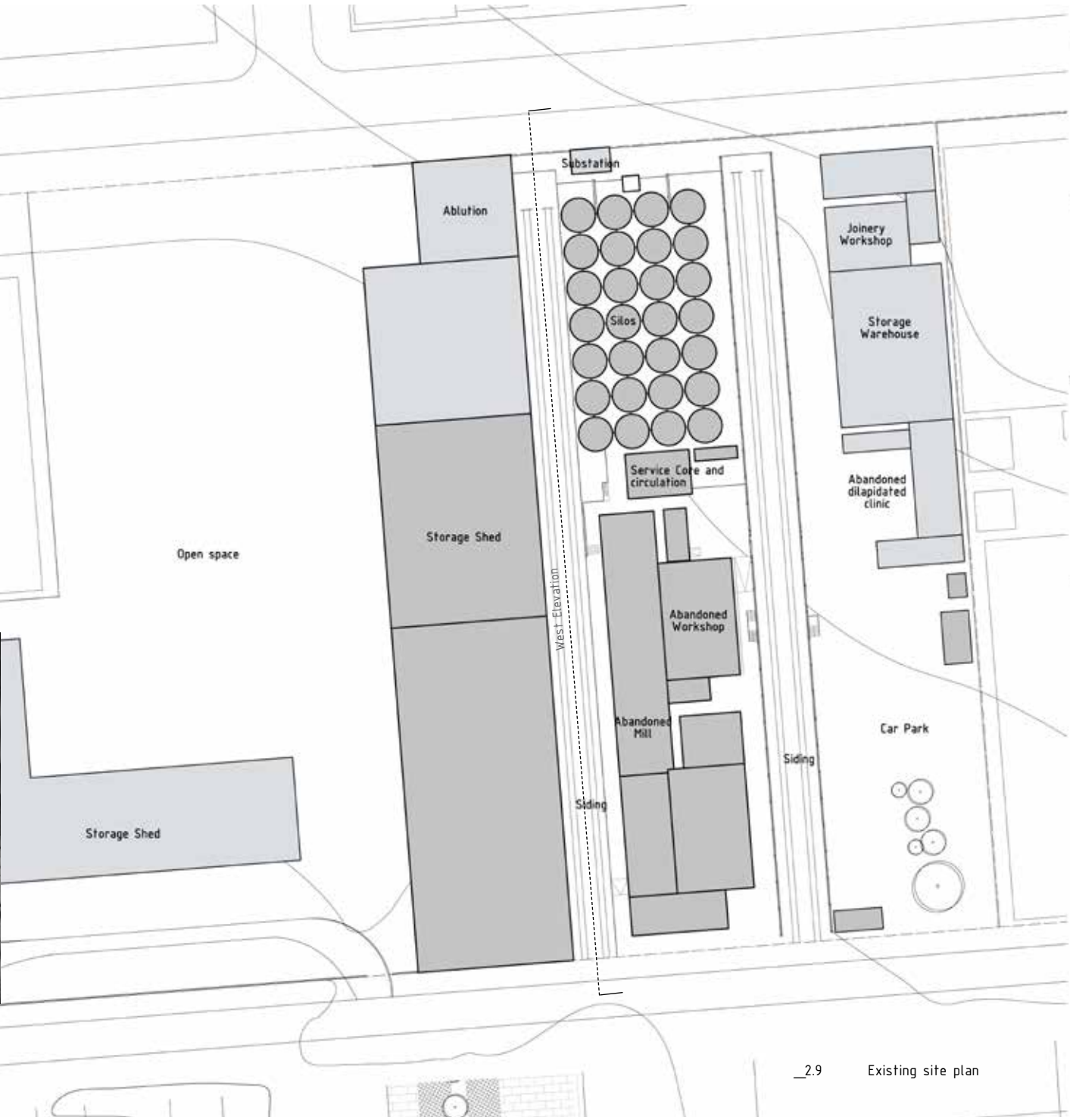
_2.6 Asylum Park

_2.7 Racecourse Promenade

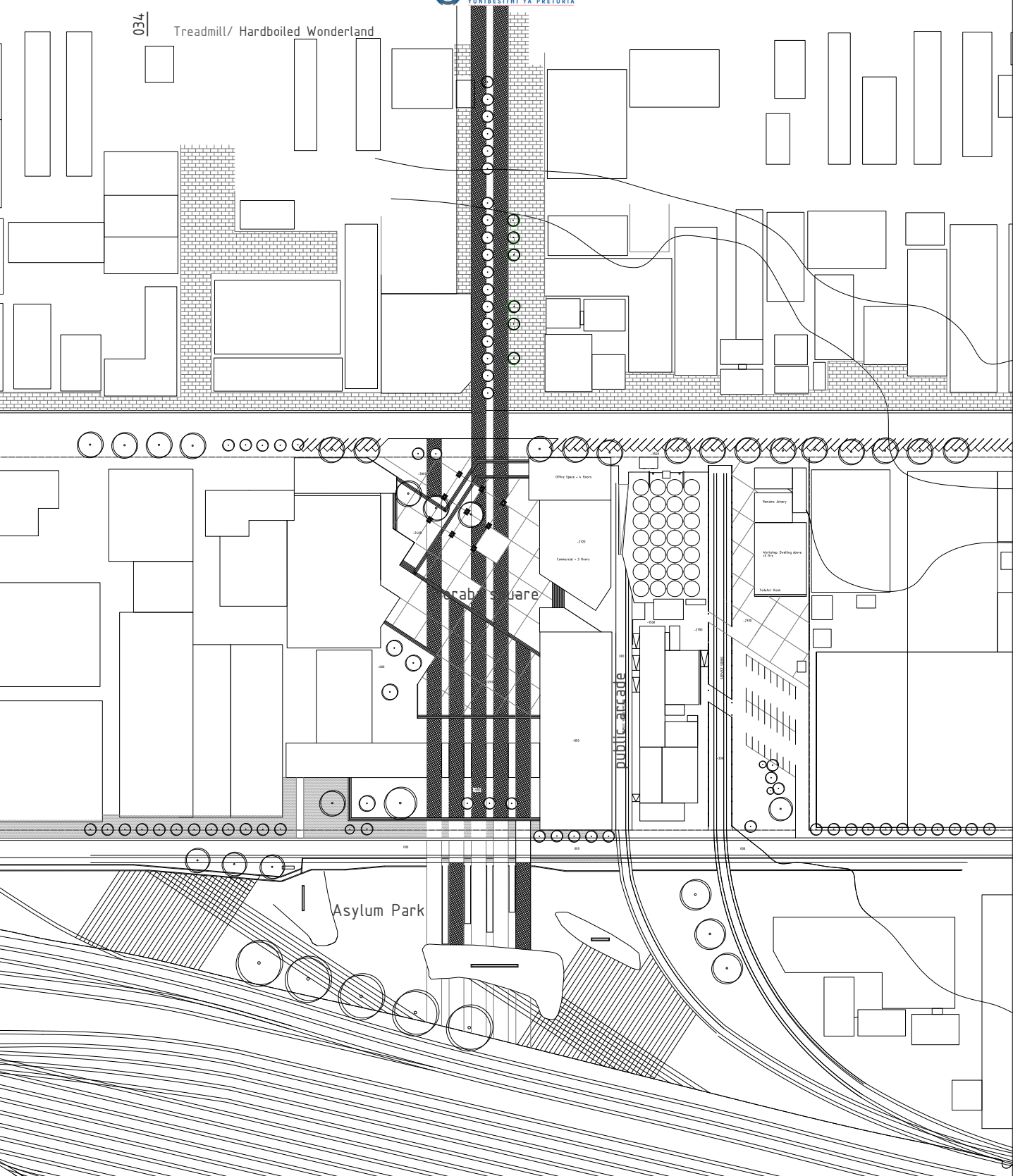


WEST ELEVATION

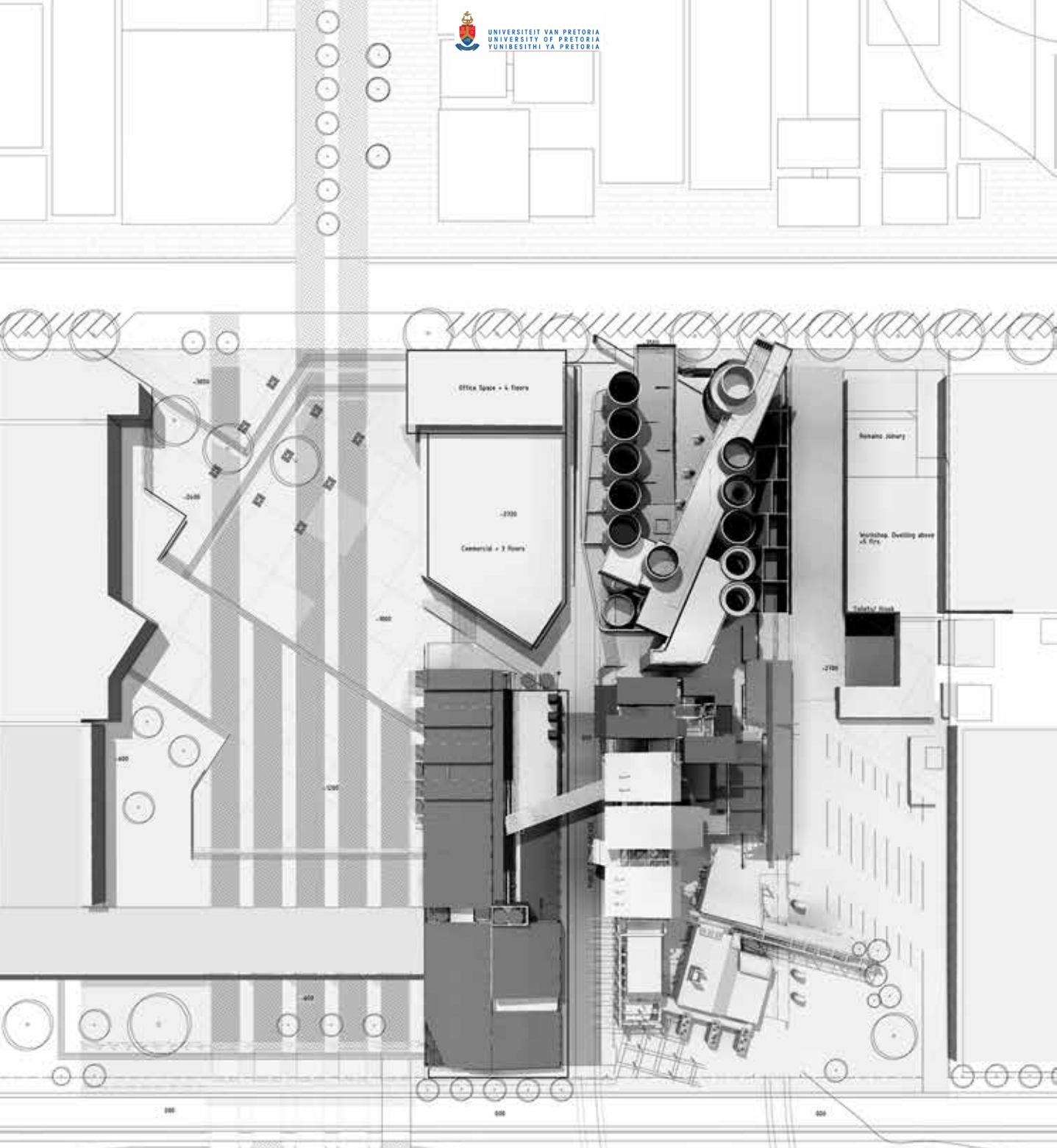
__2.8 Inside the mill and on top, looking towards Pretoria City



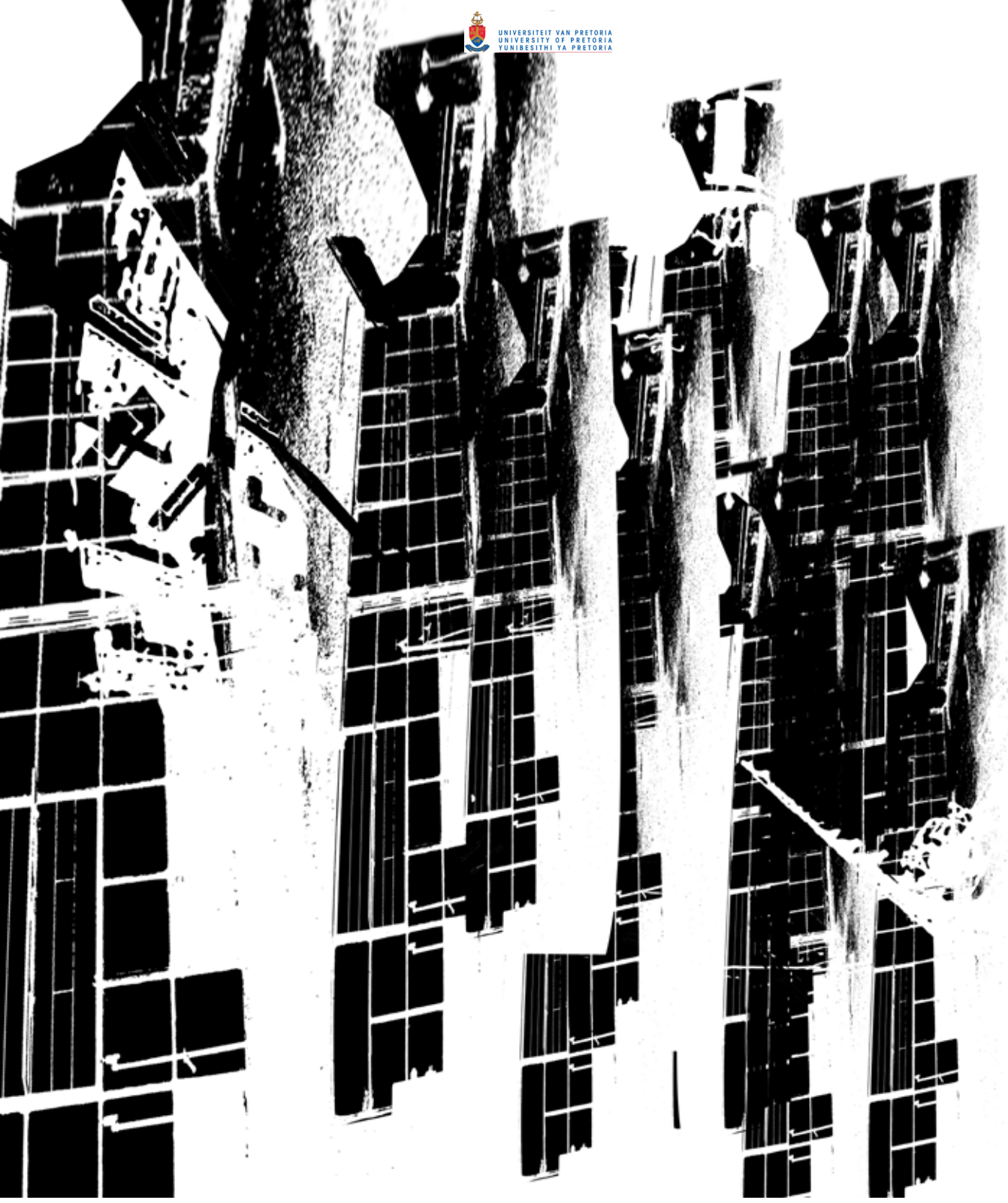
_2.9 Existing site plan



2.10 Proposed spatial development plan



_2.11 Proposed site plan



__3.1 the junoesque appearance of the mill windows.

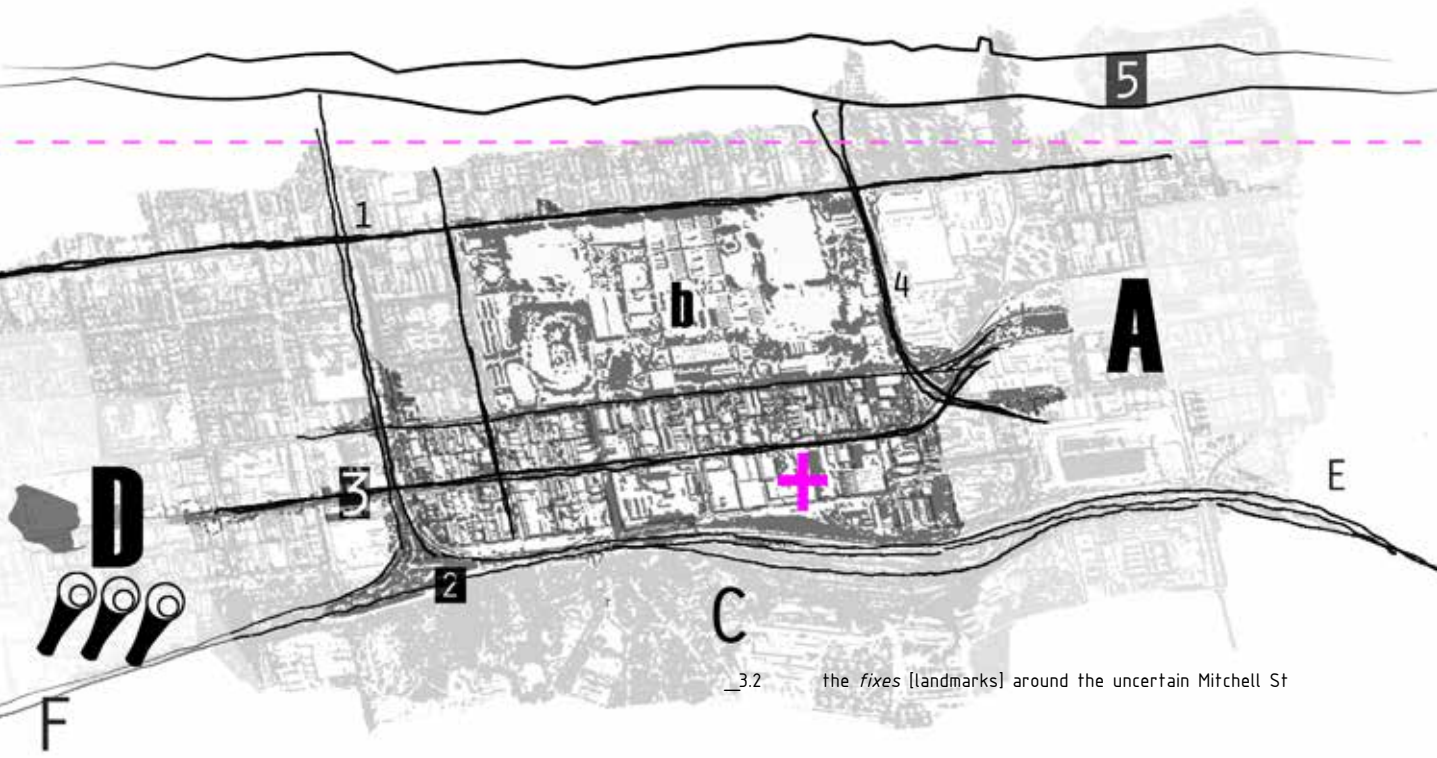
3

MARGINAL TERRITORY

Situated on the edge of Pretoria CBD, Mitchell Street is a space of transition, a marginal territory between the CBD and the Western suburbs. The forgotten industrial structures in the context have little contemporary or historical importance. The layering of non-history and mystery renders the context and the street very much a place of uncertainty. It is doubtful place, lending itself to failing industry, consumer recreation and to timeless urban activity. With many landmarks surrounding the context Mitchell Street appeals to marginal territory, a place almost devoid of history and a future. The marginality arises due to the sensation of timelessness in the context, and the ruins of mass production.

A : Pretoria CBD
B : Pretoria Showgrounds
C : Weskoppies Mental Hospital and Military Grounds
D : Iscor Steel Works and Pretoria West Power Station
F : Towards Voortrekker Monument and Southern Suburbs

1 : Pretoria West Residential
2 : Railway lines
3 : Mitchell Street
4 : Police grounds
5: Magaliesberg horizon to the North



_3.2 the *fixes* [landmarks] around the uncertain Mitchell St

_3.3 Montage of Mitchell Street

TIME IN THE WASTELAND

The experience of time in Pretoria West Industria denotes the fragmentary sense of time, central to the disintegrating modern world of Eliot's poem. Inhabitants of both the poem and Pretoria West live entirely in the present, dimly aware of their cultural heritage and indifferent to the future. John Saunders (1988:32) explains that as heirs to the scientific revolutions of the nineteenth century, the inhabitants grow ignorant of time which transcends human measurement.

April is the cruellest month, breeding 1
Lilacs out of the dead land, mixing 2
Memory and desire, stirring 3
Dull roots with spring rain. 4
.....
shantih shantih shantih 430

TS.Eliot (1922)

The five part poem starts with a consideration of cyclic time, and ends with an exploration of religious or transcendental time, with the words *shantih shantih shantih,* meaning peace. Through the power of memory, seasons are set in reverse in the *Waste Land. Cruellest,* describing spring, suggest that a disharmony of seasons exist. This moves into a previous summer, and a long lost childhood winter. According to John Saunders (1988:34), the poem suggests that modern man is dislocated from the rhythm of the seasonal year. Yet, this is a symptom of a more significant spiritual dislocation of which man is unaware. Through the image of the ageless Cumaenean Sybil hanging in a cage, Eliot encapsulates the dislocation of present, past and future time – a cultural plight of modern man (1988:34).

A Game of Chess introduces time passing rituals in the *Waste Land*. Eliot (1922) creates a picture of a couple stuck in a void with no purpose, in a present that is cut off from their past and future (1988:35). In *The Fire Sermon* the mythical past is juxtaposed with the present. Referring to the ancient Greek city of Thebes, Dante and Baudelaire, he questions the possiblity of other wastelands. In *Death by Water*, a symbolic drowning sees a modern Phoenician Sailor, through a series of youthful memories (1988:36). Finally in *What the Thunder Said*, the scene is set in the spiritual waste land, with Images of intolerable heat, while waiting for rain. In the metaphorical drought stricken landscape, rain would bring spiritual salvation. Suanders (1988:44) explains that redemption and peace comes with the sound of water. *Shantih*, or *Peace which passeth understands* alludes to redemption beyond time (1988:44).

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RUINS OF FUNCTIONALISM AND MASS PRODUCTION

The rise of the third industrial revolution has seen industry change across the world. Markillie [2012:50] describes that it first began in Britian in the late 18th century with the mechanisation of the textile industry. Subsequently, machines to make things were built rather than crafting things by hand. The second industrial revolution began in America in the early 20th Century with the assembly line – the origin of mass production.
Markillie argues that manufacturing is now going digital and with that the third industrial revolution is gathering pace. It will allow us to make things more economically, in smaller quantities and more flexibly. It moves away from mass manufacturing and toward more individualised production, merging technology and idionsyncrasy.

The reinhabited industrial landscape of Pretoria West confirms this change in manufacturing. The ruins of mass production leaves traces of a previous era. The question remains : What are we to do with these massive structures?

_3.4 The abandoned Pretoria West Mill and Silos

DETOURNEMENT

Considering the self in the ruins of functionalism

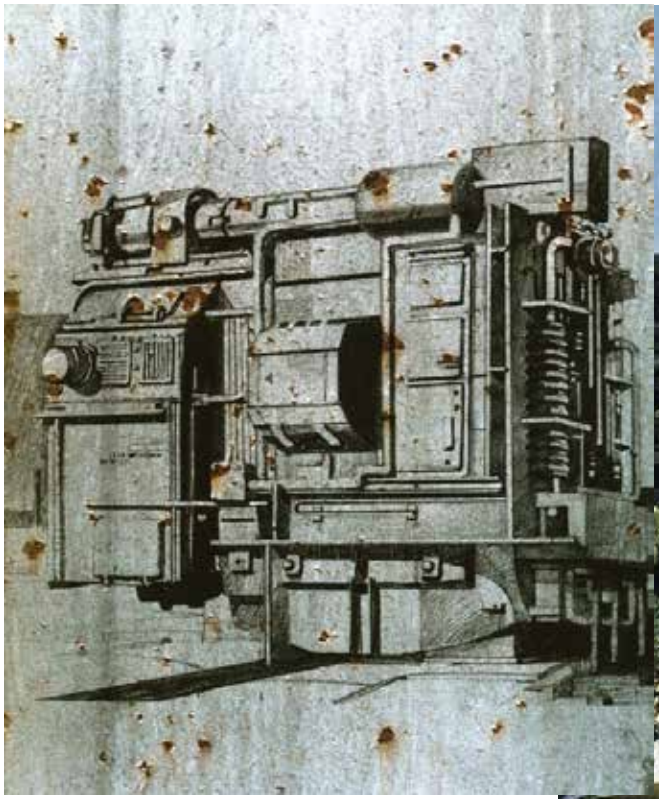
Mas Yendo (2012:3) explains that consumerism may excel at creating and gratifying transitory desires, but it has failed in embracing diversity. Heterogeneity has been suppressed in a systematic and pervasive manner especially through advertising, reducing reality into streams of images, products and activities. The automobile has progressed from luxury to necessity and to requirement in our hyper consuming culture. This is no different in the context of Mitchell St, Pretoria West. Yendo confirms that this type of hyper consumption is excessive in nature, causing a severe drain on both natural and human resources, affirming the need to establish and maintain one's social status.

The meticulous and rational control over every aspect of industrial production has indeed enabled man to function at an extremely high level of efficiency. With an increase in material wealth; however, it has created a cultural and spiritual impasse. Debord (2012:22) maintains that technology reduces one's independence and creavity, reducing man to a functional part of the collective.

Architecture is inevitably implicated in these issues, becoming a tool for rationalizing the environment, writes Yendo (2012:5). Myopic in its externalized focus, architecture is reduced to a tool of fashion, blindly imposing its will on the environment. Once reduced to the concept of the functional *machine for living in*, architecture inters man as a component of the functionalist society, rather than liberating him.

The individual must be embraced as an integral part of the composition, for architecture becomes meaningful to the extent that it supports diversity. Architecture should evoke associations, rather than dictating how space is experienced.Yendo places the emphasis on the value of poetics, achieved by embracing the qualities of contradiction, paradox and ambiguity.

The ruins of functionalism and mass production in the Wasteland of Pretoria West confirms the cultural and spiritual impasse. Not only does this affect the community, but also individual idiosyncrasy. These condition questions the relationship of the self within the community, and the unity of experience. The context beckons an evaluation of poetic experience yet the timeless nature of the milieu that holds on to the paradox and ambiguity of its experience.



_3.5 machines for living, Mas Yendo

p.050

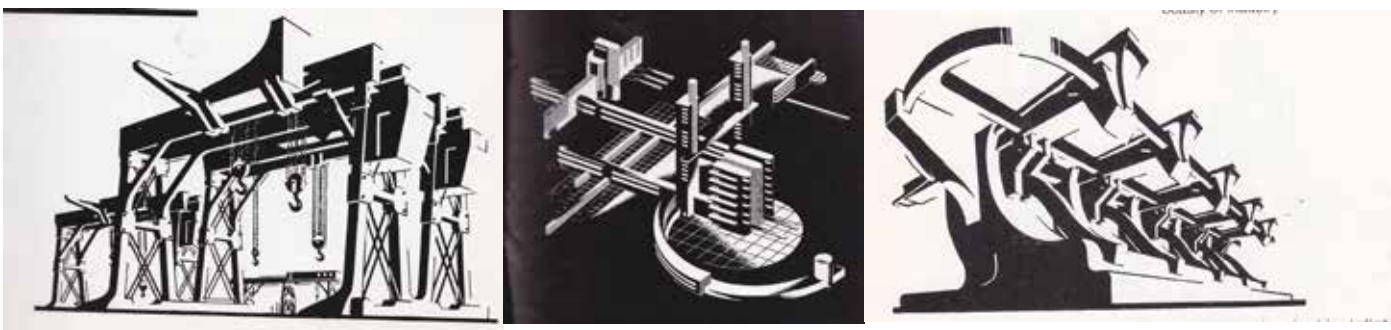
THE MILL AND THE SILOS

Beauty and form in industrial landscapes

Machinery makes no concession to surface aesthetics and derives its visual qualities from meeting strict utilitarian criteria: rivets are left exposed and moving parts are placed on the outside for ease of access and servicing. The result of this unassuming functionalism is often to produce objects of rare beauty or structures of haunting presence. If beauty is to be found in the machine-made detail, the same is true of these objects as seen in their entirety. Edwards [2008:131] states that silhouettes of industrial structures are often evocative, and the exposed frames of such structures [like gantry cranes] make them striking features in any landscape.

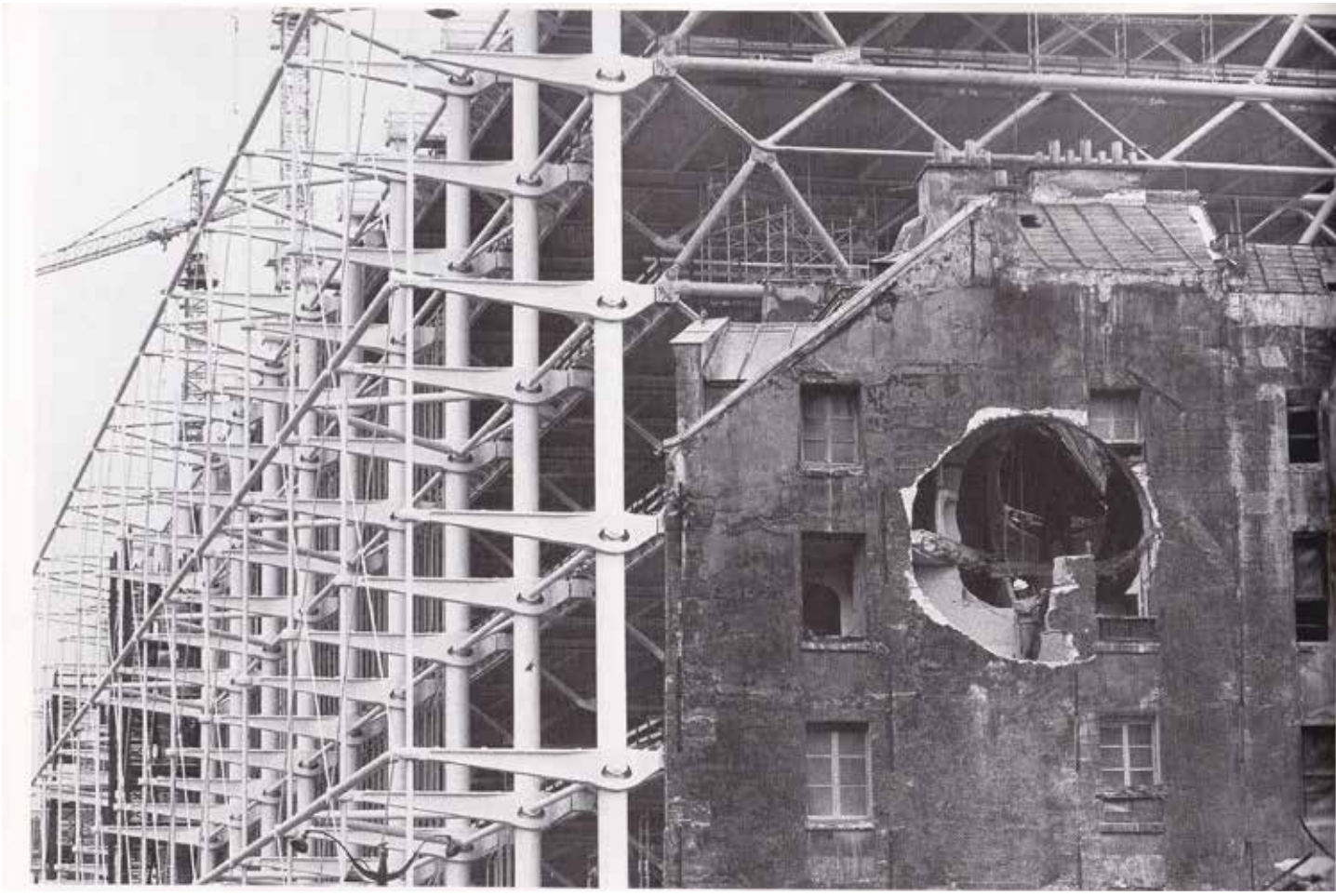
Edwards [2008:133] describes that the scene of an industrial landscape can take on the qualities of a Russian Constructivist painting as a result of the almost abstract superimposition of graphic structures and architecture.

Deconstructivism has part of its origins in the architecture of industrial areas [2008:134]. The peeling away of the façade to expose the structure, the distortions of scale and angle, and the expression of physical change or structural impermanence are qualities frequently encountered in factory areas or mechanical plant. When decay has set in, these monuments to functionalism can be romantic in the extreme.



_3.6 Chernikov's Constructivism

_3.7 Pretoria West Mill and Silos



_4.1 Conical intersect , Georges Pompidou Centre, Paris

4

A SURGICAL INTERVENTION

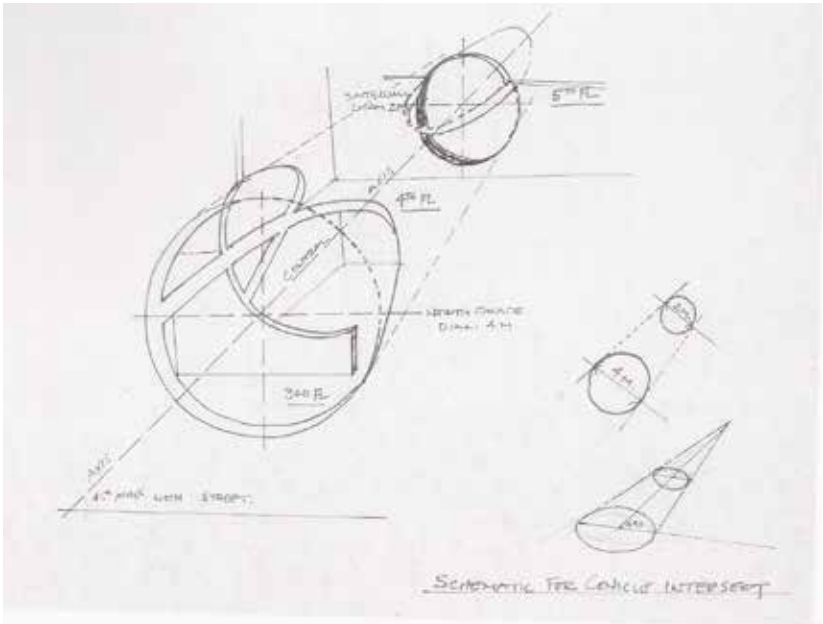
CONICAL INTERSECT

GORDON MATTA CLARK (1976) - GEORGES POMPIDOU CENTRE, PARIS.

Gordon-Matta Clark (1943 - 1978) was an American artist trained in architecture at Cornell University. His work was focused on abandoned buildings, especially in the Bronx, New York. He forced his way into buildings and started slicing away floors and walls, using a chain saw and exposing the skeleton core of structures.

The conical intersect, in Paris, was conceived as a mental projection of a large spatial cone - the large end facing downward towards rue Beaubourg, a principle Parisian street. The cone slices through two houses leaving a void that exposes the exoskeleton of the Georges Pompidou Centre. Crow (2003:95) argues that the Immaterial cone places the street spectator inside a monocular, cyclopean projection revealing unexpected patterns of Cubist complexity.

The subjective nature of the work is appealing as a layered approach to an adaption or rework of existing structures. The void is an object too, but it is conceived subjectively as a mental projection that is layered onto a physical entity. The inversion of object and subject serves as an approach to the deconstruction of the silo ensemble in Pretoria West.



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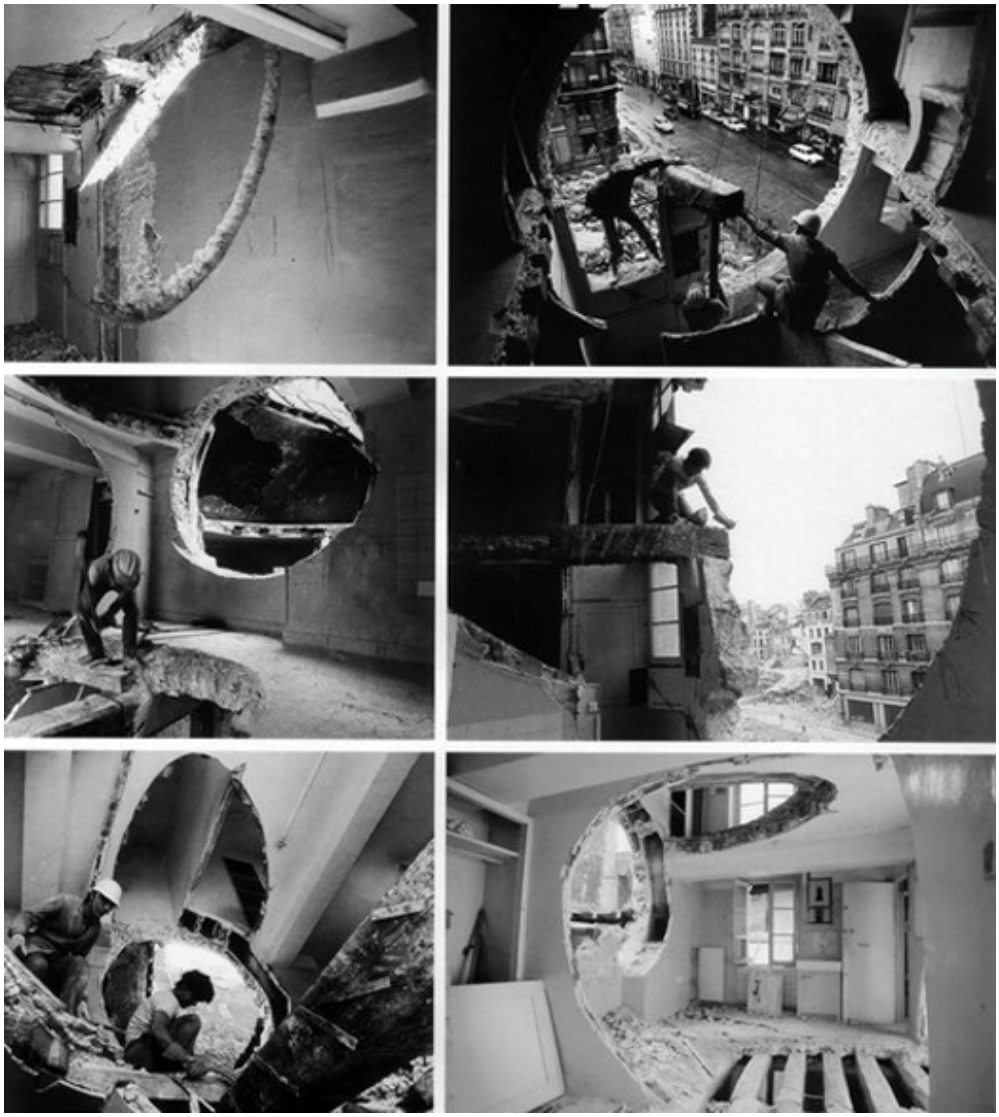
_4.2 Drawings of the conical object- the mental projecting



_4.3 Conical intersect construction

CEMENT FACTORY CONVERSION

RICARDO BOFFIL (1973) – BARCELONA, SPAIN

In 1973 Spanish architect Ricardo Boffil discovered an abandoned cement factory, part of an industrial complex outside Barcelona. Silos, underground galleries and engine rooms were transformed into his head office. Boffil (2012) states that the factory was a compendium of surrealist elements. Eight of the thirty silos were left standing after demolition works, and converted into offices, a modelling laboratory, archives, a library and a space referred to as '*the cathedral*', which is appropriated for exhibitions, concerts and lectures. The complex now stands in a garden of eucalyptus, olive and cypress trees.

> *The factory is a magic place which strange atmosphere is difficult to be perceived by a profane eye. I like the life to be perfectly programmed here, ritualised, in total contrast with my turbulent nomad life.* Ricardo Boffil (2012).

The conversion illustrates the multiple spatial and programmatic opportunities that industrial factories offer. The colossal scale of these structures carry with them an ethereal and unearthly quality of space rarely found in newly constructed buildings. The manner by which the existing structures are cut and spliced is akin to that of Matta Clark's work, and was done in the same decade. Finally, this type of factory metamorphosis can be seen across the world, from the Tate Modern or Battersea Park in London, to the Biscuit Mill in Cape Town – signifying the change of the Third Industrial Revolution.

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_4.4 Construction , interior and plan of the Cement Factory and silos

THERMAL BATHS

PETER ZUMTHOR (1996) - VALS, ZWITSERLAND

The building is conceived as a monolithic block, cut from the mountain, with carved spaces within the block. The connection of the carved spaces in between the blocks is referred to the *Meander* by Zumthor (2012) :

> *The meander, as we call it, is a designed negative space between the blocks, a space that connects everything as it flows throughout the entire building, creating a peacefully pulsating rhythm. Moving around this space means making discoveries. You are walking as if in the woods. Everyone there is looking for a path of their own.*

The mystic qualities of the recreated stone chambers renders a highly sensual spaces. Projecting focal light augments the shadows. Additionally, light reflections on the water or rays cut through steam saturated air, creating a playful sense of light. A feeling of warm stones and naked skin together with the ritual of bathing makes for a highly evocative experience of water, light and space.

The experiential journey or meander between chambers is yet another differentiation of the cutting process previously discussed. Important observations include the use of light and water in order to create spaces seemingly carved by water.

p.060

_4.5 The main indoor pool carved from the Monolithic Structure

MUSEUM OF LITERATURE

TADAO ANDO (1989) - HIMEJI, JAPAN

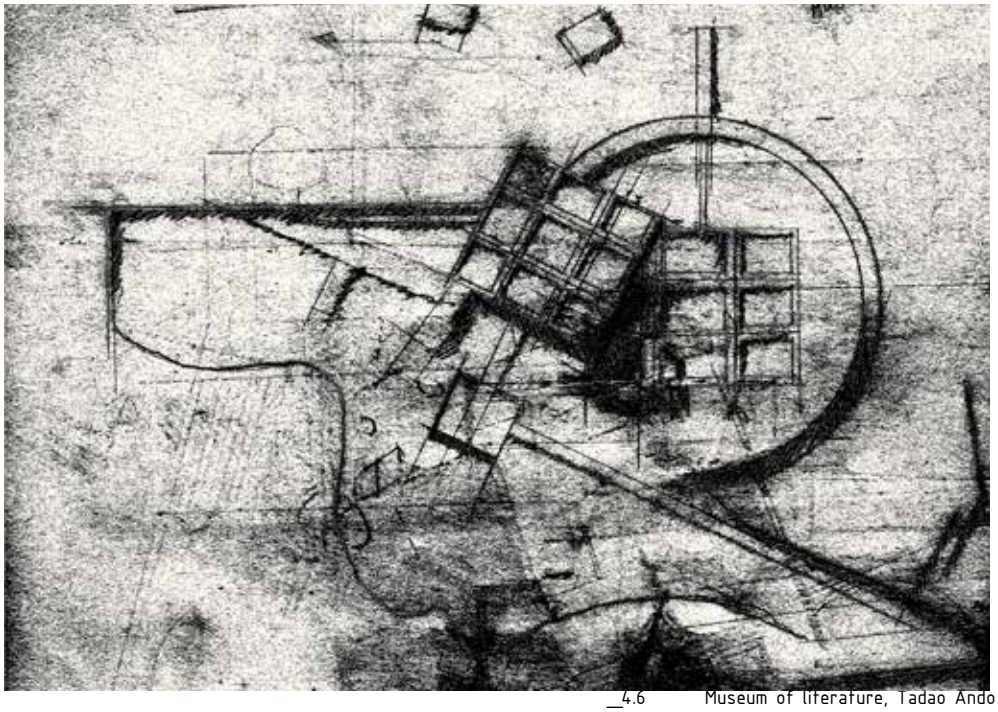
The site is in the centre of Himeji City, 500 metres to the northwest of Himeji Castle, at the foot of the hill known as Otokoyama. It is surrounded by a quiet residential district. Ando (1992:53) states that the architecture reflects the topographical relationship of the context while the museum harmonises with the Himeji Castle. Three floors and a basement accommodate exhibition spaces and a lecture hall for local writers. The building stands in a garden with a man-made pond.

The approach towards the building is significant. A long ramp starts off far away from the structure and floats above the pond. The approach offers views of both the museum and the Castle in the background. Ando argues that an approach is a preparation of oneself within a context before entering a building.

Furthermore the structure consists of cubes juxtaposed onto a wide cylinder. The ramps also circulate the cylinder, leading the visitors into a dynamic spatial experience.

It is important to notice how architectural shapes may also cut into each other to turn a static composition or experience of space into a dynamic one. However, this architectural tool works in conjunction with a planned journey in order to create a layered experience.

p.116



_4.6 Museum of literature, Tadao Ando

_4.7 The circular ramp with the Castle in the background

_4.8 Ramp across the pond

THE ARTISTRY OF TECTONICS

LeCuyer [2001:20] proposes that it is through materiality that we stimulate a reintegration of craft in the building process. This does not propose a revival of arts and crafts and does not reject materials nor the processes of industrialised building production in favour of the handmade. It is through the comprehension of contemporary materials and construction processes that a renewed notion of craftsmanship arises [2001:20]. In the article *Radical Tectonics* LeCuyer describes that craft emerges from the use of standard construction systems in a layered, unorthodox manner. It therefore celebrates the construction process by revealing the various layers of the processes and through tactful play of repetition and variation. The emphasis placed on the composition of tectonics and its materiality signifies the desire of the craftsman to create meaningful tectonic structures. The 'radically tectonic' finds its expression in the physical and material qualities of construction. The frame and skin of structures become highly articulated. This signifies the topographical qualities of tectonic structures and enhances the bodily experience in space. An architect models space as a sculptor models clay [Zevi, 1948:192].

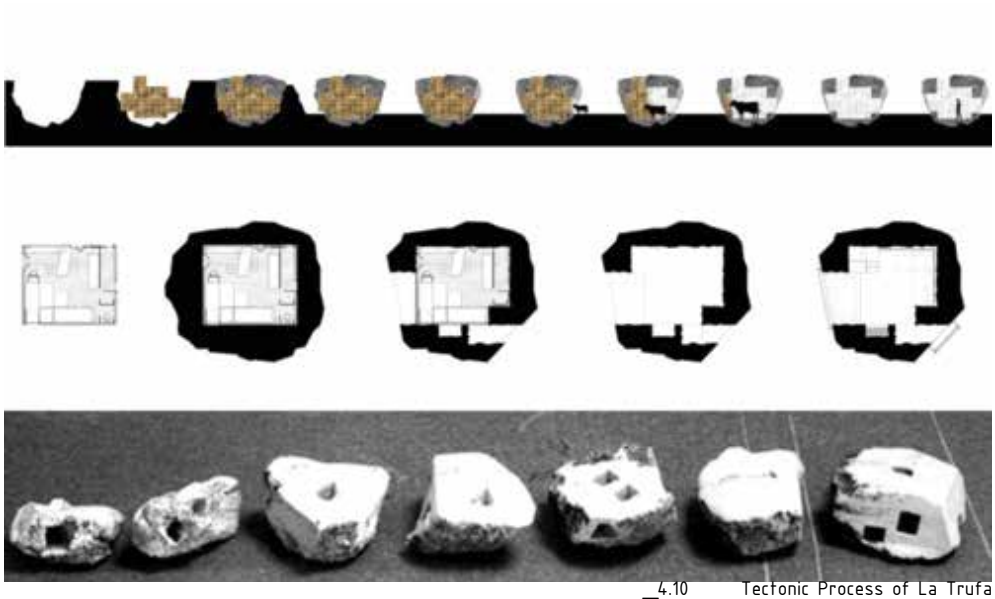
The reintegration of craft and sculpture with industry allows architects to exceed necessity and mere technical imperatives of construction in order to gain an expressive quality, signifying rendition [LeCuyer, 2001:21]. This mutation in construction processes divorces itself from Modernist abstraction and Post Modernist symbolism. Instead it turns its attention to construction itself, inspired by craft, context and culture. *This typology of construction aspires to be local, yet avoids being parochial* [LeCuyer 2001:21]. The process concerns itself with context and climate and, to a certain extent, makes use of vernacular resources and skills. Yet it embraces the industrial building system as a source of its expression.

_4.9 Craft, materiality and rendition of tectonics. EMBT Spanish Pavillion. Shanghai World Expo.2010

POETICS OF TECTONICS

Bruno Zevi [1948:216] mentions that to enclose a space is the objective of a building. Understanding space as construct suggests that the frame, or skin, merely wraps the designed space; it contains the construct of space. Tectonics reveal and conceal specific intentions created within the space. The tectonics, materiality and structure express a very specific meaning of the space and translate the language of the embodied space. Without the tectonics giving rise to meaning, the spatial qualities of a structure become generic and meaningless. It is therefore of utmost importance that both the properties of tectonics and the desire to create a specific intention is clearly understood. The radical expression given by tectonics is informed by their properties and the perceptions associated with materials and typologies in various cultures and contexts.

LeCuyer [2001:18] explains that the process of creating space may be deconstructed by focussing on tectonics. Physically building a void denotes the ideology of space as construct, where the skin or frame contains the void. This materialises the void, or air, giving it a type of physicality; turning the intangible into the tangible. This signifies an implied meaning to space. The construction process and the craftsmanship of tectonics are integrated with spatial construct. "La Trufa", designed by Antonio Garcia-Abril, resembles this deconstructed tectonic process. Garcia-Abril [2010] writes : *La Trufa is a piece of nature, built with earth, full of air*. The simple construction process involved, the digging of a hole, piling the removed topsoil up on the perimeter of the hole, building the void of the design with hay stacks in the hole and solidifying the void by flooding the spaces in-between the 'built air' and the earth with concrete. Garcia-Abril [2010] states that the poured concrete mass wrapped the air, and protected itself by the earth, which in return gave it its texture, form and colour. As time passed, cuts were made into the concrete and the haystacks removed poetically, by Paulina, the grazing calf. A soulful material and space was created by the promise of liquid stone and the exchange of material properties.



_4.10 Tectonic Process of La Trufa

_4.11 Photographic study of La trufa

5

PLOT MECHANICS

We all have memories to remind ourselves who we are. I am no different.

NOSTALGIA IN A BRICK

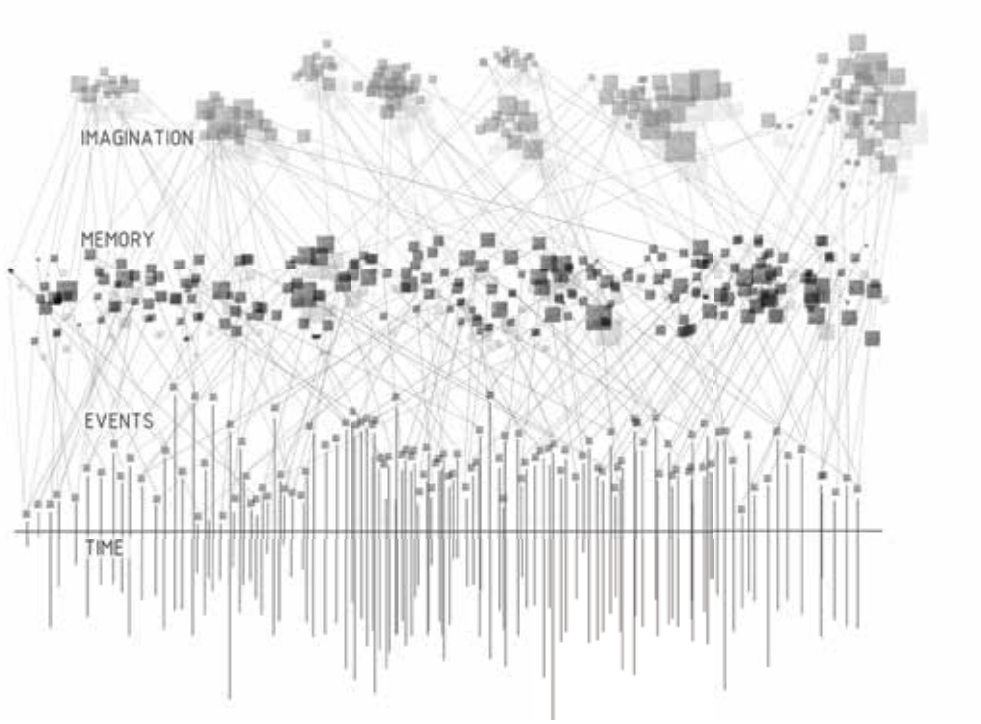
"Memory, what a strange thing it is", writes Gaston Bachelard [1994:16]. The construct of memory manifests itself as a common notion in post modern thinking. Memory does not record concrete duration. We can only think of it in a line of abstract time that is deprived of all thickness. The Wasteland gives rise to the decomposition of memory. The way memory is understood and relived is particularly important in this context. The demise of time in the context solicits the validity of memory. However, to localize memory in time is a matter for the biographer, it corresponds to a sort of external history. Hermeneutics however, is more profound than biography and must determine the centers of fate by ridding history of its conductive temporal tissue. Memory in this context should not try to string together and memorialize past events, but rather signify intimacy. Localization in the spaces of our intimacy is more urgent than the determination of dates.

Annie Murphy Paul [2012:42] argues that by outsourcing our memory we are changing our cognitive habits. We are flooded with information and we are increasingly relying on search engines and smart phones to remember for us. Paul [2012:43] observes that we have a growing expectation of locating information down the line, which leads us to form a memory not of the fact itself but of where we'll be able to find it. In the film *Memento*, the mechanics of memory are explored. Through the common theme of anterograde amnesia, Nolan [2000] portrays the way we construct our own realities by means of memory and the lack thereof. The constant referral to a source of memory in the film describes the notion Annie Murphy Paul explains - a type of transactive memory. In the film the protagonist asks : *How can I heal if I can't feel time?* Strong notions of grief and self-deception present themselves. With no new memory, there is no time, and subsequently no healing. Between memory and forgetfulness the construction of a reality occurs. This suggests the work of the imagination. Bachelard [1994:17] suggests that we are in unity of imagination and memory, in the functional composite of imagination and memory. We are a product of our own memory and imagination, and these cognitive processes should not be interpreted in isolation. Imagination can be interpreted as a derivative or crystallization of memory, the subconscious and the present. Juhanni Pallasmaa [1996:41] confirms that memory and imagination are in constant interaction. Through perception, the domain of the presence fuses into images of memory and fantasy. Memory can change the shape of a room, and it can change the colour of a car, it can be distorted. Memories are an interpretation.

p.080

The stronger the dread of thinking that we are without precedence or consequence, the more detailed our notion of antiquity and utopia Pallasmaa [2011:81].

The city exists in memory, in the desire to remember, in the desire to forget, in the simultaneous construction of memory and forgetfulness [Raoul Bunschuton, 2001:34].



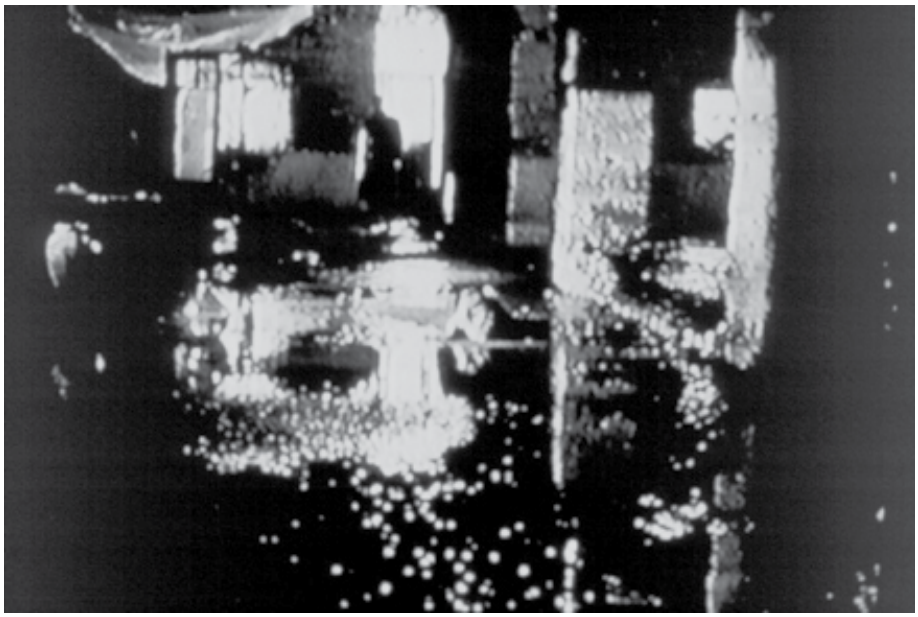
_5.1 Abstracted timeline

The image represents the abstracted timeline created through memory. Memories can be bigger or smaller than an event, depending on perception. Imagination is a crystallization of both memory and event. The cognitive processes represent time in a non-linear fashion, and questions the reality of scale.

The nostalgia in a brick refers to Domenico's House. Materials have memory too, be it engraved, etched or stained. It may change shape in time and adhere to external forces, recording moments of passion, neglect, fear, pain and joy. Long after we leave a place these memories remain.

Recalling spatial intimacy, Bachelard [1994:18] alludes to a unique wardrobe with a unique smell that one might remember from childhood, or the smell of raisins and the feel of the tiniest latch that has remained in our hands. Through these localizations, memory and imagination are vividly evoked. The materials of walls, floors, cupboards and doors are etched into our memories. The smell of a timber cupboard; the loud sounds of a timber floors, echo perpetually in our minds. The cold touch of a concrete slab and the soulful nature of stone. Not only do the materials record memories, they install matter into our minds. We long for those spaces, created by these senses. That is the nostalgia in a brick.

In the context of the Wasteland, where the inhabitants exist purely momentarily, memory and imagination prove to be dull. I suggest that memory should be appropriated by signifying intimacy, as Bachelard (1994) explains it. Memory lapses together with the delusions of time, there exists a constant reconstruction of being; of space. The goal is to design spaces of intimacy, constructing meaning to memory and crystalizing imagination, bringing renewed awareness of the relationship between cognition and space.



_5.2 Domenico's House of leaking roofs, water and eroding materials. Andrei tarkovsky. *Nostalghia*. [1983]

PLASTIC TIME

The construct of time has much bearing on personal experience. The present is a fusion of memories and fantasy. Past, present and future time is woven into an intricate map of reference and comprehension. Time has always been a mental recognition, placing order in the cosmos. As the fourth dimension of space, time creates a continuum for rendering infinite possibilities within the parameters of space. Variable in its nature, time reaches into the depths of null and explodes into the realms of impossibility. If it is possible for time to be associated with nothing and everything simultaneously, with past and future, with change and no change, then surely it has the potential for implosion.

The most peculiar quality of time surely is the speed thereof. Pallasmaa [2011:78] states that in a culture where time vanishes, or is exploded, as in our age of speed, the task of the arts seems to be to defend the comprehensibility of time, its experiential plasticity, tactility and slowness.

Plastic time alludes to the dual existence of time. How often do we experience slow time during periods of boredom and accelerated time when exhilaration takes control. The experience of time is layered, for we do not only experience rhythmic time but poetic time too. The poetic image of time is associated with mental realities, a reconstructed understanding of time, memory and imagination. The poetic image merges the dimensions of time and timelessness. Time implosion, however, solicits a deeper understanding of time. Pallasmaa writes that we can experience the simultaneous desires to halt and accelerate time and these conflicting obsessions seem to create time implosion.

> *The experience of timelessness in art arises from the fact that the experience of art takes place in an imaginary world and mental reality, which are always recreated by the viewer.* (Pallasmaa 2011:79)

Constructing poetic time in the Wasteland is crucial. The experience of timelessness in the context creates a platform for dispersion. It renders an opportunity for diaspora to places far beyond the mind. The goal is to create spaces of slow and fast descent into memory and imagination. Space that can be recreated by the user, space that has absolute multi-dimensionality – accelerating the current condition and awakening the relationship between space and time.

p.138

__5.3 Nude descending the staircase, Marcel Duchamp, 1912

MEANING AND MEANINGLESSNESS

The nature of events is not necessarily grounded within their context. Tschumi [1994:10] argues that events have an independent existence of their own. Rarely are they purely the consequence of their surroundings. Pallasmaa [2000:32] contradicts this by stating that the same event is an entirely different story depending on its condition, time of the day, illumination and soundscape. The presentation of an event is totally inseparable from the architecture of space, place and time. Designing events is not the role of the architect, however the space that allow for events should be designed [Bunschoten,2001:42].

The architectural event space is a stage tailored for a play of which the script is unknown. The event becomes an exegesis of the possibilities within space. It resembles an approach that initially questions and finally celebrates the process or sequence of occurrences.

Through sequence, events become architectural. Tschumi [1994:12] proposes that the architectural sequence implies a juxtaposition of actual spaces. These sequences are cumulative, and meaning/significance is derived through the juxtaposition of frames. They establish memory through the course of events. To experience architectural sequence, is to reflect upon events in order to place them into successive wholes. The sequence through juxtaposed space implies movement. Inevitably movement intrudes on the controlled order of architecture. The act of entering a building violates the balance of architectural geometry. Bodies carve unexpected spaces through fluid and erratic motions. Spaces are therefor composed, they develop from scene to scene.

Both served and servant spaces stage these events. Staircases, corridors and storage rooms serve various spaces and are therefore servant spaces. In popular culture, the significance of servant spaces denotes Post-Modernism. In *Pulp Fiction* (1994) a film by Quentin Tarintino, scenes are set in pre- and post-event spaces, where the main events are suggested off screen. A number of significant scenes play out in bathrooms. Locating the popular fiction in the water closet, reinforces the title of the film [Susan Fraiman,2003]. Noticibly, servant spaces play a central role in the film.

Where Tarintino plays with the significance of servant space, Louis Khan creates a strong formal distinction between served and servant space. Roemer Van Toorn [1998] interprets the work of Koolhaas and relates it to filmic nuances of Tarintino. Both architect and director use the culture of visual pulp within the non-space - spaces we are often in, but do not consciously experience. Their works are accumulations of short stories within these non-spaces, or servant spaces.

p.110

Architecture and film are simultaneous in character. Van Toorn [1997] notes that the sequence of scenes in a montage creates a mental space that resists chronological comprehension. What is attractive about architecture is that it makes space, and place, for activity and movement where the user of the space becomes his own director. Film and architecture make use of sequential movements through space, strung together by memory. This spatial simultaneity is an important property for arriving at reflexivity [Van Toorn, 1997].

Architecturally, the sequence and hierarchy of served and servant spaces ought to be questioned through the architectural montage of spaces. Movement through spaces should abstract non-linearity. Ultimately, the goal is to construct meaning and meaninglessness, disconnecting users with space, while simultaneously placing a user in a conjunctive whole. Thus creating ambiguity and simultaneity in order to develop an open architecture of specificity and indeterminateness.

_5.4 Montage of bathroom scenes
Pulp Fiction [1994]

_5.5 Architecture and limits.

Architecture is defined by the actions it witnesses as much as by the enclosure of its walls. Murder in the streets differs from murders in the Cathedral in the same way as love in the street differs from streets of love. Radically.

[Tschumi, 1978:22]

Swimming in public pools is, while you've got to be patient, the most effective way to emerge into a civilization, a culture. You understand everything immediately, you understand the relation between men and women, primness, old fashionedness; you understand everything.

[Rem Koolhaas, 1977: 72]

6

AQUALUNG

THE PROMISE OF WATER

The promise of water refers to the mythical life fostered in the qualities thereof. Aaron Betsky [1995:9] describes water as the continuum of the universe made real, the source of life and rebirth, the mirror that creates a heterotopic alternative to lived experience. Within the realm of man-made environments the metamorphosis of water is that of a sensual and economic realm. Water becomes both representative of economic structures and a structuring element. Water turns gravity into a narrative of connecting channels and pools that guide you through space. Betsky [1995:11] explains that water can become one of four things in an artificial environment- a point, a line, a pool or an edge. It becomes a point of gathering, a source of energy, a place of culture, limits and imagination. The point represents the spring, a place of community and origins of life. It has magical connotations, and it is the centre of activity. The line is the river. Betsky states that river cultures are associated with territorialisation, the creation of rigid structures and language, thus replacing nature with an artificial culture. The pool and the edge mirror each other. The edge is the coast, the delta where the earth, sky and water mix and give birth to a civilisation. The labyrinth waterways of the delta become grids of irrigation, a realm which is completely contained. Yet at the edge, possibility and danger take hold; it is a place where another world begins. The edge is a point where distinction dissappears.

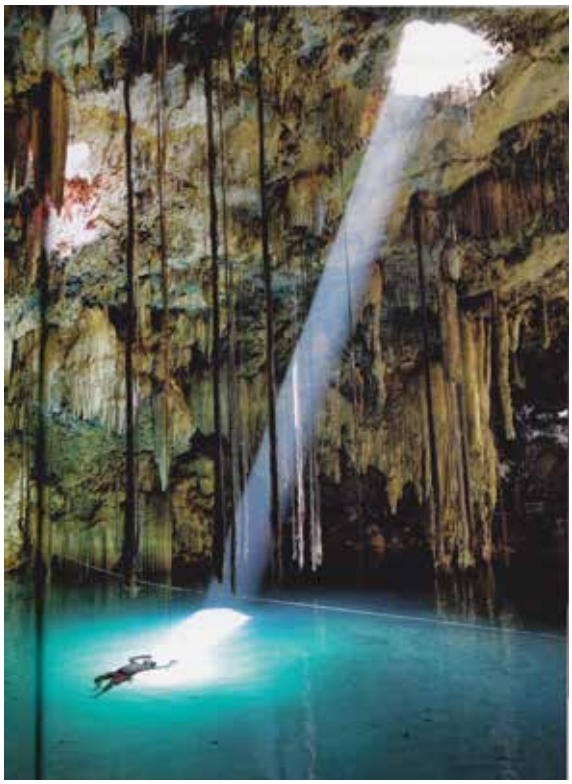
The pool is a mirror of society, a place where we, like Narcissus, can admire ourselves, and where the real and the unreal mix, since it is both a man-made artifact and something that cannot be contained by man. The pool also mirrors and frames architecture. Betsky believes that we can only frame water, and dream by looking into it. But we may also jump into it and, like a sailor, set off into another realm of beauty and danger.

To cities the significance of water is crucial. Ger Bergkamp (2010) stated that better city life is directly connected to good water. South African cities are rarely built around a good water source. Now reduced to a storm water channel, the Apies River was once the primary water source of Pretoria. This is evident in the city's grid change to the East of The Apies in Sunnyside. The street grid developed around irrigation channels flowing from both the Apies and Walker Spruit. Due to hard rainfall in short bursts, these channels flooded and spilled back into the respective rivers, which subsequently caused the rivers to flood. Hence, the storm water channeled river. Betsky [1995:13] writes that water is hidden and concealed in our cities. It exists in sewers, tunnels and water storage tanks that now no longer even loom over rooftops, but hide inside anonymous buildings.

p.052

Cities no longer grow around rivers, springs, pools and ports, but around airports and highways, in amorphous patterns that defy the presence of water and yet demand it simultaneously. We often forget how fundamental the vast systems of extraction, purification, distribution and drainage are to our urban life, yet there is little or no trace of them in our artificial environment.

Programmatically it is pivotal to focus not only on swimming pools and recreational activities but also on the use and significance of water on various scales. As place making artifact to container of space, the haptic experience of water allows for multiple interpretations and use. It is space making ability should be explored throughout the man-made environment and exhibited to the public, thus renewing the relationship between the city, citizens and water.



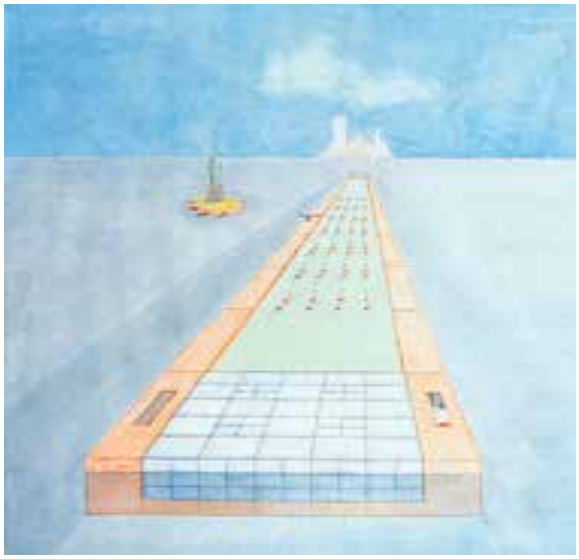
__6.1 The Maya believes natural wells. such as the Xkeken Cenote in Mexico's Yucatan led to the underworld

THE STORY OF A POOL

The prototype became the most popular structure in the history of modern architecture. Due to the chronic Soviet labour shortage, the architects/builders were also the lifeguards. One day they discovered that if the swam in unison – in regular synchronised laps from one end of the pool to the other – the pool would begin to move slowly in the opposite direction. They were amazed at this involuntary locomotion : actually it was explained by a simple law of physics : Action = Reaction.

In a secret meeting, the architect/lifeguards decided to use the pool as a vehicle for escape to freedom. Through the by now well-rehearsed method of auto-propulsion, they could go anywhere in the world where there was water. It was only logical that they wanted to go to America, especially New York. In a way, the pool was a Manhattan block realised in Moscow, which would now reach its logical destination.

[Rem Koolhaas, 1977]



_6.2 Story of the Pool

SWIM - ACTIVATE MEMORY AND IMAGINATION

Public swimming pools contain vernacular memorabilia and strong associations with childhood memories. Jeff Wiltse (2007:207) states that childhood memories, related to public swimming pools, are profoundly vivid compared to those of visits to schools or churches. A delicate relationship exists between water, spatiality and self-reflection. As a public space it provides a social platform of interaction, recreation and self-reflection. The act of swimming adheres to public and private imagination. It provides a forum and a space where culture and dreams can be shaped. Wiltse confirms that swimming pools as public spaces generally foster a vibrant community life by countering the alienating aspects of modern life. It becomes an informal gathering space which does not place prejudice on people divided by economic classes and social differences.

The solitude of swimming renders the ritual a highly introspective act. Many personal acts are augmented while swimming. Breathing becomes more than regulatory; it gains sensual significance. The expansion of lungs and the movement of all the muscles while suspended in a semi-weightless meduim connects the corporeal with the cerebral. It is a dive into the imagination, an alternative world where movement is not restricted in terms of dimensionality. Joss Bailey (2011) acknowledges that swimming improves the mind and the body concurrently. Imagination is an integral part of swimming; entering a unique state between body and mind, rarely experienced outside a pool. Bailey believes that there exists a romantic notion of swimming, making it a deeply significant activity.

As a public ritual, it simultaneously celebrates intimacy and collective delight. Bodies carving through space in synchronous movements, recall perhaps the evolution of man and the nostalgia of aqueous beings. Swimming amalgamates images of three dimensional spatiality, transcending euclidian space, placing intimacy and communal recreation in realms outside physical space and time.

p.064

_6.3 Vernacular Memorabilia

INTIMACY AND OCCUPIED SPACE

Interpretation based Spatiality

Occupied space implies non-euclidian space, or 'lived space' as Pallasmaa [2000:16] terms it. He explains that lived space transcends the rules of geometry. Lived space resembles structures of dreams and the unconscious, organized independently of the boundaries of physical space and time. It is a combination of external space and inner mental space. Swimming pools render occupied or lived space. The medium of water that occupies space places swimmers in between actuality and mental projection. Pallasmaa [2000:22] argues that in experiencing lived space, memory and dream, fear and desire, value and meaning fuse with the actual perception. Fleming (2002:539) argues that Cherico's painting takes expressionism into an introspective world of free associations. The work is a dreamscape that fuses dream fantasies, memory images and visual paradoxes. His intention was to break down the barriers of childhood and adulthood; the sleeping and the waking states; the fantastic and the familiar.

Occupied or lived space does not only apply to swimming space. Lived space is inseparably integrated with the subjects concurrent life situation. The experiential dimensions of mental and material worlds are fully intertwined.

The architectural implication of occupied space is crucial. Understanding spaces around the pools as lived space means that there is a constant rendering or production of space through the mental realities. Spaces of intimacy, solitude, and time bring about memory and imagination. The aim is to create interpretation-based spatiality, place that has the possibility of always creating a new experience, adding to existing structures of meaning and understanding. Eric Owen Moss [1993:65] states that he would very much like people to walk into buildings and think "This is the first time I've been here". He denotes this to learning how to be comfortable being uncomfortable.

In the context of the mill, the metaphysical production of space alludes to the memory of place. As the mill once turned substances into pulp, the occupied space now signifies this role.

In Japan the notion of *skinship* is synonymous with bathing. *Skinship* represents the social importance of intimacy, especially emotional intimacy. The medium of water provides a space that allows for intimacy without physical contact. Ultimately, occupied space should transcend the boundaries of the pool into poolside spaces and auxiliary programmes. Pallasmaa [2000:23] proclaims that the cinematic narrative defines the boundaries of lived reality. The sequential event space escapes the pool and cuts across the entire building. The significance of event space is therefore defined by the notion of lived or occupied space, framing human situations of interaction and intimacy.

p.102

_6.5 Georgio de Cherico, *Melancholy and the Mystery of a street*. 1914 Oil on canvas

_6.4 Montage of *Skinship* scenes from the Japanese film *Norwegian Wood(2010)*, based on the novel by Haruki Murakami

7

SWIMSCAPE

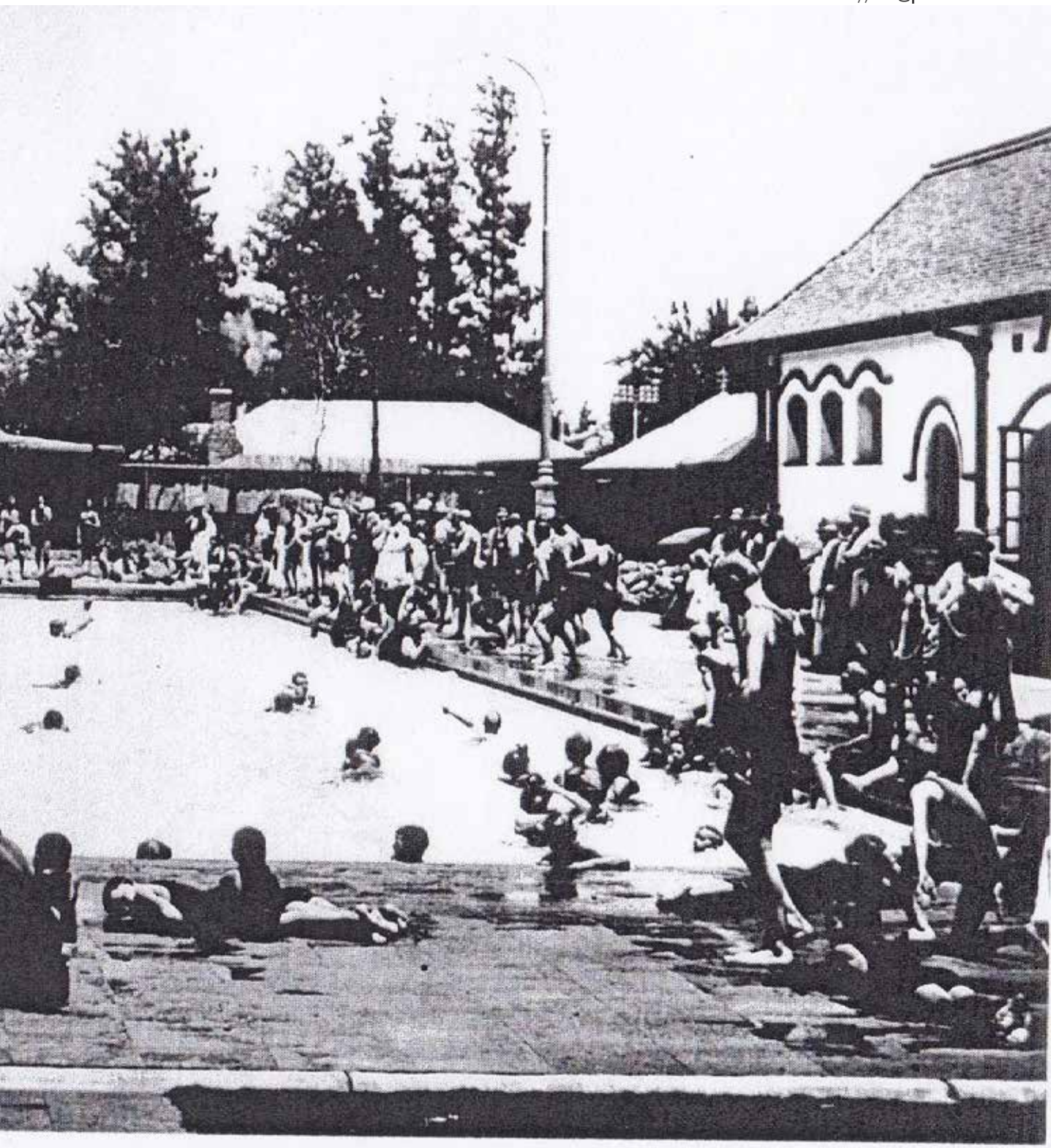
A BRIEF HISTORY OF PUBLIC SWIMMING POOLS

The oldest public swimming pool, the "Great Bath" is found in the ruins of Mohenjo-Daro in modern day Pakistan, and is believed to have been built during the 3rd Millennium BC. (Brittanica Online, 2012). Both Roman and Japanese cultures have an extended history with water. Bath houses were centers not only for bathing, but for socializing too. Bath houses were known for their spatial and spiritual qualities while acting as gathering spaces. Swimming pools only became popular in 19th Century England.

In 1603, the first national swimming organization was established in Japan (2012). However, the oldest swimming club in the world is the Maidstone Swimming Club, founded in 1844. The club had various races, diving competitions and water polo games in the River Medway but due to concerns of drowning while swimming in the River Medway, the swimming pools were founded. The inclusion of swimming races in the 1896 Olympic Games widely spread the popularity of swimming. The Oxford Swimming Club was founded in 1909 and swimming gained popularity among students. In Post-War America the popularity of swimming pools spread through popular culture, especially Hollywood films, in particular *Million Dollar Mermaid* in 1952, which made backyard swimming pools a desirable status symbol (Wikipedia, 2012).

Although closely related, baths and pools are predominantly differentiated by size, temperature and activity. Baths are smaller, with higher temperatures than pools and are mostly situated near natural hot springs containing minerals, hence the latin term thermae or thermal (2012). However the biggest difference lies in the activity within the water. Baths are understood as spaces for relaxing and the rejuvenation of the body where pools are programmed for exercise, such as swimming, diving or training.

_7.1 Perspectives and aerial photograph of the *Great Bath*, Mahenjo-Daro



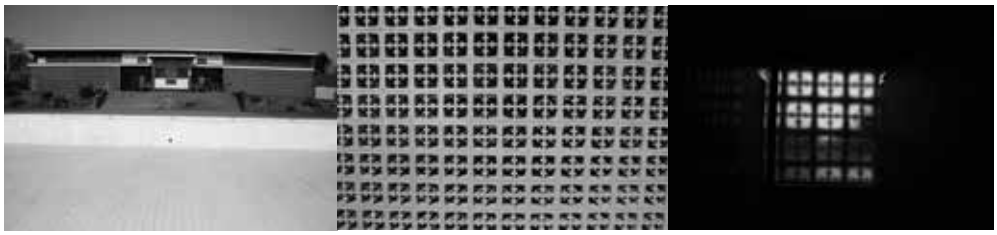
_7.2 The original Sunnyside Public Swimming Pool (1946). The Department of Trade and Industry now occupy the site of the pools.

_7.3 The new Sunnyside public swimming pool

_7.4 DeJong Diving Centre, Brooklyn

SWIMMING POOLS IN PRETORIA

_7.5 Sunnyside Public Swimming Pool



_7.6 Deon Malherbe Swimming Pool, Pretoria North

_7.7 Hillcrest Municipal Swimming Pool

_7.8 David Hockney, Brian Los Angeles Sunday 21st March 1982, 1982, color Polaroid composite, Collection of David Hockney

p.011

POOLSIDE CULTURE AND SWIMWEAR

J.G. Ballard (2011) refers to swimming pools as a natural world redesigned as inhabited, imagined and inhaled environments. Culture encompasses our common social practices. Swimming as a social practice originated at the brink of Modernism, yet it is the decadent and sensational qualities of Post-Modernism that really defines swimming pool culture, or the swimscape. It becomes a man-made place of indulgence, leisure and desire.

The presence of swimming pools are especially visible in popular culture between the late 1940's and early 1980's. Private swimming pools became a reflection of post-war ideology. The ideal setting with flawless conditions varied with notions of wealth, consumerism and the triumph of man over nature. Synonymous with suburban lifestyle, Mary Macvean (2012) writes that the backyard swimming pool can be an object of desire or a sign of suburban sterility, an icon of the good life or a symbol of its demise. According to Daniell Cornell (2012), curator at the *Palm Springs Art Museum,* swimming pools further denote the shape of desire and dreams, the utopian-dystopian topos of suburbia and the cult of the body. However, public swimming pools adhere to a much higher social value.

p.110

_7.9 swimscape

_7.10 poolside gossip

_7.11 poolside bar

_7.12 60's fashion shoot

_7.13 poolside phonecall

_7.14 poolside family

THE BIKINI : A CULTURAL REVOLUTION

The swimscape may also be defined through the evolution of swimming attire and one's relationship to the body. Most bathers in antiquity swam naked. Roman murals however suggest that swimwear, similar to the modern day bikini were popular not for swimming but for exercise. Minoan paintings from 1600 BC suggest that bikinis where used even earlier than Roman antiquity (Lancek et al. 1989). Throughout the middle ages nudity was banned in public baths. Modest swimwear revealing very little skin was acceptable. Loinclothes, gowns and classic smocks covered bodies. According to *FACTio* magazine (2012), women attached metal weights to the hem of the bathing gowns so as not to not to expose their legs. From the Seventeenth Century bloomers and stockings were protocol.

The genesis of swimming pools radically changed swimwear, to lighter, sleeker and more revealing pieces. A return to sexual intimacy and nudity brought about the most significant swim piece of the century, namely the bikini. Wartime rationing ordered a 10% cut in fabric use, and in 1946 French engineer turned fashion designer Louis Reard, launched his design in the French Riviera and named it after the Bikini atoll, where an atomic bomb fell, supposedly because of the garments explosive effect (Lancek et al, 1989). However it was only after the sexual revolution of the 1960's that bikinis really became popular. It appears that society is returning to the ways of classical antiquity, feeling ever more comfortable revealing skin, placing ever more pressure on the fashionable body.

Mens swimwear evolved in a similar fashion. Baring of the chest, being the biggest change in 1933 explains Roselyn Hseuh (1997) Major differences are apparent in the cuts. Men's attire are mostly square shaped garments – hence the term boxer shorts, representing sturdiness, stability and strength, while women's garments accentuate lines, curvatures and sensuality.

p.082

__7.15 The reduction of swimwear. Circa 1880- 2012

8

PROCESS

STUDIES

OBJECT ANALYSIS

The layered landscape of the object contains various spatial analogies. In a rural landscape silos can be seen from a great distance. They have a strong agricultural association, reminding one of soil, rain and fertility. The silos stand as an object within the vast open spaces of a landscape.

In an urban landscape it can be a landmark too. Ruto Mills [also in Pretoria West] was once known as the Black Mills by farmers outside Pretoria. The silos were painted black, helping farmers to find the mill in the urban landscape. Many rural people also live in the urban landscape and have memories or associations with the pastoral landscape via the medium of the silos.

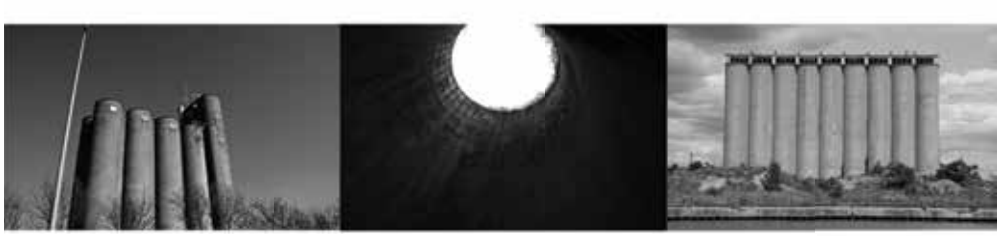
The Pretoria West silos stand in a hard industrial landscape between two railway sidings. Acting as a large granary, it stored unprocessed grain. The ensemble consists of 28 abandoned silos, each made of 200mm reinforced concrete. 7m in diameter and 31m high; the silos form a landmark in the industrial landscape.

Public space, usually affiliated with urban space, is a layer superimposed onto the silos. Water or pools, manifested as public space may turn the isolated spaces of the ensemble of silos into a universally accessible space allowing the public into the hidden and mysterious spaces silos have captured for centuries.

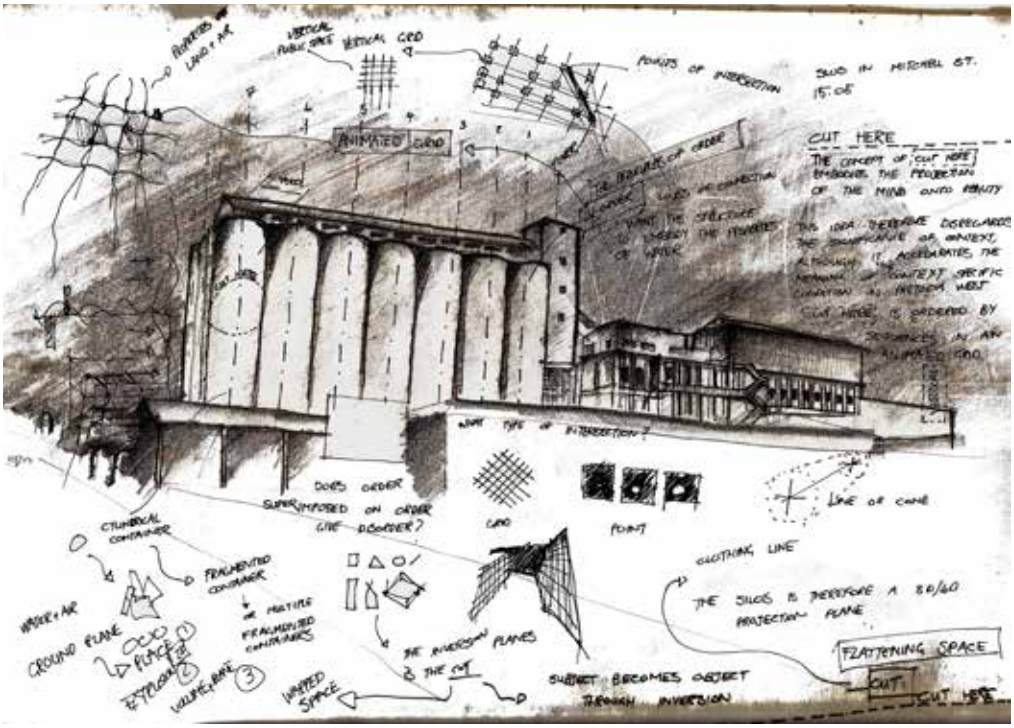
Finally the silos have a phenomelogical layer. The space within and in-between have romantic notions. The scale and gravity of these empty spaces reminds us of *axis mundi* - the relationship between man, earth and the sky. Adding water to the melange accelerates the perception of gravity and stirs life within the unoccupied spaces.

As an approach to heritage, the intervention acts as a mediative condition between the memory of the object and the imagination of its spatial qualities. Silos have always been understood as objects rather than structures with subjective qualities, rarely experieced for its spatiality. The object should remain a landmark, addressing the space around it and not only within. The process, movement and access into the silos should be celebrated and augmented. Fundamentally the superimposition of public space becomes the middle ground between object and subject.

p.014



_8.1 Silos as an object in the landscape , with hidden spatial qualities



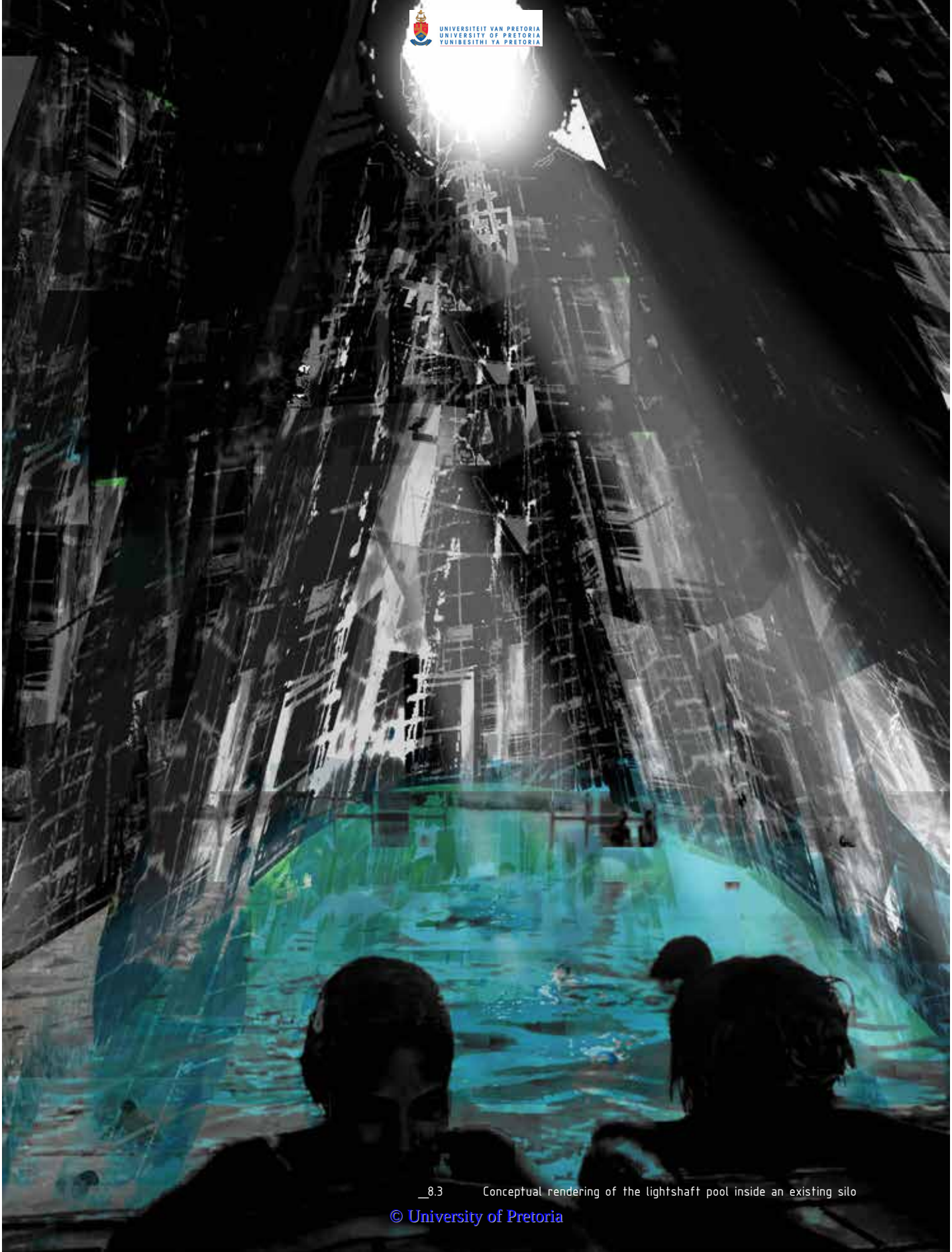
_8.2 drawing of existing structure on site in Pretoria West

BETWEEN COMPOSURE AND SEDUCTION

The atmosphere and experience of the spatial narrative relies exceedingly on the levels of intimacy. The frame or body of the design acts as a bridging apparatus, connecting dynamic points, allowing one to saunter through the building. Subsequently most spaces become a series of corridors that transform meaning continuously. Corridors may be used as resting spaces too, or to stage an event to someone looking in. Corridors may frame these events from various perspectives, allowing people to create idiosyncratic narratives. The existing spaces [the silos] become pause spaces, whilst the new spaces become narratives of movement.

The journey through these corridors take on its own form of a narrative, exploring haptic experiences of water, light and gravity. Zumthor [2006:41] argues that in order to create a milieu for strolling one ought to rely less on directing and more on seducing. The levels of intimacy are controlled by proximity and distance between spaces, the emphasis of light and the tension between exterior and interior space. Spaces also act as instruments, always amplifying, collecting or transmitting sound. The aural experience of water ranges from a gentle trickling, animated with light, to roaring sounds of rushing water and the cooling effect of mist. Ultimately, the design aims to create spaces of composure, letting a user stroll at will, whilst luring the user into seductive spatial experiences.

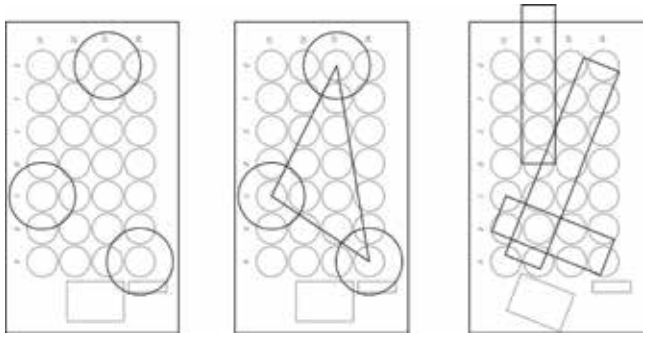
Spaces of fast and slow descent into memory is strung together with narrative and movement patterns of the looped journey.



_8.3 Conceptual rendering of the lightshaft pool inside an existing silo

CORRIDOR BRIDGES

The isolated spaces of the object maintains a static equilibrium. Dynamic points superimposed onto the object determines the axes of the adapted memory grid [referred to on p.108] and introduces a dynamic composition. The pivotal points remain in isolation within the object and is bridged by the memory boxes, which subsequently become corridors of movement between the silos. The intervention thus takes the form of servant spaces serving the isolated silo spaces. Although the corridor bridges are a mental projection they become the new object in between the silos.



_8.4 evolution of bridging apparatus

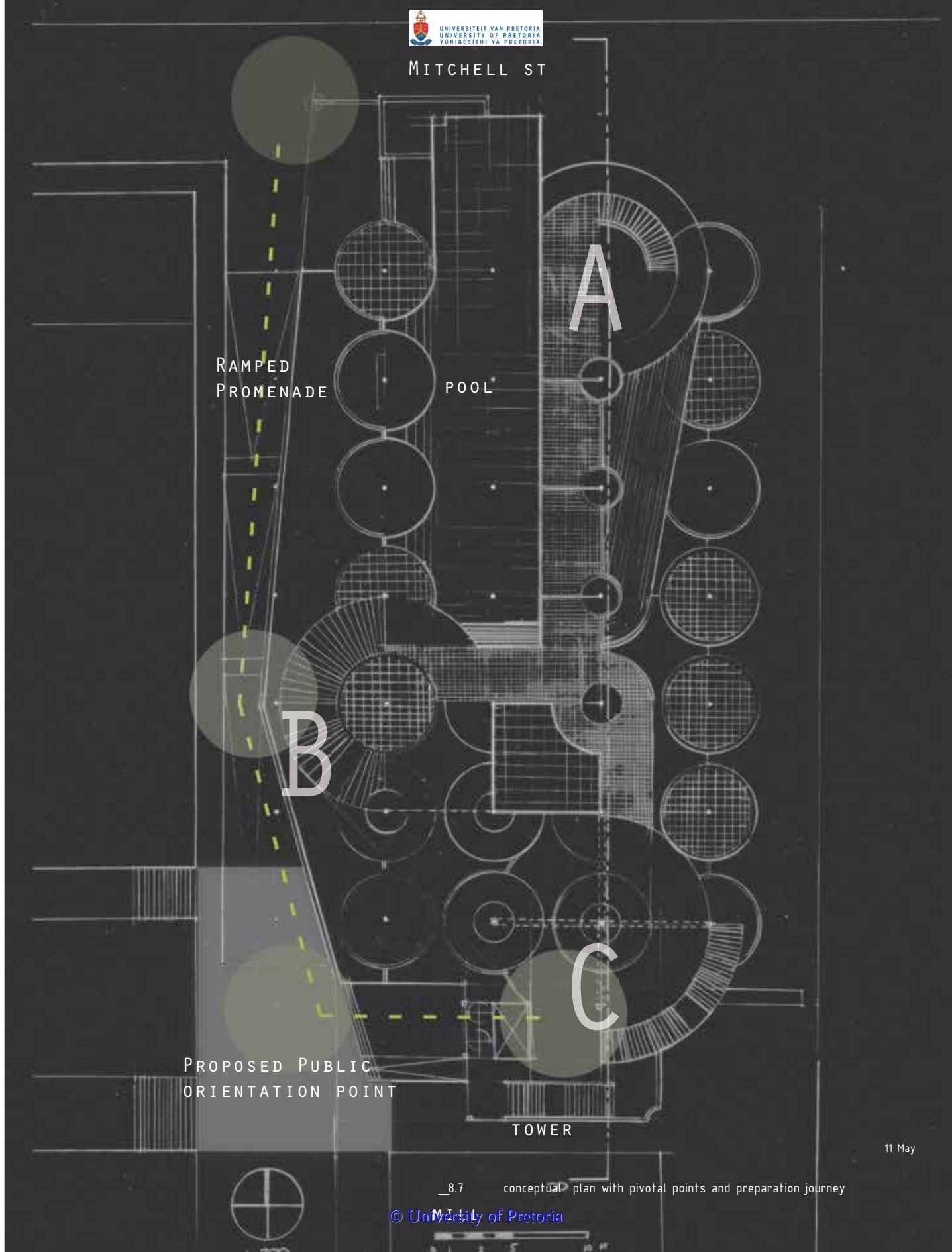
The Insertion of dynamic points required three activation measures :

A ACTIVATING THE STREET EDGE

B CAUSE MOVEMENT TENSION BETWEEN INSIDE AND OUTSIDE

p.054

C COUPLE THE TOWER WITH THE ENSEMBLE OF SILOS



_8.7 conceptual plan with pivotal points and preparation journey

MEMORY GRID AND STACK

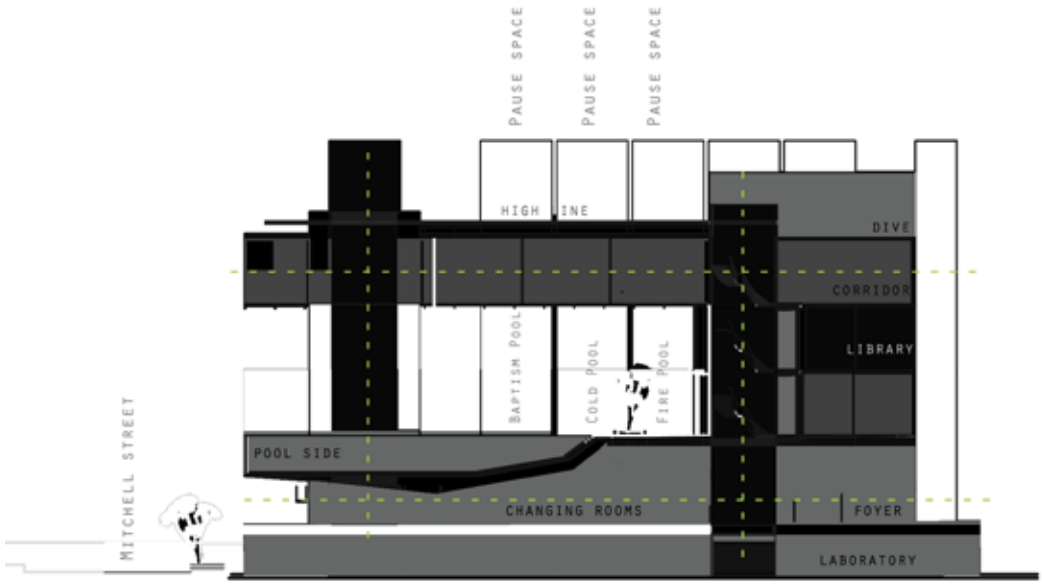
The progression of the design is disruptive by nature, yet it aims to have catalytic reactions. The unveiling of the hidden space, [the space occupied by the silos], puts the object in a vulnerable state. The process of dissection allow us to scrutinize the object in a series of interventions.

The abstract three dimensional grid is a reaction to the strong order of the silo ensemble. The grid maps the nucleus of the ensemble in the x, y and z axes and is rotated and fitted to the axis of the dynamic points. Memory boxes are stacked into the grid and become the bridging apparatus between the isolated spaces of the silos.

The various programmes of the proposed structure are stacked within the grid to become the mental projection layered onto the existing structure. The auxillary programmes are discussed on p.120.

p.104

_8.8 The memory grid, change of axis and memory boxes



_8.9 Stacked memory boxes in a coneptual section and looped journey

CONVEYER BELTS OF MOVEMENT

Conceptually the journey is conceived as it was historically applied in the silos. A conveyer belt scooped grain from the sidings [now the public arcade] and transported it to the top of the silos where it was deposited and left to settle.

The journey through the complex becomes exceedingly important. Divided in two parts, the preparation journey starts off on Mitchell Street, to the north of the complex. This route is intended to draw the public from the street and guide them around the complex towards the orientation point and in so doing offering selected views.

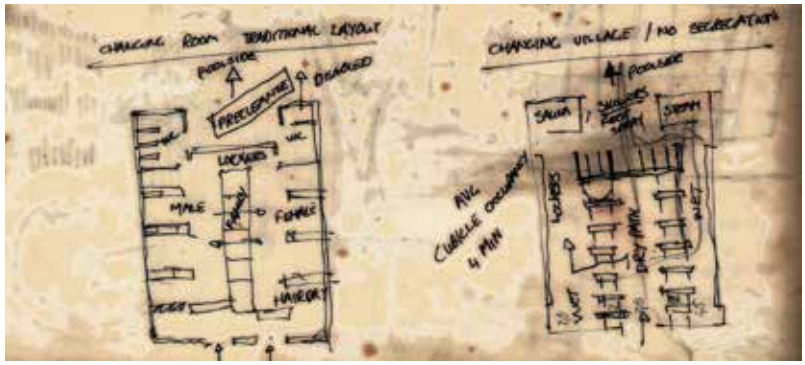
Point B on the conceptual plan indicates the narrowing of the promenade, slowing movement down and raising conciousness of the approach. The immense scale and gravity of the silos bears down on the pedestrian at this point, signifying the weighty tension of the structure on its surroundings.

Upon entering the complex at Point C [p.107] the energy of the journey changes. The stacked memory boxes present a looped journey, starting in the changing rooms beneath the length pool. Two circulation cores guide swimmers up and down between the stacks of programmes.

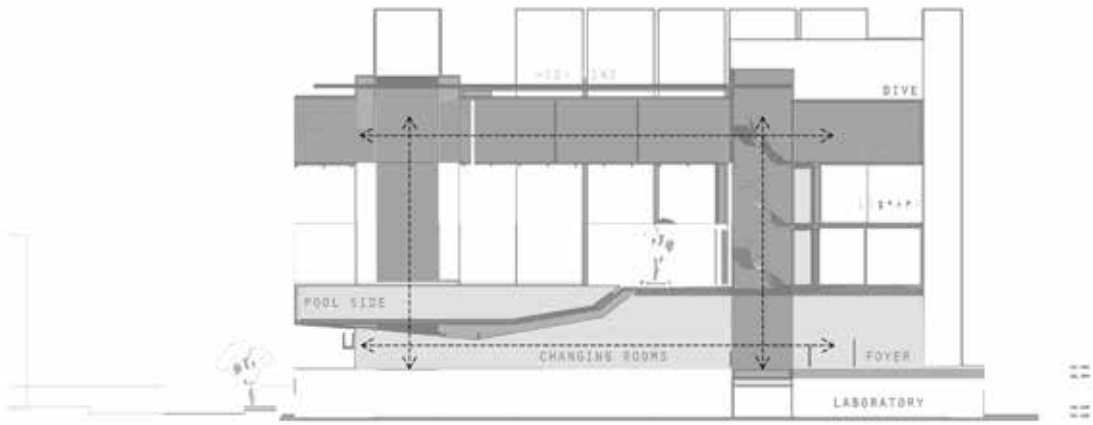
The looped journey encourage the public to choose an idiosyncratic route throughout the complex and saunter without a specific destination. En route a series of pause spaces allow the user to relax before moving on. Each silo, or pause space has distinct characteristics depending on the type of pool or programme inserted within the structure.

Finally the changing rooms embody a specific route divided into wet and dry paths.

p.068



__8.10 Studies for journey through changing rooms



__8.11 Looped journey

SPATIAL GENRES

The introduction of spatial genres to the memory boxes give rise to spatial intent as movement through the building progress. Spatial genres are derived from the cinematic experience of space and establishes spatial montage, layering the experience of movement. Furthermore, the genres guide the design decisions for the different stacks [refer to the matrix of choices on p.124].

Spaces of desire

Situated below the length pool, the changing rooms become the focal point of experience. Heavy concrete columns support the pool, creating the feeling of an underground cave or chamber. The base of the silos stand on an existing 1500mm thick concrete slab. By exposing this slab the gravity of the chamber becomes evident. Cavities cut into the bottom of the pool project dancing shadows on the concrete mass and allow views into the pool from beneath. Furthermore, a unisex changing room charges the tension inside the chamber and rich material finishes such as timber and leather enhance the decadence of desire.

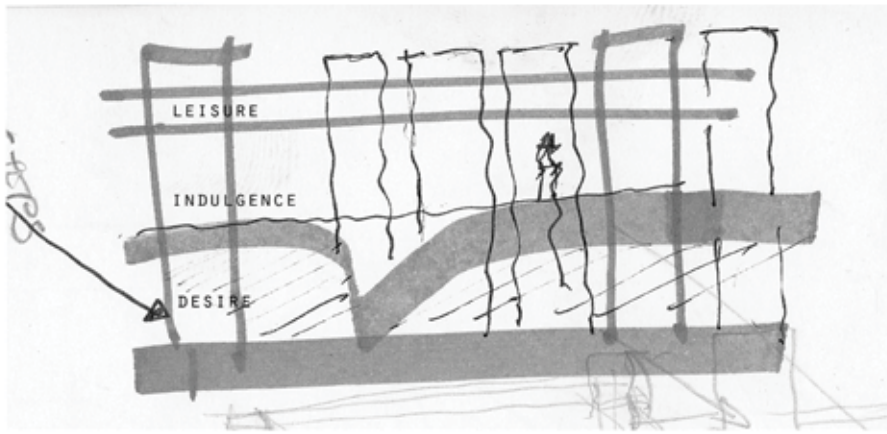
Spaces of Indulgence

Immersion into water masses allow swimmers to explore the self, imaginatively and memorially. The pause spaces present various water bodies, advocating a diverse range of pleasures. Pools vary in sizes, tempratures and sound intensities. Proximity and light quality determines the intimacy of spaces. The lightshaft pools are only accessible by swimming through the length pool, adding to the mystery of the silo spaces. Beneath water surfaces the material finishes are coloured in shades of grey with mosaic tiles. This stands in contrast to the grey concrete that surrounds the poolside spaces. Ultimately the pleasures are hidden in a serious of grottos and this spatial layer relies on exploration and encourages self-indulgence.

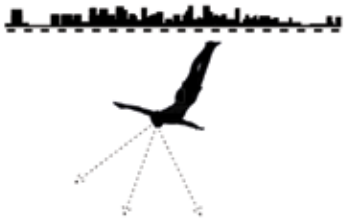
Spaces of leisure

The corridor and skyline walkway encourage activities generally regarded unproductive. The corridor offer views of the city and supports unproggrammed space that may be appropriated for yoga classes, exhibitions or lounging in the sun. The diving centre present daring activities with a 30m freediving silo. The skyline consists of a green roof with private and public planted space. Material finishes are simple epoxy screed, timber and glazing, placing focussing towards the exterior rather than the interior.

p.064

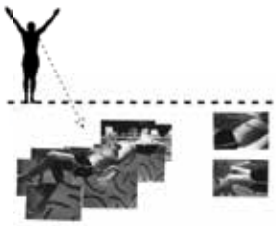


_8.12 Diagram of spatial layers



LEISURE

skyline, corridor, library and diving



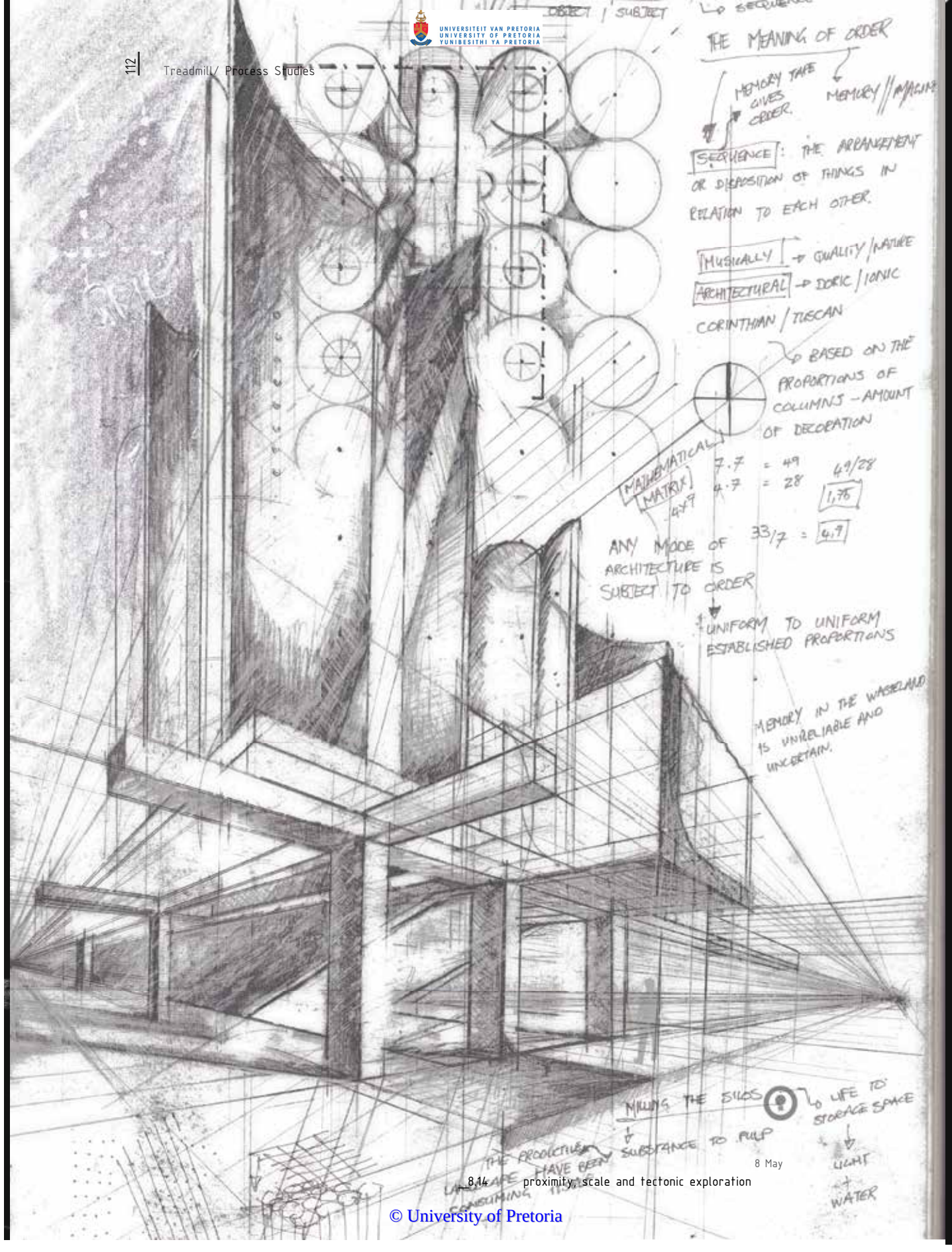
INDULGENCE

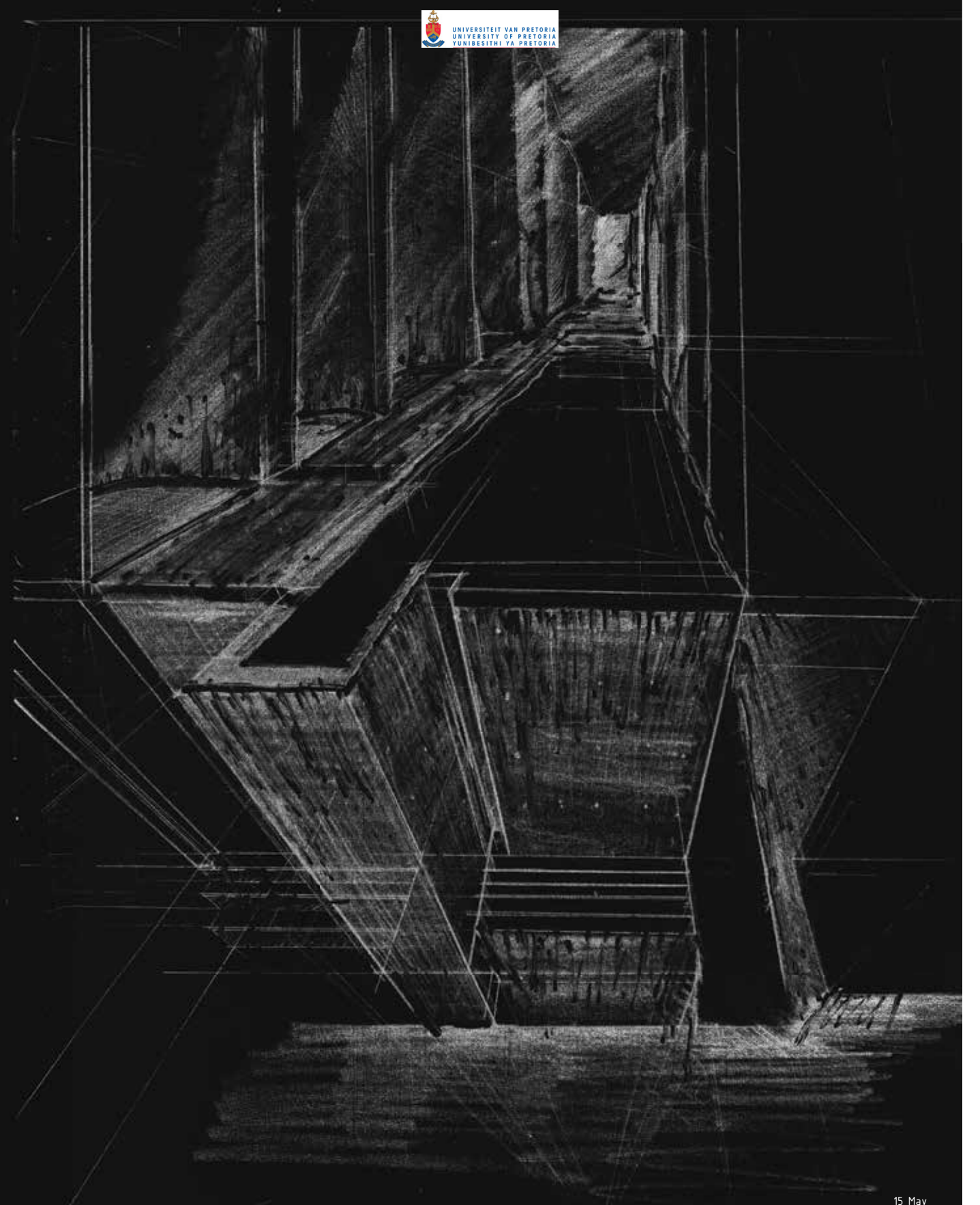
pools : lap pool/rain pool/lightshaft pool/flower pool/hot and cold pools/baptism pool

DESIRE

changing rooms and gymnasium

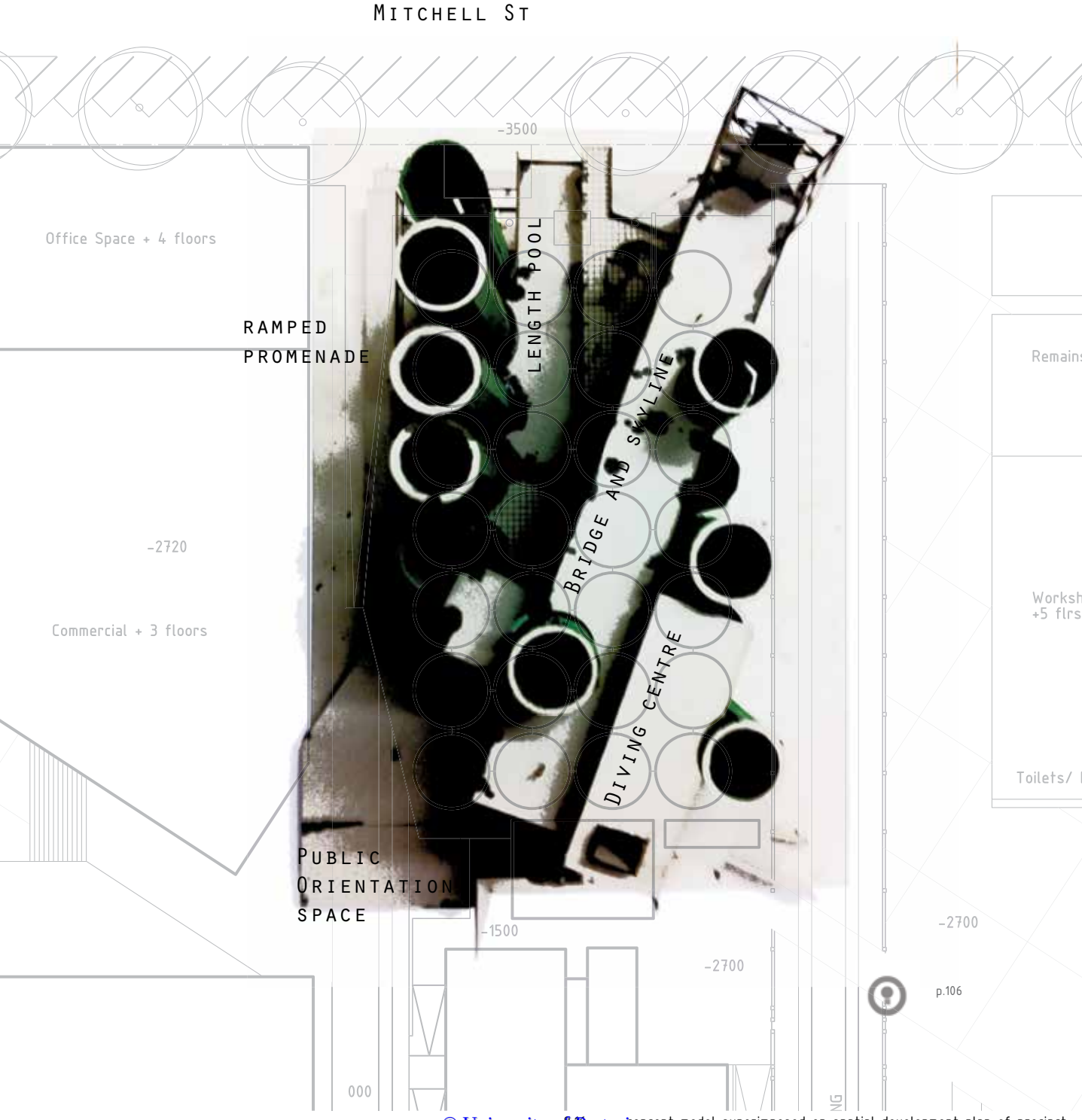
_8.13 Spatial analogies of genres





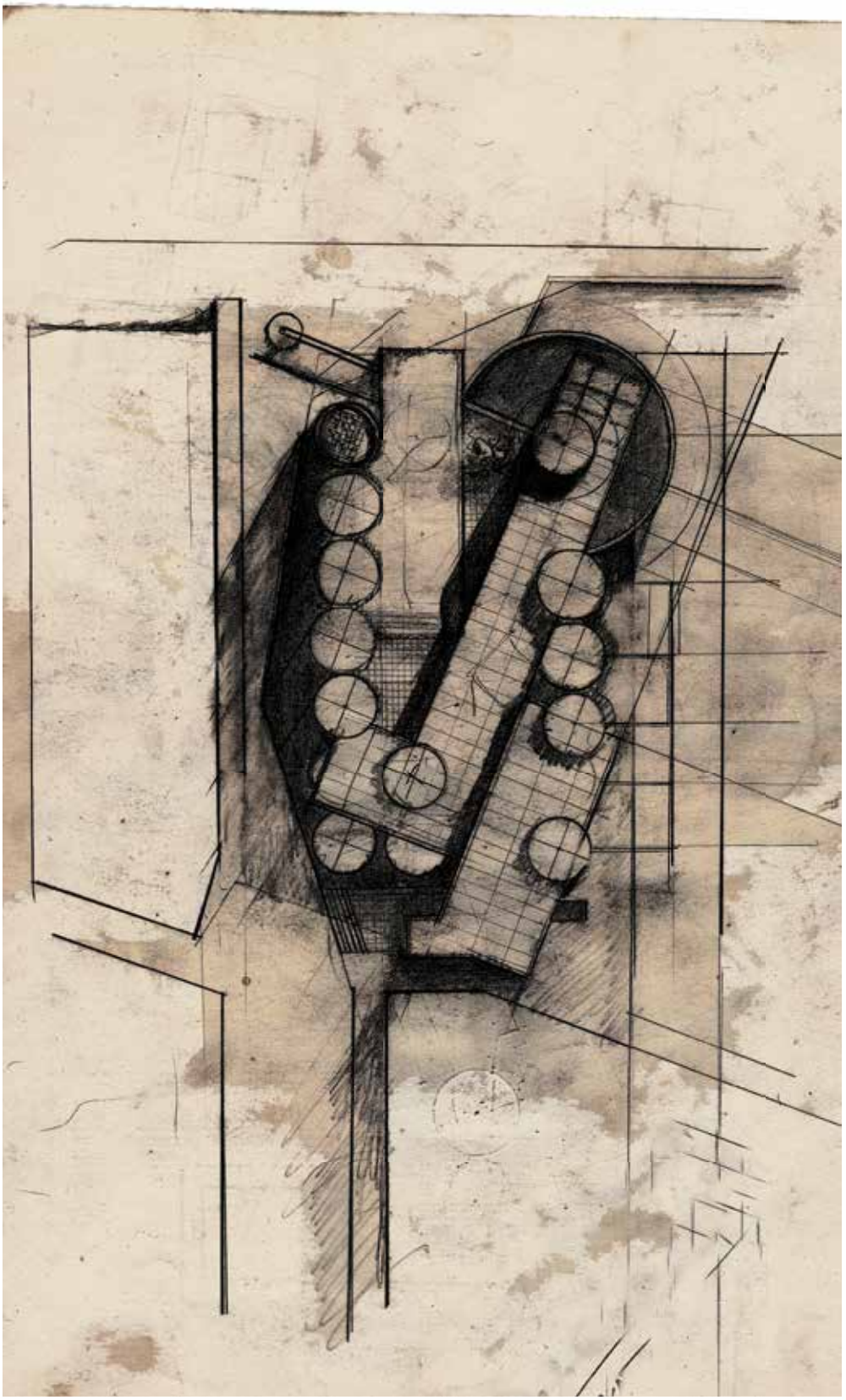
15 May

_8.15 length pool and deckside spaces



8.19 Concept model superimposed on spatial development plan of precinct

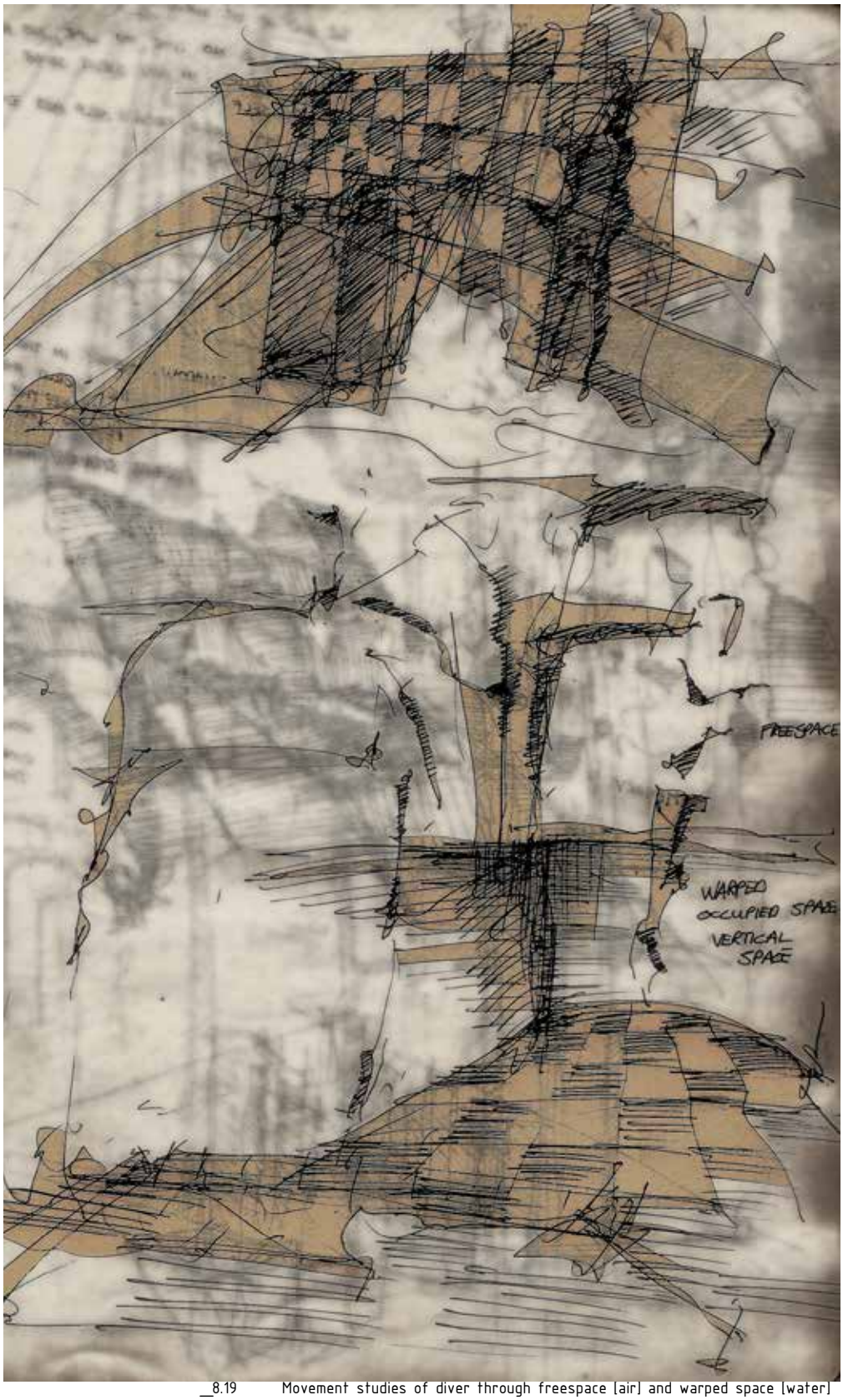
_8.17 northern perspective of model



_8.18 Conceptual Site Plan

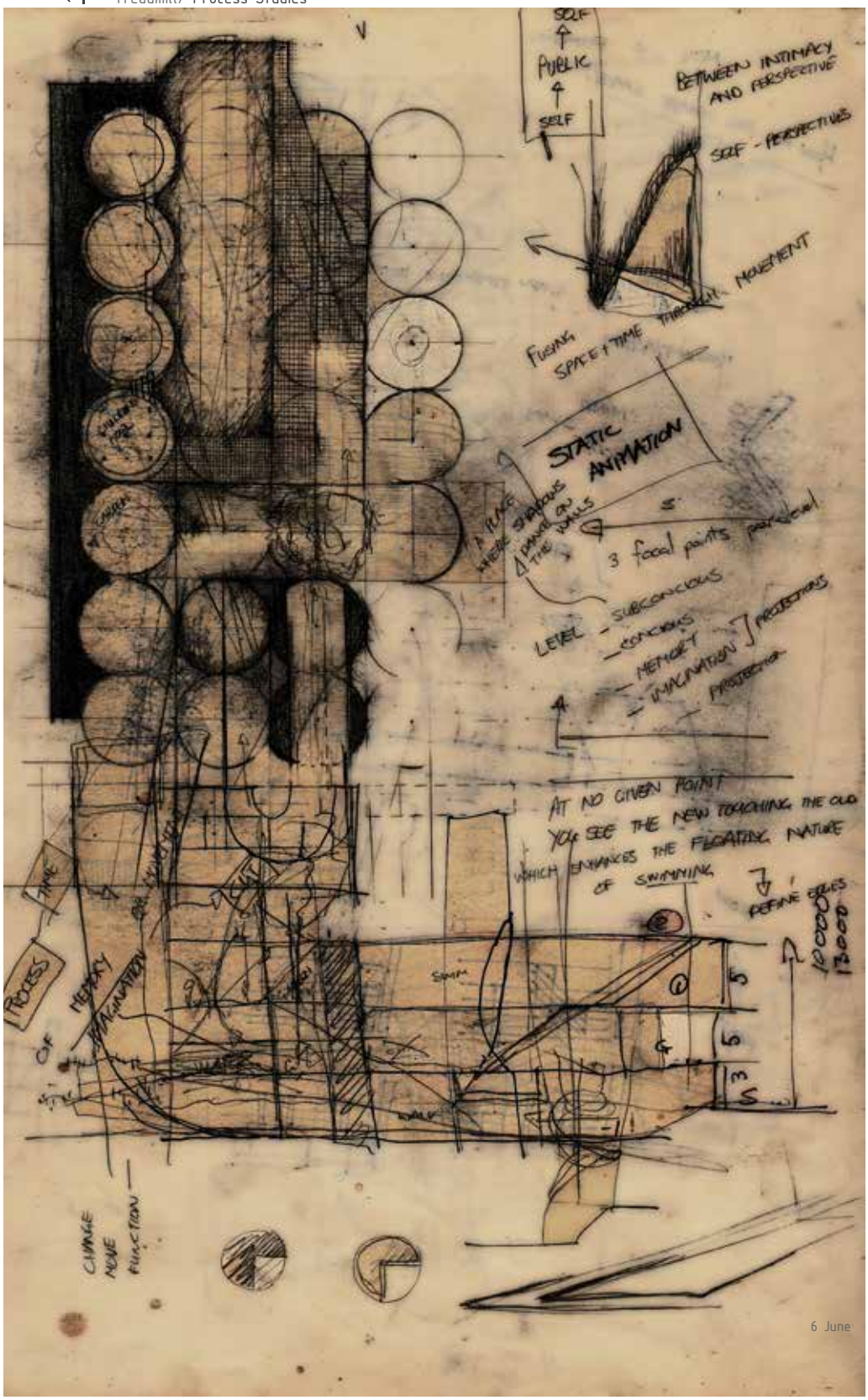
p.054

17 August



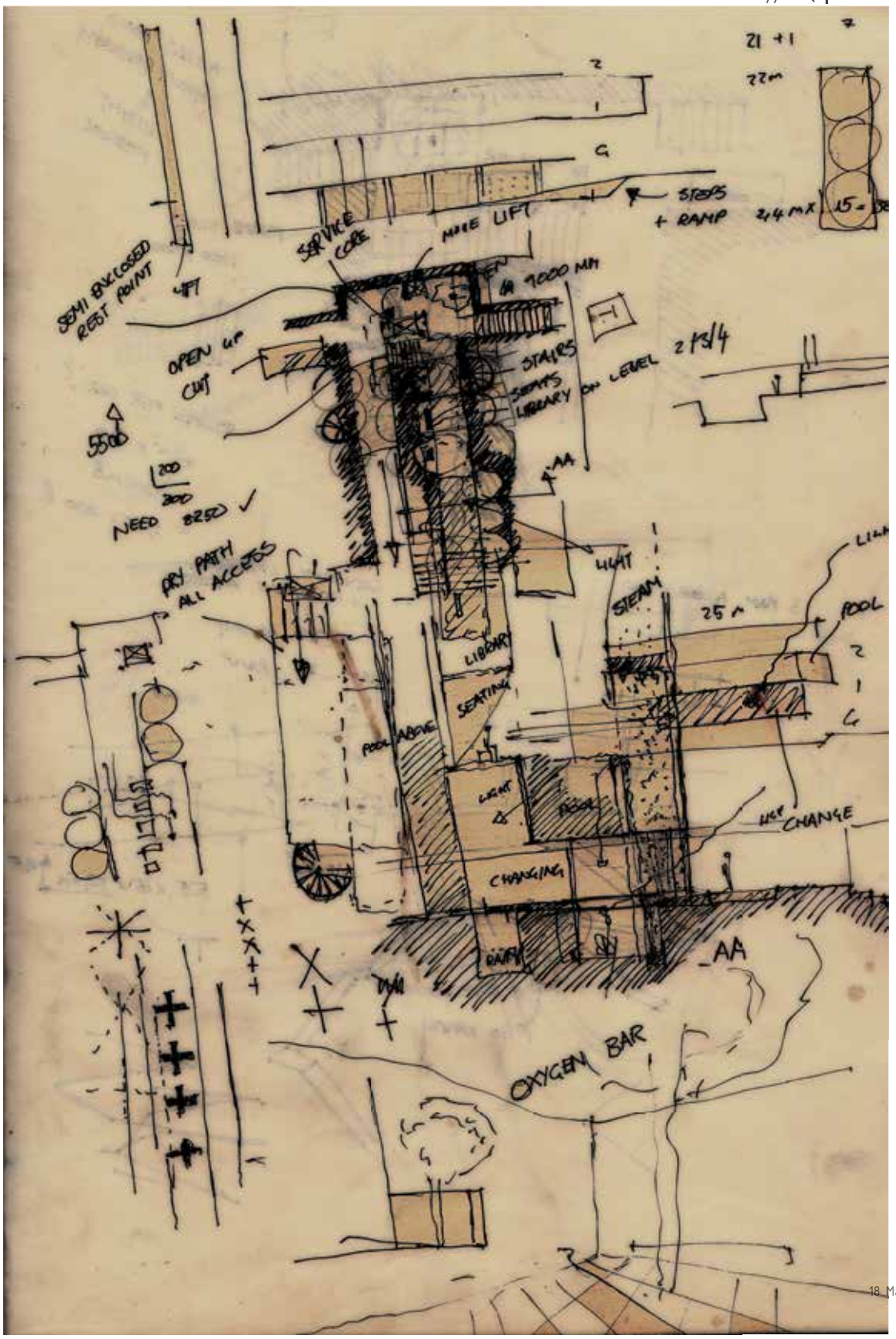
28 March

_8.19 Movement studies of diver through freespace [air] and warped space [water]



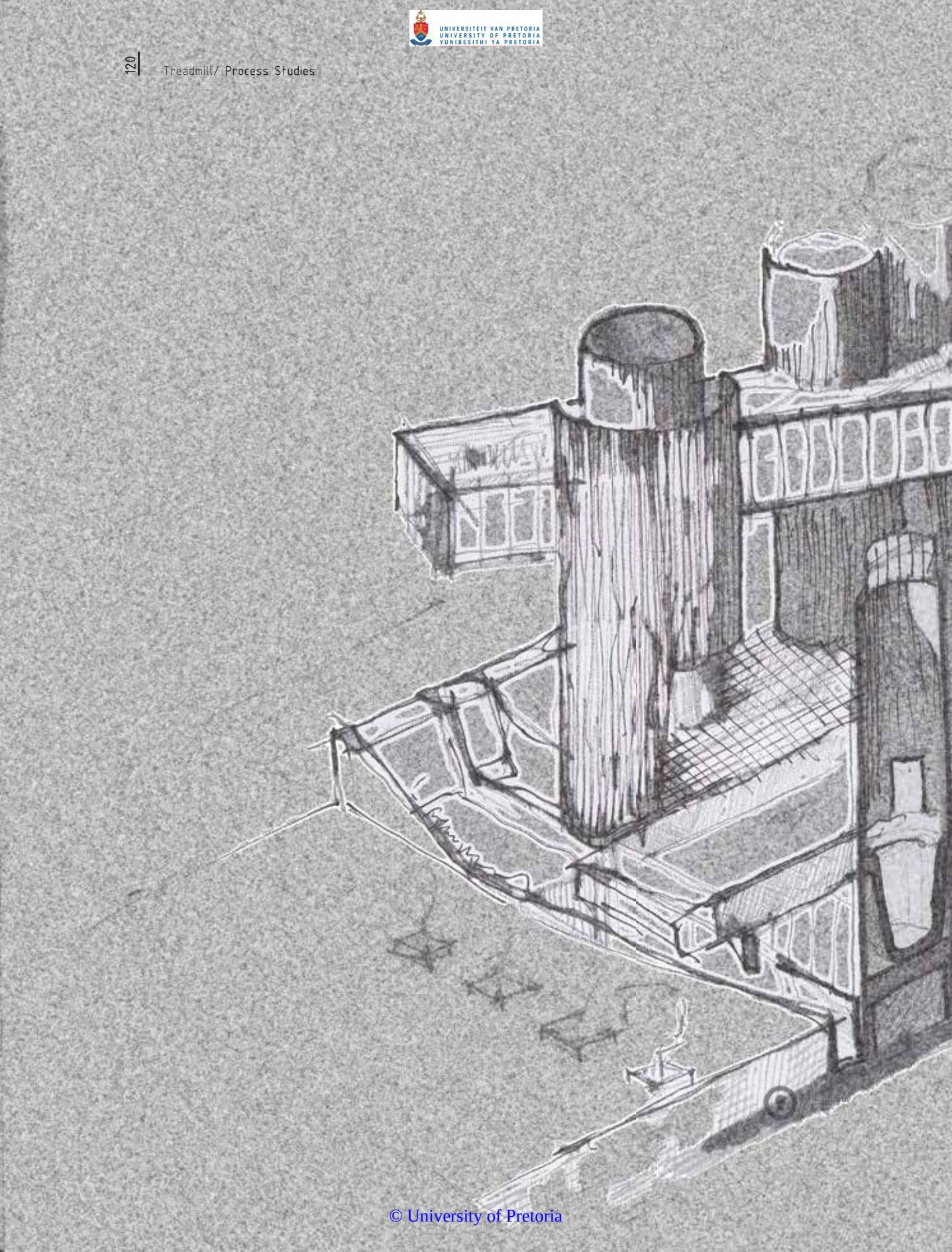
p.104

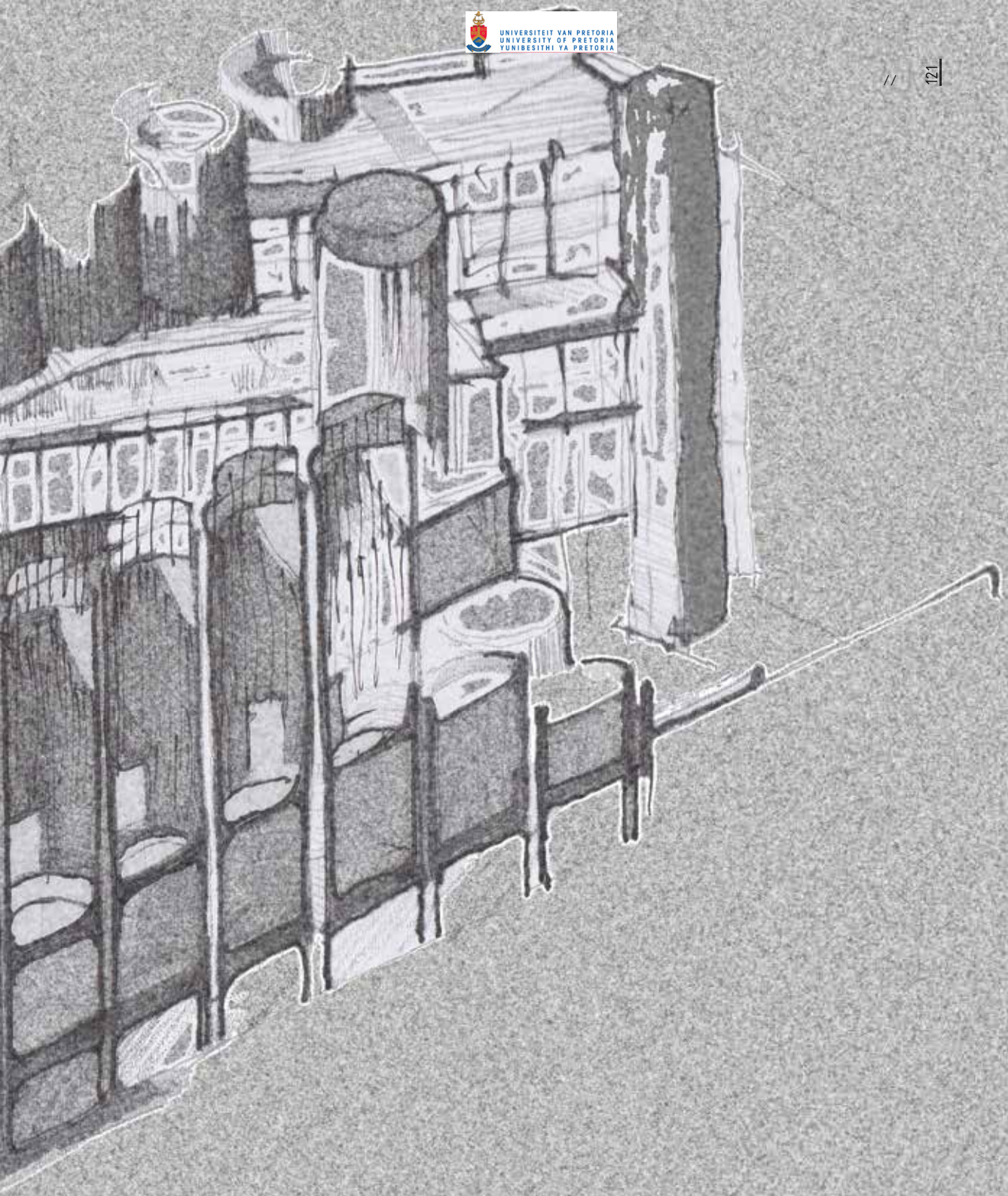
_8.20 Conceptual Plan of poolside spaces



18_May

_8.21 Conceptual Section





_8.22 Axonometric section exploring various pool depths inside the silos

AUXILIARY PROGRAMMES

Bottom Layer - Desire

Changing rooms are understood as a programme. Removing layers of clothing and engaging in a cleansing ritual prepares the body for the act of swimming. Placing significance on the changing rooms transforms the meaning of servant spaces and creates a cinematic experience this integral part of swimming pools.

Gymnasiums and libraries have long been associated with swimming such as at the baths of Caracalla in Ancient Rome. Alternative gymming, such as yoga is introduced, together with traditional cardio and weight training.

A water purification laboratory is introduced into the basement, and exposed to the public in order to raise awareness of water usage and cleaning facilities. [This programme is discussed in more detail on p.134]

Middle Layer - Indulgence

The library takes advantage of two silo interiors to host 92 conventional 300 x 1800mm book shelves whilst reading spaces are scattered across the complex.

Top Layer - Leisure

The diving centre serve as a freediving tower and provide for police training currently done outside Pretoria. The prayer room and baptism pool work in tandem of vertically stacked spaces, and may be appropriated for small church services too. The skyline walkway saunters across the roof of the corridor and leads to private garden spaces. A small cafeteria caters for events and provide snacks and drinks for swimmers.

p.152

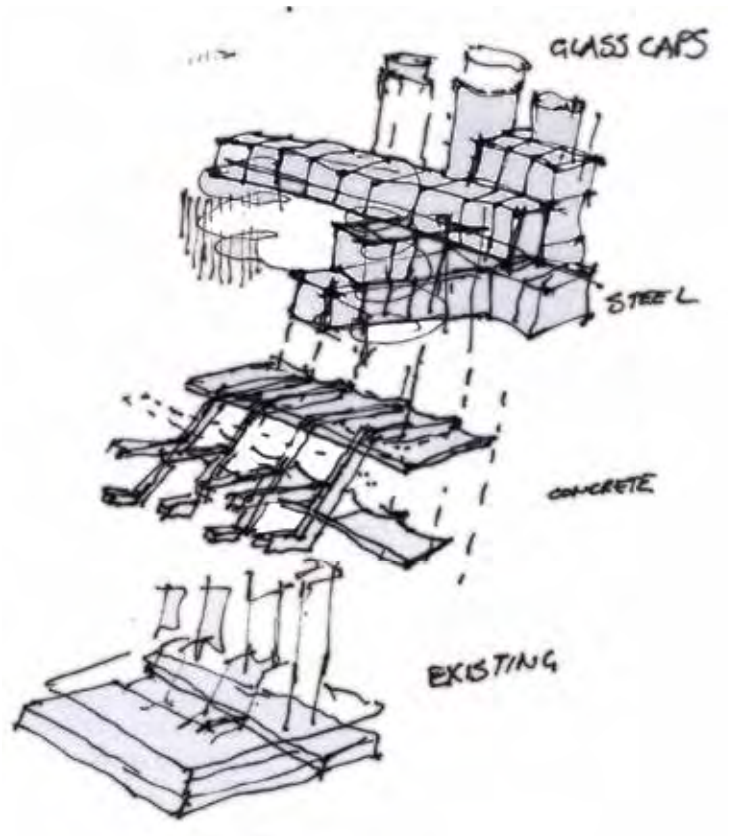
_8.23 Montage of poolside activities

TECHNE

THE MATRIX OF CHOICES

	DESIRE	INDULGENCE	LEISURE
EVENT	Change/Cleanse	Swim/Bath	Dive Unprogrammed
TIME	Slow	Timeless	Slow/Fast
MEMORY	Intimate/Material	Collective/Childhood/ Imaginative	Staged/Animated
SOUND	Echo/Muffled	Serene/Tranquil/ Intense	Silent/City
LIGHT	Dark/Focal	Filtered/Bright	Levels of Exposure
MATERIALS	Concrete/Timber/ Brick/Leather	Weathered Concrete/ Water/Bronze/Copper	Steel/Glazing/Concrete/ Grass
TYPOLOGY	Chamber	Grottos/Verandah	Floating Corridor
MOVEMENT	Slow/Directional	Suanter/Pause	Slow/Fast/Directional
TECTONIC	Heavy/Rich	Sculptural	Light/Crisp/Clean
COLOUR	Grey/Red/Brown	Grey/Green	Grey/Green/Yellow

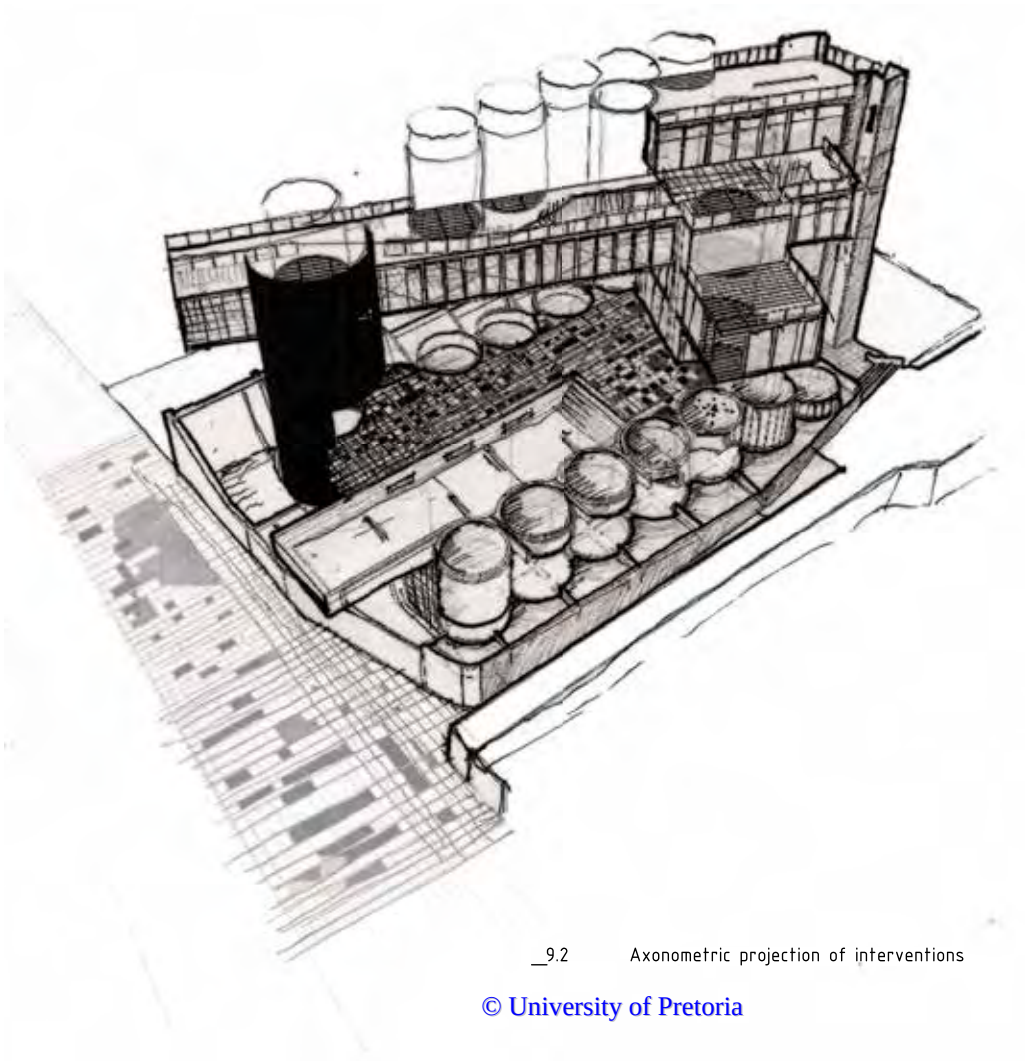
p.110



_9.1 conceptual axonometric of the existing structure and interventions

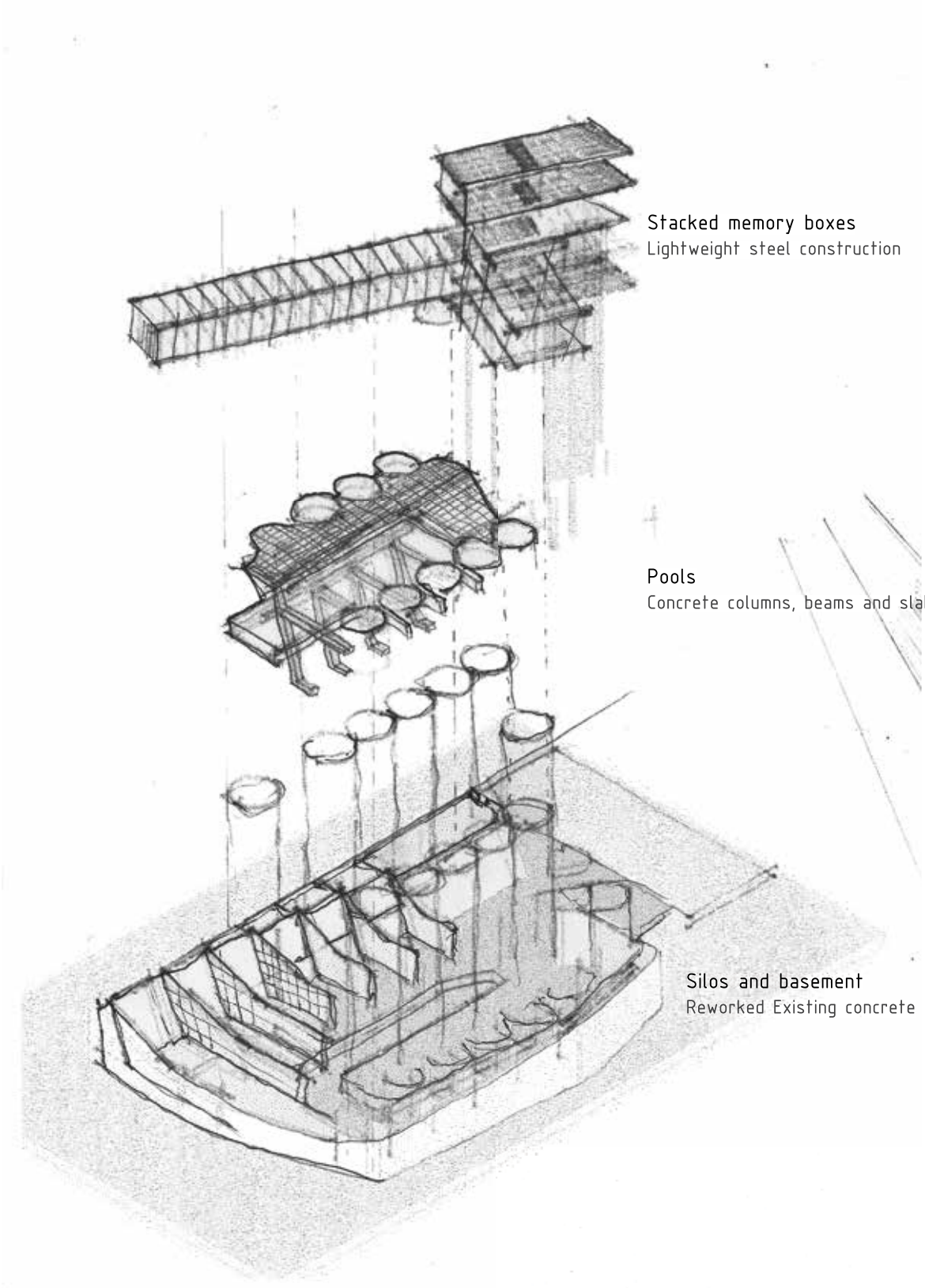
STRUCTURE

Spatially the building is comprised of 3 parts. The lightweight steel structure link the isolated silo spaces above the pools. In addition the steel corridors create an interior/ exterior spaces on the poolside level. The pools rest on the primary concrete beams which is grounded to the existing slabs. The pools as a ground plane become a spatial tool dividing the overall structure into chambers and attics.



p.140

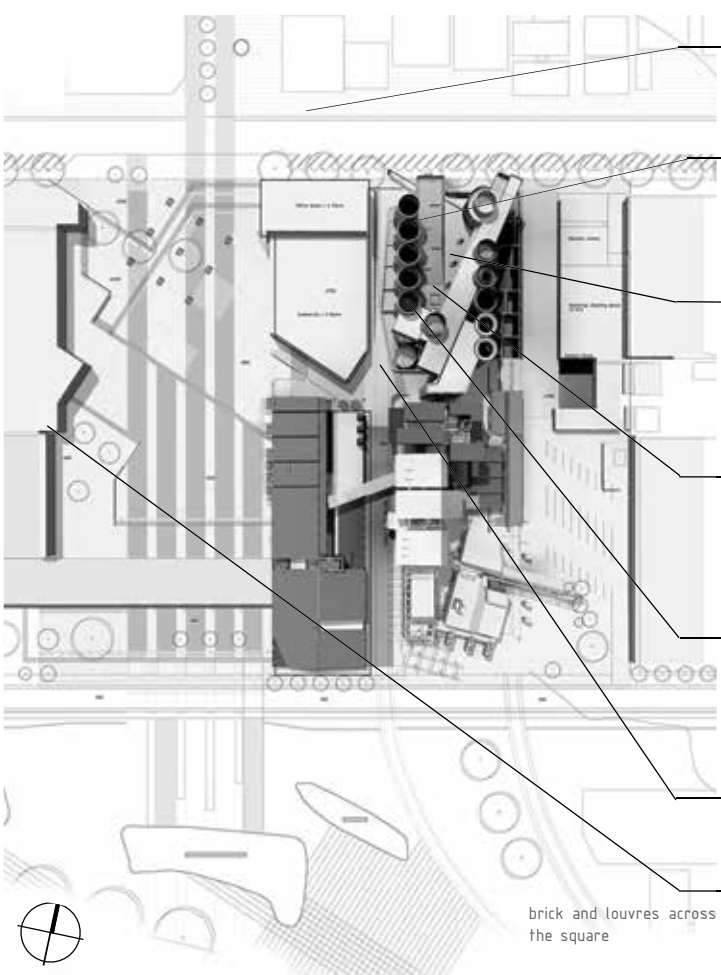
_9.2 Axonometric projection of interventions



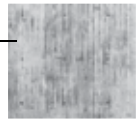
_9.3 exploded axonometric of structure layers

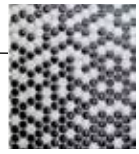
MATERIAL SELECTION

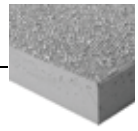
The industrial nature of the context is predominantly expressed through robust materials such as steel, concrete and brick. New materials comply to the spatial genres in order to create specific experiences of space. [refer to the matrix of choices. p



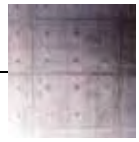

brick use on Mitchell St


existing silo concrete texture


mosaic applied around pool

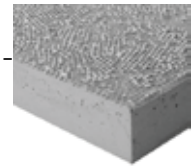
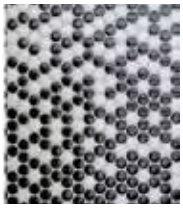

pool surfaces


glass cap support


off shutter concrete used on the ramp

p.056

_9.4 Precinct Site plan and materiality

material		discription	application
Reinforced concrete		Heavy reinforced concrete beams and columns are used to support the main length pool. With light projecting through the bottom of the pool, the surface finishes become important. Sandblasted surfaces receive light while the timber shutter is left imprinted on other surfaces. Other finishes include tooled or off shutter concrete	Used for structural support of pools and floor surfaces next to pools. Also used in the basement and spaces opening onto the artificial wetland
Retroflective high-performance concrete		The unique surface of this high-performance concrete features embedded glass speheres that reflect light directly back at its source through a retroflective mechanism. This gives the material a dynamic illuminated appearance.The material may also be applied as a non-slip surface or discrete safety demarcation.	Used as pool surfaces inside the silos to create an ethereal experience as the floor surface of the pools are seemingly illuminated. Also used at the edges of pool levels as discrete safety lines.
Litracon translurcent concrete		Litracon is used to animate the interior spaces of the changing cubicles, below the swimming pools-providing a soft lighting of the interior spaces. The material blurs the boundaries between the interior and exterior, giving hints of activities on the other side of the surface.	Used in the changing rooms beneath the pool level to give a feeling of lightness and moving/dancing shadows and light. Silhouettes project through this solid surface reinforcing the spatial intent.
Extruded glass fibre performance precast concrete		This high performance architectural precast concrete has an extremely homogenous fair-face finish and brilliant white appearance. The material is very durable and strong. The precast members provide a pristine fair-faced finish and allows for standardization. Due to its strength it also allows for slender columns.	Used in pools as individual treads of the stairs. The fair-faced finish provide for a very clean aesthetic within the pools which is important for the perception of water. Also used to support the glass caps of the silos with slender columns and beams.
Glass mosaic		Glass mosaic is 100% recyclable.The material porvides an animated floor surface and may be applied as a non-slip surface around pools. The mosaic is durable and complies with safety regulations.	Used around the pool levels to animate the floor surface and indicate demolished structure. The animated surfaces extends the feeling of the moving water planes. §

CUTTING CONCRETE

The process of cutting concrete can be done with diamond edge saw blades or a process called thermal lancing. The choice between the cutting processes depends on the type of concrete, size of reinforcement bars and level of precision required.

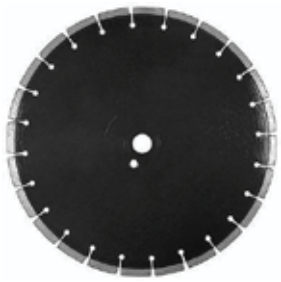
DIAMOND BLADE CUTTING

This process would be applied to smaller jobs with less precision. The saw blade is attached to a concrete saw machine and it cuts like a grinder. Deep floors, such as the existing feed slab of silos may be cut with saw blades under wet cutting conditions. This technique cools the blade and increases its life span. Using diamond saw blades give a rotating line texture to the concrete and may be desired as an aesthetic finish. The *La Trufa [2011]* project by Ensemble Studio is an example of the use of diamond blade cutting.

THERMAL LANCING

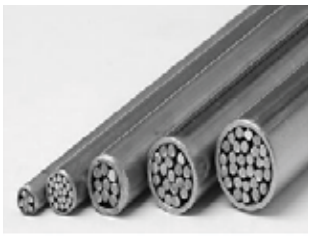
The cutting technology of thermal lancing prouds itself on efficient precision. Low carbon lances are used as the primary cutting device. This is made possible by pure oxygen burning through the lance, consuming the low carbon wires. The extreme temprature of the lance literally melts through any material. This includes carbon alloyed steel, high-alloyed steel, cast iron and non-metallic materials such as bricks or reinforced concrete. The level of cutting precision is unmatched and efficient compared to traditional demolition processes. This process would be applied to precision cuts made for openings into the silos.

p.060

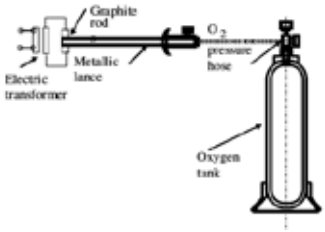


_9.5 Concrete saw blade with diamond edge

_9.6 The La Trufa concrete edge, cut with a 1800 mm diamond saw blade.



_9.7 Low carbon lances



_9.8 Basic circuit of thermal lance

_9.9 Precision cutting

_9.10 Thermal Lancing

WATER SYSTEMS

The water complex relies heavily on the water purification system. Rainwater is harvested from across the precinct and purified to the Water Law level 5 for public swimming pools Submergence requires the highest rated purification of water. This implies that the recycled water is also potable.

The silos are situated at the lowest altitude of the precinct. A 5m difference separates Mitchell St to the North and Carl St to the South. This enables a water network across the precinct to serve each project and to harvest surface runoff over approximately 12 000 m^2 Each project plugs into this network and channels water down towards the silos for water purification.

The water purification occurs in five steps.

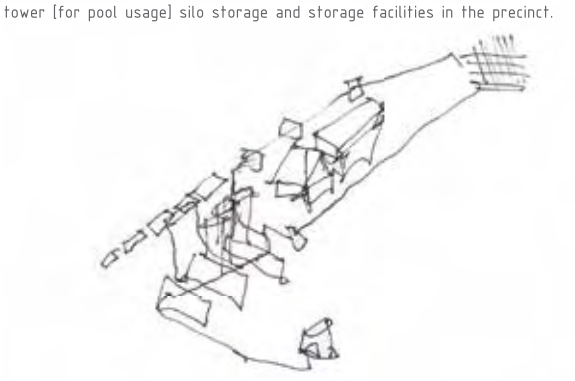
1. Multiple debry filter tanks seperated surface debry from the water with mentisgrating and mesh grids.

2. An oil and grease strip seperates oil from the surface of the water. This filter works in conjuction with a settling tank which allow sediments to settle at the bottom of the tank. Grey water runoff from hand wash basins and kitchens are also channeled back to this point.

3. Water is pushed through the artificial wetland or a reverse osmotic membrane to filter solutions such as NaCl or CCO_3 from the water. Plants such as Typhacapemsis [Reeds] ; Crinum bulbuspermum [Lily] ; Nymphea nouchali [Lily] absorb these solutions in the wetland.

4. Finally the water is purified to potable levels through a UV Filter to filter microbes from the water

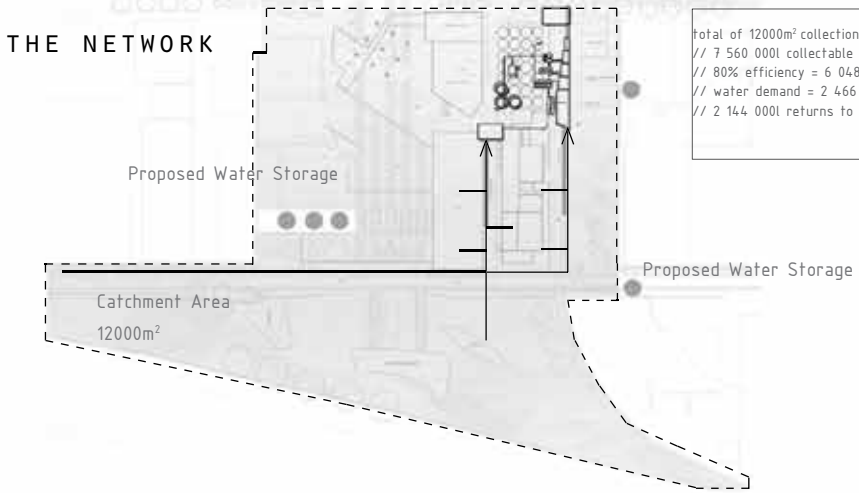
5. Pumped to distribution tower [for pool usage] silo storage and storage facilities in the precinct.



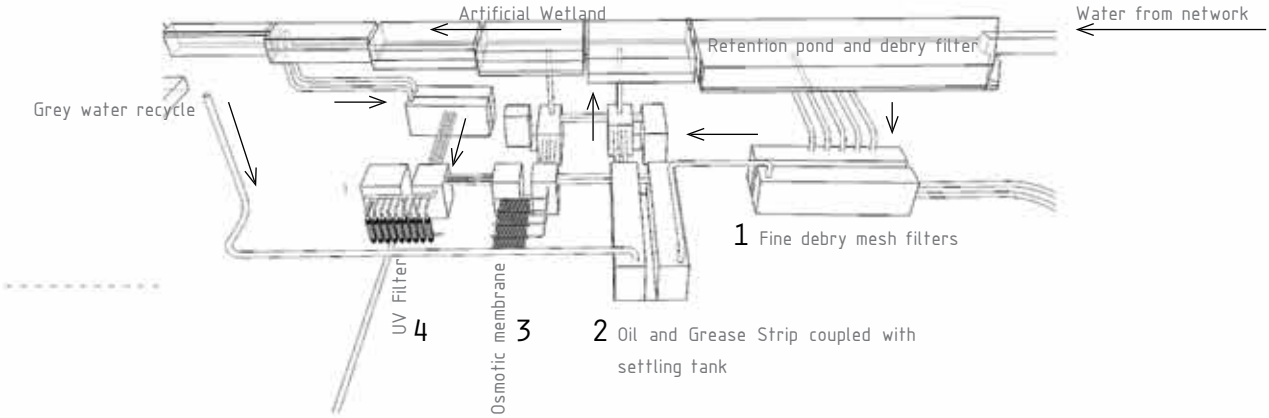
p.076

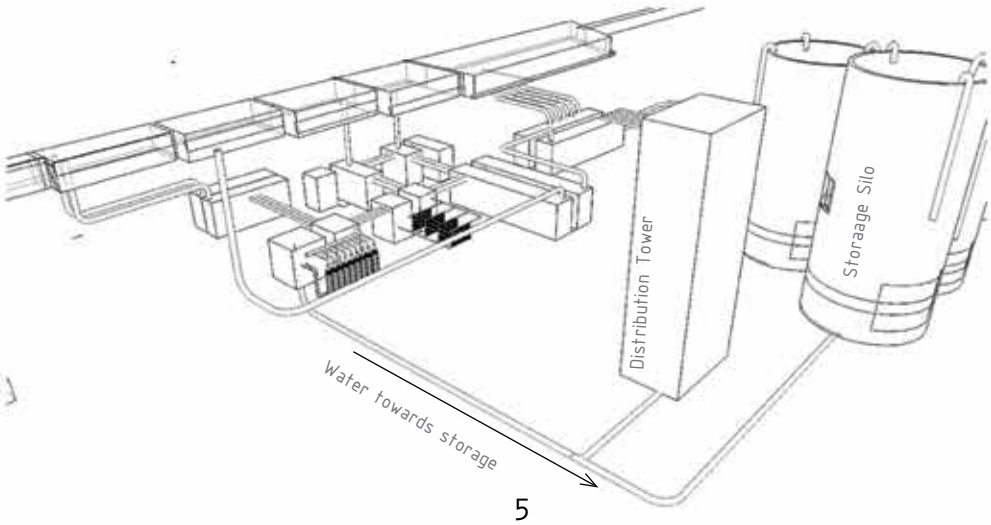
__9.11 Schematic diagram of water network

THE NETWORK



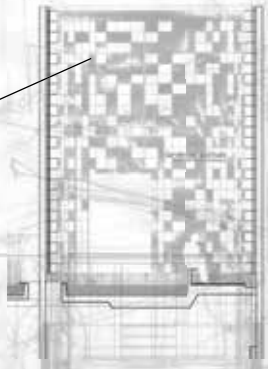
total of 12000m² collection surface
// 7 560 000l collectable per annum [-20% losses]
// 80% efficiency = 6 048 000l
// water demand = 2 466 000l pools and 1 438 000l for storage
// 2 144 000l returns to grid as potable drinking water





ACOUSTIC CONSIDERATION

The acoustic performance inside the silos influence its spatial qualities. The existing condition of the silos have a fairly high reverberation time rendering an intense acoustic performance. The pool condition considers the silo with least amount of additions and the smallest pool which renders a modest reverberation time, suitable for the acoustic environment. The garden of solitude relies on an acoustic dead space. In this space the hidden acoustic cladding reduces the reverberation to a mere 0,045s - creating a surreal environment inside the silo garden.



Garden of solitude

spatial dimensions : [πr^2] 38 500 x 7 500mm
considerations : concrete, acoustic cladding, vegetation, people

Reverb Time : 0,045 s

The existing conditon

spatial dimensions : [πr^2] 38 500 x 17 000mm
considerations : concrete surface - wall, floor, roof

Reverb Time : 5,86 s

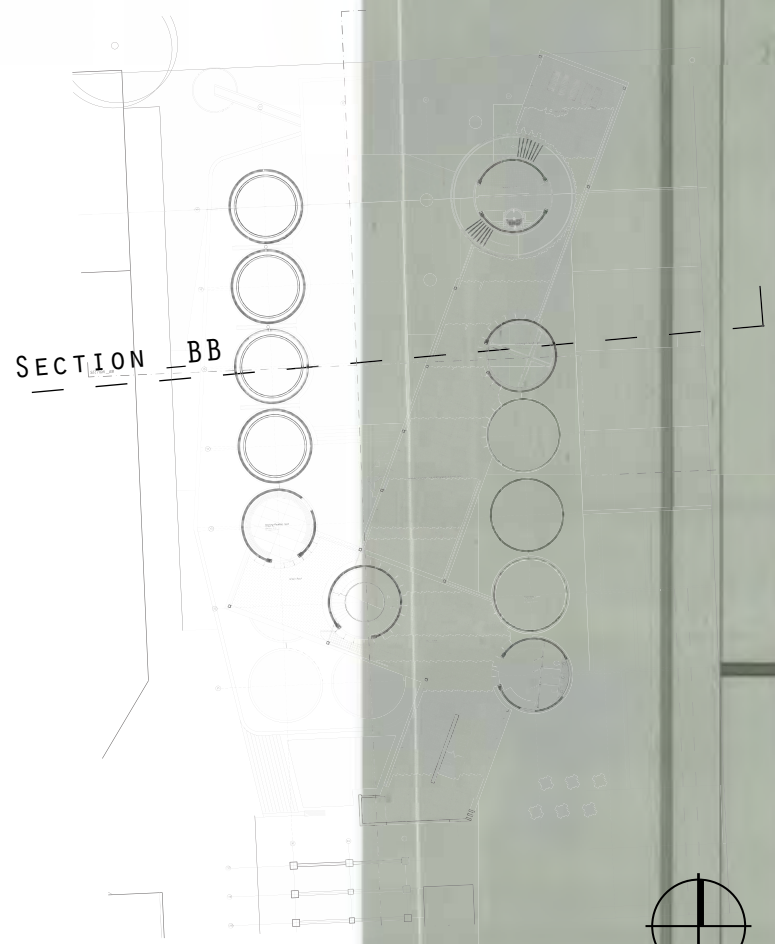
Pool condition

spatial dimensions : [πr^2] 38 500 x 17 000mm
considerations : concrete, glazing, water, openings, people

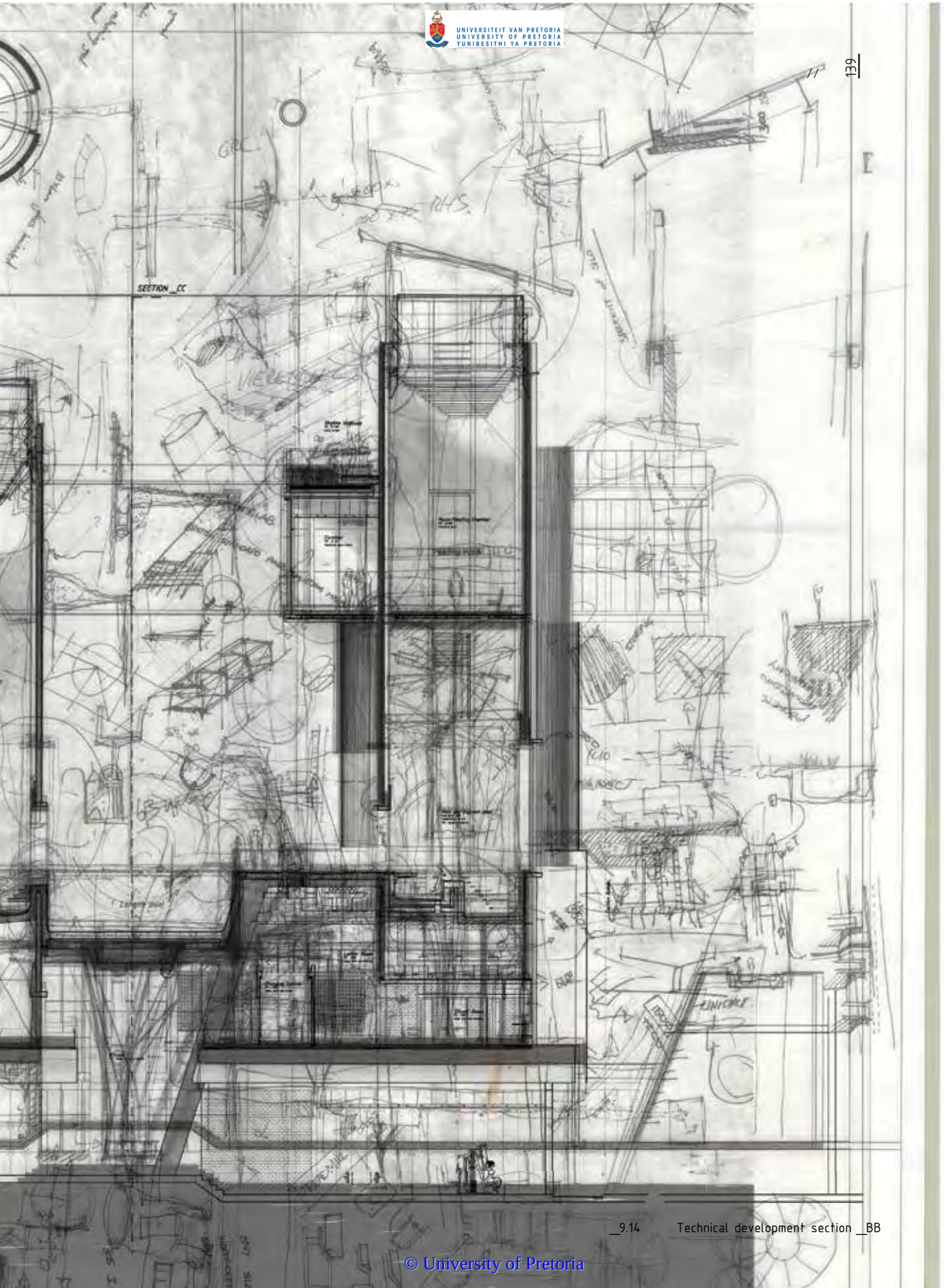
Reverb Time : 1,37 s

TECHNICAL GROWTH

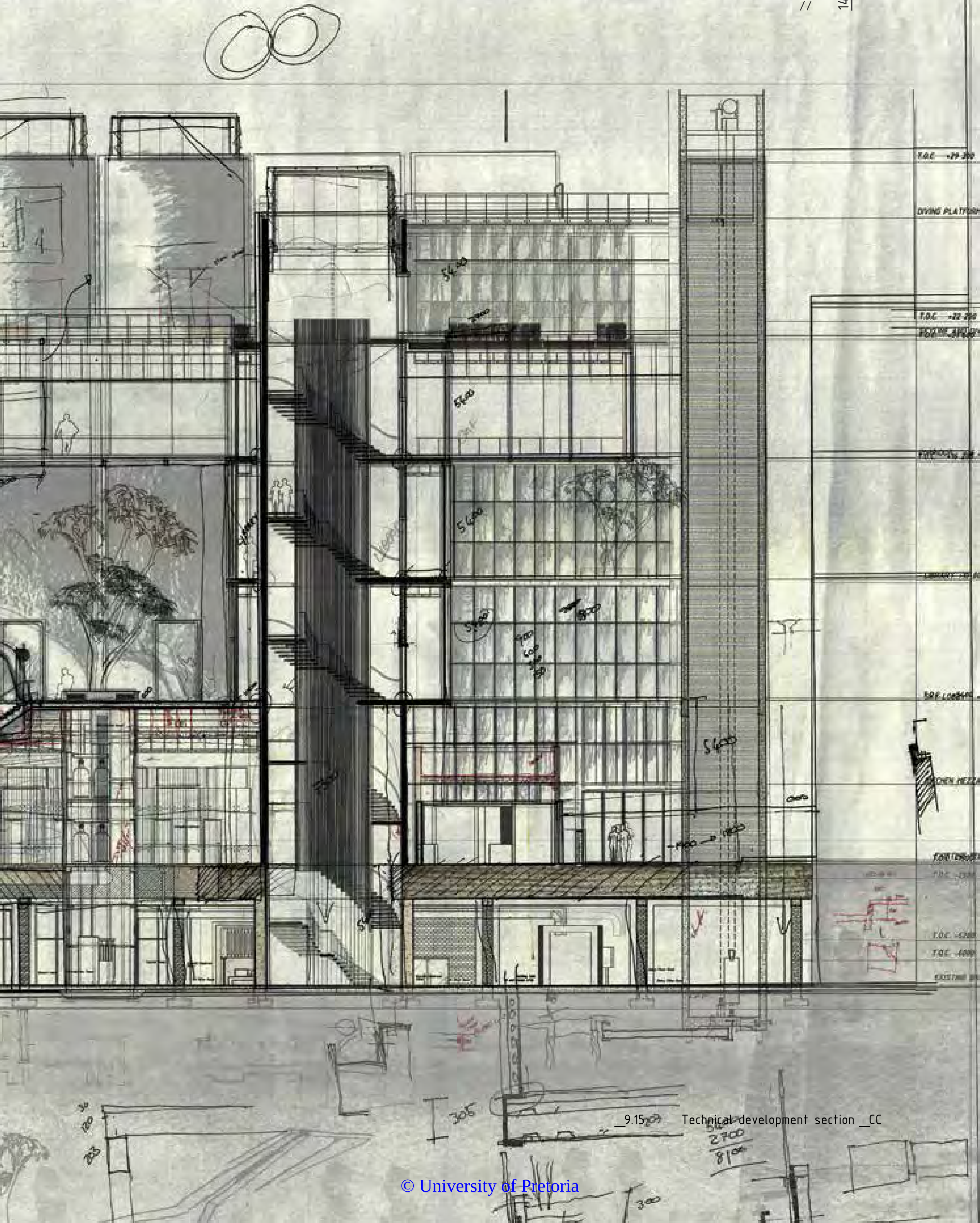
A layered approach displays the technical development of the project. The drawings display four versions of sections _BB and _CC



SECTION _BB



_9.14 Technical development section _BB



__9.15 Technical development section __CC

DECONSTRUCTION PROCESS

The animation of deconstruction process considers a possible concstruction timeline of the project. The timeline maps the order of elements constructed on site ranging from demolishing the existing structures to cutting opening and cutting through the existing structure with the new. This process also display the interaction of subject and object.

existing condition

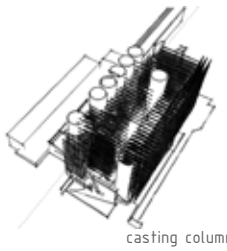
removal of drywalls

scaffold construction

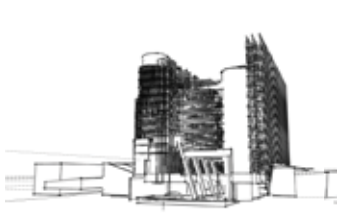
growing scaffold and silo deconstruction

growing scaffold

growing scaffold and cutting slabs



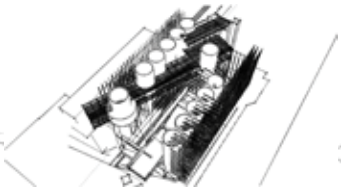
casting columns



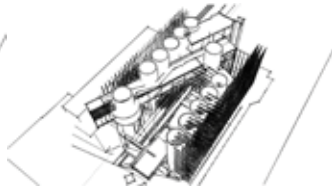
Beams and columns in place

Casting slabs

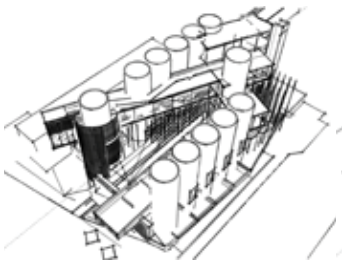
steel framework construction for corridors and siteworks suchs as ramps and wetland



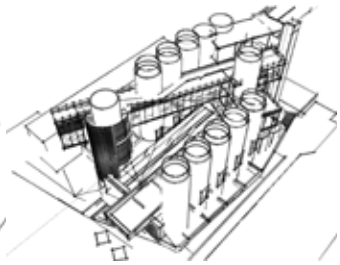
Steel infill and permanent shuttering for corridors



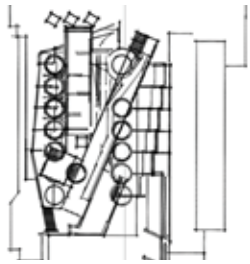
casting concrete floors for corridors and cutting window openings into silos



staircases and steel fittings around silo



glazing, silo glass caps and balustrades



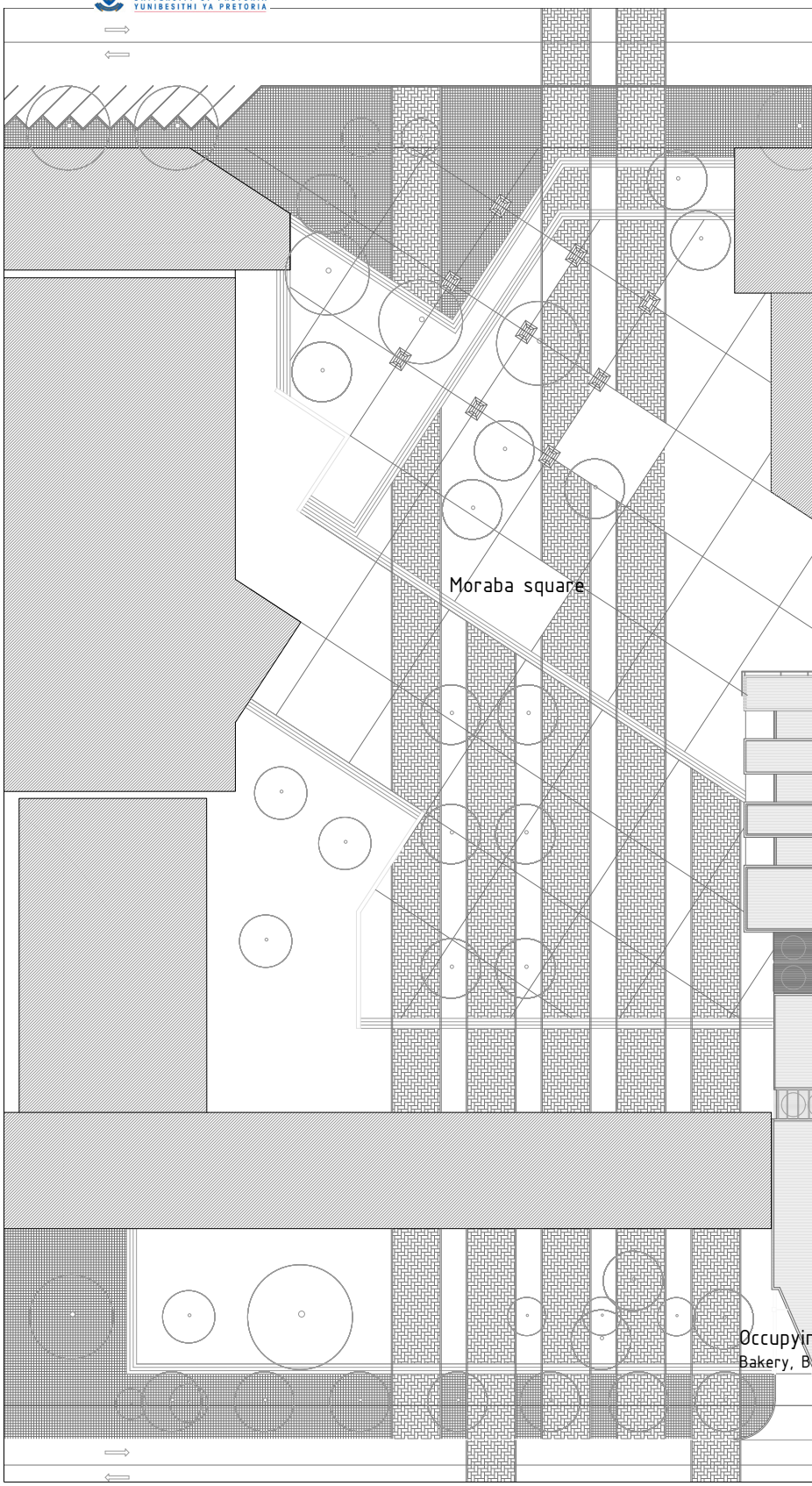
site plan

_9.16 Animation

DRAWINGS

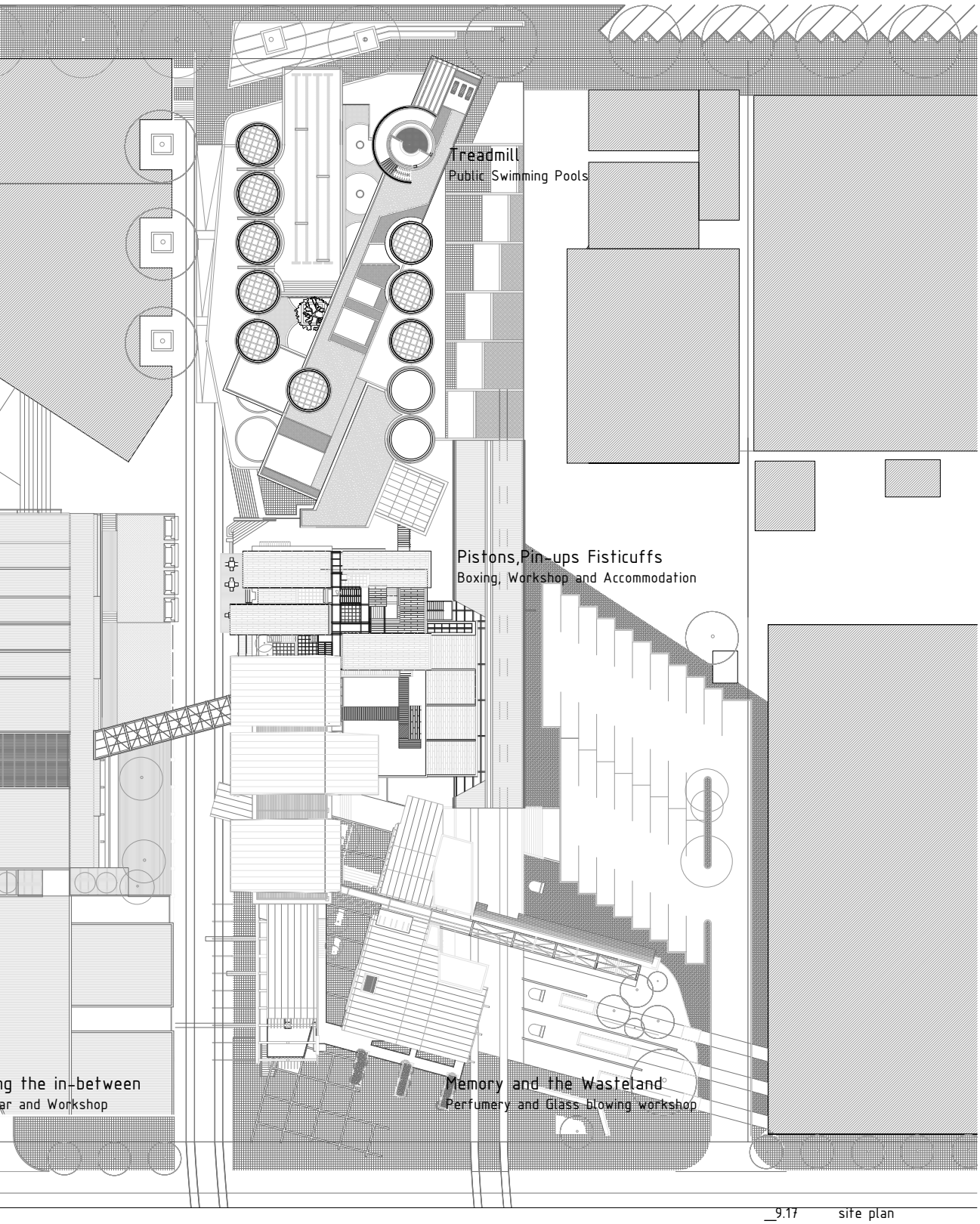
Where concepts and design explore multi-dimensionality, techne questions multi-dimensionality.

The techne drawings qeustions the object and subject in resolves the synthesis of the new and old. The plans, sections and details is the metamorphosis of a conceptual sketch. Technical drawings document the thinking process of questioning and is also a sophisticated design tool.

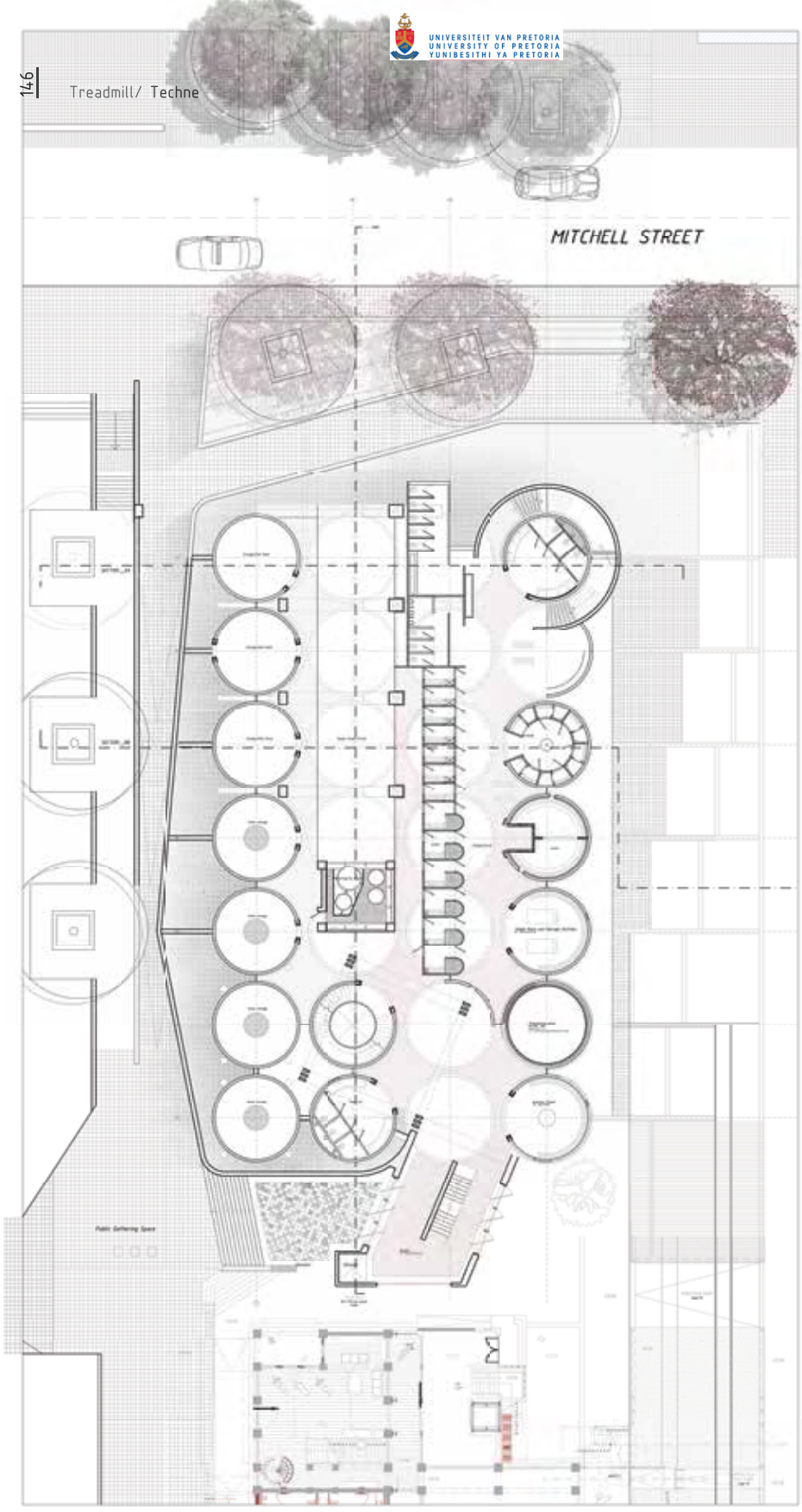


HARD-BOILED WONDERLAND SITE PLAN

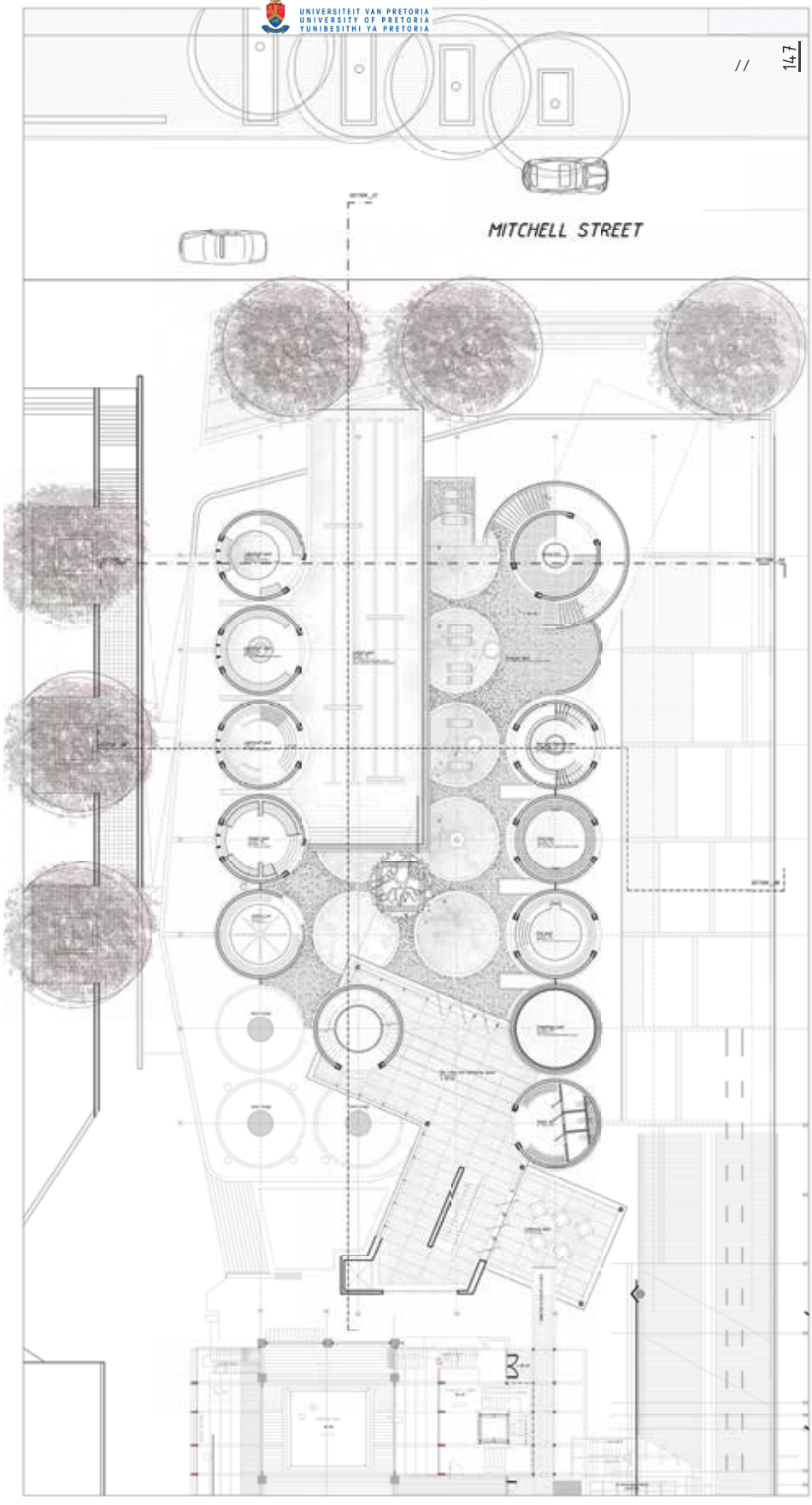
Mitchell Street



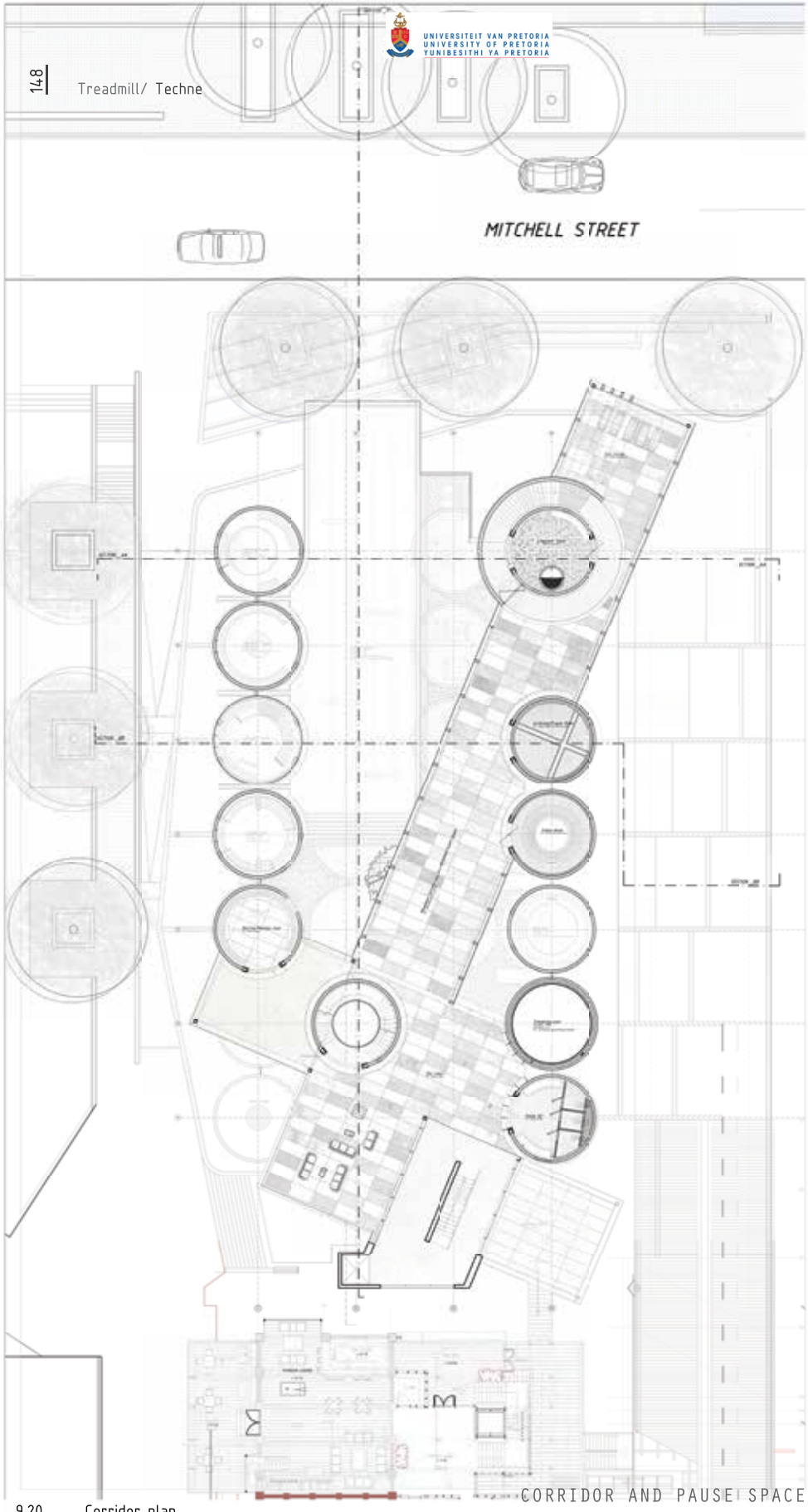
_9.17 site plan



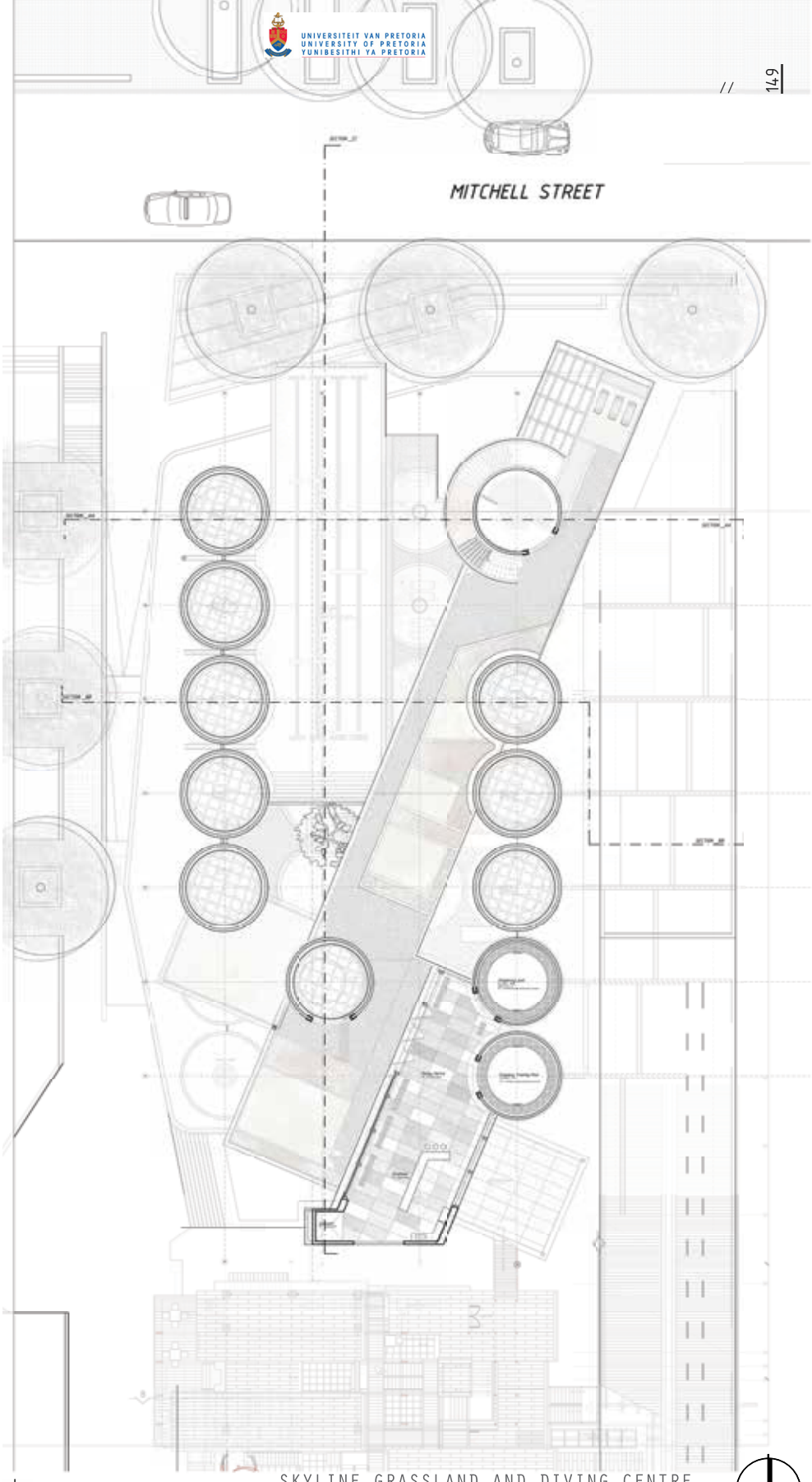
_9.18 Feed slab plan



_9.19 Poolside plan



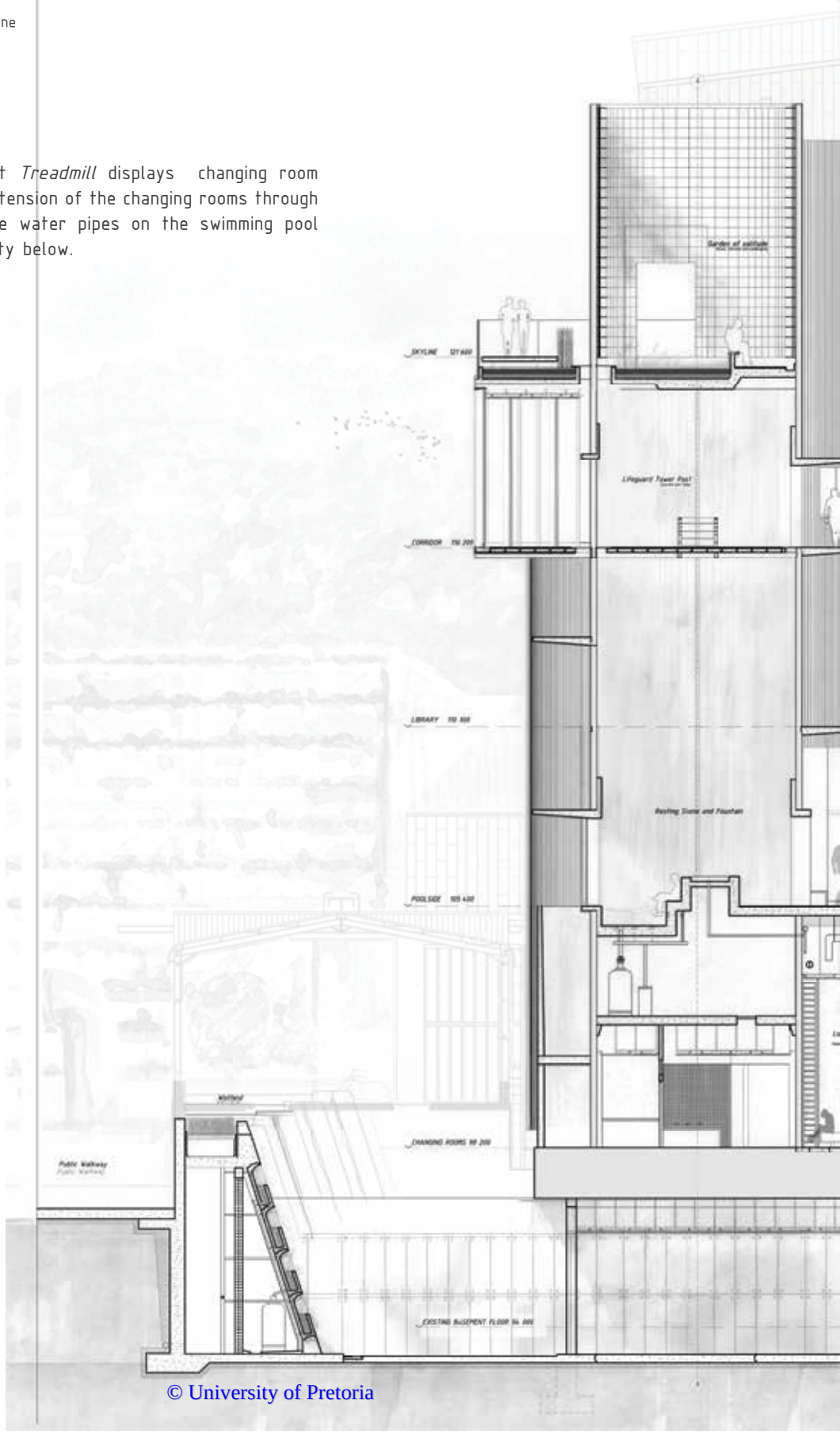
_9.20 Corridor plan



_9.21 Skyline plan

Time : 09h30

The morning scene at *Treadmill* displays changing room interaction and the extension of the changing rooms through steam rising from the water pipes on the swimming pool level, signifying activity below.

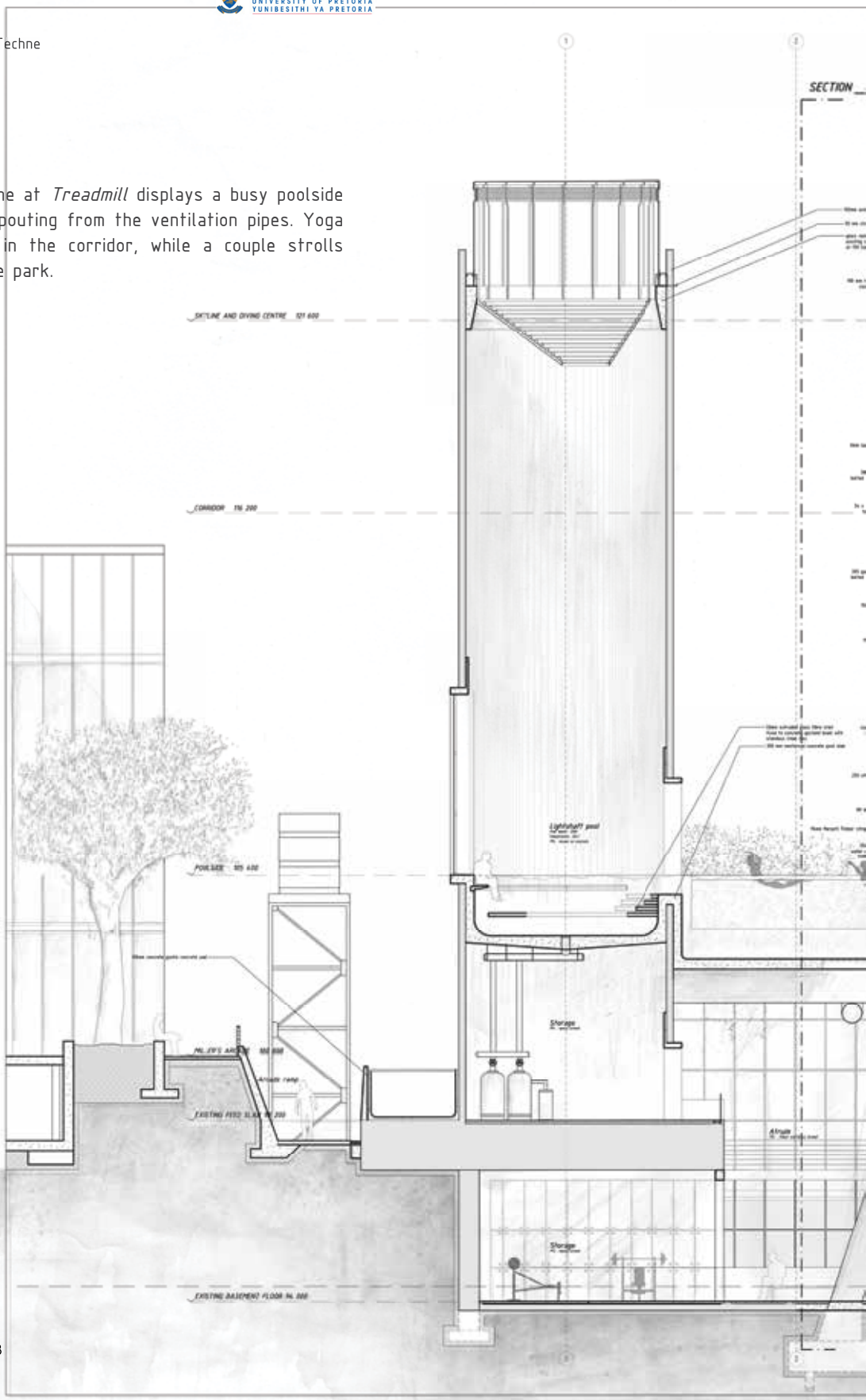


_9.22 Section _AA

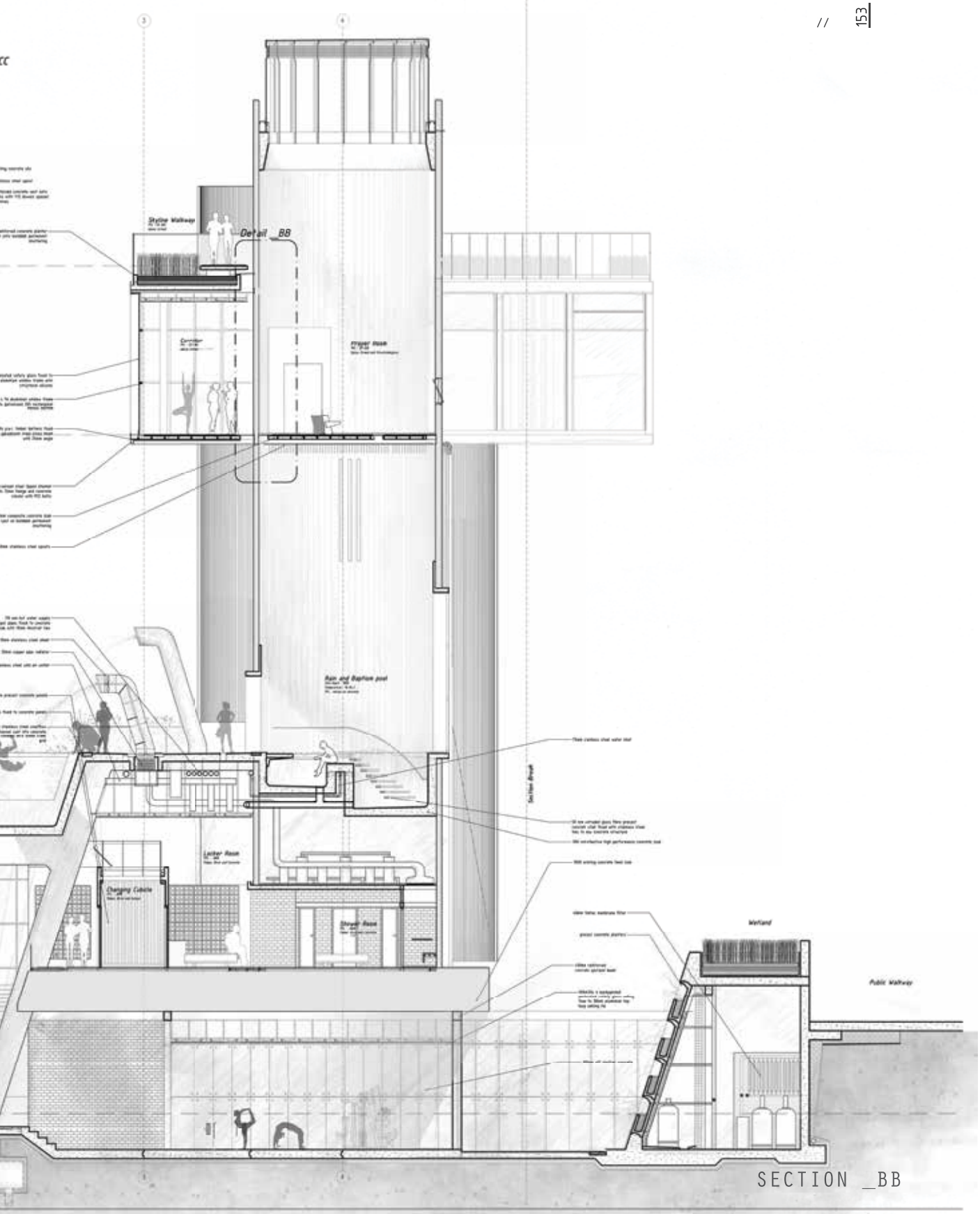
SECTION _AA

Time : 15h30

The afternoon scene at *Treadmill* displays a busy poolside level with water spouting from the ventilation pipes. Yoga classes commence in the corridor, while a couple strolls through the skyline park.



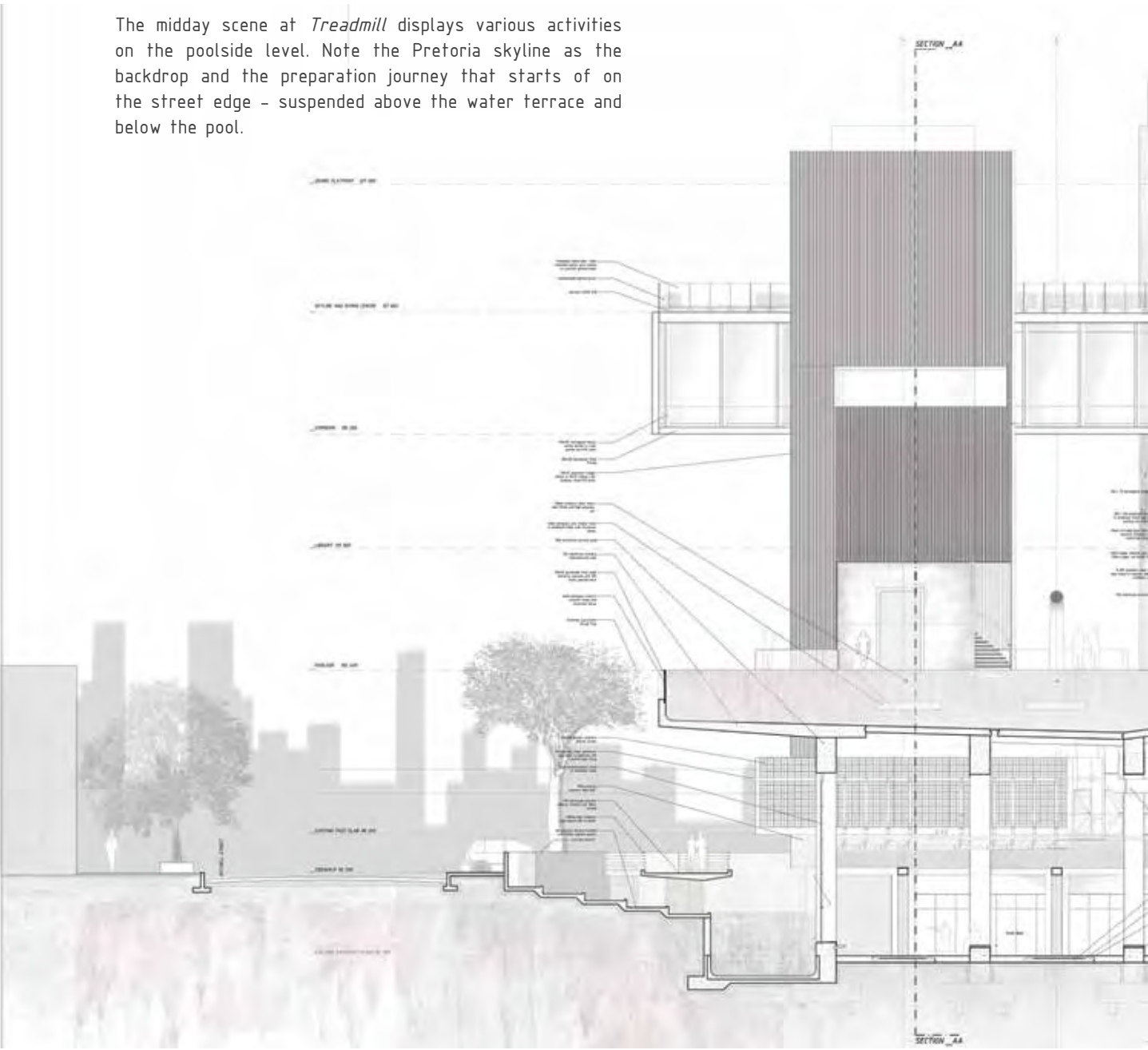
_9.23 Section _BB



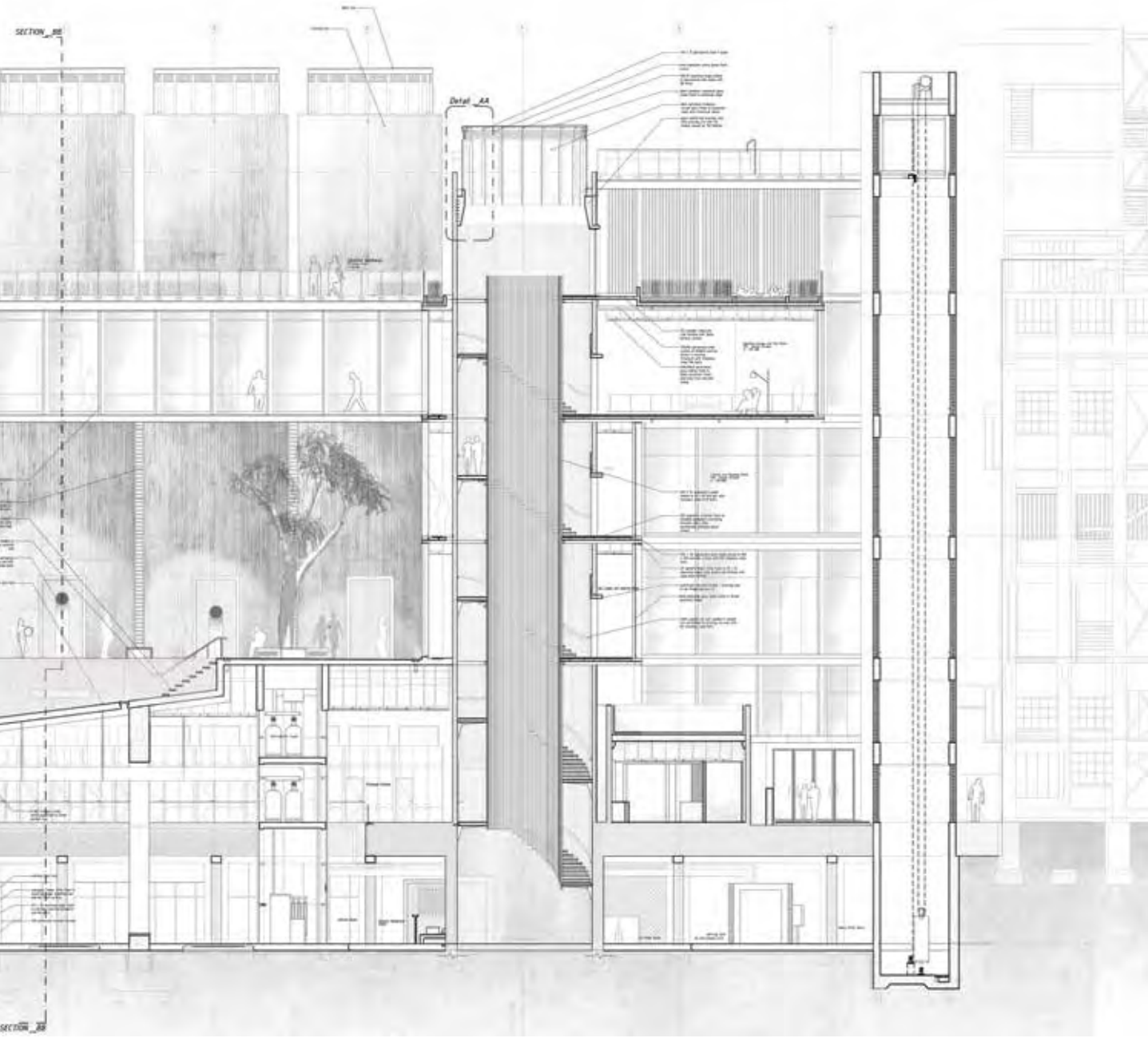
SECTION _BB

Time : 12h30

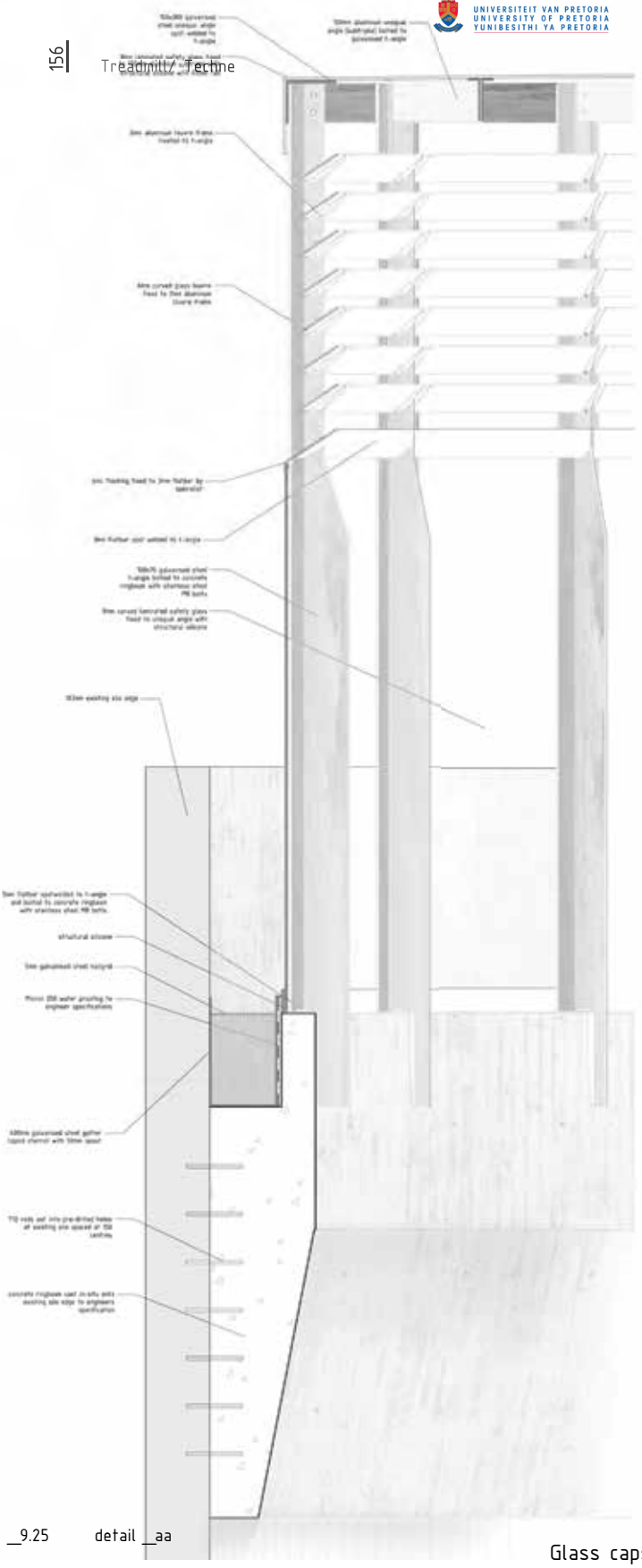
The midday scene at *Treadmill* displays various activities on the poolside level. Note the Pretoria skyline as the backdrop and the preparation journey that starts of on the street edge – suspended above the water terrace and below the pool.



_9.24 Section _CC



SECTION _CC

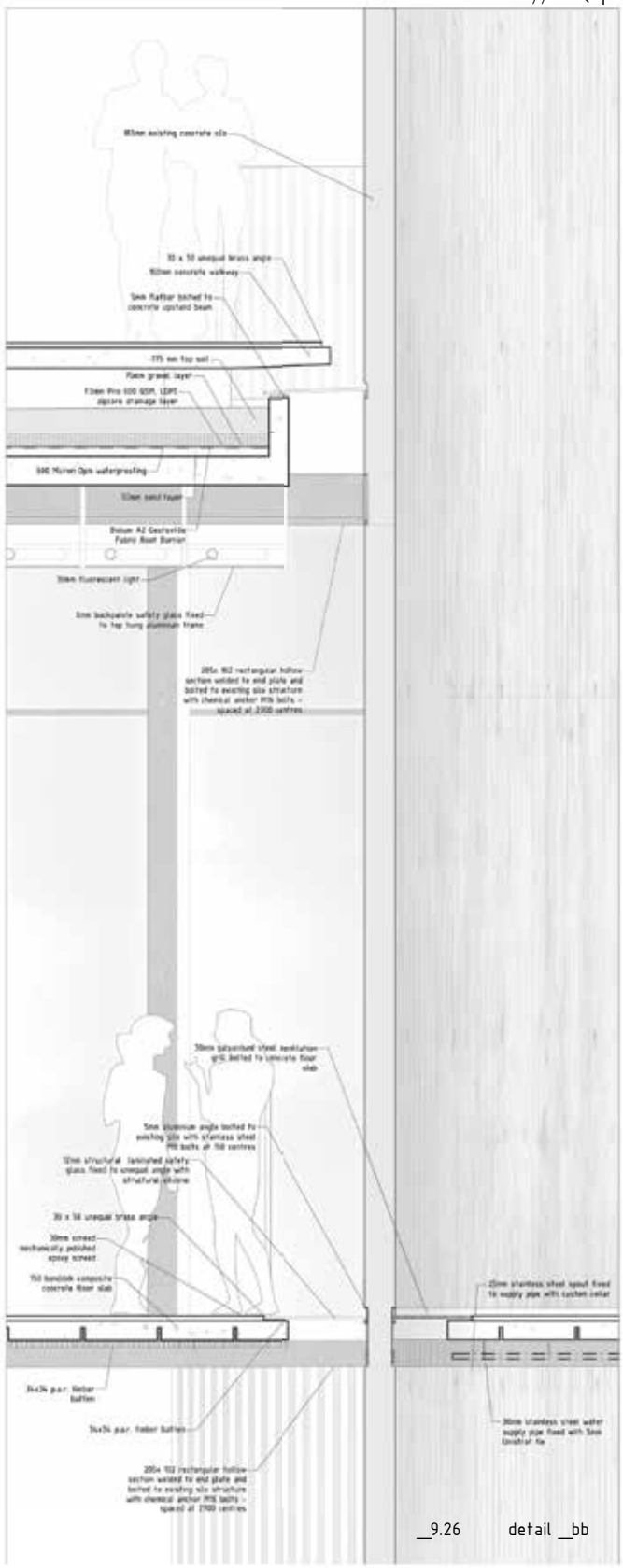


The glass cap has a dual functionality. It filters light into the silos and ventilate the space through a stack effect. At night it serves as a beackon, much like a lighthouse it resuscitates the landmark status of the original structure.

_9.25 detail _aa

DETAIL _AA
Glass caps emerging from the silos

This detail explores how the orginal object (silos) pierce through the intervention. From outside the complex, it appears as if the intervention cut through the silos, but with closer inspection it is clear that the silos or existing structure still prevails as the primary structure. Old and new is constantly split with structural glass, allowing light to perform the cutting process

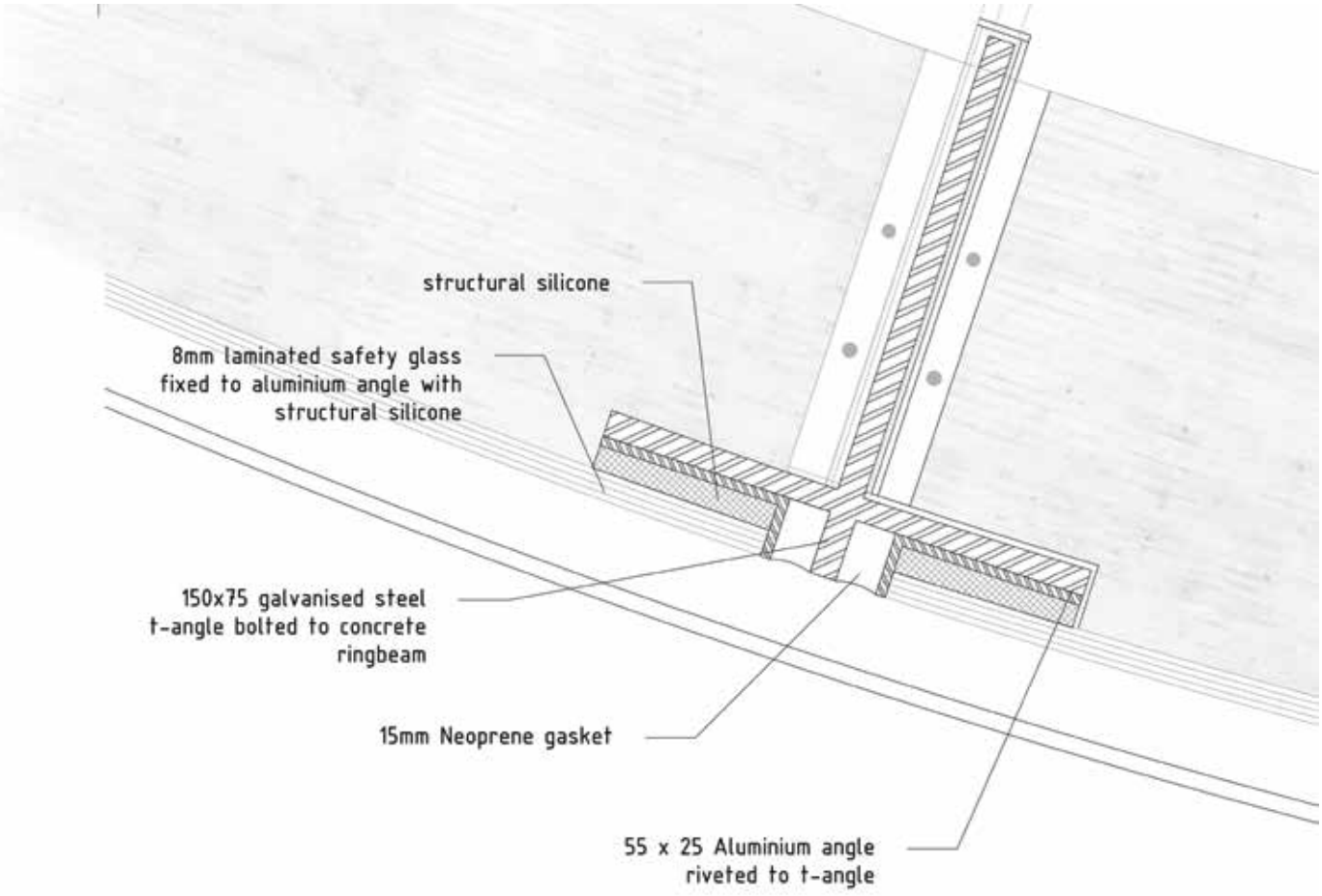


_9.26 detail _bb

DETAIL _BB

Silos piercing the corridor

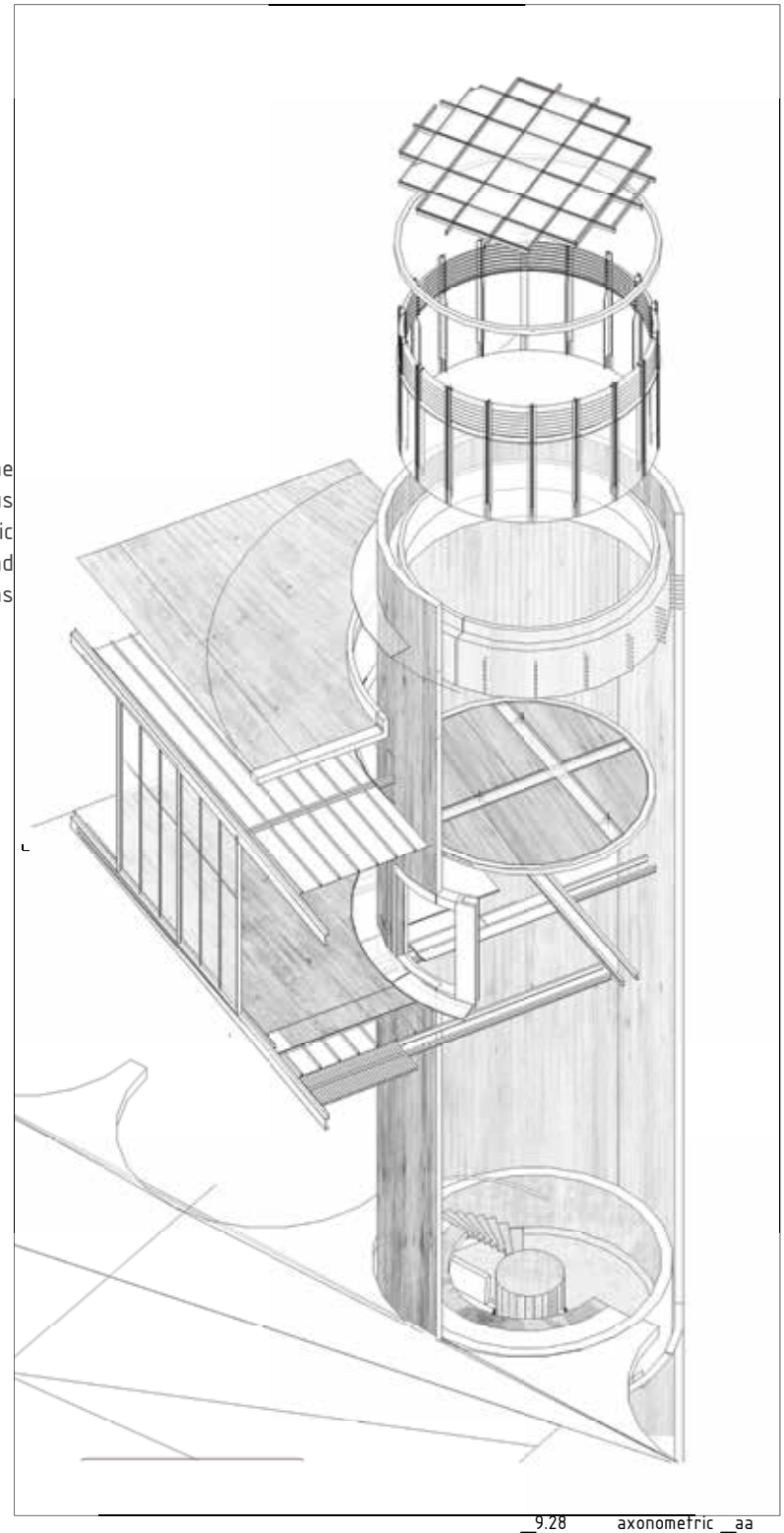
The glazing detail shows the connection between the laminated curved glass and the substructure. The glass is connected to a seperate angle to allow for movement and expansion.



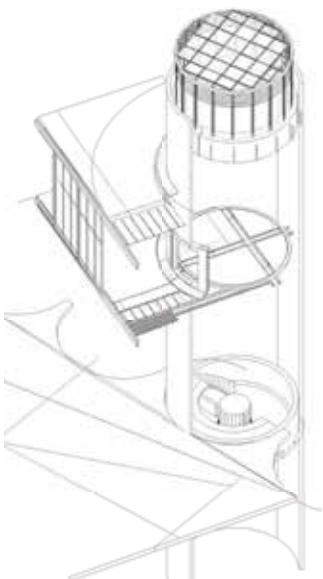
_9.27 detail _cc

DETAIL _CC

The techne details explore the ojbect and subject in various scales. The exploded axonometric place the details in context and explores the various interventions between old and new.

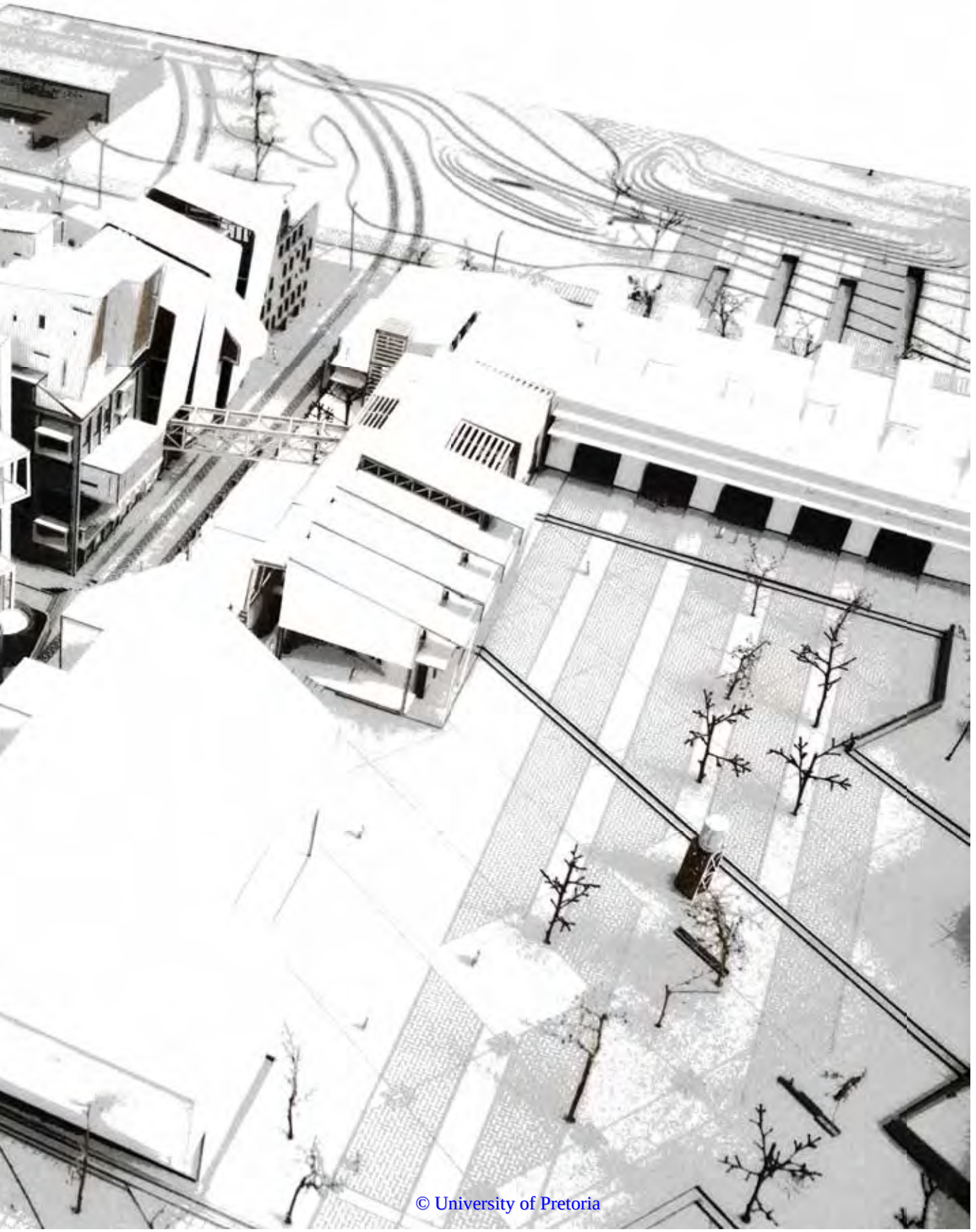


_9.28 axonometric _aa

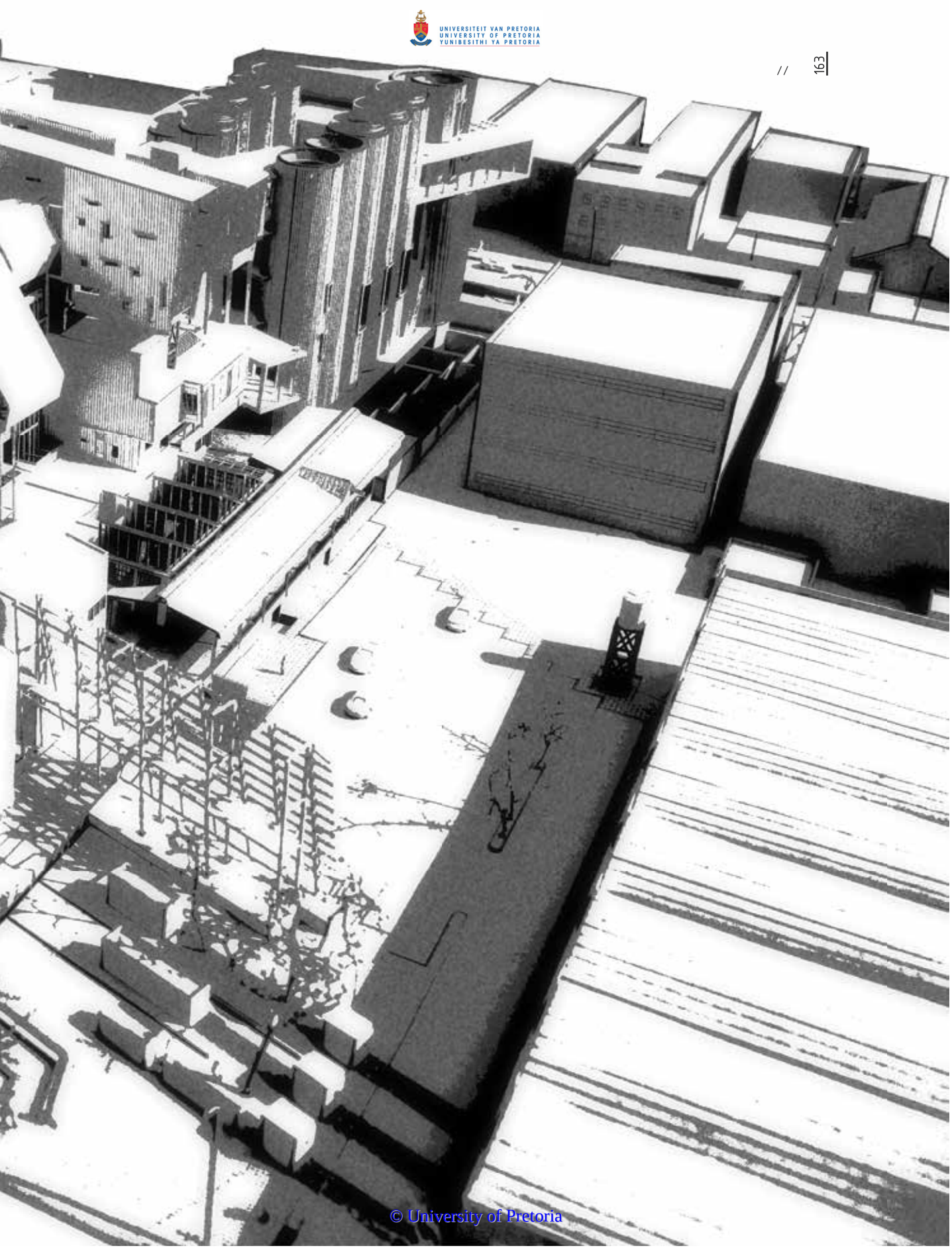


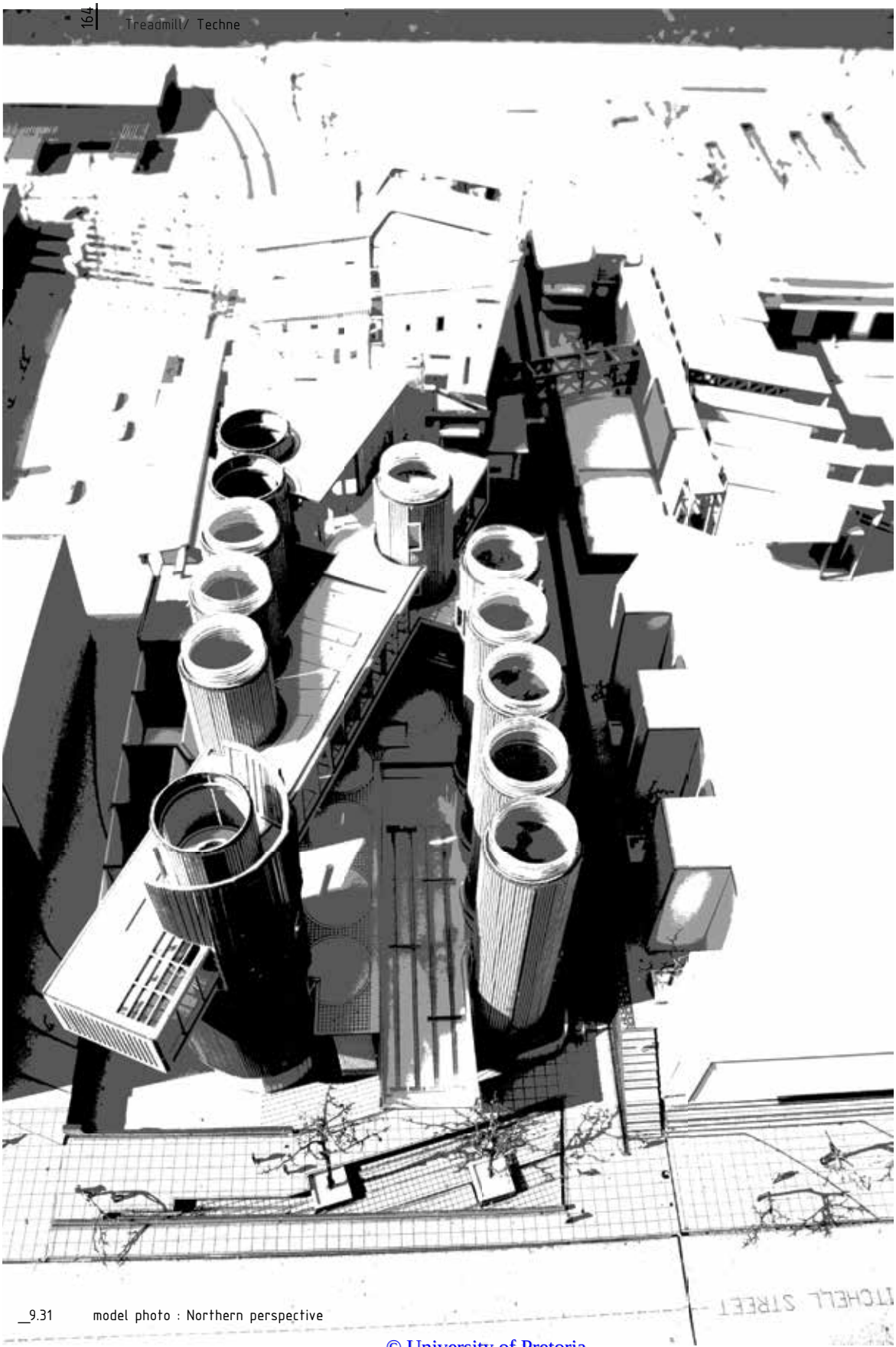
AXO _AA

_9.29 model photo : north western perspective



_9.30 model photo : south eastern perspective





_9.31 model photo : Northern perspective

__9.32 model photo : southern perspective

DESIGN SYNTHESIS

The aim of the dissertation was to investigate the nature of subjectivity and objectivity throughout the continual process of design. The concept was applied to an abandoned industrial structure [the silos] as the original object with the addition of water as the original subject - the merger thereof becoming the experience of space/middle ground.

The context revealed strict subjective parameters of dreamscapes and timelessness whilst being imposing objectively. The design of the *Treadmill* exhibits the idiosyncratic and collective values, manifested from the theoritical approach and allow a unique exploration of architecture that engages with the re-use of dying industrialist programmes.

The merger of subject and object, in this case, is a celebration of possibilities in urban industria. However, to contextualise the structure within the third industrial revolution, a more sophisticated architectural device might have been gratifying. Perhaps an intervention that can inscribe itself into the matter of the existing structure and perform a metamorphosis digitally and physically - oscillating between subject and object in various realms.

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