

FILM AND ARCHITECTURE

Archive Cinema Complex

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Jaco Bruwer jacobruw@gmail.com

Jacques Laubscher (Studio Master)
Marianne De Klerk (Mentor)
Rudolf van Rensburg (Mentor and study leader)

Submitted as part of the requirements for the degree Magister in Architecture (Prof.), in the Faculty Engineering, Built Environment and Information technology, University of Pretoria.

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CHAPTER 1. Introduction

ABSTRACT

The aim of the thesis was to study the relationship between film and architecture. Qualitative research methods were employed during precedent studies. The dynamic medium of film inspired an architectural anchor, the South African film archives. The Pretoria CBD was chosen as the backdrop for the *Archive Cinema Complex*, surrounded by public transport, pedestrianised streets and arcades.

The objective of the design was to celebrate cinema and the collective heritage embodied in film. The programme was positioned in an existing building envelope, and it was allowed to partially occupy the roofscape, becoming a display to the city. The theory informed the need to identify views early on in the design process. Movement patterns around viewpoints define the viewer's perspective during the spatial experience. Thus allowing the spectator to become the observed. The roof provided advantageous height required for an urban visual interplay.

Investigation into circulation, in and around the building, created opportunities for interaction between various role players. These include the built environment, film, user and the city of Pretoria amongst others. The programme was extrapolated along this circulation route allowing the user to navigate the building. Cinematic devices, in particular memory and mental montage, were employed to define the route.

On street level various images announce the programme. The placement of the building and visual interplay of projecting screens exposes the urban dwellers to film.

AIMS

The aim of this thesis is to create a dynamic architectural urban environment that celebrates film and its heritage. The film archive ultimately transforms Pretoria into a cinematic experience lived through memory.

Film is investigated and probed to inspire a typology closely related to the medium itself. Inventive connections to film are covered to add to the body of theory that currently exists. This aims to surpass the superfluous relations, such as narrative, visual aspects, director/architect, and rather inspire the design process. Film becomes cinema through the medium of architecture. The Archive architecture must match the exciting and dynamic medium of film in order to promote it to the man on the street.

DESIGN PROBLEM

Film and architecture are vastly different mediums with their own inherent logic and objectives. The difficulty lies in the translation of film to built form; of a medium that renders time and space in ways architecture is unable to. Which aspects are important and astute to guide the design proposal to successful completion? Film theory can assist architecture in consolidating the non-public nature of the Archive to the realm of public heritage.

Film theory is put to the test to determine whether it can solely resolve a complex architectural problem.

LITERATURE STUDY

This dissertation is a continuation of the author's theory essay submitted in 2008 for Honours RFS module also entitled *Film and Architecture*. The research proved rewarding and ample information is available on various topics in the bigger theorem of architecture and film.

An immense wealth of information was gathered early on in order to identify information that can directly influence and guide the design. Much room for debate remains about the influence film has on architecture. Can film act as a sufficient theoretical discourse for an architectural intervention? In the process of answering this question, filmmakers and architects that have addressed some of the issues were looked at and the information accumulated to form one theoretical argument.

Bernard Tschumi is the most published architect in the field, because film theory inspired part of his Parc de la Villette (1982) design in Paris. The publication *Manhattan Transcripts* (first edition published in 1981) contains diagrammatic representations resembling sequential frames of a filmstrip. This publication is the prequel to his competition-winning proposal and in many ways the concrete amalgamation of film theory into architecture. Architects including Rem Koolhaas, Jean Nouvel, Juhani Pallasmaa and Le Corbusier share his interest in the subject and have all written about their enthusiasm. The Architectural Design (AD) magazine has debated subjects from metropolis to Russian avant-garde filmmakers to mall movies in two editions dedicated to film and architecture in 1994 and 2000. The publications relate to architectural philosophy rather than praxis, creating a void that this dissertation ultimately fills.

PRECEDENT STUDY

Three precedent studies are analysed to inform different aspects of the design proposal. A film precedent, *The Science of Sleep*, by the French director Michel Gondry, strengthens the theoretical argument and becomes an exemplification of the numerous films watched during the research period. Understanding of the film medium is necessitated through this choice of study.

The typological precedent, the London Southbank BFI (British Film Institute), having been visited by the author inspired the idea of a rejuvenation of the South African Film Archive. The dynamic British film archive stands in stark contrast to the dismal state of our own film archive. The BFI takes pride in its preservation of film and has bred a culture of film interest with film festivals screening year round.

RESEARCH METHODOLOGY

Research is focused on an array of different opinions from architects and filmmakers and their interpretation of the subject. Film production has been studied to audit the design process of architecture in order to learn a few practical techniques. Ideas have been substantiated by famous thinkers and explained through numerous references to films. Qualitative analysis is deemed necessary, especially to map the emotional and memory aspects associated with films and human experience. These conclusions are predominantly objective, however subjective experiences have not been omitted in order to explain the nature of the human mind.

All of the important decisions made early on in the design process are first discussed according to their qualities and then followed by data to validate the choices made. Nothing is arbitrary in the process and a film research premise is maintained throughout the year. It follows from the theoretical argument that a design dogma is imposed that will have film architecture as a result. The diagrams, research, analysis and writing style speak a filmic language, easily integrated into the architecture vocabulary. Certain film terms deconstruct architectural meaning that excites further investigation, which in turn leads to a wider field of enquiry. The research methodology calls for a coherent film exploration that finally leads to a well thought out design proposal.

Glossary

Establishing Shot - a shot which shows the environment in which the action will take place, usually early in the sequence.

Film - The successive production by means of a photographic camera of a number of images of the same object or objects in motion and reproducing the same in the order of taking by means of 'a projector' ... with one or more intermittently operated film drums (Robertson: pg. 61)

Continuity system/ continuity editing - a system of editing generally used within mainstream cinema to seamlessly cut from one shot to another without calling attention to the editing. This system includes invisible editing, eye line matches, and cutting on action.

Frame - individual still image of a film or video, or the rectangle within which the image is composed or captured.

Mise en scene - French term from the theatre that literally means 'whats put in the scene'. To the cinema it refers to the elements of a shot - the set, the props, the actors, the use of colour and light - and the way these elements are composed or choreographed.

Persistence of vision - Sensory phenomenon to which cinema owes its existence: the perception of fluid movement from still images projected above a threshold speed. Below this speed image flickers (hence the term 'the flicks' coined when silent film was shot at lower speeds, c.16-20 frames per second)

Storyboard - Series of drawings, much like a comic strip, used to plan a sequence of shots.

Shot - A single continuous image.

(www.bfi.org.uk)

CHAPTER 2. Film

Filmography, South African Film History, Timeline

The moving image was invented by Louis Aime Augustin Le Prince in New York in 1885. He applied for an American patent in 1886 that read: "The successive production by means of a photographic camera of a number of images of the same object or objects in motion and reproducing the same in the order of taking by means of 'a projector' ... with one or more intermittently operated film drums" (Robertson: pg. 61). In fact France, Germany and Edison in America were also busy with their film experiments. Thus, when the technology was finally available, it developed worldwide in a very short time. Germany dominated the early years of film in what are now referred to as German expressionist films. After the Second World War, the USA dominated the world film market.



Fig. 2 Playtime, Jacques Tati (1967)



Fig. 3 Blow Up, Michelangelo Antonioni (1965)



Fig. 6 Rear Window, Alfred Hitchcock (1954)



Fig. 7 The Shining, Stanley Kubrick (1980)



Fig. 4 Metropolis, Fritz Lang (1927)



Fig. 5 Wings of Desire, Wim Wenders (1987)



Fig. 8 City of God, Fernando Meirelles (2002)



Fig. 9 Louis Aime Augustin Le Prince



Fig. 11 Lumiere Brothers, 1895



Fig. 10 U-Carmen e-Khayelitsha

SOUTH AFRICAN FILM HISTORY

South Africa saw films simultaneously with European and American audiences. The first public projection was held in Johannesburg on 11 May 1896, only a year after the first world premiere in Paris on 22 March 1895 by the Lumiere brothers. The year after, Edgar Hyman started filming real life scenes in Johannesburg and also captured President Paul Kruger in 1898 leaving his house on the way to the Raadzaal (SAhistory).

South Africa is amongst the pioneering countries in the early film years. At the grand opening of the Capitol Theatre in Pretoria in 1931, two South African sound films were premiered: Joseph Albrecht's *Sarie Marais* and *Moedertjie*, only four years after the first international talkie, *The Jazz Singer* (1927) (Robertson, 1986: 70), was screened.

The local film industry boomed in the late 1950s after a new film subsidy system was introduced. This marked a lucrative period that lasted until the 1980s (SAhistory). At the height of Afrikaner nationalism an increasing number of anti-Apartheid films were produced and released to international film audiences. *Katrina*, *Boesman en Lena*, *The Fourth Reich* and *Place of Weeping* were examples, and interestingly some were popular in the Republic as well. Film's popularity transcended escalating racial discrimination; 'coloured people only' theatres were established as early as 1910 in Durban (SAhistory). A black film industry, financed by beer halls and churches, was created in 1970 (SAhistory). These films were of low quality

until Simon M. Sabela directed *U'Deliwe* in 1974 and raised the local standard dramatically.

In the 1980s South African cinema focused on American Films, which became increasingly popular. Jamie Uys directed some of the few local successes in the 80s, *The Gods Must Be Crazy* and *Beautiful People*, the latter winning a Golden Globe for best documentary film. In the last years of Apartheid a number of films on the subject were released – such as *Cry the Beloved Country*, and *Sarafina!* both directed and produced by James Roodt and Anant Singh. Afrikaans cinema came to a virtual halt in the period leading up to the 1994 elections.

CONTEMPORARY SOUTH AFRICA

South Africa became an active member of the international film community after 1994. The film industry has been injected with new interest and many films have been produced in this second fruitful period. Films of note are *Yesterday*, *Paljas*, *Stander*, *Blood Diamond*, *Lord of War*, *10 000 BC* and the Oscar winner *Tsotsi*. The British-born, South African independent director Dumford May received critical acclaim for the Xhosa adaptation of Bizet's opera, . The film entitled *U-Carmen e-Khayelitsha* was shot in its entirety in the Cape Town township Khayelitsha and has become the "definitive Bizet opera" according the British Telegraph (Rees, 2005). *Son of Man* (2007), his latest release, is the nativity Bible story placed amidst African politics.

The themes outlined in Dumford May's films outline the narrative shift that has occurred since the turn of the century. According to Trevor Blake, a staff member of the film ar-

chives of South Africa, the shift has finally been accomplished from injustice and minority rule to the post reconciliation period. Political filmmakers no longer dent the South African image abroad. This is our greatest film achievement, but it came through a lot of effort and research.

At the Los Angeles Location Expo, South Africa won first prize for their 2009 exhibition stall (Filmmaker.co.za, 2009). The Department of Trade and Industry has introduced tax incentives for film crews to decrease production costs.

Film in South Africa has become a very lucrative industry that currently generates R1 billion for the local economy (SAGoodnews.co.za, 2009). South Africa's biodiversity and cityscapes can easily substitute any other found on the planet, which is an attractive proposition for location scouts. To accommodate the surge of film crews into Cape Town a mega film studio is under construction that will compete with other international facilities. This project aims to inject the local economy with even more international film commissions.

FILM ARCHIVES

In 1910 Anker Kirkerby created the world's first film archive in Copenhagen, Denmark realising film's historic importance. (Robertson, 1986: 66). The first national archives were established in Britain and Germany in 1935. The *International Federation of Film Archives* (FIAF) was created in 1939 to promote and standardise the preservation of film. Their aims are to protect, promote, preserve and improve accessibility of film worldwide. South Africa

forms part of the 120 member institution of the FIAF represented by the *National Film Video and Sound Archives* (NFVSA).

The NFVSA is located in an old farmhouse on the grounds of the Union Buildings in Pretoria. Film in this context refers to photography and video moving images of historical importance. [This thesis will use the term 'film' as described by Le Prince's patent]. The archive has a number of problems that undermines the importance of film in our cultural heritage. The building is removed from the urban public realm and remains inaccessible in terms of information and physical access.

Even though the archive has an extensive collection of items, no formal cataloguing system exists to indicate what is available. Programme specific spaces, like cinemas and exhibition halls are not accommodated in the complex. It is difficult to imagine anyone getting excited about film in such an uninspiring film museum. The staff maintains that historic films are unpopular and no future screenings are planned outside the *Klein Karoo National Arts Festival*.

Film screenings in Europe remain popular; in Bonn, Germany the silent film festival has been running for 25 years (Goethe-Institut). The film is accompanied by picnics, wine and a symphony orchestra that plays original film scores. The BFI (British Film Institute) forms part of the Southbank Centre in London, a vibrant arts and culture precinct. The archive hosts film cross-programme events, such as music or architecture and film. The BFI is discussed in more detail in Chapter 5 when it is analysed as a typological precedent.

CHAPTER 3. Theory

Montage, Existential Space, Memory, Space and Time, Cinema Experience

Film has become a very important topic for architects and architecture schools in the last two decades. Prominent architecture schools have film classes where they discuss the form and content of films. Short films are produced in conjunction with the design proposal to demonstrate complex spatial structures and theories. Why did architecture become conscious to these possibilities only recently? This poses an interesting question as the two mediums have been affiliated with one another for nearly a millennium.

ORIGINS OF FILM

The origins of film can be traced back long before the first projected images or the invention

of photography. The Acropolis was designed as a cinematic experience; the eye is led on a path structured by narrative. Choisy argues that its composition is planned as if viewed by the eye of a filmmaker, offering an architectural sequence “*subtly composed, shot by shot*” (Luketz, 1999). The architect carefully choreographs the user’s experience and his emotions could subsequently be controlled. In fact, the word ‘cinema’ is derived from the Greek word kinema – “*which connotes both motion and emotion*” (Bruno, 2007: 7).

It was only when the Classical era was revisited in the Renaissance that the second cinematic advancement, namely Linear Perspective, was made. Cinematic thinking was once again triggered when it became possible to capture views



Fig. 12 Camera Obscura



Fig. 13 Montage Lion Sequence from Battleship Potemkin, Sergei Eisenstein

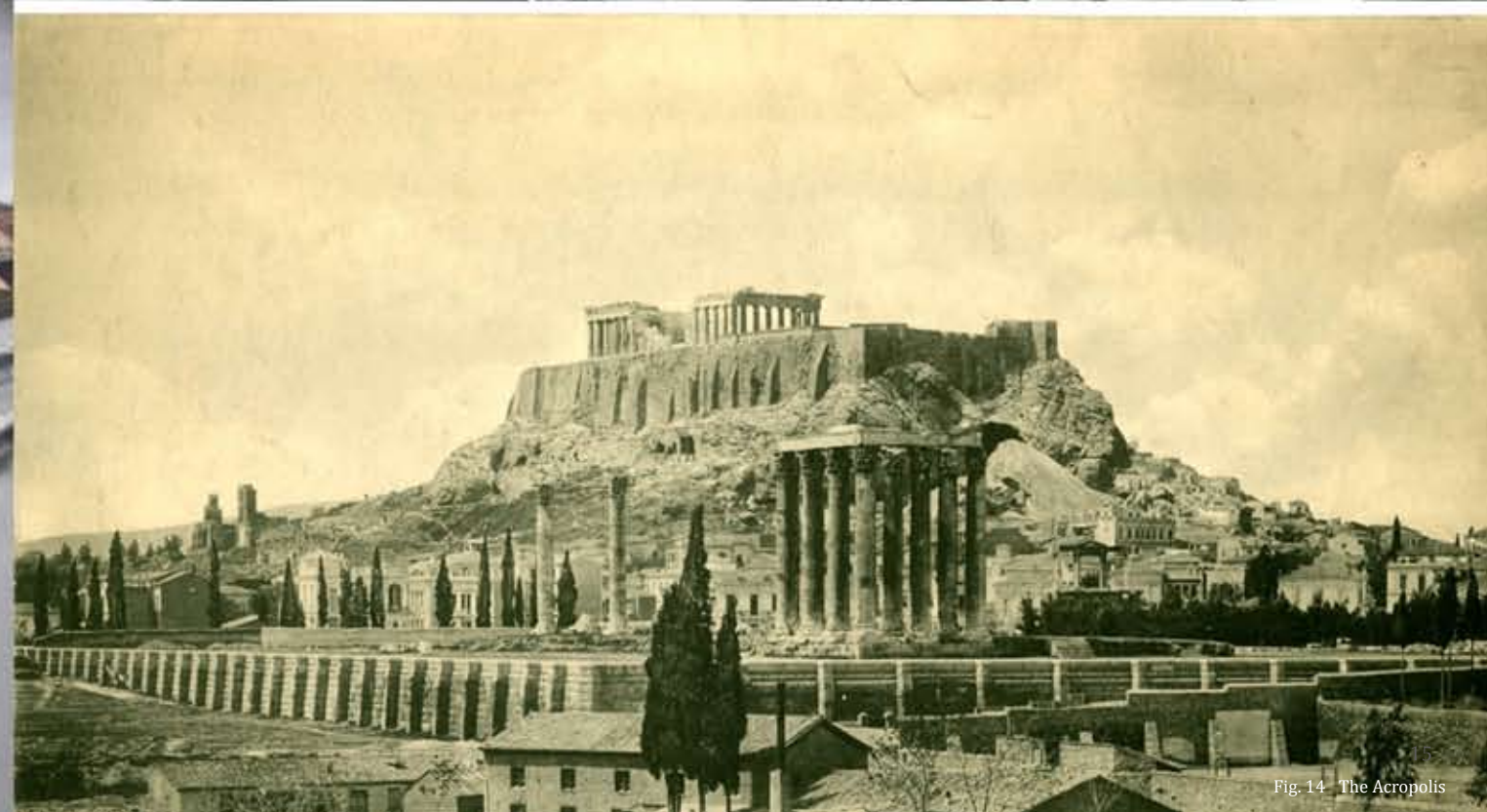


Fig. 14 The Acropolis



Fig. 15 The Acropolis



Fig. 16 Film Projector

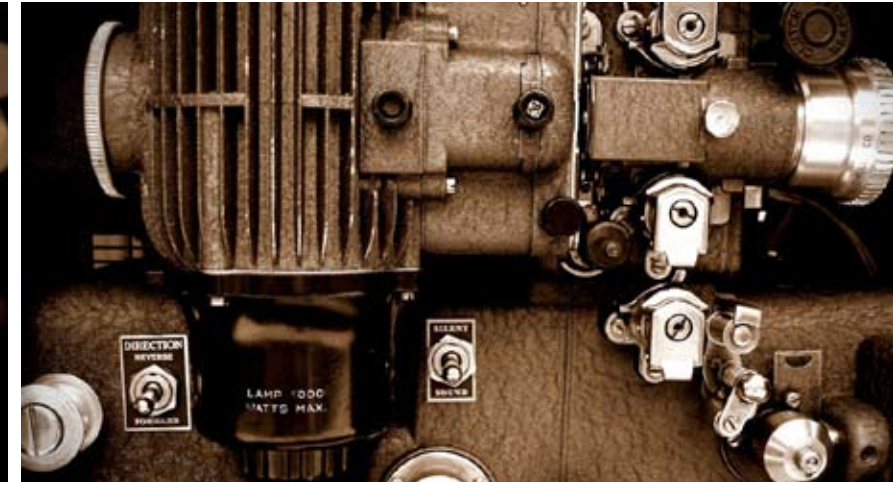


Fig. 17 Film Projector

accurately, as the human eye perceives them. In the 16th century, the Camera Obscura dazzled its first audiences with its magical visual encounter with reality. The projected, constant changing pictures were the first truly objective view of our world. The Camera Obscura is not only a projection device – the word camera literally means ‘chamber/room’ (Oxford Dictionary). Rattenbury states that “*in the Camera Obscura, the room disappears (as does the cinema auditorium), you see life, but at a remove; profoundly different to being out there*” (Toy, 1994). The purpose of film is to reveal a detached reality, a reality we can escape to and from which we can gain perspective and insight.

ARCHITECTURE OF FILM

To examine the birth of film it is important to do so at the hand of Walter Benjamin, a philosopher of the early 20th century, and author of an article named “*Das Kunstwerk im Zeitalter Seiner Technischen Reproduzierbarkeit*” (Blunden, 1936) (*The Work of Art in the Age of Mechanical Reproduction*). In his argument he predicts the imminent world of commercialism and debates whether it’s possible to nurture art in this climate.

Benjamin poses the question: How does the cameraman compare to the painter? He uses the analogy of a cameraman as surgeon and a painter as magician both trying to heal a person. A surgeon must penetrate the patient, cut him open and operate while a magician can heal from a distance. A painter can keep distant from reality, while the cameraman must infiltrate into the fabric of that realm (Blunden, 1936).

An early criticism of film believes that it is impossible to analyse and contemplate film since,

just as a frame was being understood a new one replaced it. “*I can no longer think what I want to think, my thoughts have been replaced by moving images*” (Duhamel, quoted by Blunden, 1936). It is an artform characterised by constant change; it must be seen in its entirety, “*the movement image*” according to Deleuze (Frampton, 1991). The smallest constituent of film is the frame, a photograph of a freeze in time, positioned in its exact place by the art of montage.

MONTAGE

Montage: The process or technique of selecting, editing, and piecing together separate sections of film to form a continuous whole (Oxford Dictionary).

The Russian filmmaker and theorist Sergei Eisenstein is fundamental in the theorem of montage: “*Montage becomes the mightiest means for a really important creative remoulding of nature*” (Leyda, 1963: 5). Montage is the process of giving things their place in relation to one another. Heidi Sohn sees this practice in architecture – where techniques “*acquire their position, their place, and hence result in a sort of system of classification*” (Sohn, 2006: 49). Architecture is also responsible for human ‘montage’; it concerns itself with existentialism. Pallaasma outlines this point in the publication *Architecture of image: Existential Space in Cinema*: “*establishing a place is the fundamental task of architecture*” (Pallaasma, 2001: 20).

The whole is better than the sum of its parts, and through montage random raw footage gains its meaning. Sergei Eisenstein distinguishes cinema from architecture by the “*spatial eye’s*” path. In cinema, the eye follows an imaginary route through a series of objects, “*through sight*

as well as mind” revealing “*diverse positions passing in front of an immobile spectator.*” In architecture, Eisenstein argues, the spectator moves “*through a series of carefully disposed phenomena*” which are observed with “*his visual sense*” (Lukez, 1999). Once again, we are walking on the path to the Acropolis, assembling the views and spatial arrangements through mind montage and the viewer’s advance through space. Sergei Eisenstein referred to montage as the 4th dimension of film (Toorn, 1997).

SPACE AND TIME

A film represents time and space as a dynamic force. The duration of the film (usually less than two hours) depicts various events and actions in sequence. Michael Dear terms this the “*fusion of space and time*” (Dear, 1994). Filmic action needs to take place somewhere. This is why architecture has played such an important part in film history; to create the backdrop for action. Film addresses the space and time dimension directly; it cannot be avoided in film, as opposed to architecture.

The fourth dimension can be carefully scripted, user movement patterns predicted and the space designed accordingly. We can translate this condition to the architectural experience. Bernard Tschumi adopts this approach in his design process with his extensive use of movement diagrams.

Film can, however, render the fourth dimension in interesting new ways. Michel Gondry, a contemporary film director, supports the privileged position of film. In his Smirnoff advertisement, he uses a Vodka bottle as the ‘*narrative hook*’ (Broodryk, 2009) that connects the characters from one space-time dimension

to the next. This device merges the various time periods and places that the two characters experience in their journey to freedom. Michel Gondry rendered a reality that makes us envious of cinematic space. Tschumi, in the publication entitled argues that this could be done in architecture; if we adapt these filmic techniques to create architectural ‘*surprises*’.

VIEW AND REPRESENTATION

Views are closely related to the fourth dimension as they are a constant shifting phenomenon experienced when space is embodied. The habitation of space in itself becomes a spectacle.

Jane Jacobs argues that “*the sight of people still attracts other people*” and this curiosity contributes to safer streets and neighbourhoods (Sanders, 2002: 175).

Views aren’t only pure entertainment. They transcend to the human desire to dream, to inhabit distant vistas. In a cathedral, the high vaulted ceilings, use of light and fresco paintings focus the gaze to the heavens. The Acropolis makes the user “*a consumer of views*” (Bruno, 2007: 58). Corbusier designed his strip window for the view – “*In my own work I seem to think as Eisenstein does in his films*” (Bruno, 2007: 58).

In fact, film has changed the way we view our world. The camera has become our “*prosthetic eye*” (Bruno, 2007: 256). Film set designers include camera angles (important viewing vistas) on their plans. Perhaps architects can learn from these representations. Tschumi’s diagrams in *Manhattan Transcripts* read like a film: one diagram forms part of the larger representation and cannot be understood alone. *Event Cities* by Tschumi further explores the use of multiple drawings to explain his concepts. If one repre-



Fig. 18 Memento, Christopher Nolan (2000)

sents an architectural reality in a dynamic way, it will inevitably influence the way one designs. One perspective cannot stand in for the whole design. Architecture must evolve from the Renaissance architect; space will be explored from a multitude of angles.

MEMORY

Memory is what makes us aware of time; the residue of the past transforms into memories of the present (Comte-Sponville, 2004). In the film *Memento* the lead character Leonard (Guy Pearce) has lost his ability to remember. Every day he has to establish with the help of tattoos and notes, where he is, when it is and where he is going. In fact the film illustrates the power of memory when he distorts his past to “*manipulate his future self*” (Martin-Jones, 2006: 179) to commit an unmotivated murder.

Without memory, it would be impossible to experience architecture, or film. Without memory we cannot determine our place in the world.

It is through memory that we can understand the moving image – we remember the preceding frames, and our minds can follow the trajectory of movement. “*They establish a memory of the preceding frame, of the course of events. Their final meaning is cumulative; it does not depend merely on a single frame (such as a façade), but on a succession of frames or spaces*” (Tschumi, *The Manhattan Transcripts*, 1994).

Sanders argues that every film spectator has a mental New York imprinted in their mind. We construct blocks and streets with the fragments of memories left by the New York movie saga. In fact the way we ‘record’ the world according to Quintillian is similar to our film experiences: “*To remember the different parts of a discourse, one would imagine a building and implant the*

discourse in site as well as in sequence: that is, one would walk around the building and populate each part of the space with an image; then one would mentally retrace the building, moving around and through the space, revisiting in turn all the rooms that had been ‘decorated’ with imaging. Conceived in this way, memories are motion pictures” (Bruno, 2007: 221).

John Ruskin said that “*without architecture there would be no remembering*” (Californication, 2007). Memories happen somewhere. Bruno states that when revisiting an old building we used to inhabit, we not only remember the place, but the people we met, the conversations we had, the things we did there. The brain is like a room; neurons are triggered and long forgotten images are projected in our minds. The brain does not record events like the movie camera does. Through montage in our own minds we are able to rework old memories, make them applicable to new situations – a sign of human intelligence.

Architecture can play on these memories – most importantly the ‘collective memories’ as Carl Jung names it – *the collective unconscious*. Public architecture can recreate homely, intimate spaces, or spaces that are a sign of movement, like corridors. Architecture can create spaces for repose, viewing – all concepts that are understood by the man on the street.

EXISTENTIAL SPACE AND THE HAPTIC

“*We place our feelings, desires and fears in buildings. A person who is afraid of the dark has no factual reason to fear darkness as such; he is afraid of his own imagination, or more precisely of the contents that his repressed fantasy may project into the darkness*” (Pallaasmaa, 2001: 31).

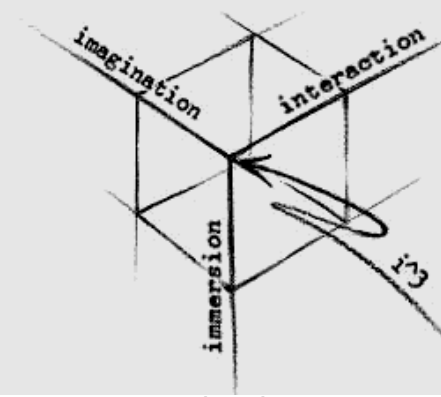


Fig. 19 HYPERmedia triad

The human body is a receptive organ – it can distinguish between thousands of voices, faces, textures, temperatures, smells and tastes. Bruno believes that this receptive nature of the human is also reversed. When we touch we are touched. This haptic nature is not only an expression of the human hand; skin envelops us, and includes the eye membrane: “*We are moved by the moving image*” (Bruno, 2007: 254).

CINEMA ARCHITECTURE (THE ARCHITECTURE OF EXPERIENCE)

A small film production/art company, HYPERmedia has released a manifesto that calls for many changes in the film world. They are centred on the invention of new technology, like smaller, lightweight cameras. Certain archaic filming conventions must be abandoned; the camera can move freely in the filmic space and itself become a character. They want the cinema experience to be totally “*immersive, imaginative and interactive*” (HYPERMedia Manifesto, 2009).

Perhaps with their methods they will find the task a difficult thing to do. They are questioning the medium itself and would like to add computer gaming technology to the film experience. But architecture could help achieve their golden triad.

Film is experienced in a highly conditioned, silent environment – there are no distractions. Architecture, according to Walter Benjamin, is not so fortunate (Blunden, 1998). We do not give our undivided attention to architecture, perhaps the very reason that so many bad buildings have been erected without notice.

The ritual of going to a film is a conditioning process, an eerie environment easily reproducible. A grotesque comparison to this routine is again with the ancient Greeks. Oracles imposed

visions and illusions on clients through a vicious experience. The client was subject to days of no sleep or food and confined to a dark room before they were considered worthy of council. Can any objective knowledge come from such an encounter?

A dark auditorium space is entered; darkness separates viewers from the screen and sets the scene for a spectacular projection of light. Sound blasts from all corners of the cinema to complete the wondrous illusion. Total attention is on the screen, as Rattenburry states: “*The creator invisibly provides and dominates the experience of the individual*” (1994). The very material projected on that screen is subjective, the director consciously decides what stimuli he wants to arouse in his rendering of reality. The context of a film screening is universal, it can be reproduced exactly anywhere in the world. After a screening, no evidence of that film exists; it is absorbed by the viewers and transformed into memories.

CONCLUSION

Film is a play on light and architecture a play on space, but essentially they are equally real to us: “*Cinematic space moves not only through time and space or narrative development but through inner space. Film moves, and fundamentally ‘moves’ us, with its ability to render effects and, in turn to affect*” (Bruno, 2007: 7).

We appreciate film because it is an extension of our minds, a medium closest to our perception of the world. Communication is a visual projection from one mind to another. We edit memories and experience them through the act of viewing.

Architecture that understands film, is architecture closely attuned to the human mind.

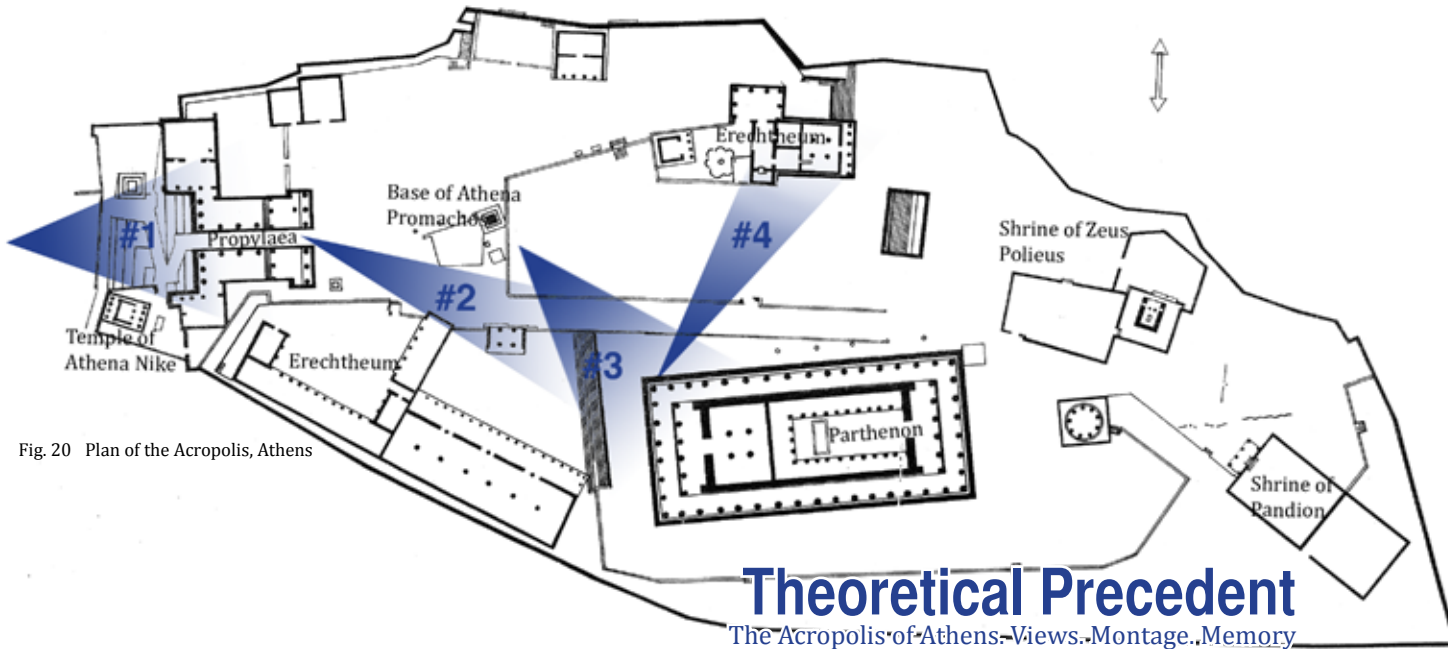


Fig. 20 Plan of the Acropolis, Athens

Theoretical Precedent

The Acropolis of Athens: Views, Montage, Memory

THE ACROPOLIS FROM THE EYE OF A FILMMAKER

In 1889 the French engineer Auguste Choisy released the publication *Histoire de l'architecture*. This seminal piece was of particular interest to Le Corbusier (as discussed in the famous *Towards a new Architecture*) and also the Russian film director Sergei Eisenstein.

His essay *Montage and Architecture* takes a close look at the narratives of Choisy in his description of the Acropolis and asks the reader to see it through the eyes of a filmmaker. He focuses on four composed shots of the Acropolis, using Choisy's sketches and descriptions to illustrate the composition of these shots.

Choisy and Eisenstein both argue, after analysing the compositions, that the Greeks calculated their place, scale, size and timing on the first impression they make.

"Our recollections invariably take us back to first impressions, and the Greeks strove, above all, to make it a favourable one" (Bois, 1989).

It is not only these compositions that interest Eisenstein, but also the architectural sequence, or in his terms, the montage i.e. relation from one shot to another.

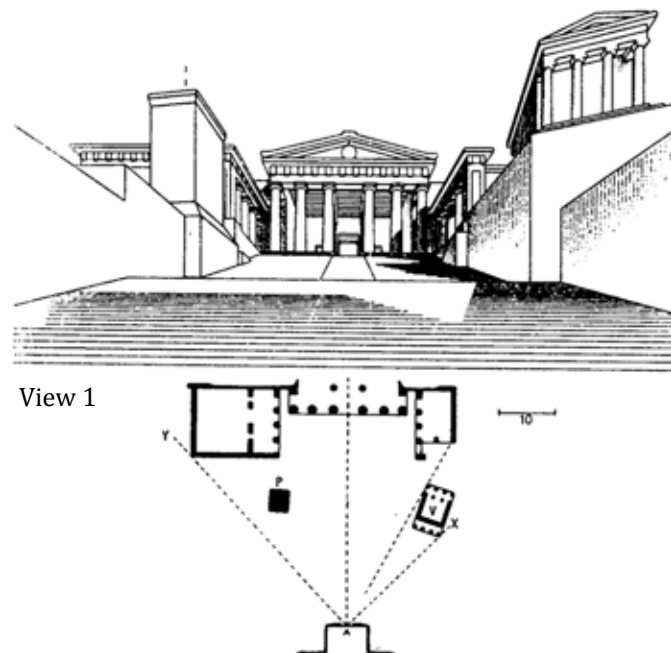
"The Greeks have left us the most perfect examples of shot design, change of shot, and shot length (that is, the duration of a particular impression). Victor Hugo called the medieval cathedrals 'books in stone' (see Notre Dame de Paris). The Acropolis of Athens has an equal right to be called the perfect example of one of the most ancient films" (Bois, 1989).

The following views are described by Sergei Eisenstein in his article "Montage and Architecture" that appeared in *Assemblage* in 1989. Edited by Yve-Alain Bois.

VIEW 1

"The general idea of the plan of the Propylaea can be seen in view 1 ... We see the symmetrical central block and two noticeably different wings — the right-hand one broader and the left-hand one less so. ... At first sight, nothing could be more uneven than this plan, but in fact it constitutes a completely balanced whole in which the general symmetry of the masses is accompanied by a subtle diversity in the details. ... The optical symmetry is impeccable."

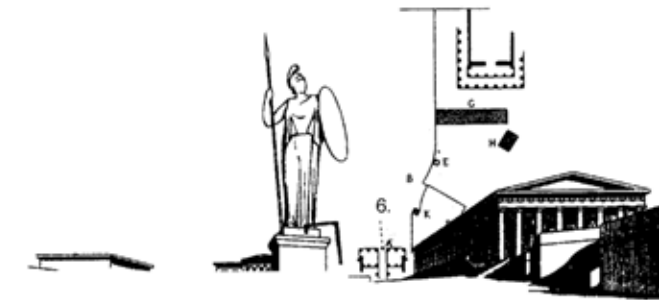
Both wings of the Propylaea balance out at the exact moment when the general view of the building opens out in front of us." (Bois, 1989)



View 1

VIEW 2

"First view of the square; Athene Promakhos. Passing by the Propylaea, the spectator's eye embraces the Parthenon, the Erechtheion, and Athene Promakhos (view 2). In the foreground towers the statue of Athene Promakhos; the Erechtheion and the Parthenon are in the background, so that the whole of this first panorama is subordinated to the statue, which is its central point and which creates an impression of unity. The Parthenon only acquires its significance when the visitor loses sight of this gigantic piece of sculpture." (Bois, 1989)



View 2

VIEW 3

"The parthenon and its oblique perspectives. To modern thinking, the Parthenon — the great temple of the Acropolis — should be placed opposite the main entrance, but the Greeks reasoned quite differently. The cliff of the Acropolis has an uneven surface, and the Greeks, without altering its natural relief, placed the main temple on the highest point at the edge of the cliff, facing the city (view 3). Placed thus, the Parthenon first of all faces the spectator obliquely. The ancients generally preferred oblique views: they are more picturesque, whereas a frontal view of the facade is more majestic."

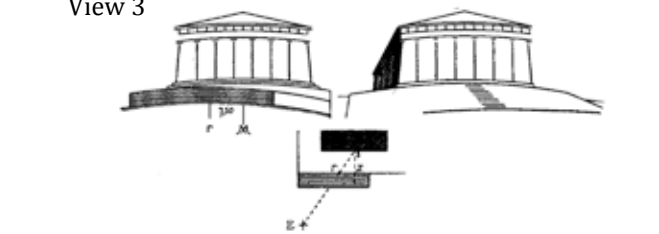
Each of them is allotted a specific role. An oblique view is the general rule, while a view en face is a calculated exception." (Bois, 1989)



View 3

VIEW 4

"After the first panorama from the Erechtheion, let us continue our way across the Acropolis. At point 3 the Parthenon is still the only structure in our field of vision, but if we move on to point 4, it will be so close to us that we shall be unable to encompass its shape; at that moment the Erechtheion becomes the center of the panorama. It is precisely from this point that it offers us one of its most graceful silhouettes (view 4). The bare wall is enlivened by the Porch of the Caryatids, which stand out from it as though against a background specifically created for them." (Bois, 1989)



View 4

CONCLUSION

These shots and the architectural sequence undoubtedly render a cinematic experience. The compositions/shots, their placement and remnants in our mind and timing create a directed emotional response.

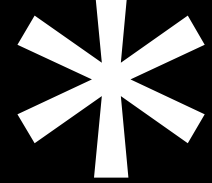
Fig. 21 View 1-4, Choisy's diagrams of the Acropolis

CHAPTER 4. Establishing shot

A shot, normally taken from a great distance or from a "bird's eye view," that establishes where the action is about to occur. (Oxford dictionary)

[Slow pan across the Pretoria Skyline.] Cars, pedestrians and muzak animate the sound space. Taxis vie for their clients' attention. The screen fades to black as the word Pretoria appears. It is followed by a long shot of a roofscape, the music builds as the screen is filled with a montage of views from this strange undiscovered realm. The space is embodied by the viewer and, without realising it, the viewer has travelled through the space. The brain carefully constructs a mental map of this world, a map infinitely more complicated than any world equivalent. The roofscape is filled with imagined smells, sounds, history and out-of-frame areas constructed with the help of film clues such as ambient noise. Perceptions and emotions make out the final part of this mental map. The spectator comprehends the space that is about to be formed.



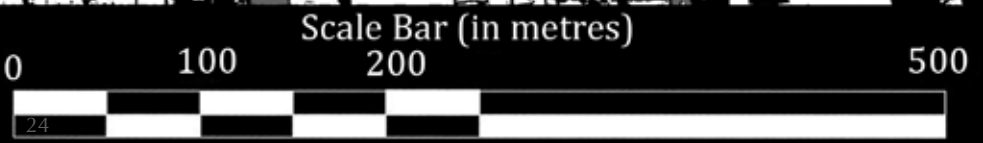


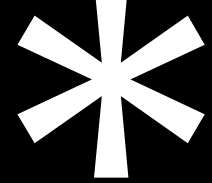
PRETORIA CBD LEGEND

- Study Area
- Site
- Public Squares
- Vehicular Routes
- Pedestrian Routes
- Proposed BRT Bus Stops
- Municipal Bus Stops
- Taxi Stop
- Public Parking Garages



North





**PRETORIA CBD
LEGEND**

- Site**
- Visual Areas of Interest**
- High Pedestrian Traffic**
- Vehicular Traffic**
- Traffic Intersections (High activity)**
- Green Space**

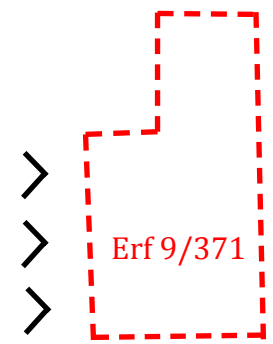


Fig. 25 Site Elevation

General Information

WHERE?

Location: 210 Andries Street, Pretoria CBD
Erf: Portion 9 of 371

The proposed site is located on the corner of Andries and Church Street in the bustling Pretoria CBD with a direct visual link to Church Square via the pedestrianised Bureau Street. The area is hallmarked by a hive of pedestrian activity, with a high concentration of arcades, pedestrian streets and public squares in the vicinity.

WHEN?

The building was constructed in 1937 by the Johannesburg firm Harrison and Stucke. The intended use of the building was an OK Bazaar retailer with office space.

WHY?

- The site is in the centre of pedestrian activity in Pretoria. Bordered by Church Street, Kudu Street, Burlington Arcade and Central Street.
- An underutilised roovescape, with an average height of three storeys, has immense potential for expansion.

- The art deco facade of the proposed site conjures images of the splendour day of cinema.
- A direct visual link to Church Square through Bureau Street provides excellent viewing vistas.
- Ineffective use of floor area inspired a clean-up and re-ordering of said area.
- A parking garage adjacent to the proposed site provides ample parking and the possibility of a drive-in cinema, embracing all forms of film spectatorship.

URBAN CONSIDERATIONS

- Pretoria is a day-work city. According to Gerrit Jordaan, a Tshwane framework advisor and architect (2008), there is a complete lack of social framework for Pretoria CBD.
- The proposed site and programme will bring life to the city centre after work hours. It will regenerate the block, increase land value and provide the city dweller with a wider range of civic activities. Together with a proposed gallery in the same block a gentrification policy is set in motion, that aims to lure the whole demographic and all classes of South Africa.
- With the safe, on-site parking, the site will introduce Pretoria inner city to suburban viewers.



Views TO Site



Views FROM Site



Fig. 27 Photos of Study area in Pretoria CBD

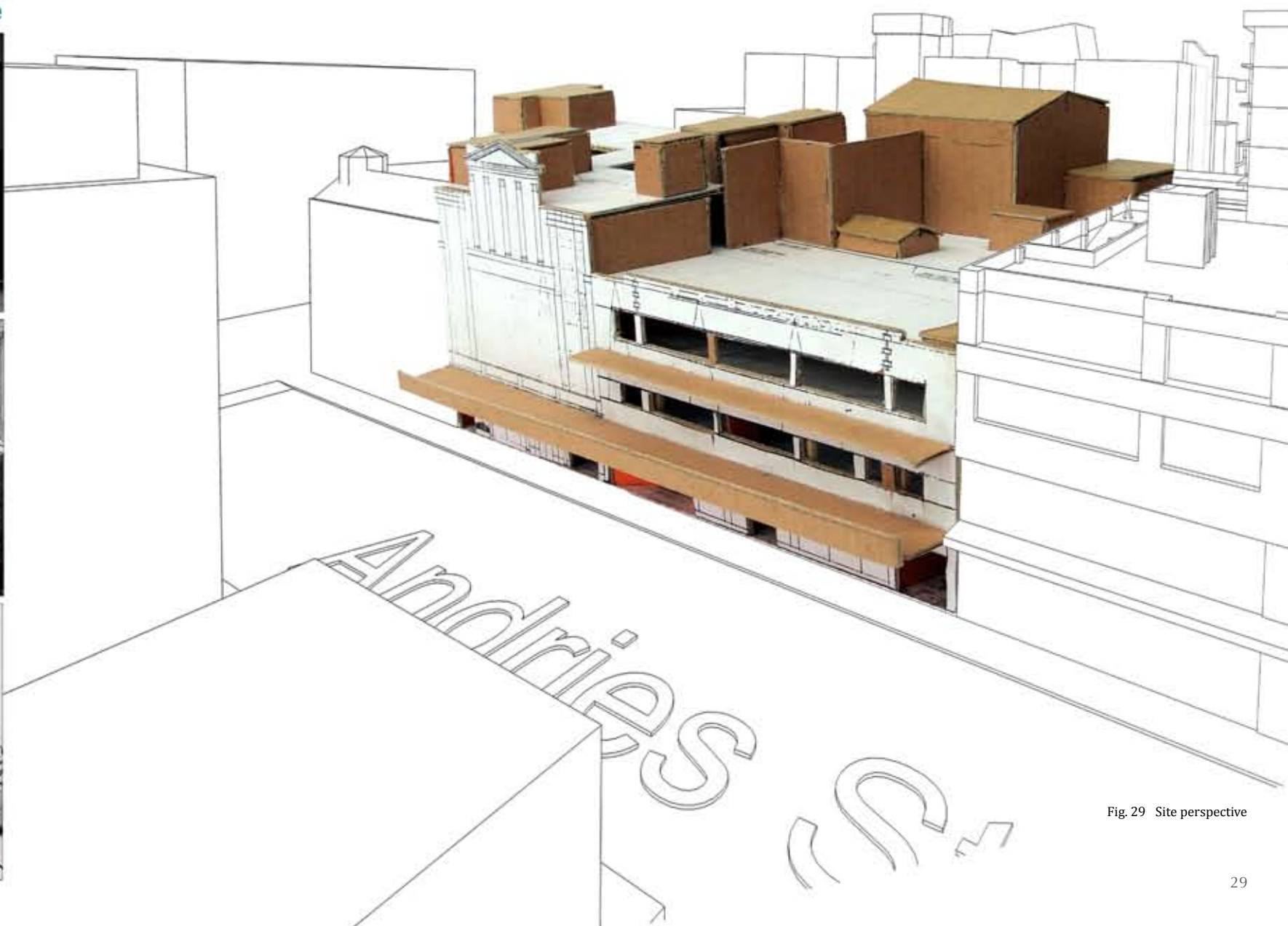


Fig. 29 Site perspective

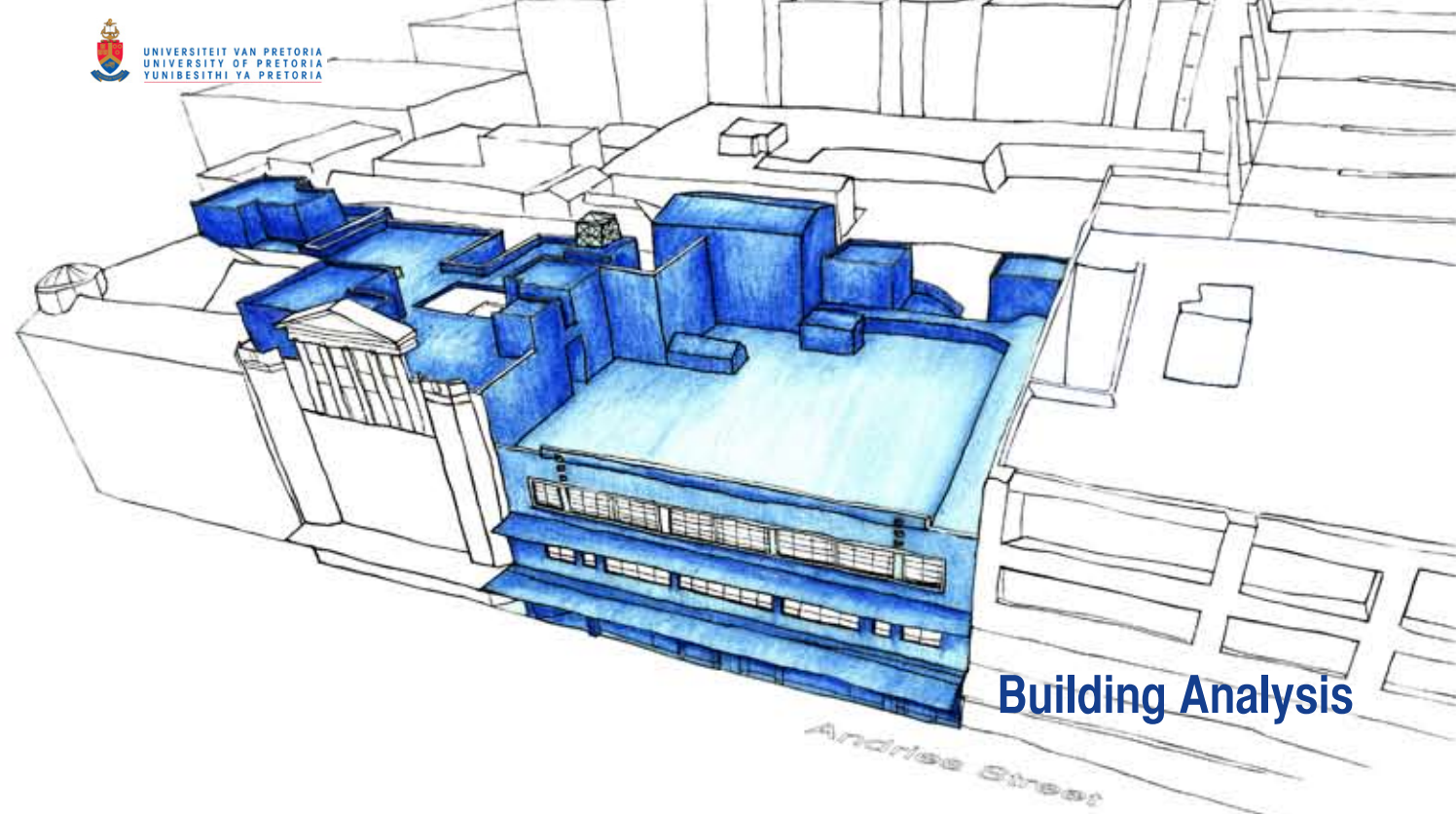


Fig. 30 Site identification

ACCESS

The site is in the centre of the Pretoria Central Business District (Jordaan, 2009) and is served by many public transport modes. Church Square is only 150 metres away, linked via the pedestrianised Bureau Street, and is a hub of activity with access to public busses and also the future expansion of a BRT (Bus Rapid Transport) station. For the private car owner the council has no parking requirements for the inner-city, but parking garages are located in the area, including the adjacent site. Church Square is also connected via Paul Kruger Street to Pretoria Central Train Station, with metro- and future Gautrain trains. Taxis operate in the area and two major taxi routes function along Andries and Vermeulen Street.

All these transportation modes have a second benefit – the high number of pedestrian traffic in the vicinity. Numerous arcades and pedestrian streets breed a healthy walking culture.

The building's main access point is in Andries Street, opposite Bureau Street, but because of the large footprint of the building secondary entrances are also located in Church Street.

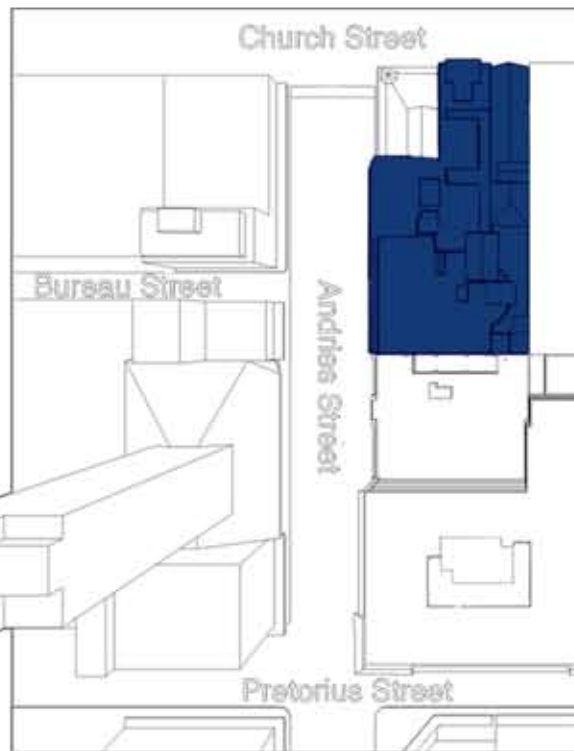


Fig. 31 Plan

PROPORTION

The Art Deco facade is carefully proportioned to articulate the horizontal plane. The result is an elegant, white facade in perfect symmetry. This facade is pierced by filmstrip window arrangements.

GRID

The building was constructed in 1937, and as a result structural elements are stocky in comparison to present day standards. Column spacing and beams are ordered on a grid, with a few exceptions where no logical order can be established. The ordered grid extends to the roof where the column grid and steel reinforcing protrude for possible future vertical expansion.

The grid will be respected and new elements clearly distinguishable as such. Weight and size of roof expansion will be limited in certain areas where the existing structure does not allow for enormous development.

FRAGMENTATION

Fragmentation from the urban fabric occurs firstly from street to inner courtyard. Secondly this fragmentation occurs in a similar way as urban sprawl, instead of a horizontal discrepancy in scale, this happens vertically – only three storeys up a suburban scale is discovered.

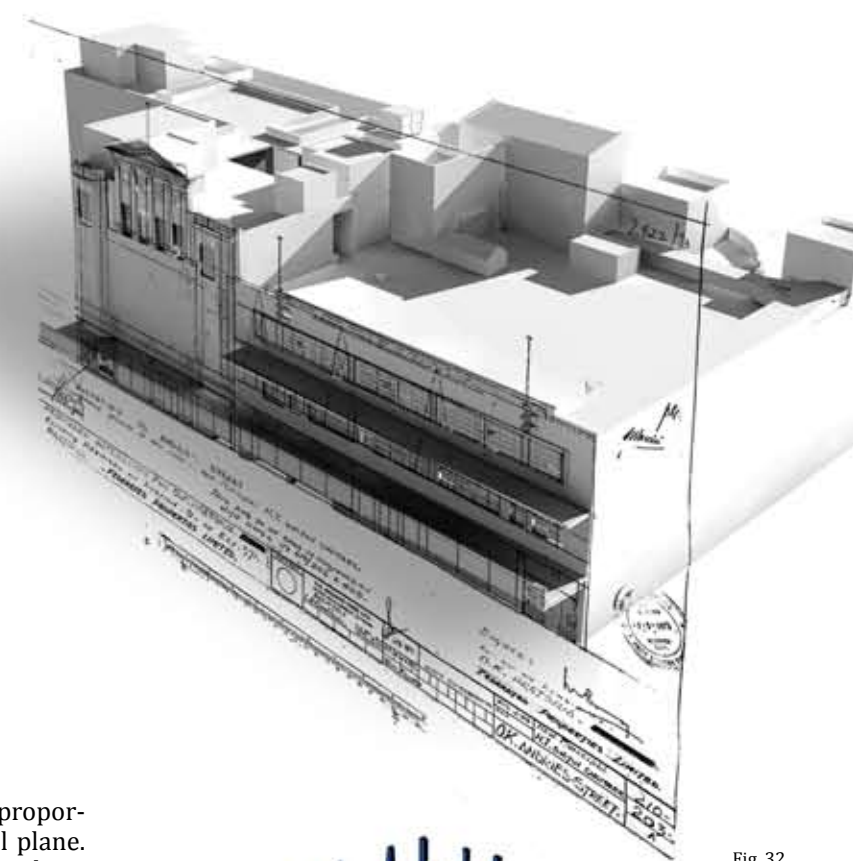


Fig. 32

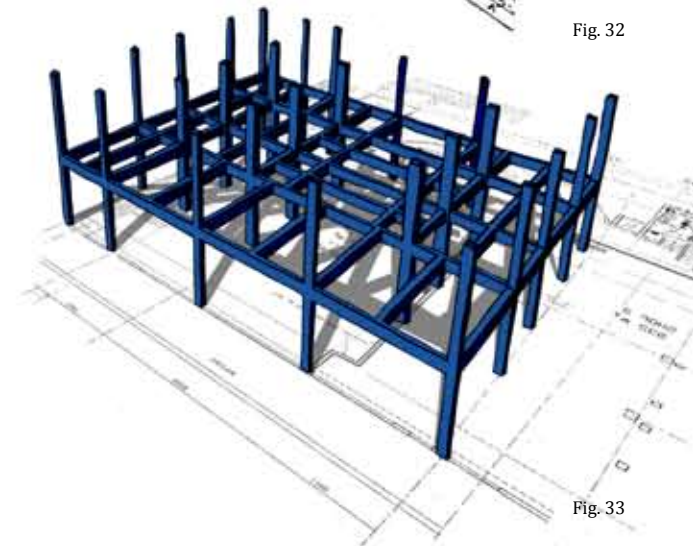


Fig. 33



Fig. 34

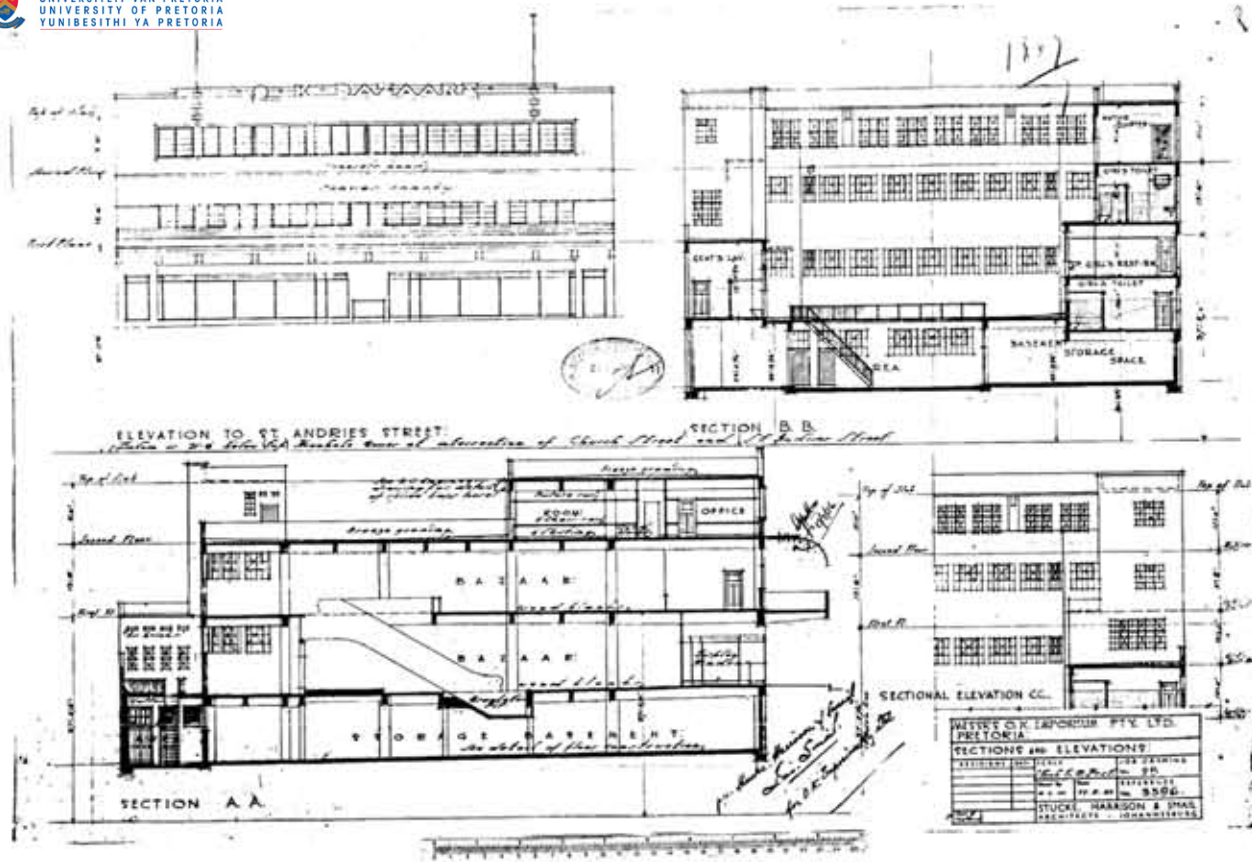


Fig. 35 Harrison and Stucke drawings, 1937

SERVICES

The services approach to this building has been a back-of-house, exposed system, incorporating the inner outdoor spaces and roof. The air conditioning system was retrofitted on the roof and fire safety measures were added later. The result of the years of layering is a messy services system. The back-of-house area will be converted into a courtyard and this calls for a clearing up of services. A new service duct will accommodate existing and new service requirements.

LIGHT

The abovementioned inner outdoor space was conceived of for another reason, to bring light and northern sun into the building floors. The amount of direct sunlight in this small space is limited, site visits and sun tracking software estimate direct summer sun (December) to three hours a day (between 11 and 2 o'clock). Unfortu-

nately these windows were 'bricked-up' in an upgrade in the 1990s. The result is an electrically lit floor area that only receives small amounts of natural light from the west facing street facade. This exposure is further blocked by the tall buildings on the opposite side of the street. Their shadows are cast from 3 o'clock onwards. However, the shadow analysis showed that western shading devices will still be necessary.

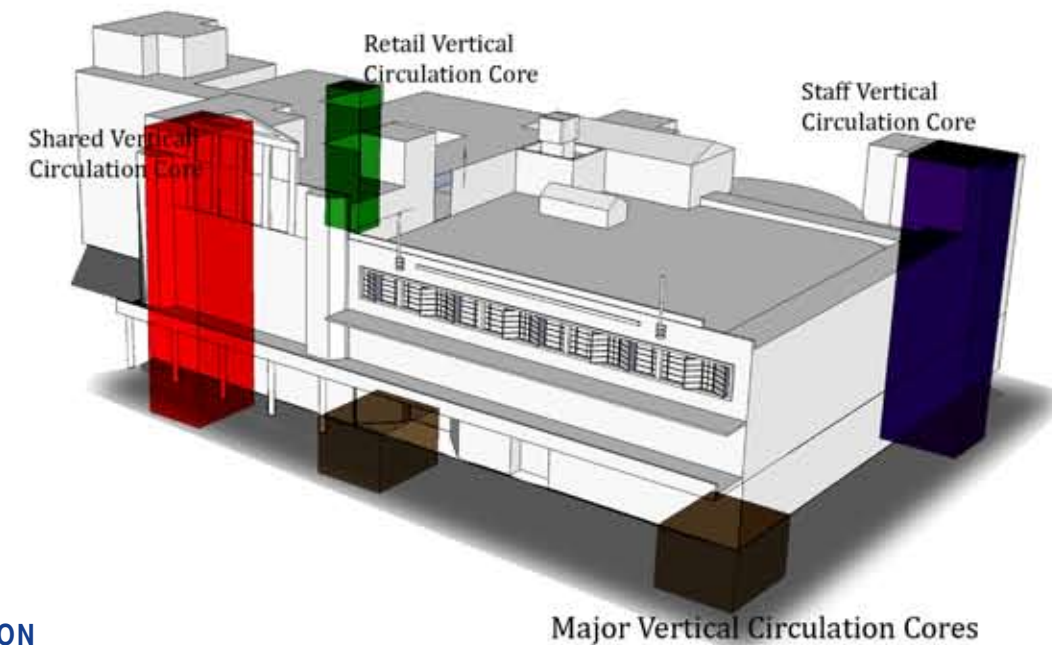
VOLUMES

The ground and first floor feature high overhead beams and the re-adaption to a public building is relatively easy. The second floor was intended for office space and the ceiling height of 2.8m makes the installation of suspended ceilings difficult.

The 'courtyard' or rather service space, as it has not been utilised as a social area, is cluttered with A/C units, pipes, cables and also the intrusion of the expanding building fabric itself. The space is dark, dirty, claustrophobic, wet and noisy.



Fig. 36 Photos of Courtyard



CIRCULATION

Ground to first floor is easily accessible by a staircase. The second floor is accessed from the shared vertical circulation. The red bar indicates the main circulation core of the entire building. Fire escapes, a staircase and two lifts form this core.

The connected floor diagram shows the separate functions of the buildings. The same colour indicates areas that are vertically connected.

PROGRAMME

When the building was constructed in 1937, the intended programme was an OK Bazaar (retail) with offices on the top floors. A storage basement was included and a wooden escalator was installed to the first floor. Unfortunately this programme is very difficult to re-adapt and the building is now a furniture showroom, with a cramped church on the office floor (second floor).

CONCLUSION

The site has been analysed with these criteria, and problems as well as opportunities have been identified. These aspects form an important part in the design process and will be covered in the design chapter.

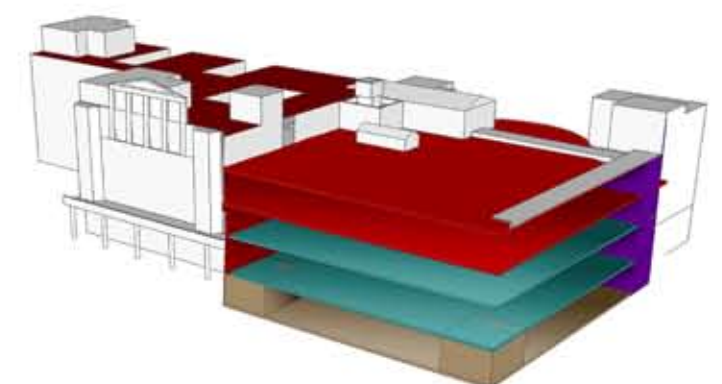
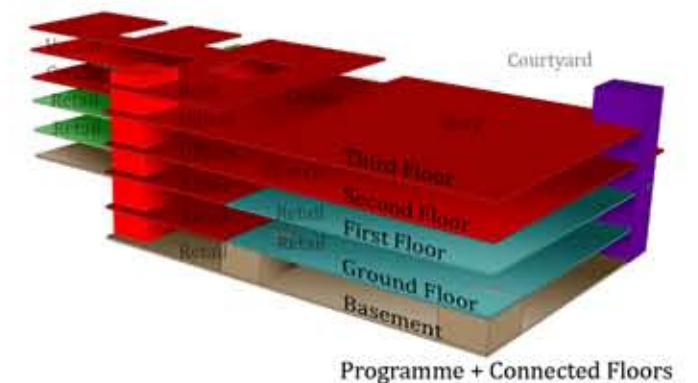


Fig. 37 Analysis diagrams

CHAPTER 5. Precedent Study

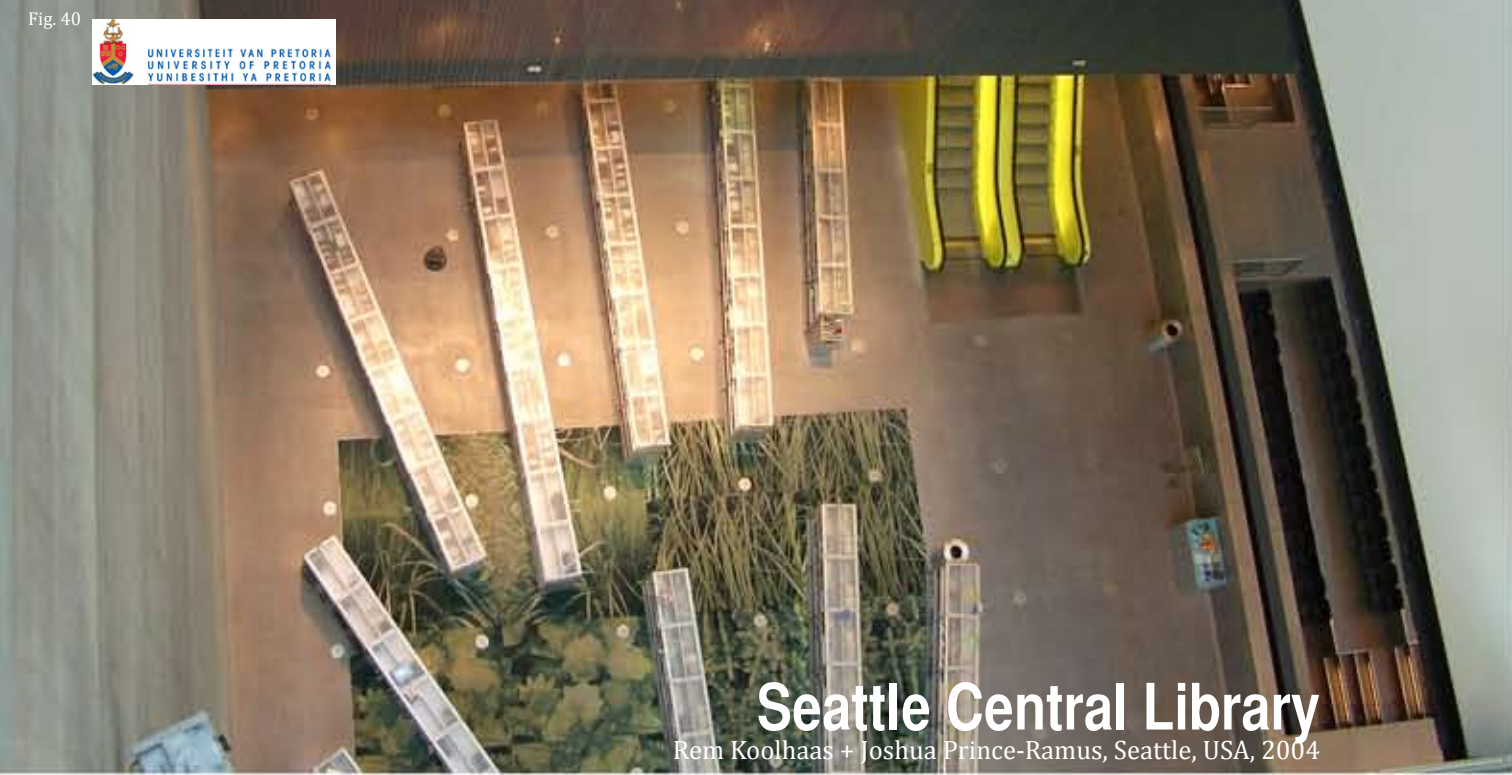
Seattle Central Library - The Science of Sleep - The BFI Southbank



Fig. 38



Fig. 39



Seattle Central Library

Rem Koolhaas + Joshua Prince-Ramus, Seattle, USA, 2004

CONTEXT

The Seattle Central Library is situated in the central business area of the city, on the site of the old library. It is surrounded by tall skyscrapers that celebrate verticality. Asked about the matter, Koolhaas remarked that *“it would be a pity to be as boring as the context”*, but conceded that it *“shouldn’t be eccentric either”* (Mangut, 1999).

PROGRAMME

The OMA team visited a number of worldwide libraries, accompanied by key members of staff from the Seattle Library. The library typology was questioned; it is no longer a book archive but rather an information centre, one of the last keepers of free public space, and rooms for this purpose were incorporated into the design programme.

The OMA team followed a strictly rationalised approach to the design, asking the library staff to formulate a list of activities. This list was converted into a table that allocated floor area to the different activities. OMA then grouped activities together in clusters and amalgamated the table into built form. An important premise of the design is evolution and adaptability, which means that functions were compartmentalised in clusters in terms of their predicted lifespan (Rasmus).

When the final design came under scrutiny, the librarians defended it saying that the building fulfils all of their needs.

THE FIVE COMPARTMENTS

The building is organised in terms of five platforms, which are connected by escalators and elevators. Activities are grouped and put into clusters, architecturally defined, function separated by function and compartmentalised for flexibility. The diagram on the right explains the grouping and ordering of the activities. The in-between spaces are cross-programmed between staff and users to encourage interaction and information transmission.

MOVEMENT

Matthew Stadler in a Domus review of the library insists on the modesty of the project (2004), a characteristic he feels is not captured by the camera. *“Only the shaft is monumental. Nothing else in the library registers so viscerally, the unbroken shaft of concrete piercing the building’s heart”* (Stadler, 2004: pg. 24). In expressing the importance of the programme, the OMA team put considerable effort into un-programmed activity of the library – the vertical circulation. This was named *‘the shaft’*, a space that incorporates elevators, escalators and a 40 metre clear volume that stretches 11 storeys.

Headquarters.....

Admin. The head administration offices of the Seattle metropolis libraries. Contains meeting rooms and offices.

Collections.....

The Book Spiral. non-fiction books and the main reading room Will be sloped at 2 degrees, making vertical movement possible on a ascending spiral, city block wide.

Mezzanine.....

Information and Research. Contains the “mixing room”, where a search starts. Computer Labs.

Entrance Level.....

Public space. Entrance, teen area, café, fiction books, Auditorium Child area, and second language English speakers.

Staff Level.....

Staff Level/Parking Garage
Staff offices, Parking, Shipping and receiving

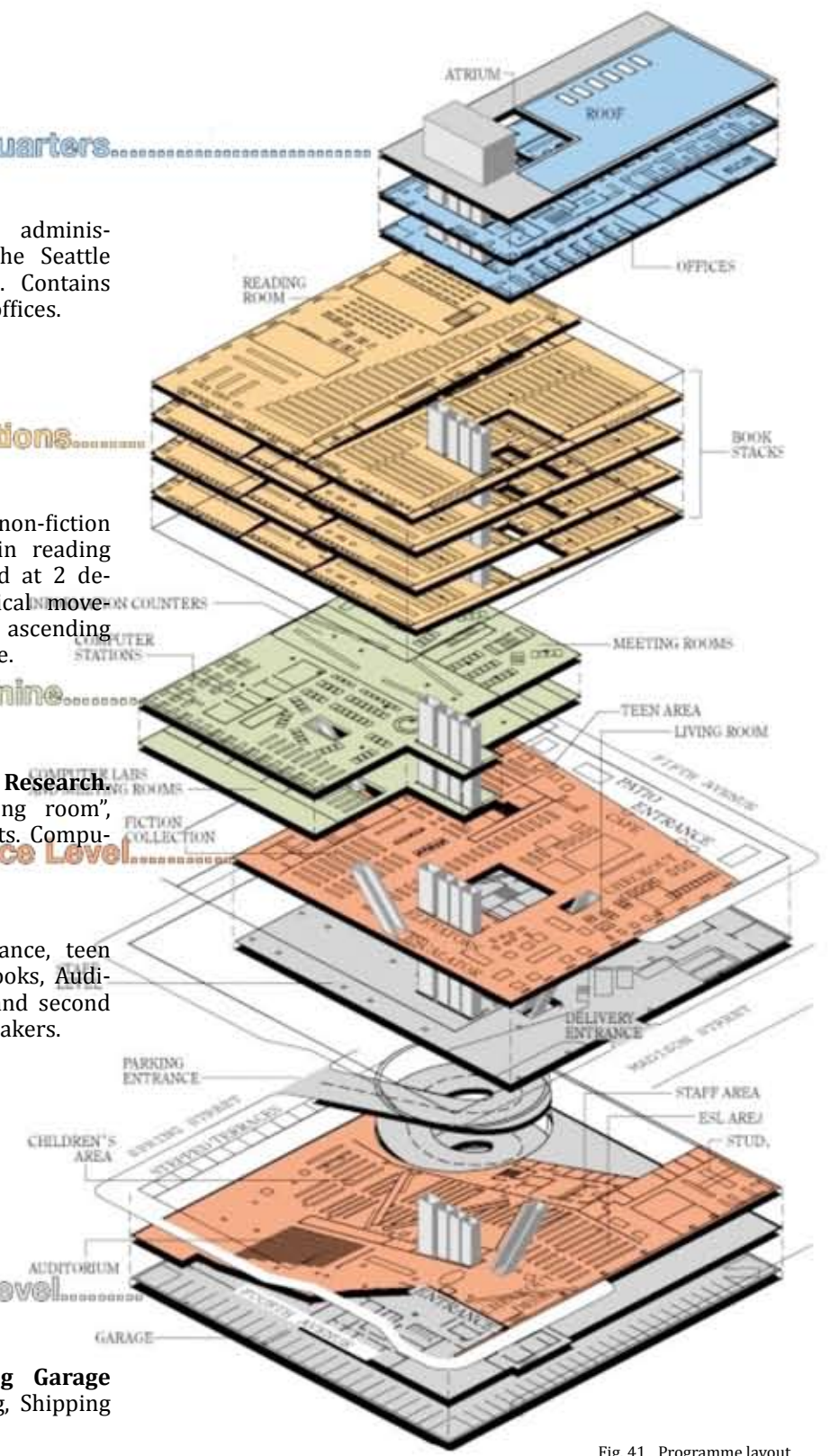


Fig. 41 Programme layout



Fig. 42



Fig. 43

All programmes disperse from this core, and one remains always aware of its presence. Staller says that *“its solidity recast the remaining spaces as somehow provisional, mere transitions between shafts and whatever surrounds it”* (Staller, 2004: pg. 25).

These spaces become the transitional device between the chaotic city realm and calm knowledge gathering in the form of reading rooms. The corridors are coloured bright red and the escalators bright yellow, inviting the public to its inner world on the upper floors.

The diagram on the right shows the design process. The first diagram was generated after discussion with the library staff. This graph was compacted, to free up more space and grouped into the platforms on the diagram to the right.

The result is the concept model, the Seattle Library stripped from its opaque facade. The facade was added to enclose this programmed space; it is the envelope. The complicated facade is in fact, like Rasmus explains in his video presentation, the result of a simple rationalised design approach.

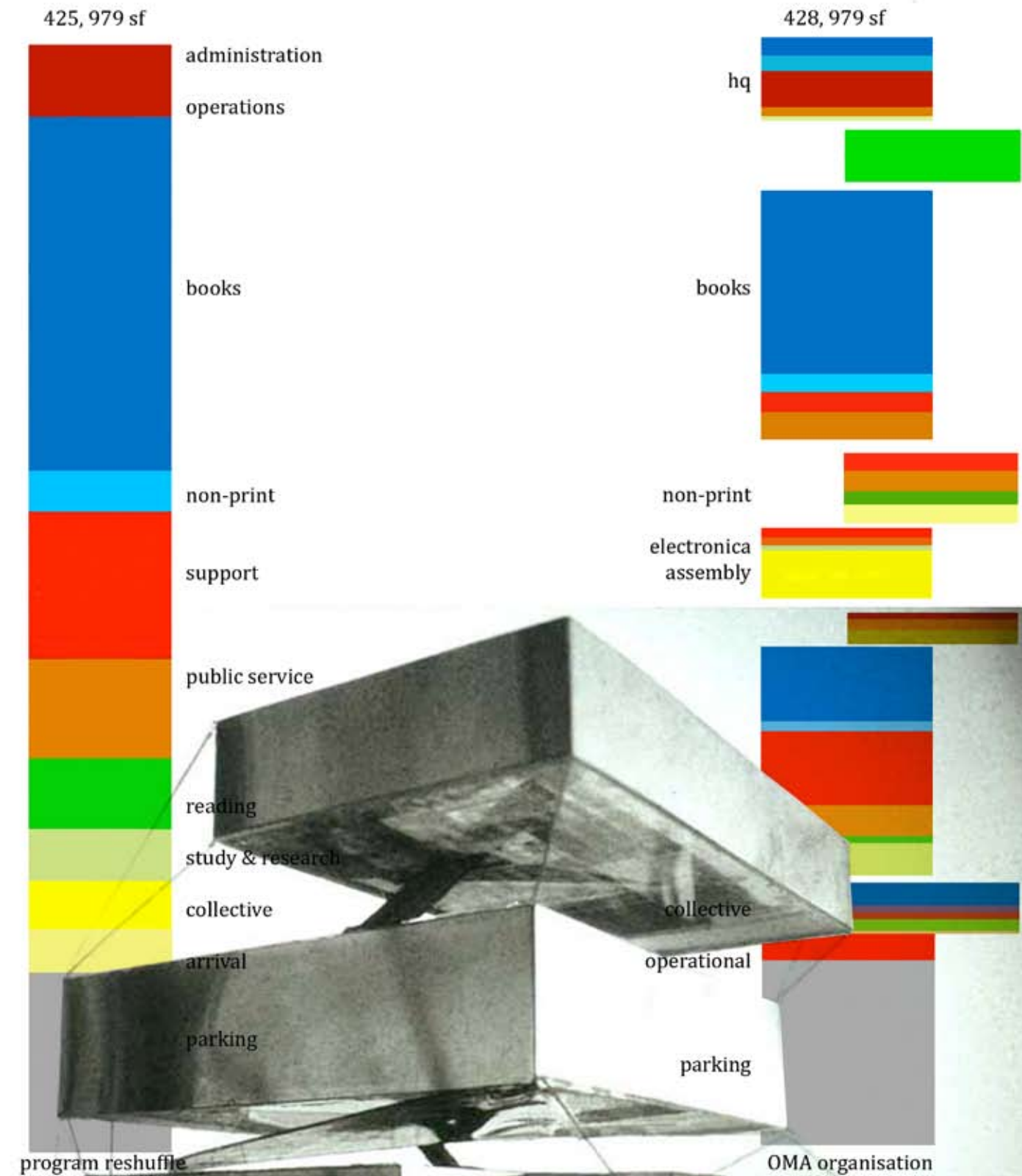


Fig. 44 Collage of OMA table and concept model



HISTORY

Situated in the heart of London, the BFI Southbank celebrates British film heritage. Anthony Minghella (chair of the BFI) says that the “*archive is a key to our collective unconscious, our cultural memory*” (The Independent, 2007). With the opening of the BFI Southbank on 14 March 2007, it replaced the Museum of the Moving Image, constructed in 1989.

The original building was designed by Avery Associates on the then fast developing Southbank district. The museum was privately funded, consequently influencing the design proposal and site selection. The Waterloo Bridge was found suitable to reduce cost by utilising the under carriageway. This posed many difficult construction implications: the “*structure to which nothing of any weight could be attached and to which no part could be denied access for future inspection. It was also found to leak, resonate with traffic noise and move seasonally by as much as 100mm*” (Avery Associates, 1989).

In 1999 the Museum of the Moving Image closed, the result of dwindling visitor numbers. Management and facilities were to blame. In 2007 the site was reopened, in a much larger complex, the BFI fused the Museum of the Moving Image and the National Film Theatre Complex. This increased the BFI’s facilities to three cinemas, an Imax theatre designed by Avery Architects in 1999 and the addition of a newly constructed Mediatheque by David Adjaye.

PROGRAMME

The BFI boasts the following facilities:

- Studio - free standing box-cinema
- Imax Theatre
- Three Cinemas
- Mediatheque
- Gallery
- Restaurant
- Café
- Film store

MEDIATHEQUE

David Adjaye on the design - “*The space features a dark, woven vinyl floor and bespoke furniture. Aluminium honeycomb panels faced with translucent polycarbonate are backlit to lend a soft, diffused light and 14 articulated plasma screens set in comfortable booths create relaxing viewing stations*” (Adjaye, 2007).

The content of the mediatheque is curated for continual change insuring updated fresh material.

ARCHIVE

The archive contains more than 50,000 fiction films, over 100,000 non-fiction titles and around 625,000 television programmes (BFI, 2009). The archive material, because of the collection’s size, is located at several venues around the UK. No in-house storage facilities are available at



the Southbank centre.

The BFI’s commitment to preservation has been responsible for the numerous classic titles digitised in recent years.

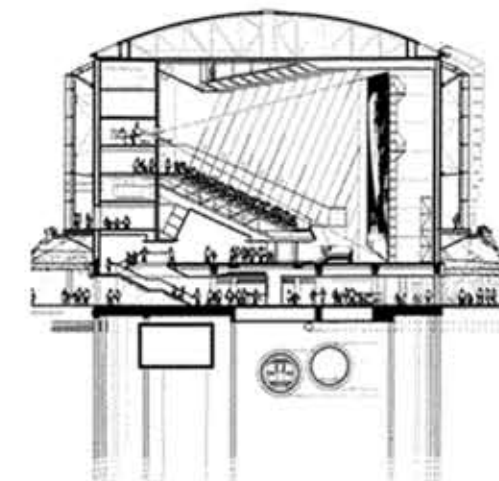
OPERATION

The BFI Southbank maintains an interactive webpage and free guides at the facility. They promote and market upcoming festivals, exhibitions and events. Most of the facilities available to the public come at no cost, to encourage participation.

CONCLUSION

The establishment is a celebration of film. It is one of the world’s foremost repertory cinemas. It still has no equivalent in Los Angeles, the home of American film.

Their commitment to film and British film is unmistakable. There can be no comparison to the South African counterpart, in fact, the contrast couldn’t be more stark.





The Science of Sleep

Directed by Michel Gondry, 2004

Fig. 51

PLOT

A young man, Stéphane (Gael García Bernal) returns to his mom's apartment in Paris from Mexico, where he lived with his father after his parents' divorce. His father's death prompts his decision to re-connect with his mother and live in his old bedroom. It soon becomes clear that Stéphane is a vivid dreamer that has difficulty separating his dream world from reality. When he arrives at the job his mom organises for him, he soon realises that his designer aspirations are thwarted by a boring typo job. A beautiful girl moves in next door, a creative like-minded Stéphanie (Charlotte Gainsbourg) who inhabits his dreams and imaginary worlds. She and his dreams become his escape from his real world and mundane job.

"The film is a *mélange* of sometimes-magical sequences that mix dreams with reality, and isn't entirely linear or plot-driven" (Director-file.com, 2007).

DIRECTOR MICHEL GONDRY

Michel Gondry is a self-taught genius. After researching all available videos, interviews, director commentaries, websites and films of Michel Gondry, this became more evident. His advertisement for *Smirnoff*, as mentioned in the theory chapter, displays his understanding of space and time, and the inventive ways of rendering them. *Eternal Sunshine of the Spot-*

less Mind is his coming-of-age film. He handles topics as complicated as memory, spaces of the mind and a questioning of the self. He collaborated with Charlie Kaufman, the celebrated screenwriter, in *Eternal Sunshine* and this, in many ways, inspired his writing of *Science of Sleep*.

A recent Gondry collaboration, *Tokyo* is a look at Tokyo through three different stories and three different directors. The strap lines of the film read "Do we shape cities? OR, Do cities shape us?"

MICHEL GONDRY ON SCIENCE OF SLEEP

The story was written by Michel Gondry himself and contains many personal references. A recurring dream of big hands, his old apartment formed Stéphane's room, and the boring job Stéphane occupies is similar to Gondry's previous job.

The opening scene of the film contains wild splashes of colour on screen that signify Stéphane's voyage from reality to the dream world. An old LP gramophone spins at a high speed while paint is introduced to the surface, utilising centrifugal forces to create interesting patterns. This effect illustrates Gondry's understanding of the film medium and that the process of capturing it is a more influential artwork than the dried paint product.



Fig. 52 Director sketch

GONDRY/TSCHUMI

Perhaps Gondry would have been like Bernard Tschumi if he pursued a career in architecture. Uncanny resemblances are found between the two thinkers. Tschumi publishes and creates paper architecture to test and push the boundaries of architecture. This experimental enquiry is more easily achieved in film, but Gondry still utilises shorts, like music videos and advertisements, to test the film medium.

Perhaps the most telling resemblance is revealed in an interview with Gondry on Director-file.com where he explains his approach to *Science of Sleep*.

"That's part of the suffering that Stéphane endures, not being able to know for sure what is going on in Stéphanie's head. So since I couldn't figure out the outcome of this story, since I was, in a way, in the middle of living it, I decided to take the point of view of somebody dying. As much as I could imagine it, or anyone can, because of course nobody comes back from the journey.... So I imagined what it could feel like: A succession of events and emotions, increasingly dramatic, interrupted by a void. Just stopping before it reaches a conclusion, an explanation. I always imagined death as a succession of ups and downs, like temperature curves and a minimum level, a sort of line that is only known after it's been crossed, that interrupts the curve with no return. That's the end of the film, the black with the credits." (Director-file.com)

It's not far off from Bernard Tschumi's own

conviction as published in *The Manhattan Transcripts*, where he uses the analogy of death to explain architecture. And the very concept of succession of events inspires both.

SPACES OF THE FILM (PRODUCTION)

The film opens in Stéphane's film studio (mind) as he prepares to dream. Shortly thereafter we are introduced to his old bedroom, preserved exactly, and his new office the next day. The office space is dramatically altered in his dreams. As Gondry puts it in the director's commentary, "all proportions are different in dreams" and the sets were completely rebuilt for the dream sequences. The ceiling was extended higher and the steps grotesquely enlarged. These re-invented spaces are probably the closest amalgamation of the manner our minds record spaces and recollect them.

Interesting images are displayed in this film, like the reconstruction of Stéphanie's room in a cave in another of Stéphane's dreams. The cave space reminds Stéphane of his primordial shelter and thus emphasises his relaxed state when he is in her room.

Stéphane and Stéphanie are united in an imaginary world, where dreamlike sequences appear but it is quite evident that it happens in reality. Jeff Buchanan, a film critic says that "in Gondry's strange universe the point isn't always tied so much to what world his characters currently inhabit as it is their reaction to that world" (Answers.com).



Fig. 53 Reality: Stephanie's Room



Fig. 54 Dream: Stephanie's Cave



Fig. 57 Exhibition: Cardboard city, from a dream sequence



Fig. 58 Film: Stephane's Mind (represented by a film studio)



Fig. 55 Reality: Office Space (Claustrophobic)



Fig. 59 Exhibition: Stephane's mind reconstruction



Fig. 60 Gondry Sketch



Fig. 56 Dream: Office space (Large Stairs, High Ceiling)

SPACE AND TIME

The realm of dream and reality is blurred in this film. The viewer becomes as disorientated as Stéphane in this film, unable to separate dream worlds from the real, or even imaginary worlds, in clear daylight. Montage plays an important role in achieving this sensation, juxtaposing dream worlds directly against reality. Gilles Deleuze (also from France), and in no doubt acquainted to Gondry, separates film into two distinct categories: the time image and the movement image. The time image is when time is rendered in a labyrinth, non-linear and is earmarked by flashbacks and jumps in time. The movement image connotes time as a linear force. In *Science of Sleep* these two categories can substitute the dream world and reality.

EXHIBITION

Gondry has released a B movie, an apparent first, totally new version of the *Science of Sleep*.

The film is restructured and un-released footage combines (montage) to create a totally different film. As further proof of Gondry's brilliance, two exhibitions, one in Deitch, New York and one in Paris for *Science of Sleep* have opened. The exhibitions feature re-built sets, like Stéphane's room, his mind studio and a pink room filled with 'creepy little pathological gifts' (as mentioned in the film).

Ben Davis, writing for Artnet explained this exhibition as "a choppy montage of a movie preview". This exhibition is a precedent for a physical translation of film into architecture, probing space and human experience. But this insignificant exhibition has power that not even the Acropolis can achieve. One must mention the Acropolis has long passed from recent memory, one the film benefits from, and has the power to place one in cinematic space. Space that like Stéphane's character is re-appropriated, layered with memories, music quotes, characters and personal experiences.

Movement Precedents

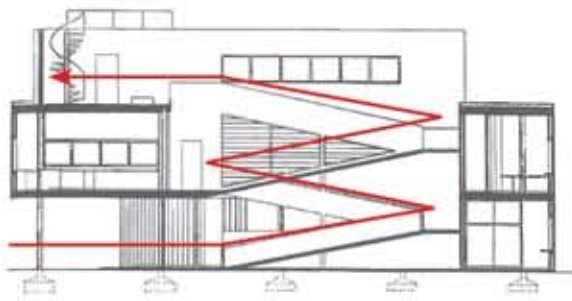


Fig. 61

VILLA SAVOYE, PARIS (1928)

Le Corbusier

The building is inspired by Le Corbusier's five points of architecture. Pilotis allowed the building to be lifted and make circulation free. The free facade allowed him to frame periaptic views of the landscape. In the publication *Vers une Architecture* he refers to the Acropolis, especially view 2 as illustrated by Choisy and Eisenstein.

Le Corbusier is aware of the movement of the viewer and the resultant change of view. The ramp is an important circulation element in his design, the architectural promenade that ultimately leads to the roof terrace. From here a exterior window frames another important view.

(Bubb, 2006)

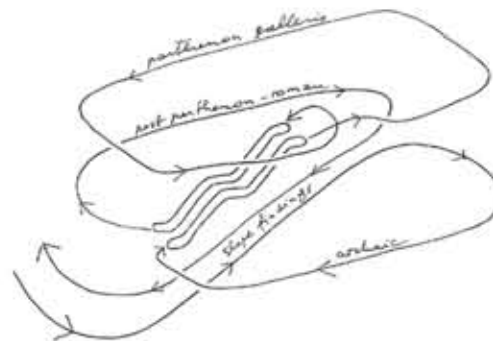


Fig. 62

THE ACROPOLIS MUSEUM, ATHENS (2009)

Bernard Tschumi

Architect's Statement from Tschumi.com - *The movement concept, "the visitor's route forms a clear three-dimensional loop, affording an architecture promenade with a rich spatial experience extending from the archeological excavations to the Parthenon marbles and back through the museum artefacts is conceived to be of utmost clarity."*

Movement in and through time is a crucial dimension of architecture, and of this museum in particular. With over 10 000 visitors daily, the sequence of movement through the museum artefacts is conceived to be of utmost clarity."

Conclusion - The museum is less than 500m away from the Acropolis and now forms part of the starting point of the journey towards the Acropolis. Movement and sequence is important to Bernard Tschumi.

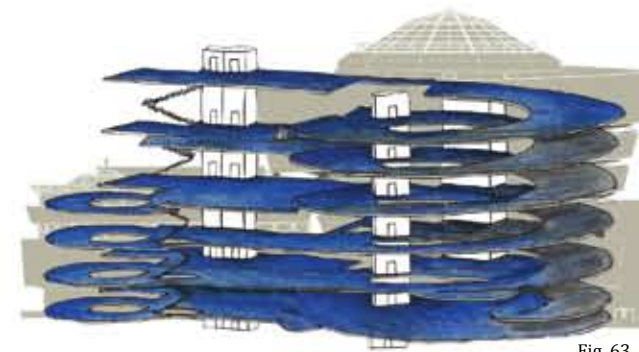


Fig. 63

THE GUGGENHEIM, NEW YORK (1959)

Frank Lloyd Wright

The movement through the building commences once one enters the elevator and ascend to the top floor. Thereafter the movement is a slow spiralling descending ramp on which artworks are displayed.

This movement through the building proved to be very unpopular to museum curators who have complained about the difficulty of exhibiting artwork on a sloped floor and curved wall.

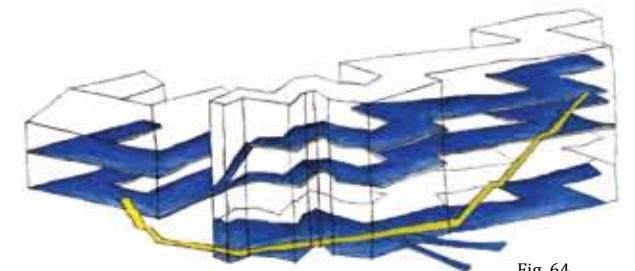


Fig. 64

THE BERLIN JEWISH MUSEUM, BERLIN (1999)

Daniel Libeskind

Architect's Statement - From Studio Daniel Libeskind.com:

"The entrance is through the Baroque Kollegienhaus and then into a dramatic entry Void by a stair, which descends under the existing building foundations, crisscrosses underground, and materializes itself as an independent building on the outside. The existing building is tied to the extension underground, preserving the contradictory autonomy of both the old building and the new building on the surface, while binding the two together in the depth of time and space".

Conclusion - The journey is carefully planned to render effects on the user. After traversing along the route, dead ends negotiated, rooms with no entries passed, one enters the Holocaust Tower. The architect scripted the route to this space to render the desired emotion on its visitors.

CHAPTER 6. Design

Design Problem. Client. User. Accommodation. Concept. Design Development.

Highlights and low points of the design. Late nights, design, coffee, red pencil, programme, urban, sustainability, movement, services, plan, section, fire escape, disabled access, service corridor, structure, materials, heritage, escalator, archive, plant room, scale, volume, user, cinema, views, site, shading, form, existing structure, details, engineer.

Fig. 65





Design Problem

Theory. Site. Sustainability. Existing Archive

INTRODUCTION

Through persistent research the importance of film as a body of knowledge has been established. The film archive of South Africa (NFVSA) has been visited to gather more information on local film – unfortunately the facility is in a derelict state.

Problems with the establishment

- Inaccessible, no public interface
- Archaic system
- Film medium not celebrated
- No catalogue system available
- No cinemas
- Ineffective staff structures

Quite simply, film is unimportant in this archive. It has subsequently been decided to redesign the South African film archive, using film theory to create a cinematic experience, not only in terms of film but also the physical experience of the spaces.

DESIGN PROBLEM

1. Promote film in South Africa:

- - Through architecture
- - Through the choice of site
- - To open up the archive

The existing archive typology is challenged, the archive (a cold room) is opened up figuratively and literally.

2. Sustainability

- Densify our cities by developing under-utilised, half-empty existing structures.

- Densification has many green advantages, such as proximity of public transport, local labour and materials.
- Inherent limitations of re-using an existing building and its roofscape.
- Structure, heritage and intended use of the existing structure greatly influences design decisions.

3. Application of theory

- To prove film theory as a legitimate architectural discourse.
- Use film theory to guide the design process.

4. Archive

- Storage and preservation of sensitive material.
- Protection from fire.

5. Construction

- Light structural elements to minimise stress on existing structure.
- Materials chosen to announce certain areas of prominence.
- Sustainability.

6. Cinema

- The cinema form is released from the ‘mall box’.
- The form is utilised to create foyer spaces as a transitional space.
- The cinema roof complex is seen as a transport terminal, the dark auditorium space the vehicle to other realms.



Client. User

Archive. Cinema. Ancillary Clients. User

PRIMARY CLIENT - NATIONAL ARCHIVE

The proposal calls for a major change in the structure of the NFVSA (National Film Video and Sound Archives). Based on international precedents, the Hong Kong Film Archive and the British Film Institute, the South African Archives will be split. Film (in the NFVSA's definition “video”) and related material (documents, equipment, exhibitions) will now form part of South Africa's Film Archive.

They will strictly adhere to the International Film Archiving (FIAF) body's strict policies. A new staffing structure that is based on an amalgamation of worldwide archive precedents is also implemented.

Staff Structure

Admin	- 7 staff members
Research and Study	- 2 staff members
Legal	- 1 staff member
Preservation	- 2 staff members
Information Technology	- 3 staff members
Library	- 3 staff members

SECONDARY CLIENT - CINEMA COMPLEX

In order to showcase the film material, cinemas were added to the programme. A private company will run the cinema complex for two reasons: firstly to ensure effective service related to other cinema chains, and secondly to attract visitors to the complex throughout the year.

A possible client is the extension of Ster-Kinekor's Cinema Nouveau brand to include vintage/heritage

material not only from the South African archive, but historic films from around the world, commonly known as a revival house or repertory cinema.

Staff Structure

Projectionists	- 6β
Concession Stand	- 3
Cleaners	- 6 shared with archive
Admin	- 3
Box Office	- 4
Security	- shared with archive

ANCILLARY CLIENTS

Programmes that supplement the cinema experience and compete with the cinema mall experience.

Staff Structure

Rooftop Cafe	- 8
Rooftop Bar	- 4
Bookstore	- 3
DVD Store	- 3
Coffee Stand	- 2

USER

- The film addict (eat + film + bookshop)
- The urban dweller (no knowledge of film)
- The film student (research)
- The journalist who needs footage of past events
- The filmmaker (research + obtain footage)
- Business lunch away from the urban chaos
- International tourists (academics and public)
- Companies who hire the facility for an event
- Film premiers (red carpet event)



Accommodation

Functions. Function Description.

SHARED FUNCTIONS

Some of the functions that will be shared amongst all the clients of the building include:

Information/receptionist - Placed near the entrance to bolster security and to simplify the archive experience.

Restrooms - Three restroom facilities are placed in the building. Firstly a staff changing room, secondly a museum restroom and lastly a restroom for the cinemas, restaurant and rooftop bar.

Building Management - security, maintenance and gardening facilities.

Services - Plant room, chiller, service corridor, refuse and stand alone staff circulation. A delivery depot with basement storage will streamline and hide the frequent delivery requirements of some of the vendors.

PRIMARY FUNCTIONS

The programme requirements of the new South African Film Archive:

Film Archive - Film must be preserved under very strict temperature control: 7°C, with controlled humidity. Fire protection, with the help of compartments, will stop the spread of fire and also allow each room to be cooled separately. This allows more effective ventilation control and the option of expansion.

Library - The film archive collection contains film related documents, books and posters that must be preserved. Sub-functions include: storage, office, reading area, books, catalogue, special collections, archive, research office

IT/Media Labs - The IT facility will increase the accessibility of the collection. Many films will be available to be seen at the mediateque, a computer facility with comfortable seating and earphones, where films of choice can be enjoyed. The library will also contain a dedicated IT lab for research. To maintain these labs, digitally store converted historic films, as well as maintain the Internet space an IT/Media office and digital archive will be accommodated.

Digitising Facility - A facility that can convert many formats of film and videotapes to digital format, and also retouch and edit these films. These converted films will be stored in the digital archive. The facility will also be open to the public, a conversion and editing service will be provided for home videos. Other functions include: office, film editor, public interface, digitising room and storage.

Exhibitions - The collection boasts a number of historic film memorabilia, cameras and equipment. The limited exhibition space will be split into permanent exhibition areas, temporary spaces and media spaces. The archive will use the temporary spaces for the video art installations and film exhibitions. The media spaces (screens and dark rooms) will be controlled from the IT/Media office.

Offices - The archive staff will be spread in 4 main areas: the IT office, the library, the digitising facility and the office. The office space will be for the admin staff and curator of the exhibition spaces. The office consists of: a waiting area, reception, discussion room, conference room, open plan office space and storage.

Curio Store - The curio store will form part of the street interface on the ground floor. The curio store will generate income for the museum and sell film related items.

SECONDARY FUNCTIONS

The Cinema complex and all functions related to its effective management:

Cinemas and Foyers - Four cinemas can be accommodated on the roof of the building. These cinemas will be lifted to utilise their form and create foyers beneath them. The cinemas are smaller than some of the commercial cinema auditoriums, but this is justified by the smaller target audience.

Concession Stand/ Box Office - Tickets and the control thereof will be handled by the box office. The concession stand is responsible for all movie refreshment requirements.

Projection Rooms - Projection rooms need special consideration in terms of size, fire regulations and

projection angles. A special consideration for an archive cinema is the need for more equipment, as a wider range of film formats, from different eras, will be projected.

Office - A small admin office and storage space from where the cinema complex can be managed and operate.

ANCILLARY FUNCTIONS

Supplementary functions to the archive and cinema complex include:

Book store - books, storage, counter.

DVD store + rental - storage, counter.

Coffee stand - a coffee stand on the first floor will compliment the bookshop and the courtyard space.

Courtyard - demolition, to create courtyard.

Rooftop cafe - cold storage, refuse, counter, kitchen, dry storage, dining area.

Rooftop bar - bar, cold storage, dry storage, counter, seating.

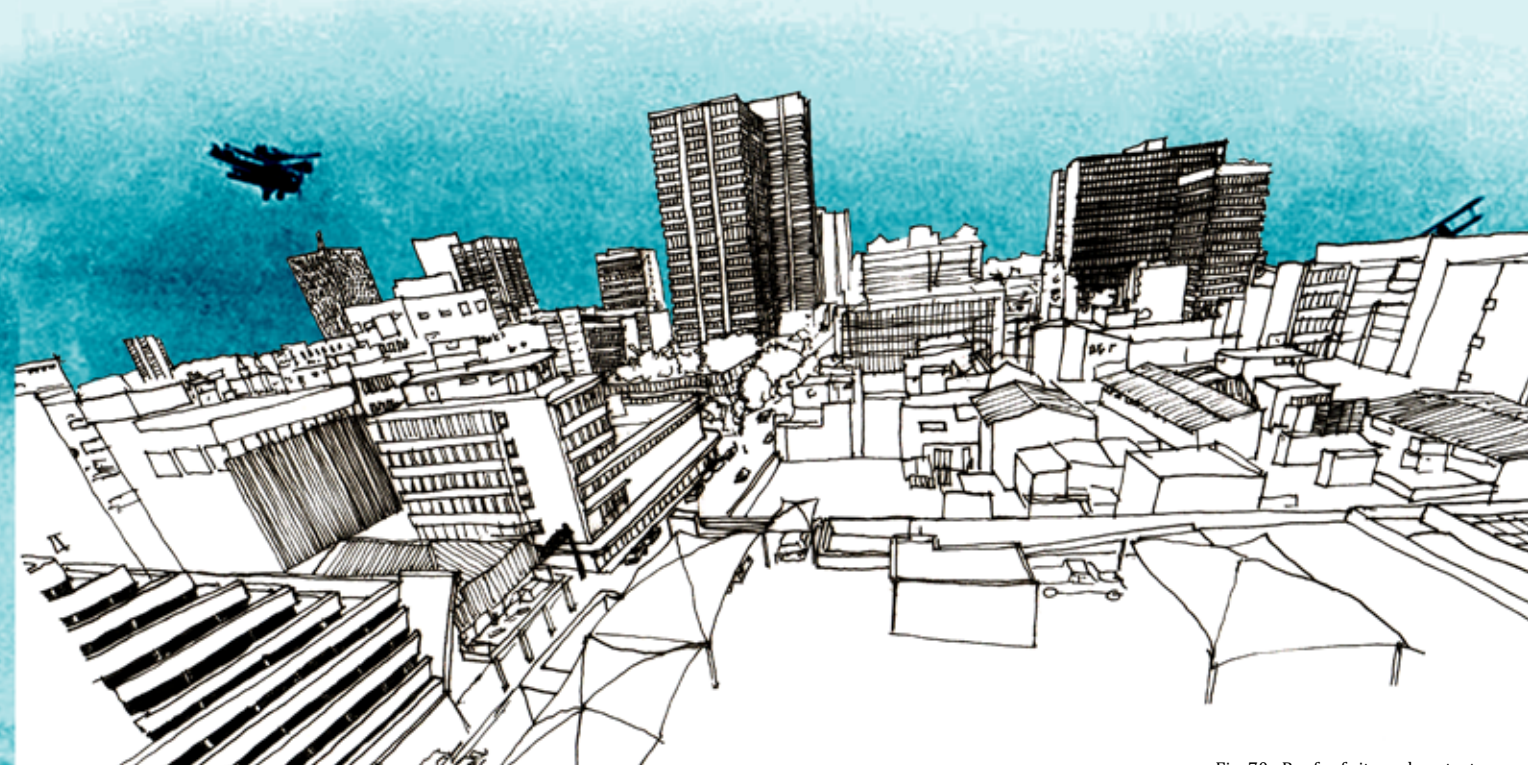


Fig. 70 Roofs of site and context

INTRODUCTION

After much deliberation and thought a concept has been developed that is directly inspired by the theoretical argument. One of the most recognisable characters of film, *King Kong*, inspired the final concept of the design.

In the 1933 version of the film, *King Kong* is captured and taken to a theatre on Broadway in New York to be displayed. He is infuriated by the crowd and with his strength manages to break free from his chains and escape. What *King Kong* decides to do next is interesting, he climbs the highest landmark in the New York skyline, the Empire State Building. Why did *King Kong* not simply run away? Why did he climb the tower? The film's justification for his action is showed early on in the film, before his capture, in his natural habitat. *King Kong* inhabits the highest point of the island domain; he is the jungle king.

But an alternative motif is suggested by the author. Did *King Kong* try to escape from the commotion on the streets and retreat to the upper storeys, a secret known to New York Penthouse inhabitants? Did *King Kong* climb up the tower to gain perspective to this strange new land? To understand where he is?

FORMALISING THE CONCEPT

The rooftops of our cities are full of potential. This unexplored realm can in many cases easily be utilised and developed to maximise floor area. On the chosen site the existing building has merely three above-ground storeys with planned vertical expansion construction details.

Why the rooftop?

- Vantage point (linked to views in theory chapter)
- Escape from urban chaos
- Movement (not only in the building, but the rooftop cinemas will be seen from around the city and that will generate urban movement)
- Contributes to the legibility of the inner-city (a visual landmark)

VISION

A cinema complex where one is directed towards views of the complex, views of the city and also from the interior - towards views of itself.

The complex will lure pedestrians from the street and introduce them to their city, from a vantage point at a remove. This Camera Obscura effect, (from theory chapter) Camera means room, but as Giuliano Bruno states, is "a room with a view" (Bruno, 2007: 416)

CONCEPT SUMMARY

ROOF

To generate views of the city the roof is utilised. Cinemas are allocated to this realm; they act as an advertisement for the building program. Between this realm and the street level is the journey that must be undertaken.

BUILDING

These four floors are where the user is led on a cinematic journey, and arrives at the destination with knowledge of film. Devices such as movement, viewing vistas, mental montage and memory are utilised to instil a cinematic awareness on the user.

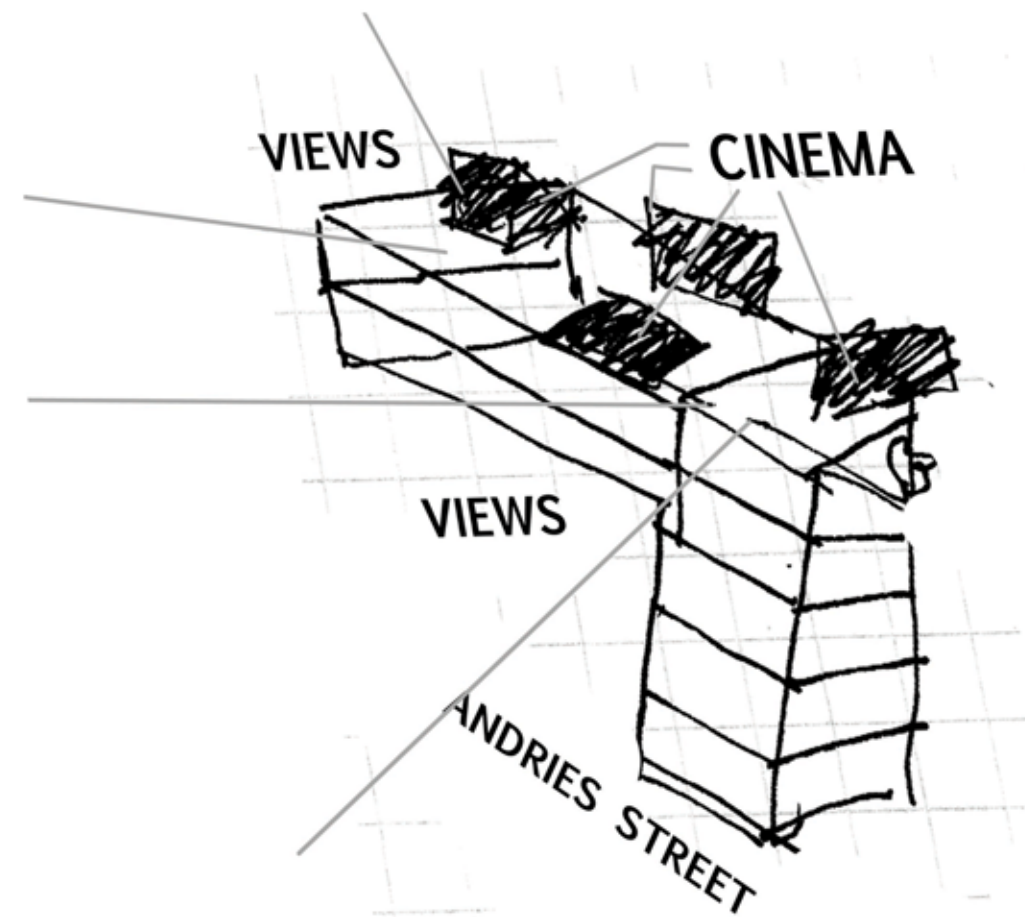


Fig. 71 Concept sketch



Design Development

Time line. Process. Problems. Solutions

INTRODUCTION

The design approach relies on a good understanding of the existing structure and context. The existing structure has been modelled physically and virtually and visited frequently in the early stages of design. Certain problem areas are highlighted in the site analysis and new ones brought about with the concept. Theoretical arguments like montage, views, memory and movement guided the process until completion.

INITIAL PROPOSALS

The site analysis guided many of the initial design proposals. The development of a strategy of re-use was formed that would dictate the extent of demolition and new build. Factors that informed these decisions include vertical circulation, natural light, public space requirements and natural ventilation.

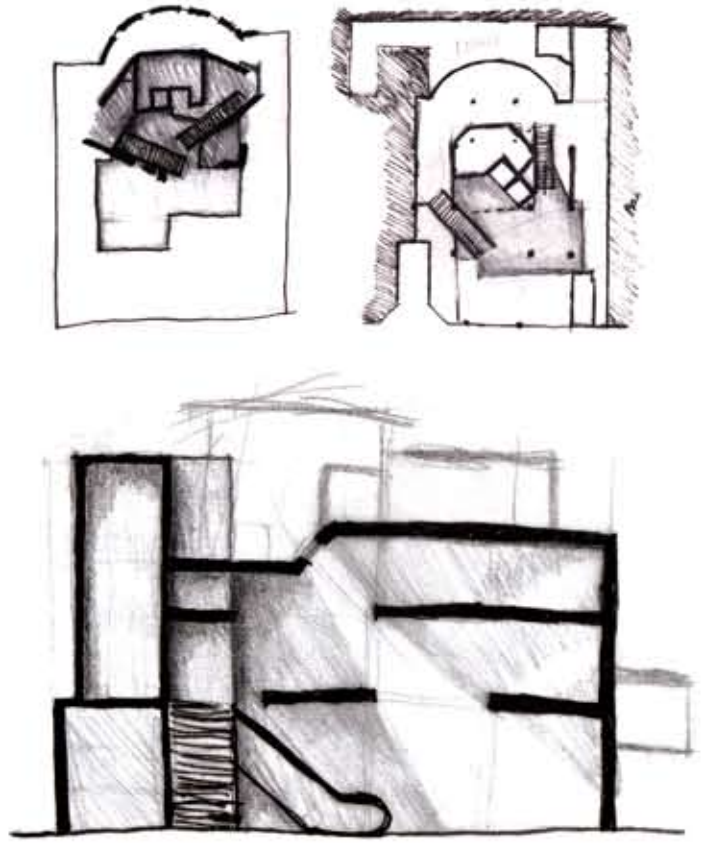


Fig. 73 Initial concepts

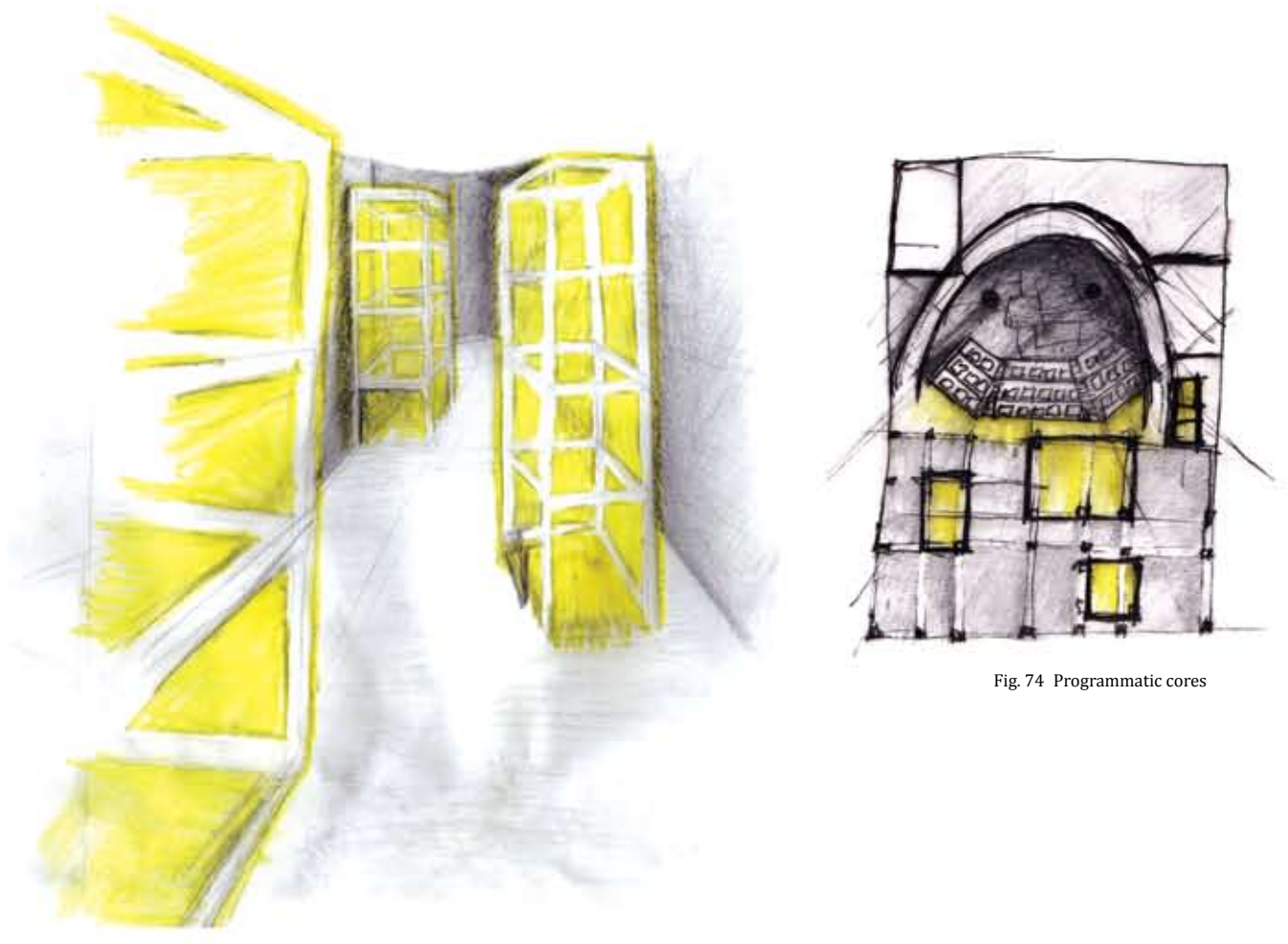


Fig. 74 Programmatic cores

INFILTRATING THE INTERIOR

The needs of the proposed building had to be understood and a diagram produced to solve the placement of the programme. Theoretical concepts such as memory and movement are tested in these drawings. Would one be able to navigate an undiscovered floor if the trace of the previous one was still imprinted on the mind?

CORE - PROGRAMME AND MOVEMENT

The diagram utilises the idea of splitting the different programmes vertically instead of a horizontal placement. This arrangement generates movement throughout the building, increasing the opportunities for discovery, incidental engagements and a cross breeding of knowledge. Little bits of information will be dispersed on the routes and with mental montage and memory, a person will be able to construct a complete image.

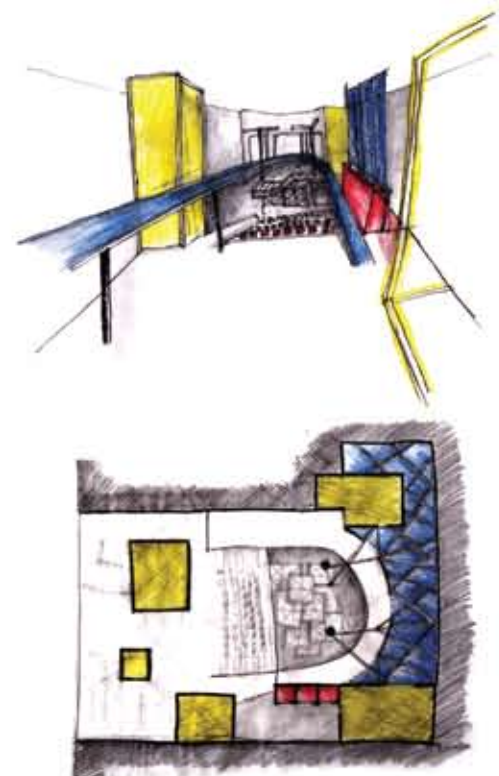
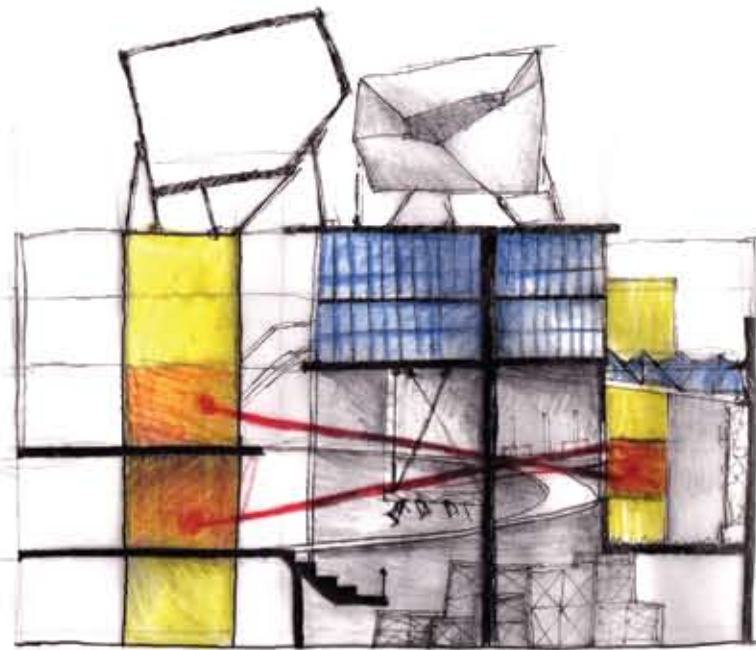


Fig. 75 Movement investigations

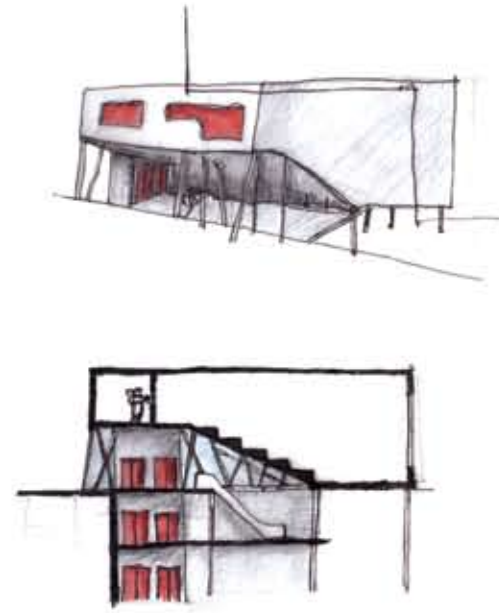


Fig. 76 Cinema form

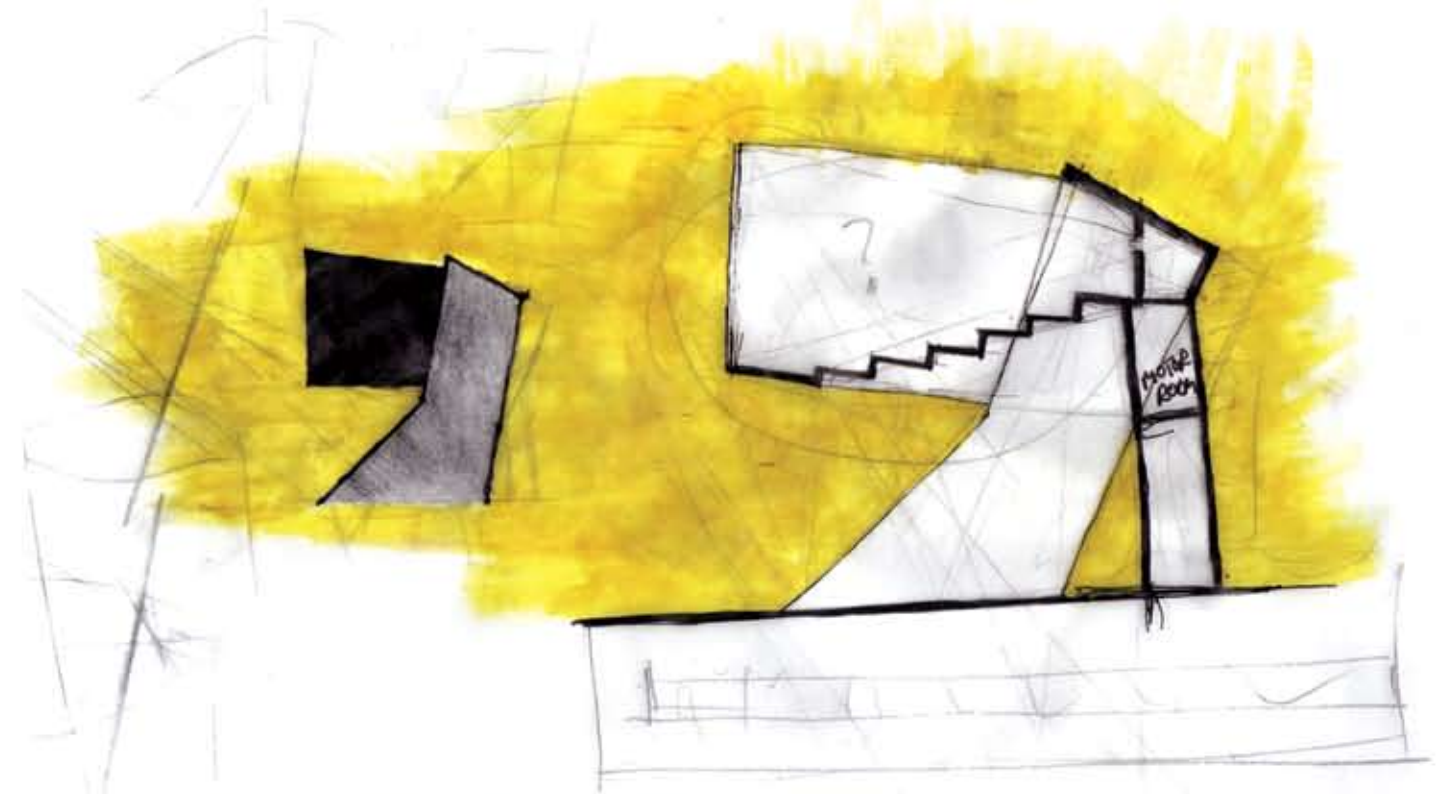


Fig. 77 Cinema tower Parti diagram

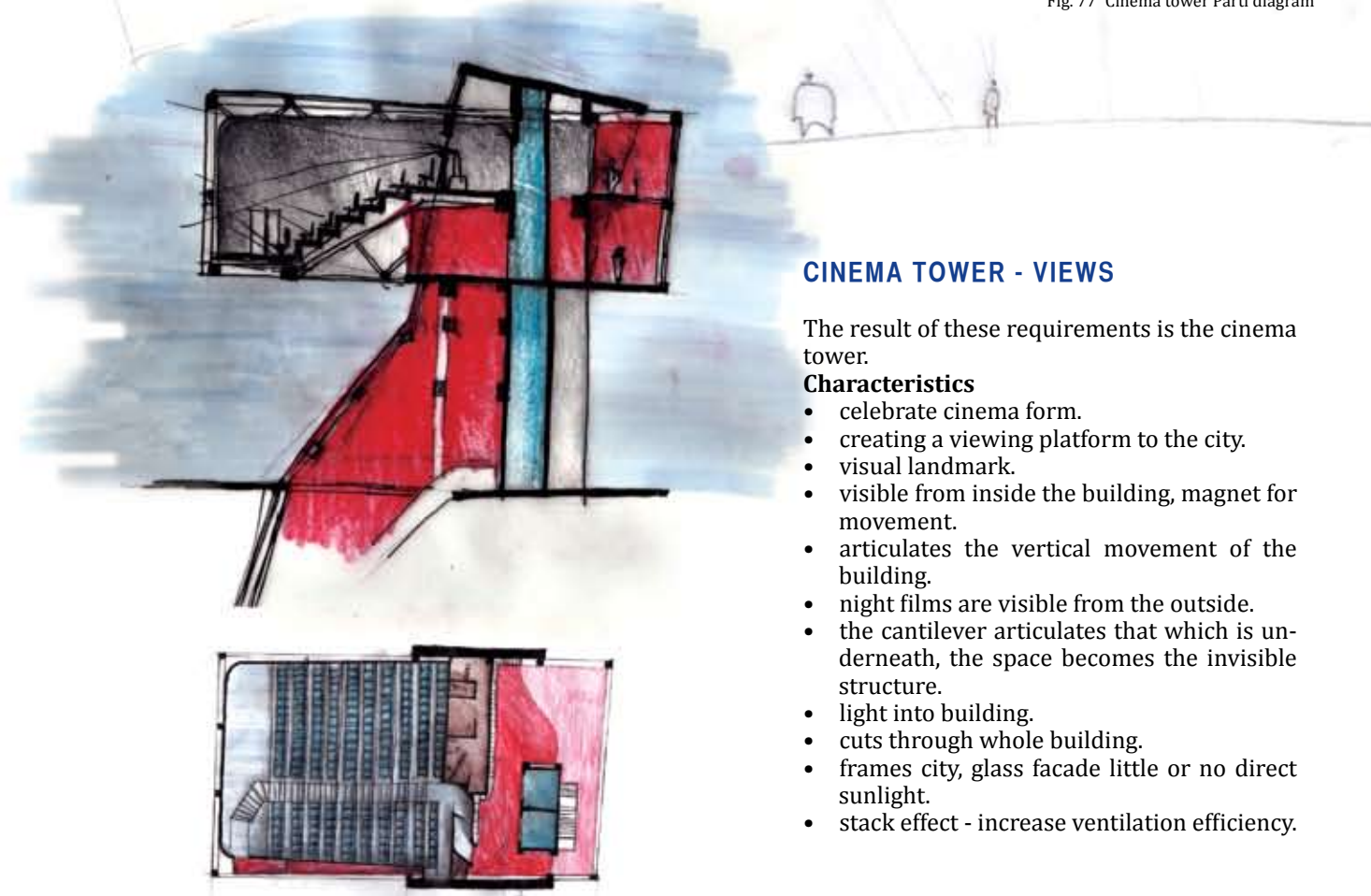


Fig. 78 Cinema tower: plan and section

MOVEMENT

Vertical circulation is of utmost importance, but this vertical engagement with the building must be utilised. A spiralling movement increases opportunities for interaction with the programme, hence knowledge of film.

COMBINING IT ALL

Important design parameters

- Movement
- Light
- Views
- Programme
- New and old
- Link roof realm with street, spill out on roof.

After an investigation of the cinema form, these factors have been combined to form one architectural element.

CINEMA TOWER - VIEWS

The result of these requirements is the cinema tower.

Characteristics

- celebrate cinema form.
- creating a viewing platform to the city.
- visual landmark.
- visible from inside the building, magnet for movement.
- articulates the vertical movement of the building.
- night films are visible from the outside.
- the cantilever articulates that which is underneath, the space becomes the invisible structure.
- light into building.
- cuts through whole building.
- frames city, glass facade little or no direct sunlight.
- stack effect - increase ventilation efficiency.



Fig. 79 Cinema tower model

STRUCTURE

Bracing form is dictated by the requirements of the engineer, but relies on a network structure that would also effectively screen out the western sun.

PLAN GENERATOR

The cinema tower is tilted at a 50° angle.

Reasons for the tilted axis of the tower:

- new order, clearly distinguishable from the existing fabric.
- responds to the context.
- important viewing vista from Bureau Street, the tower is tilted to acknowledge this vista and from Choisy and Sergei's analysis of the Acropolis create an oblique viewing angle that is preferable.

In conjunction with this tilted axis the northern cinema, cinema D, is tilted to respond to the pedestrianised Church Street.

The programme is extrapolated from the cinema tower. Movement corridor, in red, connects the different foyers and cinemas on the roof level.

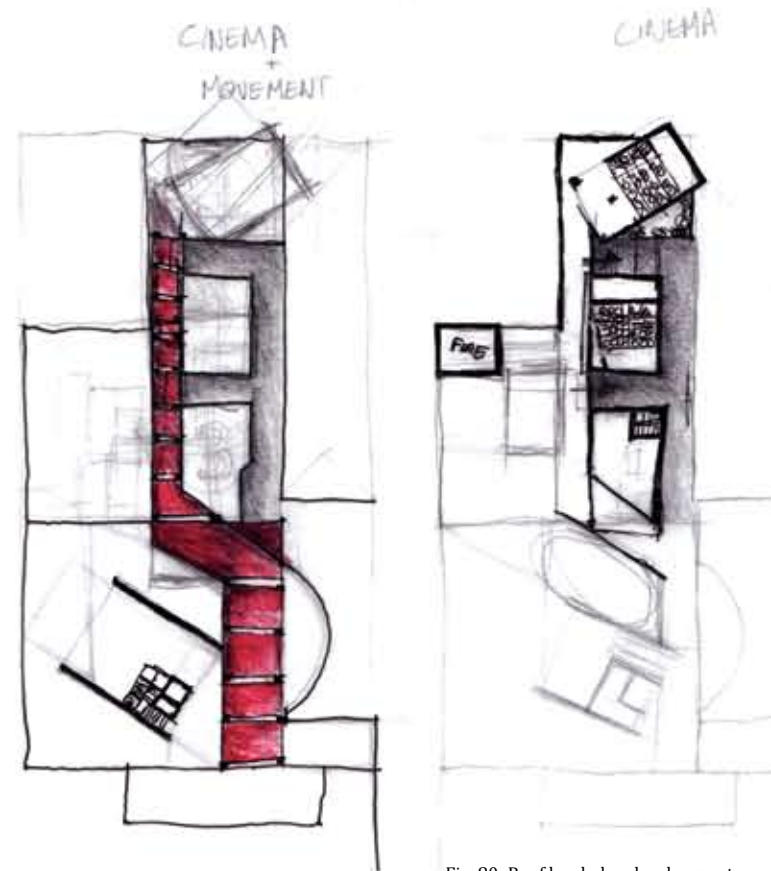


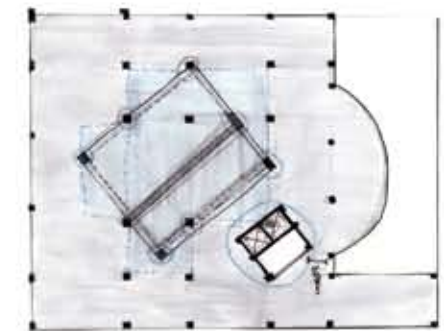
Fig. 80 Roof level plan development



Fig. 81 Plan development



Fig. 82 Programme model



PLAN

The cinema tower and its grid is imposed onto the plan. The new order of the cinema complex is contrasted with the existing structure and grid. The influence of the new grid becomes more apparent with vertical progression through the building.

The programme has been grouped and then vertically separated into programmatic cores to stimulate movement. In many instances views have been created to encourage movement.



THEORY

The experience of arriving at the rooftop cinemas is a choreographed experience, designed according to the key theoretical concepts outlined in the theory chapter. This journey employs the following theoretical aspects:

Montage and memory

The programme is divided amongst the vertical floor levels. To navigate the building, these concepts are relied on to create a legible, easily understandable distribution of activities. A memory of the preceding floor is imprinted on the mind and traversed on the succeeding floor. The effect is cumulative, bits and pieces stitched together as mental montage.

Movement and views

The movement created between the opposing energy poles (archive and digitising facility, street level and cinema tower as examples) create an architectural promenade. These circulation routes in themselves become a spectacle.

From the rooftop cinema many views of the street is offered to the user. These views plays on the idea of spectatorship and escapism.

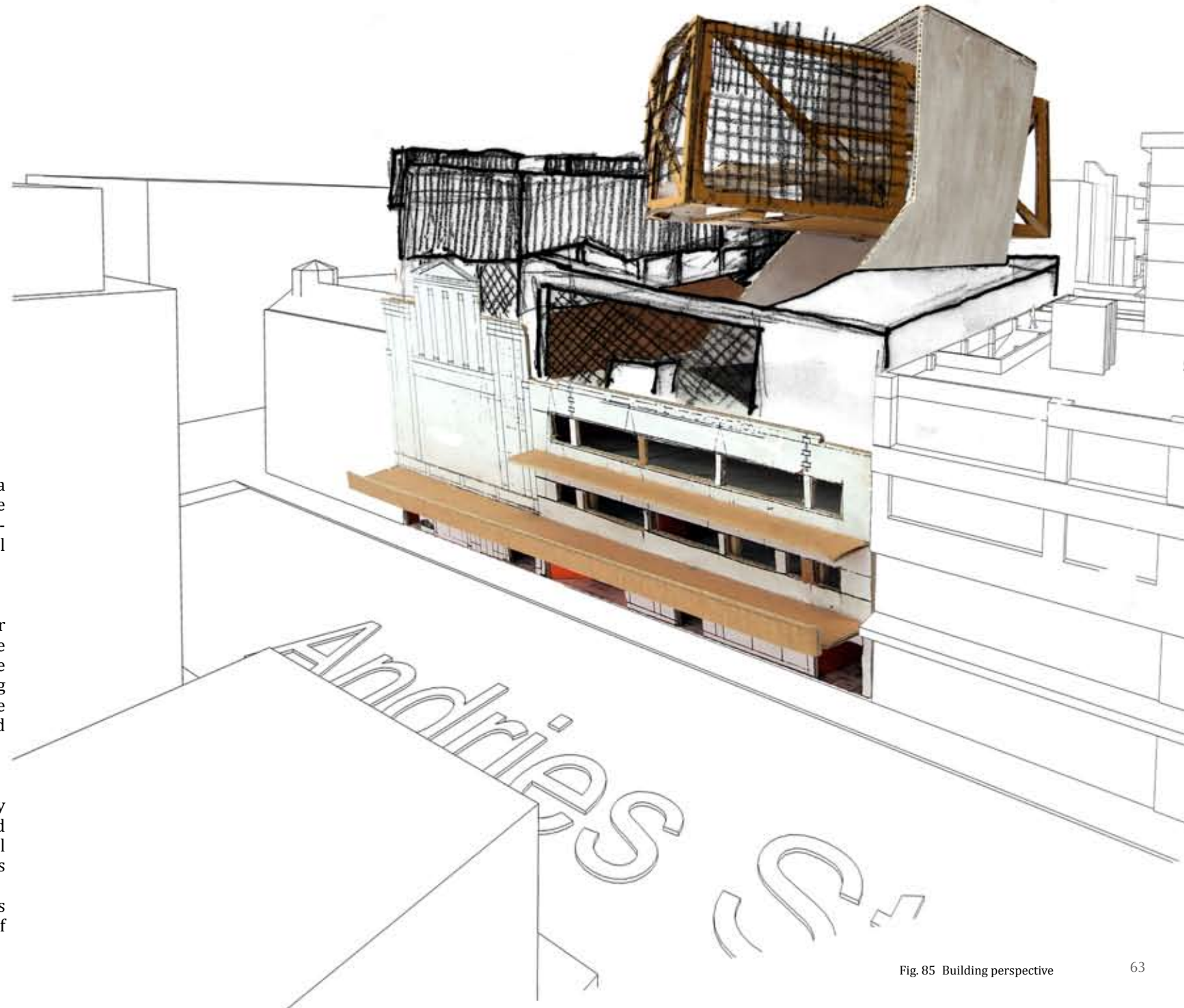


Fig. 85 Building perspective



Experience

Views. Perspective. Escape. Movement

Scene 1 : Approaching the entrance of the Archive Cinema Complex

THE EXPERIENCE

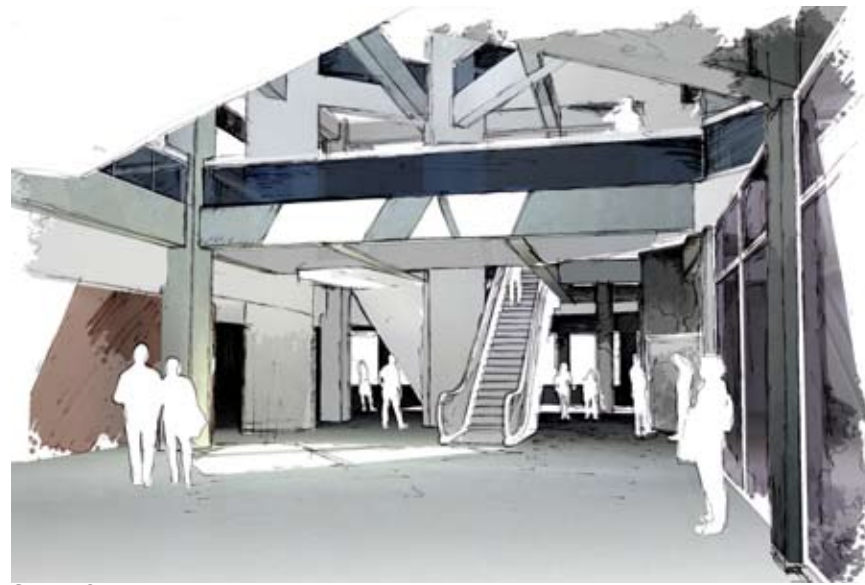
Archive Cinema Complex

The experience through the building is a carefully choreographed journey. The programme and views (from the city, to the city and on to the building itself) are set up along the circulation route to stimulate movement and create a montage of views for the users of the building.

The circulation route leads from the entrance to the cinema tower viewing platform, where views of the urban condition can be experienced, but like the camera obscura at a remove.

Some important scenes on the journey

- The atrium on the ground floor with light filtering in, views of the destination, the cinema tower is also visible.
- Articulated views of Bureau street from every level throughout the building
- Travelling up, the courtyard becomes a focal point.
- From the increased vantage point users also observe other users and activities (exposing the programme)
- Reaching the cinema level another destination is the northern most point, where a framed view towards the Paul Kruger statue and Church square is visible.



Scene 2 : Entering the building, seeing the atrium void and film archive, obstructed views of the courtyard are also visible.



Scene 3 : Entering the atrium, looking up towards the Cinema tower.



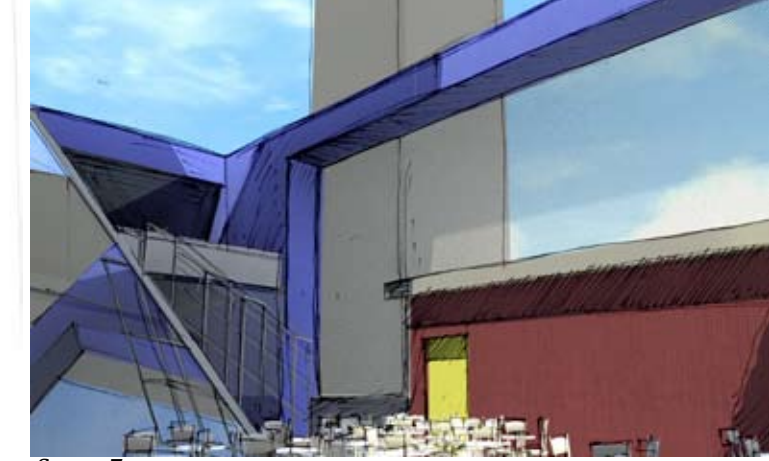
Scene 4 : The courtyard with reflection pond and reading area



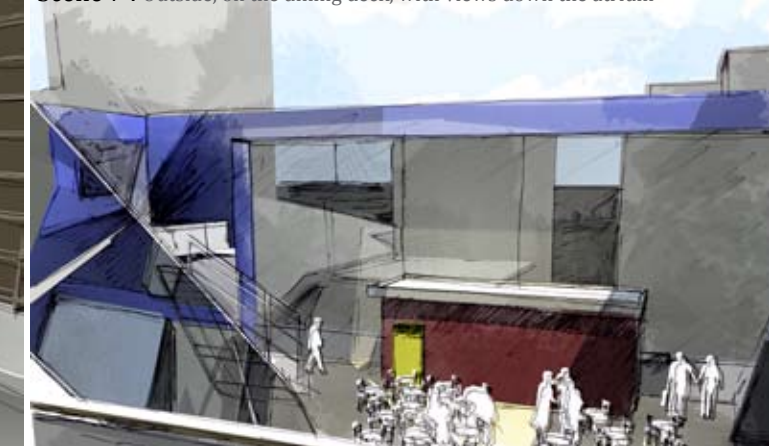
Scene 5 : Library special collections



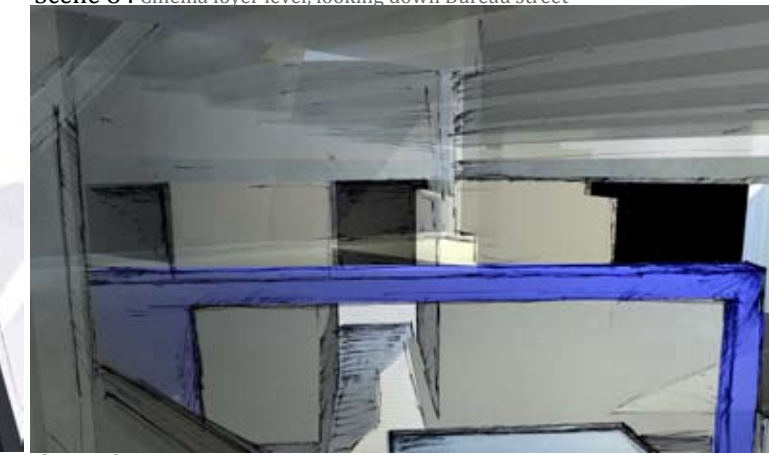
Scene 6 : On the circulation route, looking down to the glass bridge



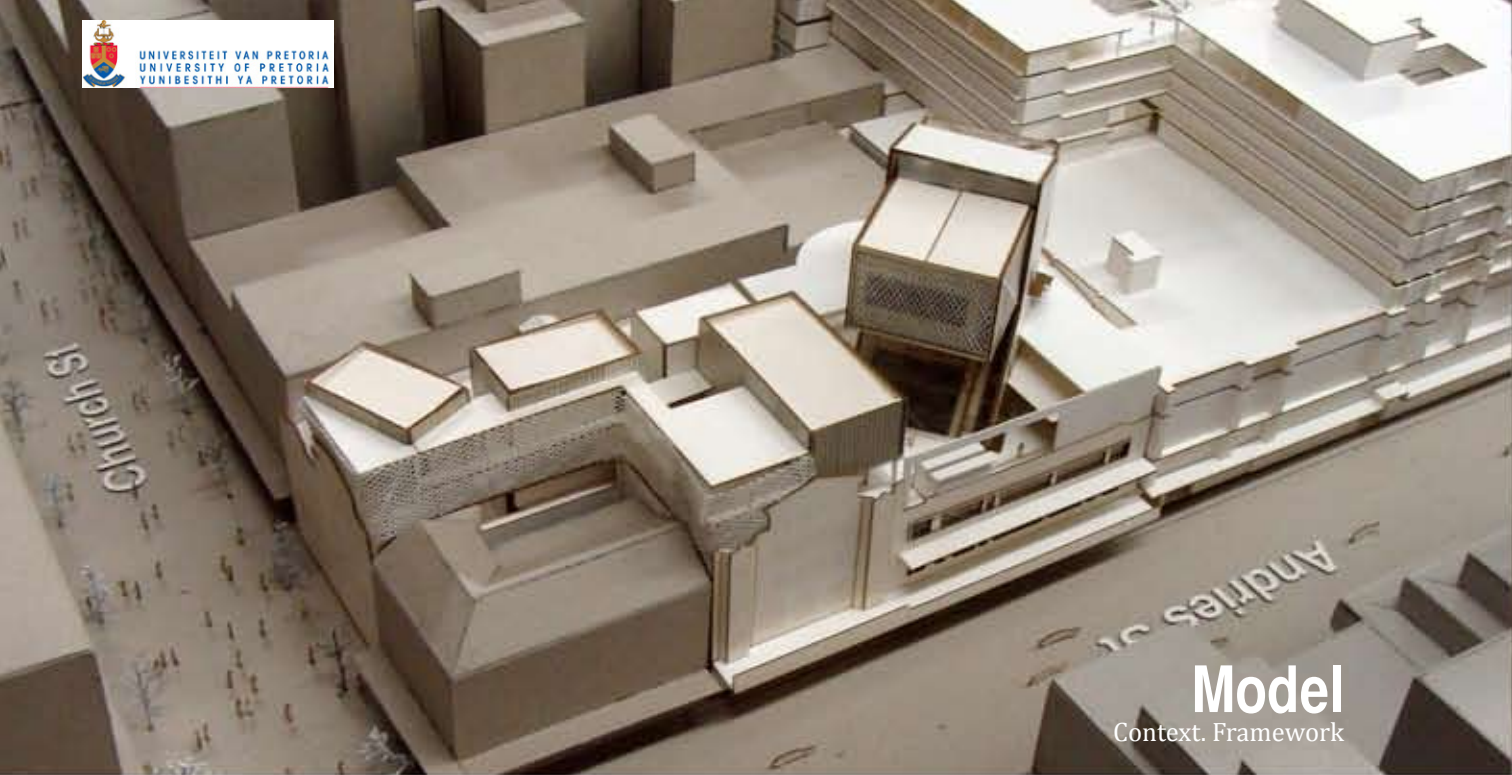
Scene 7 : Outside, on the dining deck, with views down the atrium



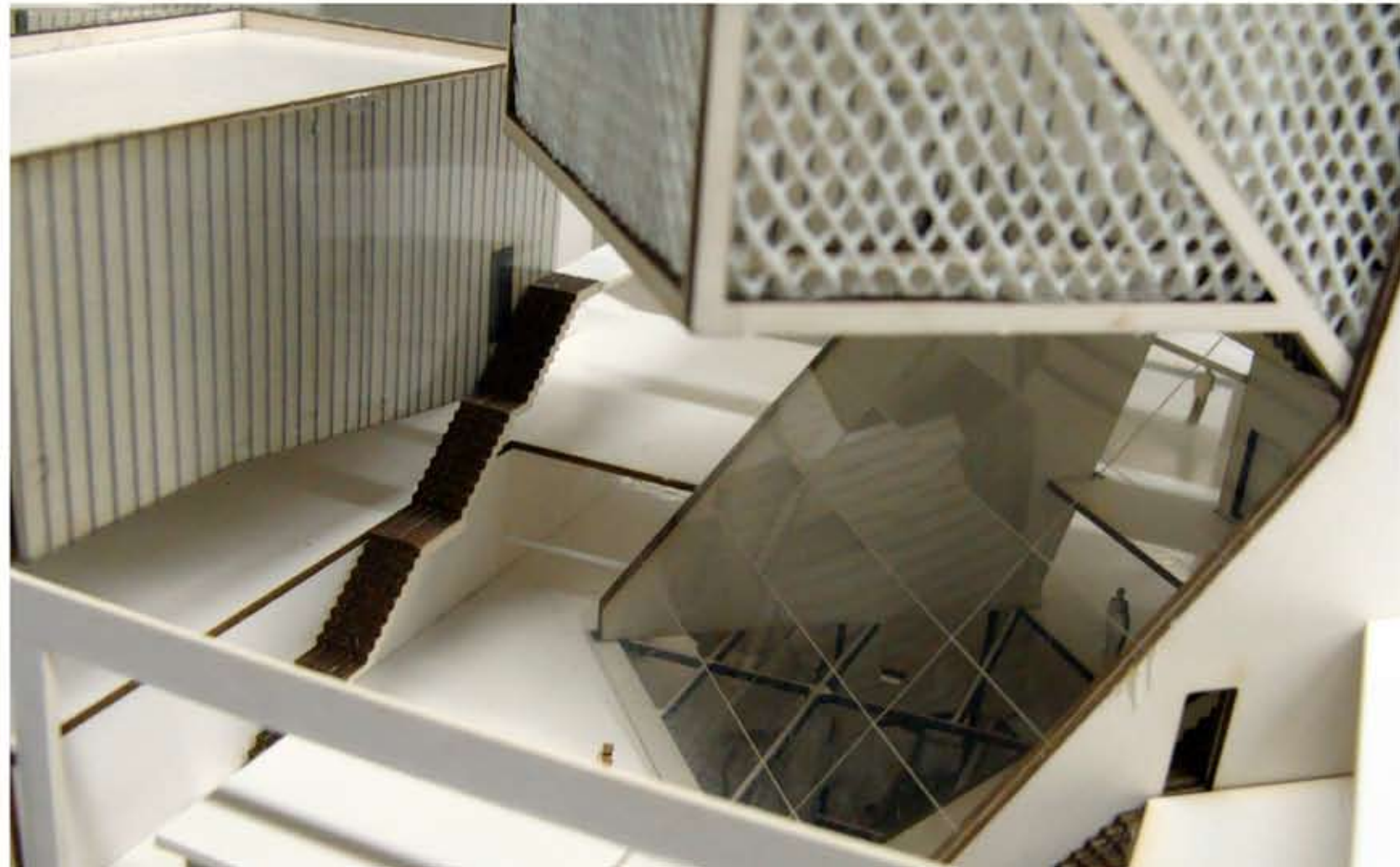
Scene 8 : Cinema foyer level, looking down Bureau street



Scene 9 : In the Cinema tower, on the viewing platform, looking down Bureau street towards Church Square

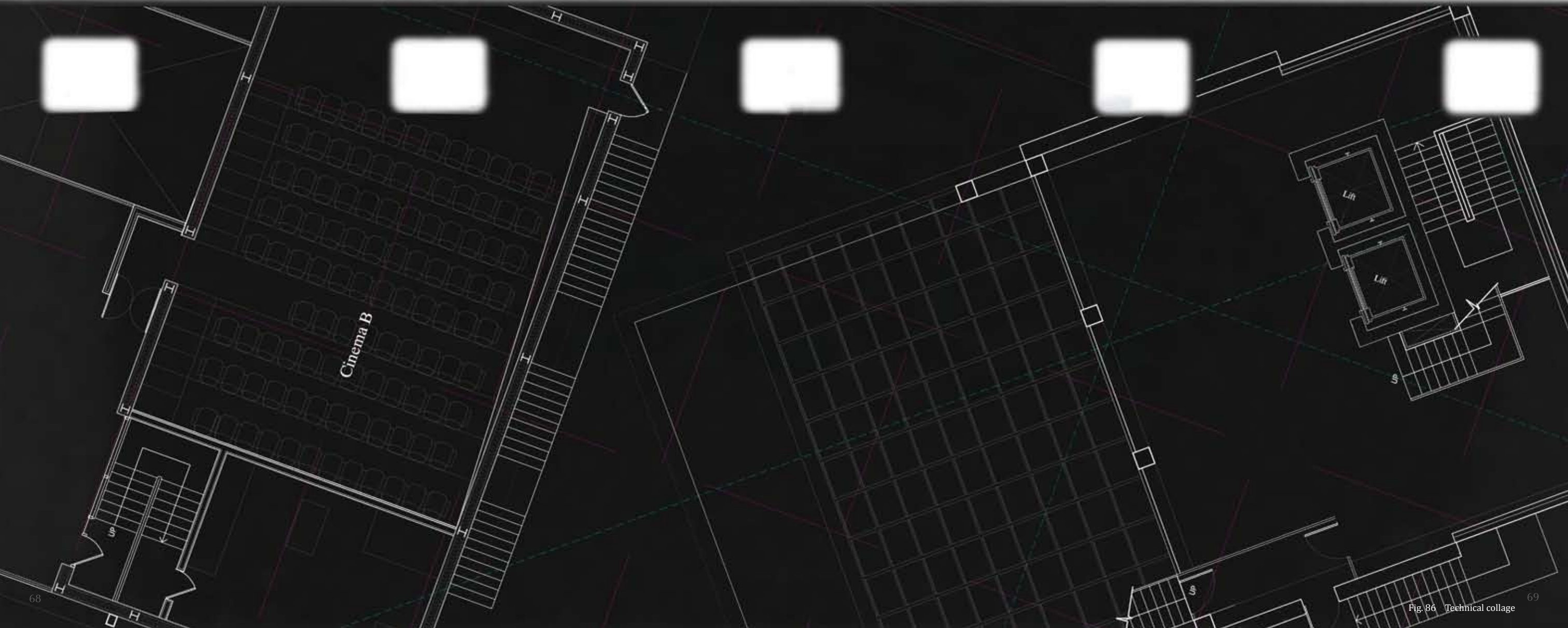


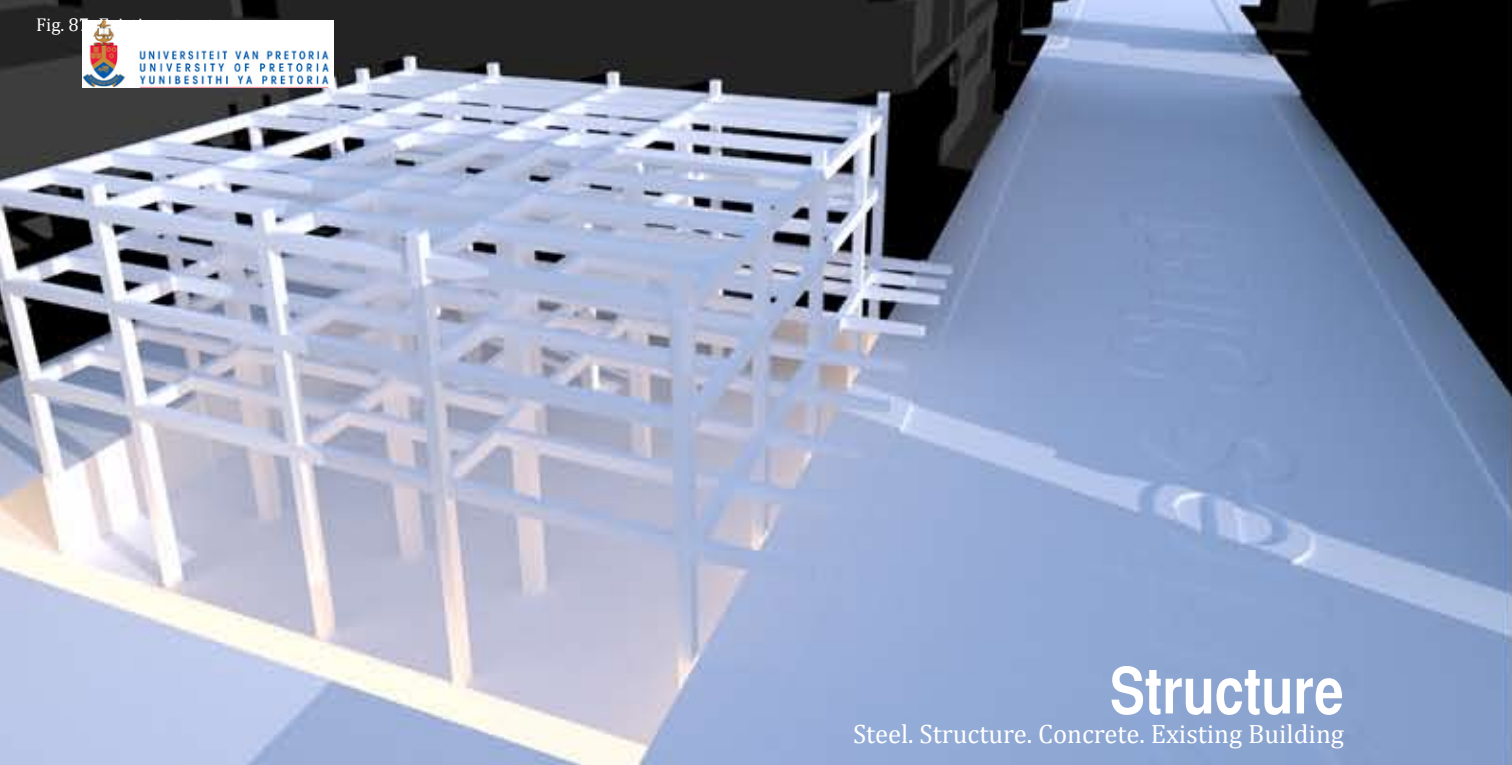
Model
Context. Framework



CHAPTER 7. Technical

Plans. Sections. Elevations. Details. Perspectives. Materials. Structure. Services. Sustainability. Programme. Circulation





Structure

Steel. Structure. Concrete. Existing Building

INTRODUCTION

Introducttradatory sentence. two parts of building. The existing structure is less stocky on the roof extension (northern of the project). Combined with a chaotic column grid this brings about a number of challenges.

EXISTING STRUCTURE

The size and spacing of the concrete structural members in the problem area were discussed with an engineer.

The structural system was informed by these conclusions:

- A part of the existing roof load was removed, and rooftop structures demolished.
- The existing structure was deemed strong enough for proposed programme.
- Small cinema auditoria are proposed (less than 50 seats).
- The proposed structure will be lightweight.

CONCRETE

Three new shafts cut through the existing building structure - the atrium void, the fire escape and the lift shaft. In conjunction with these elements, 4 new concrete columns carry the weight of the cinema tower extension.

The new vertical elements could compromise the integrity of the existing structure, especially since part of the existing floor slabs and beams will be removed. The solution is to support the

existing structure; keep as many of the existing beams as possible; and add beams to the existing structural grid.

CINEMA

The cinemas are designed as lightweight structures, supported by the existing concrete columns. These existing columns are extended with H-columns to clearly distinguish between old and new. These slender elements create the illusion of floating cinema forms on the roofscape.

This idea is further exploited by the choice of materials - the cinemas are clad in translucent polycarbonate sheeting with LED backlights. A lightweight steel frame, offset from the cinema wall to create a thermal cavity, is clearly defined at night time.

CINEMA TOWER

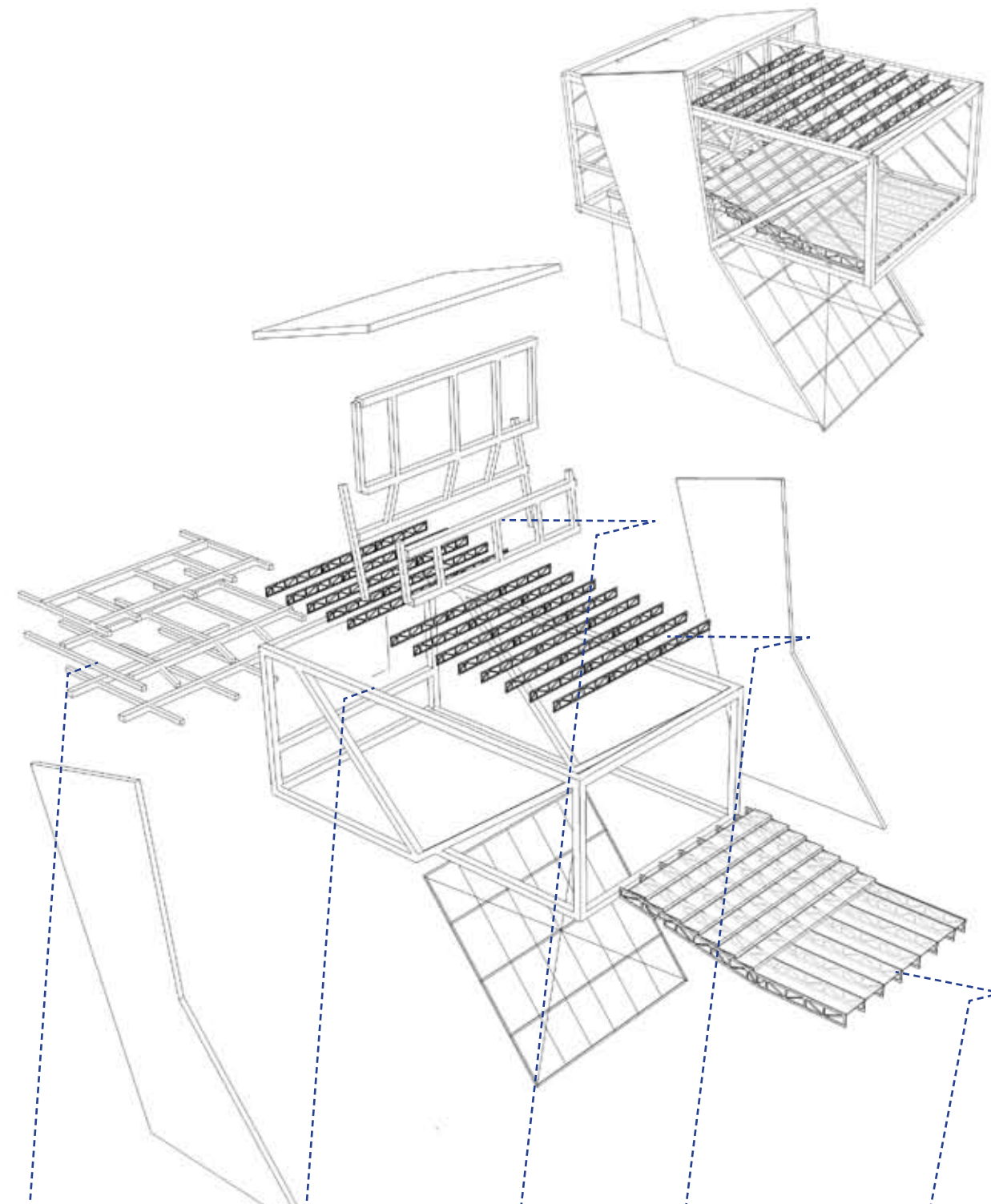
The cinema tower consists of three main structural elements:

Concrete form : 4 existing columns and 4 new columns support the cinema tower walls. These two elements receive their lateral structural support from the steel box truss. A concrete lift shaft acts as a counter balance to the moment loads induced by the cantilever.

Steel box truss : The element that supports the cinema and makes the cantilever possible. The system consists of a big truss supported by a network of smaller elements and metal mesh.

Cinema: As mentoined above.

Fig. 88 Structural model of the cinema tower



Floor Beams

Max Span: 4800 mm
 Element : Wide flange rolled steel section
 Loads : Floors, Projection room
 D/L : 18-28
 Depth: 4800/28=171mm
 Application: Depth 200mm

Main Steel Structure

Max Cantilever : 12000mm
 Element : Rolled steel truss
 Profile : 450 x 450 Square
 Loads : Cinema, floors, moment
 D/L : 8-15
 Depth: 12000/15=800mm
 Cantilever: 1/3 = 2400mm
 Application: Depth 8960mm

Vierendeel Girder

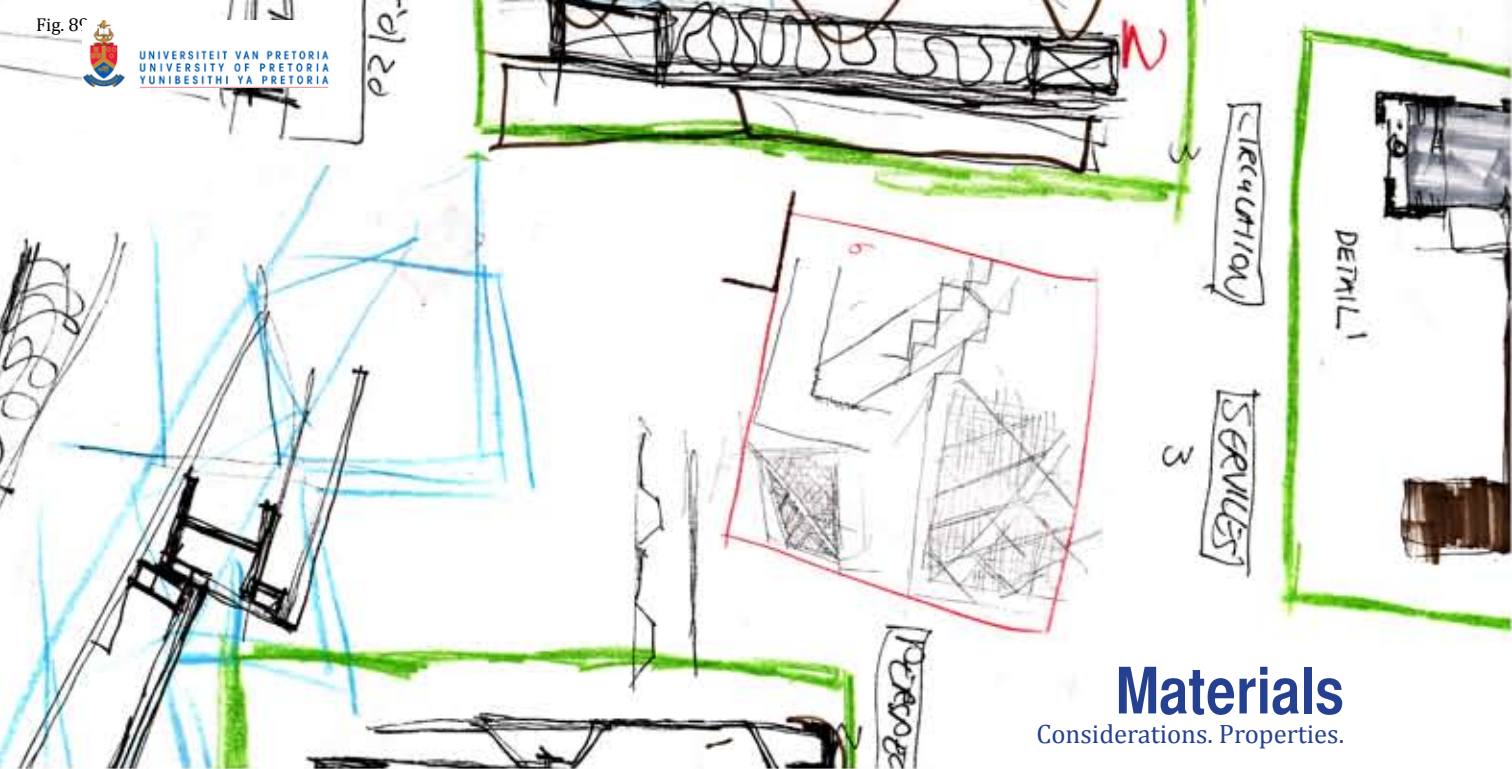
Max Span: 13000mm
 Element : Vierendeel Girder
 Loads : Foyer floor, Cinema
 D/L : 4-12
 Depth: 13000/12=1085mm
 Application: Depth 3100mm

Roof Trusses

Max Span: 12000mm
 Element : Wide flange rolled steel section
 Loads : Wind, Rain
 D/L : 10-18
 Depth: 12000/18=667 mm
 Application: Depth 700mm

Cinema Trusses

Max Span: 12000mm
 Element : Wide flange rolled steel section
 Loads : Floors, Projection room
 D/L : 8-15
 Depth: 12000/15=800 mm
 Application: Depth 800mm



Materials

Considerations. Properties.

OSB BOARD

Sustainable: OSB board is constructed from fast growing trees, leaving almost no excess.

Properties (PG Bison, 2006): Aesthetic quality, moisture resistance, good thermal and acoustic isolation, strength.

Use: The exterior and interior panels of the cinemas are clad with OSB board. The cavity is filled with mineral glass wool insulation. An 18mm thick OSB board is also used for the flooring of the cinema.

Why: A suitable lightweight method of construction, it minimises the stress on the existing structure. The aesthetic quality of the board, combined with the IBR sun and rain protection, means the board can be left untreated.

Manufacturer: PG Bison, Johannesburg.

GLAZING

Exterior: Glazing is the thermal weak spot of a building. Limiting exposure to the sun is essential. The Archive Cinema Complex minimises exposure to the northern sun, and sun shading devices are employed on all western facades. In conjunction with sun protection these exterior glazed units are double glazed to comply with new standards imposed on South African building standards.

Interior: A frameless, laminated system is employed to take advantage of the existing exposed concrete beams. Two 4mm floating

glass units are laminated with a digitally printed PVB interlayer (Fraser, 2009). This configuration according to Smartglass provides good sound insulation properties and safety.

The laminated glazing unit separates the programmed spaces from the circulation areas while still providing views of the activity inside.

Properties (Smartglass, 2009):

- Sound: STC value: 33
- Thickness: 9.52mm

The interior sealed double glazed units for the archive is described in the Archive section.

Flooring: Glass flooring is required in two key areas of the building. Firstly, as a method of pronouncing and separating the archive from the existing building envelope. Secondly, the glass flooring is used to bridge across the atrium space. These light bridges do not compromise the spatial integrity of the atrium.

Why: A translucent light box is created with visible structural steel elements to affirm the user. The box is lit from within at night to articulate these important circulation routes.

How: 25mm laminated translucent glass fixed to steel substructure, recommended size 1 000mm x 1 000mm (SpecialistGlass, 2009).

Manufacturer: Smartglass Service Centres in Pretoria and Johannesburg.



Fig. 90 OSB Board



Fig. 91 Laminated glass with digital media



Fig. 92 GKD mesh



Fig. 93 Translucent IBR sheeting

TRANSLUCENT IBR SHEETING

Polycarbonate IBR sheeting will be used to protect the OSB clad cinemas from sun and rain. The sheets are fixed to a substructure of steel. A ventilated cavity is formed between the IBR sheeting and OSB board that increases the thermal properties of the cinema wall.

Properties (Modek, 2009):

- 1.25 mm nominal thickness
- A layer of UV protection PC is co-extruded on the weathering side of all MODEK PC roof sheets.
- OPAL 50 IBR profile has a 0.68 shading coefficient compared to a 4mm clear float glass.
- Clear IBR sheeting will be implemented in the cinema tower, where the sun is blocked by mesh.

(Modek, 2009)

Why: The sheeting protects the cinema and also provides a screen for the cinema illusion. Two cinema projections are visible from outside through these screens at night time. They also house lighting equipment that emanates light, advertising the cinema's presence.

Manufacturer: Modek, Johannesburg.

MESH

Western and northern facades are protected from the sun with external metal mesh screens. These screens make it possible to have large glazed units on the western facade, which is the side with the best views. The mesh further enforces the idea of opening the cinema box, perforating the wall to make the

form visible. The Baltic mesh screen has been selected from the GKD mesh catalogue.

Properties (GKD Mesh, 2009) :

- Shading, open area is 43%.
- Views are permitted whilst blocking the western sun.
- Size 6 000 mm x 8 000mm x 5.5mm.

OTHER MATERIALS

Drywall

Gypsum drywall will cover the periphery walls and have pipes and electrical services running behind them.

Manufacturer: Lafarge Gypsum

Concrete

The new cinema tower is supported by four existing columns and four new concrete columns.

Manufacturer: Pretoria Portland Cement.

Masonry

Masonry walls are constructed in the basement and archive where thermal mass and structure is required.

Manufacturer: Corobricks.

Steel

The cinemas are built with the use of steel, creating lightweight structures. The cinema tower is built up with steel trusses and secondary network lighter elements. The film archive is clad with stainless steel floor and wall sheets.

Manufacturer: Highveld Steel, Witbank

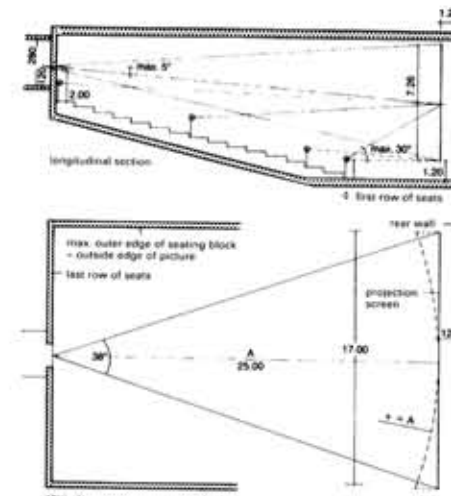
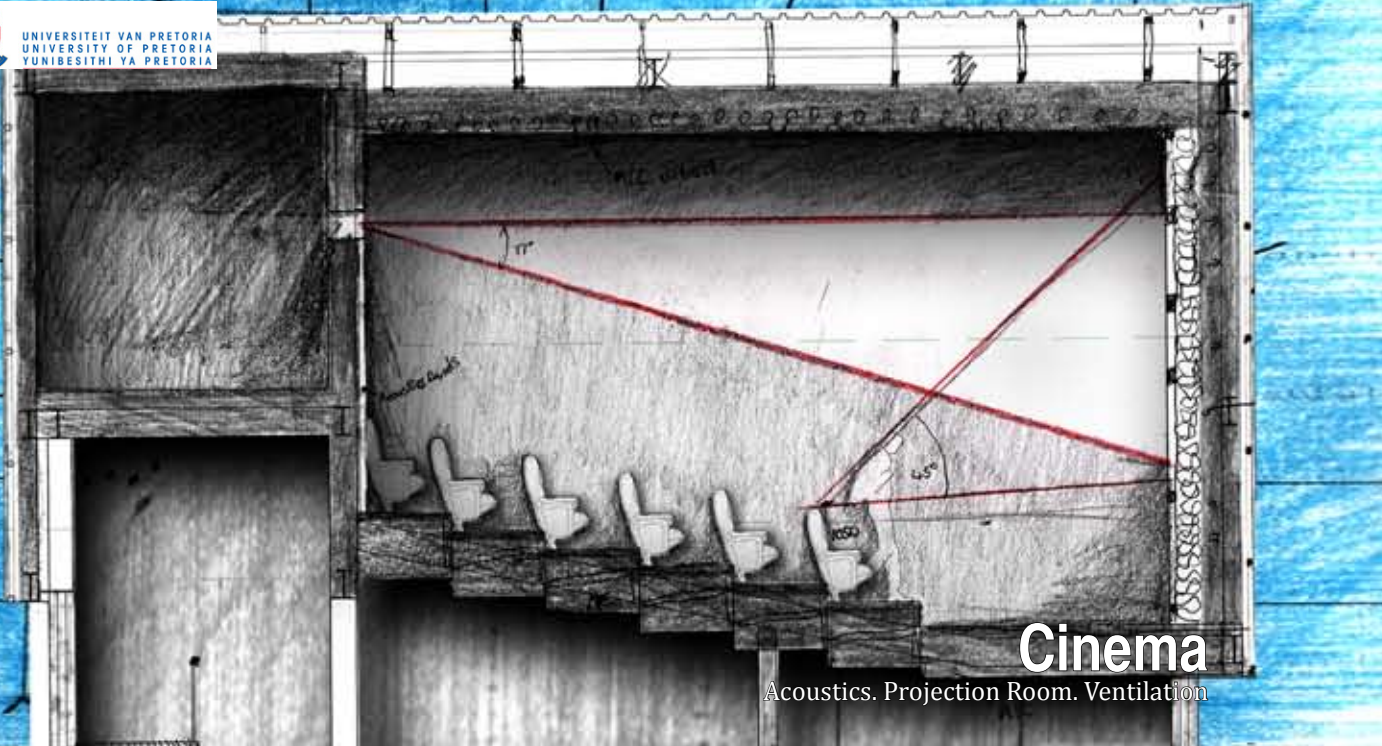


Fig. 95 Cinema Design, Neufert p: 489



Fig. 96 Projection room

INTRODUCTION

A revival house (repertory cinema) specialises in old films, but is also capable of projecting new releases. The range of film material extends to the equipment of the projection room. As an important in-house safety regulation no nitrate based (highly flammable) films will be projected; instead these films will be converted in-house to a safer polyester based film stock.

ACOUSTICS

Two problems exist: unwanted city sound (exterior) and film sound reverberation (interior). Sound from the city is removed from the interior cinema space with the help of composite wall structures consisting of a cavity, rock mineral wool insulation and a patented vinyl sound barrier.

Dolby Surround Sound relies on the multiple placement of speakers. A typical installation consists of two rear channels, two mid channels and two front channels with a subwoofer. The sound generated by these systems must be absorbed as quickly as possible. No reverberation is desired in a cinema. Absorbent acoustic panels are used in the wall and ceiling construction.

To prevent a standing sound wave one wall of the cinema is slanted.

VIEW/PROJECTION ANGLES

The projection port must be at least 2.1m higher than the seating auditoria. The central projection axis cannot slope more than 5° in either the horizontal or vertical plane.

Viewing angles are calculated in sections with a seated eye height of 1.12m from the floor level.

VENTILATION

The cinema is cooled from the floor level and warm air extracted from the ceiling. Ducts in the floor structure also service the foyer spaces below. The heat generated by the projector must also be extracted to protect the film stock and improve working conditions for the projectionist.

ACCESS

To utilise the form of the cinema auditorium, conventional cinema access is abandoned. The cinema is lifted from the floor level to create foyer spaces and a staircase promenade leads the viewer into the dark space.

A second cinema floor, serviced by a lift, caters for the elderly and differently-abled viewers of the cinema. This level is also used by projectionists.

PROJECTION ROOM

Controls the sound, lighting and masking of the cinema. Three optical glass ports, sound insulated, must be provided for the two projectors and the projectionist.

Equipment in a projection room:

- Projector - 8mm, 16mm, 35mm and 70mm formats must be supported. A 3D projector will adhere to the latest technological advancements in film. These projectors will be split between the cinemas; rather than having all of the formats supported in one cinema.
 - Music table: Latest Dolby technologies, but also support for magnetic formats. Amplifier and music system for intermission music.
 - Rewind bench.
 - Switchboard.
 - Storage (spares, films, light bulbs).
 - Fire extinguishers.
- (Metric Handbook)

SEATING

- Arranged according to horizontal viewing angles of 30° (Metric Handbook).
- Space between rows: minimum of 300mm required by SABS 0400.
- Vertical viewing lines determined in section.

FIRE

- SABS 0400 fire regulations:
- A maximum of 21m from seats to escape route.
- The composite wall structure must have structural stability of 120min.
- Smoke detectors.
- Minimum aisle width of 1.1m.
- Sprinkler system.

CITY CINEMA

Two of the cinema screens will be visible from the city at night. It will also allow the viewers inside the cinema a view of the city before the screening. This will be made possible by lifting the screen and retracting sun-blocking curtains.

In conjunction with LED backlights between the translucent skin and cinema wall the cinemas will, with the help of architecture become light emitting structures. This allows the urban city dweller to still proclaim his urban presence even though he is removed from the street.



Film Archive

Temperature. Preservation. Digitising



Fig. 98 ArriScan, digitising equipment



Fig. 99 Preservation at the BFI

INTRODUCTION

The film archive is an important time capsule and must hence be protected. Guidelines applied by famous archives, including the BFI, New Zealand Film Archive, UCLA Film Archive, Harvard and Hong Kong have been researched to formulate an ideal South African Film Archive.

NITRATE FILM

The film vault will store material ranging from as early as 1930 and will include recent South African releases. The only exception is Nitrate based film, which is an extremely volatile, toxic film stock especially vulnerable to temperature fluctuations, Kodak warns against temperatures as low as 41° (Kodak, 2009).

Nitrate film will be stored off-site, as does the New Zealand Film Archive, which uses an abandoned ammunitions bunker. The only exception is when an important piece must be preserved and digitised. This operation will be closely monitored and the material will be stored in small quantities in a well ventilated strong room. If a screening of a nitrate film is scheduled, the nitrate film will be duplicated on a Polyester film stock by the Arri Laser equipment in the Digitising Lab.

ARCHIVE

Historic and sensitive material is kept at 7°C to prolong their life. The temperature control is separated from the building ventilation system,

but can link to the system in case of a system failure. A generator also forms part of this safety net. Less sensitive material will be archived in the glazed viewing platform on the ground floor. Typical temperature for these materials is 18°C.

INSULATION

Panels: The archive is clad in an insulated panel consisting of a stainless steel finish with a 32kg fire retardant polystyrene core. These panels come in widths of 1 170mm, are glued together and joined to the masonry structure with a patented sealed screw.

The local manufacturer (Panelworld) does not provide a U-value but an international manufacturer, Coldstream guarantees a value of 0.184 watts / m2 Kelvin on a 125mm thick panel (Coldstream, 2009).

Glazing: On the ground floor the archive wall is punctured by existing window openings to make the collection visible to the public. These openings are a potential thermal weakness of the system. A sealed double glazed unit, with low emissivity coating (8mm glass with 16mm cavity filled with argon gas) can achieve a U-value of 1.6 watts / m2 Kelvin (Airproducts.co.uk, 2009).

To minimise the thermal loss through the glazing material, less sensitive material will be stored on these floors, with higher temperatures.



Fig. 100 Proposed archive diagram

COMPARTMENTS

The archive is compartmentalised for a number of reasons:

- To contain the spread of fire.
- Effectively control temperature.
- Expansion – empty compartments can be locked and cut off from the ventilation system until they are required.

DIGITISING LAB

The digitising lab offers the opportunity to convert old film stock to the digital archive. It also allows the duplication of sensitive material to be used for projection.

A film archive company, Arri provides the following equipment:

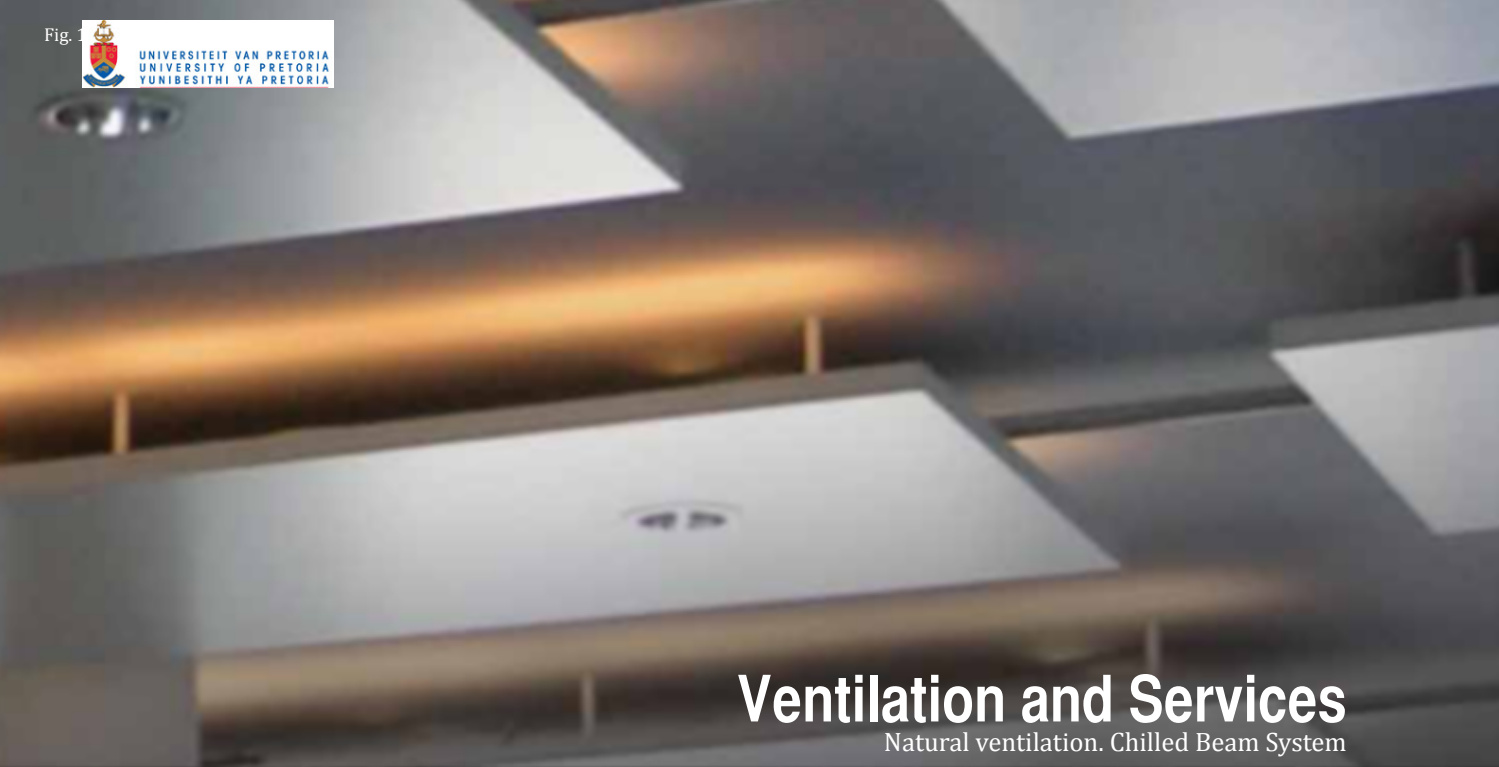
Arriscan - scan each frame of the film stock to a digital format

Wet gate system - cleans the film stock before scan procedure. Dust and scratches are removed in this process. The Arri system uses a less toxic liquid that does not require strict storage and security regulations like the old industry standard Tetrachlorethylene.

Arrilaser : a film stock recording device

Other facilities:

Light Table, Computer with video editing capabilities, other format video converters, work surface.



Ventilation and Services

Natural ventilation. Chilled Beam System

INTRODUCTION

The fitment of a new air-conditioning system in the existing building envelope is difficult to achieve. Low ceiling heights and limited space means that suspended ceilings with overhead ductwork would not be possible. A hybrid active/passive system that eliminates the need for this configuration has been designed.

VENTILATION

The new atrium space cuts through all floors of the building and is roofed by the cinema tower floor. The basement is connected via an offset double storey.

This new system relies on natural ventilation, the stack effect to create a slow draft throughout the building. The hot, stale air is extracted at fourth floor ceiling level. Fresh air is introduced on the north and south walls of every floor.

COOLING

A cooled water pipe network with overhead suspended 'radiators' cools the air. A patented system, called the Thermasail is a thin profile suspended aluminium sheet. Copper coils with cooled water conducts the temperature to the aluminium sheet which in turn cools a larger area:

Properties (SPC, 2009):

- Lightweight.
- Slim profile, just 25mm.

- High water temperatures (16 – 18°) allows for efficient chiller operation.
- Lighting and other services can be accommodated into the sail.

MECHANICAL VENTILATION

With this system the plant room size is considerably smaller. Only the minimum allowed fresh air, according to SABS 0400 is necessary. The air is no longer cooled before it is introduced to the floors, instead it is mixed with the colder air in the spaces. The plant room is now merely an air handling unit.

Another important piece of equipment is the chiller. A chiller system by Voltas Technologies utilises the sun's energy to cool the water (Voltas Technologies, 2009).

Extractor fans, located close to the highest point of the atrium space, will control the air flow and temperature of the building.

SPECIAL REQUIREMENTS

Areas with special ventilation requirements are needed:

Projection room, the projectors generate vast amounts of heat and must be directly linked to a cooling unit.

- **Server room**: the digital computer database generates heat
- **Archive**: needs specified in archive section.

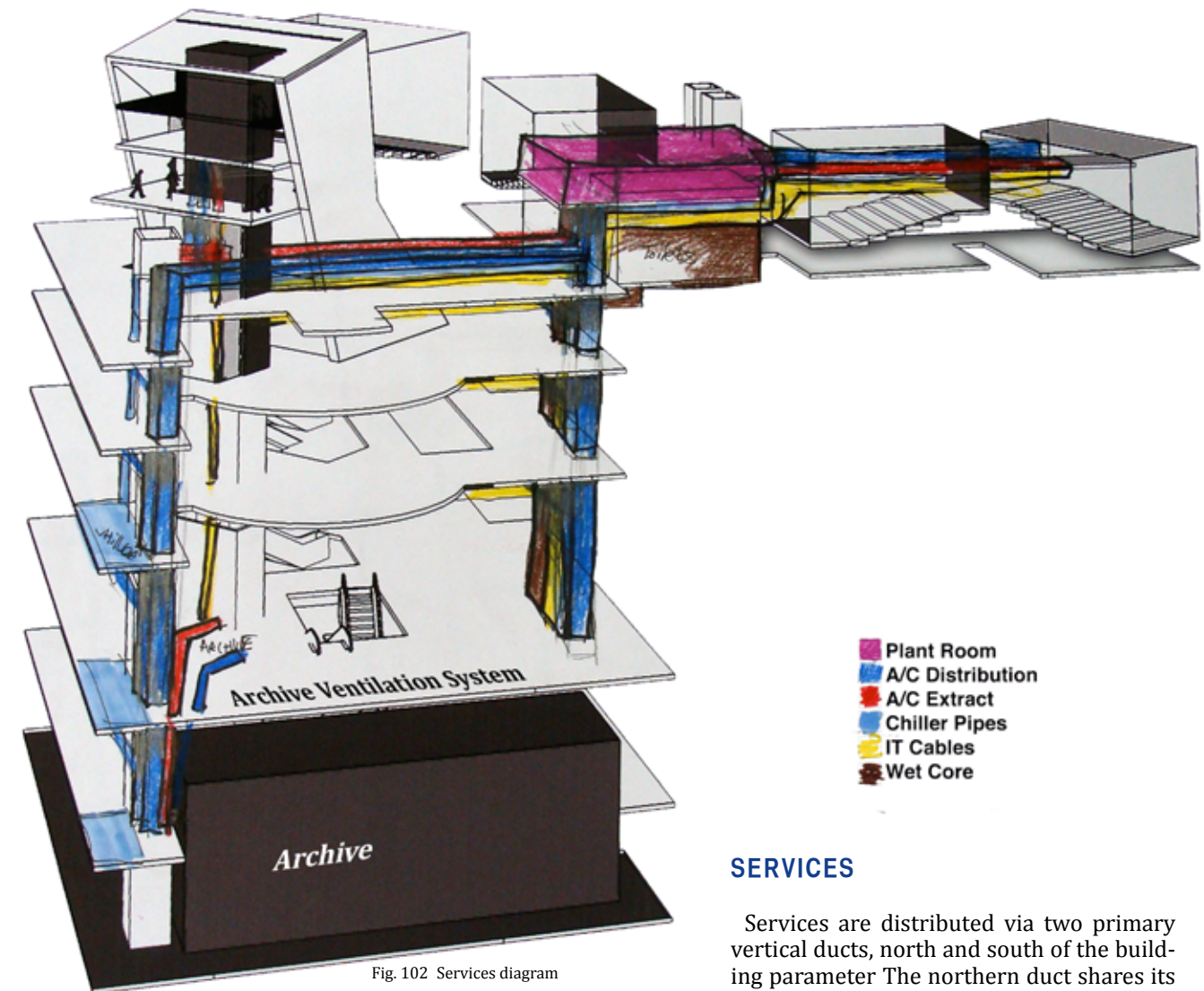


Fig. 102 Services diagram

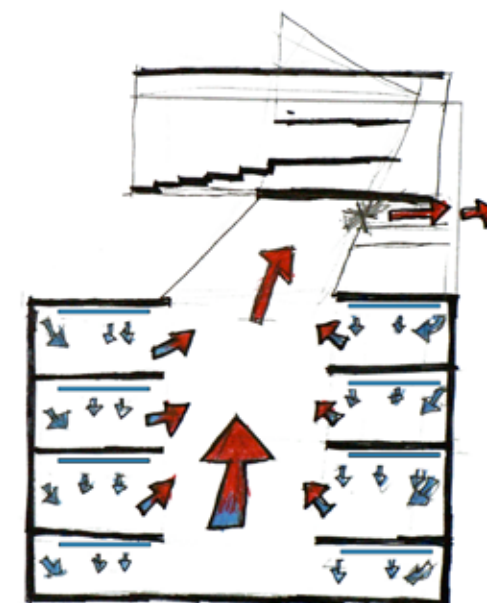


Fig. 103 The stack effect in the archive atrium

SERVICES

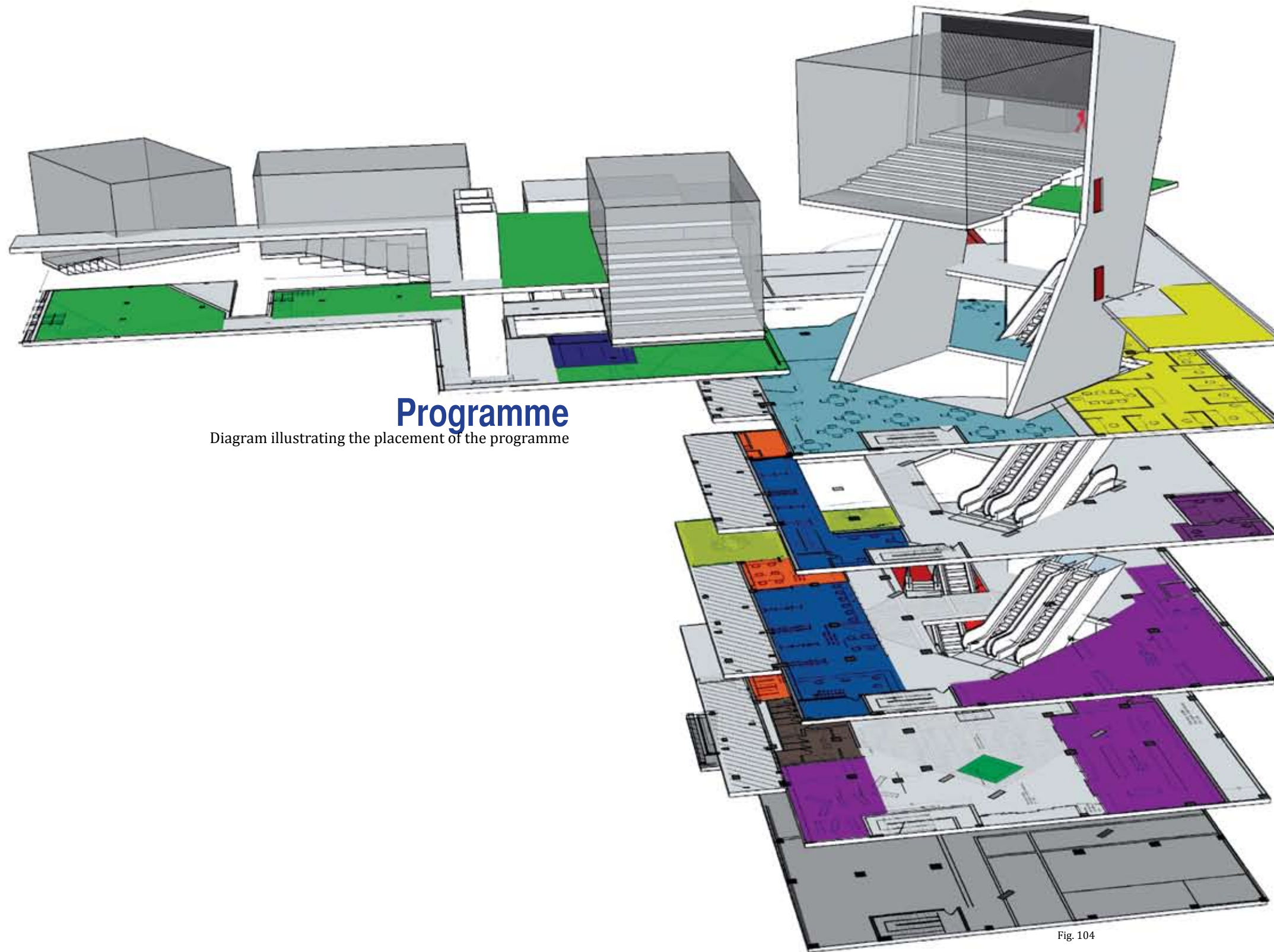
Services are distributed via two primary vertical ducts, north and south of the building parameter. The northern duct shares its services with the rest of the building, allows for the possibility of an expansion of the air conditioning system throughout the site.

This northern duct also houses electrical conduits, IT cables and the piping required for the restrooms, all three of which are located on this vertical axis.

The second, southern duct delivers air conditioning ductwork, the chiller pipe network and also minor wet services, catering to the needs of a coffee shop and office kitchen.

The two ducts allow the building to be relieved of serviceable suspended ceilings, a commodity not available due to low floor to ceiling heights on some existing floors. Instead a periphery system delivers services to all the serviced areas with only limited use of suspended ceilings.

New rainwater pipes are also installed into these two ducts, the existing system in dire need of replacement.



Programme

Diagram illustrating the placement of the programme

04 Fourth Floor

- Cinema Foyer B,C,D
- Film Bar
- Box Office
- Concession stand
- Office Space

03 Third Floor

- Restaurant
- Outside and inside dining
- Archive Staff Offices
- Chiller Plant

02 Second Floor

- Library Special Collections
- Digitising Facility
- IT Lab_02
- Museum Exhibition Space
- Projection Room_02
- Chiller Plant

01 First Floor

- Library Open Access
- IT Research Lab_01
- Projection Room_01\
- Book Shop
- Courtyard
- Backup Generator

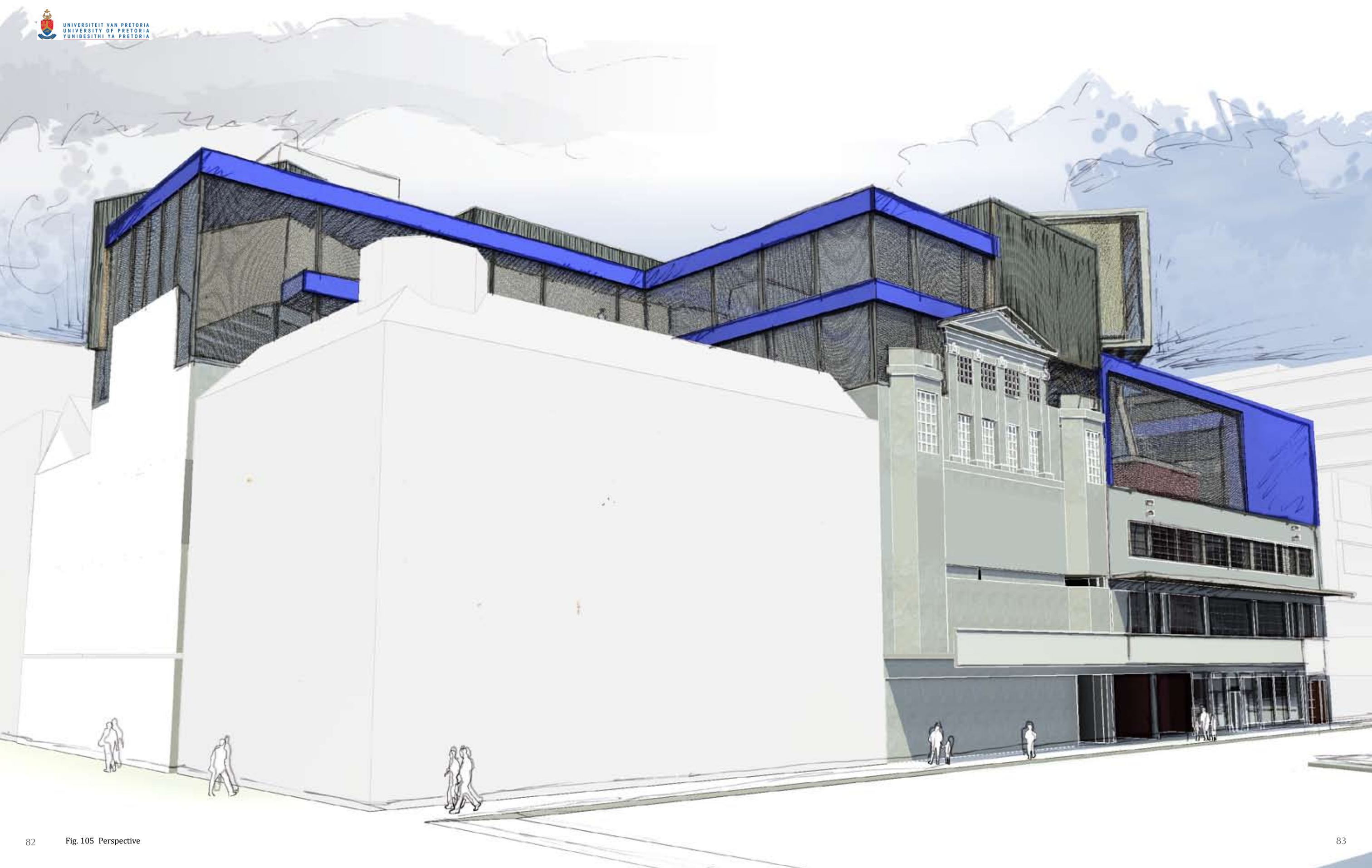
00 Ground Floor

- Information/Reception
- IT Research Lab_00
- Projection Room_00
- DVD Shop
- Archive Curio Store
- Film Archive Second Floor
- Delivery Depot
- Refuse Area
- Restrooms

000 Basement Floor

- Information/Reception
- IT Archive and Offices_000
- Archive First Floor
- Archive Temperature Control
- Special Collection Storage
- Temporary Exhibition Storage
- Shop/Restaurant Storage
- Staff Room
- Plant Room

Fig. 104



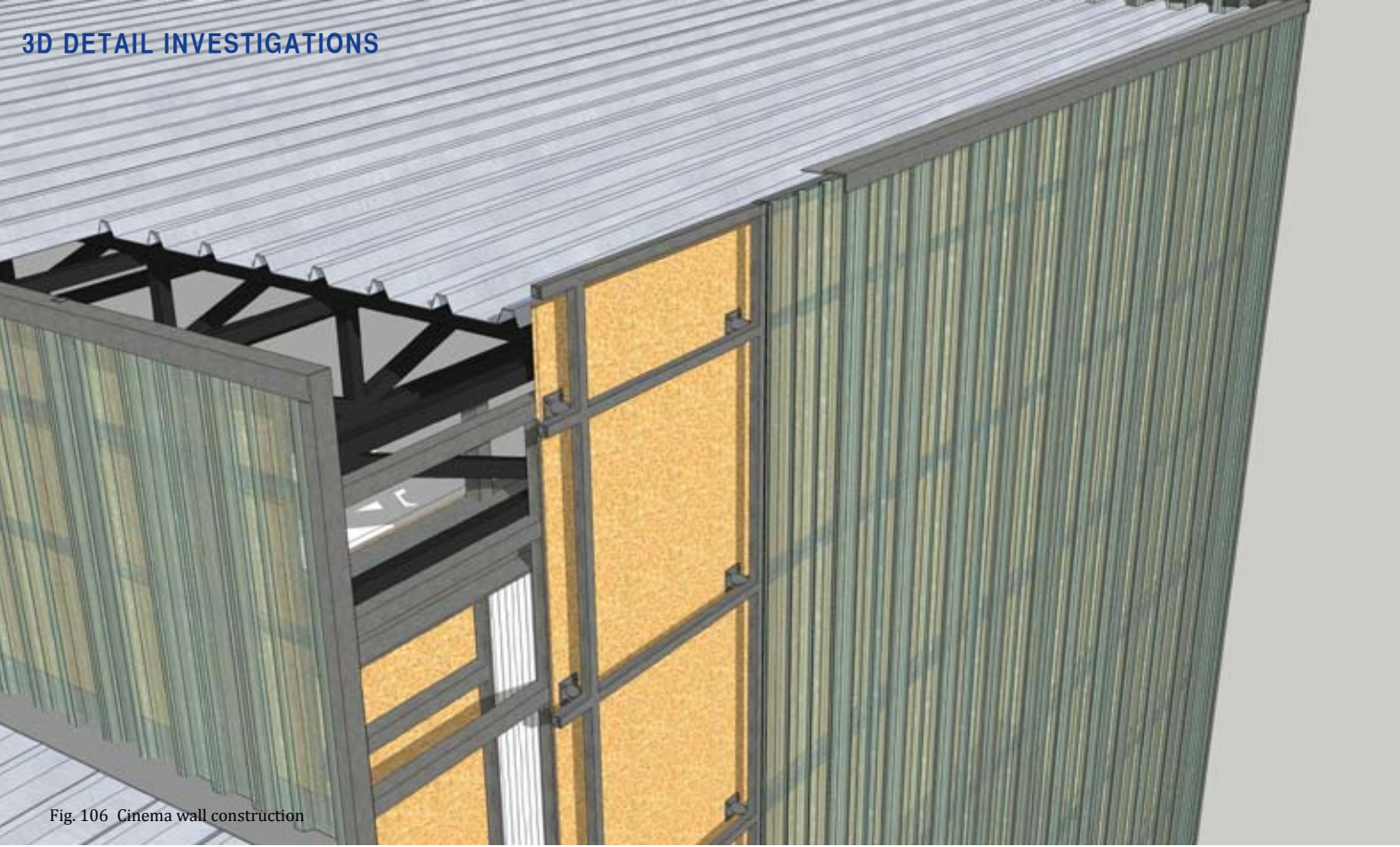


Fig. 106 Cinema wall construction

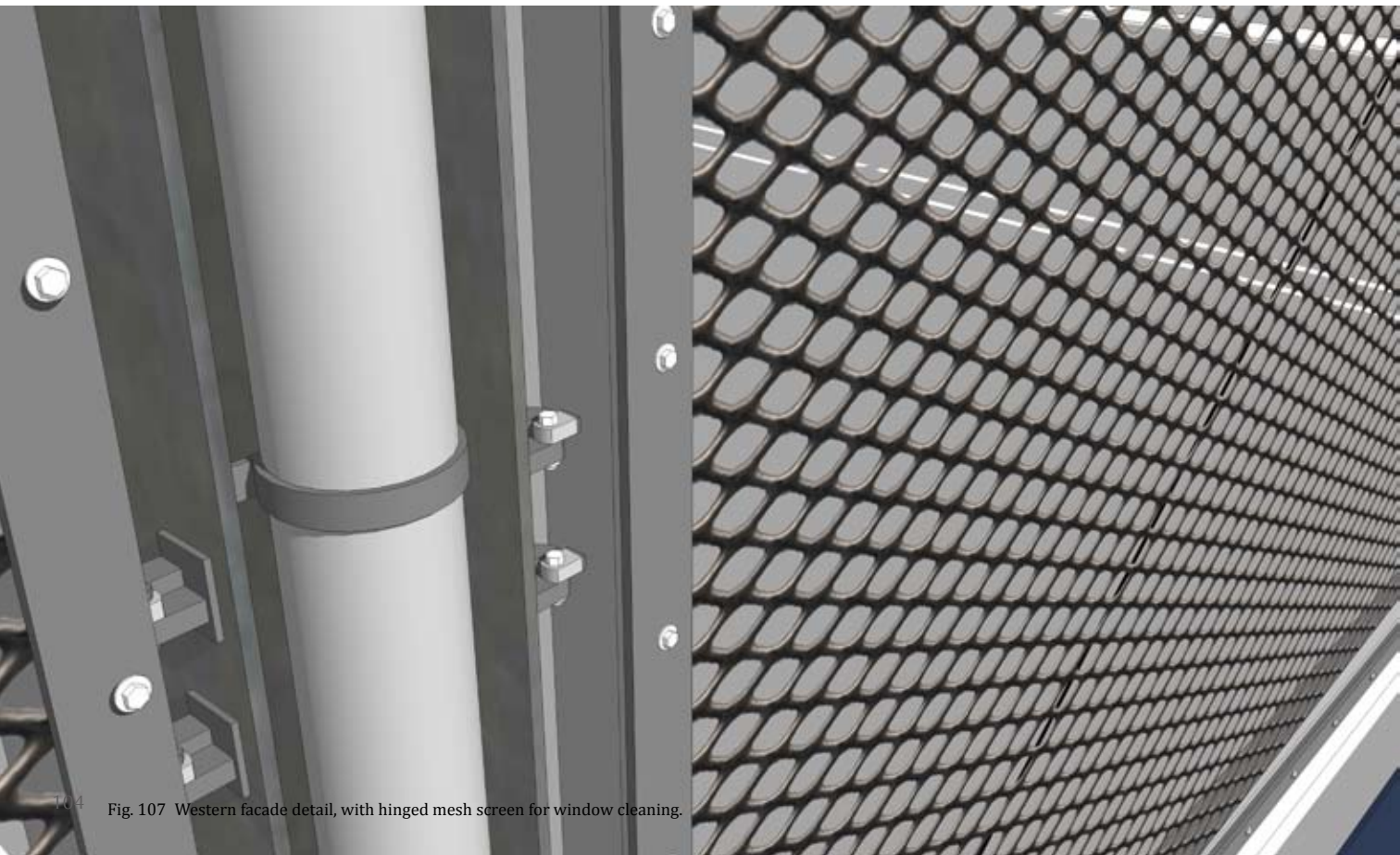


Fig. 107 Western facade detail, with hinged mesh screen for window cleaning.

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Fig. 108 Block investigation : Schizo Framework Group

FROM COMMUNAL GROUP MANIFESTO :

SchizoCity is an experiment that questions accepted practices of urbanism. These practices often fail to address complexities of existing context and fabric. Within this framework, process replaces product, mindset replaces solution. It focuses on a generative ideology that exposes the latent multiplicity of the current urban situation.

The SchizoCity framework was done as a group project and set out to mainly investigate the pedestrian friendly nature of the Pretoria CBD and immediate areas. In developing the discourse surrounding the urban framework proposal it was necessary to research existing concepts and theories regarding the development of urban space. The relationship between programme and existing block typologies that occur in many contemporary cities was the main theme of discussion. The grid has been the de facto generator of urban form since antiquity. A method employed by civilization to logically define its presence on the earth.

This framework accepts the condition, but questions the nature of urban design itself. It opposes the nominally efficient process of planning and zoning. The framework proposes a large- scale architectural mindset that is spatially and programmatically driven. This allows for specific interpretations of context and program, without being restricted by an inhibitive framework.

Hausmann's process of strategic rupture, whereby the block both physically and experientially, creates opportunities for previously interiorised spaces of the block is opened to become the theatre of collective annexation. It unlocks the possibility of individual modes of expression. Previously inaccessible space supports an urban tissue of greater depth

and experience. This tissue forms a framework for human experience that could successfully support its inhabitants and their complex needs. Jan Gehl, a Danish architect, subscribes to the aphorism that life takes place on foot. Mechanisation with the advent of automobiles, computers and the internet has a direct influence on, the possibilities and opportunities for chance encounters.

Interaction, that were for so long an everyday occurrence, have diminished (Barnett, 2003:17) – people have stopped engaging with their environment on a variety of levels.

This situation Gehl believes can be remedied through the design of a physical environment that promotes 'optional activities' such as lingering in the shade of a tree, watching a water fountain, pausing for a cup of coffee etc (Barnett, 2003:17). These aspects in turn promote an environment of sociability and community that is crucial to the convivial nature of a successful urban space.

Parallel to the spatial investigation of the city, a programmatic exploration is necessary to achieve the goals of the proposed framework. It is suggested that programmes that exist on the fringes of the city, or that might be considered alien to the urban environment be introduced into space provided by the alternative block typologies. These programmes are deliberately chosen as not to compete with the existing programmes of the city but to be complimentary and catalytic processes. With reference to Schizo City the proposed project intends to add another layer of 'exploration' within the city.

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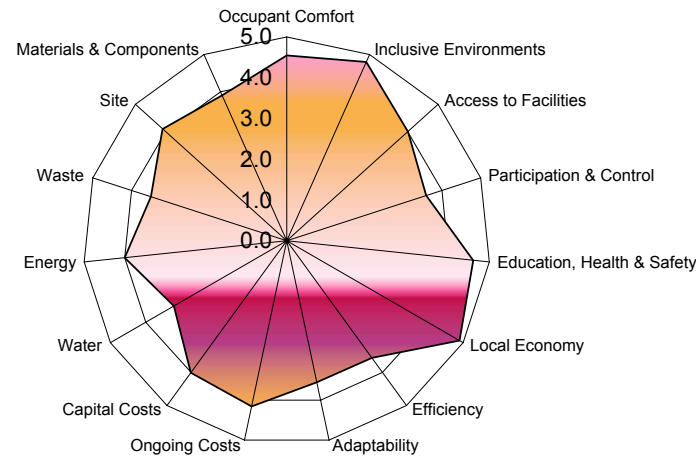
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Appendix B

SBAT rating of Archive

SUSTAINABLE BUILDING ASSESSMENT TOOL (SBAT- P) V1

PROJECT		ASSESSMENT	
Project title:	Archive Cinema Complex	Date:	Oct-09
Location:	Pretoria CBD	Undertaken by:	Jaco
Building type:	Museum/Cinema		
Internal area (m2):	3800SQM		
Number of users:			



Social	4.3	Economic	4.0	Environmental	3.7
Overall	4.0	Classification	VERY GOOD		



Appendix C

Framework : Inner City

BLOCK FRAMEWORK

Two interventions:

- P. du Toit: City Centre and Die Meent redevelopment
- J. Bruwer: Archive Cinema Complex

Current problems of the Pretoria CBD:

- Existing Infrastructure (why expand?) :
- under-utilised empty buildings in the CBD
- CBD deterioration
- urban sprawl unnecessary
- lack of Social Framework (Jordaan:2009) :
- little or no nightlife in CBD
- monotonous urban activities
- public space can be improved

BLOCK FRAMEWORK

Theory

Prix, in his essay "b5 2 c6: Public Space" (2003:18), states that in Western cities (also Tshwane) public authorities do not have the ability to fund urban projects, thus private investors develop land for financial gain. He goes further by saying that "the master plan is dead" (ibid.) - transformations in the urban fabric has caused the individual 'figures' (i.e. buildings) to be the main influence of urban space (ibid.). Pasquarelli (2003:24) agrees when he suggests that small actions within cities should be favoured above large-scale principles. Therefore, the City Block Framework proposes specific interventions to enhance the inner city public realm.

Framework Components

- Gentrification
- Inject new life into the city
- Densification
- Vertical expansion and more effective use of existing built fabric
- Sustainability
- "urban-recycling"

FRAMEWORK GUIDELINES

“The model of the building as object is replaced by the idea of an urban transistor – an architecture that is capable of amplifying the urban spaces adjoining it through its own transistor like spatial organization”. (Prix, 2003 : p 18)

Transistor definition - a semiconductor device with three connections, capable of amplification in addition to rectification (Oxford dictionary).
Amplify definition: cause to become more marked or intense (Oxford dictionary).
Rectify definition: put (something) right; correct (Oxford dictionary).

- “To create public space through architecture.” (Prix, 2003 : p 18)
- Utilise disused spaces in the city, creating more public space
- Public space no longer on a master plan level, but on an architectural scale – smaller interventions related to the context rather than large-scale solutions.
- Contribute to the public domain of the Pretoria CBD (add more public space and rectify existing)
- Create new interaction level in city (roofscapes, empty interior spaces and arcades)
- Three-dimensional use of space
- Create energy between two interventions that would act as a catalyst for development for adjacent buildings

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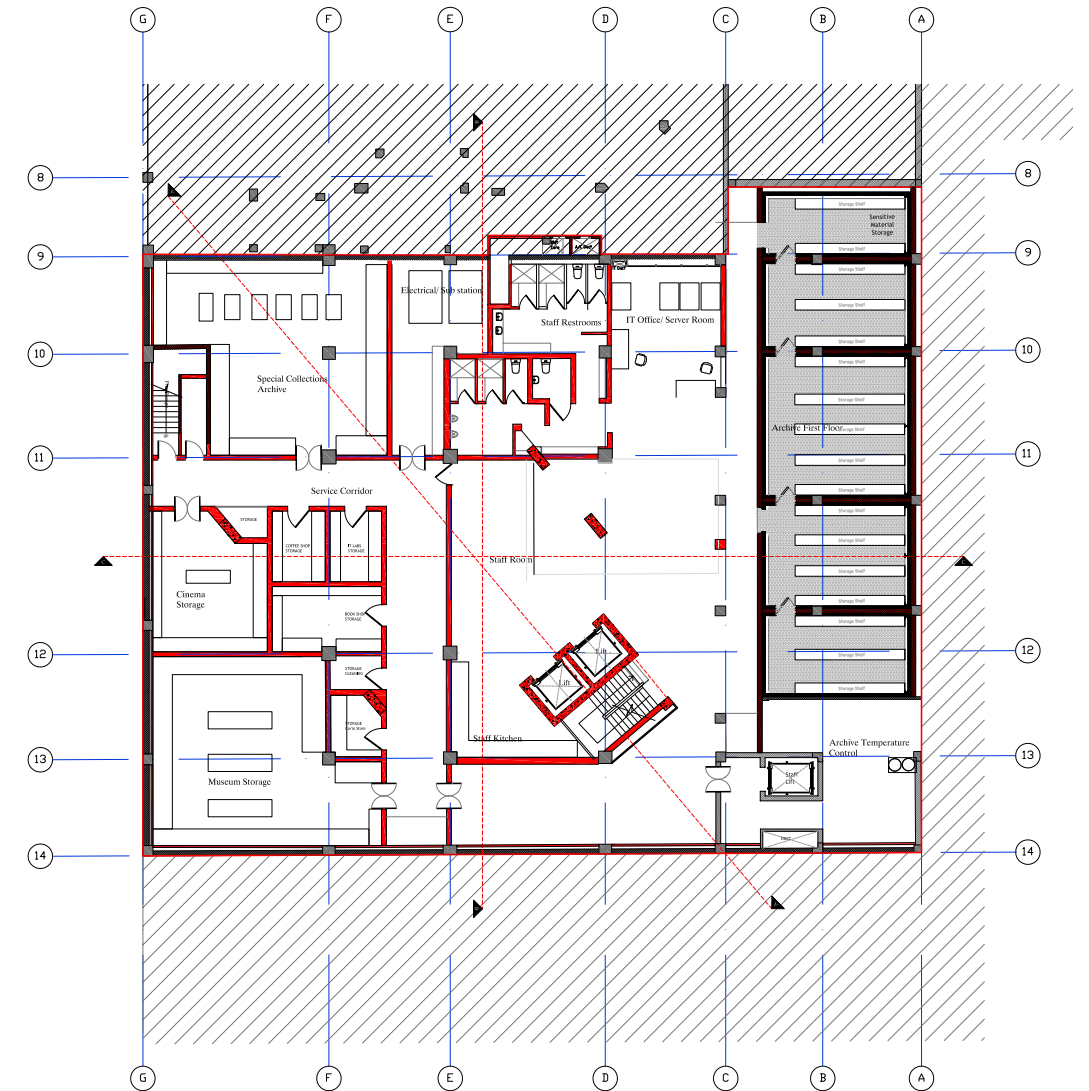
WITH THANKS TO.....

Our dedicated Studio Master, Mentors and study leaders, my work colleague (Don) fellow students and friends! Thanks to my friends who helped (for free) with the book/model/presentation/encouragement/patience/food.

Ma en Pa vir julle ondersteuning! Sussies ook! Die res van die familie, Ouma!
Free contributors - Anelle, Stegmann, Stephan, Lize, Anja, Don



Proposed Plan

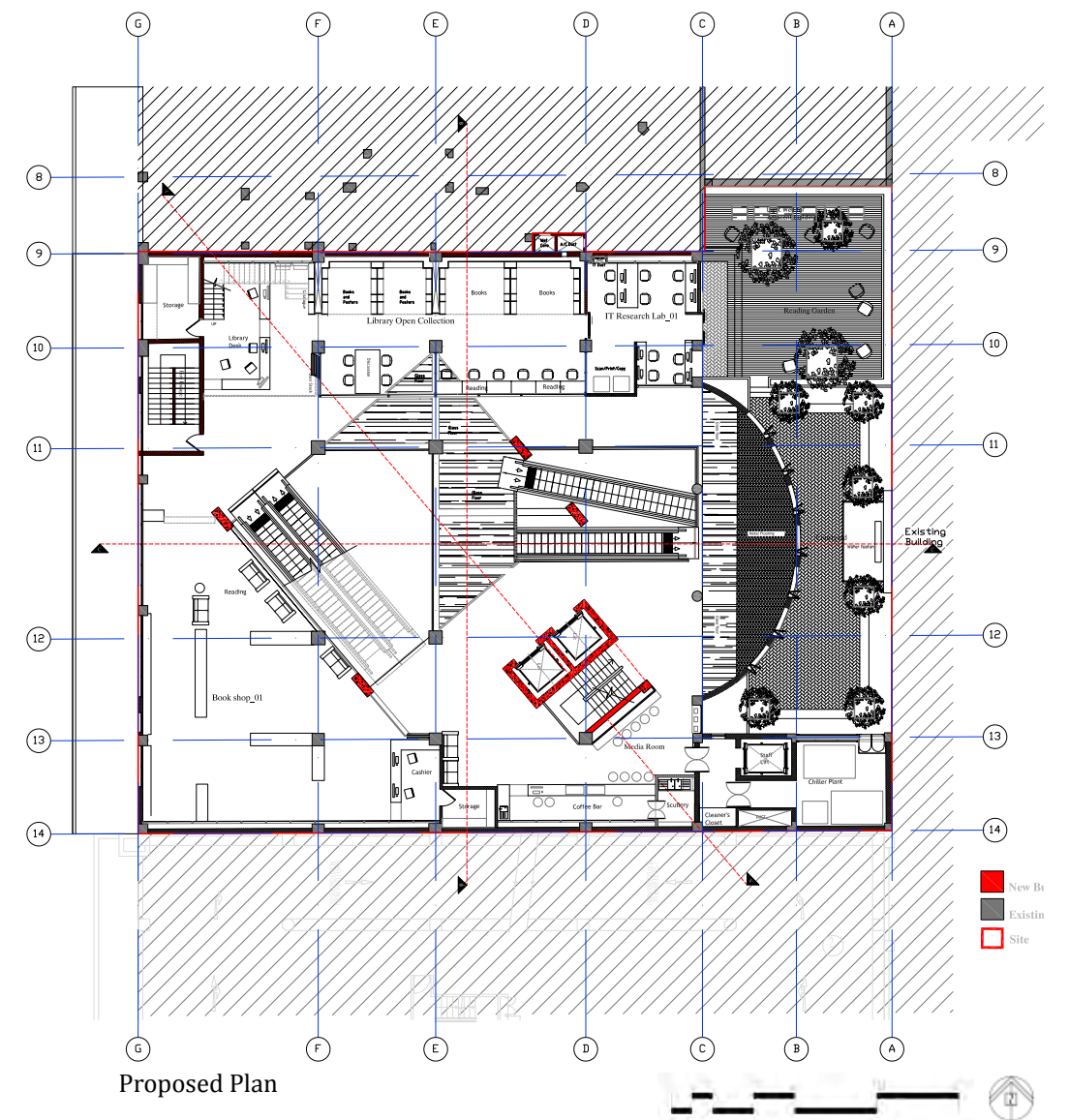
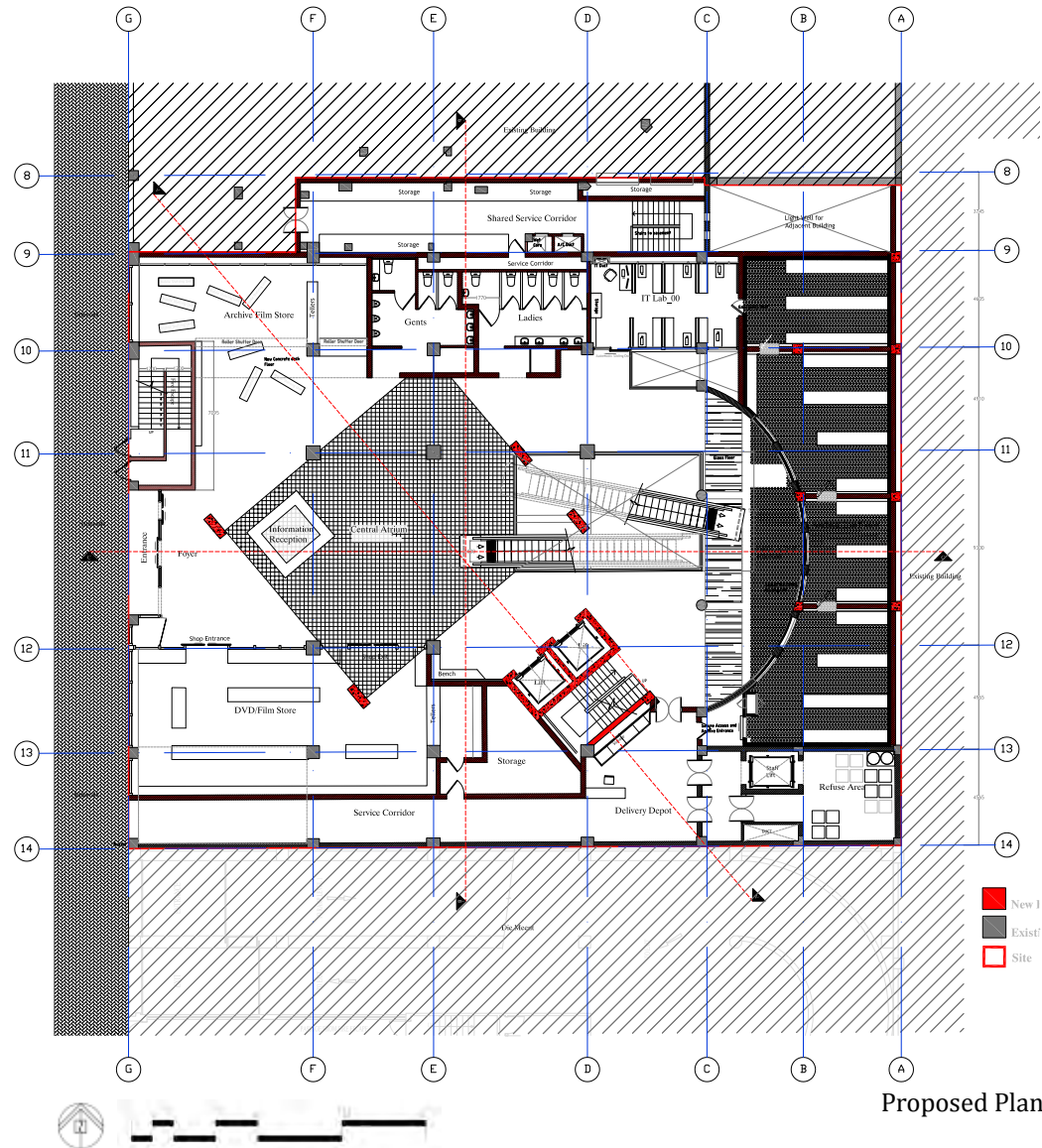
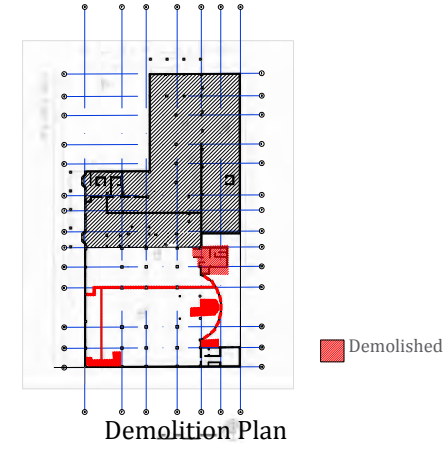
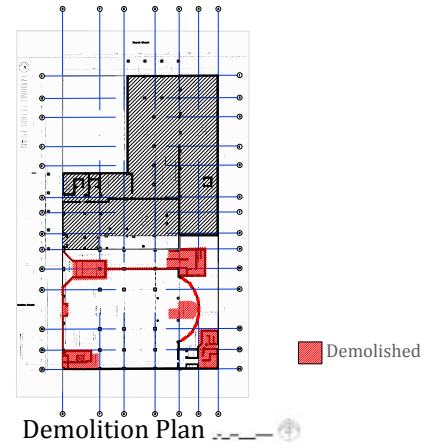


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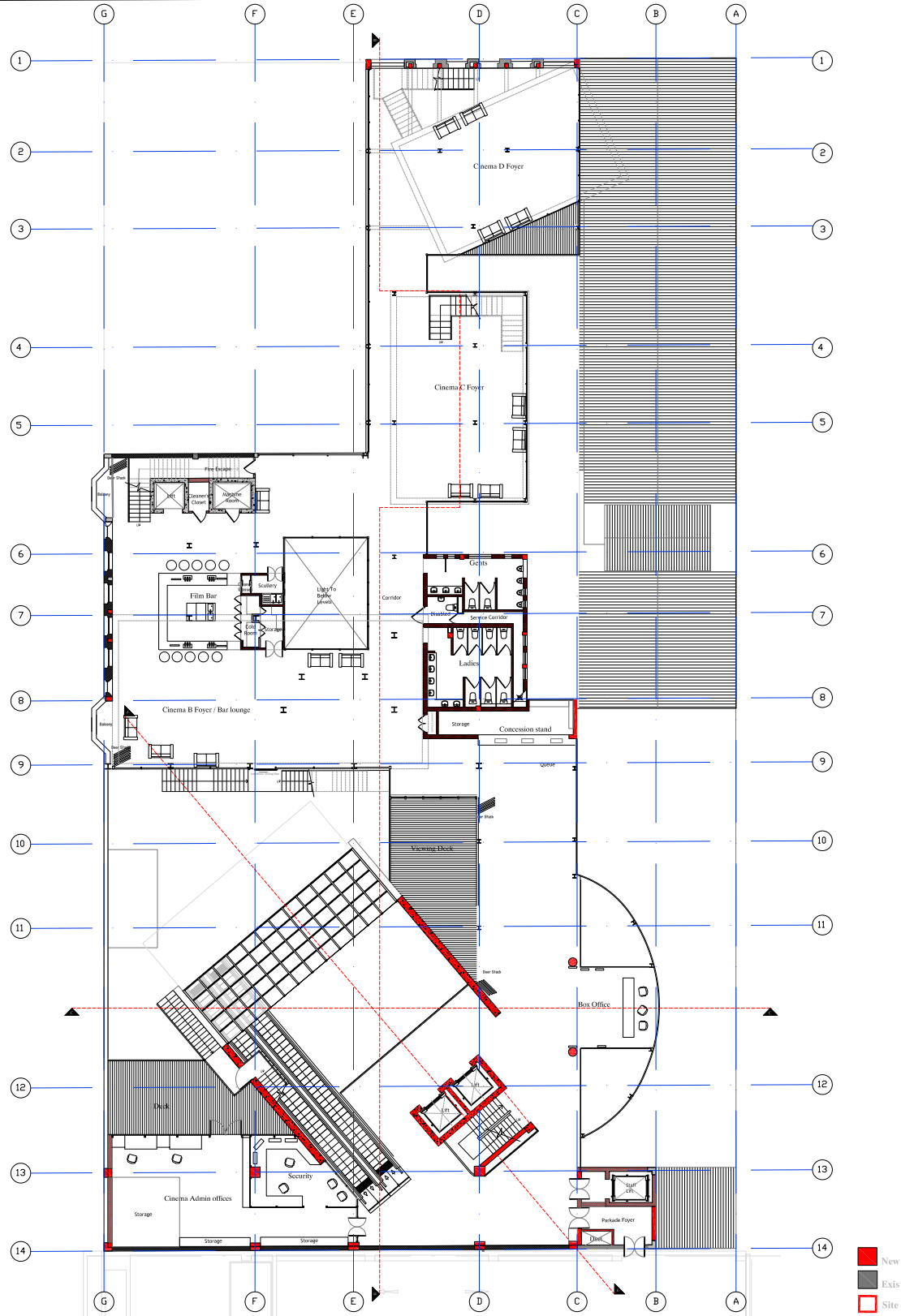


00 GROUND FLOOR

01 FIRST FLOOR

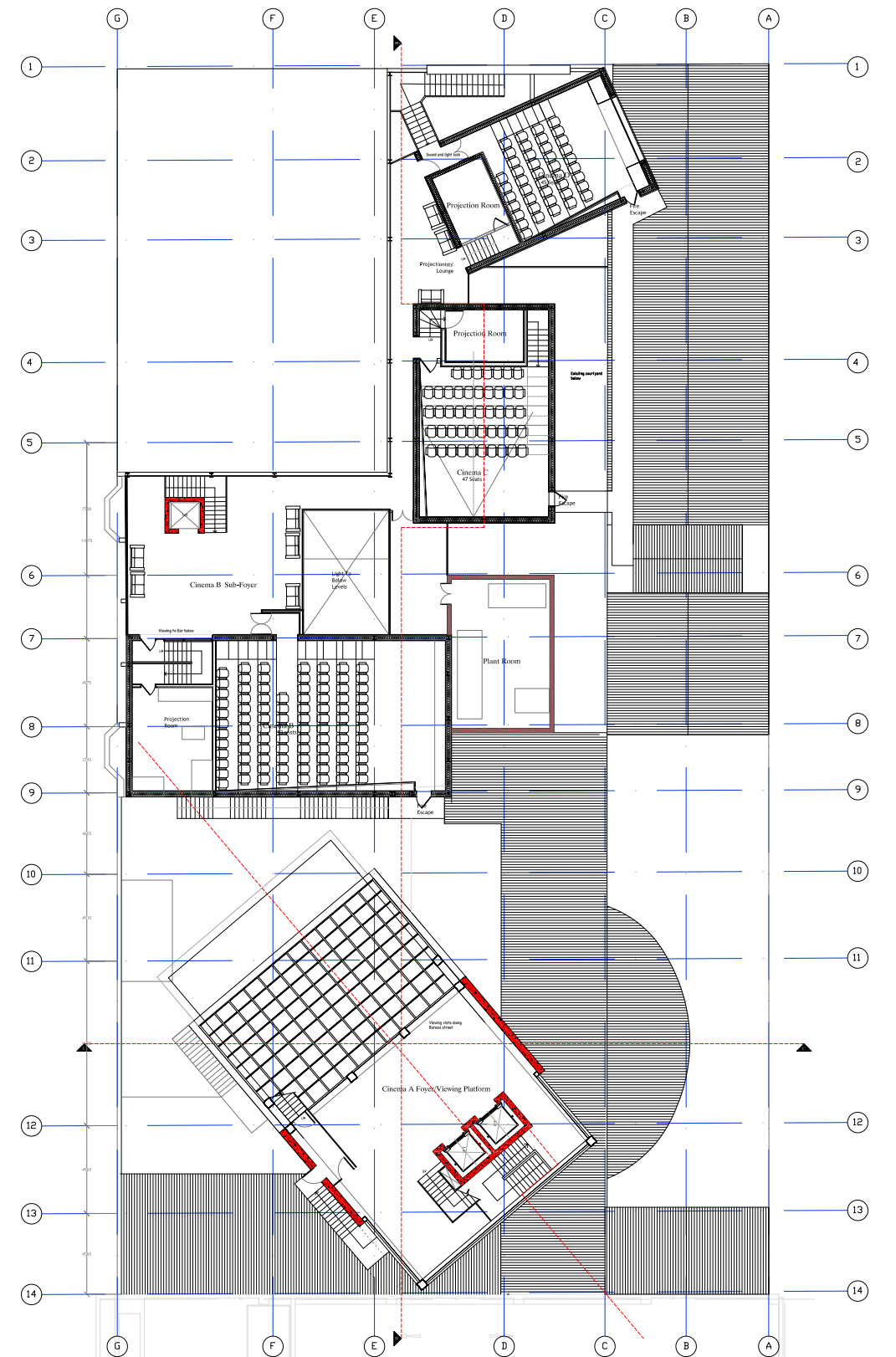


04 FOURTH FLOOR



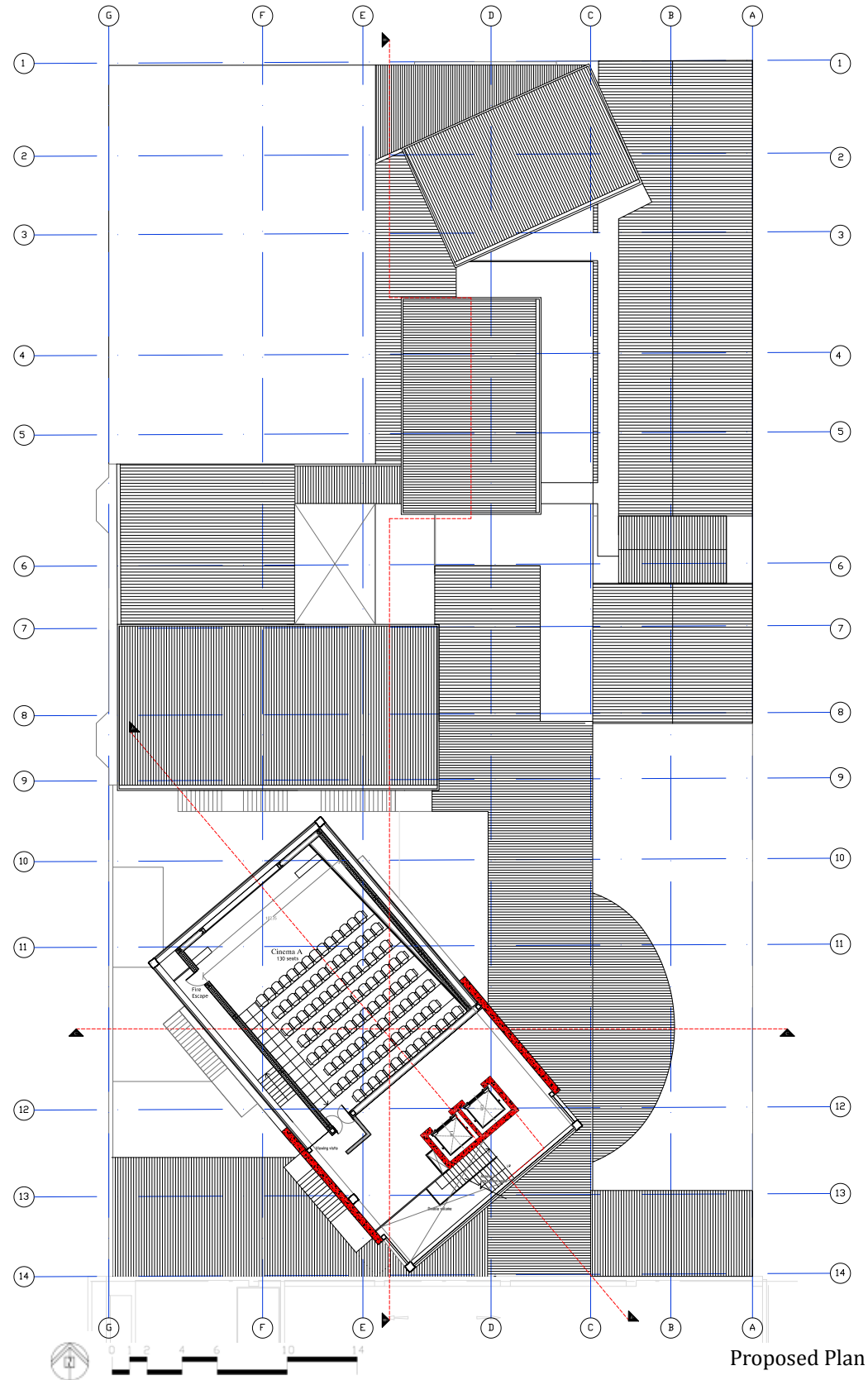
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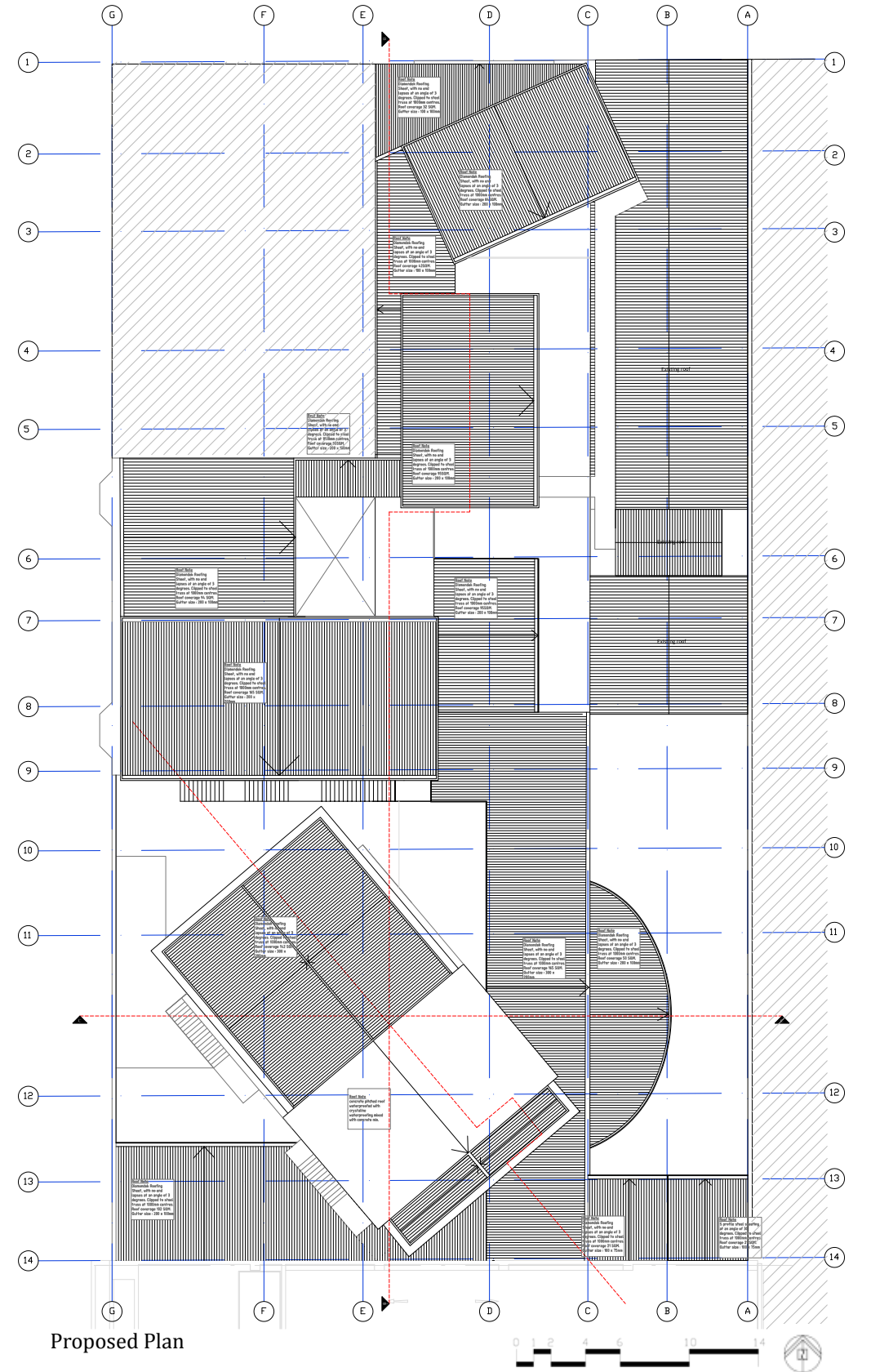
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06 SIXTH FLOOR

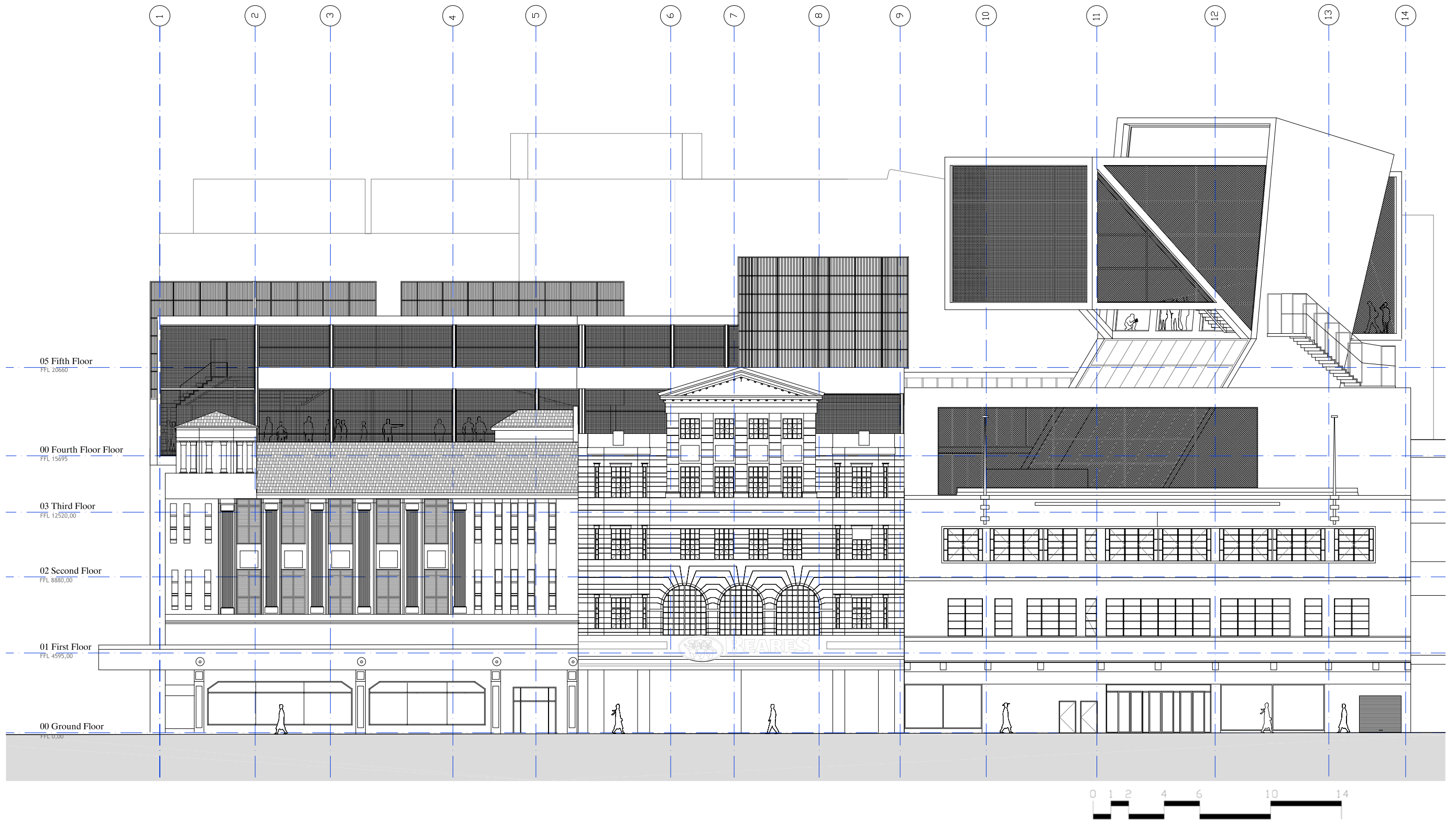


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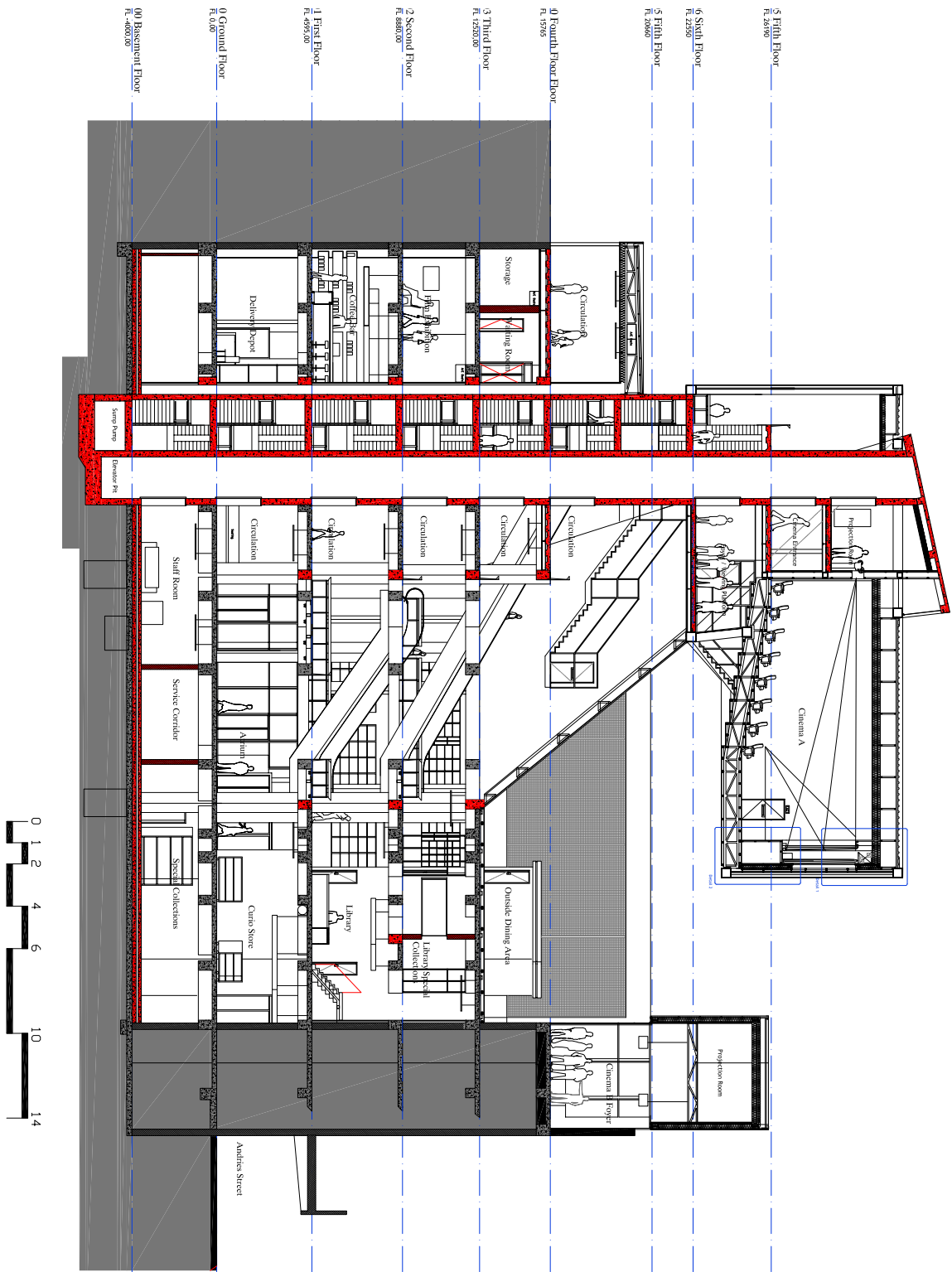
ROOF PLAN



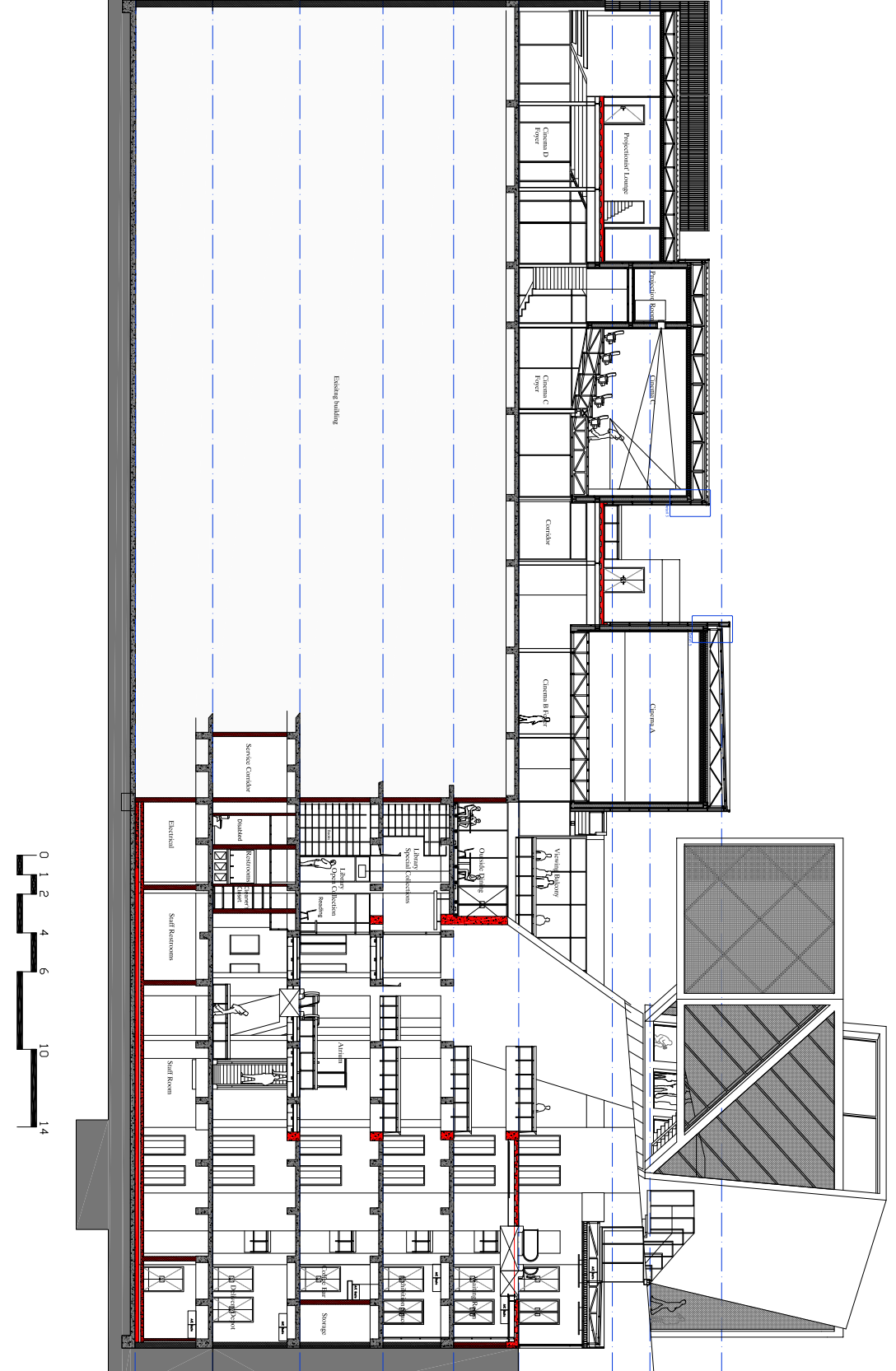
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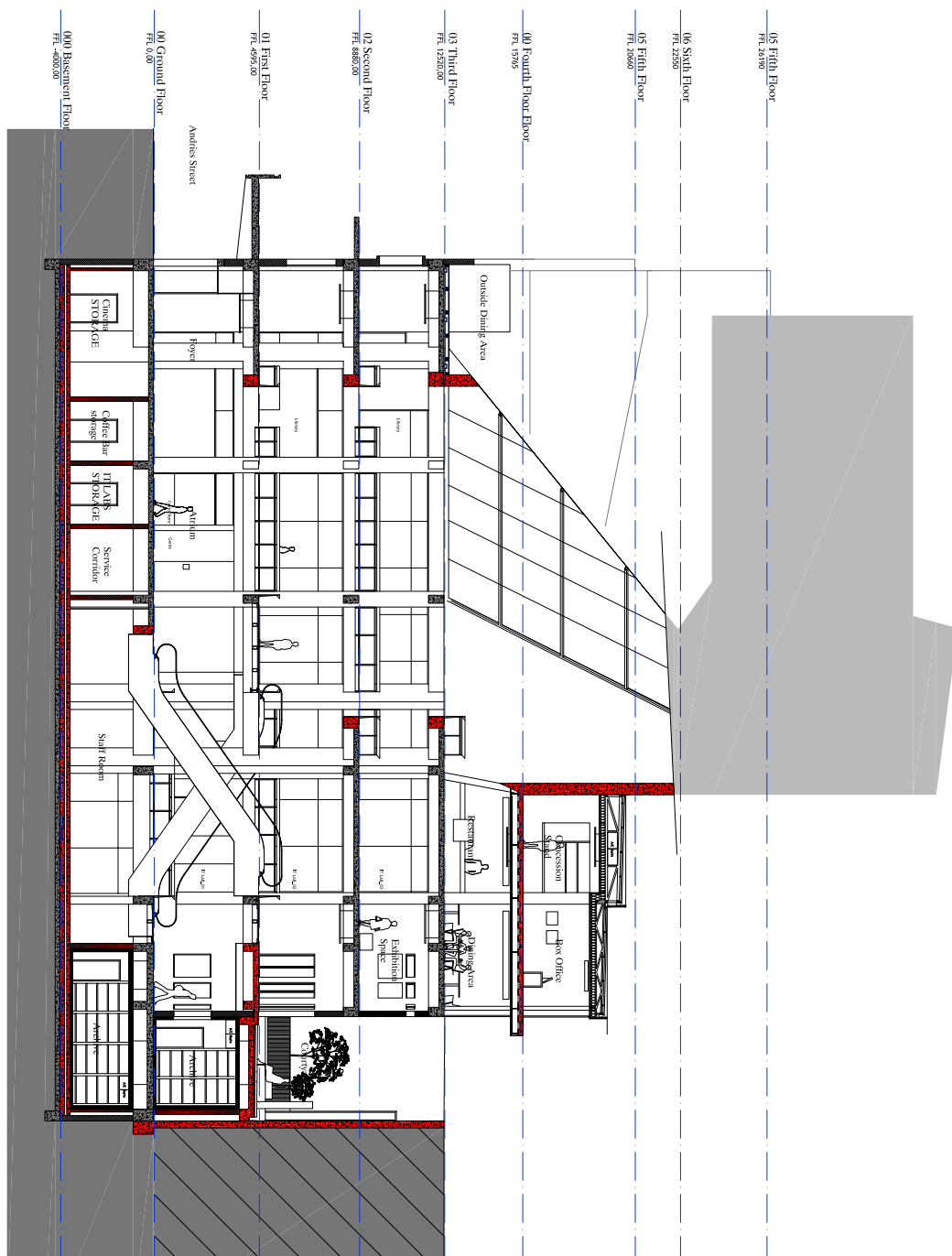
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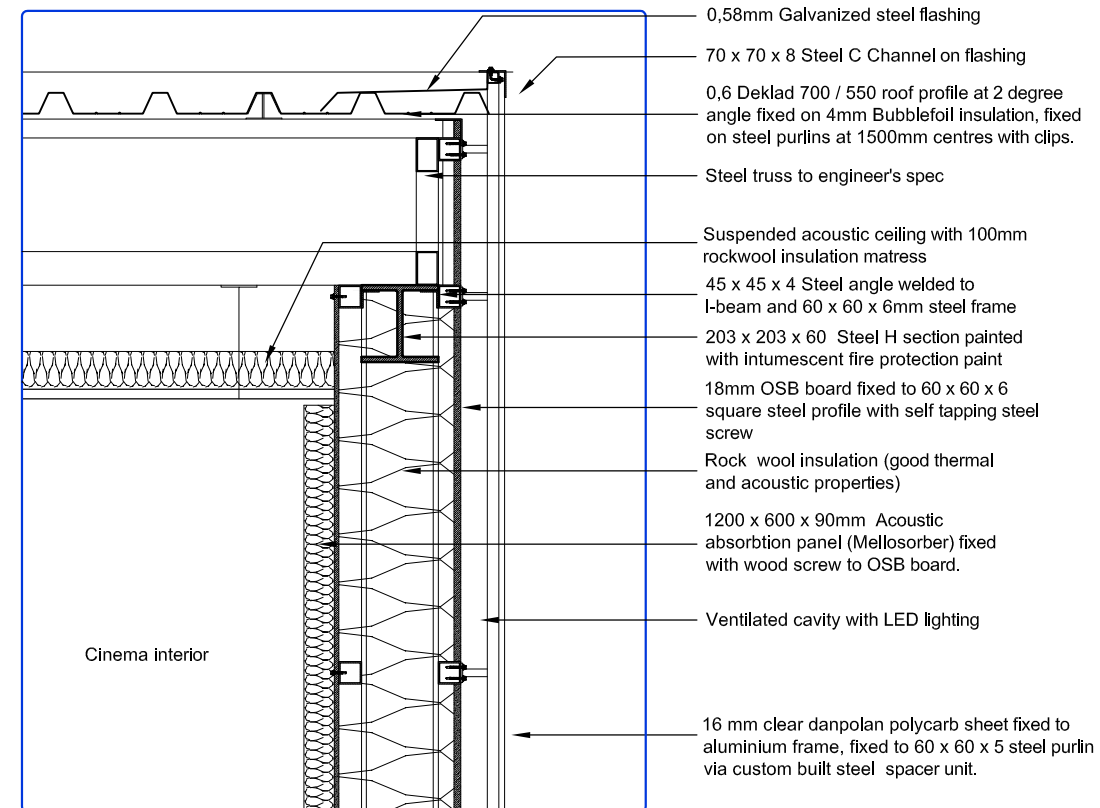
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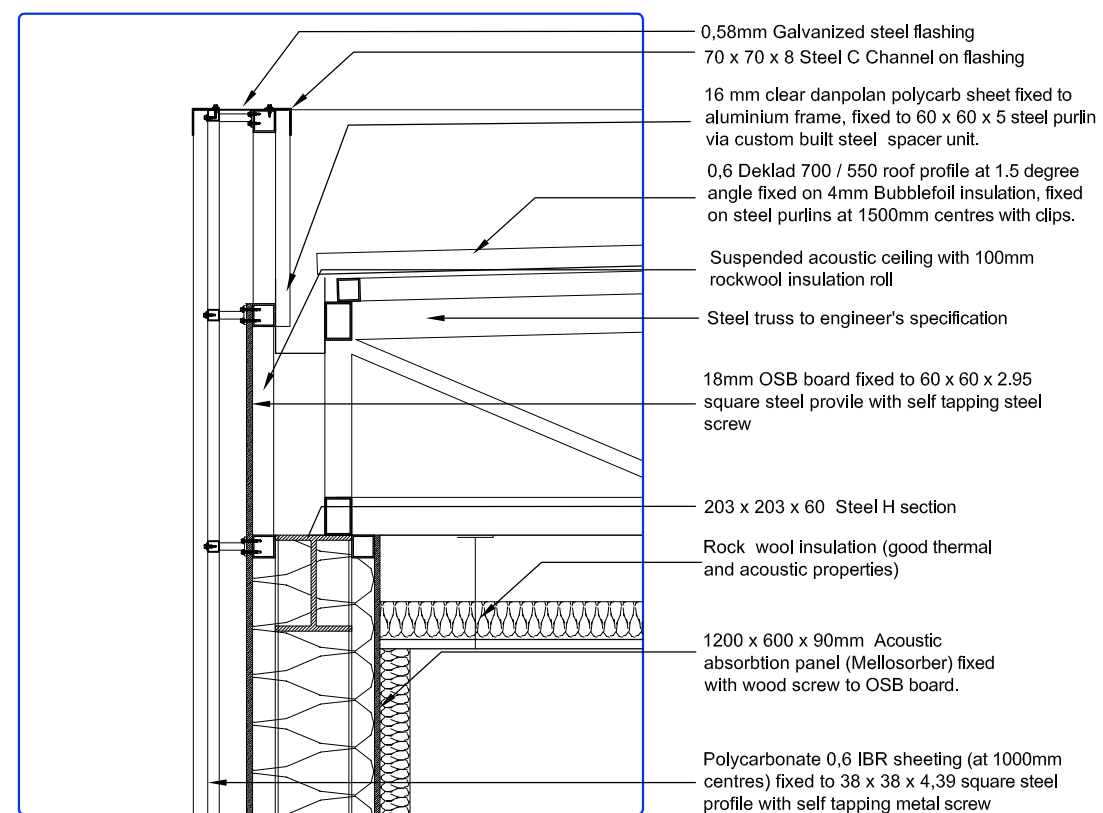
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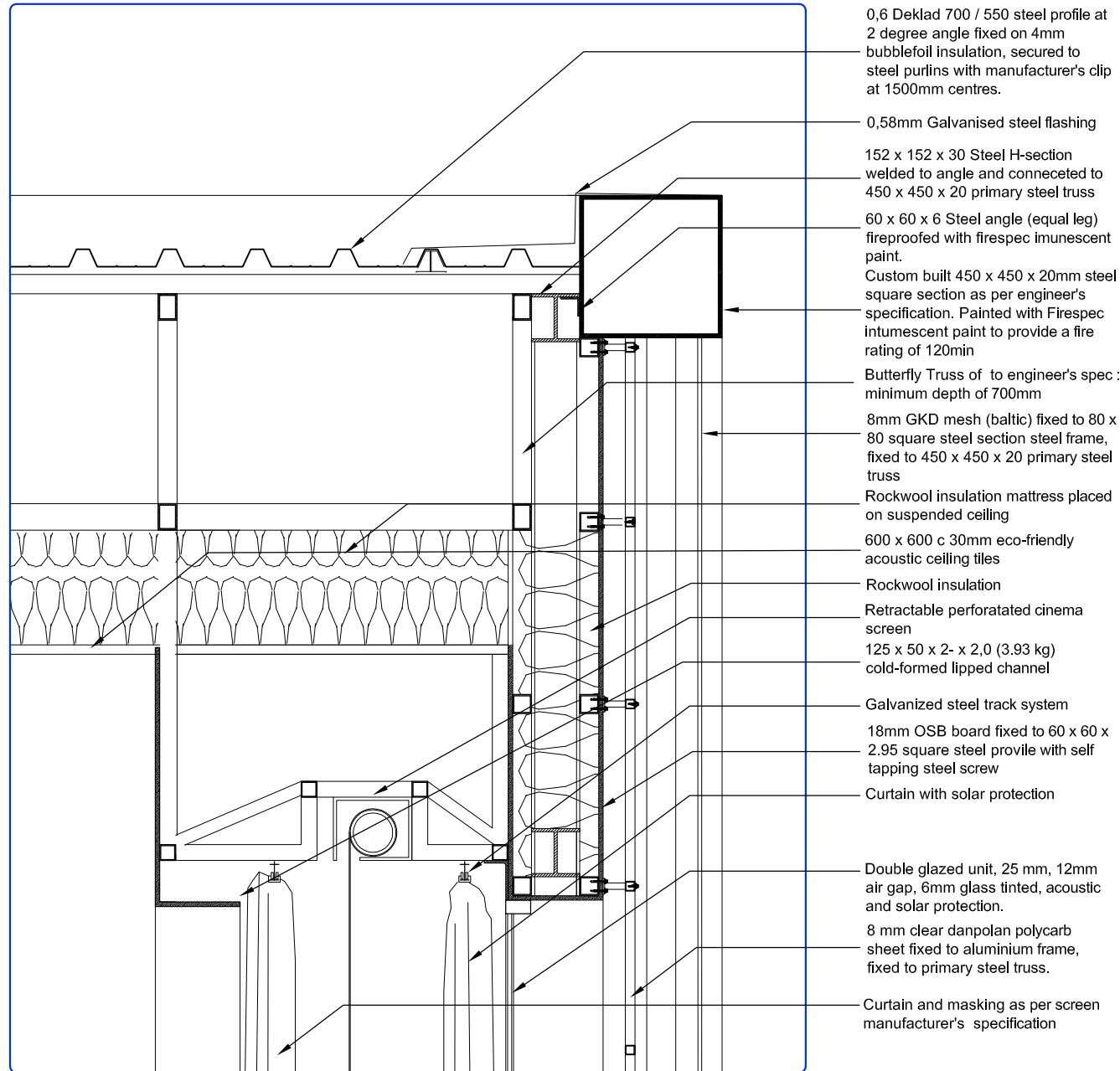
DETAILS



Detail 3 Cinema wall detail Scale 1:20

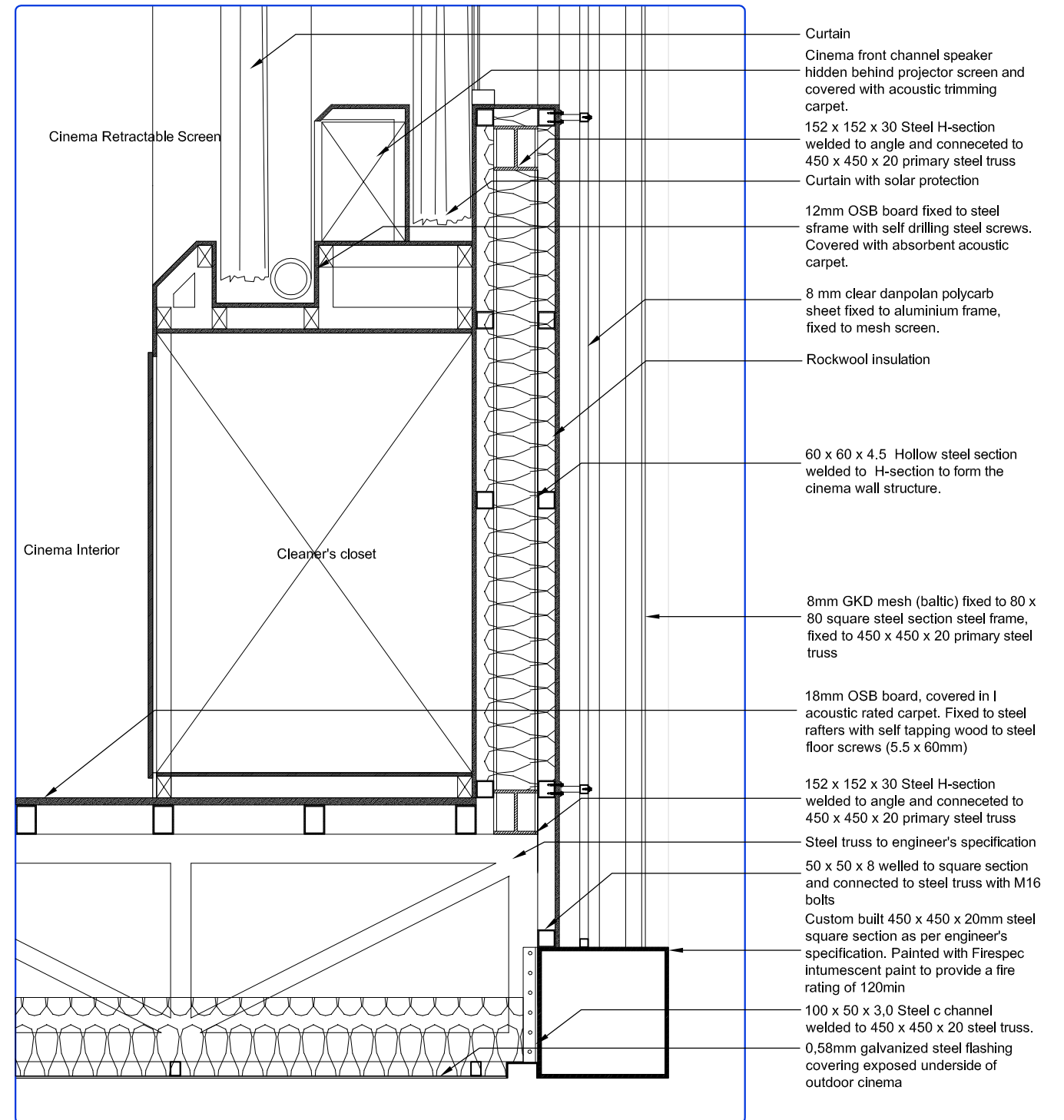


Detail 4 Cinema gutter detail Scale 1:20



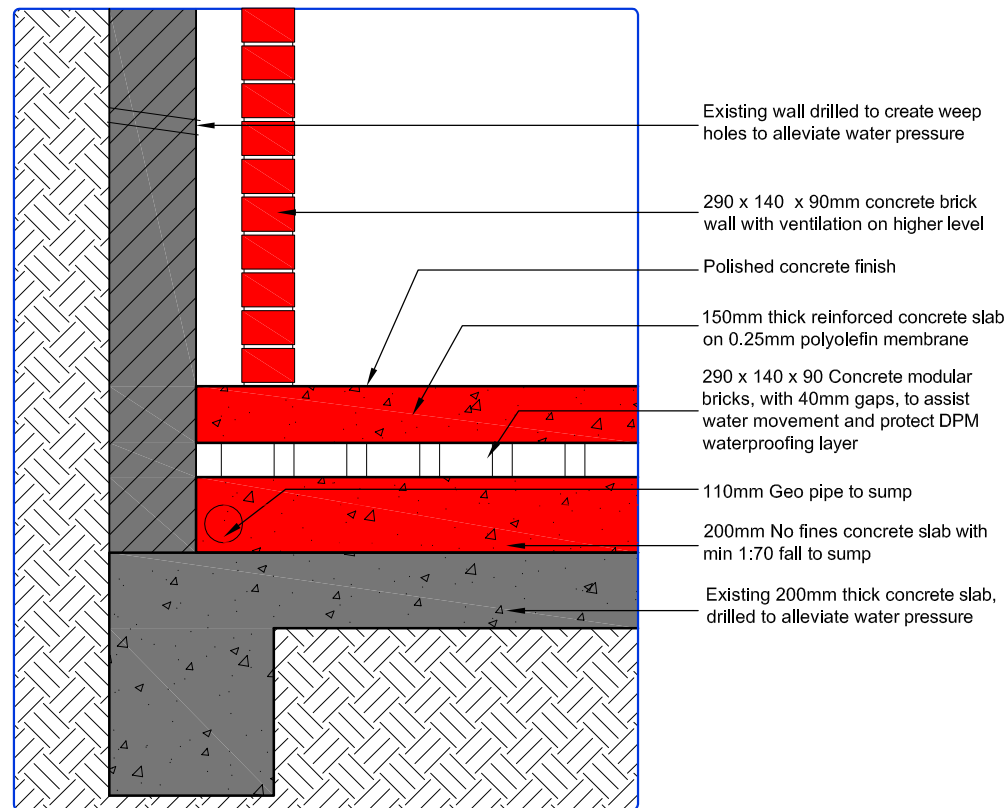
- 0,6 Deklad 700 / 550 steel profile at 2 degree angle fixed on 4mm bubblefoil insulation, secured to steel purlins with manufacturer's clip at 1500mm centres.
- 0,58mm Galvanised steel flashing
- 152 x 152 x 30 Steel H-section welded to angle and connected to 450 x 450 x 20 primary steel truss
- 60 x 60 x 6 Steel angle (equal leg) fireproofed with firespec intumescent paint.
- Custom built 450 x 450 x 20mm steel square section as per engineer's specification. Painted with Firespec intumescent paint to provide a fire rating of 120min
- Butterfly Truss of to engineer's spec : minimum depth of 700mm
- 8mm GKD mesh (baltic) fixed to 80 x 80 square steel section steel frame, fixed to 450 x 450 x 20 primary steel truss
- Rockwool insulation mattress placed on suspended ceiling
- 600 x 600 c 30mm eco-friendly acoustic ceiling tiles
- Rockwool insulation
- Retractable perforatated cinema screen
- 125 x 50 x 2- x 2,0 (3.93 kg) cold-formed lipped channel
- Galvanized steel track system
- 18mm OSB board fixed to 60 x 60 x 2.95 square steel provile with self tapping steel screw
- Curtain with solar protection
- Double glazed unit, 25 mm, 12mm air gap, 6mm glass tinted, acoustic and solar protection.
- 8 mm clear danpolan polycarb sheet fixed to aluminium frame, fixed to primary steel truss.
- Curtain and masking as per screen manufacturer's specification

Detail 1 Cinema tower retracting screen detail Scale 1:20

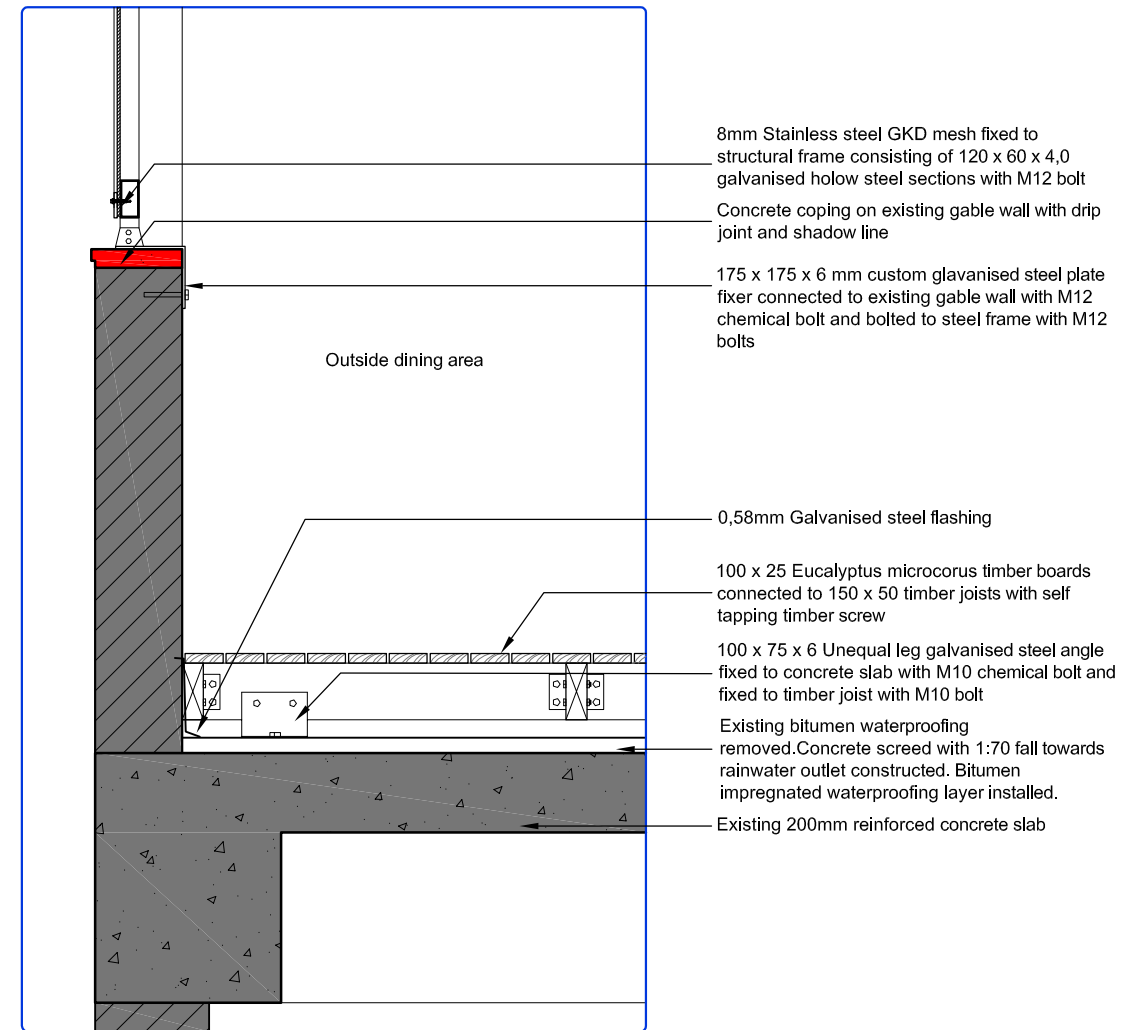


- Curtain
- Cinema front channel speaker hidden behind projector screen and covered with acoustic trimming carpet.
- 152 x 152 x 30 Steel H-section welded to angle and connected to 450 x 450 x 20 primary steel truss
- Curtain with solar protection
- 12mm OSB board fixed to steel sframe with self drilling steel screws. Covered with absorbent acoustic carpet.
- 8 mm clear danpolan polycarb sheet fixed to aluminium frame, fixed to mesh screen.
- Rockwool insulation
- 60 x 60 x 4.5 Hollow steel section welded to H-section to form the cinema wall structure.
- 8mm GKD mesh (baltic) fixed to 80 x 80 square steel section steel frame, fixed to 450 x 450 x 20 primary steel truss
- 18mm OSB board, covered in I acoustic rated carpet. Fixed to steel rafters with self tapping wood to steel floor screws (5.5 x 60mm)
- 152 x 152 x 30 Steel H-section welded to angle and connected to 450 x 450 x 20 primary steel truss
- Steel truss to engineer's specification
- 50 x 50 x 8 welded to square section and connected to steel truss with M16 bolts
- Custom built 450 x 450 x 20mm steel square section as per engineer's specification. Painted with Firespec intumescent paint to provide a fire rating of 120min
- 100 x 50 x 3,0 Steel c channel welded to 450 x 450 x 20 steel truss.
- 0,58mm galvanized steel flashing covering exposed underside of outdoor cinema

Detail 2 Cinema tower truss connection and retracting screen Scale 1:20



Detail 6 New basement waterproofing Scale 1:20



Detail 5 Timber outdoor dining deck and mesh screen detail Scale 1:20

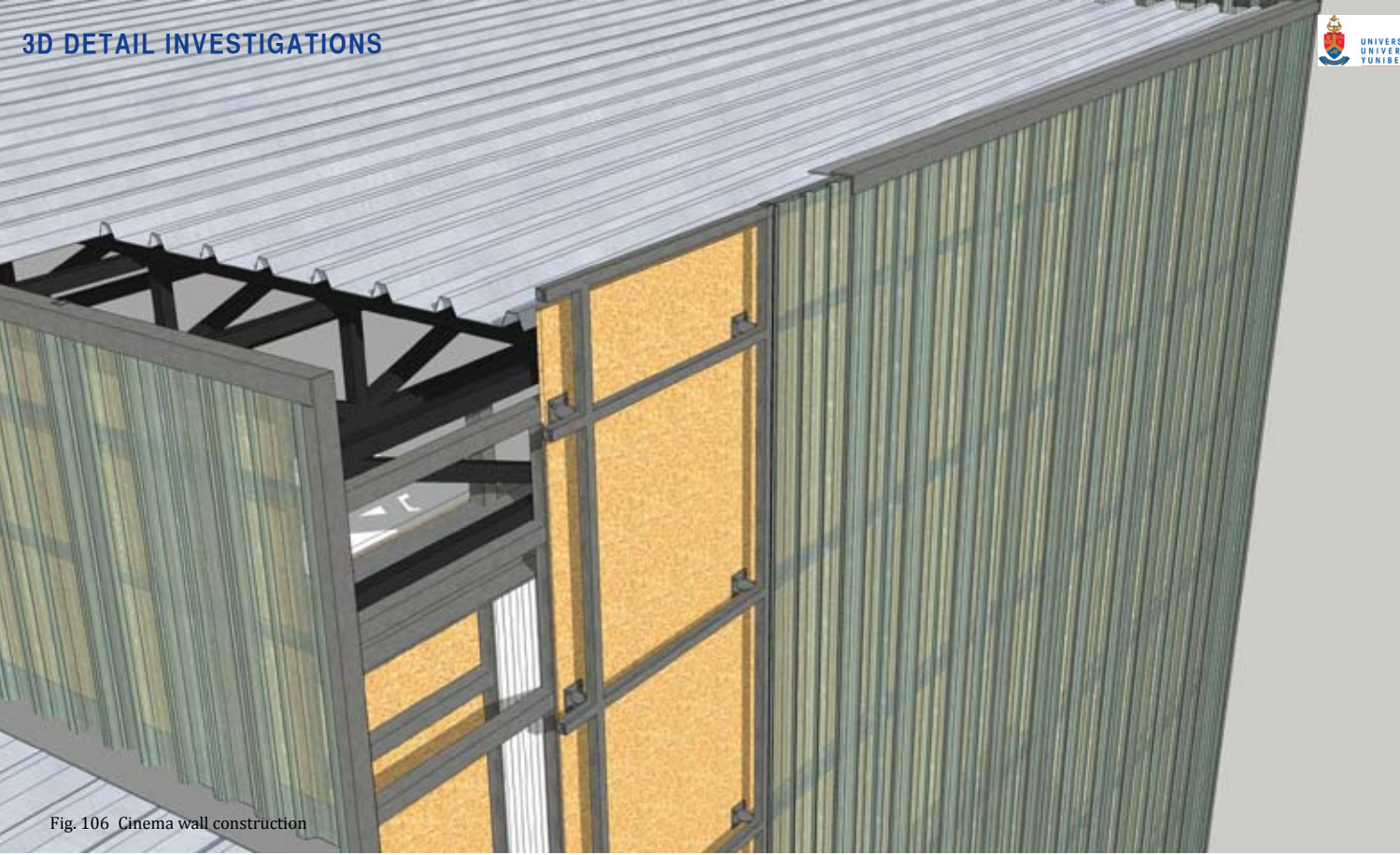


Fig. 106 Cinema wall construction

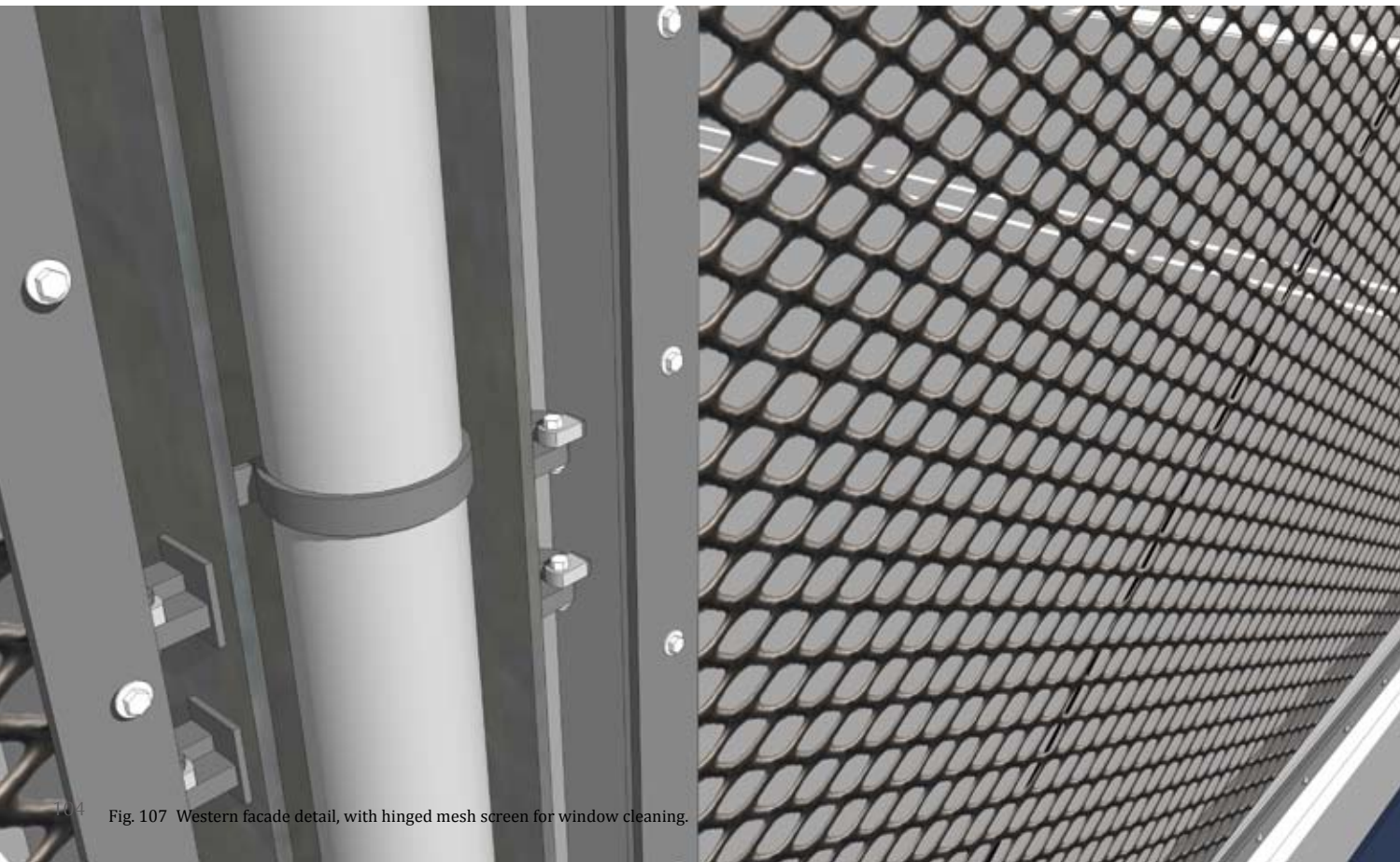


Fig. 107 Western facade detail, with hinged mesh screen for window cleaning.