

02

## SITE AND CONTEXT

## 2.1 INTRODUCTION

This chapter includes the analysis of the Meat Board to identify possible design influencers and issues affecting the proposed project. As mentioned earlier, the main design driver and constant factor in this dissertation from the beginning is the choice of site. The subsequent factor was understanding the site: the tangible and intangible factors were key to understanding the design resolution. Brooker & Stone in Rereadings: Interior Architecture and the Design Principles of remodelling existing buildings suggest a structure of the analysis of existing buildings that is used in this chapter. The format of the site and context analysis were done within the four main themes as suggested by Brooker & Stone: Context and Environment, History and Function, Form and Structure and Proposed function.

'The form of the adaption must be based on the form of the original building. Without an in-depth understanding of the unique qualities of the existing situation, it is impossible to create a coherent and comfortable remodelling' (Brooker & Stone 2004: 14).

The analysis commences with contextual background of Pretoria, specifically Arcadia and the need for office space in the area is investigated. The Tshwane 2055 Government framework is discussed and identified as the large urban vision that the proposed project aligns with. A street level context investigation considers the shortcomings and opportunities with the approach to the building. An in-depth analysis of the Meat Board building as site follows where intangible historical factors and physical aspects of form and structure are discussed. The chapter concludes with a proposal for a programme in which the building can be reused.

## 2.2 CONTEXTUAL BACKGROUND

### 2.2.1 OFFICE SPACE IN PRETORIA CBD

Urban sprawl and extensive development to the east and south of Pretoria resulted in the formation of nine nodes of office development around the Tshwane municipality. According to IOL Property these nodes are: Arcadia, Brooklyn, Hatfield, Lynwood/Menlopark, Menlyn/Faerie Glen, Pretoria's eastern suburbs, east Centurion and Highveld Technopark (Mudzuli 2014). It seems that the trend in the capital is that the CBD is mostly occupied by government departments and that private corporate companies migrate towards the new business nodes (Mudzuli 2014).

Various factors may have triggered the current trend of decentralization in the municipality. The first being a lack of public transport. Inadequate public transport led to an increased use of private transport that severely congests the road network. Secondly, old office buildings in the CBD often do not have sufficient parking for modern requirements (Mudzuli 2014). Additionally, modern

organizations often prefer to occupy 'green buildings' due to the economic advantages of lower energy usage and other benefits and old buildings can be costly to retrofit accordingly (Paviour-Williams 2013).

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### 2.2.2 TSHWANE 2055 VISION

The Tshwane 2055 Vision is an official campaign launched by the government of South Africa that directs future development towards a collective vision for the Tshwane district. The Tshwane 2055 Vision document reveals valuable information on the population distribution, economic sectors and the heritage of the capital.

Although Gauteng is the smallest province of the country, it is most densely populated and claims most economic activity. According to the report, the majority of Tshwane's population consists of 'youth' (classified as people 35 and younger) and it states that there is a definite need to create business opportunities for this age group. This biggest development issues in the city subsequently involves 'unemployment, education, security and participation' (Tshwane 2055 2014).

### 2.2.3 BUSINESS OPPORTUNITY WITHIN THE CAPITAL

Gauteng is known for its various business opportunities and is considered as the 'economic engine' of the country. The population of Gauteng has grown from 2.1 million in 2001 to 2.9 in 2011 and is expected to continually grow. The population growth reflects an influx of people in search of economic opportunities. The amplified economic opportunity subsequently increases the demand for infrastructure development in the area (Tshwane 2005 2014).

The major business sectors in the capital include government, social and personal services, finance and business services, automobile industry, wholesale, retail, trade & manufacturing. Additionally Tshwane is appraised to produce 90% of all research development with institutions such as Armscor, Medical Research Council and the Council for Scientific and Industrial Research, among others (Tshwane 2055 2014).

### 2.2.4 HERITAGE RESOURCES WITHIN THE CAPITAL

A capital city as such, inherits a certain symbolic character of identity and monumentality that is translated through architecture, cultural artefact and other cultural rituals. Tshwane is currently the political and administrative capital; Cape Town is the seat of the legislative

branch and Mangaung, the judicial capital. Historical city planning and political events contributed to the forming of three capital cities, which may deny some of Pretoria's monumental quality as the seat of executive authority.

The remodelling of the capital city therefor focuses on enhancing Pretoria's monumentality as capital city and on other crucial issues such as housing, economic use of space and functionality of nodes in the city (Tshwane 2055 2014).

### 2.2.5 NELSON MANDELA CORRIDOR

The Nelson Mandela corridor will be located around the Apies River and along Nelson Mandela Drive. The proposed plan is to lift the water level of the river with a nearby source with the aim of creating a promenade of arts, culture, business, sport and entertainment. The aim is to attract financial businesses and high-end retail services to the promenade (Coggin & Trangos 2013).

### 2.2.6 GOVERNMENT BOULEVARD

The proposed government boulevard is a joint project by the City of Tshwane and the Department of Public Works. This corridor aims to provide a long-term solution to the accommodation of government head offices and municipal agencies. A key focus of this project involves the creation of public space that will reflect 'the national spirit' and will house events such as celebrations, marches and festivals (Coggin & Trangos 2013). The boulevard will be located mostly on WF Nkomo Street and will include wider streets, pedestrian lanes and green spaces (Mudzuli 2014). Figure 2.1 shows the location of the Government Boulevard in relation to the site.

# 02 Site and Context

## 2.3 MACRO CONTEXT

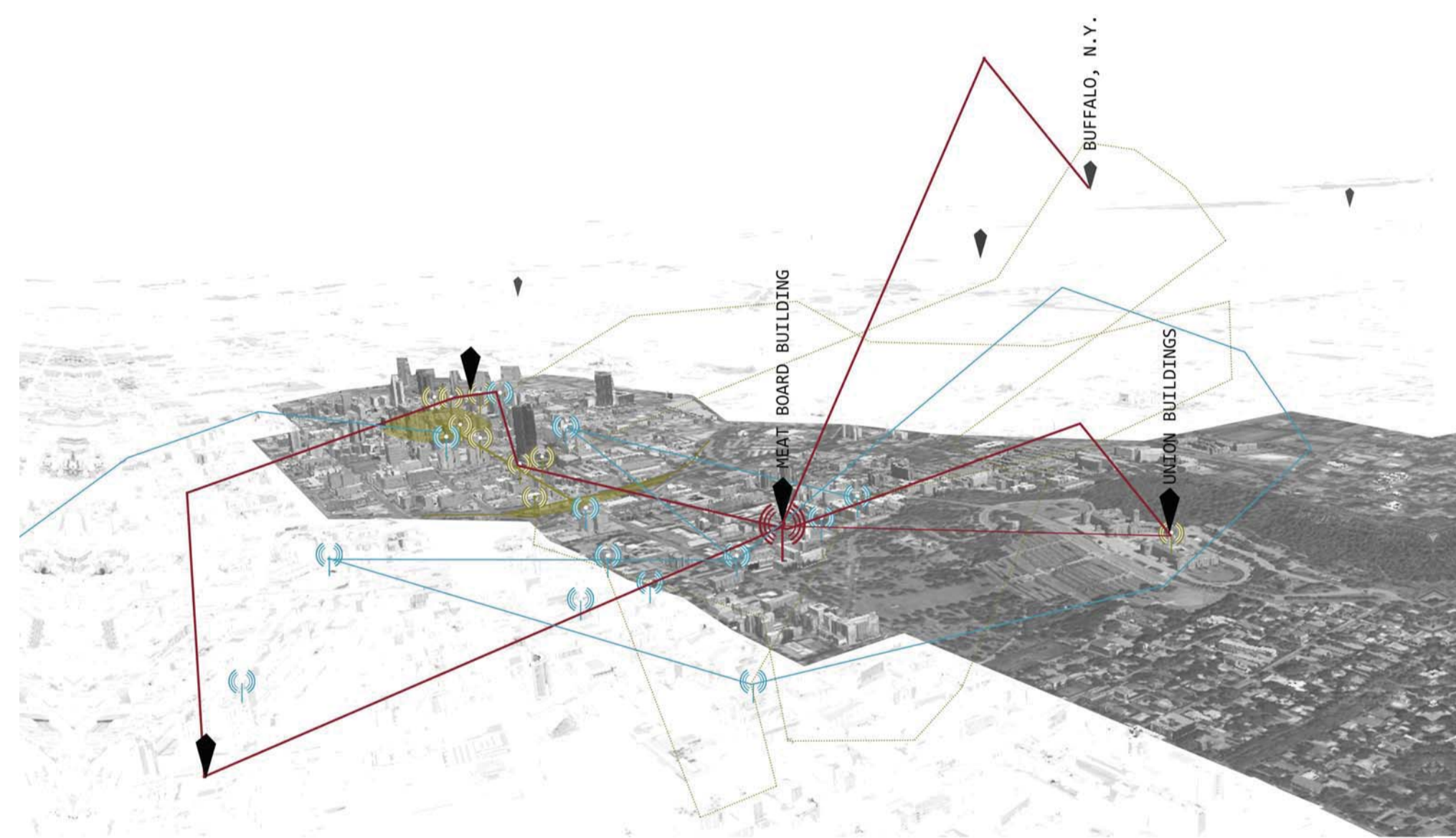
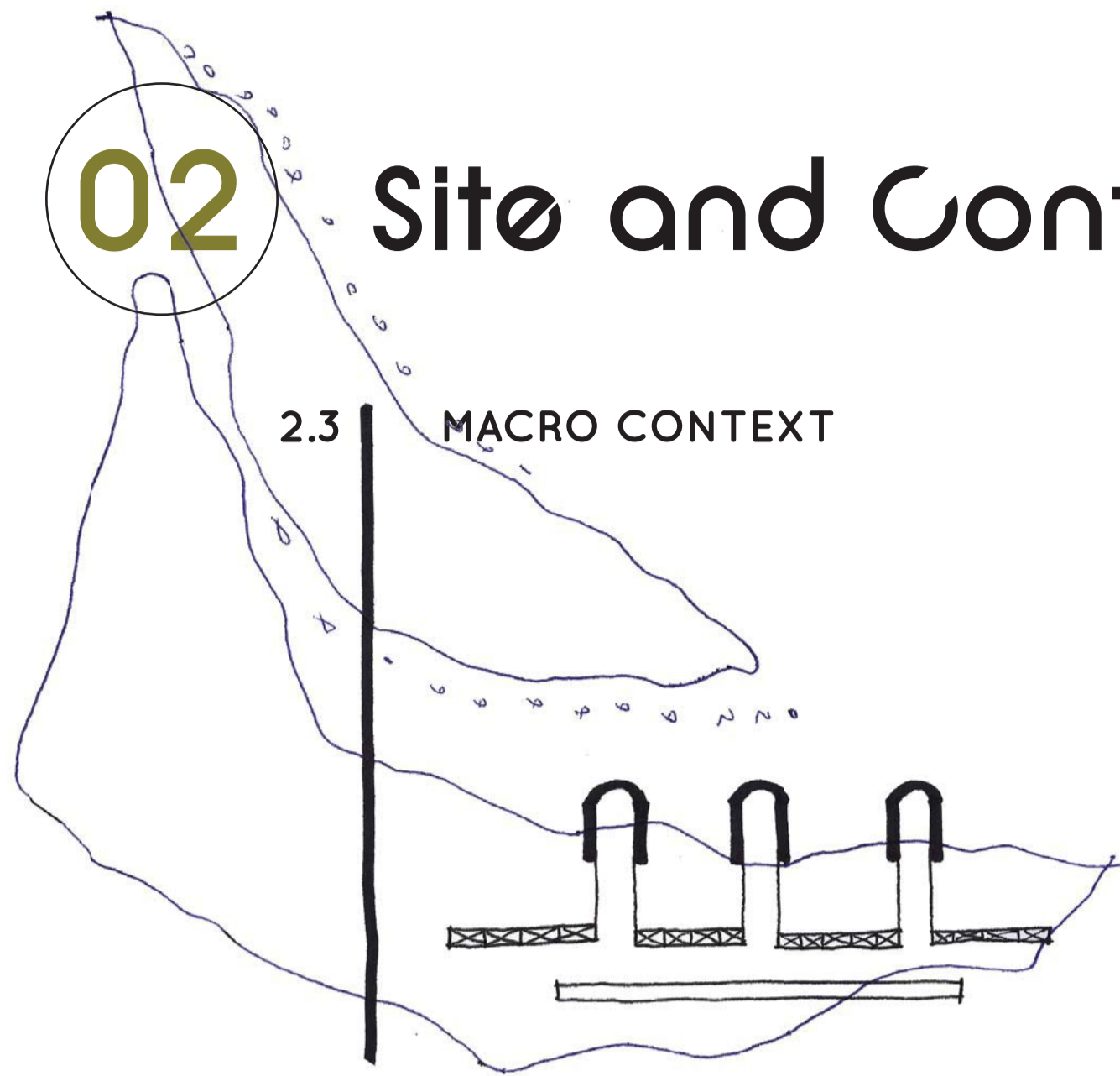
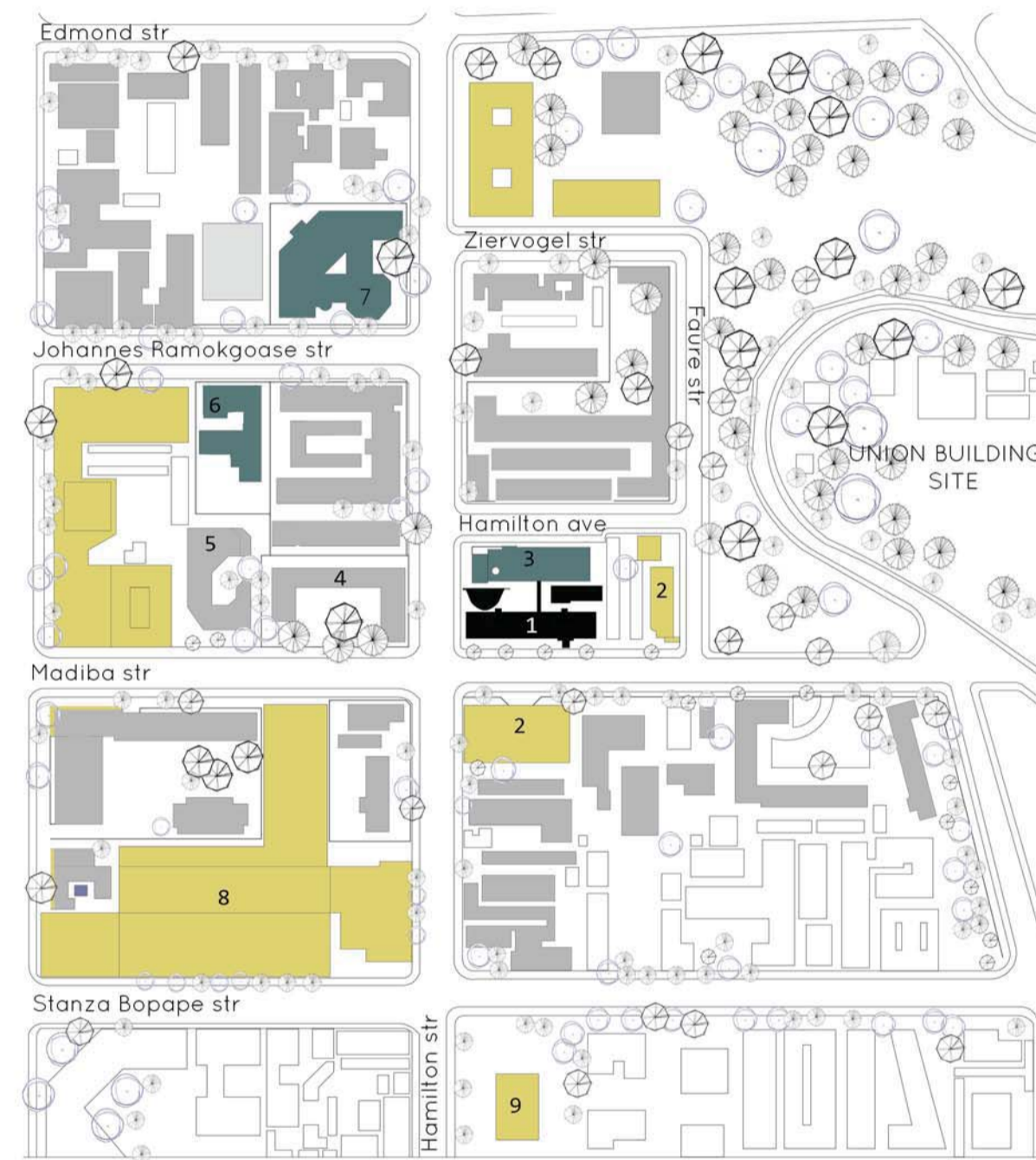


Figure 21 Conceptual aerial view of the macro context of the Meat Board building.

## 2.4 MICRO CONTEXT

The Meat Board building is situated in Arcadia, a fringe development of the CBD. Arcadia is originally a residential area and a few original houses are still found within the area, but the suburb consists mostly of large-scale residential and commercial functions. Various embassies and government departments are located in Arcadia. According to Paviour-Williams, office parks in Arcadia are few and far apart and generally offer 3500 square meter office space or less (Paviour-Williams 2013).

The location of the Meat Board building on Madiba Street provides easy access to and from the CBD and the East of Pretoria as it is in 2km radius from the Gautrain station and in 1.5 km reach of the A Re Yeng bus service. Access to the site is currently difficult for private vehicles as there is a lack of parking on site although the parking arcade of the Suncardia shopping Centre is available as alternative. The immediate environment of the site is harsh for pedestrians as there are no in-between pause spaces with seating or pedestrian friendly street crossings. The lack of pedestrian interfaced functions on street level contributes to this unfavourable pedestrian environment.



- KEY:
- Commercial Facility
  - Government department
  - Residential Facility
  - 1. Meat Board Building (site)
  - 2. Health Professions Council of South Africa (HPCSA)
  - 3. Department of Agriculture, Forestry & Fisheries
  - 4. Orange Court Guest House
  - 5. Arcadia Hotel
  - 6. National Presidency
  - 7. Department of Cooperative Governance & Traditional affairs
  - 8. Suncardia Shopping Centre
  - 9. Mc Donalds

Figure 2.3 Map showing micro context of the Meat Board building.

## 2.4.1 STREET LEVEL CONTEXT

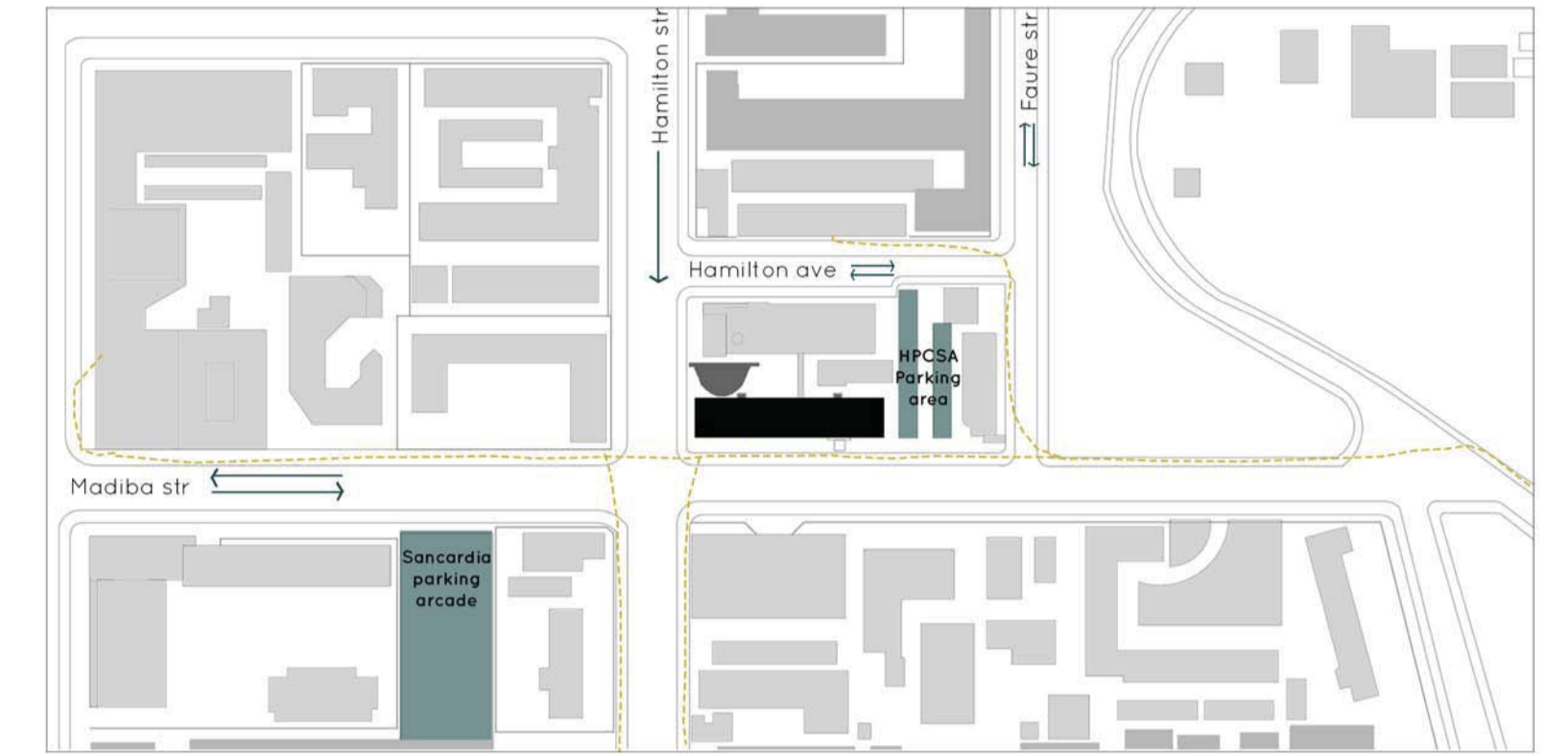


Figure 2.4 Diagram showing vehicle and pedestrian circulation around the site.

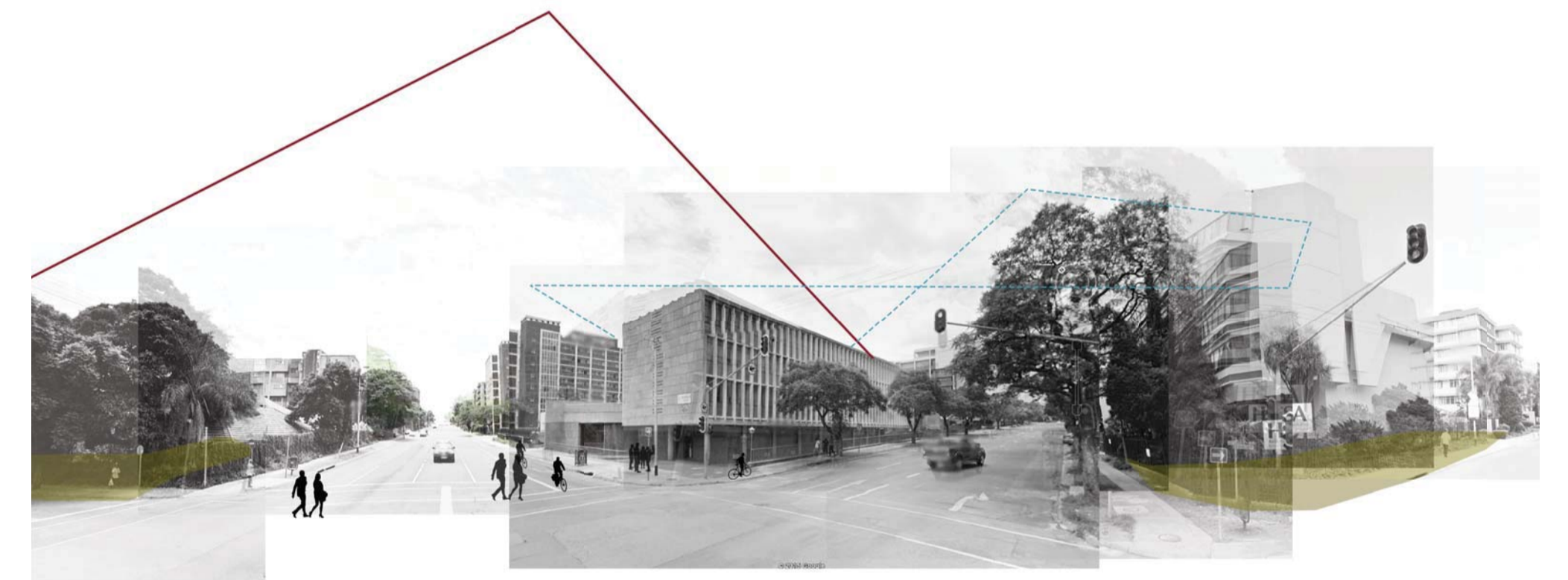


Figure 2.5 Conceptual perspective of the immediate context of the Meat Board building.



Figure 2.2 Diagram that shows location and proximity of points of interest in the immediate context.

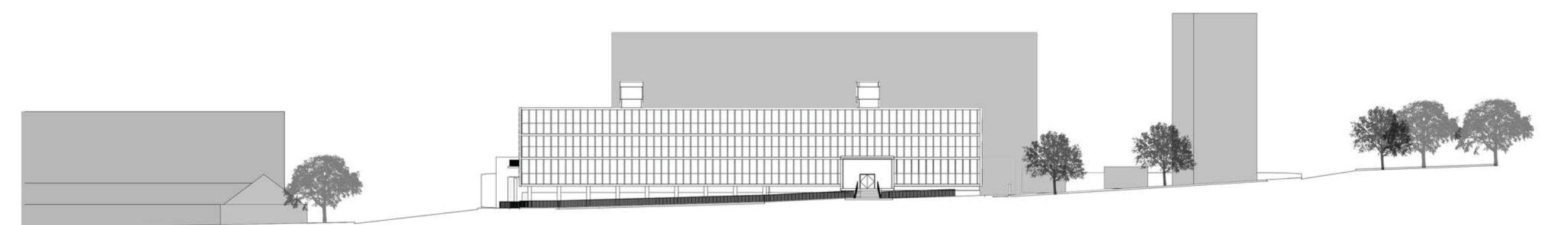


Figure 2.6 East West Site Section showing the scale of the Meat Board building in its context.

# 03 Meat Board building: a local Modern Movement icon

## 2.5 HISTORY AND FUNCTION

### 2.5.1 BACKGROUND INFORMATION

<b>DATE OF ORIGIN:</b>	1951
<b>CURRENT NAME:</b>	Nipilar House
<b>ARCHITECT:</b>	Hellmut Stauch
<b>ADDRESS:</b>	140 Hamilton Street, Arcadia, Pretoria
<b>COMMISSIONING OWNER:</b>	Livestock & Meat Industries Control Board
<b>CURRENT OWNER:</b>	Private owner
<b>CURRENT OCCUPANT:</b>	Department of Water Affairs & Public Works
<b>TPOLOGY:</b>	Office Building

### 2.5.2 STATEMENT OF SIGNIFICANCE

The Meat Board building by Hellmut Stauch is an iconic Modern Movement building in the architectural history of Pretoria and South Africa. The building holds significant tangible and intangible architectural value in its context. The legacy of the building falls under three main themes: (a) Modern Movement architecture; (b) Brazilian influenced architecture and (c) regionalist architecture within Pretoria.

The building as civic building is revolutionary from a stylistic viewpoint as the design challenges the classical style of most civic buildings at the time. The building reflects typical morphological elements of the Modern Movement such as an elevated mass on pilotis, horizontal windows and a roof garden.

On an excursion to Rio de Janeiro, Brazil, Stauch visited the Ministry of Education building designed by renowned architect Oscar Niemeyer. During this time, Stauch was inspired by the manner in which Niemeyer incorporated climatic principles into his architecture. The Meat Board building holds historical value as it can be considered a prototype for creating climate responsive architecture in South Africa. The textured mosaic tiling on columns, the organic garden layout and the organic morphology of the boardroom reflect a unique Brazilian character and should be preserved. The moveable sun control louvres on the northern façade holds historical significance as this is the first of its kind in South Africa (Nation 1985) and it is revolutionary in the current ecologically conscious paradigm.

Lastly, Stauch's ecological innovations in the Meat Board building can be seen as an influencer for the regionalist design approach of the Architecture School of Pretoria.

### 2.5.3 SIGNIFICANT ELEMENTS

The exploded view of the Meat Board building shows significant elements in and around the building.

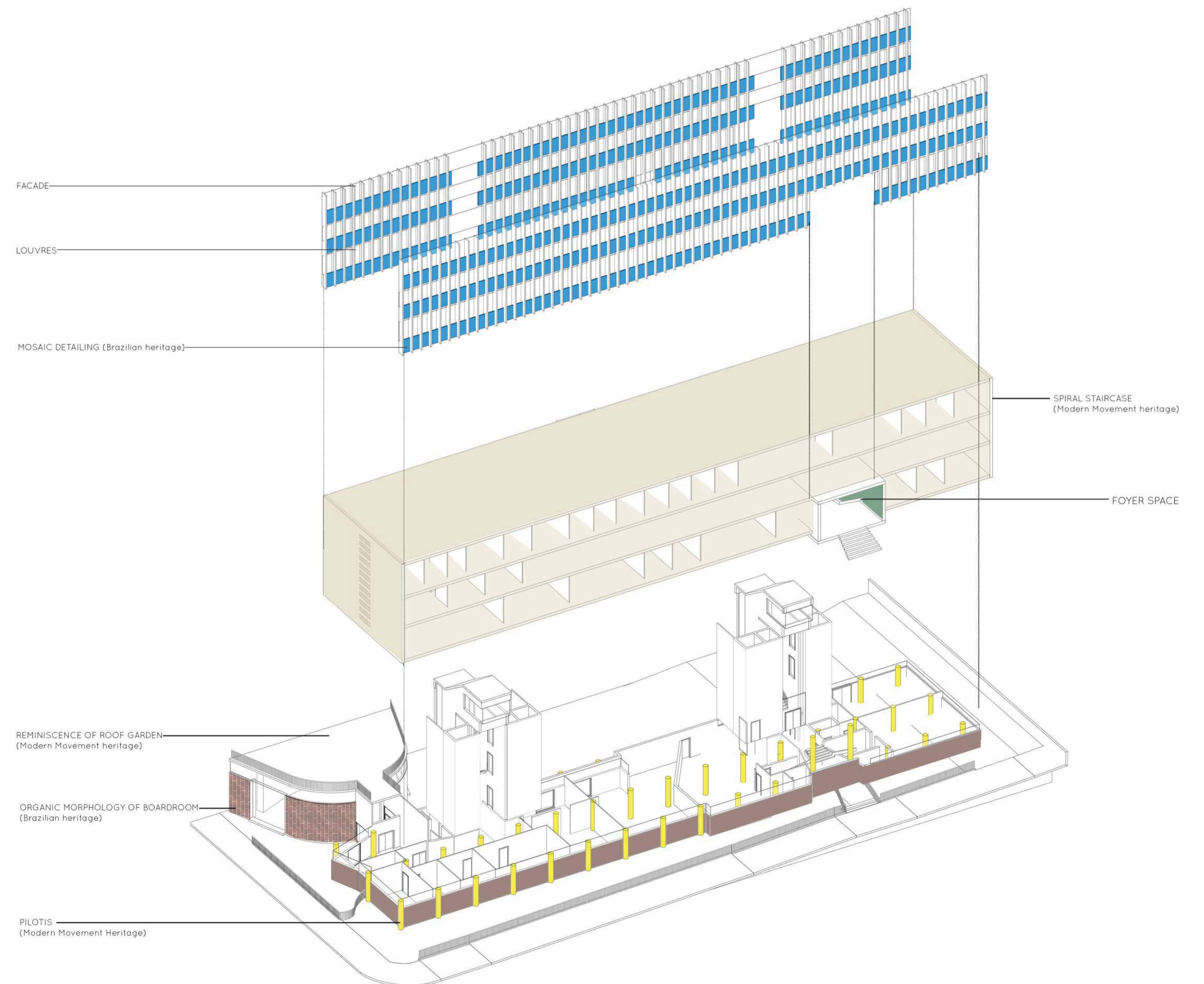


Figure 27 Meat Board building street view (Google Earth [S.a.]).

Figure 28 Exploded axonometric view demonstrating elements of cultural and heritage significance.

# 04 Current Condition

## 2.5.4 EXPLORING THE EXTERIOR

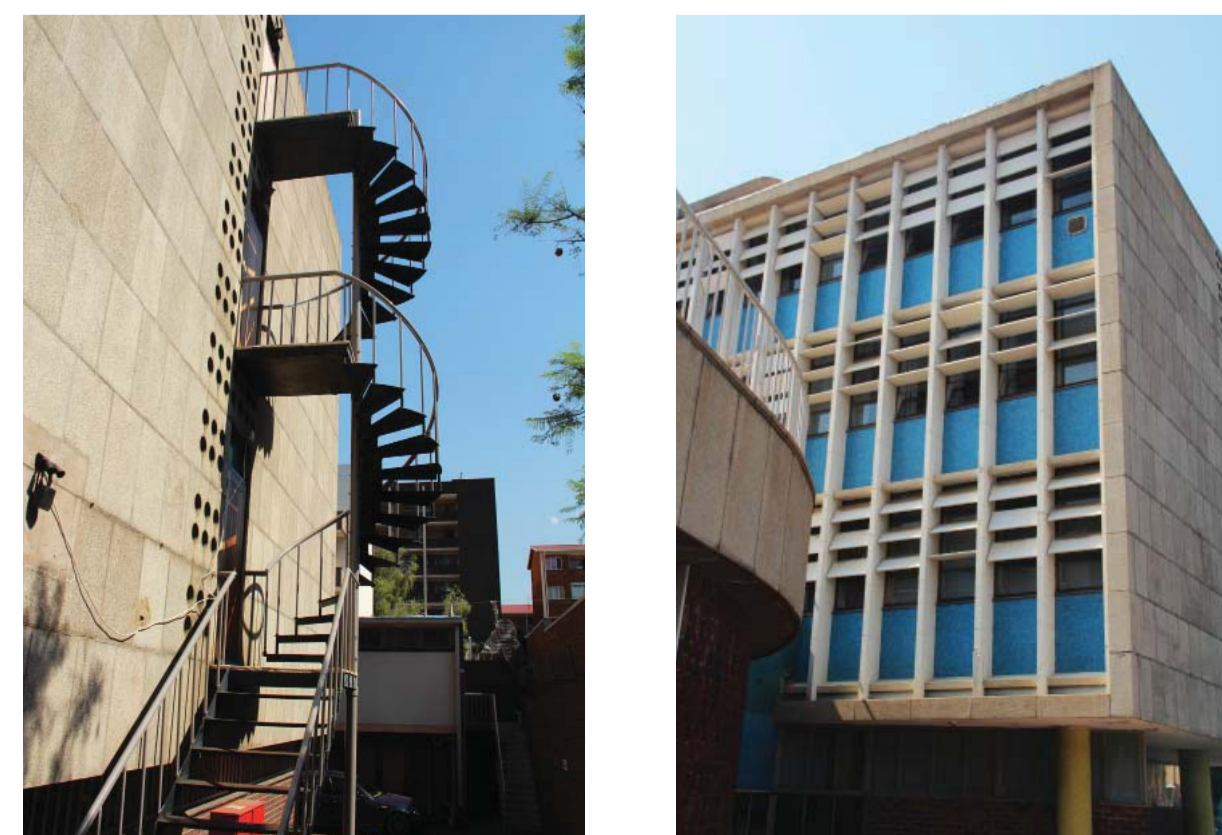


Figure 2.9 Building corner articulation.  
Figure 2.10 Window detailing on Western facade.  
Figure 2.11 Main entrance.  
Figure 2.12 Articulation close up showing entrance and facade detailing.  
Figure 2.13 Exterior spiral staircase.  
Figure 2.14 North facade view showing sun central louvres.

## 2.5.5 CURRENT INTERIOR CONDITION

The Meat Board currently serves as offices for various tenants of the Department of Public Works. The atmosphere in the building is gloomy and dark- not in line with the vision of a light and colourful working environment that Stauch originally envisioned. The current interior finishes are outdated and lack sophistication and the static cellular arrangement of offices contribute towards a dark, isolated environment. From a structural perspective, the building is in a good, useful condition. Currently the building does not comply with SANS sanitation requirements and this contributes towards an uncomplimentary working environment.

## 2.5.6 PREVIOUS FUNCTION

The original programme of the building was an office building for the Meat Board (Stauch 1951: 1). Meat was graded and tested on the ground floor of the building and the rest of the building consisted of administration offices for the Meat Board. The architect describes the requirements of the building to be typical of an administrative organization. The architect recognized the rapid pace at which the workplace environment changes and therefore he tried to compensate with the design of a flexible interior space (Stauch 1951:1).

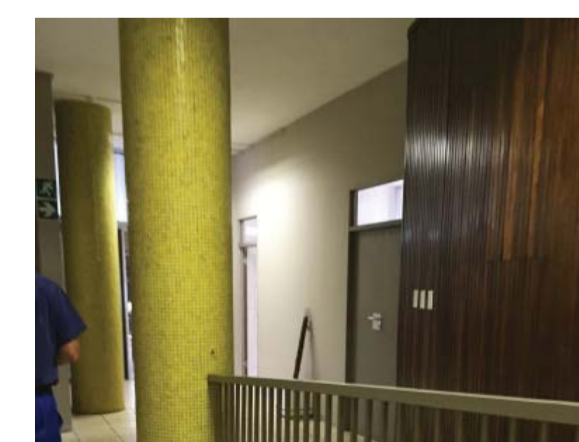
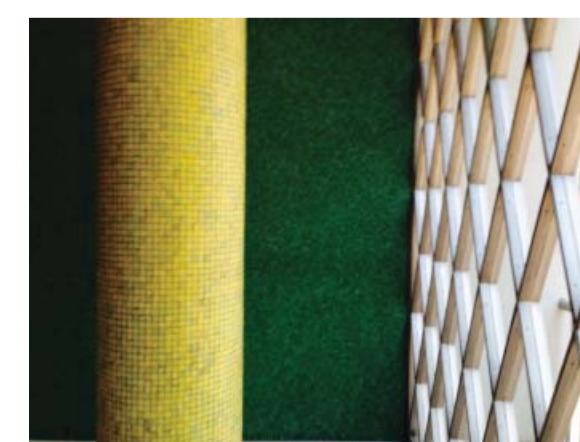
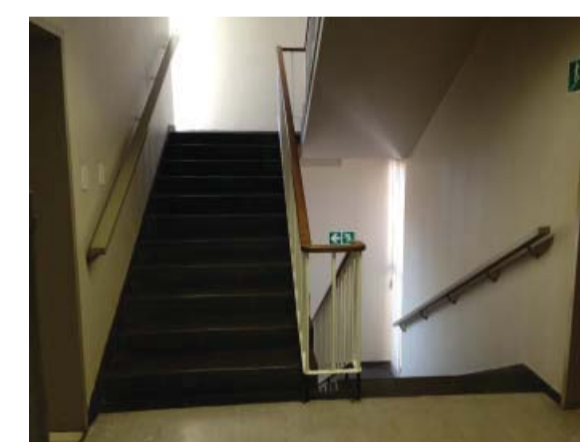


Figure 2.15 Boardroom interior view.  
Figure 2.16 Entrance foyer interior view.  
Figure 2.17 Existing interior staircase.  
Figure 2.18 Laboratory interior on upper ground floor.  
Figure 2.19 Entrance foyer detailing.  
Figure 2.20 Lower ground floor corridor view.  
Figure 2.21 Existing corridor space on first floor.  
Figure 2.22 Existing corridor space on upper ground floor.

## 2.5.7 ADDITIONS

Additions to the structure were made in 2006 when the Department of Government Works relocated staff into the building. These additions were made with one goal only: to fit maximum office space into the building. The additions consisted of the insertion of dry walling on all floors and the restriction of the thoroughfare on the ground floor level to allow for more office space. The consequence of obscuring the thoroughfare is that the intimate garden space that mimics the original residential environment is lost. Furthermore, a connecting corridor to the building north of the Meat Board building, currently the Department of Agriculture, Forestry and Fisheries, was constructed. Since then, the access corridor between the buildings have been blocked and unfortunately, the most significant façade of the building is obstructed with an obsolete addition. Except for the connecting corridor, the additions made to the structure fortunately did not cause any physical damage to significant elements, but the intervention resulted in the situation that part of the character and authenticity of the original design got lost.

### LOWER GROUND FLOOR



Figure 2.23 Lower ground floor plan diagram showing additions.

#### SUMMARY OF LOWER GROUND FLOOR ADDITIONS:

1. Original garden removed and area paved to provide parking facilities.
2. Street corner facade closed to provide extra office space. The illusion of a 'floating cube' is no longer visible- a character-defying element is lost.

#### RESULT:

3. Open space on site is used as parking facilities and this is detrimental for the overall functioning of the building from a space planning point of view.

### TYPICAL OFFICE FLOOR

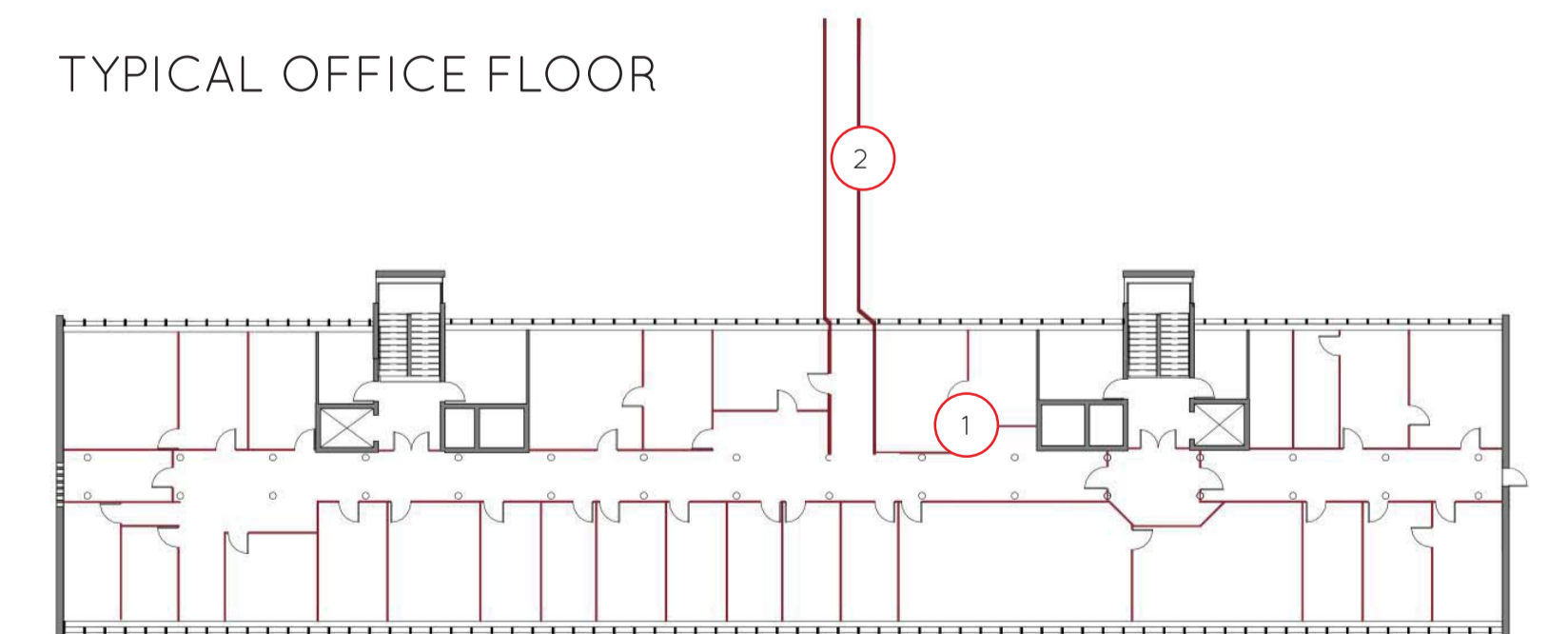


Figure 2.24 Upper ground floor plan diagram showing additions.

#### SUMMARY OF UPPER GROUND FLOOR ADDITIONS:

1. All original office system was constructed of asbestos and had to be removed for health reasons. The original flexible partitioning system was replaced by static dry walling.
2. A connecting corridor between the Meat Board building and the building to the North was constructed. Since then, the owners of the respected building have come to bad terms and the corridor is no longer used.

#### RESULT:

The current interior space within the Meat Board building is static and consists of a range cellular office without any space for socialization and interaction between users and this has a negative effect on the culture within the building as a whole.

# 05 Architect's Vision

## 2.5.8 ORIGINAL INTENT BY STAUCH

The original intent by architect Helmut Stauch was to create a colourful, positive and stimulating working environment (Stauch 1951: 3). His design response to this intent was to create modular office space with moveable partitions- an innovative and revolutionary solution for the time. The scale of the windows on the facade allows the user to have a connection with the context, but not a totally unobstructed view, as this may distract an individual in the working environment.

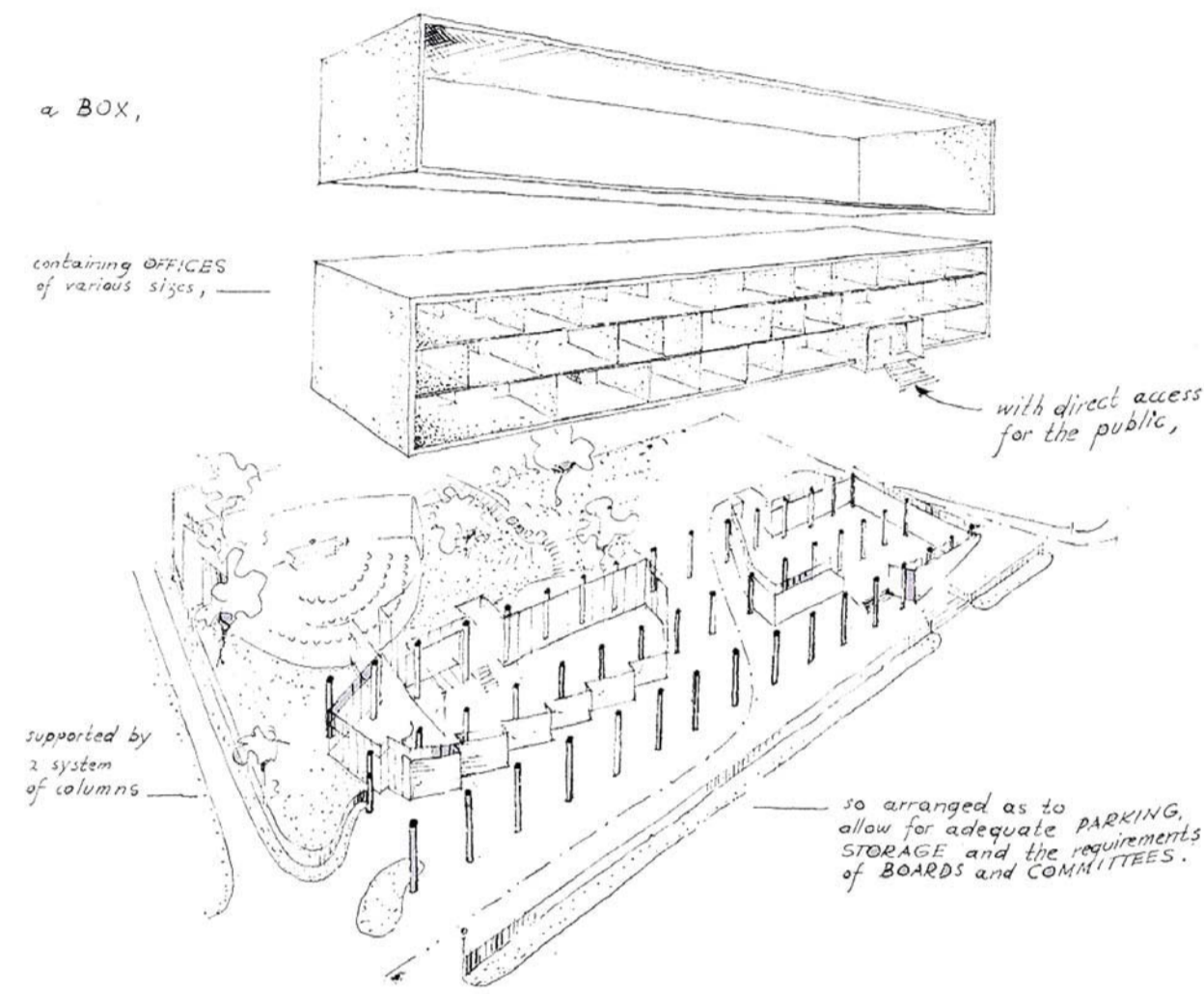


Figure 2.24 Exploded view of the Meat Board building by the architect (Stauch 1951).

## ORIGINAL LOWER GROUND FLOOR PLAN

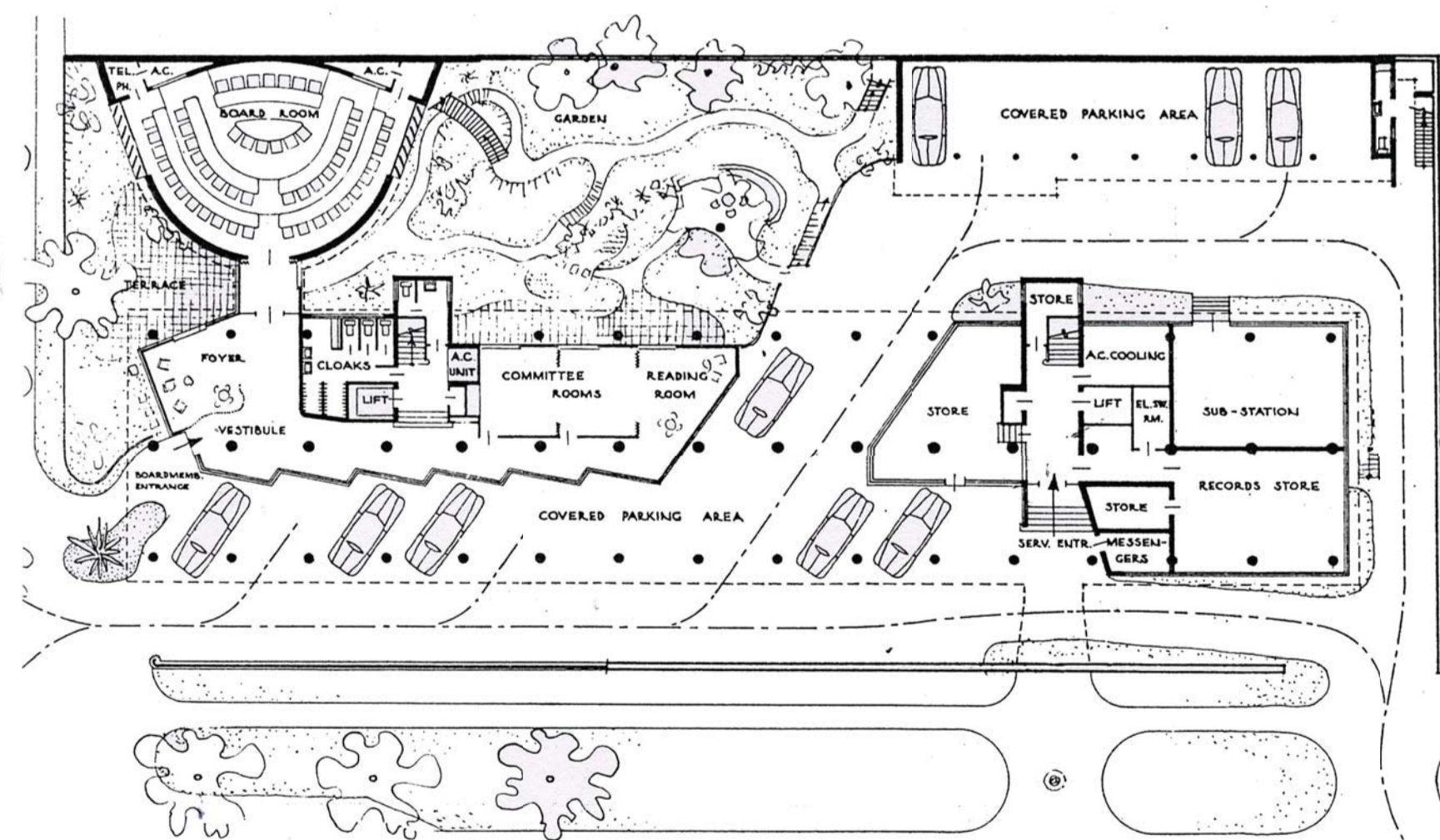


Figure 2.25 Original lower ground floor plan by Stauch (Stauch 1951:4)

## ORIGINAL FIRST/SECOND FLOOR PLAN

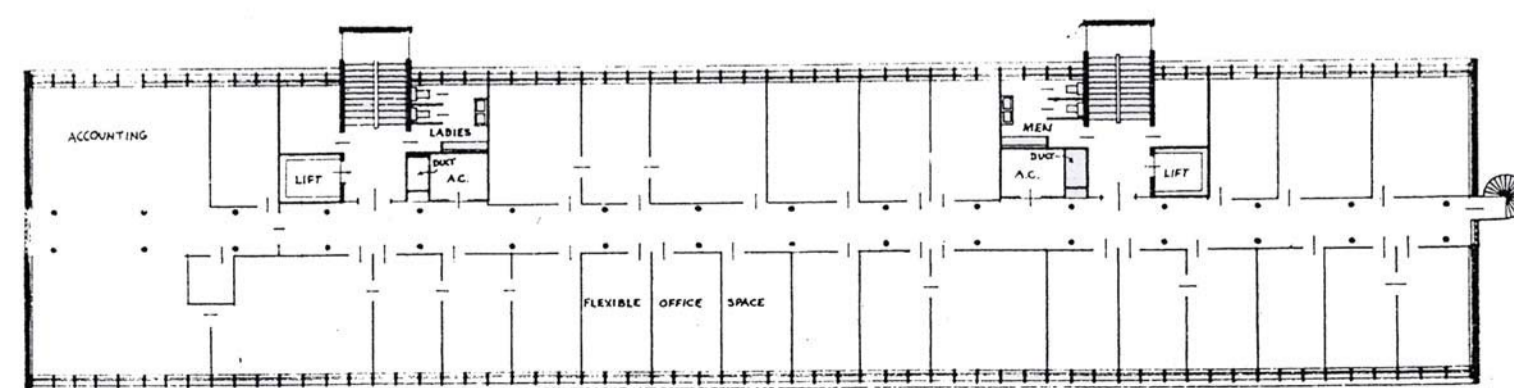


Figure 2.26 Original office floor plan by Stauch (Stauch 1951:4)

## 2.5.9 MODERN MOVEMENT HERITAGE

The significance of the Meat Board building is primarily defined by its iconic Modern Movement characteristics. Three of the le Corbusian Modern Movement elements are visible in the original design: roof garden, pilotis and the free form plan. The use of these elements did not only change the aesthetic of architecture at the time, but it revolutionized the way in which forces work within a building. Each of the Modern Movement elements and the influence they have on the structure of the building will be explained.

**1. Pilotis:** The upper three floors of the building float on wide, round columns on ground floor and this gives the impression of a floating box- typical characteristic of a Modern Movement building and also visible in Villa Savoye by Le Corbusier. The use of pilotis as support structures, spreads the load of the building between columns arranged on a grid format as opposed to a normal ongoing foundation that carries the load of the building (Columbia, [S.a.]).

**2. Roof garden:** The roof garden is located on the roof of the boardroom and serves as an extension of the courtyard garden space. The revolution of a flat roof made it possible to utilize roof space where previously, this was lost space (Columbia, [S.a.]).

**3. Free form ground floor plan:** The walls are no longer main supporting elements, so there is freedom with the design of the ground floor plan (Columbia, [S.a.]). The lower ground floor plan of the Meat Board building consists of curved lines and sharp edged lines that compose a dynamic plan.

Although the rhythm of the windows on the north and south facade of the Meat Board building reminds of the typical horizontal windows of the Modern Movement, there are substantive difference. Often in the construction of Modern Movement buildings, the designers have total freedom with the design of the facade and horizontal window elements were popular in design (Columbia, [S.a.]). In the case of the Meat Board building, the architect designed a structural facade to allow for maximum open interior space and the size of the windows is therefore generated to fit between structural modules. The holistic view of the facade does create somewhat of an illusion of the typical horizontal window element.

### PARADIGMAL INFLUENCES

#### Adolf Loos: 'Ornament and Crime'

Raumplan design methodology: building is designed as integrated whole (exterior & interior).

Interior space consists of rectilinear forms and open planes stripped of all applied ornament. Loos experiments with the integration between exterior and interior and uses contrasts in light and scale to create a theatrical effect (Heynen 19:85).

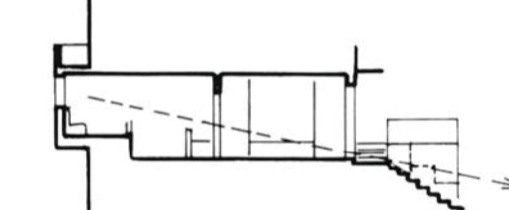


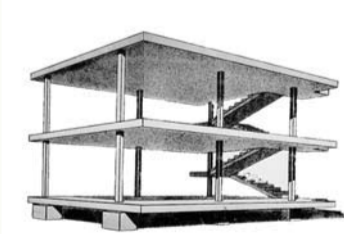
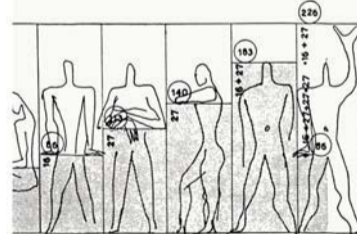
Figure 2.27. Diagram demonstrating the Raumplan design methodology (Lee 2015).



#### Le Corbusier: 'Le Modulor'

Describes the building as a 'machine for living in'. Emphasized the value of mass-produced objects.

Develops unique proportioning system based the ergonomics of the 'general' man (sci.li/tecorbu.htm).



#### Frank Lloyd Wright

Honest use of materials, designs with an holistic view of the architecture and the interior.

Concept of organic architecture- integrates the context within the design.



### DIRECT INFLUENCES ON THE MEAT BOARD BUILDING

#### Classical Civic buildings in Pretoria

The old Council Chamber demonstrated the classical language of Civic buildings in Pretoria advocated by The Department of Public works of the time. Interior space is formal and heavily decorated.



#### 1936- 1943 - The Ministry of Education and Health by Oscar Niemeyer, Rio de Janeiro.

Iconic modernist building, first modern movement building of this scale, higher than any building in Europe of the time. Excellent example of Brazilian creativity and technical ability. Use of Brise Soleil on facades for climatical control, adding a regionalist component lacking from the International style. Revolutionary integration of greenery on the public plaza and roof gardens (Gerneke 1998:203).



#### 1951 - Meat Board building completed, Regionalist style with Brazilian influences.



## 2.5.10 BRAZILIAN INFLUENCE

### Ministry of Education, Rio de Janeiro, by Oscar Niemeyer



Figure 2.34 Ministry of Education building Rio de Janeiro (Studyblue, [S.a.]).  
Figure 2.35 Meat Board building (Google Earth [S.a.]).  
Figure 2.36 Ministry of Education building Rio de Janeiro (Cram 2013).  
Figure 2.37 Ministry of Education building Rio de Janeiro (The Hour Lounge [S.a.]).  
Figure 2.38 Open ground floor pedestrian space made possible by the use of piloti (Wikipedia 2015).  
Figure 2.39 Mosaic wall detailing on street level (Texas architecture [S.a.]).  
Figure 2.40 Mosaic detailing close view (Zheleznova 2015).  
Figure 2.41 Interior lobby of Ministry of Education building, Brazil (Architizer [S.a.]).  
Figure 2.42 Interior view of Ministry of Education building (Meisner 2014).

# 06 Structural Investigation

## 2.6 FORM AND STRUCTURE

### 2.6.1 MORPHOLOGY

The morphology of the building is a true reflection of typical modern movement buildings; an elegant concrete cube with a façade ordered by a strict grid that floats on pilotis. The strict rectangular form of the building is contrasted with the sweeping-curve form of the boardroom on the north-western side of the site.

### 2.6.2 STRUCTURAL SYSTEM

The construction of the building reflects the mechanical precision and machine produced character of the Modern Movement by the combination of site built and precast elements. The overall structure is in a good, stable condition and structurally appropriate for reuse.

The lower ground level consists of a simple concrete column and beam structure with masonry infill, ordered on a rectangular grid. The upper three levels also consists of a column and beam system, but with an integrated structural exterior facade to allow for maximum unobstructed space within the interior. The exterior facade of the building is composed of various site built and precast elements that forms a grid-like skin on the Northern and Southern facade.

The architect designed a structural facade to allow for maximum unobstructed interior space. The current rigid cellular spatial planning creates narrow, cubed spaces where there is an opportunity for an open plan formation.

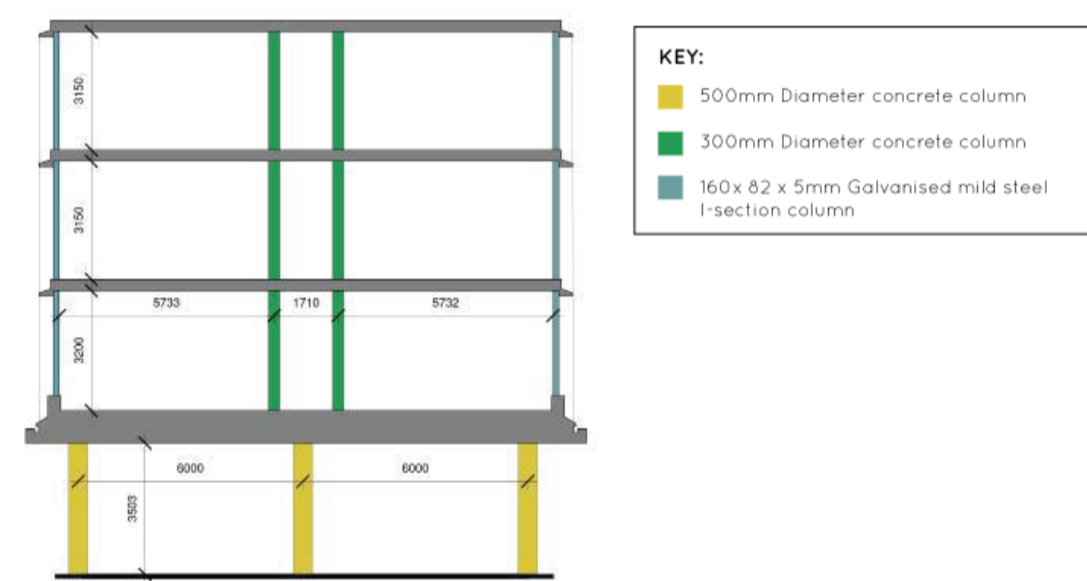


Figure 2.43 Structural section of the Meat Board building.

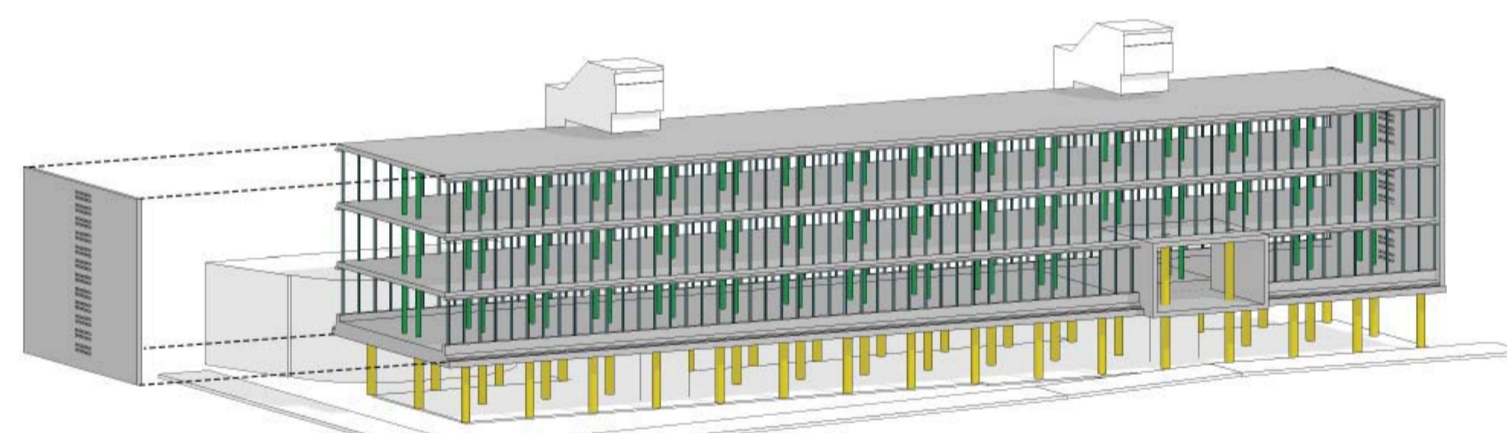


Figure 2.44 Three dimensional structural diagram of the Meat Board building.

### 2.6.3 SPATIAL PLANNING

Originally the reason for the structural system described above, was to create an open plan office environment- a fresh and revolutionary spatial approach at the time. Stauch designed an open spatial figuration with moveable office partitions. The grid-like facade was designed on a modular of 914 mm (3 feet) that translates into the design generator of the interior space.

Additions were made to the building in 2009, and it seems like the new intervention had a single purpose in mind, namely to create maximum office space. As a result, large amounts of dry walling were inserted into the building and the current spatial configuration consists of a cellular office arrangement.

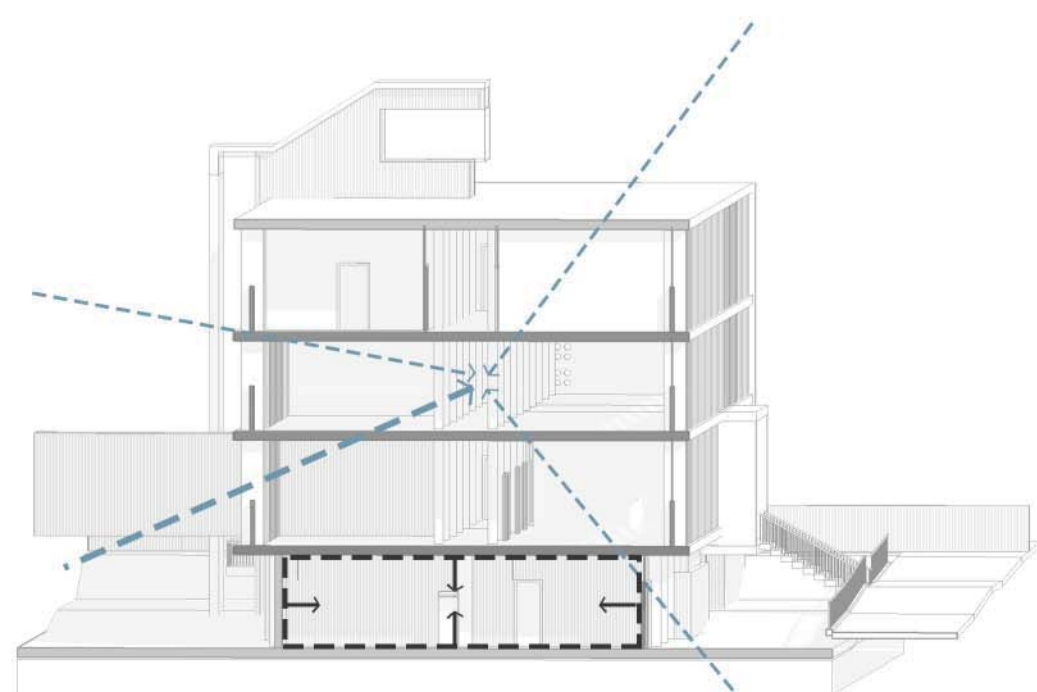


Figure 2.45 Diagram showing current interior environment: Inverted, isolated, static spatial character

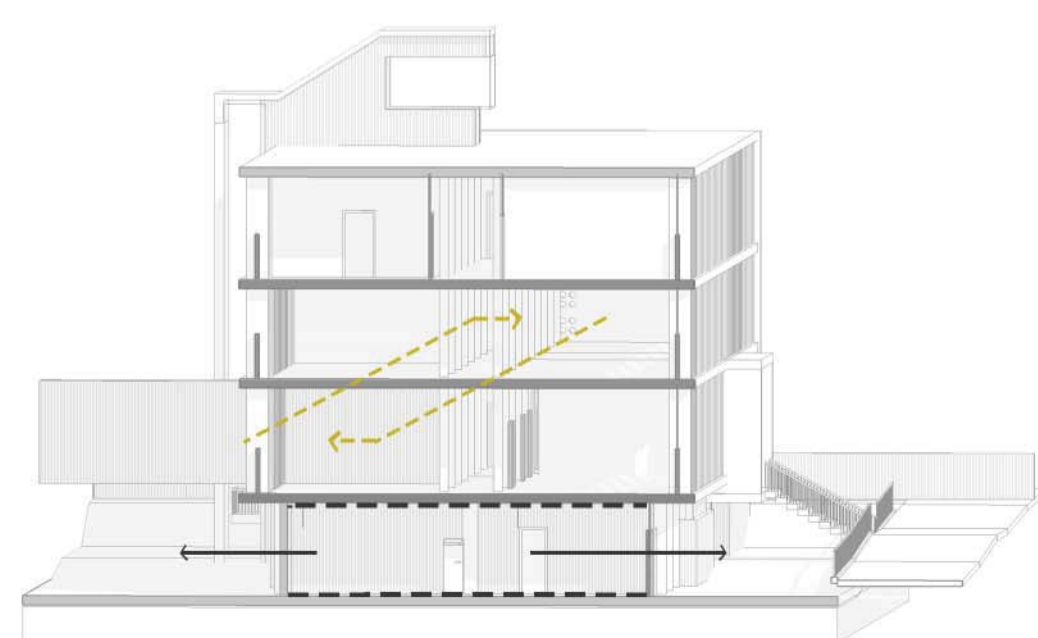


Figure 2.46 Diagram representation of original interior: Open, flexible, extroverted spatial character

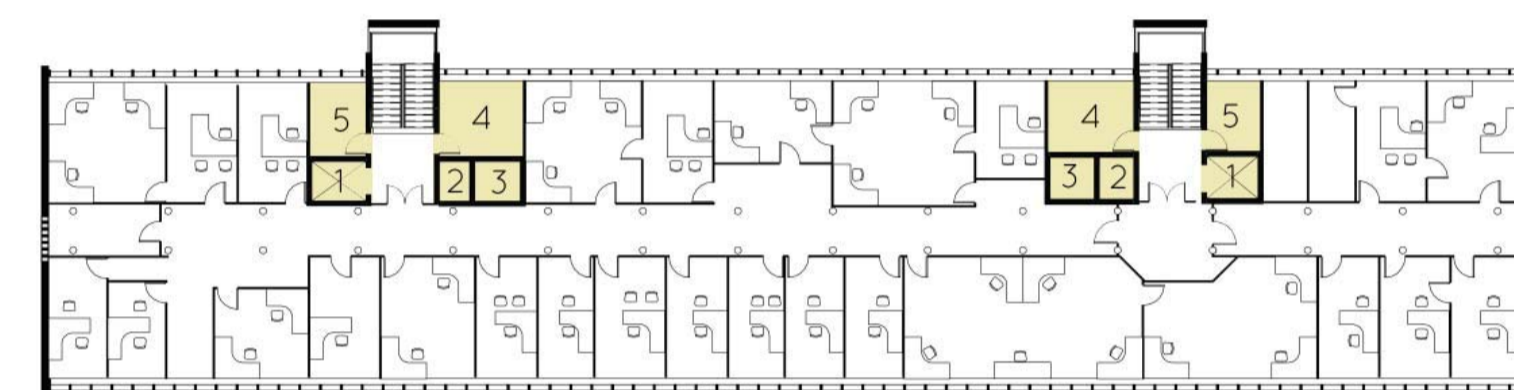
### 2.6.4 MATERIALS

The structure of the building consists mainly of precast and site constructed concrete elements with steel reinforcement. The exterior finishes of the building consist of a terrazzo finish with the addition of blue and white mosaic tiling on the facades. The ground floor columns are tiled in yellow mosaic and the masonry infill work is done in a dark purple brick to contrast the light palette of the floating concrete cube. Interior finishes consist of asphalt tiling, grey painted interior partitions and remaining original interior walls clad in Kiaat timber. The foyer space consists mainly of a yellow and green mosaic tiled surfaces with asphalt floor tiling (Howie 1952: 218).

### 2.6.5 SERVICES AND CIRCULATION

The services in the building are highlighted in the morphology. The two circulation shafts protrude to the north of the plan and rises above the roof level. Services like toilets, air conditioning and the lift machinery are located around the central circulation shafts and connect to the distributing ducts and pipes running along the corridor of the building.

#### 1st FLOOR/ SECOND FLOOR PLAN



**KEY**  
 1. Lift  
 2. Toilet pipes  
 3. Airconditioning  
 4. WC  
 5. Kitchenette

Office space area per floor: 587 m<sup>2</sup>  
 Office space per person: 13,7 m<sup>2</sup>

Figure 2.47 Plan diagram showing location of existing services

### 2.6.6 OCCUPANCY

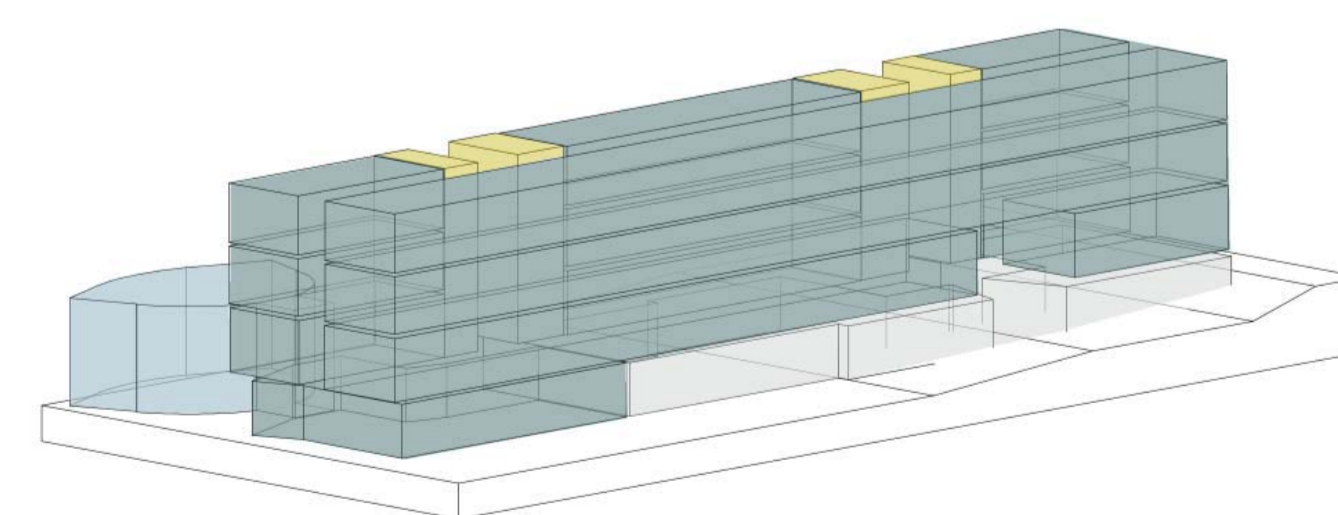
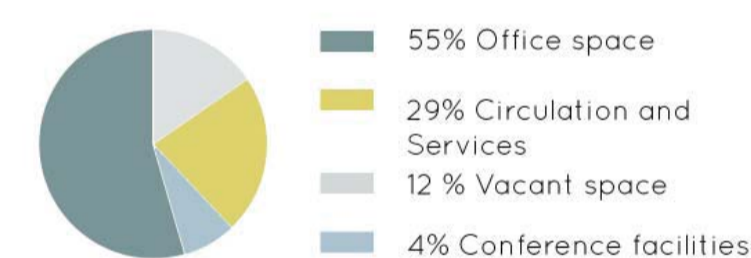
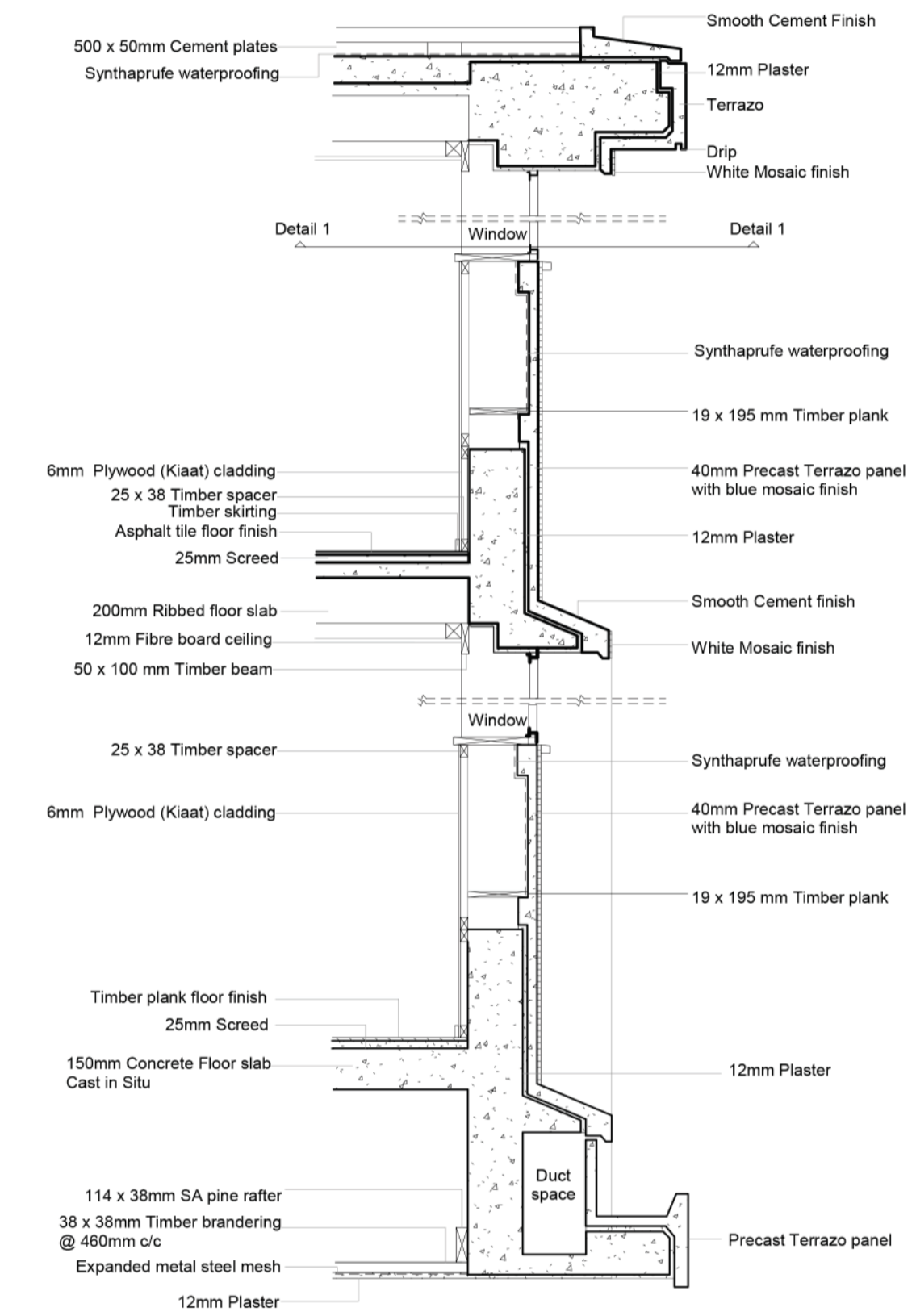


Figure 2.49 Diagram showing current occupancy of the Meat Board building.

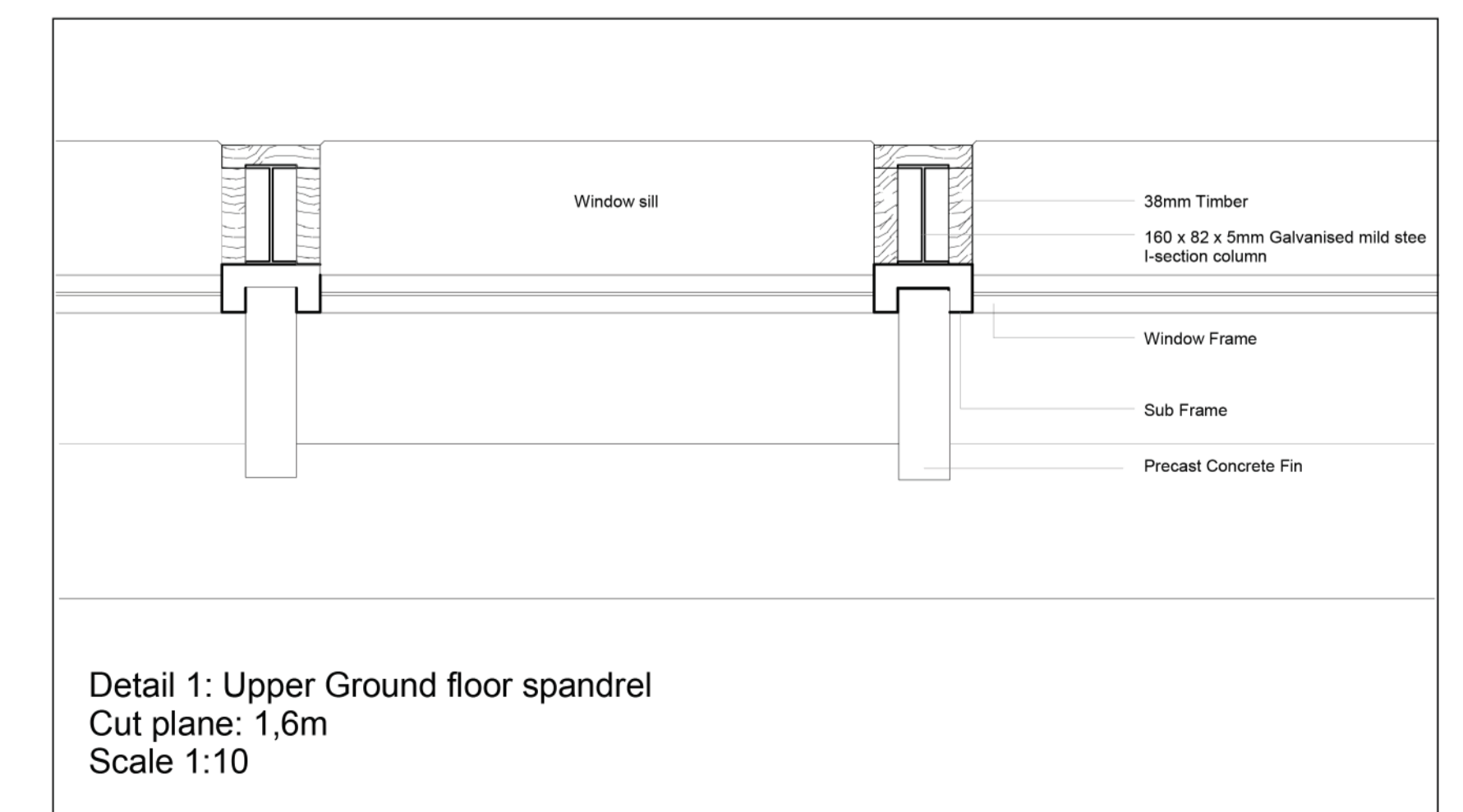
### 2.6.7 SKIN/ ENCLOSURE

The northern and southern facades consist of a repetition of precast concrete spandrels and blue cladded mosaic infill panels (refer to Figure 2.49). These textured facades are unique to the building and add character to the exterior. Adjustable louvres on the northern facade in each module are significant in the heritage of the building and are important elements that allow for user specific climate and light control within the building. The scale of the windows in each modular in the facade was delicately designed to create a connection between the user and the context.



Detailed wall section Scale 1:20

Figure 2.49 Detail section of existing wall structure.



Detail 1: Upper Ground floor spandrel Cut plane: 1,6m Scale 1:10

Figure 2.50 Floor detail of existing spandrel (facade structure).

## 2.7 PROPOSED FUNCTION

An in-depth site analysis has been conducted and it revealed that an office building is a viable programme in which the Meat Board building can be reused. According to the site analysis, the scale and location of the building is ideal for an office building. Although the building is being maintained on a day-to-day level, a large-scale renovation is required to comply with (1) SANS sanitation requirements and (2) to transform the building to a competing office building in the capital city.

## 2.8 CONCLUSION

An analysis of the Meat Board building has revealed that it is viable for reuse. The context and environment were analysed and revealed that the location of the building is close to public transport networks and governmental nodes. Additionally, the strategy of reuse of the Meat Board building can fit into the Tshwane 2055 urban planning which makes the project realistic. The analysis of the history and function investigated the layers of significance involved, the Meat Board building has been identified as an iconic modern movement building in Pretoria and it should be preserved for generations to come. Finally, the conclusions of the analysis are included in a proposed function for the reuse of the building. An in-depth investigation of the office typology follows in Chapter 3.