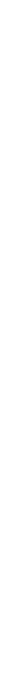


# Chapter 4

## S I T E   A N A L Y S I S



DECODING / DECYPHERING / DECRYPTING THE INHERENT SOFTWARE



## 4.1 INTRODUCTION

In Chapter 4 the urban investigation zooms in closer to the GPW city block. It starts off with a site analysis of the immediate surrounding context, then follows a description of the existing site in its current condition. Thereafter each building on the block is analysed individually which informs the statements of significance. Finally, the chapter concludes with an analysis of the GPW block as a whole, informed by the analysis of each building but also considering the spatial relationships between all the different components that make up the whole. The documentation referred to consists of the researcher's own analysis as well as the publication *Re-Centring Tswane: Urban heritage strategies for a resilient Capital (2015)*, in which the University of Pretoria's architecture department, specifically the honours studio, did a research lab in the north-western precinct in 2014, which included the site of the GPW building. Their investigation, however, only focused on the one historic (1896) building, in isolation to the rest of the block, limiting opportunity for a larger-scaled spatial impact. The structure of this chapter is as follows:

### 4.2 IMMEDIATE CONTEXT

### 4.3 OVERVIEW OF GPW BLOCK

### 4.4: ANALYSIS OF EACH BUILDING

#### 4.4.1 - DESCRIPTIVE ANALYSIS: 1896 WIERDA BUILDING

#### - STATEMENT OF SIGNIFICANCE: 1896 HISTORIC

#### 4.4.2 ADMINISTRATION BUILDING (NORTH-EAST CORNER)

#### 4.4.3 LETTER PRESS & LITOGRAPHY BUILDING

#### 4.4.4 'FINISHING' BUILDING (SAW-TOOTH)

#### 4.4.5 MAINTENANCE OFFICES

#### 4.4.6 COMPARATIVE ANALYSIS OF ARCHITECTURAL SIGNIFICANCE BETWEEN BUILDINGS

### 4.5: ANALYSIS OF BLOCK IN ITS ENTIRETY

#### 4.5.1 TECTONIC COHERENCY

#### 4.5.2 URBAN BLOCK ANALYSIS: PROBLEM AREAS

#### 4.5.3 URBAN BLOCK ANALYSIS: OPPORTUNITIES

#### 4.5.4 INTANGIBLE HERITAGE

#### 4.5.5 STATEMENT OF SIGNIFICANCE: BLOCK IN ITS ENTIRETY

## 4.2 IMMEDIATE CONTEXT

The programmatic functions surrounding the GPW block are generally drawn between two poles: community-oriented and more institutional; as illustrated in Figures 4.1 - 4.3, to the west there are many residential blocks of which the most prominent are the Schubart Park blocks (currently unoccupied and dilapidated) and the new Thembelihle Village which is a social housing and mixed-use development currently being constructed. Directly north of the GPW block is Laerskool Eendracht and to the south is the Bosman Street 'Grootekerk' and other religious and social institutions, as well as housing in its neighbouring buildings. The neighbouring block to the east constitutes the concrete Telkom Towers that dominate the city skyline.

On the same block as the GPW, west of the boundary wall, is an old-age home (Huis Davidtz) in Proes Street, Pennies Kindergarten in Struben Street as well as a block of flats to its south and the IPID (Independent Police Investigation Department) next to the boundary wall in Vermeulen Street. Overall the surroundings to the west are more community-oriented and to the east more institutionalised with, amongst others, the Department of Public Works across the street towards Church Square and the legislative institutions along Vermeulen Street.

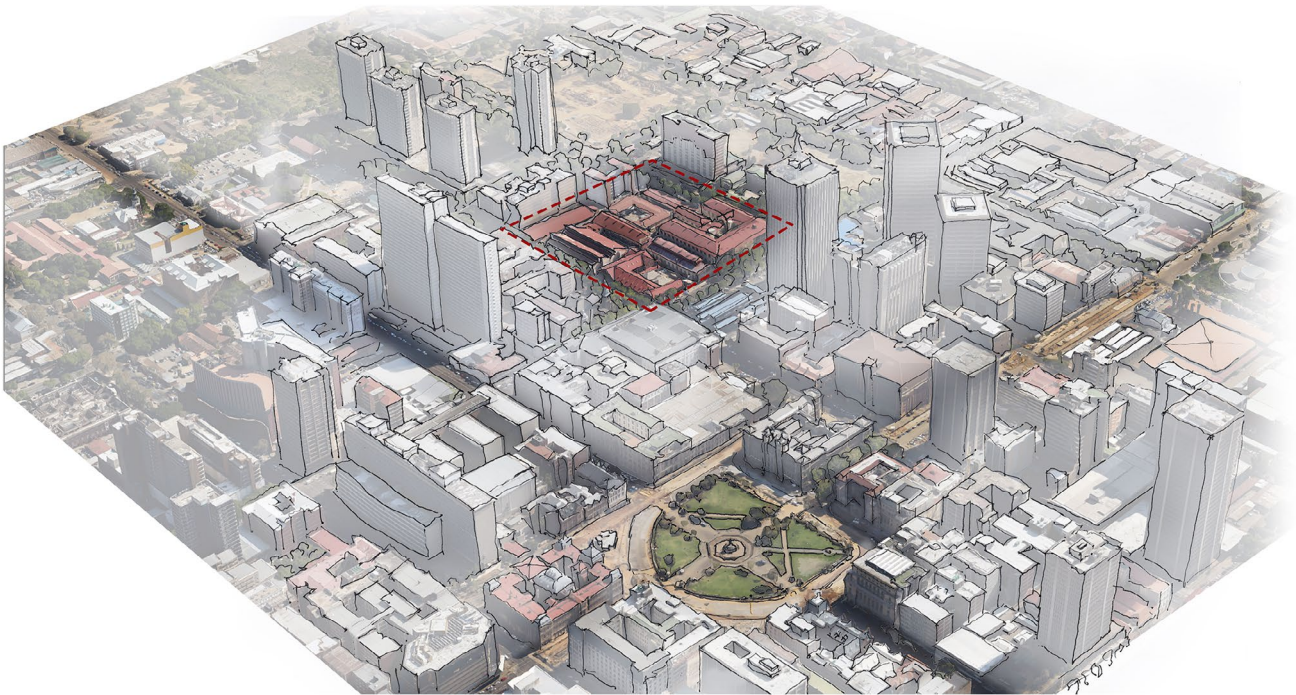


Figure 1.3: Locality map (Author, 2016)



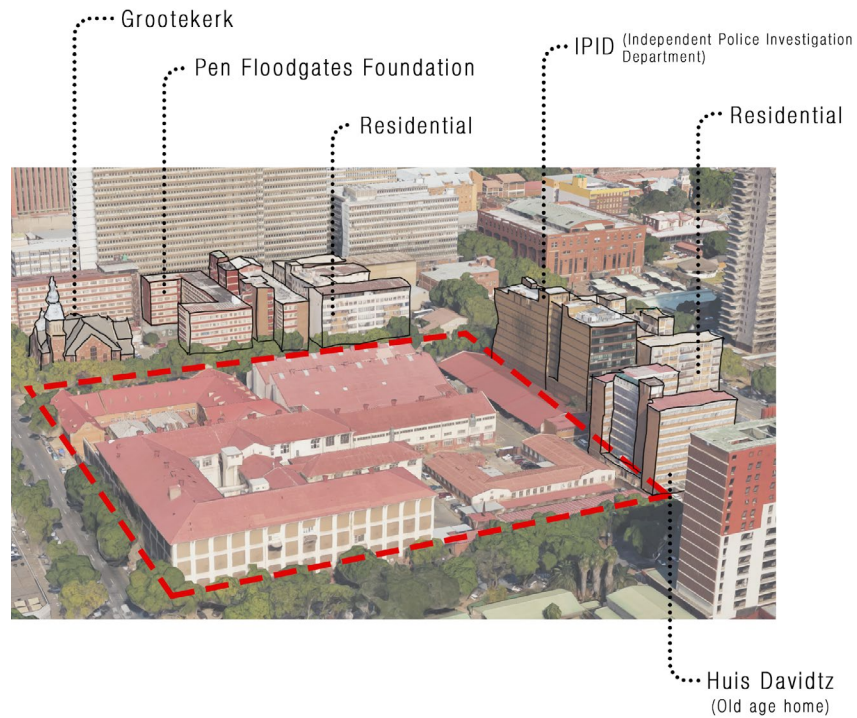


Figure 4.1: Programmatic context, looking south-west (Author)

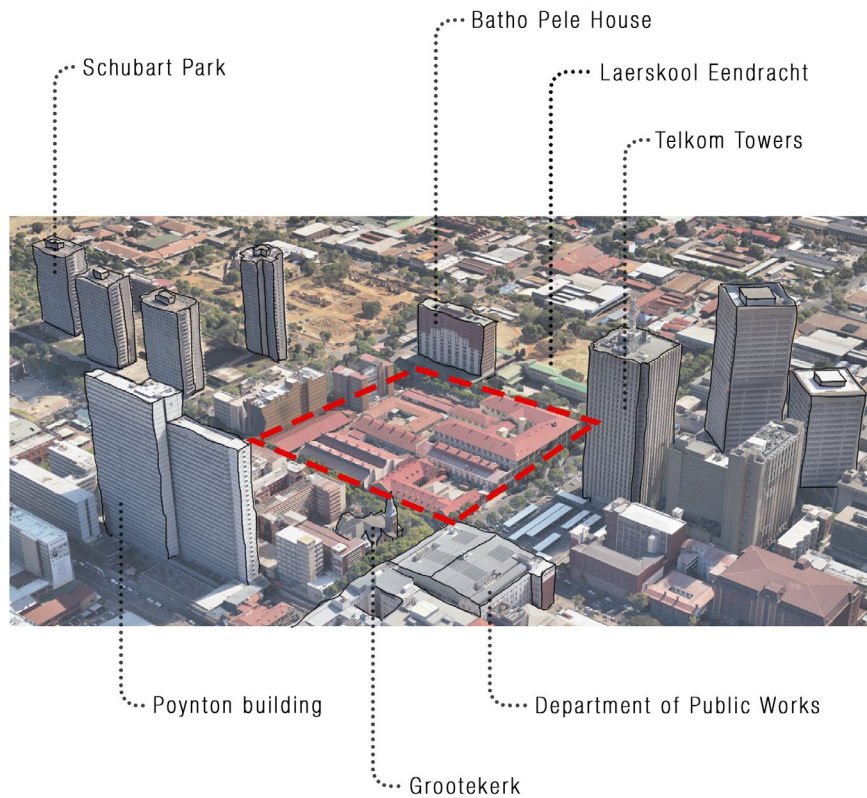


Figure 4.2: Programmatic context, looking north-west (Author)



Figure 4.3: Programmatic context (Author)



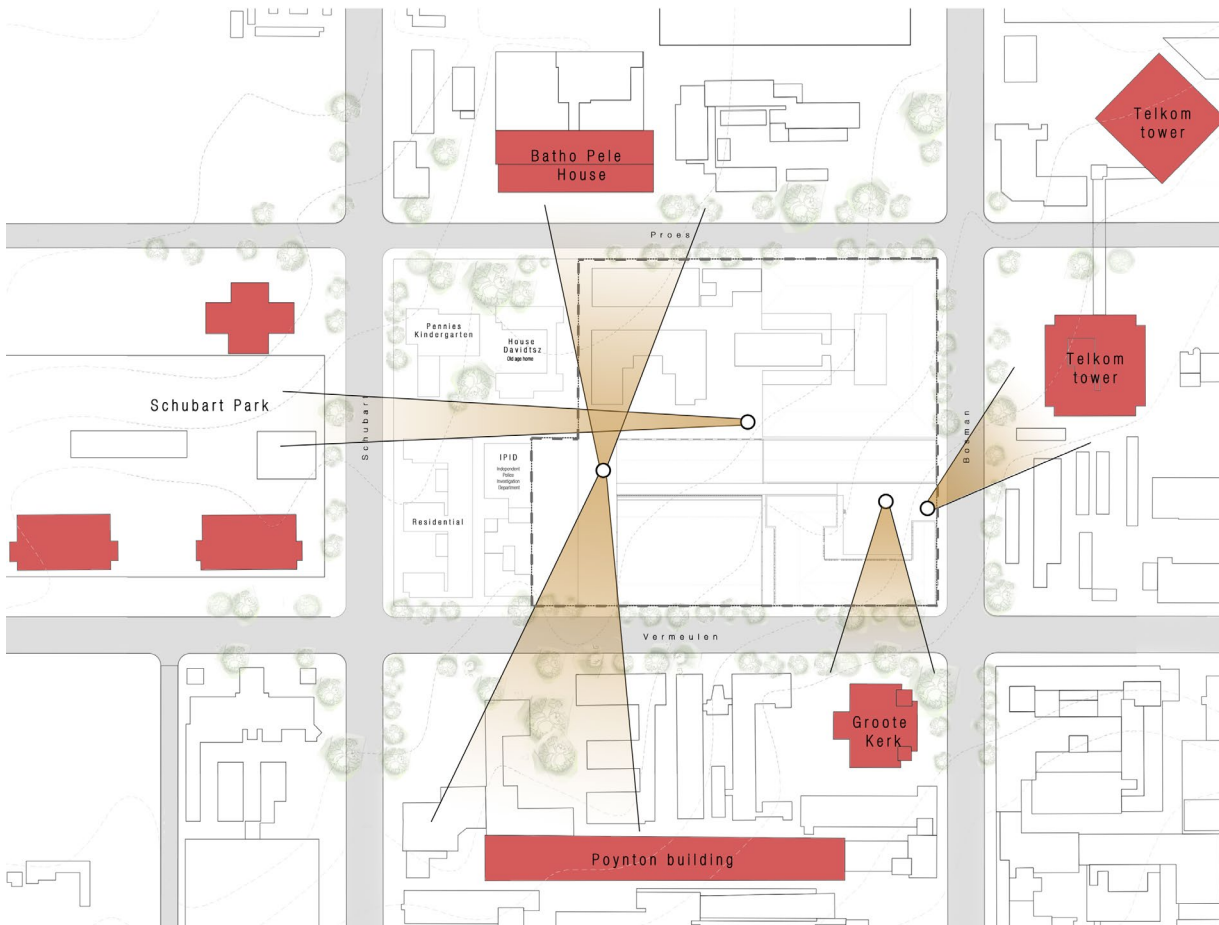
COMMUNITY-ORIENTED

- 
- housing & old age home
- schools & creches
- church & related social institutions
- commercial
- private bussiness institutions
- legislative institutions
- government institutions
- 

INSTITUTIONAL

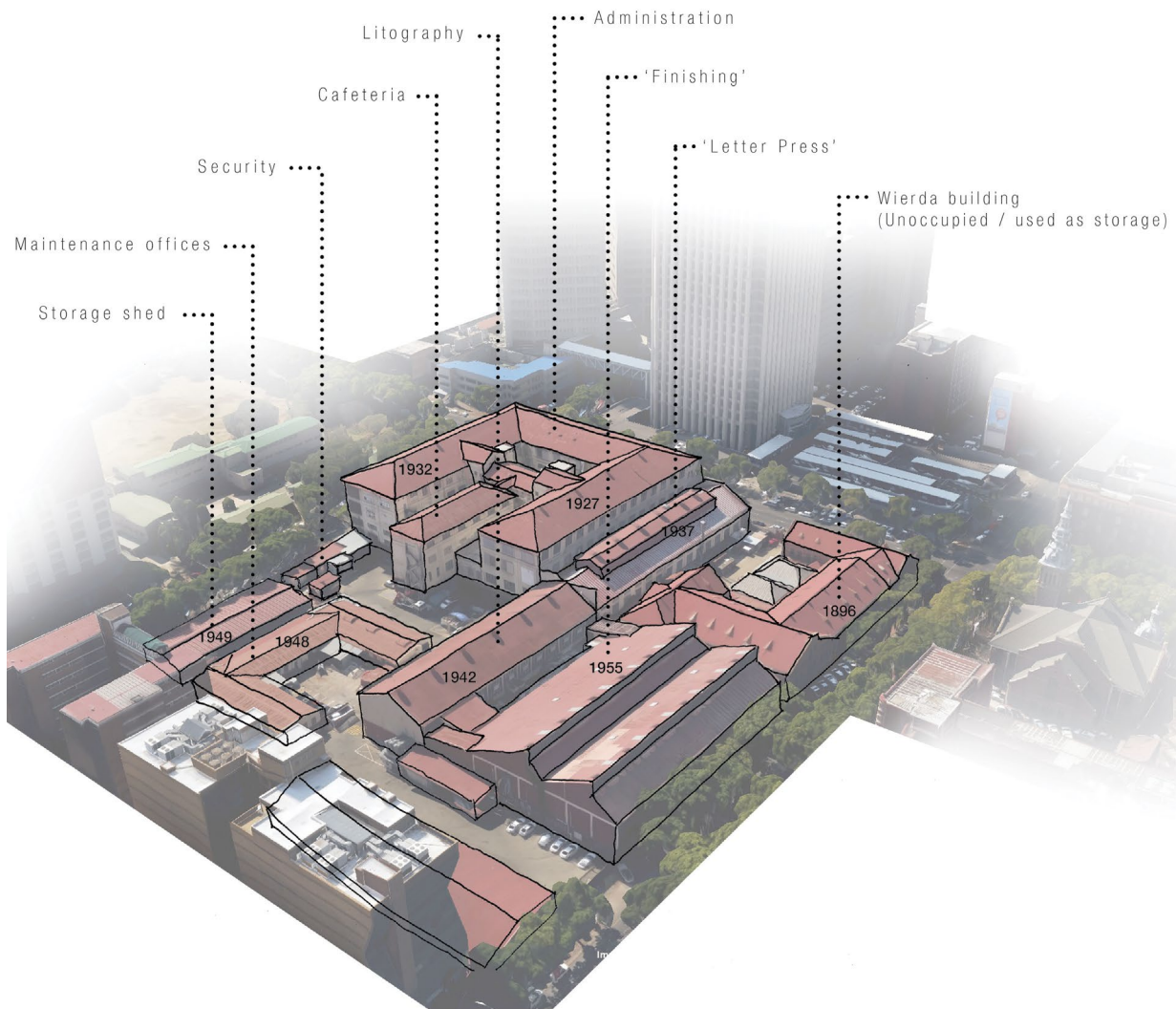


Figure 4.4: Site lines and Views of surrounding buildings



### 4.3 OVERVIEW OF GPW BLOCK

The Department of Public Works (DPW) owns the property and the Government Printing Works institution rents the buildings from them. As previously mentioned, the GPW is relocating to another site in Visagie Street as the new location offers more space and is mostly on one level, therefore it will not present the challenge of moving heavy printing equipment between different levels as the current site does (Deppe, 2016). Figures 3.7 and 4.5 highlight the timeline with which the block developed over the period between 1896 and 1955. From what documentation suggests, there was no decent masterplan for this block; the DPW just expanded over time as the GPW was in need of more space. De Villiers and Clarke (2015:97) note that “the original program of the site has remained roughly the same for decades, but as new technologies evolved, it has become obsolete and will now enter a new era of use”. Figure 4.5 also indicates the different uses of each building as it is currently being operated.



**Figure 4.5:** Existing uses & timeline of buildings on block



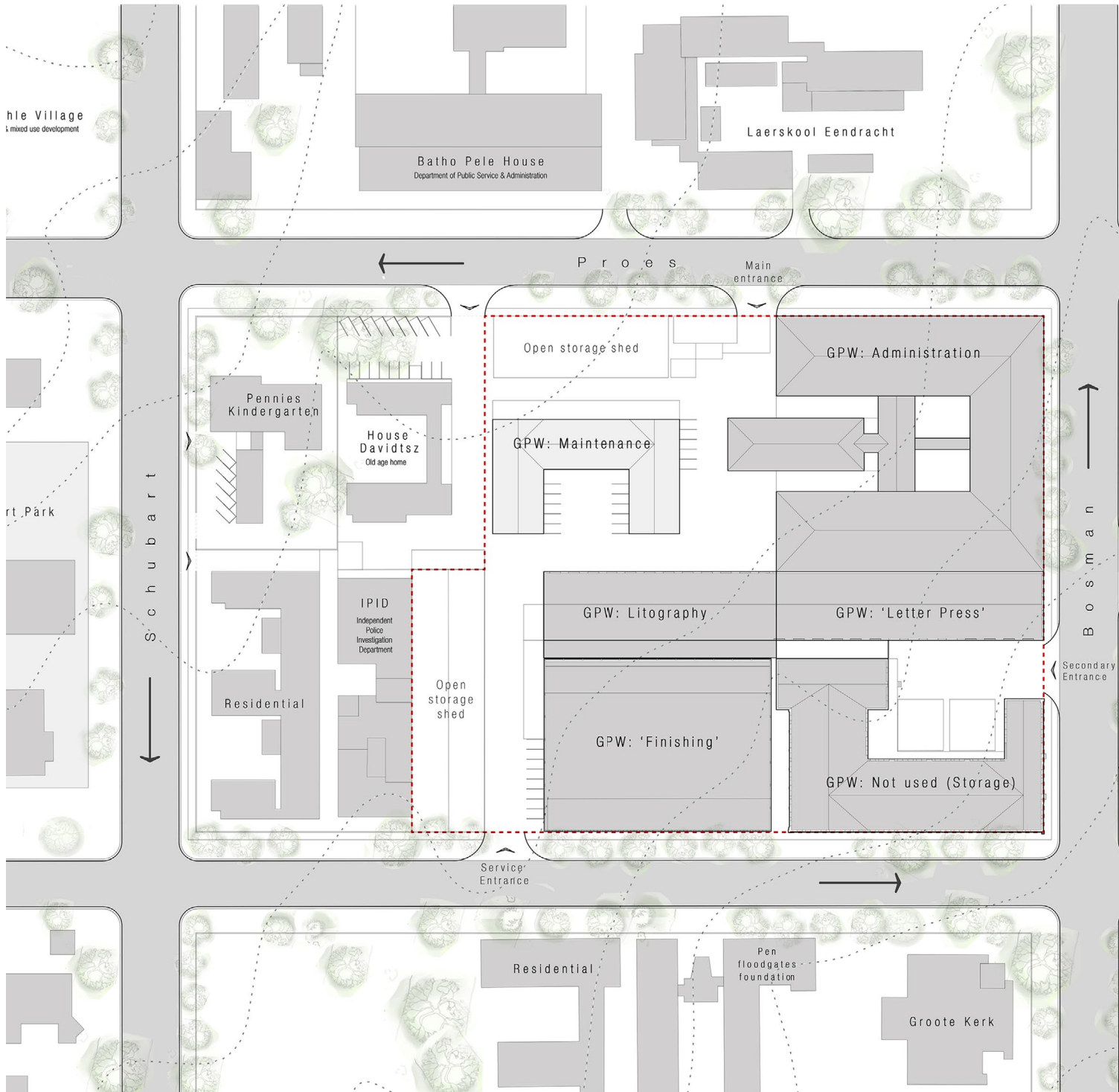


Figure 4.6: Site Plan, NTS (Author)

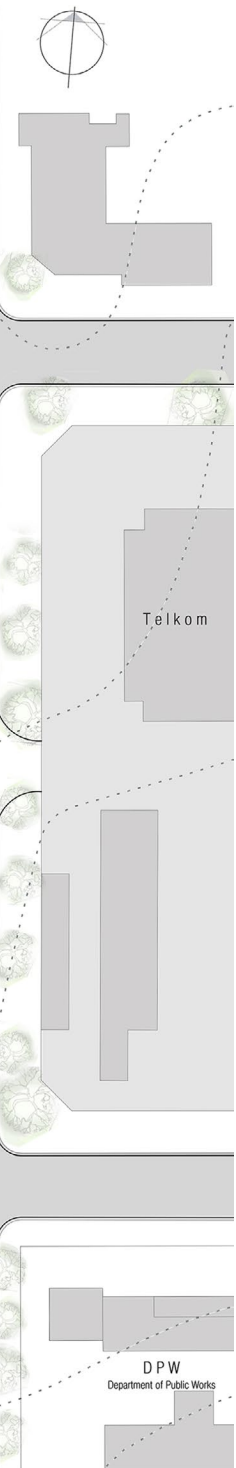


Figure 4.6 illustrates the site plan of the GPW block in its existing condition as well as the immediate surrounding context.





#### SECTION 4.4: 'SIGNIFICANCE PER BUILDING'

In the following section each building on the block is discussed separately in terms of its stylistic, formal, structural and spatial composition, as well as important historical background information. Thereafter a statement of significance is compiled based on the descriptions. Once each separate component has been analyzed, the block as a whole is discussed in section 4.5, to come to an understanding of all the spatial opportunities and problem areas that this block presents in its existing condition.



description  
of existing

4.4.1 ADMINISTRATION BUILDING (NORTH-EAST CORNER)

1927 - 1932

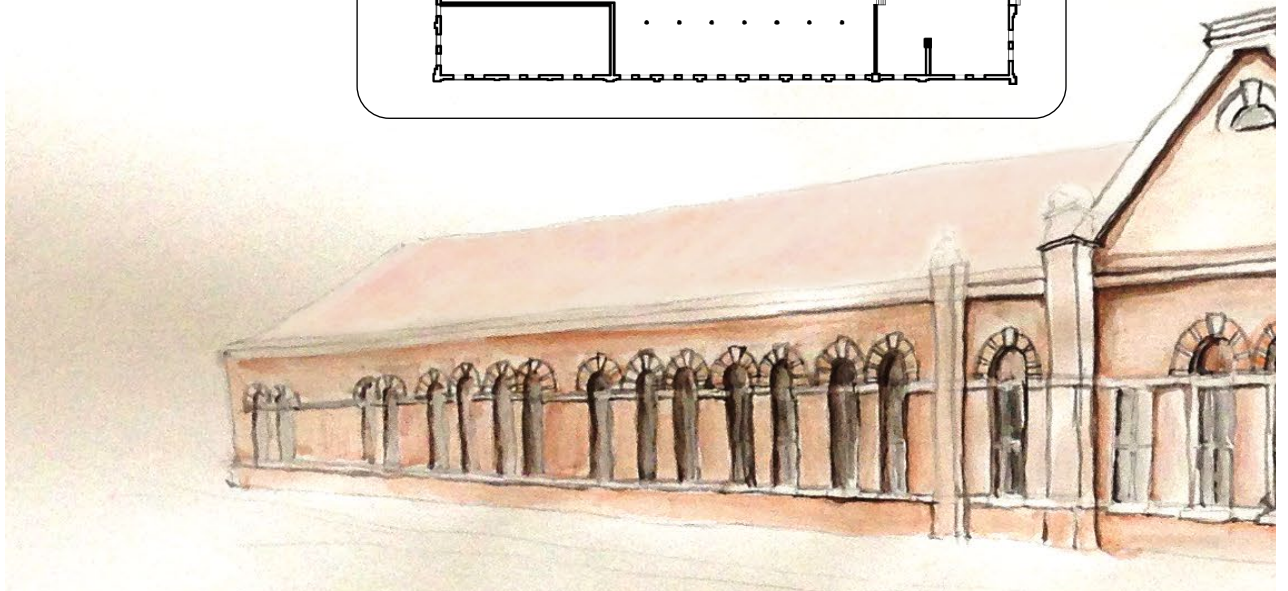
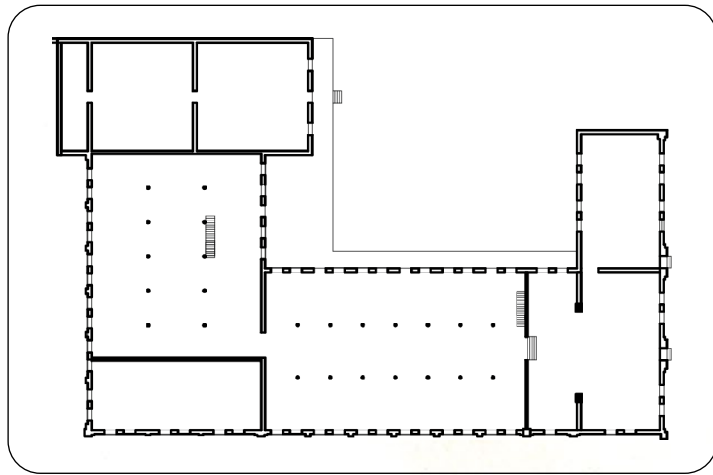
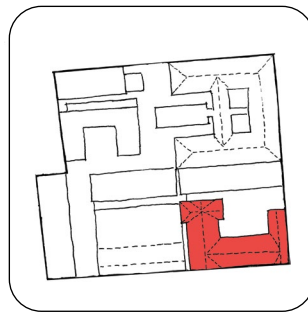
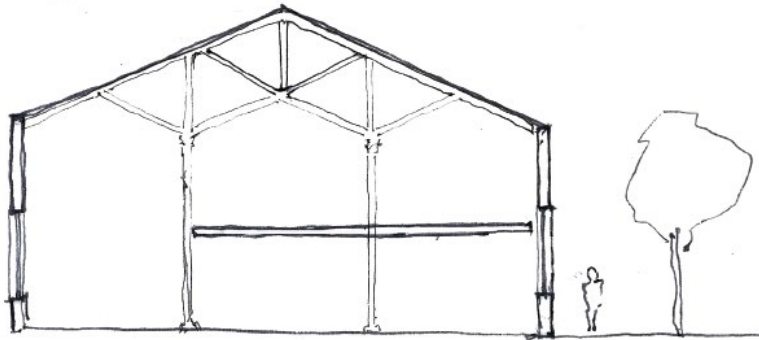




Figure 4.7: Description of Wierda building



**Year of completion:** 1895 -1896

**Architect:** Sytze Wopkes Wierda

**Commissioner:** Departement Publieke Werken, ZAR

**Architectural style:** 'Dutch Renaissance Revival'

**Uses:** Government printing works, now vacant (used as storage space)

**Current heritage status:** Article 34 of the National Heritage Resources Act (structures older than 60 years) is applicable. (Clarke and de Villiers, 2015: 79)





## A . ) D E S C R I P T I V E A N A L Y S I S : 1 8 9 6 W I E R D A B U I L D I N G

The following analysis of the 1896 Wierda building is a descriptive assessment of the originally intended design, the tangible and intangible values instilled within it, as well as its present condition.

As mentioned in Chapter 3, towards the end of the 19th century it became necessary for the government to have its own Printing Works, where, amongst others, confidential government documents and maps could be produced. In 1895 Sytze Wopkes Wierda was commissioned with this project and work on the Government Printing Works (Fig 4.7) ensued in a variant of the Dutch Renaissance Revival style (Clarke and de Villiers, 2015: 79). At the time of conception this building was thought to be of the highest quality for printing works buildings - even higher than many European standards (Rex, 1974: 416). During the Anglo Boer War the Printing Works was shut down and the printing service continued on a train on the Pretoria–Lourenço Marques (Maputo) line (Clarke and de Villiers, 2015: 79) until after the war. The building was also occupied by the South African Police Department at one point and besides this it also presented a publication service department to the general public (today it still serves this role in conjunction with printing).

The building's aesthetic value presents itself mostly on the red face-brick facade which is characterised by sandstone decorations in the form of streaky-bacon coursing, key-stones, quoining and bollards or pinnacles/obelisks as pediment finials (Clarke and de Villiers, 2015: 79). Furthermore the decorated arched window is a repetitive facade element as well as the stepped-gables with Neo-Classical styling; these were all architectural features used in many similar industrial buildings in the Netherlands at the time (Clarke and de Villiers, 2015: 79). Besides these, the red corrugated iron roof sheeting was chosen as a result of the local climatic conditions and the roof ventilators (discussed in relation to the scientific significance) became a characteristic element of the Pretoria regionalist building style (Clarke and de Villiers, 2015: 79). Furthermore the building has a U-shaped plan which frames a central courtyard.

The building has an exposed structural system that allows for large open-plan adaptable spaces that are not dependent on the perimeter walls for their structural integrity (Clarke and de Villiers, 2015: 79). According to Clarke and de Villiers (2015: 80), this structural system is an 'ingenious system' and a 'beautiful amalgam of cast-iron columns and brackets supporting a timber roof structure, all kept in equilibrium by steel tie-rods with adjustable tumbuckles'. Furthermore the roof-ventilators were included due to the need for buoyancy-driven natural ventilation in that time of earth-roads surrounding the building and the requirement to keep the interior printing equipment dust-free (Clarke and de Villiers, 2015: 79).

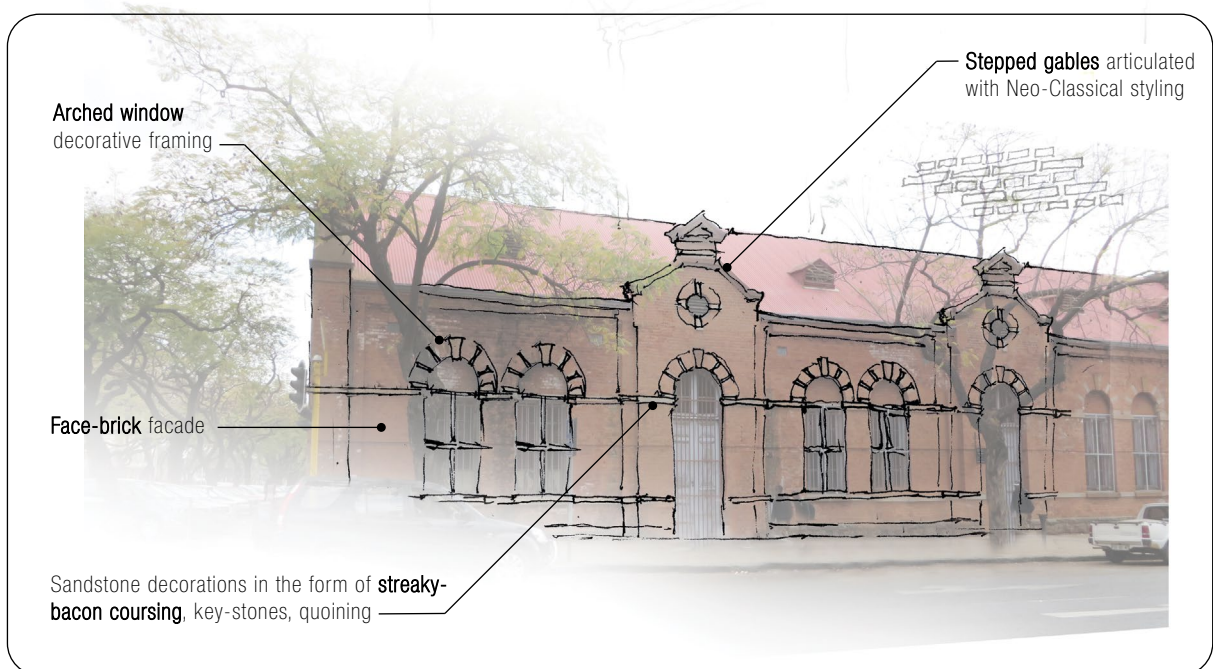
Later additions to the building include the mezzanine floor level in 1984, the fire escape stairs, the two square shape structures in the middle of the courtyard as well as the arched roof covering along the courtyard perimeter.

The building's intangible heritage and meaning are instilled in its function; according to Clarke, Kuipers and Swart (2015: 115) the GPW was "a place of production and dissemination of information". Although it was originally commissioned to print classified government information, there was also a public function to it. Deppe (2016) informs of the eastern entrance in Bosman Street where members of the public could come in and amongst others, buy newspapers.

Currently the building is unoccupied and serves as a (storage) dumping yard for anything that needs to be out of the way at the complex. There are also some maintenance issues such as paint peeling off walls, broken windows, moisture bulges in the plaster, sun damage to the timber window frames, etc.



**Figure 4.8:** Exposed structural system - Allows for large open-plan adaptable spaces that are not dependent on perimeter walls for structural integrity.

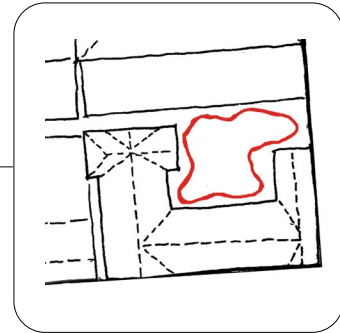


**Figure 4.9:** Stylistic characteristics

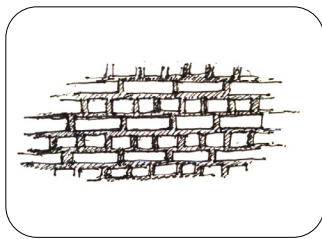
building strengths to be celebrated

### 1.) CENTRAL COURTYARD

- Building shape forms a a central **courtyard space**

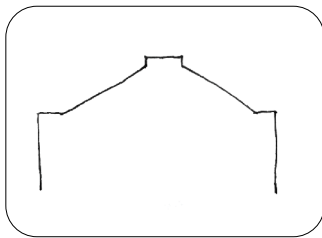


### 2.) STYLISTIC CHARACTERISTICS WHICH NEED TO BE PRESERVED:

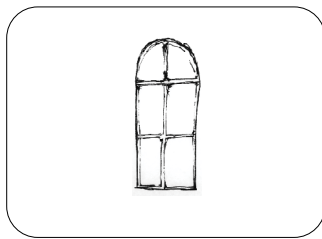


**Face-brick facade** [english bond]

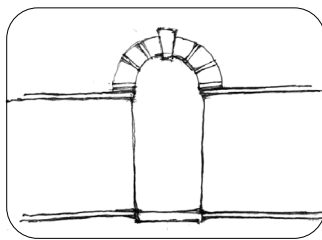
- Consists of alternating courses of headers and stretchers, with the alternative headers centred over and under the vertical joints of the stretchers.



- **Stepped gables** articulated with Neo-Classical styling



- **Arched window** & decorative framing



- **Sandstone decorations** in the form of streaky-bacon coursing, key-stones, quoining

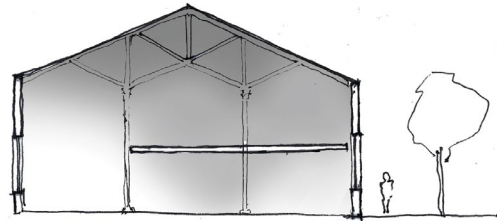
Figure 4.10: Wierda building - strengths



building  
weaknesses

1.) POOR INDOOR DAYLIGHTING QUALITY

Especially on mezzanine level (1984 addition) as arched windows' height were intended only for ground floor level



2.) BLUNT STREET EDGE

- No street interaction

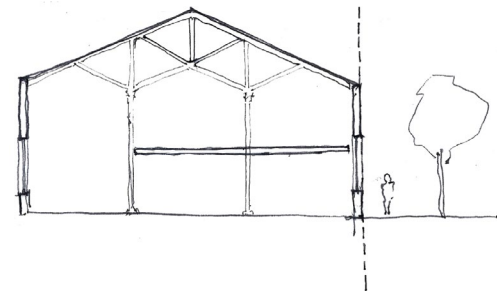


Figure 4.11: Wierda building - weaknesses



## B . ) STATEMENT OF SIGNIFICANCE : 1 8 9 6 W I E R D A B U I L D I N G

In conclusion, the statement of significance for the 1896 Wierda building is analysed according to the principles as set forth by the Burra Charter which states that “cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations” (1999: 2).

The building’s aesthetic value presents itself mostly on the exterior - the street facades in particular - and it is the aesthetic value that sets it apart at first glance as an important heritage asset to the city even to the layman. The exterior facade of the inside courtyard is unfortunately cluttered up with later additions at this point in time.

The scientific value is instilled in the building’s structural system which was ingenious at the time for a light-industry building to be able to present largely uncluttered open space; furthermore the roof ventilators were also a valuable technique used.

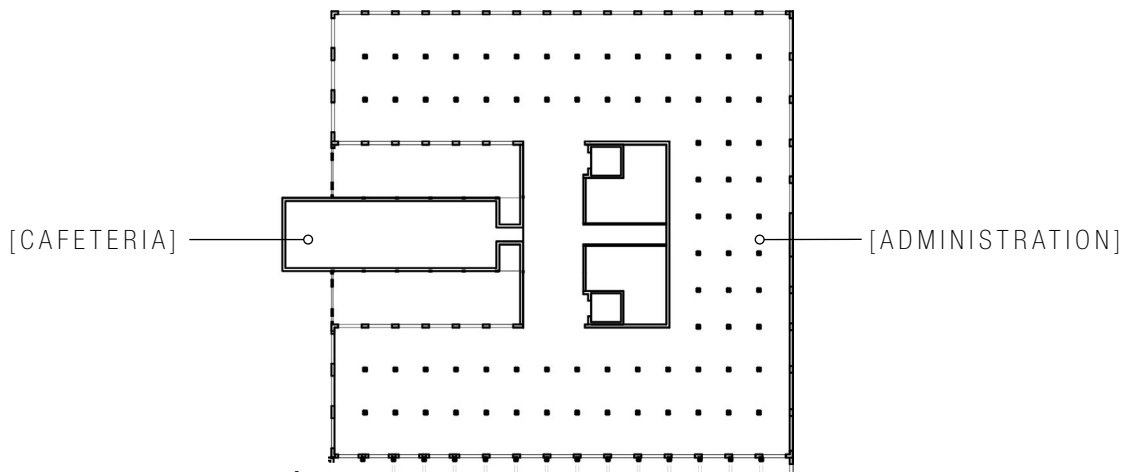
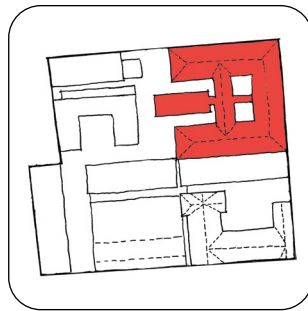
The social value of the building lies in its intangible heritage as a place for the “production and dissemination of information” and existing recommendations made for the building’s future use “mixed-use (semi-)public programming” (Clarke, Kuipers and Swart, 2015: 115).

The historic value encompasses all the value mentioned here and really specifically the fact that at the time of its conception this building was really a cut above the rest (above international standards) and a prime example for light-industrial buildings. Besides this, the building really speaks about a period in the history of Pretoria where Dutch influence wound its way into the South African context with the result being an amalgamation between 19th century Dutch style adapted to the regional climate in Pretoria.

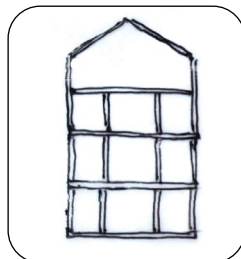
description  
of existing

4.4.2 ADMINISTRATION BUILDING (NORTH-EAST CORNER)

1927 - 1932



PLAN SHOWING STRUCTURE OF BUILDING  
5-story building with a concrete column and beam infill structure



SECTION SHOWING STRUCTURE OF BUILDINGS



This is a four-storey concrete column and beam, with brick-infill, structure with the main building primarily u-shaped in plan. Besides this it has an extra protrusion, of the same construction, sticking out to the western side (in which the cafeteria is currently situated), connected to the main building by the central circulation and services core. The roof is constructed of timber trusses and red corrugated iron roof sheeting, to fit into the rest of the block's roof tradition (see 'tectonic coherency' at section 4.5.1). The floor to soffit heights of the four levels range between 4 and 6 meters - higher than normal to accommodate some of the printing equipment.



It has an all-round monotonous facade of relatively large square window openings; these windows (with the additional heat produced by the printing machinery inside) rendered the interior space too hot and during the 70s (when air-conditioning was not yet 'trusted' in buildings (Deppe, 2016)) all the window openings on the east, north and western sides were covered with horizontal steel louvred screens to keep the sun out.



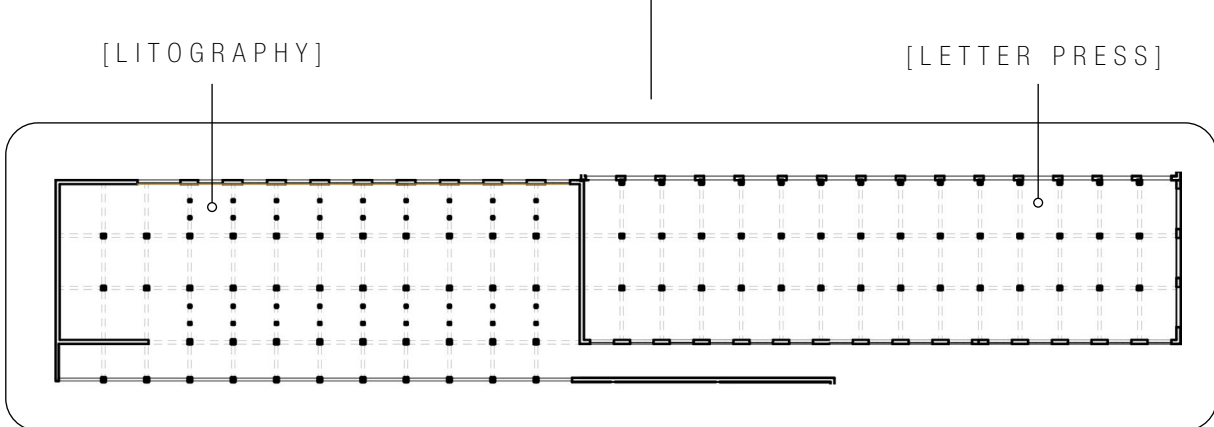
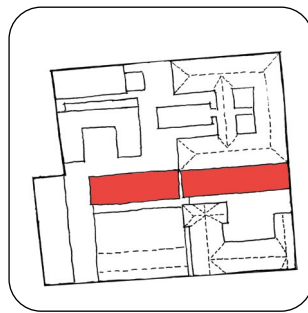
The ground floor level functions as a storage garage where small carrier-trucks and vans can drive in and unload materials and supplies. The ground floor storage garage runs directly through to the longitudinal buildings south of it, and also through underneath the saw-tooth building. On the first floor, on the southern side, it is connected to the longitudinal building (from the outside and above it looks like two separate buildings but inside the space functions as one).

Figure 4.12: Description of Administration building

description  
of existing

#### 4.4.3 LETTER-PRESS & LITOGRAPHY

1927 - 1932



PLAN SHOWING STRUCTURE OF BUILDINGS  
Concrete column and beam structure with beams spanning in both directions



SECTION SHOWING STRUCTURE OF BUILDINGS





These two buildings have exactly the same construction as the administration building, square concrete column and beam structure with the same monotonous window spacing.

The first floor slab is supported by two rows of columns spaced about 6m apart (the western building has extra, smaller columns in between). The slab consists of two-directional concrete beams (running in both directions). On first floor, the roof is supported entirely by the perimeter walls, therefore there are no columns on the first floor.



These buildings are also characterised by the red corrugated iron roof sheeting tradition, with distinctive circular shaped roof ventilators on top of them. As mentioned earlier, the southern building ('Letter Press') is an extension of the administration building, both on ground and first floor.



The western building ('Lithography') on the other hand, is an extension of the saw-tooth building ('Finishing') on ground floor level. On the first floor, the two are separated, as the saw-tooth was only built in 1955.

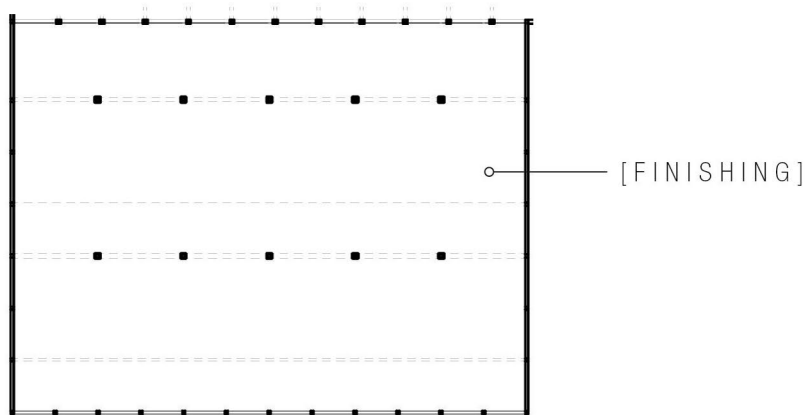
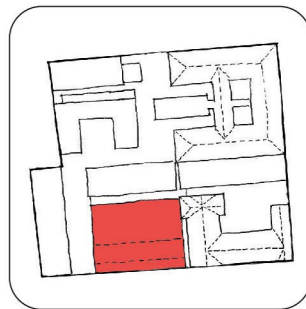
Figure 4.13: Description of Lithography & Letter Press buildings



description  
of existing

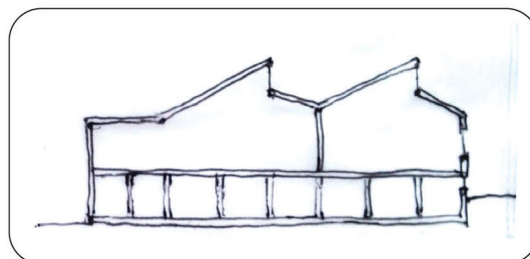
#### 4.4.4 FINISHING [SAW-TOOTH]

1927 - 1932



#### PLAN SHOWING STRUCTURE OF BUILDINGS

Concrete beam and column with brick infill structure with characteristic saw-tooth roof profile with exposed steel structure to let natural light in



#### SECTION SHOWING STRUCTURE OF BUILDINGS



This building constitutes a concrete beam and column structure with red face-brick walls (Figure 4.14). The ground floor level is sunken in to the ground with a semi-basement opening on the southern street side, then it extends into the ground floor underneath the 'Litography' level (see Figure 4.13).



The first floor slab is supported by the same column structure as the Litography building. The building features a characteristic saw-tooth roof profile with clerestory windows facing south to let natural daylight into the open volume space.

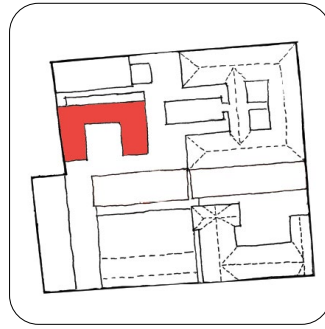


The roof also features the traditional red corrugated iron roof sheeting and is supported by steel trusses, which are carried by only one row of columns down the middle of the floor.

The saw-tooth profile-roof allows for a completely open plan and a well-lit, large volume that can accommodate many industrial production functions.

Figure 4.14: Description of Finishing (saw-tooth) building

#### 4.4.7 MAINTENANCE OFFICES :



The maintenance offices comprise a one-storey u-shaped building on ground floor level. On the site visit in February the building was very dilapidated (Figure 4.16) and some attempts at maintenance were in the process of being carried out - all the plaster was cracked and needed replastering, all the ceilings were rotted and services were hanging out over the offices. The operations director also complained that the building was extremely hot in summer and cold in winter (because of the lack of any insulation and low pitched roofs resulting in direct heat induction) and that the occupants inside this small building could not wait to relocate to their new premises (Deppe, 2016).

- Dilapidated structure
- Arbitrary (small) scale in relation to the rest of the block and for its central position in the city
- Random placement on the block - does not add any value to the rest of the block as a whole.

The 'storage shed' (which constituted an open steel structure and roof covering) just north of the maintenance offices was removed and people started using the space for parking (see Figures 4.17 and 4.18)



Figure 4.15: Maintenance offices building, Huis Davidtz in the background





**Figure 4.16:** Maintenance office building in relation to the Batho Pele House across Vermeulen Street

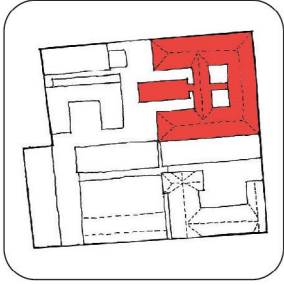


**Figure 4.17:** Empty space where storage shed structure once stood (recently removed)



**Figure 4.18:** Open space where storage shed structure was, now used for parking, Huis Davidtz in the background

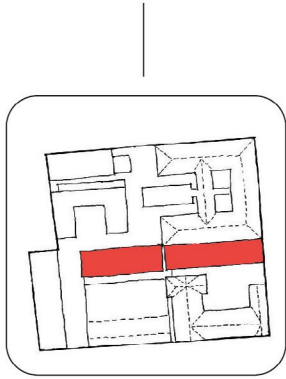
#### 4.4.6 COMPARATIVE ANALYSIS OF ARCHITECTURAL SIGNIFICANCE

	<p>N-E CORNER BUILDING 1927 - 1932</p> 	<p>STORAGE MAINTENAN</p> 
<p><b>AESTHETIC VALUE</b></p> <p>("consideration of the form, scale, colour, texture and material of the fabric" - Burra Charter, 1999: 12)</p>	<ul style="list-style-type: none"> <li>- Central courtyard potential if protruding mass is demolished</li> <li>- Facade manipulation potential if altered</li> <li>- Red corrugated iron roof sheeting (coherent tectonic roof identity)</li> </ul>	<p>None</p>
<p><b>SCIENTIFIC VALUE</b></p> <p>("importance of the data involved, on its rarity, quality or representativeness" - Burra Charter, 1999: 12)</p>	<ul style="list-style-type: none"> <li>- Large floor-to-soffit heights (4-6m)</li> </ul>	<p>None</p>
<p><b>SOCIAL VALUE</b></p> <p>("focus of spiritual, political, national or other cultural sentiment" - Burra Charter, 1999: 12)</p>	<p>None</p>	<p>None</p>
<p><b>HISTORIC VALUE</b></p> <p>("influenced, or has been influenced by, an historic figure, event, phase or activity" - Burra Charter, 1999: 12)</p>	<ul style="list-style-type: none"> <li>- Red corrugated iron roof tradition</li> </ul>	<p>None</p>

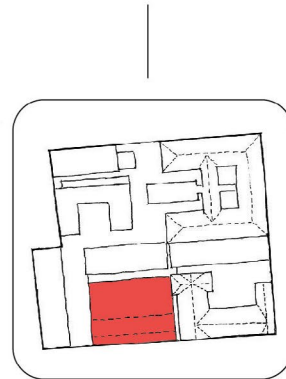
SH &  
CEICES



2 LONGITUDINAL BUILDINGS  
1937 - 1942



SAW-TOOTH BUILDING  
1955



- Red corrugated iron roof sheeting with ventilators (coherent tectonic roof identity tradition carried on from 1896 Wierda building)

- Distinctive saw-tooth roof-profile
- Red corrugated iron roof sheeting (coherent tectonic roof identity)
- Red face-brick facades (coherent materiality to 1896 building)

- Large floor-to-soffit heights
- Easily alterable because of cross-beam concrete structure
- Roof ventilators

- Distinctive saw-tooth roof-profile
- Red corrugated iron roof sheeting (coherent tectonic roof identity)
- Red face-brick facades (coherent materiality to 1896 building)

None

None

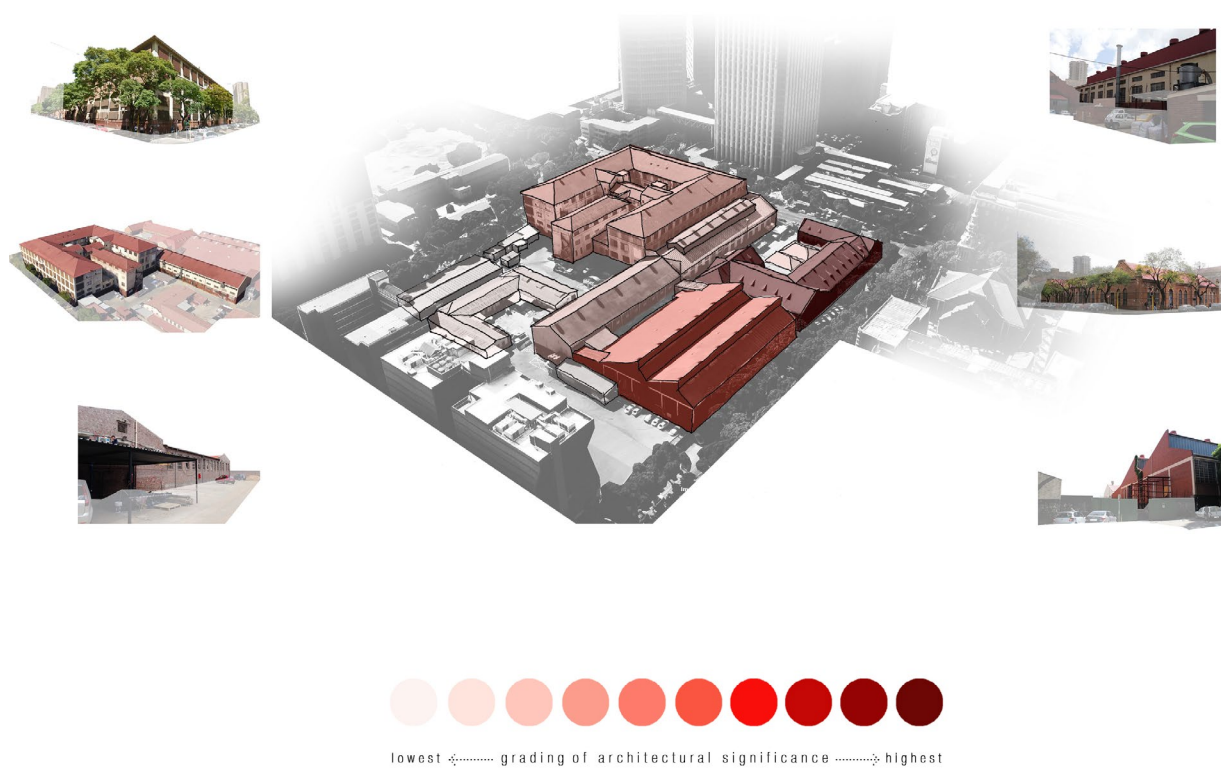
- Red corrugated iron roof with ventilators tradition

- Early example of free-plan & open volume & saw-tooth roof profile building

Figure 4.19: Comparative analysis of existing buildings

#### 4.4.10 GRADING OF ARCHITECTURAL SIGNIFICANCE

In light of the statements of cultural significance for both the block in its entirety as well as the 1896 Wierda building in particular, it is clear that the 1896 historic building has the most significance (Figure 4.20) as it carries the most value in terms of stylistic architectural heritage. Second is the 1955 saw-tooth building as the open plan, large volume and natural daylighting lends itself to be fairly adaptable to other uses as well as changing technologies in light-industry uses. After this comes the square building on the north-east corner with high floor to soffit heights, open plan and a shape that defines a central courtyard. Thereafter the two longitudinal buildings and then the rest of the existing storage sheds and smaller maintenance office buildings.



**Figure 4.20:** Grading of architectural significance of existing buildings on block (Author)



## SECTION 4.5: SIGNIFICANCE OF BLOCK IN ITS ENTIRETY

Now that each existing building has been discussed, the block as a whole can be analysed. Next the data presented in the previous section and also the inbetween, negative space in the block, the connections and contextual relationships between all the different parts will be investigated. Thereupon a statement of significance will be compiled whereby the spatial opportunities as well as problem areas are considered.

#### 4.5.1 TECTONIC COHERENCY IN GPW BLOCK

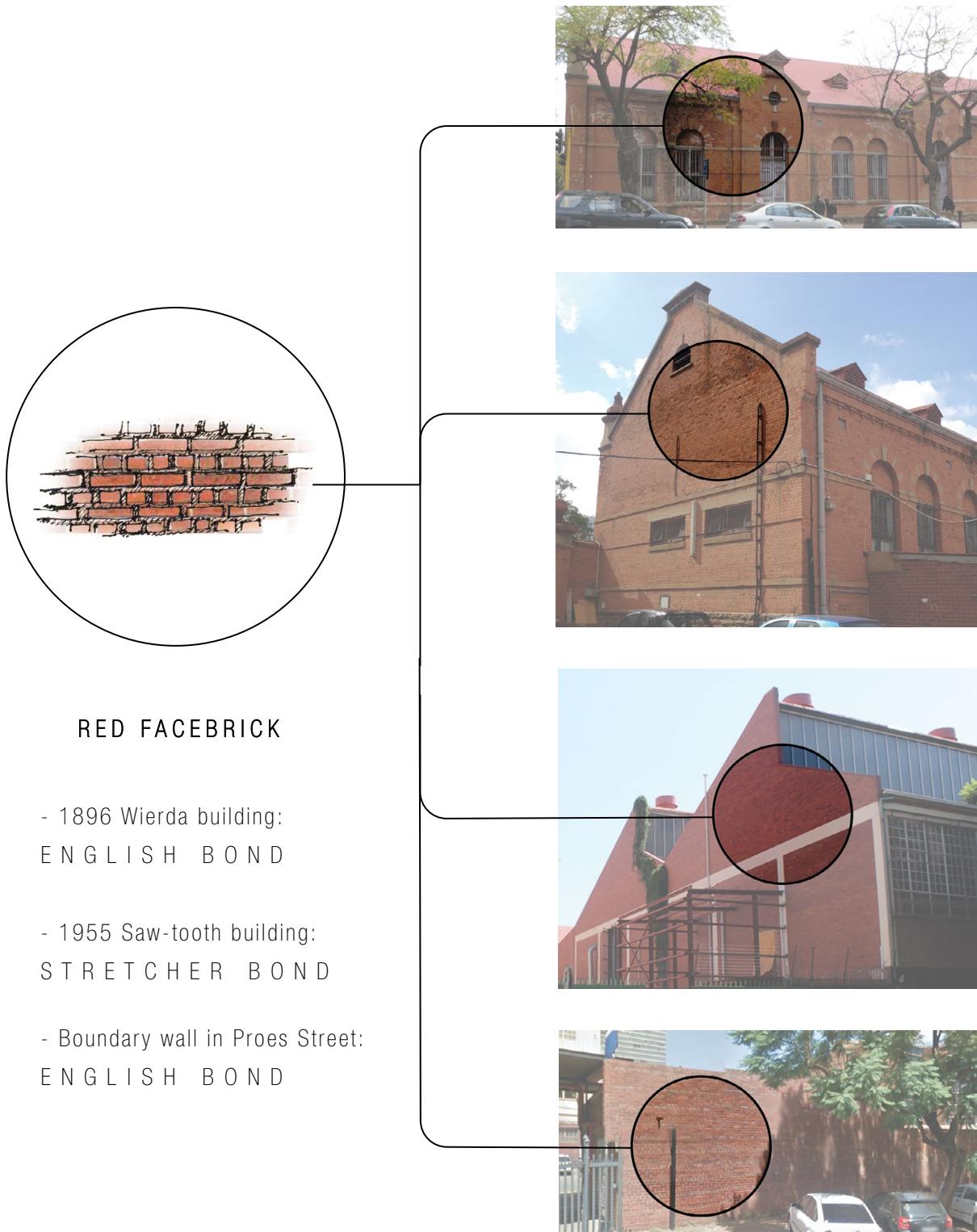
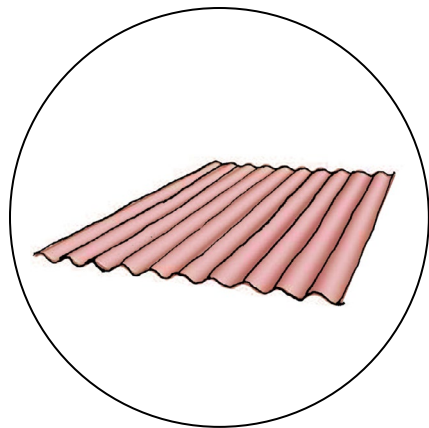


Figure 4.21: Tectonic coherency: Brickwork



### RED CORRUGATED IRON ROOF SHEETING

- All buildings on this block have the same red coloured corrugated iron roof sheeting with various shaped roof ventilators which becomes a part of the aesthetic.

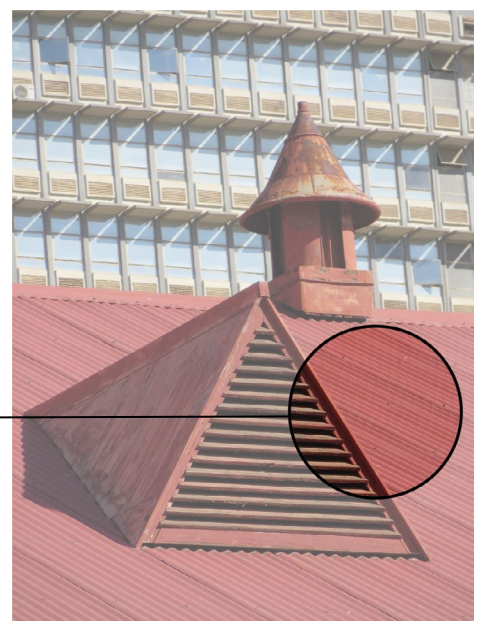
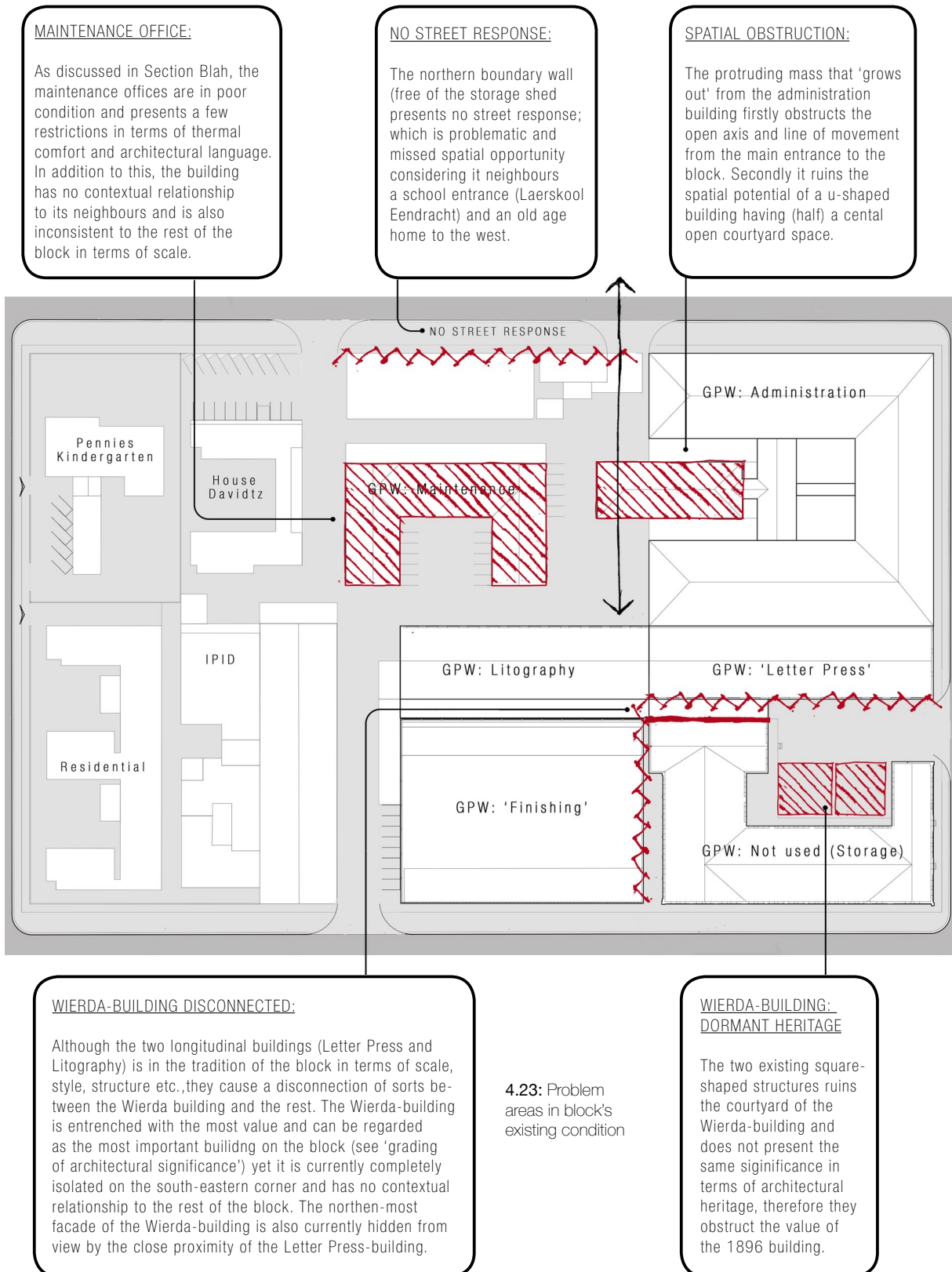


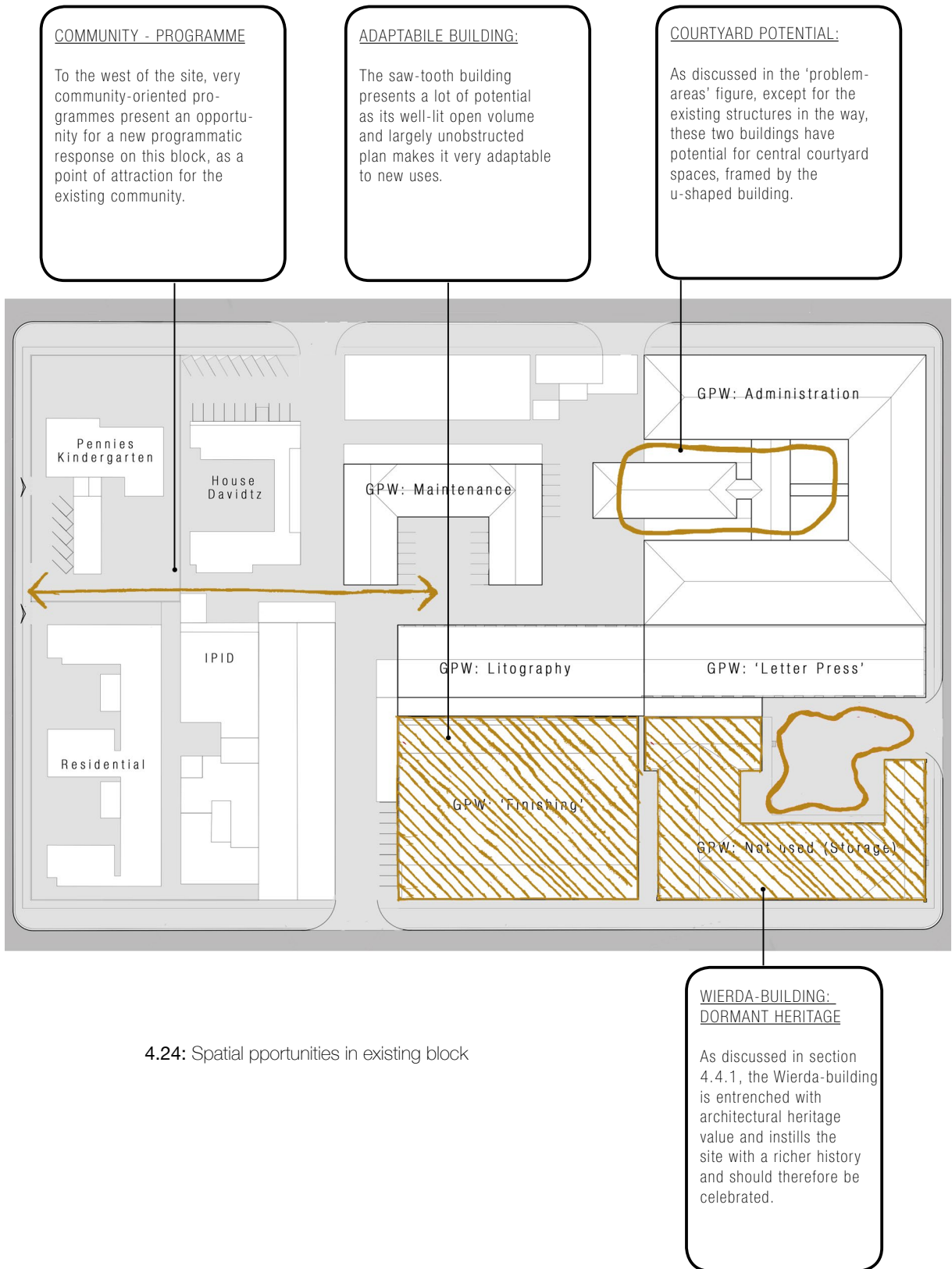
Figure 4.22: Tectonic coherency: Roof sheeting

#### 4.5.2 URBAN BLOCK ANALYSIS: PROBLEM AREAS





### 4.5.3 URBAN BLOCK ANALYSIS: OPPORTUNITIES



4.24: Spatial opportunities in existing block



#### 4.5.4 INTANGIBLE HERITAGE

The GPW block is a light-industrial complex built for the “production and dissemination of information” (Clarke, Kuipers and Swart, 2015: 115). This site is about the recording, printing and publishing of knowledge and the architecture tells this story. Figure 4.25 is a summarizing illustration of the intangible heritage that is captured by the physical and meta-physical qualities on this site.



4.25: Intangible heritage of GPW block (Author, 2016)

#### 4.5.5 STATEMENT OF SIGNIFICANCE:

##### BLOCK IN ITS ENTIRETY

In conclusion, the GPW block is a light-industrial complex with a rich (both tangible and intangible) heritage. The architecture embodies the essences of its intrinsic purpose: gathering, producing and distributing knowledge.

In light of all the information discussed in this chapter, the structures on this site present a history dating back more than a century. The architectural languages are characterised with traits of functionality, efficiency, industry and in some cases there is a layered effect of after-thoughts for unforeseen problematic elements (examples include the sun-screening add-on's and all the randomly-scattered open shed structures throughout the block).

The existing composition of the block as a whole suggests that there was no masterplan for this block; it just expanded over time and another building was built wherever seemed logical, as more space was needed. Therefore the resultant condition is one of overcrowding, buildings seem as though they are almost 'compressed' together (as if they do not have space to 'breathe'). This in turn caused disconnectedness between certain parts - specifically the part ranked highest on the grading of architectural significance - the 1896 Wierda building, which is cut off and isolated from the rest.

