

# -----[V]----- MODEL FOR ADDITIONS



## **MODEL FOR ADDITIONS**

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Fig. 5.1 View from raised train platform (Author, 2017)

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## NARRATING THE MORPHOLOGY OF ADDITIONS

Industries in South Africa are quickly becoming outdated as the latest industrial revolution, brought forth by the introduction of information technology, radically decentralized production and ultimately forces vast industrial production lines that are too rigid to compete against the flexibility and variety of new smarter industries to close.

This industrial abandonment is prevalent especially in Pretoria West, where the largest development since its original establishment came from the industrial sector. This development was spurred by the establishment of Iscor (now known as Mital steel), the Pretoria west Power Station and other large industrial plant defining the skyline. These industries were dependant on infrastructure and later the large scale food production would start attaching itself to the railway lines.

The Milling and food production industries quickly overshadowed the residents dwellings, and the character of Pretoria West was forever changed. The Massive Silo's dominating the skyline. Tshwane 2055 is envisioned with large developmental projects that would finally develop the western part of the city.

Along with the West Capital development envisioned for Thswane 2055 Pretoria West is said to be redeveloped. The development can be compared to the density of Sunnyside due to its proximity to the CBD. My project aims to address industrial food production and industry's relationship to the City.

Through the study Area's relationship with the city correlations between various industries are found and an envisioned a food production corridor spanning from the Pretoria West Railway station towards the Tshwane Market. This artery will embrace the informal markets in Marabastad as end user and distribute the products throughout the city by means of the Tshwane Market. This productive corridor is based on a recurring theme found in Pretoria, where the pedestrian movement becomes amplified in the North South direction as a result of the linear development of Pretoria. The most prevalent example is the connection between Pretoria Central Train station and the CBD with Paul Kruger street as the connective artery.

This market addresses the citizens relationship to industry as well as solidifying the role and character of Pretoria West around which development can attach. The public spaces gradually changes as it is influenced by its context the overall themes being of production in the South, Informative in the Showgrounds and Retail in the north.

Due to my research question addressing industry and its relationship to the city I chose the RCL foods Milling division as a design testing area for the establishment of the Productive corridor. Understanding the morphology of the city block and the establishment of production, forms the first part of a layered understanding of heritage. The displaced and misused houses on site thus form an important role in telling of a narrative and unveiling of the development.

The development and extension of production lines in the structures themselves are deeply visible in the layers and additions of the buildings. The extension



Fig. 5.2 Site photo of original facade construction (Author, 2017)

of the Silos continues on the exact structural rhythm, but also less obvious is the repetition of structure in the Milling buildings as the operation grew in both directions. The structure thus becomes extension of the old as the rhythm and expression thereof is continued, with services added to the exterior.

As for newer additions the same principles were used wherein structure orders and is expressed with a direct use of materials. Concrete frames with brick infill and high level windows as seen in the administration block. These buildings bear no relation to outside as they exist for the mere purpose of accommodating a function or production that is completely internalised. From these understandings I started to develop a design approach. The erven boundaries as can be seen in the historic photo, is used as the largest scale of ordering in making sense of a very cluttered and seemingly disorganized site. Structure and functions are not only respected but rather amplified by extending towards the street to create a market. The development against the railway line is mimicked as the road is acknowledged as the new infrastructure backbone with its key component being public space.

The design is mostly limited to ground level as existing interactions almost exclusively happen between buildings on ground level with the facades representing the vertical activity that lies behind it.

## MODEL FOR ADDITIONS

Architectural Issue

Urban planning principals alongside the industrial model for food production had a direct impact on the architectural environment of the study area. Whilst the formalized and functional production was



Fig. 5.3 1968 Aerial Photo of the Milling Site <https://supremeflour.co.za/why-supreme/heritage/2017>



Fig. 5.4 Current Milling Site (Google Earth, 2017)



Fig. 5.5 Photo of Original Milling Structure <https://supremeflour.co.za/why-supreme/heritage/2017>



Fig. 5.6 Additive Extension to Original Structure (Author, 2017)

implemented in the industries, the informal nature of the markets culture in Marabastad was aggressively contested by the apartheid government (Christie, 2017). Today the informal sector contributes an estimated 9.5% of South Africa's GDP and is embraced by the legislation as individual entrepreneurship is encouraged and allowed to thrive (Ligthelm, 2006: 33). This shift in governance has brought about a thriving informal environment in Marabastad which is contrasted by the large scale, formalized, production line methods of food production in Pretoria West.

The role of Pretoria West (specifically that of the area surrounding the Showgrounds) however, can be seen as a supplier of food to the markets of Marabastad. These industrial buildings and structures were constructed for the sole purpose of housing the specific function that took place inside it, with no connection between the inside and outside environments.

*“History exists if a form maintains its original function. If the form or building has been adapted to a different use, then we are in the realm of memory.” - (de Arce, 2014: 7)*

de Arce (2014) states that once a building loses its function it becomes an artefact with the city. Then, whenever possible, the original function of structures with a historic significance should be maintained. This correlates to the notion that we should not allow functioning industries to die and become post-industrial landscapes (TICCIH, 2012: 208) before we address spatial concerns.

However, it is usually only after a property is transferred to a new owner, who attempts to redevelop the property, that the heritage significance is questioned and used as a protective blanket to deter owners from demolishing these structures.

“No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.” SAHRA 1999: 58

This Act thereby protects the heritage but not the function. By this time it is too late to maintain the original function, especially in industrial buildings, as operations would have ceased by the time of transfer. I thus propose that instead of waiting to repurpose the Silos and milling buildings in Pretoria West, we should protect functioning industries from becoming irrelevant. It is therefore important to discuss possibilities on a theoretical level for the future adaption of an existing/functioning industry.

Only in acting before production halts can we retain history instead of memory.

### MODEL FOR ADDITIONS

The current site seems to be disorganised and without a distinct architectural intention. By investigating the morphology of not only the specific site but industry in Pretoria as a whole, various historic boundaries were discovered on site. As Industry imposed itself onto the initial residential urban fabric, various erven were consolidated to form the initial milling operation. The incremental creep of the industry into the entire city block (and ultimately beyond the city block) then seems to have been as a result of systematic

## STEREO TOMIC REPITION OF STRUCTURE AS FORMAL ORDER AND TOOL FOR NEW BUILDINGS EXTENTIONS



Fig. 5.7 Admin block (Google Street View, 2017)



Fig. 5.8 Grain Silos with Overhead Pipes Leading to the Oil Refinement Plant (Urban Vision Group, 2017)

consolidation of these erven. When posed with the challenge of ordering a seemingly disorganized site, the palimpsestic layers can be rolled back as we utilize the understanding of the morphological development and use the original/repeating erven as an ordering system. In short: the historic erf boundaries imposed an ordered grid onto the existing site.

Due to the repetitive and uniform nature of this erf division the site becomes much easier to understand and navigate. Some of the original dwellings still remain on site, albeit in a less than favourable condition and under utilized as makeshift offices. This condition clearly summarizes the imposition of industry and the strangling effect that industrial development had on the residents of the day.

### MORPHOLOGY OF SITE: EVOLVING A MODEL FOR ADDITIONS

Various additions have been made to the original structures as the production line has grown and changed over the years and these additions have been made in a repeating distinct fashion. The original milling and sorting buildings consisted of: a heavy exposed concrete frame, masonry infill, a simple corrugated pitched roof with gable ends and typical to industries of the time; steel pivoting windows. The most defining feature of the original buildings is the depth of the concrete beams (and width of columns) as they typically had to accommodate massive internal volumes. These framed structures were repeated multiple times throughout the building in a regular rhythm in accordance to the spans able to be achieved in concrete construction at the time.

When these structures were later lengthened (in both directions) the same method of construction

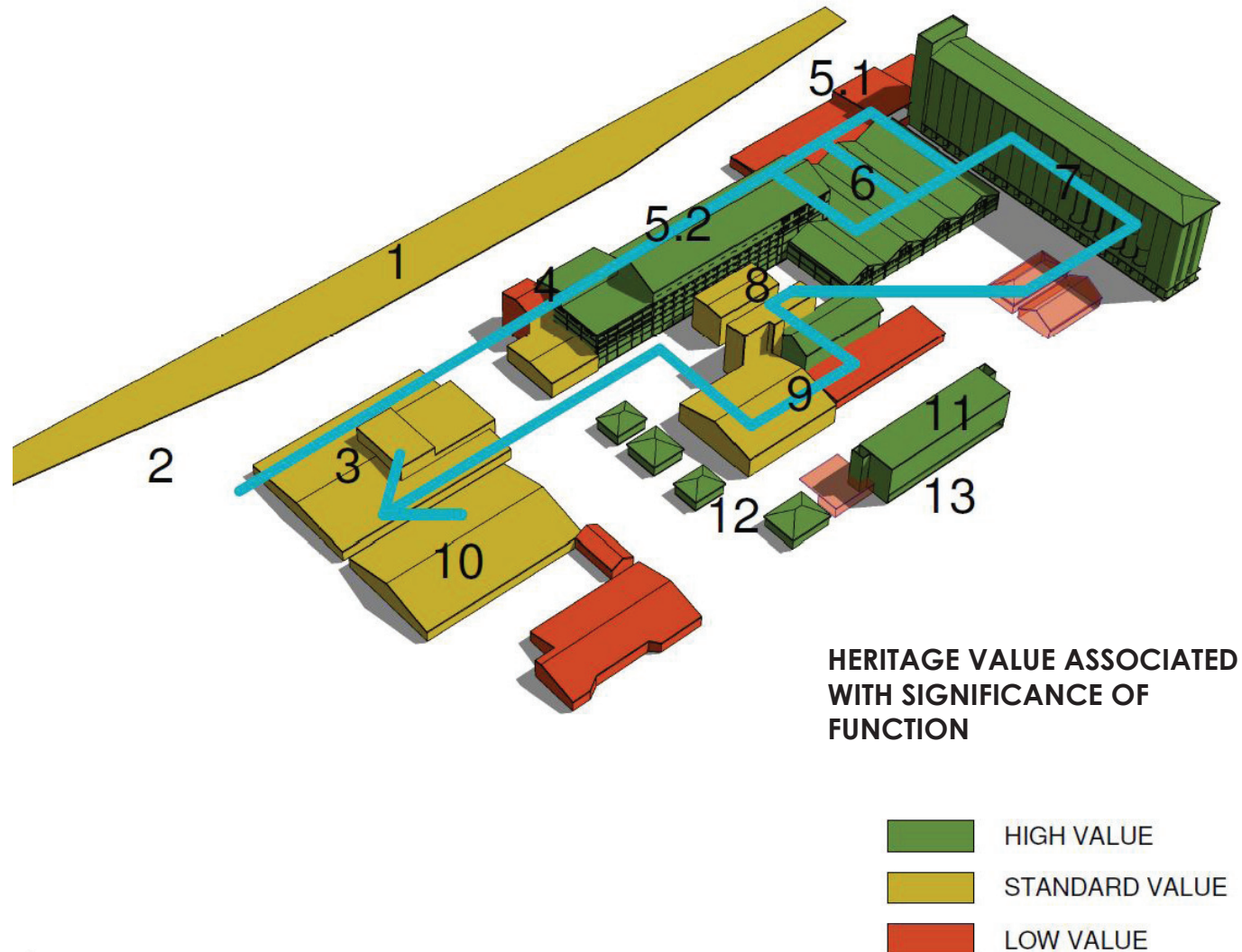


Fig. 5.9 Heritage value of structures (Author, 2017)

was utilized and as the structure was once again repeated to extend the function. It is only through close observation that this difference can be noticed amongst the mash of additions that followed.

Construction of the administrative building, to the north of the site, is architecturally derived from the original sorting and milling buildings and expresses a rhythmic pattern of concrete structure with a dark masonry infill and high-level steel paned windows.

Today the silos dominate the skyline as a defining monument to the agriculture and food industries. Visible throughout Pretoria West, only a feint vertical shadow reveals that it was ex-tended from the original 12 silos to the current 24. This time an exact reproduction of the circular structures extended the function of the original silos.

The site also seems to be littered with lightweight steel additions (the inconsistent profiles hinting that these additions were not done simultaneously). In contrast to the original buildings they seem temporary and subject to change, leading to the next model for additions – the ease and speed of construction as well as the ease and speed of dismantling the structure.

These additions mostly seem to serve a supplementary function to those functions housed in the buildings described above. Through closer inspection the overall dimensions of these additions follow the ordering rhythm set by the original building and its additions.

Although the steel structures do not express its own structural rhythm as is the case with the original concrete frame each lightweight addition

corresponds directly to a specific part of the stereotomic additions. The external facades thus are a direct result of the functions housed inside of them and can be attributed to the fact that the buildings and structures themselves are purely functional in nature.

The repetition of structure is one of the only constants to the additions on site and once again, due to its regularity and uniformity, serves as an ordering grid for future additions in a building that has become increasingly disorganized.

The notion of additions through repetition in structure is evident throughout the site. In modern construction, these repeating rhythms resulting from material spans replace the ordering principles used by the Greeks (such as the golden section) (Ching, 2014; )

### **PROGRAMMATIC PRECEDENT: HIGH STREET ABATTOIR**

Continuing the interface between city and industry in a productive environment the High street Abattoir serves as a unique model for a programmatic approach to design. (Nieuwoudt, J.H., 2012) With industrial process being the driving design factor for industrial buildings/sector proper integration between the process and the community creates a thoroughly integrated function.

### **THE ARCHITECTURE OF ADDITIONS**

The acknowledgement of time in architecture leads to a palimpsestic approach to architecture, wherein the built environment is seen as a series of layers. With even what is commonly referred to as an empty site bearing various layers of cultural, social and other

## **TECTONIC REPETITION OF STRUCTURE FOR SUPPLEMENTARY PROCESSES**



Fig. 5.10 Steel Structure as Tectonic Addition (Urban Vision Group, 2017)



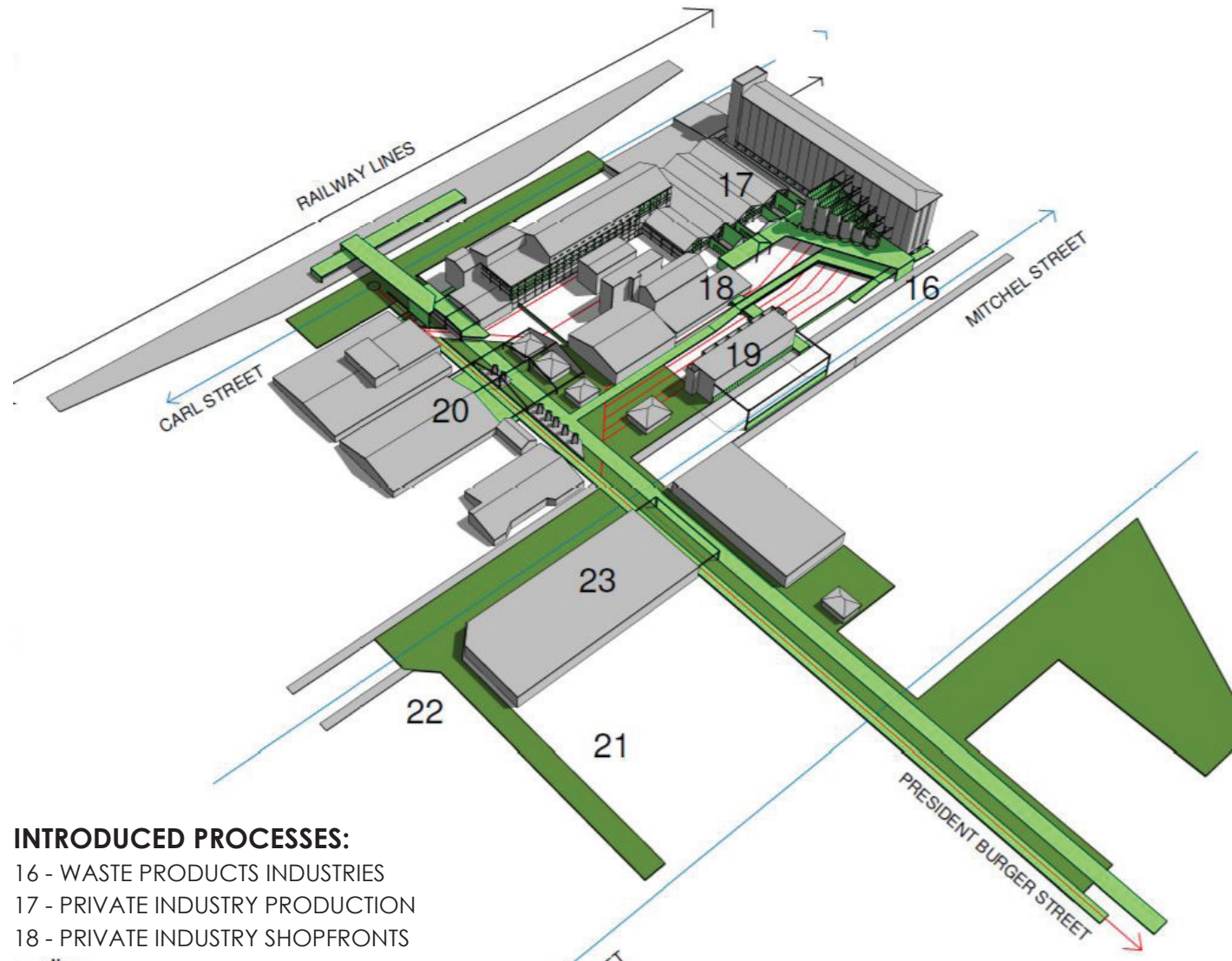
Fig. 5.11 Steel Construction as Tectonic Addition (Urban Vision Group, 2017)

layers applied to it either directly or as a result of it's context (de Arce, 2014).

I propose that as this structural grid and the methods of additions could not only order what seems to be disorganized but also can outline the new proposed intervention as the functions are extended from the original buildings towards the public realm.

My intentions are thus to dismantle the façade and extrude the function and extend the production line towards the public. My intentions are solidified in 2 aspects of the design. Firstly the progression of the productive corridor through community centred production spaces in the north South direction. Secondly the scale of industry in the east west direction perpendicular to the productive corridor. Further design approaches stem from the historic eradication of landscape, the public and open space as these industries established. Usually a design stems from the direct environment and its influences. But due to the neglect and over engineered landscape on site the public realm and landscape is shaped from the surrounding buildings as the existing structures now defines an industrial landscape.

I have gone through great effort in this initial ordering and extrusions in order to create a legible urban condition. Through various models I experimented with community and socially active production, acknowledging that food production in itself is an activity and thus should serve as the central pivot in the design. These design guides can be adopted for future developments that are to directly attach to the productive artery and serves as a continuous language for the productive corridor. The test sample of the design includes and progresses



#### INTRODUCED PROCESSES:

- 16 - WASTE PRODUCTS INDUSTRIES
- 17 - PRIVATE INDUSTRY PRODUCTION
- 18 - PRIVATE INDUSTRY SHOPFRONTS
- 19 - LABOURER'S DWELLINGS
- 20 - PACKHOUSE DEPOT
- 21 - PRETORIA COLD STORAGE (EXISTING)
- 22 - THERON'S MEAT MARKET (EXISTING)
- 23 - EXTENDED MEAT MARKET (CURRENTLY UNOCCUPIED)

\*INCLUDING INFORMAL STREET VENDORS

Fig. 5.12 Diagram of Introduced Spaces (Author, 2017)



through firstly a starkly separated Industrial Transport Interchange, a public release space, and crossover from grain market to meat market space.

Pedestrians are given precedence over HMV's as the entrance to the site is elevated and extends through the extruded façade including the user into the process of food production before leaving the terminal.

Pedestrians are given precedence over HMV's as the entrance to the site is elevated and extends through the extruded façade including the user into the process of food production before leaving the terminal. Thereafter the user descends and is released into a public landing wherein the existing dwellings is occupied by home industries that are serviced from the rear. The existing Packhouse's façade is extruded all the way to behind these dwellings to form an industrial silhouette as backdrop for the dwelling to tell their story and further define a legible urban space. The Pack house with addition of a lightweight frontage is converted into an grain depot that feeds smaller industries and the informal sector.

Circulation is primarily pedestrian with a single restricted access road and delivery bays for service vehicles originating from Carl street, which frees up the city from HMV's as it becomes designated to industrial Vehicles. Thereafter the user enters a productive public court surrounded various scale of industries the are in themselves arranged around internalised common spaces. This test area currently serves as a testing ground for my design approach and ordering principles as these would ultimately extend along the production corridor. The essence of the design I feel should thus be captured in the typical

detailing of junctions and arrangements in order to fulfil the intentions of the urban vision.

## CONCLUSION

The relationship between industry and the city is a damaged one. However, with its existing mix of residents, industry and commerce (albeit segregated from one-another) Pretoria West holds the potential for a unique relationship between industry and the citizens of Pretoria.

Only by understanding the role that these industries play within the greater context of the city can the rich character and culture of a place be amplified and solidified in a development plan. Catalysed by its heritage, development will become a manifestation of the character of place that will attract further growth and simultaneously embrace the existing stakeholders.

I conclude that theoretically it is possible to bridge the vast void that exists between the industrial environment and the public realm by introducing a community setting for production and reimagining the way that industries function. Through an intricate morphological understanding of industrial development, we can design a future for industries that is contextually appropriate.

The existing industrial built environment is often misshapen and illegible and whilst it is difficult to organize (and navigate) the seemingly disorganized site, it is possible to resolve; through understanding historic boundaries and development patterns that can be utilized as organisational grids. In this case historic erf divisions and consolidations can be utilized as an organisational tool at a large scale and

should serve as a guide to where future structures should be erected in order to maintain a legible built environment.

When designing future additions, understanding the historic expansion of these industrial buildings holds the key to a harmonious relationship between old and new. With minimal architectural intent, these buildings supply little for the architect to grapple onto, but with material spans and structural repetition forming the underlying ordering principle; it is possible to create a logical and ordered ex-tension of the past.

With all considered it should become apparent that we should, in fact, not allow the industrial heritage and infrastructure that supports it to die, but rather that it should be adapted to suit the needs of to-morrow.



Fig. 5.13 Site Photo Collage (Author, 2017)

