

005

DESIGN CLARIFICATION

EXISTING BUILDING 005-1

NEW INTERVENTION 005-2

EXISTING CIRCULATION 005-3



005-1 EXISTING BUILDING



The existing building presents a number of problems and opportunities that this thesis wishes to address. The following were highlighted and noted:

Positive Elements:

PROPORTION OF BUILDING

The depth of the units allows for good lighting in the main room of each unit.

VENTILATION

Openable windows on the northern and southern sides of each unit allows cross-ventilation to take place.

STRUCTURE

1. Concrete column and slab construction: provides a robust frame with infill which can be [re]moved, allowing for a great variation in programme.

SITE LOCATION

- 1. Church Square** is a short walk from the site
- It is **located on Paul Kruger Street**, which is an active spine of the city.
- It is **centrally located** in [re]lation to amenities

Negative Elements:

ACCESS

1. Offices on the first floor: employees of the various legal firms in the existing building gain access to the first floor through the “tunnel” and up the stairs, which are shared with the residential stock of the building.

2. Access to front of site: there is only a single lane of access to the back of the site where the parking is located. This route is shared by vehicles as well as the pedestrians/residents who have no alternative method of gaining access to their residential units.

3. Access to building once parked: this building presents two possible points of entry. The first is to go back to the “tunnel” and make use of the stairs and lifts in the lobby, while the second would be to use the fire escape located at the south-east corner of the site.

LIGHT

1. Circulation core/entrance lobby: very little light enters the entrance lobby on the ground floor as it is surrounded by solid walls on three of its four sides.

2. Tunnel: the length of the tunnel poses a problem as there is not enough light that penetrates its length. There is a strong contrast in light that disorientates the person walking through the “tunnel” as their eyes need a minute to adjust.

SIZE OF UNITS

1. Bachelor units: these units are both too big and too small-too big as a single space and too small to be divided up into different rooms. Unfortunately residents do not know how to make use their space as no definite clues are present.

2. Lack of living/recreational space: the units are small and have no room for growth. This makes living in this building temporary unless one can afford one of the limited two-bedroom units. Residents [re]sort to hanging their washing out the windows or along the railings of the passage wall outside the kitchen.



Fig 005.1.1: All office employees and residents need to pass through the opening/ tunnel in front of the blue car



Fig 005.1.5: Residents resort to placing their beds in the sun-room on the northern side of the units in order to create a private space



Fig 005.1.6: Residents make use of the railings to dry their washing. The building becomes a tapestry of colourful clothing over the weekends, when most residents do their laundry



Fig 005.1.3: Users of the building can utilise the fire escape at the back of the site



Fig 005.1.2: Once parked occupants of the building need to return to the street side where the entrance lobby is located



Fig 005.1.7: Residents also resort to hanging washing out the windows on the northern façade. The original clothes lines placed in the bathrooms are inadequate and many have been [re]-moved



Fig 005.1.8: Some residents of the two-bedroom units utilise their entrance passages to hang their washing



Fig 005.1.4: The middle of the “tunnel” is dark, especially with the lights turned off



Fig 005.1.9: According to other shop owners, the shop to the rear with blacked-out windows has been vacant for more than a year

PROGRAMME

1. Little variation in unit types: two-bedroom units are located at the ends of the passages with bachelor units filling up the [re]mainder of the building. Units are expensive, costing R450 000 for a bachelor unit of 45m². At least one bedroom is needed in these bachelor units that do not cater for families. This leaves a large portion of the building vacant.

2. Lack of cross-programming: current programmes are isolated from one another and the residential and office components do not acknowledge each other.

3. Shop located at rear of tunnel: this particular shop has been vacant for a while and shows no signs of being let soon. Not enough feet pass by and therefore its success would [re]ly solely on the users of the building.

005 - 2.1 CONSTRUCTION STRATEGY

■ existing ducts
■ new ducts

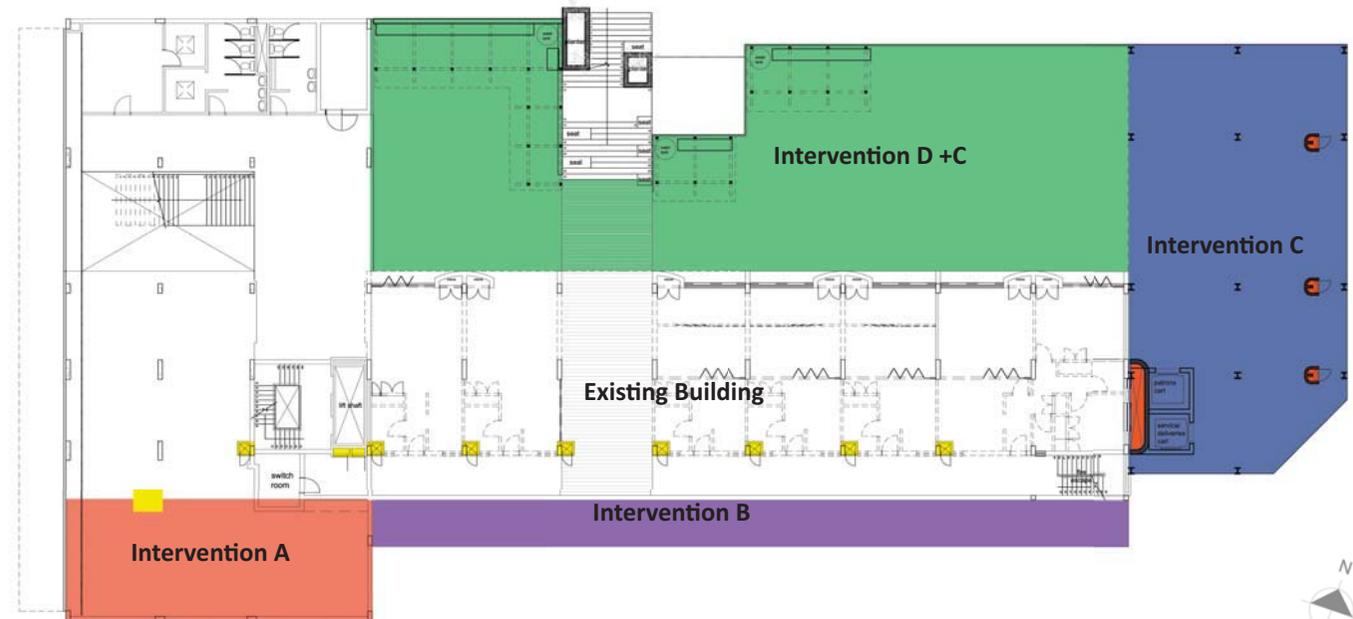


Fig 005.1.10: This diagram indicates the location of the various interventions that will take place in conjunction with existing Woltemade building

The existing Woltemade building is currently underutilised and [re]quires a strategy that will draw people back into the building. This strategy is to incorporate additional spaces and new programme scenarios through a variety of interventions. Four interventions have been identified that will each be treated separately in terms of structure, application and site context/orientation adding to the qualities of the host building.

Intervention A: Exhibition + Gallery Space

Location of intervention

Second floor to sixth floor on the roof of the existing first floor

Construction technique/structural system

A conventional approach to building this portion of the

building will be taken, which includes the use of brick and concrete. Small portions of intervention A will cantilever over the street edge. These cantilever portions will be constructed using a lightweight steel structure with screening elements.

Reasons for construction method

Fire regulation are the biggest concern of this intervention as it occurs on the site boundary and therefore needs to be constructed from materials which do not pose as a fire hazard.

Services system

No wet services are [re]quired in this block, however should future programmes dictate wet services they can be connected to the host building's duct which is located adjacently to this intervention.

005-2 NEW INTERVENTIONS



Electrical services will be surface mounted and distributed throughout the space in cable trays.

Associated advantages to intervention A

- Additional space to building footprint
- Provides new advertising opportunities for the building
- Gallery spaces allow for interaction with the street
- New dimension to western façade

Intervention B: The Wrapping Structure

Location of intervention

From the walkway on the third floor to the eighth floor.

Construction technique/structural system

A light weight hanging structure is deemed the most appropriate construction method for intervention B. The hanging structure consists of a system of cables held in tension, fixed to the roof structure and southern façade. Walkways will be hung from these cables to provide additional space.

Reasons for construction method

Other methods of construction were investigated, namely a pre-fabricated castellated steel trusses. However this [re]quired a huge amount of steel and [re]sulted in a cumbersome structure that sat awkwardly on section through the passages. Therefore the most appropriate method of construction for this intervention is a cable system with hanging floors. This particular method of construction uses the least amount of building material, while providing the greatest amount of flexibility.

Services system

No wet services are provided for in this area as it mainly consists of a walkway.

Existing electrical roof lights will be [re]placed by energy efficient lamps once they have fused. New footlights will be concealed under the new hanging floors and be distributed by cables via trunking placed inside the lipped channels.

Associated advantages to intervention B

- Provides additional space
- Multi-purpose exhibition + gallery space
- Becomes an extension of public space on the northern platform
- Provides horizontal and vertical connection through the building
- Place for coincidental meeting spaces
- Takes advantage of surrounding views

Intervention C: The Eastern Block

Location of intervention

Ground floor to sixth floor

Construction technique/structural system

Light weight steel structure in the form of QC flooring will be implemented in this intervention. QC flooring is permanent steel shuttering that is filled with concrete. Additional [re]-inforcing is not [re]quired as the shuttering acts as [re]-inforcing. Furthermore only light weight infill and cladding is used.

Horizontal shading devices are provided for on the northern façade, while vertical shading devices are included on the eastern and western façades.

Services system

New ducts have been provided for in this intervention with two sections. The first compartment houses fresh water and sewage and the other houses data and telecommunications.

All electrical services will be distributed throughout the space in suspended cable trays. Cable trays allow for the most flexibility in terms of the continual movement of internal partitions to accommodate changes in tenant layouts.

An alternative to an HVAC system had to be found because of the limited headroom within the existing building. One could [re]asonable assume that FFLs of the new interventions would line up with the FFL of the existing floors. Therefore the heating and cooling of Intervention C will to a large extent rely on PEX pipes running through the the slab.

This system consists of pipes filled with water cast into the concrete slab. The water is heated or cooled, depending on the season, and circulated throughout the building. This system ensures a comfortable environment without the need for a HVAC system.

Associated advantages to intervention C

- Additional space is provided
- New service/circulation core
- Provides water harvesting potential with planters
- Physical connection to intervention B + D

Intervention D: First Floor Platform

This intervention is marked as both D and C because it forms its own element, that being the platform, and merges with intervention C on the first floor. Intervention C then goes on to rise six floors.

Location of intervention

First floor

Construction technique/structural system

Light weight steel structure in the form of QC flooring will be implemented in this intervention. QC flooring is permanent steel shuttering that is filled with concrete. Additional [re]-inforcing is not [re]quired as the shuttering acts as [re]-inforcing. Furthermore only light weight infill and cladding is used.

Services system

Due to the nature of the space being a platform the only electrical services provided for will be footlights on the new stairs and lights in the trader's stalls. Both these circumstances [re]quire that fittings and cables be protected.

Associated advantages to intervention D

- Provides a new entrance and access point to the site
- Services are concealed below and are not tampered with
- The raised platform facilitates public activities
- Allows a direct link to intervention B and views to gallery space above

“B”) on the southern façade would bring a certain verticality to the building through physical and visual links which were previously missing. Intervention “C” allows for additional space and programmes while at the same time providing new services.

005 - 1 DESIGN STRATEGY

Layering: The design strategy intends to preserve the original building’s form and identity. New structures are layered over the existing in order to create new spaces for new programmes. New interventions will wrap around the host building and expose the edges in order for the original building to be read separately.

A large portion of the new intervention will take place to the south of the existing building, as this façade has over the years been altered and no longer [re]tains its original integrity.

Old versus new: All new structures would deliberately read differently to the host building through the use of contrasting materials and construction technologies. Steel is predominantly the material of choice as its use [re]quires no wet construction; components are pre-manufactured and would contrast with the host building.

In addition to the steel construction, transparent and translucent components would create an architectural language of ‘lightness’. This would allow the new components to be sensitively inserted into the existing building.

Place making: New structures are added to the existing building to articulate new functional spaces. The new entrance on the ground floor leads patrons up to a new public platform on the first floor, which accommodates a market, restaurant and [re]tail spaces. Intervention “A” becomes an exhibition/advertising space for programmes that take place within the building. The new hanging structure (Intervention

005 - 1.1 LAYERING

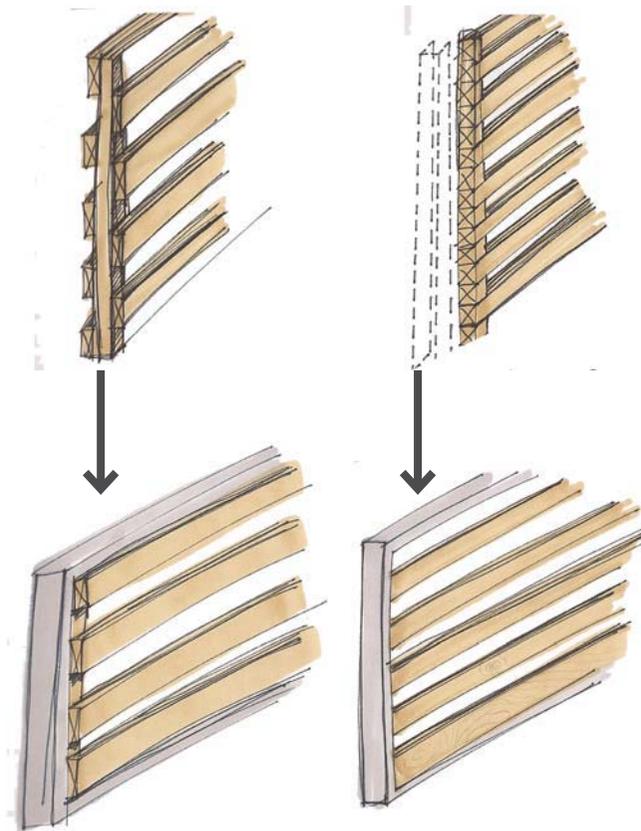


Fig 005.11: The various configurations the timber screens could take on the northern façade



Fig 005.12: The timber screen allows for partial light infiltration as well as a degree of privacy

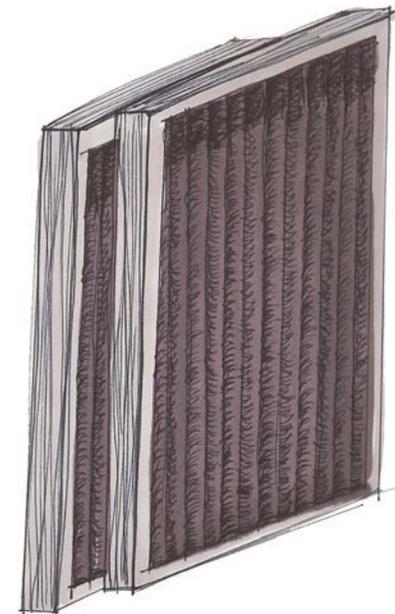


Fig 005.13: The corrugated screen allows for total light eradication and complete privacy from the outside

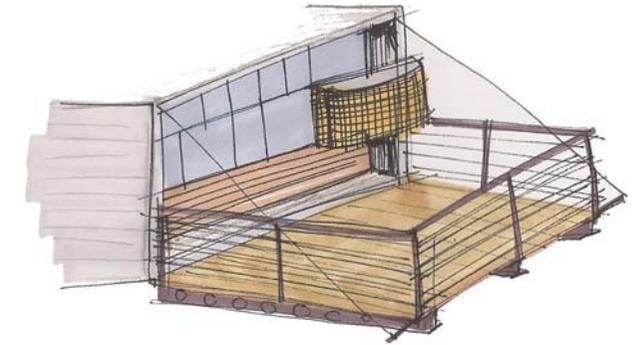


Fig 005.18: Areas where residential units are located will be treated differently. Balconies of various sizes can be added to increase the amount of living space

One component of the layering process would be the addition of movable screens to the northern façade. One of the intentions of this thesis is to install the rails of the movable screening system onto the façade of each unit.

The internal programme and its [re]quirements would then determine the type of screen that would be needed. In the case of a retail programme, a perforated screen could be considered to limit the amount of direct sunlight falling onto the merchandise.

Where office spaces are programmed, timber screens would be a reasonable choice for spaces with boardrooms or conference rooms to reduce lighting levels for activities such as presentations.

Projection rooms inherently need less light, therefore the screening material should attempt to completely block the light. Corrugated sheet metal fixed to a frame would fulfill this criterion.

Residential units are treated differently to the other programs found within the building. The new balconies provide much needed space which can be programmed according to the needs of the inhabitants. Some residents might prefer a washing line, while others might find a planting area more useful. Yet another resident might find an outdoor living area more useful.

level of privacy

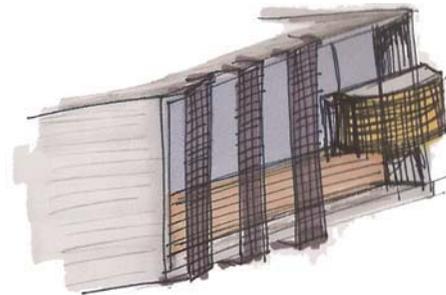


Fig 005.15: Perforated shading devices are added to the façade for programmes such as retail spaces

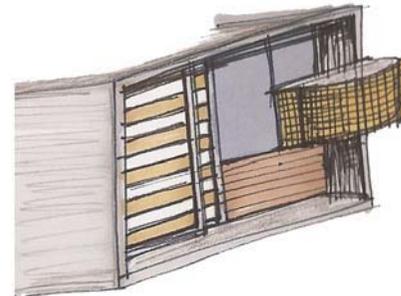


Fig 005.16: Timber screens are incorporated into the façade for offices and meeting rooms

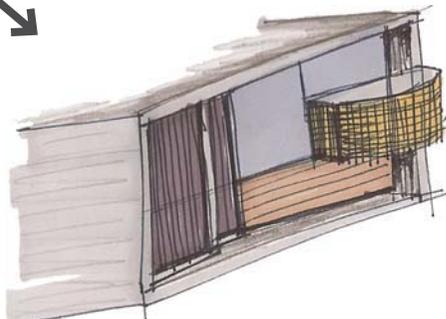


Fig 005.17: Corrugated screens are placed on the façade where light needs to be blocked from the interior. This would be done in front of projection rooms

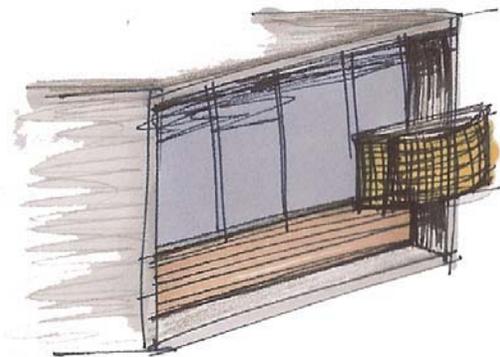


Fig 005.14: The northern façade of each unit as it appears before being altered

005 - 1.2 PLACE MAKING

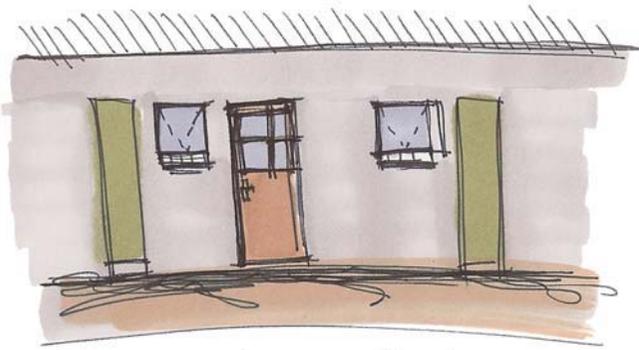


Fig 005.19: Existing residential units are all similar in appearance and open onto the Southern walkway



Fig 005.20: Simple modifications turn an existing residential unit into a fruit and vegetable stall



Fig 005.21: The fruit and vegetable stall as it would appear when closed

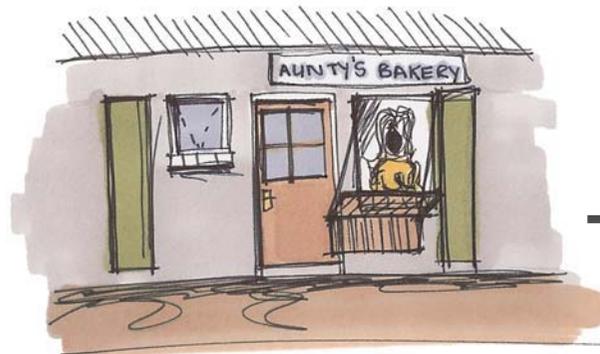


Fig 005.22: The existing kitchen window can be altered to make way for a small scale bakery catering for the needs of residents



Fig 005.23: The bakery display can be folded away and the window boarded up



Fig 005.24: The Herb and Vegetable stand sells fresh produce to residents in the building



Fig 005.25: The Herb and Vegetable stall as it would appear when closed



Fig 005.26: The front of a live/work unit can be altered to showcase merchandise

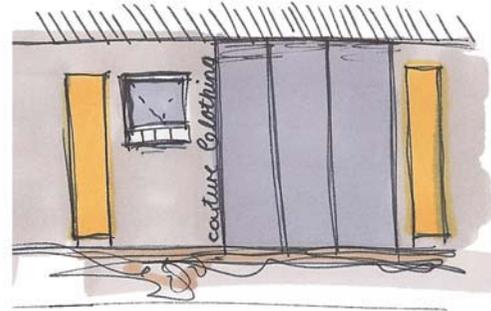


Fig 005.27: The occupant of the live/work unit can close the shop doors when needed



Fig 005.28: Live/work units can be altered further to incorporate more retail space



Fig 005.29: The Boutique as it would appear if closed

Residential units are not intended to be average. The residential unit. Residential units distributed throughout the Design Depot are intended to be places where residents can earn an income, while at the same time serving the inhabitants of the building as well as outsiders who visit the building. By incorporating the residence and small businesses into a single component the inhabitant makes a saving in terms of renting business premises and travelling to and from these premises.

In some cases the live/work units could be converted to form sales points for fresh fruit and vegetables, while others could sell goods which have been crafted or sewn by the inhabitant. Furthermore, the balconies of these live/work units could become green houses which grow herbs and flowers that can be sold along the communal walkways.

Various levels of intervention can take place within the live/work units. Simple modifications would entail the adaptation of the kitchen window, which could include adding shutters or opening it up to serve patrons. More elaborate alterations would include converting the kitchen into a display area, thereby making the living component more compact.

Not only does this cross programming ensure the sustainability of the building but it also allows for diversity which can be expressed on the façades and in the passages. Residents are encouraged to adapt their units as they see fit. The only [re]striction would be that adaptations not limit further growth of the building and be constructed in such a way that they are demountable and easy to dismantle should the programme need to change in the future.