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Adaptive [re]use

An investigation into the adaptation of an existing building
for various programmed scenarios at 116 Paul Kruger Street
in the Pretoria City Centre

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November 2010

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Submitted in partial fulfilment of the requirements for the
Degree of Magister in Architecture (Professional) in the
Faculty of Engineering, Built Environment and Information
Technology, University of Pretoria, Department of
Architecture.

Thank You

Nico Botes – You have been inspirational and helped me get excited about my project when I lost focus.

Mom + Dad – For always being supportive in every way possible. For not complaining when the dining room table was covered in paper, pens and cardboard.

Justin – How did I get so lucky? There are not enough words to truly express how thankful I am, but I'll try anyway. Thank you for the continuous support, going to site and taking photos and never complaining when I dragged you to random places. Thank you for just being there while I worked and watching copious amounts of movies to keep yourself busy.

Dylan – Thanks for doing all of the random odd bits from scanning to typing and for the use of your fingers for holding pieces of models in place while they dry.

Joseph – For bringing me a uninterrupted stream of tea and sandwiches while I worked

Lisa + Wayne – Thank you for being so patient and understanding. Thank you for all of you input and man hours giving me advice and direction for my thesis to follow

Dawie – Thank you so much for all of your help concerning the printing of my document and the great ideas that came along with it.

To all my friends – Sorry for not being around, I was not ignoring you I was simply busy with my thesis and here's the proof. I'll be back in your lives in a big way... so good luck!!!

Andrea – Thank you for being the voice of reason when my brain was a pudding of mash. Thanks for all your support chop, everyone needs a friend like you!!!

Printed Paper

To ensure that responsible choices continue further than the design, all thesis books have been printed on appropriate sustainable papers. This includes papers which are acid free, elementally chlorine free (ECF), sustainable and certified by the Forest Stewardship Council (FSC).

According to Clement Zvikonyo, from Paper Smith and Son, it is regarded as better practice to make use of papers manufactured from sustainable forests endorsed by the FSC opposed to **[re]**cycled paper made from post consumer waste. This is due to the large amounts of chemicals such as chlorine and acid, which are **[re]**-quired to bleach the pulp in order to whiten the colour and make it viable for print.

Acid free	Papers which are free from traces of acid, i.e. made under neutral sizing conditions (Curtis Fine Paper, n.d:3)
Bleaching	Bleaching method using chlorine or other chemicals to whiten the colour of woodpulp used in paper making (Curtis Fine Paper, n.d:3)
Chlorine	A bleaching agent used in the woodpulp production process to create whiter, stronger paper (Curtis Fine Paper, n.d:4)
De-inking	Removal of printing ink and impurities from recovery paper; to produce [re] cycled fibre pulp with improved whiteness and purity (Curtis Fine Paper, n.d:4)
Forest Stewardship Council (FSC)	An international non-governmental organisation, which promotes responsible and sustainable forest management. This allows papermakers to identify woodpulp originating from well-managed forests (Curtis Fine Paper, n.d:4/5)
Paper grades	Paper is classified into different grades according to the end use, the pulp used and the treatment of the paper (Curtis Fine Paper, n.d:6)
Post consumer waste	Is waste collected after the consumer has used and disposed of an item. [Re] covered materials can be de-inked to form [re] cycled pulp (Curtis Fine Paper, n.d:6/7)
Pre consumer waste	Also known as best white waste, typically these are unprinted off cuts, scraps, trimmings and overruns from printers that are then formed into [re] cycled pulp (Curtis Fine Paper, n.d:7)
Totally chlorine free	Paper made from woodpulp bleached without the use of chlorine chemicals (Curtis Fine Paper, n.d:8)

Abstract

Adaptive [re]use is a process that makes use of the principles of [re]duce, [re]use and [re]cycle, often giving products and extended lifespan not initially associated with the original function. Environmentally adaptive [re]use makes sense as the embodied energy of the host building is [re]tained opposed to the amount of energy [re]quired to construct an entirely new building.

The purpose of the urban group framework was to increase density within the city and provide a wider range of commercial, social and cultural activities that take place in a 24 hour cycle. Another aim was to [re]store existing buildings within the city, [re]juvenating the area and its surrounds.

The design strategy of this thesis was to investigate how new interventions could be in contrast to the existing building. This was achieved by allowing new structures to be read differently from the host building. The contrasting use of materials and construction technologies [re]sulted in an architectural language of “lightness”, allowing new components to be sensitively inserted into the existing building.

Additionally the design strategy included the exploration of layering and place making. Layering involved the preservation of the original building’s form and identity, while new structures are layered over the existing in order to create new spaces. Place making was achieved by adding new hanging structures to the northern and southern façade in turn articulating new functional spaces.

All new adaptations and interventions are constructed in such a manner so as not to hamper the flexibility and future adaptability of the building.

Summary

This proposal intends to demonstrate various strategies and principles that can be applied to an existing building in the Pretoria CBD. These strategies and principles can then be applied to other dilapidated or under utilised buildings in order for them not to be demolished in their entirety. The proposed design will identify various program scenarios and demonstrate how the different programs manipulate the building and how the building adapts to the program. Throughout this process, the new adaptations should not limit the future adaptability of the building and ought to be of a sustainable nature.

The Site

Address: 116 Paul Kruger Street, Pretoria

Name of building: Woltemade Building

GPS co-ordinates: S 25 ° 44' 64"

E 28 ° 11' 27"

Main function of the building: Residential

New function: Mixed Program Scenarios manifesting itself in the form of a Design Depot

Research fields: Environmental Potential, Housing and Urban Environments



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ARCHITECTURE

CONTRIBUTION TO THE ARCHITECTURAL PROFESSION

Future users and programmes are undeterminable and unpredictable in nature and therefore **[re]**quires a different approach to that which is currently implemented in the realm of the Built Environment.

The project moves into the realm of flexible versus permanent architecture that, despite not being part of the existing building or structure while still conveying meaning and being contextually relevant. Any alterations and **[re]**-configurations intend to serve the user's needs.

Space in the city is a valuable **[re]**source and it is not always deemed possible to construct a building from scratch. This thesis investigates flexible and adaptable enclosures and additions to an existing building which takes into account the realities such as phasing, structural integrity and the varied needs of the user.

RESEARCH FIELDS

The thesis falls between two research fields of the Department of Architecture at the University of Pretoria: Environmental Potential and Housing and Urban Environments

ENVIRONMENTAL POTENTIAL

This thesis deals with aspects of the environment on many different levels, from the choice to make use of an existing building and services to the incorporation of harvesting solar energy as well as the addition of the screening system placed along the outside edges of the building on the northern façade.

The system placed in front of each unit enables the occupants to extend the needs of the program to the exterior of the building. This is achieved through the use of various screening materials. These screens address the environmental [re]quirements of the internal program as well as give expression and identity to the façade.

HOUSING AND URBAN ENVIRONMENTS

Housing within the CBD is always in demand, however the current conditions leave the Woltemade Building partially empty, even though it is predominantly a residential building.

Residential units are vacant for many reasons including; high rental prices, little variation in unit type which does not address the needs of families as it does not allow room for growth.

This thesis intends to create useful spaces within each residential unit which can accommodate a larger amount of people without compromising the quality of living conditions.

The project intends to provide more choice to the user thereby drawing residents back to the building.

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