

**The Hidden Life of Montrose;**  
strategies for building in an historic environment  
Ina du Toit

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THE HIDDEN LIFE OF MONTROSE;  
STRATEGIES FOR BUILDING IN AN  
HISTORIC ENVIRONMENT

This dissertation is presented as part fulfillment of the degree of Master of Architecture (Professional) in the School of Architecture, Planning and Geomatics

University of Cape Town, 2014

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This dissertation is presented as part fulfillment of the degree of Master of Architecture (Professional) in the School of Architecture, Planning and Geomatics, University of Cape Town, 2014

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## ABSTRACT

Densifying within an already built-up, existing city inevitably brings up the question of how to build within an existing built environment, such as Cape Town, where many buildings have historic meaning. This dissertation explores this question and ultimately argues that we should use the spaces and buildings that we have more effectively, rather than searching for greenfield sites outside the city where we can build from scratch.

I see buildings as existing in time and having a life of their own – this means that they can accommodate different uses and occupations throughout their lifetime. I believe the evidence of other uses and previous occupations should not be hidden and that exposing the secret life of buildings will create a richness and complexity in our urban environment. Structures retain time, they exist of layers of time and this should be acknowledged.

The emergent themes of architecture as palimpsest, of time and the thinking about sustainability was developed in response to urban sprawl and the disregard of all that went before it; both remnants of modernist policies still evident in the development and expansion of Cape Town. Reusing, renovating, adapting and extending older buildings retain the social and cultural capital embodied in buildings and it is inherently more sustainable because it involves less material use, less transport energy, less energy consumption, less pollution during construction and the reduction of generated landfill waste.

The site occupies a large piece of land right next to the historic Leeuwenhof, Waterhof and Welgemeend farm homesteads in the Upper Table Valley. The programme was developed in response to site; both in terms of its current use and its history. It is a design for a satellite campus for the Cape Peninsula University of Technology's Hospitality Management School.

The historic waterways serve as inspiration for a circulation spine and route connecting and supporting a series of free-standing buildings. The discovery of really thick masonry walls at Montrose serves as inspiration for the principle of using thick masonry walls as another ordering system. Building within an existing environment will become increasingly important as expansion of cities becomes less favourable as less land is available. This dissertation serves as a case study of possible ways to build within an existing environment where some buildings have historic value.



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*All images by author, unless otherwise stated*



These images are creative explorations through which I investigated broader interests at the start of the year.

My initial image/word was a palimpsest (1). A palimpsest is a writing slate where remnants of what was previously written is still visible. For me this referenced layers of time and of uses that are still visible in existing buildings.

The layered rock (2) refers to the visible layers of time and Table Mountain as visible palimpsest. The smaller stones (4) were picked up around Cape Town - the river pebble and moss hints at the availability and importance of water.

The magnet (3) refers to gravitational force to the centre of Cape Town as city.

The tapestry techniques (5) hints at Cape Town as an urban tapestry - different threads stitched together to create a vibrant whole. The 'warp' of the woven fabric only attains visibility in conjunction with the 'wett'.

The plaster of paris layers, spaghetti and urban landscape images (6) all refers to layers as well as materiality.

These explorations informed my initial search for a broader theme and assisted me in looking for a site.

## PREFACE

The inception of this project is a love for the city of Cape Town. Also known as the *Mother City*, Cape Town's unique conception as an agricultural supply post of fresh produce to the VOC and later first permanent settler town in the Cape and South Africa encapsulates a rich history grounded in its landscape, with the Company's Garden as living testimony. Its unique topography at the foot of Table Mountain shaped its growth and continues to determine development.

Cape Town has a population of 3.7 million people, of which the majority live outside the historic city bowl.<sup>1</sup> I believe that the city can accommodate massive densification – this will ensure more vibrant communities, will justify spending on communal facilities and green open spaces, it will provide more accommodation closer to services and jobs and will cut down on long and expensive travelling time and costs.

Densifying within an already built-up, existing city inevitably brings up the question of how to build within an existing built environment,

such as Cape Town, where many buildings have historic meaning.

This dissertation explores this question and ultimately argues that we should use the spaces and buildings that we have more effectively, rather than searching for greenfield sites outside the city where we can build from scratch. It also makes sense in an era of increasing anxiety over sustainability, as Carl Elefante rightly claim the "greenest building is the one already built". This means looking for existing buildings that can be adapted and re-used.

I see buildings as existing in time and having a life of their own – this means that they can accommodate different uses and occupations throughout their lifetime. I believe the evidence of other uses and previous occupations should not be hidden and that exposing the secret life of buildings will create a richness and complexity in our urban environment. Structures retain time, they exist of layers of time and this should be acknowledged.

The emergent themes of architecture as palimpsest, of time and the thinking about sustainability was developed in response to urban sprawl and the disregard of all that

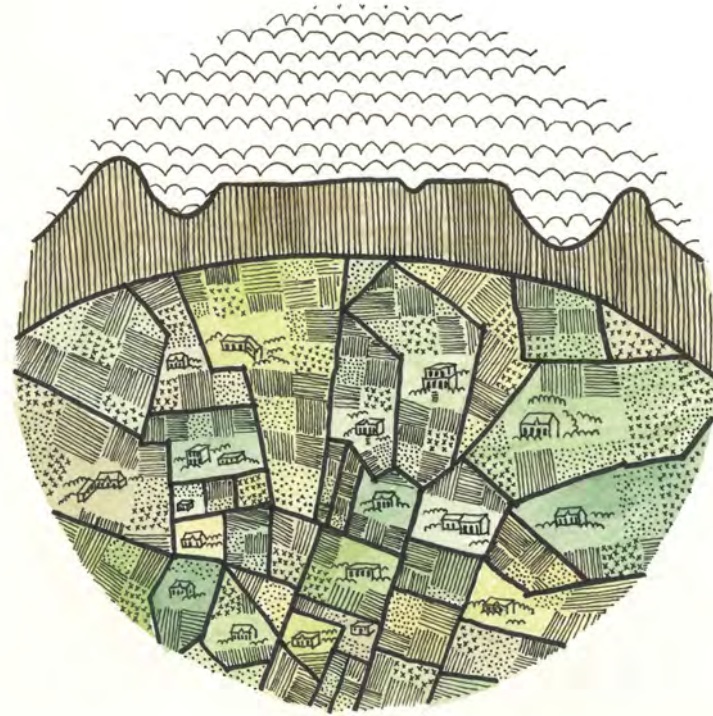
went before it; both remnants of modernist policies still evident in the development and expansion of Cape Town. The greatest challenge for the twenty-first century is such legacies of the twentieth century.<sup>2</sup> I propose that new architecture should be about process rather than product. It should welcome the dynamic of the future and address the lessons of the past. It must celebrate diversity; recognise the value of the old as well as the new, of modernity as well as tradition.

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<sup>1</sup> Cape Town Census 2011, Available Online: [https://www.capetown.gov.za/en/stats/Documents/2011%20Census/2011\\_Census\\_Cape\\_Town\\_Profile.pdf](https://www.capetown.gov.za/en/stats/Documents/2011%20Census/2011_Census_Cape_Town_Profile.pdf) [Accessed 26 August 2014]

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<sup>2</sup> Powell, K. 1999. *Architecture Reborn, The Conversion and Reconstruction of Old Buildings*. London: Laurence King Publishing, 19



## INTRODUCTION

This dissertation is a design for a satellite campus for the Cape Peninsula University of Technology's (CPUT) Hospitality Management School. The programme was developed in response to site; both in terms of its current use and its history.

The site occupies a large piece of land right next to the historic Leeuwenhof, Waterhof and Welgemeend farm homesteads in the Upper Table Valley. These historic farms of the Upper Table were established to grow fresh produce to supply passing ships of food when the Company's Garden could not keep up with the demand.

The establishment of Cape Town is intrinsically linked to its role as a supplier of food with the support of the fertile lands of the Upper Table Valley.

The Upper Table Valley retained its agricultural role and character until the end of the 19<sup>th</sup> century when fierce competition for land between the rapidly expanding city and these farms resulted in a loss of water rights for many farms and their subsequent subdivision into housing estates.

Today these pressures to develop still exist and the competition for land is perhaps even more fierce. The area's favourable position close to the central business district of Cape Town as well as its pleasant and protected

nature at the foothills of Table Mountain makes it desirable land. Yet it is completely contained, by the mountain and Signal Hill and Devils Peak on 3 sides and the sea to the north and there is thus no space for expansion.

Densification is threatening its rural quality as developers are increasingly knocking down older buildings to make space for larger blocks of flats and new housing estates. The challenge today is to densify this area while acknowledging its unique agricultural past.

The site belongs to the CPUT and is currently used as a women's residence. The large property includes a part of land that was previously part of the productive land of the Waterhof farm. The design proposal densifies existing accommodation for students on site as well as introducing a restaurant and a hotel. These, and the inclusion of a productive garden is a clear reference to Cape Town's role as supply post and stop for sailors on onward journeys. It also serves as practical training for students in the Hospitality Management Department at CPUT; the expansion of the programme ensures a more vibrant and active precinct at all times.

Building within an existing environment will become increasingly important as expansion of cities becomes less favourable as less land is available. This dissertation serves as a case study of possible ways to build within an

existing environment where some buildings have historic value.

The starting point of this dissertation is that buildings have lives, that they accumulate meaning and richness over time and that their re-use rather than their demolition and death is a better solution to both densification and sustainability questions.

As such, different strategies for building within an historic environment will also be discussed and assessed in relation to the design proposal.

## THE HIDDEN LIFE OF BUILDINGS: TIME AS DESIGN INFORMER

Buildings grow; they have a life of their own.

At the heart of architectural theory is a paradox: buildings are designed to last, and therefore they outlast the people that made them. Then, liberated from the shackles of immediate utility and the intentions of their masters, they are free to do as they will. Buildings long outlive the purposes for which they were built, the technologies by which they were constructed, and the aesthetics that determines their form. They suffer innumerable subtractions, additions, divisions, and multiplication; and soon enough their form and their function have little to do with one another.<sup>3</sup> Between our world and our idea of the world is a fascinating kink. Architecture, we imagine is permanent. And so our buildings thwart us. Because they discount time, they misuse time.<sup>4</sup>

The word *building* contains a double reality. It means both the action of the verb build, and that which is built – both verb and noun, both the action and the result. Whereas *architecture* may strive to be permanent, a “building” is always building and rebuilding.<sup>5</sup> In *The Secret Life of Buildings*, Hollis tells the

tales about the lives that buildings lead, changing through the course of their lives, into ‘something rich and strange’.<sup>6</sup> Over time buildings grow, even when they’re not allowed to. Hollis refers to this constant evolving and the life of a building as secret because the existence of their stories has been either overlooked or wilfully ignored.

Christopher Alexander maintains that “no building is ever perfect. Each building, when it is first built, is an attempt to make a self-maintaining whole configuration. But the predictions are invariably wrong. People use buildings differently from the way they thought they would”.<sup>7</sup> People make changes in order to maintain the fit between a structure and the events that takes place in it. Each time this happens to a building we assume that we are going to transform it, that new wholes will be born, and that, indeed the whole which is being repaired will become a different whole as a result. Each alteration is a ‘retelling’ of the building as it exists at a particular time – and when the changes are complete, it becomes the existing building for the next retelling. In this way the life of the building is both perpetuated and transformed by the repeated act of alteration and reuse.<sup>8</sup>

## Time

Time as a form-giving element is never incorporated into design strategy. If buildings have lives of their own, and they unquestionably grow, how can architects anticipate this growth and make provision for it? How can architects acknowledge this animate quality of buildings and use it as a design informer?

Between the dazzle of a new building and its eventual corpse, when it is either demolished or petrified for posterity as a museum, are the lost years – the unappreciated, undocumented, awkward seeming time when it was alive to evolution. If Brian Eno is right, those are the best years, the time when the building can engage us at our own level of complexity. He says that

We are convinced by things that show internal complexity, that show the traces of an interesting evolution. Those signs tell us that we might be rewarded if we accord it our trust. An important aspect of design is the degree to which the object involved you in its own completion. Some work invites you into itself by not offering a finished, glossy one-reading-only surface. That is what makes old buildings interesting to me. I think that humans have a taste for things that not only show that they have been through a process of evolution, but which also show they are a part of one. They are not dead yet.<sup>9</sup>

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<sup>3</sup> Hollis, E. 2009. *The Secret Lives of Buildings*. London: Portobello Books Ltd, 9

<sup>4</sup> Brand, S. 1994. *How Buildings Learn – What happens After They're Built*. New York: Viking, 2

<sup>5</sup> Brand, 3

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<sup>6</sup> Hollis, 9

<sup>7</sup> Alexander, C. 1979. *The Timeless Way of Building*, Oxford: Oxford University Press, 39

<sup>8</sup> Hollis, 13

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<sup>9</sup> Eno, in Brand, 11

While the environmental value and advantage to reusing existing buildings might be easily explained through looking at the immense financial, material, environmental and energy cost of demolishing old buildings and erecting new ones in its place, the cultural value of keeping existing buildings is more complex.

When dealing with existing buildings, there is an awareness of urban vitality and identity, but most importantly, continuity. The need to retain buildings is not only a desire for the physical form of these structures, but also a desire for a certain degree of permanence in the mental images or 'maps' that people have of their environment. Every building, old or new, classic or modern, carries with it historic value and cultural meaning, because it was created and used by men and women of that particular time.<sup>10</sup> Old buildings embody history. They are our world; in old buildings we glimpse the world of previous generations. Old buildings that survived are adapted, complex and mysterious - keepers of secrets.

### Time-less

The opposite of adaptation in buildings is graceless turnover. Famous buildings are often image-driven. They strenuously avoid any relationship with time. This attitude reflects modernist proponents that

advocated a coherent break with the past and with time. Modernism was a consistent and rational movement, concerned with functionalism combined with a social reformist agenda focused on progression.<sup>11</sup> A house was a machine for living, Le Corbusier provocatively declared in his *Towards a New Architecture*. This rhetoric boiled down to two things. Modern architecture was anti-historicist – physically, a fresh and immaculate patina-proof look, and a spiritual newness where historical references were scrubbed off. And modern architecture was anti-monumental – and rejected the concept of permanence, consisting of lightweight volumes that appears to float or are lifted on pilotis.<sup>12</sup>

Remnants of modernist thinking are evident in contemporary architecture. New flashy buildings represent an aesthetic of timelessness, which is sterile. Buildings by famous architects are often self-referential, reflecting an egotistical and narcissistic culture.

Architectural photography also encourage time-less buildings. Awards are given to buildings that photograph well, not necessarily function well. The lifeless picture void of people takes time out of architecture. It is *magazine architecture*. Focusing on a building's exterior is a perplexing thing – all

that effort concentrated on impressing the passers-by rather than the people who use the building. Would it not make more sense to award buildings that are loved, not just admired from afar? Admiration is from a distance and brief, love is up close and cumulative.<sup>13</sup>

The very process of getting a building built fosters time-less buildings. Instead of steady accumulation, the business of contemporary architecture is dominated by instants in time. One is the moment of go-ahead, when drawings and renders become final; the other is the moment of hand-over, when occupancy begins. The effort is to make everything perfect and *final* for these opening nights. The race for finality undermines the whole process. In reality, finishing is never finished.

Peter Calthorpe maintains that many of the follies of the architectural profession would vanish if architects simply decided that what they do is craft instead of art – craft is practical and functional made with *artfulness* whereas art is simply aesthetic.<sup>14</sup> Art is also inherently radical, but buildings are inherently conservative. Architecture has trapped itself by insisting it is the "art of building". Perhaps it is more appropriate to define its job as the "design-science of the life of buildings" – a shift to include time, long-term responsibility

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<sup>10</sup> Munday, 4

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<sup>11</sup> Kostof, S. 1985. *A History of Architecture, Settings and Rituals*. New York, Oxford University Press, 702

<sup>12</sup> Kostof, 702

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<sup>13</sup> Brand, 71

<sup>14</sup> Calthorpe, in Brand, 54

and constant adaptivity.<sup>15</sup> Thinking about what a building actually does as it is used through time, how it matures, how it takes knocks and how it develops, there is the realisation that value resides in that process.

### Frozen in Time

On the other side of the spectrum, preservationist legislation for older buildings is also a constraint to the growing life of buildings. Many people believe in preservation out of fear of what will replace buildings that are not preserved. All too often they fight to save not because what they are saving is so good, but because they fear what will replace it, will be no better.<sup>16</sup> Facadism is the word used for projects that save the illusory fronts of buildings to mask entirely new construction.

In October 2001 the City of Cape Town formally adapted the first Integrated Metropolitan Environmental Policy (IMEP). Cultural heritage was one of the main focus areas of the IMEP and through this the city has committed itself to ensuring that the diverse cultural heritage of the city is protected and enhanced.<sup>17</sup> It states that cultural values, sites and landscapes of historic significance, areas of scenic beauty and places of spiritual importance must be protected and enhanced in planning and decision-making. Furthermore, the city has to

ensure that the cultural heritage of Cape is conserved.<sup>18</sup>

This policy document of the SAHRA (South African Heritage Resource Agency), established under Section 11, is greatly influenced by the Burra Charter or the Australia ICOMOS (International Council on Monuments and Sites ) Charter for Places of Cultural Significance. The terms cultural significance, cultural heritage value and heritage significance are often used interchangeably. The Burra Charter uses cultural significance as the term that brings together all the cultural values of a place. It also includes historic use as rationale for conservation.

According to SAHRA's conservation principles, in areas where there has not yet been a systematic survey to identify conservation-worthy places, a permit is required to alter or demolish any structure older than 60 years. This will apply until a survey has been done and identified heritage resources are formally protected.<sup>19</sup> Other principles includes *minimal intervention*, *repair* of deteriorated and missing features rather than replacement, using *traditional building techniques*, and building in a way that interventions does not *disturb* the original fabric and can be

removed. Contemporary design in an historical setting is only encouraged if it does not disfigure valuable historical and architectural fabric, and if compatible with the existing character and scale of the environs.<sup>20</sup>

As such, norms and regulations often lead the discussion when looking at the growth or evolution of existing buildings older than 60 years. Developers fight the conservation regulations, and conservationists are always on the defensive. A crucial thing is to have developers who see cultural qualities as a unique selling point of a place. The process should start with trust and mutual respect.

There is also the need for the public to become more involved. It is a necessary step towards an integral approach to re-using existing buildings. Intelligent and progressive responses to building in historic environments is possible when specialists, policy-makers and all other parties concerned work together in collaboration, each with their own responsibility and knowledge.

### Timeless

The needed conversion is from architecture based on image to architecture based on process. Image both in terms of the flashy new post-modern obsessed with façade and

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<sup>15</sup> Brand, 210

<sup>16</sup> Brand, 93

<sup>17</sup> Bandarin & Van Oers, 149

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<sup>18</sup> Bandarin & Van Oers, 149

<sup>19</sup> "Built Environment Heritage Resources" Available Online: <http://www.sahra.org.za/about/built-environment> [Accessed 10 April 2014]

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<sup>20</sup> Western Cape Conservation Principles. Available Online: [http://www.sahra.org.za/sites/default/files/website/article\\_docs/CONSERVATION%20PRINCIPLES.pdf](http://www.sahra.org.za/sites/default/files/website/article_docs/CONSERVATION%20PRINCIPLES.pdf) [Accessed 24 March 2014]

image in terms of strictly facadist preservationists. Herzberger writes that the aim is for architecture "that, when the users decide to put it to different uses than those originally envisaged by the architect, does not get upset and consequently lose its identity".<sup>21</sup> Paul Meurs, and architect and lecturer at the Delft University School of Architecture believes that we need to find ways to make the past a part of the city of the future.<sup>22</sup>

### Adaptive Re-use

Adaptive re-use is one way to make the past part of the future. The retention and re-use of existing historical buildings in a way that suit the changing needs of society, has both cultural and environmental value. The built environment has a very important role to play within the debate on climate change and the linked concept of sustainable development, particularly as it demands 40% of global resources and generates a proportionate amount of waste.<sup>23</sup> A major contribution that the built environment can make to climate change adaptation is in the area of making better use of the infrastructure that we already have. If the construction industry repositions itself to increase focus on the revitalization of existing buildings as an alternative to demolition and

replacement, it can contribute positively to the extreme challenges of climate change and encourage sustainable development.

Reusing, renovating, adapting and extending older buildings retain the social and cultural capital embodied in buildings. It is inherently sustainable because it involved less material use, less transport energy, less energy consumption, less pollution during construction and the reduction of generated landfill waste.<sup>24</sup>

In addition to being an environmentally responsible way to build, reusing existing buildings can improve people's experience of their cities. An individual's connection to the world is facilitated by memory as it envelopes every feature of human experience. In the absence of memory, meaning collapses. In architectural terms, if memory exists as the foundations upon which meaning is built, if a person is to find and experience meaning in their built environment, architecture must necessarily engage with its temporality. Juhani Pallasmaa notes that

Our existential and lived reality is a thick, layered and constantly oscillating condition. Architecture is essentially an art form of reconciliation and mediation and in addition to settling us in space and place, landscapes and buildings articulate our experiences of duration

and time between the polarities of past and future... We understand and remember who we are through our constructions, both material and mental. We also judge alien and past cultures through the evidence provided by the architectural structures they have produced.<sup>25</sup>

As such, existing buildings acts as mnemonic devices that facilitates people's sense of belonging in a city. Aldo Rossi's *The Architecture of the City*<sup>26</sup>, was one of the books written as a rebuttal to the modernist redevelopment of European cities after the Second World War. A city remembers through its buildings, Rossi argues, so the preservation of old buildings is analogous with the reservations of memories in the human mind. The process of urban change is the domain of history, but the succession of events constitutes a city's memory and this is the preferred psychological context for making sense of the city. Identity, it follows, is the sum of all the traces in the city. When its development sweeps buildings away then memory loss and identity crisis threaten and the city loses its typology, and can no longer act as a kind of guide for the people living in it.<sup>27</sup>

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<sup>21</sup> Herzberger, H. 1991. "The Artist and the Scientist" in *Bridging the Gap*, New York: Van Nostrand Reinhold, 146

<sup>22</sup> Frolov, 2013

<sup>23</sup> Langston, C.A. 2008. "The Sustainability Implications of Building Adaptive Reuse" Available Online:

[http://epublications.bond.edu.au/sustainable\\_development/4/](http://epublications.bond.edu.au/sustainable_development/4/) [Accessed 9 April 2013]

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<sup>24</sup> Langston, 2008

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<sup>25</sup> Pallasmaa, J. 2009. *Space, Place, Memory, and Imagination: The Temporal Dimension of Existential Space* in M. Treib (Ed.) *Spatial Recall: Memory in Architecture and Landscape*. New York: Routledge,

<sup>26</sup> Rossi, A. 1982. *The Architecture of the City*. Cambridge: MIT Press

<sup>27</sup> Rossi, 130

The layering of new over old, rather than the wholesale obliteration of vestiges of previous materials, details, spaces, and uses, allows for a deeper and richer architecture and continuity through architecture with the past. Memory of past times must be retained in order to construct meaningful architecture. Yet, as Ruskin and Morris<sup>28</sup> insist, imitating past styles is an insult rather than a compliment to the builders of the past: every generation should build according to the needs and manners of its own age. The challenge is to build within an existing setting, produced in various eras and at different times (as is the case in most contemporary cities) while being both respectful of historic elements, the surrounding context, as well as being contemporary. Rather than promoting a slavish restoration of the exterior shells of historic buildings, a more layered and complex approach is necessary – architecture as palimpsest.

This layered approach is about process rather than product. It welcomes the dynamic of the future and addresses the lessons of the past. It has value in its celebration of diversity, recognising the value of the old and new, of modernity and of tradition. As Aldo Van Eyck<sup>29</sup> states, “Places we remember and places we anticipate are mingled in present time. Memory and

anticipation, in fact, constitute the real perspective of space, giving it depth”.

According to Kevin Lynch, the present needs a past to grow on. “Longevity and evanescence gain savour in each other’s presence...We prefer a world that can be modified progressively, against a background of valued remains, a world in which one can leave a personal mark alongside the marks of history”.<sup>30</sup>

The challenge of adaptive re-use should be regarded as a valuable architectural assignment in its own right.<sup>31</sup> The *convergence* approach is whereby the architecture of the intervention creates new quality resulting from the merger of the existing situation and the addition. When a building designed for one purpose is put to a completely different use, its value deepens according to Jane Jacobs.<sup>32</sup>

Preservations studies have focused on time separate from space, while design cultures since modernism has tended to prioritise space apart from time.<sup>33</sup> Although advocates for permanence and

monumentalism and advocates for modernism and the fleeting are opposites, they are trying to do the same thing: both are trying to situate architecture outside of time. Permanence is eternal. The fleeting or a moment, once captured, is raised above time. Yet buildings exist in time. Layering of time and evidence of other uses in time confirms the hidden lives of buildings.

Buildings have lives in time, and those lives are intimately connected with the lives of the people who use them. Buildings come into being at particular moments and in particular circumstances. They change and grow as the lives of their users change. Eventually – when people no longer find them useful – they die.

Buildings that still work for a living, that are richly textured, are expert at being exactly where they are and what they are, are visibly cherished. These buildings have endured in a way that they would never have done if no-one altered them. Through time and different roles they’ve played, these buildings learn and get better. Architecture is all too often imagined as if buildings do not – and should not – change. But change they do, and have always done. This dissertation explores different ways that architecture can incorporate richness accumulated over time in the re-use rather than demolition of existing buildings.

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<sup>28</sup> Quoted in Powell, 10

<sup>29</sup> In Markus, T. A. 1979. *Building Conversion and Rehabilitation: Designing for change in building use*. London: Butterworth

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<sup>30</sup> Lynch, in Brand, 102

<sup>31</sup> Meurs, P & Steenhuis, M. 2011. *Adaptive re-use in urban and rural areas in the Netherlands*. Amsterdam: NAi Publishers, Introduction Available online: [http://www.steenhuismeurs.nl/EN\\_BR/English/Products/project/273/Adaptive-re-use-What-are-we-waiting-for-?template=print](http://www.steenhuismeurs.nl/EN_BR/English/Products/project/273/Adaptive-re-use-What-are-we-waiting-for-?template=print) [Accessed: 2 March 2014]

<sup>32</sup> Jacobs, 253-254

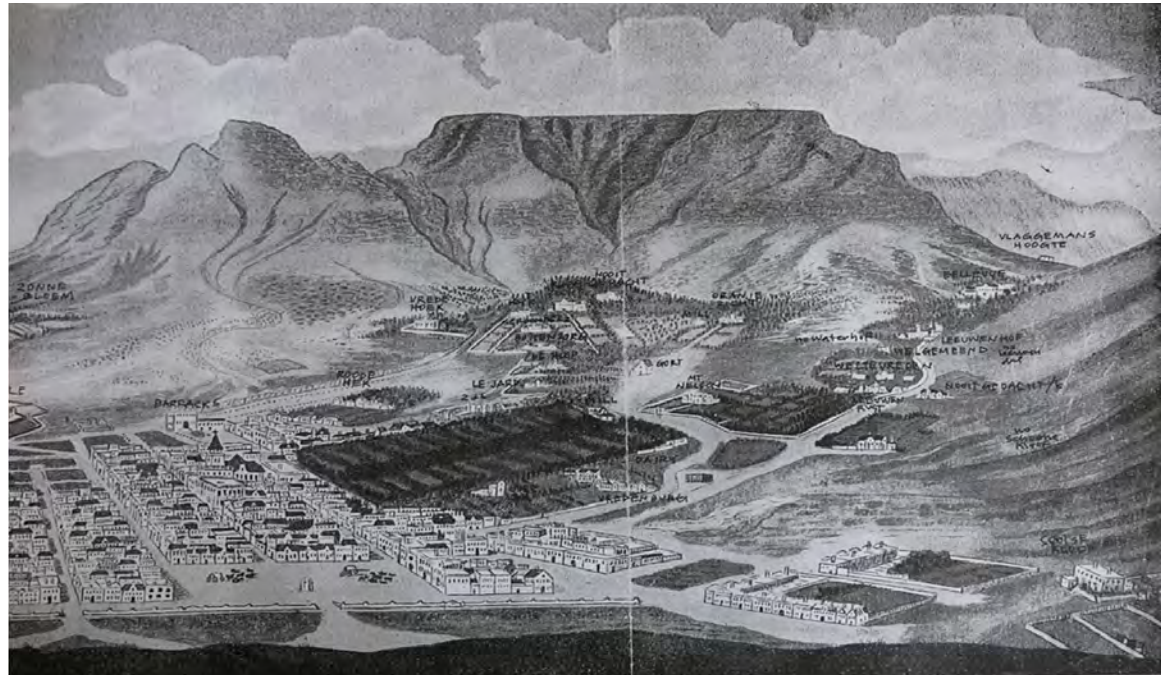
<sup>33</sup> Crysler, C.G. 2012, in Crysler, Cairns and Heynen (Ed.) *The Sage Handbook of Architectural Theory*, Sage Publications, London

## THE HIDDEN LIFE OF THE UPPER TABLE VALLEY

The wider study area of this project is the Upper Table Valley, chosen because of its rich, layered history. The area has changed from pastoral land, to market garden farms, to a semi-agricultural area of manor and country houses, to the first example of mass (Victorian) housing developments to an extension of the commercial urban centre of Cape Town.

The Upper Table Valley is an inner suburb of the City of Cape Town immediately adjoining the central city area. It is bounded on the north by the shore of Table Bay and is enclosed on the other sides within a semicircle of high land of which the great mass of Table Mountain dominates the scene and closes the vista to the south flanked by Devil's Peak and Lion's Head. On the shore line at the centre of the semicircle is the level ground on which the settlement from which Cape Town grew was situated. From here the bottom of the valley rises gently towards the south but more steeply immediately to the east and west.

Table Valley has been the home of man since the earliest times and Stone Age sites have been reported within its bounds.<sup>34</sup> At the time of Jan Van Riebeeck's arrival in 1652 it was visited annually by the pastoral Khoi-Khoi



Johannes Schumacher, 1776, looking from Signal Hill  
(Harris, S. 1998. *The Waterhof Lands*, Album A. unpublished)

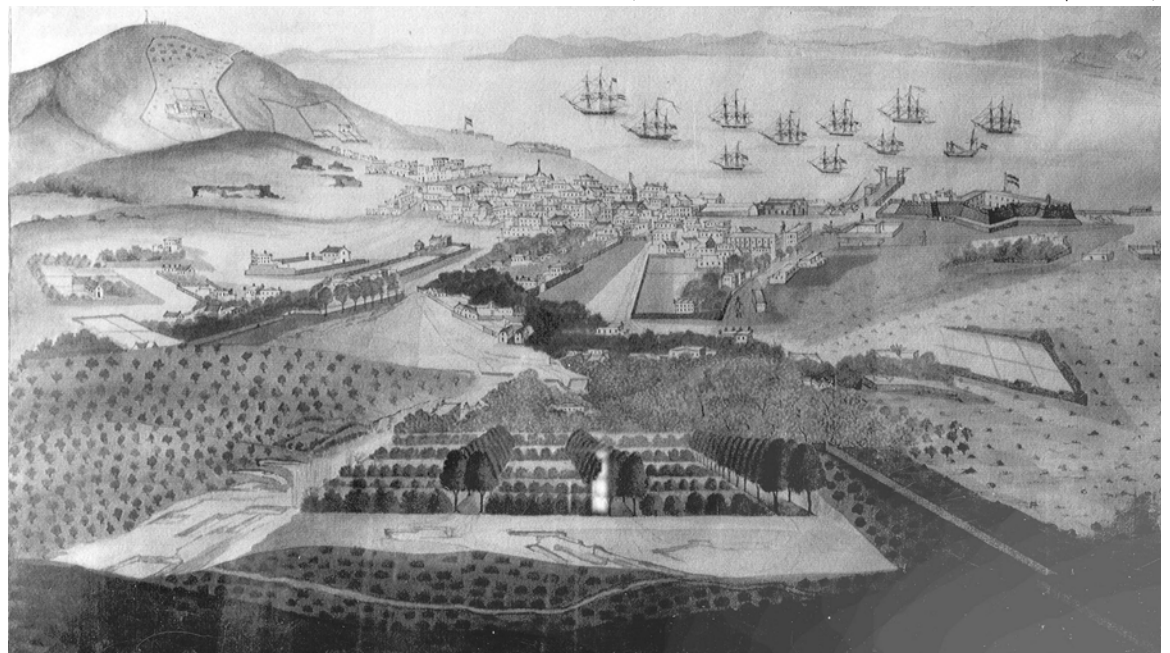


Table Valley from Oranjezicht farm, 1804 artist unknown  
Harris, S. 1998. *The Waterhof Lands*, Album A. unpublished)

<sup>34</sup> Verschoyle, D. 1979. "Upper Table Valley: A Survey", 1979 in *VASSA Journal*, Number 3, July 2010, 20

people who sought grazing, wild game, edible plants and water.

The new settlers introduced for the first time cultivation of the soil, which was the central purpose of their enterprise, and the use of water both for irrigation and as a source of mechanical energy. In 1657, the first free burghers were granted garden allotments to grow produce for victualing visiting ships as the Dutch East India Company's garden could not meet the demand.<sup>35</sup> These allotments ranged from one to eight hectares in Table Valley and gradually spread fanwise from the town towards the mountain, their location determined but the pockets of rich granite and sandstone soil, the contours of the terrain and the perennial streams from which water could be led for irrigation.<sup>36</sup>

At first, the gardens were detached or grouped in clusters with wide spaces of waste land between them. As the natural vegetation was reduced by overgrazing and cutting for firewood so new species of oaks, stone pines and poplars were introduced to form the new basis of a new landscape which is still visible today.

From 1686 water was led from Platteklip stream to service reservoirs lower down from which it distributed to the town. From this time onwards, the competition between the

growing town and the gardens for the available water runs like a continuous thread through the history of both.<sup>37</sup> As new gardens were laid out, reservations were retained between the allotments to allow unimpeded movement on the wagon roads. Doordrifts or thoroughfares were reserved for the driving of livestock to rough pastures on the mountain slopes. Such were the origins of Buitenkant, Molteno and Kloof Nek road.

In addition to these thoroughfares there evolved an irregular secondary system of wagon ways traversing private properties and linking the various homesteads. Such were the origins of Prince and Hof Street. So it was that in the centre of the valley there came into being an intricate network of property boundaries, doordrifts, wagon roads, irrigation furrows and windbreaks, overlaying but combining with the natural landscape to meet the needs of a purely agricultural community.<sup>38</sup>

At the sides of the valley on the lower slopes of Devils Peak and Signal Hill the light Malmesbury soil and the absence of perennial streams deterred the establishment of small gardens. This land was used mainly for grazing and dairy farming and was consequently laid out in larger units. When urban settlement eventually took place, considerable areas unencumbered by

The farms of Table Valley in 1804.

This painting is what piqued my interest in the farms of the Upper Table Valley. It was painted in 1804 and shows icons of the market garden houses on the slopes that embrace the town. Each has the owner's name written next to it. It used to belong to J. H. Hofmeyr of Welgemeend and currently hangs in the Koopmans De Wet museum in Strand Street, Cape Town. (Image from Stewart Harris's Flickr stream: <https://www.flickr.com/photos/myskygarden>)

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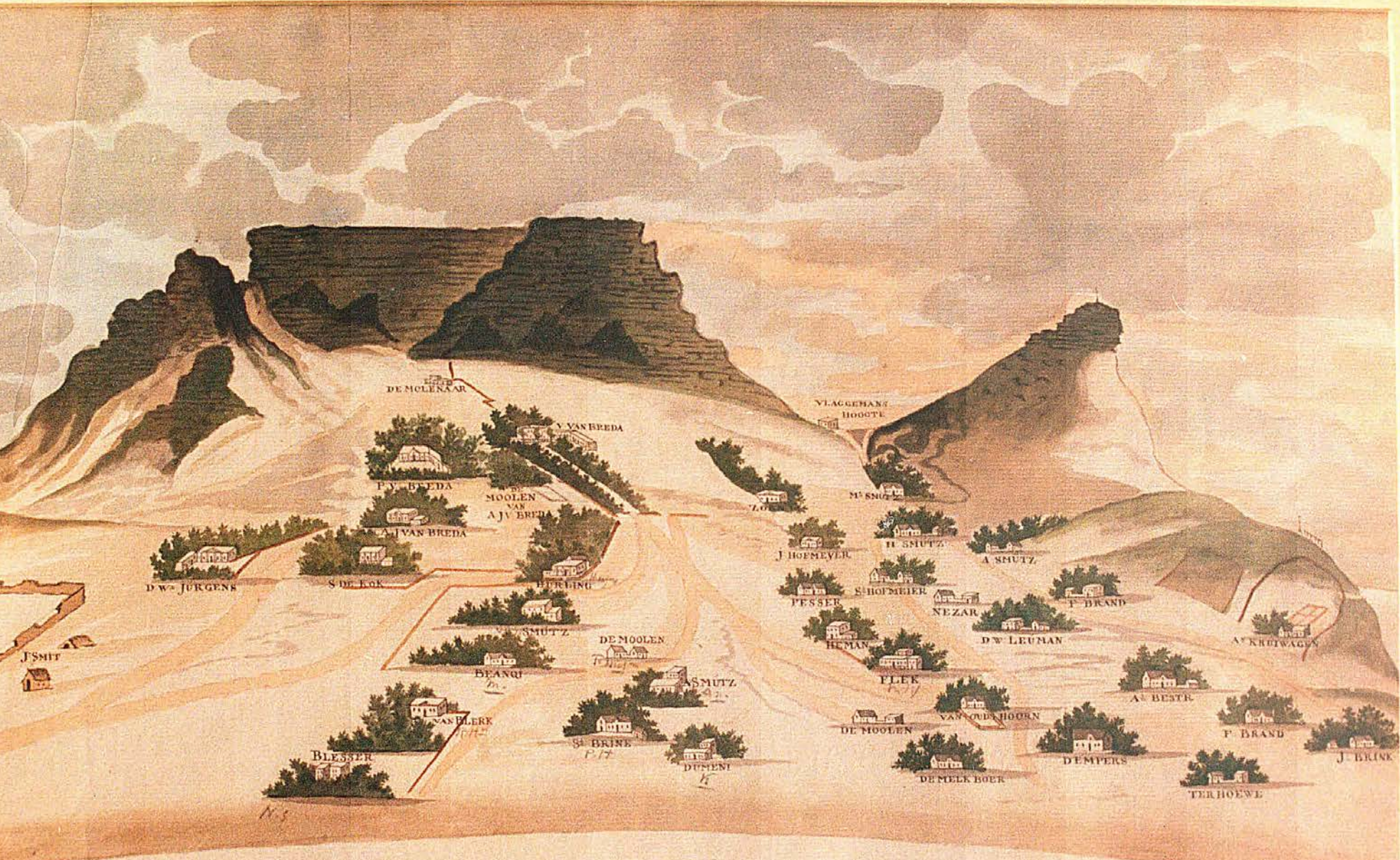
<sup>35</sup> Verschoyle, 20

<sup>36</sup> Verschoyle, 20

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<sup>37</sup> Verschoyle, 21

<sup>38</sup> Verschoyle, 22



DE KAAP STAD  
 OF  
 TAFEL VALEY

numerous property boundaries were available for the layout of large townships.

By 1820, the map of Table Valley clearly shows the man-made boundaries which formed the framework for later urban development.

With the growth of Cape Town its water supply became inadequate and the Municipality began a programme to purchase the water rights of the garden owners from the mid-19<sup>th</sup> century.<sup>39</sup> This forced the pace of change from agriculture to residential land use. The expropriation of the water rights in Upper Table Valley rang the death knell of market gardening. Only those farms that possessed rights to the residual water from Waterhof spring were able to carry on, namely, Waterhof, Leeuwenhof and Welgemeend.<sup>40</sup>

The pace of economic expansion in the 1850s and 1860s, accelerated with the development of diamond mining in the 1870s and gold mining in the 1880s brought a corresponding increase in population and urban growth followed by speculative development in urban land. The mass procured commodities of the industrial age were now available for use in building, drainage and roadmaking, thus greatly facilitating the rapid development of housing

estates.<sup>41</sup> Many of the Upper Table Valley farms were subdivided into building lots and developed as housing estates.

From 1890 the houses became intrinsically late Victorian in form and appearance. They continued to be built in the first decade of the 20<sup>th</sup> century and form the greater part of the older housing stock which has survived in the Upper Table Valley. Many earlier larger Georgian houses also survived into the 20<sup>th</sup> century to become nursing homes, boarding houses and students hostels, but because of their large grounds were magnets for flat developers and most of them were demolished between 1930 and 1950.<sup>42</sup>

The second stage of rapid urbanisation started in the 1920s. By 1921 a severe shortage of houses had become apparent. There was less demand for larger houses that were expensive to maintain and many became institutions. Landlords started turning to flat developments for investment and by 1924, some large blocks were built in Sea Point. After 1933 larger blocks appeared in the Upper Table Valley. In 1938 there were 124 blocks in the area above Mill Street. The earlier flats were chiefly built on the larger vacant lots or on properties with large gardens which was difficult to maintain in the economic climate.<sup>43</sup> Between 1918 and 1938 single dwelling development also picked up.

From 1945 onwards, flat blocks of up to 7 stories began to break through the green canopy.

The farms of Table Valley in 1820, overlaid on a map and aerial photo of the Upper Table Valley in 2012

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<sup>39</sup> Verschoyle, 26

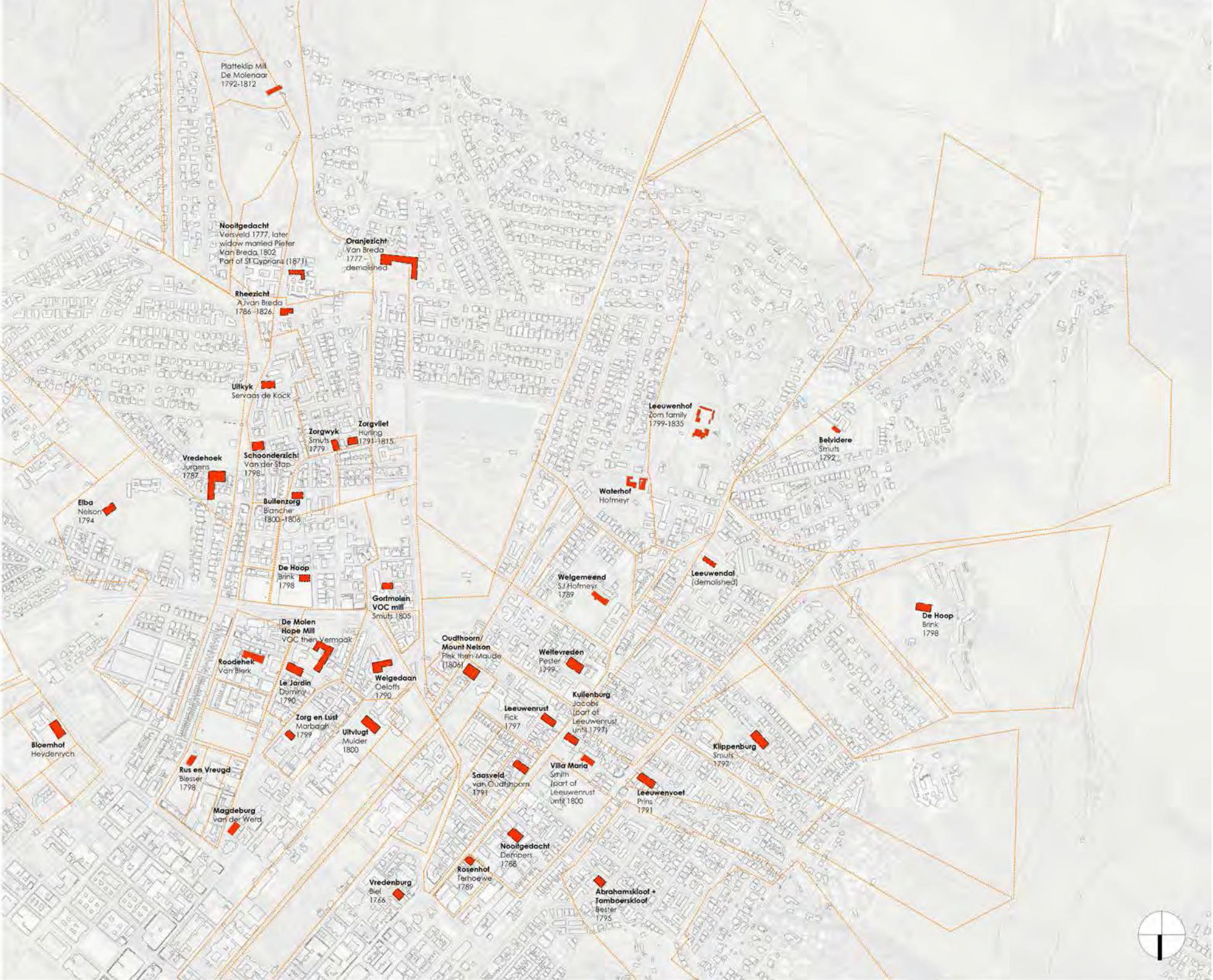
<sup>40</sup> Verschoyle, 33

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<sup>41</sup> Verschoyle, 34

<sup>42</sup> Verschoyle, 29

<sup>43</sup> Verschoyle, 43



Platteklip Mill  
De Molenaar  
1792-1812

Noelgedacht  
Vanveldt 1777, later  
widow married Pieter  
Van Breda 1802  
Part of St Cyprians (1871)

Rheezicht  
A.J. van Breda  
1786-1826

Oranjezicht  
Van Breda  
1777  
demolished

Ullyk  
Servaas de Kock

Vredehoek  
Jurgens  
1787

Schoonderzicht  
Van der Stap  
1798

Bullenzorg  
Blanche  
1800-1806

De Hoop  
Brink  
1798

Gormolen  
VOC mill  
Smuts 1805

De Molen  
Hops Mill  
VOC then Vermaak

Roodehek  
Van Blerk

Le Jardin  
Duminy  
1790

Zorg en Lust  
Marbach  
1799

Uitvlugt  
Mulder  
1800

Rus en Vreugd  
Blessier  
1798

Magdeburg  
van der Werf

Vredenburg  
Bla  
1766

Rosenhof  
Terhoeve  
1789

Noelgedacht  
Dempers  
1788

Saasveld  
van Oudthoorn  
1791

Villa Maria  
Smit  
(part of  
Leeuwenrust  
until 1800)

Leeuwenrust  
Fick  
1797

Welleveden  
Pester  
1799

Wegemeend  
S.J. Hofmeyr  
1789

Leeuwenhof  
Zorn family  
1799-1835

Waterhof  
Holmeyr

Belydere  
Smuts  
1792

Leeuwendal  
(demolished)

De Hoop  
Brink  
1798

Klippenburg  
Smuts  
1799

Leeuwenvoel  
Prins  
1791

Abrahamskloof +  
Tamboerskloof  
Bester  
1795



TIMELINE OF THE DEVELOPMENT OF THE UPPER TABLE VALLEY



Table Bay with Market Farms at the foothills of Table Mountain  
Mattheus Sager, 1748,



The farms of Table Valley, 1820

**Pre-1652**

Area visited annually by pastoral Koi-Koi who sought grazing, wild game, edible plants and water

**1652**

First settlers introduced cultivation of the soil.

**From 1657**

Free burghers granted garden allotments from 1 - 8 ha in Table Valley - gradually spread fanwise from town towards the mountain - location determined by packets of rich granite + sandstone soil, contours of the terrain + perennial stream for irrigation.

**From 1686**

When castle and new jetty built, water lead from streams to service reservoirs

**By 1700**

Line of present roads established  
Wagon road from town to Kloofnek - Kloofstr; Molenweg to Gvt's water mill - Mill str

**1774**

Water rights of each garden adjusted

**1700s**

'Gardeners' grew vegetables, fruit + grapes. Sold in town + to passing ships.

Thoroughfares between farms for driving livestock to pastures. Secondary systems of wagonways traversing private property and linking homesteads.

**1774**

Water rights of each garden adjusted

**1806-1820**

Some subdivision of garden land for urban purposes bottom of Hope, St Johns + Kloof streets.

**1810**

Infilling space of ungranted land between clusters of gardens and narrowing of existing doordrifts.



Millard's panorama, 1859  
 (Ex Bekker prints ex CCC Electrical Dept copy neg Mi.001  
 of glass plate original)



**1800-1830**

Flat roofs constructed of grouted brick laid on timber beams + water proofed with train oil, less restrictive plans + 2nd storeys possible.

**After 1803**

Imports of Welsh Slate - low-pitched hipped roofs possible

**By 1820**

6 private watermills along the stream from platteklop to Orange street

Former taxes on winemaking removed + preferential tariffs in England encouraged exports.

Oranjezicht, Leeuwenhof, Welgemeend enlarged, new vineyards laid out. Fruit + vegetables still main activity

**1839**

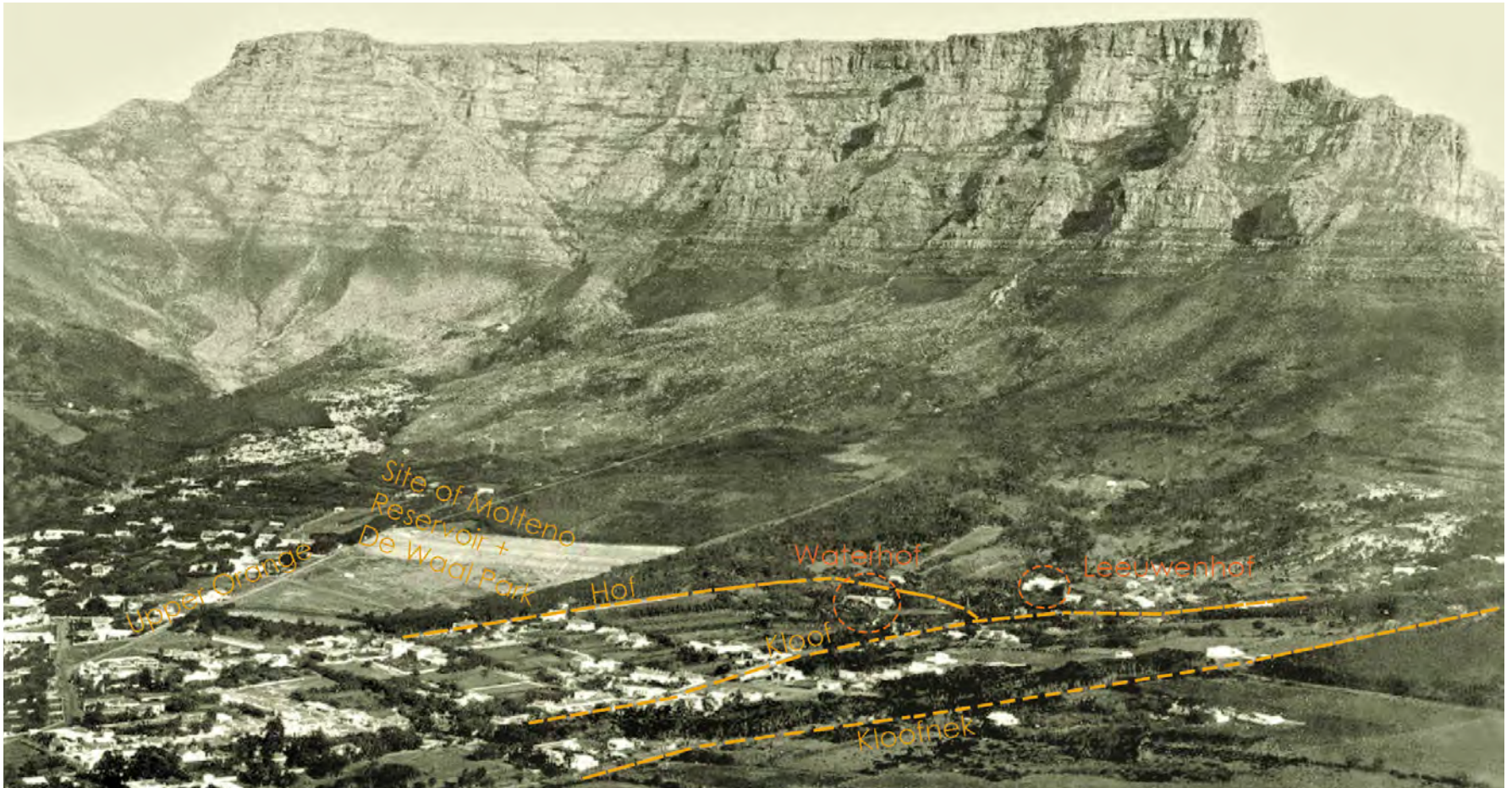
De Hoop Farm subdivided for residential development. Deduction for residential lots here and there along Hof and Kloof streets. Houses late Georgian. (low-pitched hipped slate roofs, large 12 pane windows, internal shutters, 8 panelled front doors)

**mid 1800s**

Economic policies of Company + institution of slavery inhibited possibilities for development of commerce + industry: held back growth of town + expansion into Upper Table Valley. Market gardening remained the economic base for activities. Reduction of British garrison removed lucrative local market for garden produce.

**1850s**

With growth of CT - water supply problem- Municipality embarked on programme to purchase the water rights of garden owners. Forced the pace of change from agriculture to residential.



View of Upper Table Valley 1877 (image from Stewart Harris's Flickr stream: <https://www.flickr.com/photos/myskygarden>)

#### Sensus 1856

10 full time farmers, 10 professionals with farm managers, 2 brewers. some craftsmen at top of Kloof Str. Area below Mill street market gardening disappeared. Start of displacement of agriculture as primary occupation of inhabitants in process of adaptation of area for development of residential suburb.

#### 1855-1865

Economic growth because of minerals - spate of land subdivision for residential development, part of Roodhek, Zorgwyk, Weltevreden sold by public auction.

#### 1863

Municipality acquired rights to 2/3rds of Waterhof spring + Kotze's spring above Leeuwnhof

#### 1868

Municipality purchased full rights to Platteklip stream.

#### 1872

Kloof Nek Road built to take place of the steep road at the top of Kloof Street to Kloof Nek

#### 1886

Molteno reservoir completed on land previously part of Oranjezicht farm.

#### late 1800s

Farms crippled by expropriation of water rights.

#### Until 1880

Single storey Georgian villas

#### After 1890

Houses late Victorian. Imported standardised corrugated iron sheets + cast iron hardware provided material at low cost. Most of stonework from granite quarry below Kloof Nek.

#### 1892-1897

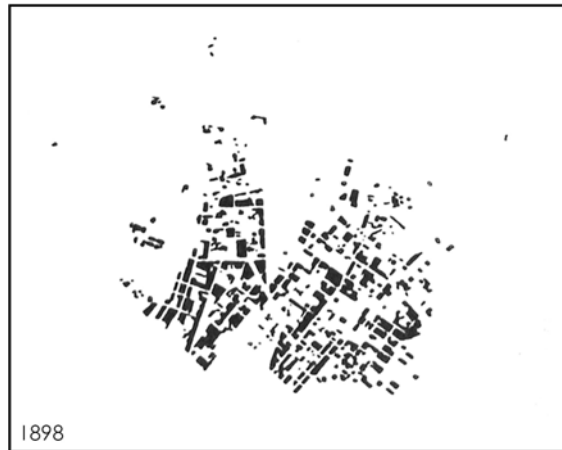
unprecedented expansion housing development large Leeuwnvoet + Tamboerkloof estates subdivided. Also subdivisions on portions of Zorgwyk, Uitkyk, Buiten zorg + Rheezicht.

#### 1896-7

After Jameson Raid influx of Uitlanders from Transvaal



View of Kloof Street 1868 (image from Stewart Harris's Flickr stream: <https://www.flickr.com/photos/myskygarden/>)



**1894**

De Waal Park opened

**1895**

CT's first power station in Molteno Road (De Villiers Graaff)

**1896**

Minimum width of 40 feet for new streets (as opposed to previous 30ft at Tamboerskoof + Leeuwenvoet)

**1893-1899**

Massive scheme to provide sewers + stormwater channels

**1899**

Oranjezicht sold to housing syndicate to be developed as housing estate

**By 1903**

Most open drains bricked over + watercourses, irrigation channels + mill streams disappeared from sight forever

**1897**

Electric tramway branch line ran up Kloof Street to terminus above Camp Street.

**1900-1905**

Tramway extended Brownlow road via Kloof, + along Upper Orange to Montrose Avenue. Tramways first followed existing housing developments, then induced rapid infill and commercial activity along routes. By 1904, 39 shops between Mill + Roeland, 12 in Mill, 57 in Kloof Street

**1896-1910**

New houses built under city by-laws of first building regs of 1896. (modeled on British 1875) Most terraced + semi-detached houses built by landlords and let to tenants, many of whom were recent immigrants.

**1902-1903**

Short housing boom stimulated by evacuees after Anglo-Boer war.

**1903-1909**

Depression, less building.

**1909**

First tar roads at Welgemeend estate.

**1920**

New Building regs.

**By 1921**

severe shortage of houses Gvt introduce rent control - induced owners to sell to tenants. Council also advanced building loans to prospective owners. Trend of small detached houses with gardens (Edwardian).



Kloof Nek Road 1938 (Image from Hilton T's flickr stream: <https://www.flickr.com/photos/hilton-t/>)



**By 1934**

City Council formed a town planning branch

**1924**

Landlords turned to flat development, some large apartment blocks built in Sea Point

**1918-1938**

single dwelling development picked up in Oranjezicht + Marks estates and continued in new townships of Vredehoek, Firdale Avenue + Bay View avenue. 12 new streets at Devils Peak in 1930.

**1920 - 1930s**

Larger Victorian and Georgian transformed into boarding houses, nursing homes + institutions.

**1935**

First trackless trams in Tamboerskloof.

**1936**

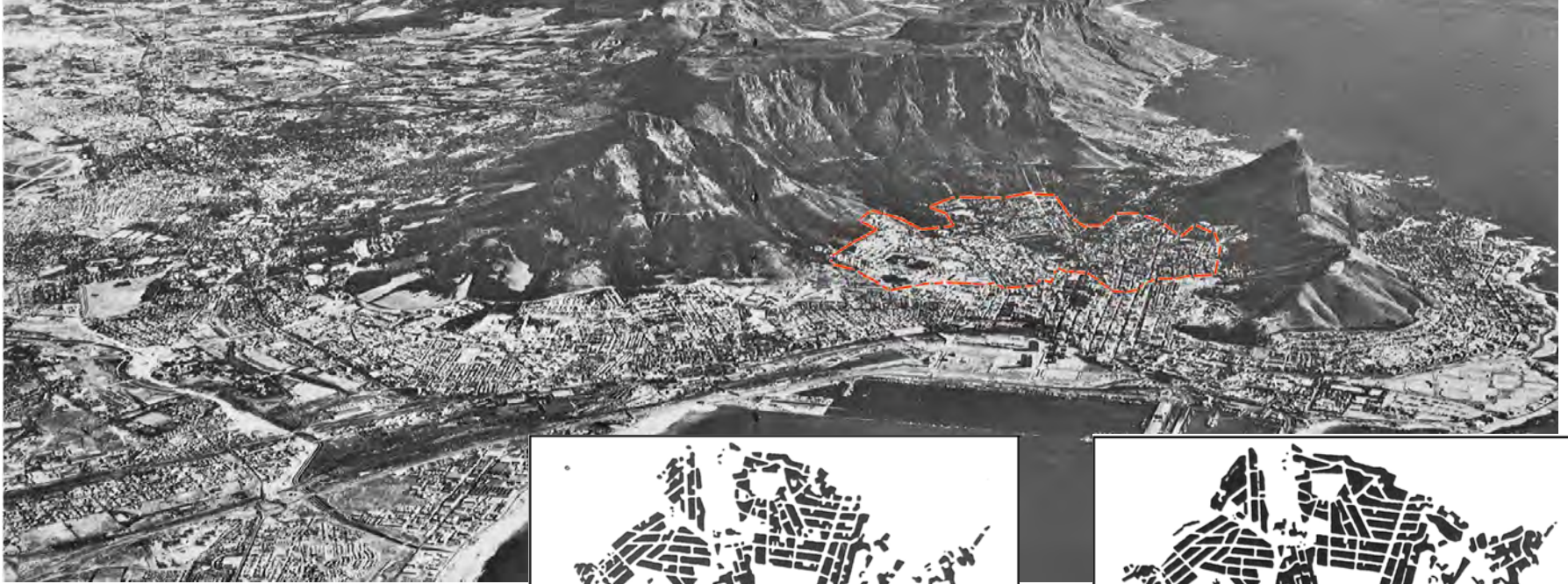
Trackless trams superceded old trams on Kloof Street, Oranjezicht, Mill Street + Buitenkant Street

**By 1964**

Trams replaced by motor buses

**By 1938**

After 1933 larger blocks appeared in Table Valley. By 1939 there were 124 blocks of flats in the area above Mill Street with 593 units.



McNally Aerial photograph 1950s (Image from Stewart Harris's Flickr stream: [//www.flickr.com/photos/mysky-garden/](https://www.flickr.com/photos/mysky-garden/))



### 1930s

Home ownership + swing to small, detached dwelling affected architectural fashions. Stoeps + porches with roofs or canopies supported on pre-cast Tuscan columns took place of cast-iron verandahs. Clay tiles supplanted corrugated iron as a roofing material.

First flat blocks often in style known as Californian - with loggias + archways supported on tuscan columns.

### Between 1930 + 1950

Many old Georgian houses demolished by flat developers due to their large grounds

### By 1930s

All vestiges of old Gardens community disappeared. Last direct link broken when Dr Harold Hofmeyr sold Welgemeend homestead.

### From 1945

Flat blocks of up to seven storeys broke through the tree canopy.

Also new parking requirements lead to increase of hard surfaces at the expense of garden space.

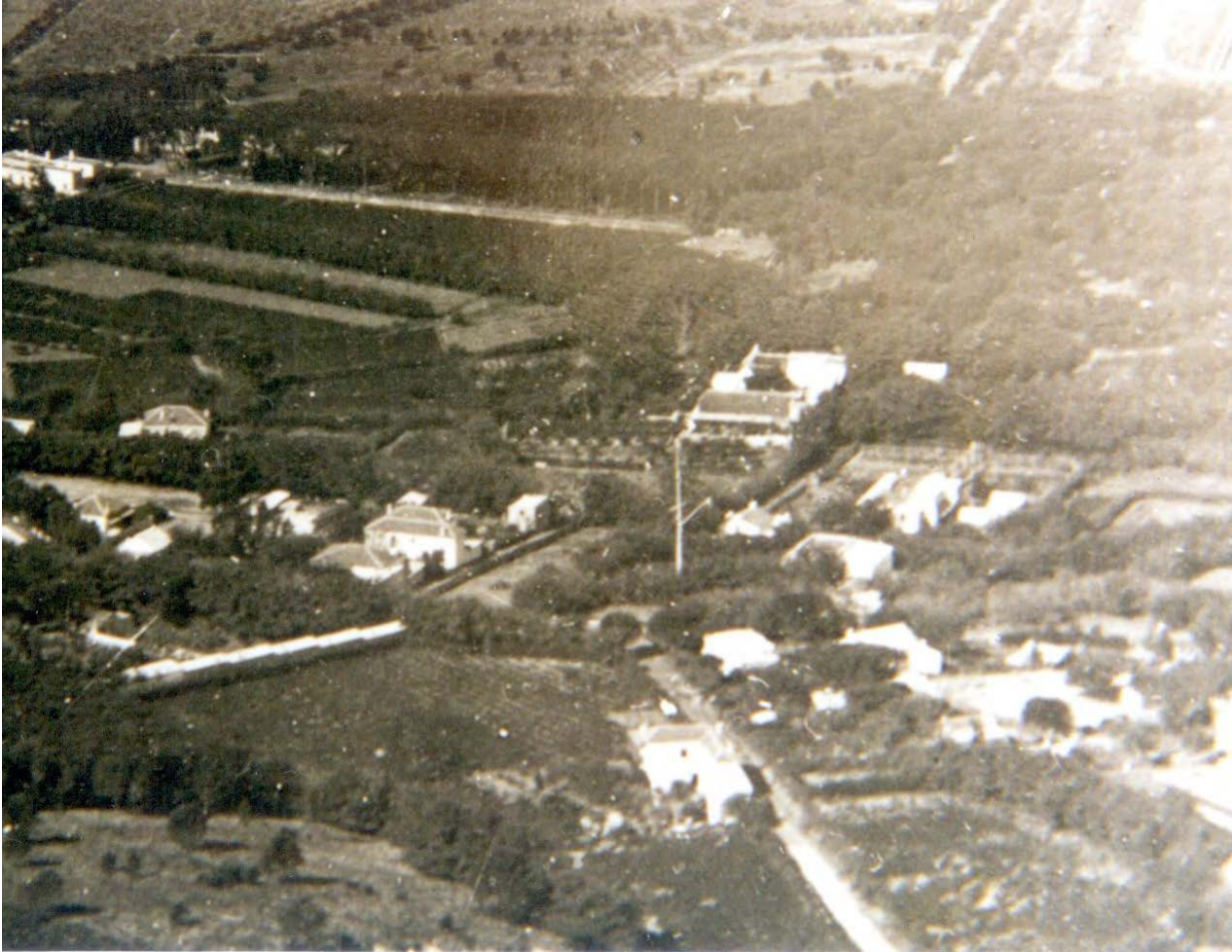


## THE HIDDEN LIFE OF THE KOTZE STREET AREA AND THE ELIZABETH WOMEN'S RESIDENCE

The more specific study area for this dissertation is the Elizabeth House Women's Residence in Kotze Street. Kotze Street was the historic approach road to the Leeuwenhof homestead and the Waterhof lands are adjacent to the residence on the north. Together with Welgemeend at Jan van Riebeeck High School and and Nootgedacht at St Cyprians, they are the only garden farm homesteads that survive in a recognisable form.

The property encapsulates the tendency of pieces of estates being added to and pieces sold off according to its owner's financial strength. Where most farms were completely cut up in residential lots, subdivided, and developed as housing estates, a large portion of open land still exists in the Elizabeth House street block. The large property belongs to the Cape Peninsula University of Technology and occupies an area of 16 748 square meters. The site contains 12 existing buildings, ranging in age from 160 to 40 years old.

The ad hoc nature of the site is characteristic of the Upper Table Valley area and I see this project as a case study in how to build within an existing setting, retaining the character of the area while making the site as a whole more legible and coherent.



View from Lion's head, 1893



Molleno Reservoir

Leeuwenhof Homestead

De Waal Park

Waterhof Homestead

Elizabeth Women's Residence

Welgemeend Homestead

Jan van Riebeeck High School

Mount Nelson Hotel

Hof Street

Hof Street

Kame Street

Kooi Street

Kooi Street

Orange Street



Locating map  
1:10 000

**1. Green Oaks 1862**

1862 on map House Montrose  
 1900 - additions E Seelinger for F. Spilhaus  
 1904 - alterations + addition of first floor  
 Double storey, old building completely enclosed in modern addition.  
 Outbuildings have various layers of alterations + additions.  
 Well-treed garden includes oaks, palms, gums and jacarandas  
 Converted to Green Oaks Hotel, incorporated into EWR (1973)



**7. Green Oaks staff quarters (1906)**

Various layers of additions  
 partly garages



**6. Green Oaks staff quarters (1906)**

"The cottage"

Various layers of additions  
 partly garages, partly  
 accommodation



**9. Beaufort House (original EWR) (1898)**

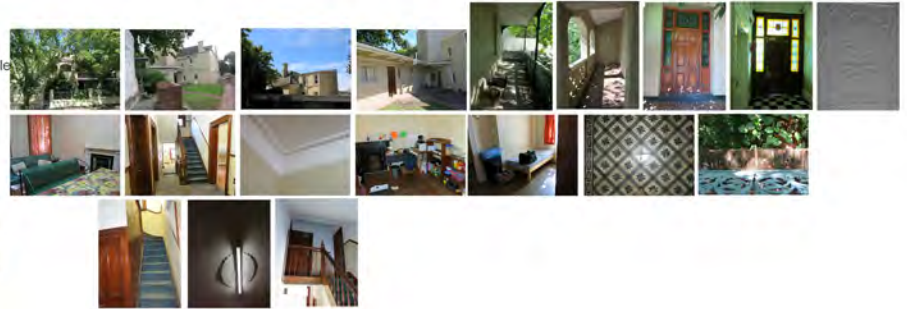
House first built for P.J. Collier in 1898.  
 1948 bought by the Cape Technical college and converted into EWR.  
 smooth and stippled plaster, symmetrical twin projecting bays with  
 gables, much altered, enclosed and projecting bay between original bays  
 added. Original street boundary walling



1940

**2. Newslead 1900**

Austin Cooke for Mrs Cooke  
 Pair of semi-detached double storey villa  
 12 Hofmeyr str has decorative facebrick gable  
 noteworthy facade, interesting brickwork  
 14 Hofmeyr str noteworthy facade and  
 cast-iron, leaded glass in front door.  
 Surviving 'Brosely' tiled dormer gables  
 Gothic verandas.  
 Both re-roofed - now concrete roof tiles



**3. Paradise (1904)**

Victorian Villa. Mauseith and Goodchild for Mr. S Romain  
 Single storey. Now indifferent.



**4. Green Oaks garages (date not on survey)**



**5. Storeroom (date not on survey)**



**10. 1st Extention (prob 1950s)**

3 storeys, smooth plaster, steel small paned windows,  
 hipped asbestos cement roof (being replaced by sheeting)  
 computer room addition (date?)



**12. "Camelot" (date not on survey, prob 1960s)**

2 storeys, facebrick base, smooth plaster, small  
 steel small-pane windows, pitched asbestos cement  
 roof



bridge from 12-1

**8. Mr Twine's House (1898-1918??)**

Caretakers house  
 smooth plaster, steel casement windows  
 single surviving 6 pane double sliding sash  
 shallow, pitched, 1BR roof



**11. 2nd Extention (1966)**

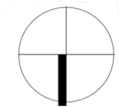
Part 2 storeys, part 3 storeys, facebrick steel windows, smooth surrounds,  
 hipped asbestos cement slate roof



original gable (for service road)  
 still visible at entrance



Elizabeth Women's Residence



Situated at the top of busy commercial Kloof Street, the site has the potential to pull people through the precinct from Kloof Street. This opportunity to feed off the commercial activity of Kloof Street, prompted the decision to incorporate the Rozanna Court building into the precinct. It borders the site on the North and has a frontage onto Kloof Street - providing the precinct with a public address in Kloof Street. The Southern and Eastern side of the site has a more suburban arcadian character. It borders on the large open lands of the Waterhof homestead, the Bird Sanctuary and Waterhof Spring property and the large Leeuwenhof property.



## Open Green Spaces



Two historic waterways cross the site. The Kloof Nek stream forms the Northern boundary of the site. The historic Montrose homestead (later Green Oaks hotel) faces the dry streambed and lush garden. To the south, water passing from Table Mountain through the valley on which Leeuwenhof is situated runs past the site. This water was channeled for irrigation for the cultivated lands of Waterhof of which the site forms a part. These furrows joined the water channels originating at the Waterhof Spring to flow down to the city.

The waterways and large green open spaces of the site forms part of a bigger system of green links from Table Mountain to the city and to the Company's Garden

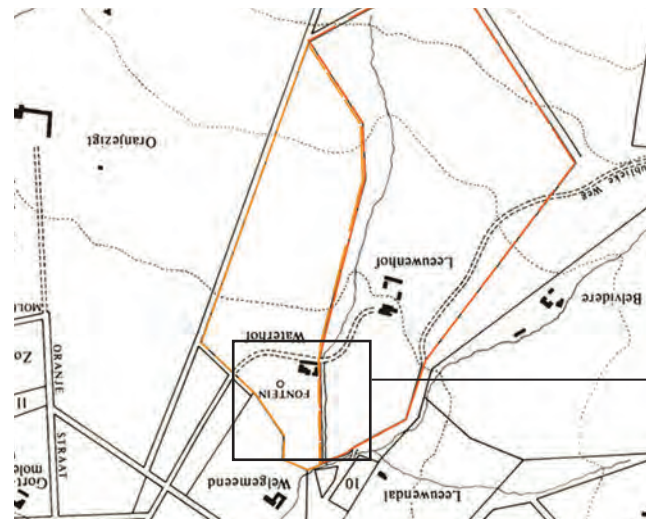
This prompted the decision to keep the large open green space as a garden and not to build up the back of site intensively.

Together with the adjacent bird sanctuary and Waterhof garden, the garden forms a buffer between the densified western side of the site and the green open side to the east that forms part of the larger green system.

# TIMELINE OF THE DEVELOPMENT OF THE KOTZE STREET AREA

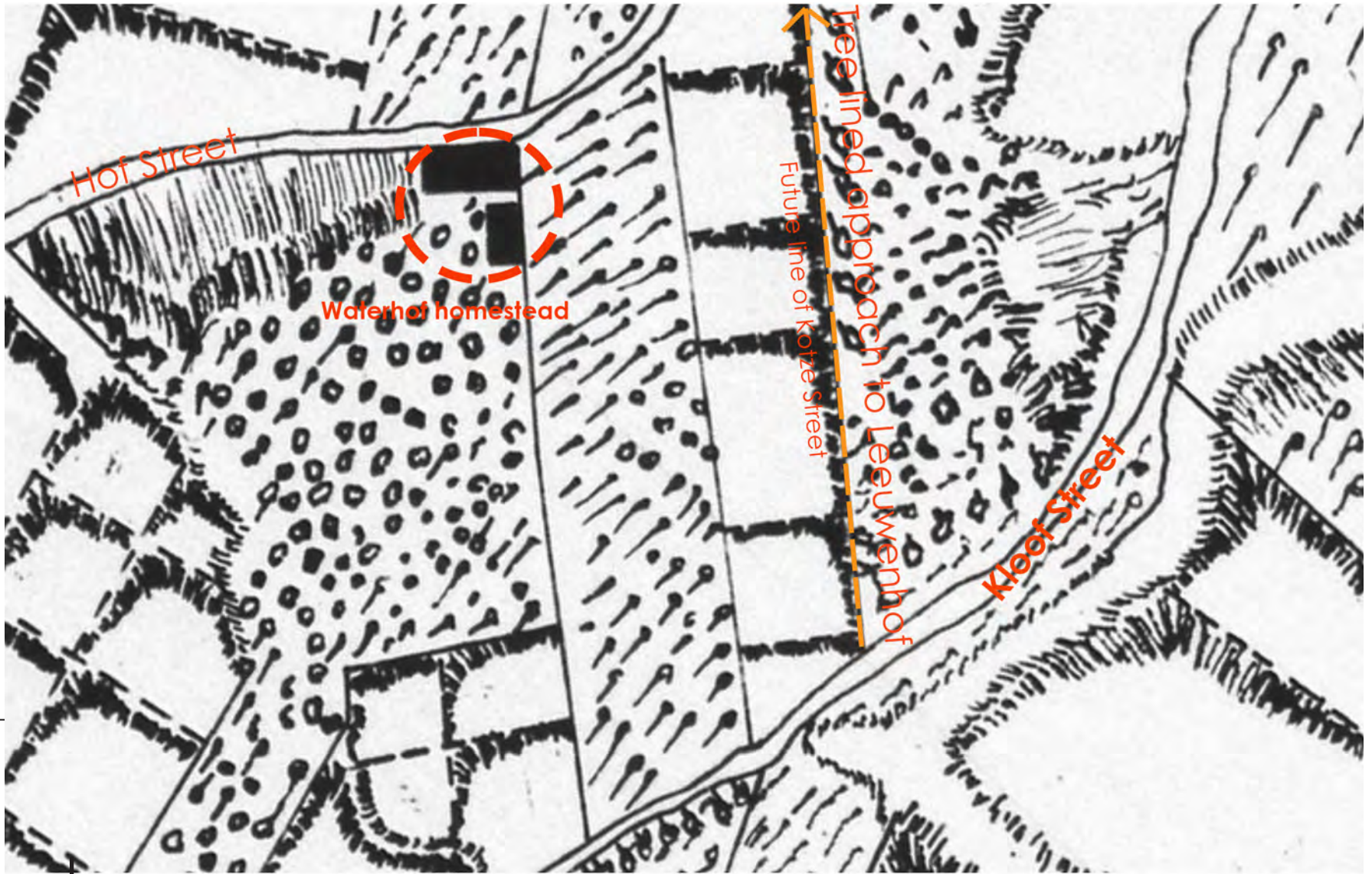


1782 SG Diagram (OCF 3:212) when Waterhof deducted from Leeuwenhof. Richly watered land, waterleidings for irrigation. To fund building a better house (current Leeuwenhof), sold off land.



1820 Position and size of Leeuwenhof and Waterhof (see map of Table Valley farms on page x

- 1698 Blesius the owner of Leeuwenhof acquired additional land
- 1764 Sold Leeuwenhof to Brasler
- 1777 House + outbuildings seen on Schumacher panorama
- 1782 Piece of Leeuwenhof sold to Bottiger, granted 2 extra pieces over time. With profits of sale, Brasler built house now know as Leeuwenhof
- 1785 HJ De Wet bought WH
- 1794 JH Hofmeyr bough WH - estate at its largest between 1839 + 1849 when Hofmeyr added Little Leeuwenhof to the holding
- 1804 Tafel Valley drawing (Hofmeyr named)
- Hof street connects Waterhof to city, also Leeuwenhof (although main entrance to Leeuwenhof to the West)
- Tree lined approach to Leeuwenhof where future Kotze/Coetzee Street is
- 1849 Waterhof sold to JH Versfeld

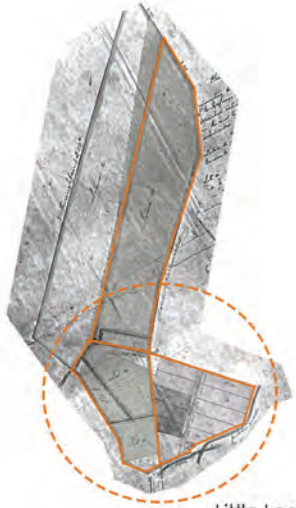


1821

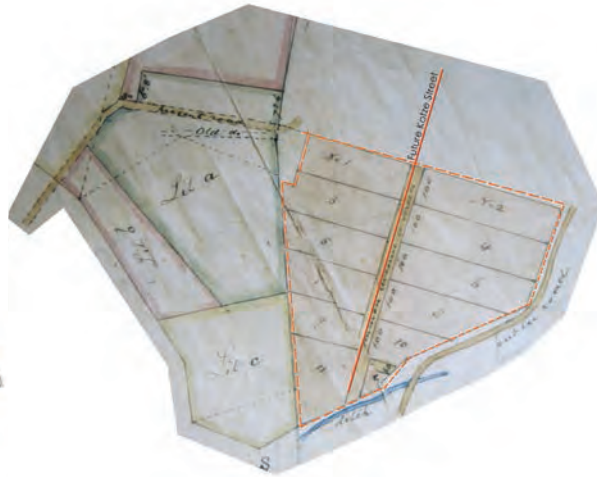
1:2000

(All historic maps obtained from Brian Martin at the City of Cape Town's Economic Environment and Spatial Planning Department in Strand Street)





Little Leeuwenhof



- 1862 Deduction of WH to CT Municipality of water sources
- 1873 GB Bennett bought Waterhof (brewery)

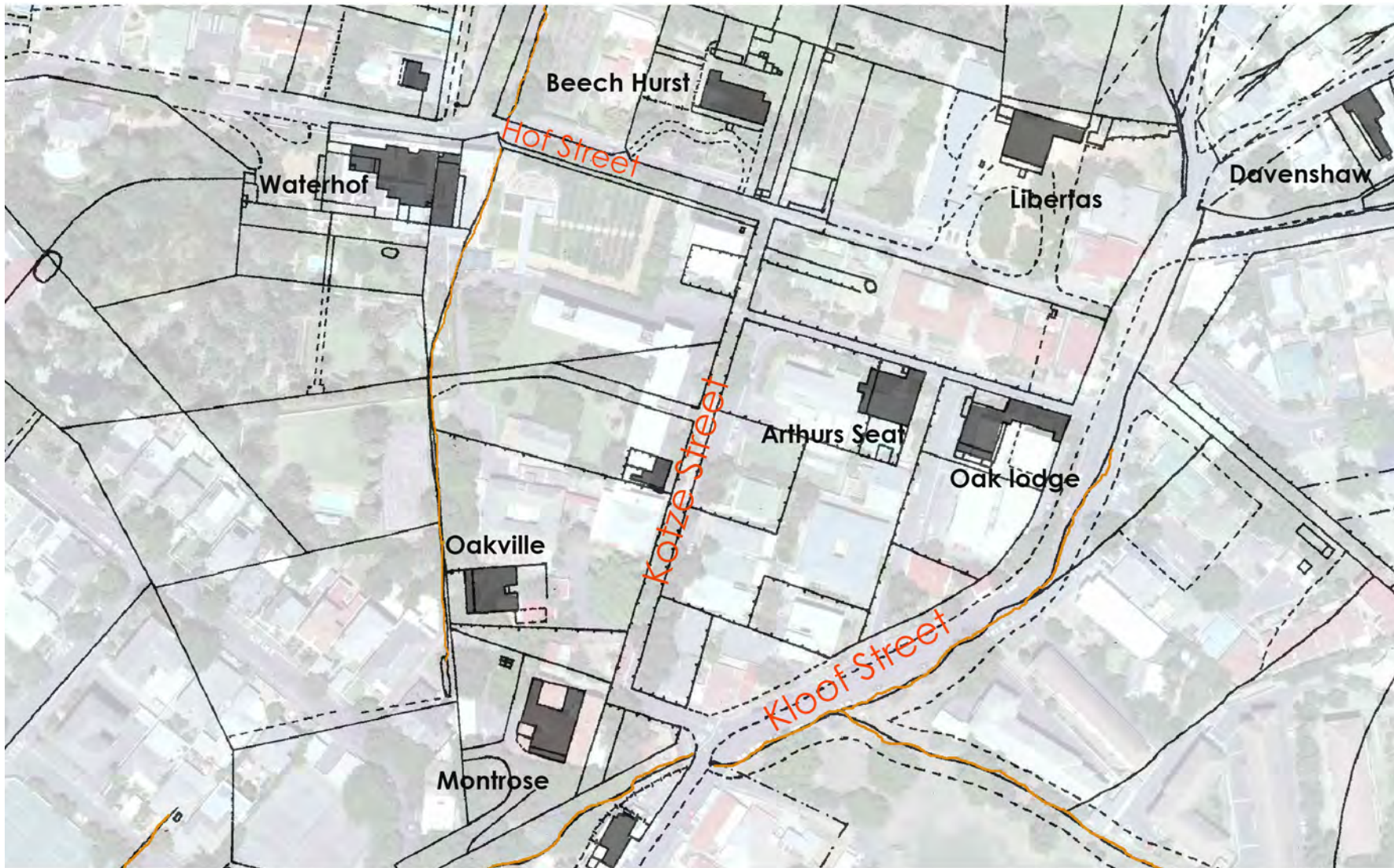
First Survey where Kotze Street is visible  
Country houses (note the english names) springing up, but area still predominantly cultivated land and paddocks

Kloof Street bridge over perenial stream - reason why Kotze Street (approach to Leeuwenhof) has a kink and doesn't join Kloof Street straight

Montrose on map

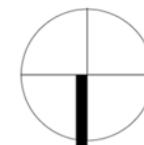
**1848** Knobel survey  
At Jan Hofmeyer's insolvency, shows Waterhof lands at their most extensive. Detail (right) St Ronans plot 1. A, B & C Waterhof. (Images obtained from Stewart Harris)

**1862** Excerpt from Snow original (top)  
This is a photo of photos of the original Snow map - showing streams or furrows in blue, the riverbank in olive green, and pale green formal gardens (photo by author of photos courtesy of Stewart Harris)



## 1862 Snow

traced over 2012 aerial (original damaged)





Tree lined approach to Leeuwenhof where future Kotze Street is  
 Both Waterhof and Leeuwenhof's gardens geometrically layed out  
 Kloof Stream very visible  
 Waterhof/Leeuwenhof approach formalised

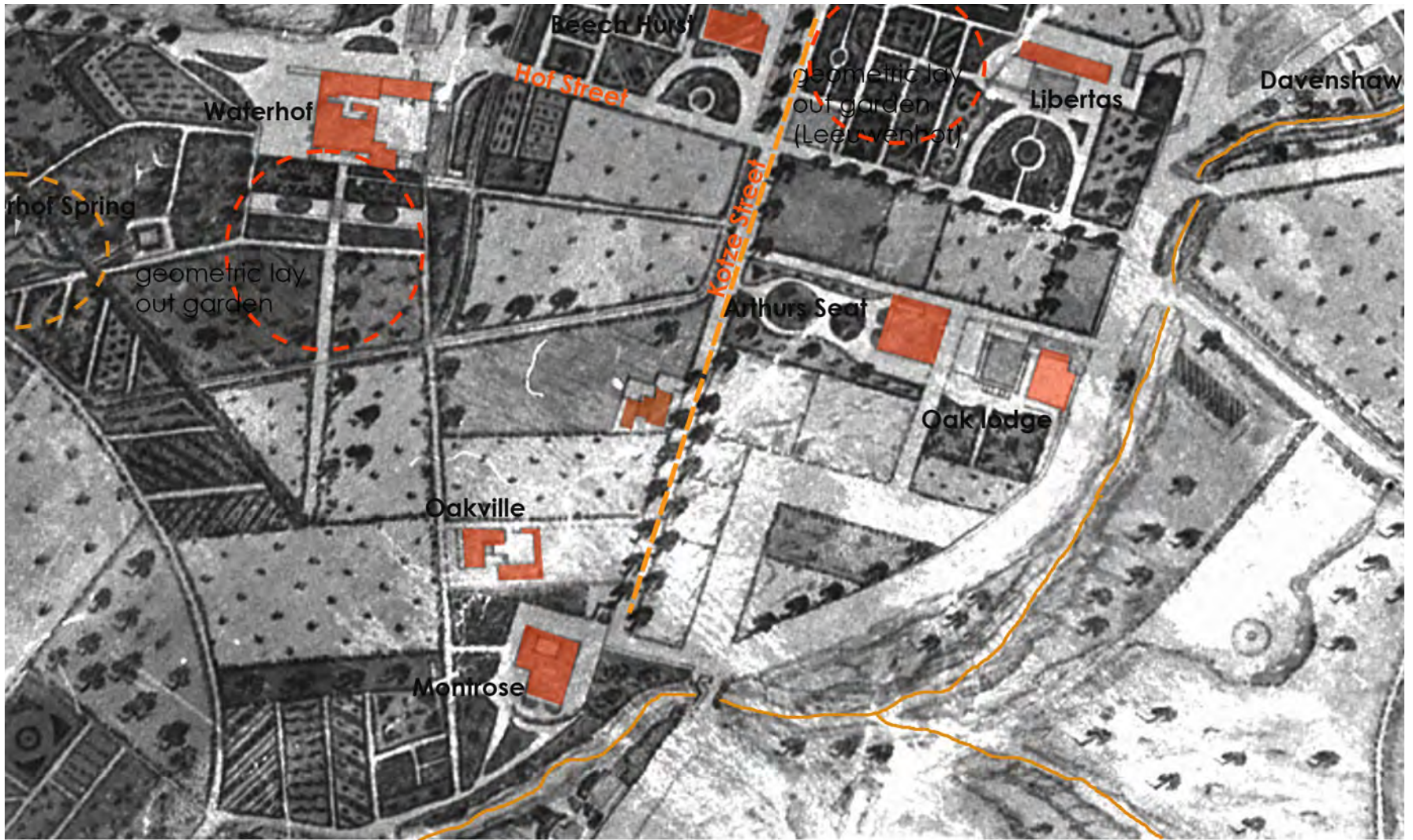
### Interpretation of Wilson 1878 by Stewart Harris (top)

Dots show vineyards.  
 Watercourses highlighted

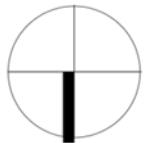


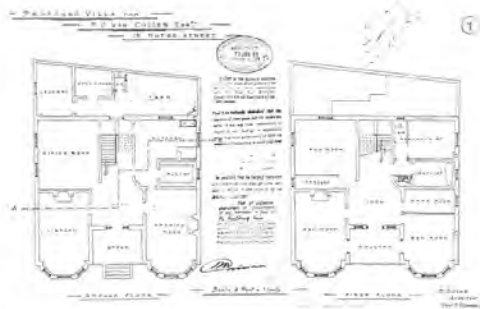
### 1874 Notes about planting and water

Waterhof's forecourt (east approach planted with trees. From the stoep 4 terraces. Lowest fields (now swimming pool area EWR) were vineyards. Watercourse at the end of the present garden had an oak hedge and path. The boundary of the East side was a quince hedge which bordered the municipal land a and b. The parts marked garden, right and centre, remnants of market gardens - fruit and vegetables. (image and info obtained from Stewart Harris)

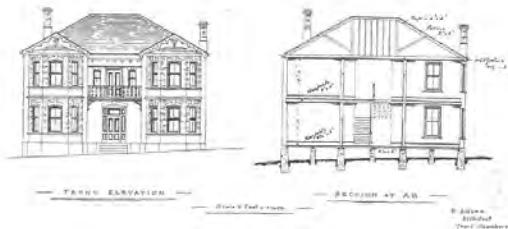


1878 Wilson

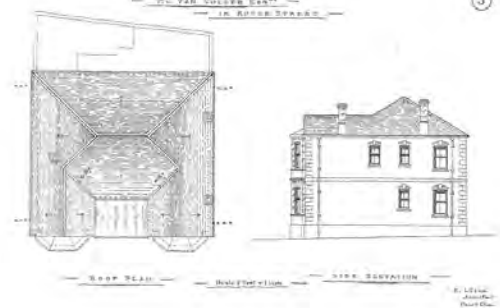




PROPOSED VILLA FOR P.J. VAN COLLIER ESQ. IN ROOSE STREET ①



PROPOSED VILLA FOR P.J. VAN COLLIER ESQ. IN ROOSE STREET ②



PROPOSED VILLA FOR P.J. VAN COLLIER ESQ. IN ROOSE STREET ③

End of the 19th century - many large estates sub-divided.  
 First Victorian row-houses appear  
 Hofmeyr road layed out  
 Kloof Stream prominent  
 Waterhof Spring prominent

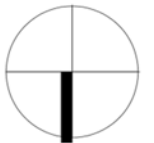
- 1898 Beaufort House constructed for van Collier
- 1904 Extensive alterations to Montrose for the Spilhaus family by Seeliger
- 1919 Alterations to Waterhof by Parker & Forsyth for Mrs L Woodhead

First map that shows Beaufort House

Beaufort House 1898  
 constructed for PJ van Collier  
 (from *Survey of historical buildings*,  
 plate UTV197, City of Cape Town)

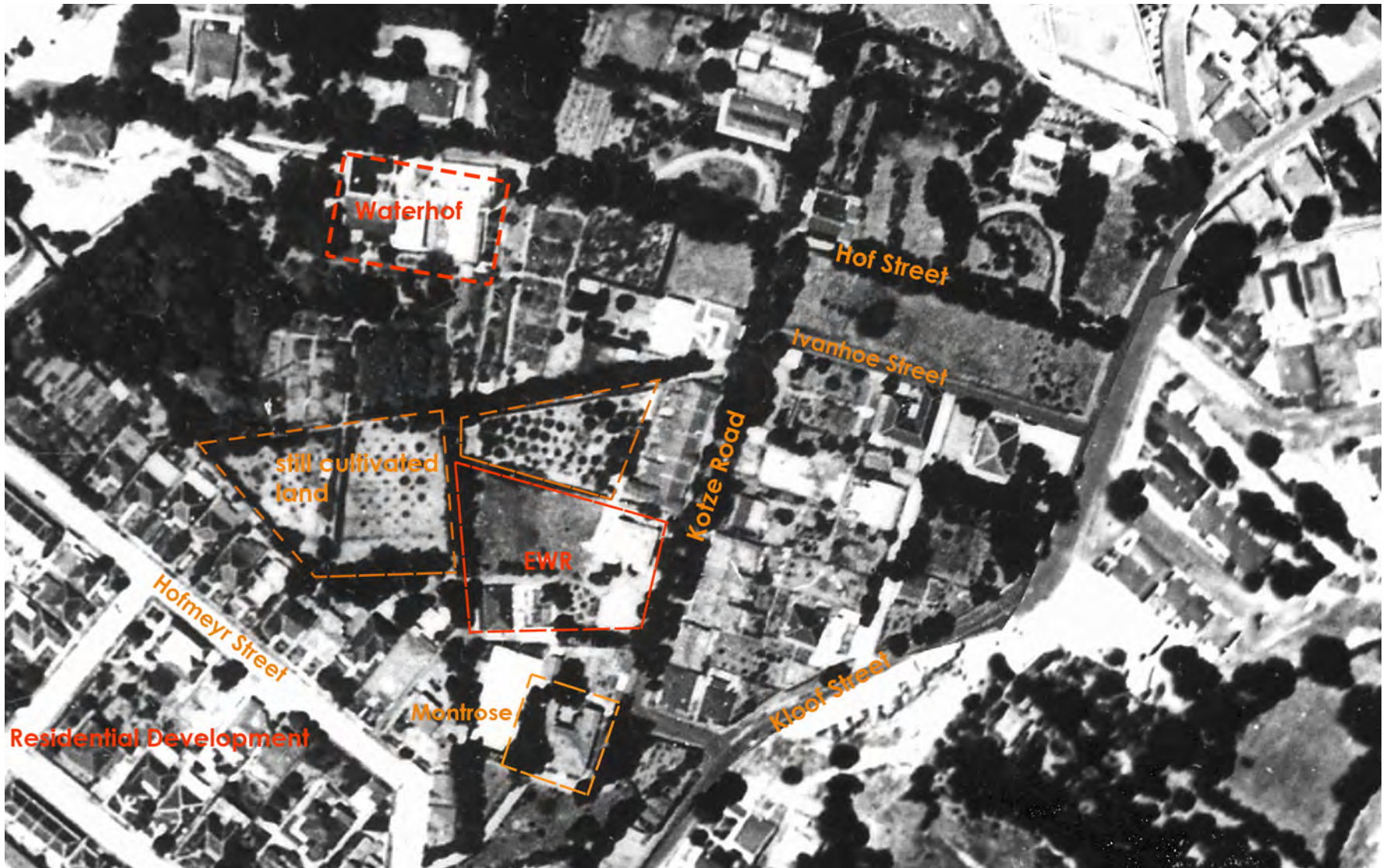


1898 Thom





1910 Surveyor General combined map  
not believed to be completely accurate, but contains information on ownership (image obtained from Stewart Harris)



1926

Block between Ivanhoe and Hof still open  
Hofmeyr Street and surrounds built up

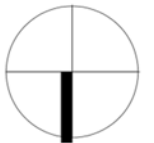


1928-1931 Street block between Ivanhoe and  
Hof subdivided and built up  
1948 Beaufort House purchased by Cape  
Technicon

Victorian rowhouses still where futue EWR will  
be  
Hofmeyer Road tarred  
Rectangular building diagonally on St.Ronans



1935



- 1958 Arthurs Seat demolished, Brabant court built
  - 1966 Orphanage demolished, rebuilt + enlarged (Ivanhoe str)
  - 1968 Piece of Waterhof sold to Cape Technical College, EWR extended
  - 1969 Waterhof endorsed as National Monument
  - 1973 EWR buys the Green Oak Hotel  
Beech Hurst Demolished
  - 1975 Alterations to Waterhof
  - 1997 Carl Ingerveld sell Waterhof to Koos Bekker
-



This is an overlay of tracings of Kotze Street in 1898, 1957 and 2012 . What is evident in this map is the oldest continuous existing structures that are darkest; Waterhof, Montrose, Beaufort House as well as many houses in Hofmeyr Street. (Hofmeyr is the street with the most complete Victorian street facade in Cape Town.) This image also shows the open area of the Waterhof Garden, the Bird Sanctuary and Waterhof spring site and Elizabeth Women's Residence garden that has never been built up. It also shows where houses have been demolished in order to build blocks of flats or institutions such as the Orphanage, and to widen Kloof Street. It also shows buildings demolished when the Leeuwenhof property and garden was consolidated.

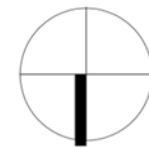


Overlay

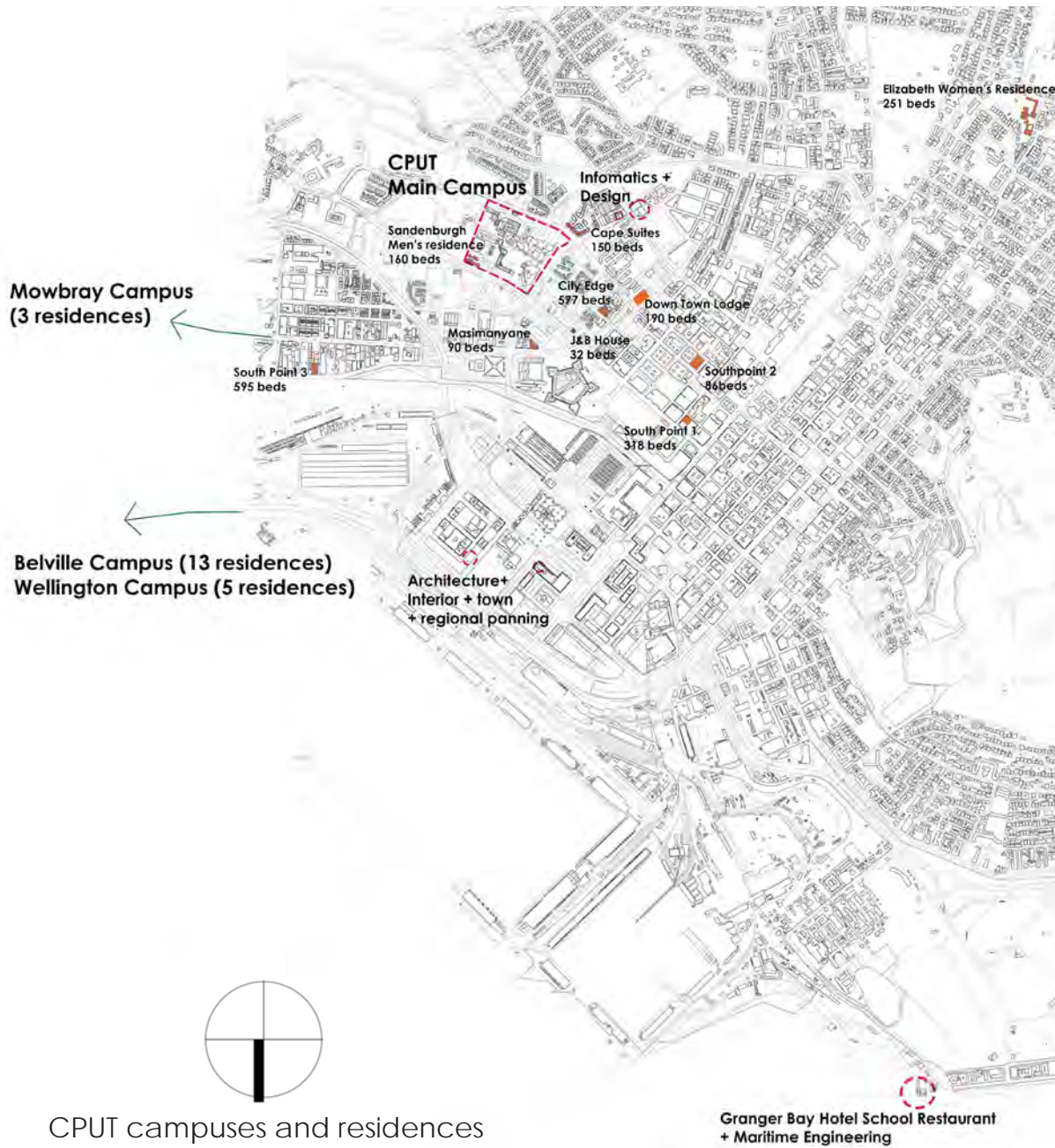


The Cape Peninsula University of Technology (previously known as the South African College and then the Cape Technicon), purchased Beaufort House in 1948. Soon they required more space and started buying out surrounding properties. In 1966 they knocked down a row of Victorian houses to build the largest of the residence structures on the site. In the 1960s, a piece of the Waterhof garden was sold to CPUT to expand the residence to include recreational space. In 1973, CPUT bought the Montrose homestead, or the Green Oaks Hotel as it was known then.

Paradise, a single storey Victorian house was purchased in the 1980s to house the warden of the residence. Newstead, a double storey double residence was bought during the same time to accommodate more students. The CPUT previously owned St Ronans which was bought out by Koos Bekker, the owner of Waterhof, who also moved the northern boundary to include the waterway in his property.



The growth of the CPUT Elizabeth Women's Residence in Kotze Street  
1:5000



Residences	Actual capacity
Masimanyane	90
Viljoenhof	134
J&B House	31
Down town lodge	190
Catsville	864
EWR	251
Sandenburgh	160
St Peters	505
City Edge	577
Southpoint (New Mkt Junction)	595
Southpoint (10&12 Plein St)	318
Southpoint (President)	86
Cape Suites	150
Wouter Malan	117
House Murray	100
House Meiring	118
House Bliss	124
House Navarre	97
<b>Cape Town/Wellington Totals</b>	<b>4 507</b>
WCCN Athlone (Nico Malan)	535
Protea Hoff Tower 4	166
River Park	222
Post Graduate	66
SACCO	332
MGR 1	240
MGR 2	191
Freedom Square	390
De Beers	112
Sheriff's house	86
Anglo	112
Heroes House	210
New 200 Bed Bellville residence	200
<b>Bellville Totals</b>	<b>2 862</b>
<b>Overall CPUT Totals</b>	<b>7 369</b>

Total students enrolled in 2013: 33 507  
 % students enrolled living in residences: 21%  
 Total students enrolled Main Campus: 16 100  
 Total students who live in residences: 3951  
 % in residence: 24%  
 National target tertiary education residence accommodation 30%

In order to meet the national target, more residences are needed. EWR currently accommodates 251 students, but has the space to accommodate more, and denser accommodation.



Bird Sanctuary

Waterhof Garden

St Ronans Orchard

View over Waterhof towards Table Mountain

1929

1930

South African Children's Home 1969

Koize Street

Row Houses 1989-1919

Maple Court 1947

Romella Court 1978

Pomorov Villa 1910s (veranda 1930s)

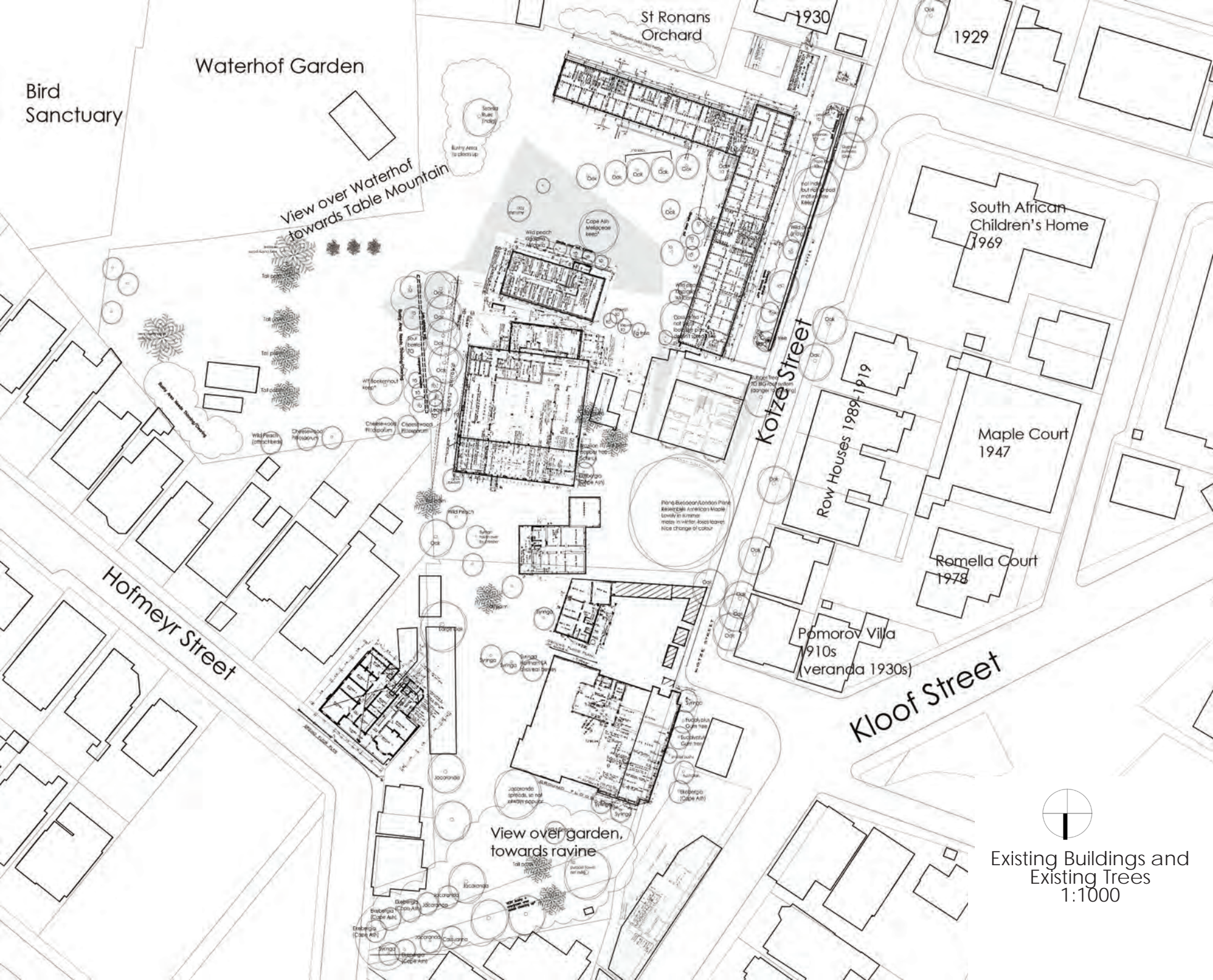
Kloof Street

Hofmeyr Street

View over garden, towards ravine



Existing Buildings and Existing Trees 1:1000





## THE HIDDEN LIFE OF MONTROSE

Montrose was built as a country house sometime around the mid-19th century (as it first appears on Snow's 1862 map). According to information available on building conventions of the time, it was probably a single story building, with a front porch or stoep facing north. Its roof was either a pitched thatched roof or a solid flat roof, as corrugated iron only became widely available after 1860.<sup>44</sup> Both these systems made use of heavy beams.

At the turn of the century, Wilhelm Spilhaus bought the property and made extensive additions to the building in 1904, including adding a second story and conservatory.<sup>45</sup> Spilhaus arrived in South Africa from Germany in 1869 and became a successful businessman, importing wool and groceries, and exporting wine.<sup>46</sup> The Spilhaus family lived in Hofmeyr Street at Montrose until 1907, when they moved to Hohenort in Constantia.

The architect of the 1904 extension, Ernst Seeliger was employed by Spilhaus for numerous projects, both for warehouses as well as at Montrose and Hohenort. Although Seeliger was a very busy and productive

architect and has been described as one of the ten most important practices of the time, he was not a particularly inventive or clever designer and his oeuvre is seldom more than competent and always derivative.<sup>47</sup>

Around the 1920s and 1930s, many larger properties in the Upper Table Valley were converted into old age homes, residences and other institutions. The grand old house at Montrose was too big for a single family house during in the harsh economic climate, and was converted into the Green Oaks Hotel. The hotel was known for serving hot lunches to Capetonians living and working in the area.<sup>48</sup>

In the 1950s, a new wing with rooms was added on both levels to the east. In 1960, a new dining room extension was added on ground floor to the west.

In 1973, CPUT purchased the property and converted the large dining area into a common room and more bedrooms.<sup>49</sup>

In May 2014, a fire originating from a student cooking on a 2 plate stove destroyed a section of the roof and first storey. In August, due to being exposed to heavy rain, the timber floor of the first floor collapsed, and caused a lot of damage.

Because of the numerous additions over the years, not much of the rich historical and material layers are visible at Montrose. The fire and subsequent damage exposed some of the material richness of the older part of the building.

The most significant remains of the original Montrose is the incredibly thick walls of the original country cottage. The walls measures 550 – 600mm in places. Plaster conceals its structure, but John Rennie contends that it is likely to be stone in some places, and definitely clay bricks for the rest.<sup>50</sup>

Although the area around Montrose towards Kloof and Hofmeyr Streets are mostly built up now, the small ravine where a stream used to flow past its front façade remains. The garden around here is lush and forest like.

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<sup>44</sup> Based on conversations with John Rennie and Stephen Townsend, both architects and experts on Cape Town history

<sup>45</sup> Survey of historic building, UTV 193, City of Cape Town

<sup>46</sup> Townsend, S. 2004. "A Heritage Impact Assessment Report regarding alterations and additions to Warehouse on Erf 1388, Cape Town", commissioned by De Villiers and Hulme

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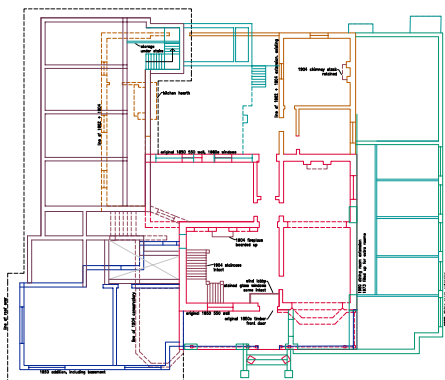
<sup>47</sup> Townsend, 2004

<sup>48</sup> According to John Rennie and Mr. Waters, who has been working as a barber in Kloof Street for 60 years

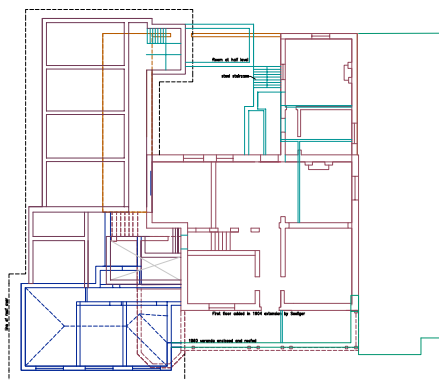
<sup>49</sup> Induced from plans obtained from the Council at the City of Cape Town

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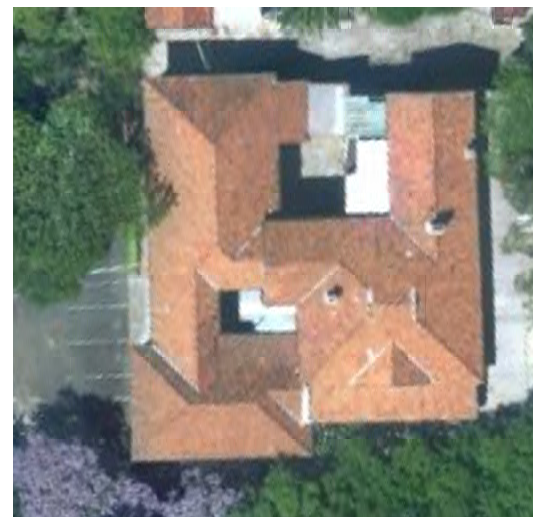
<sup>50</sup> Based on a conversation with John Rennie on site



Ground Floor Plan  
1:500



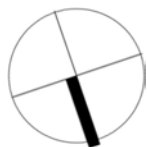
First Floor Plan  
1:500

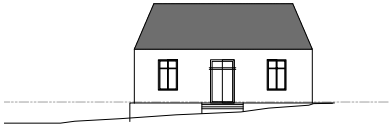


Roof Plan  
1:500

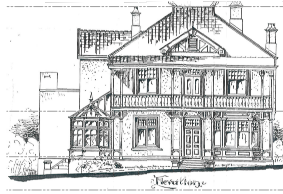
## MONTROSE LAYERS

- 1850 Original cottage, thatch or flat roof
- 1862 Snow map, 2 wings + yard added.
- 1904 Major additions, Seeliger for Spillhaus, first floor added, + conservatory
- 1950 Extra rooms added
- 1956 Extra wing added
- 1960 Dining room extension
- 1973 Dining room divided into room





Front Elevation 1850  
1:500



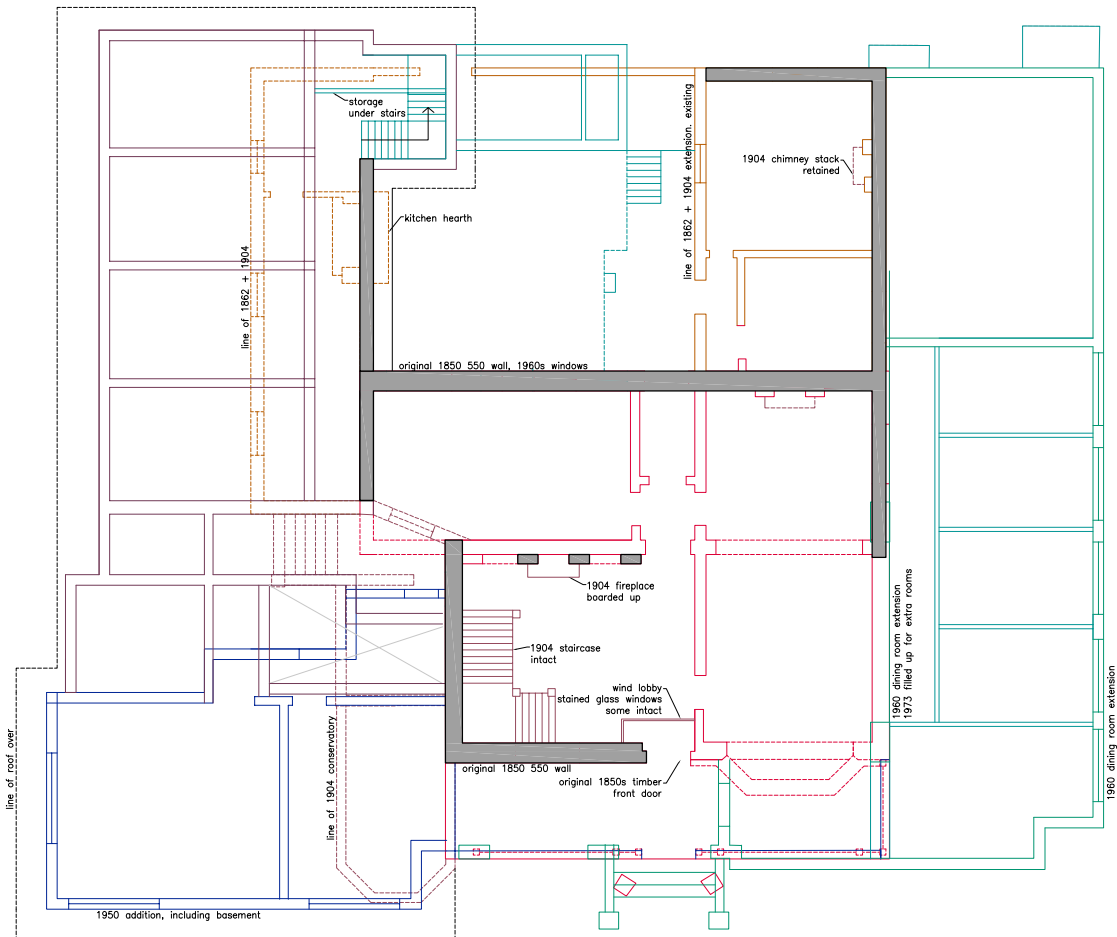
Front Elevation 1904  
1:500



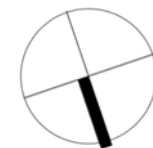
Front Elevation 1950s  
1:500

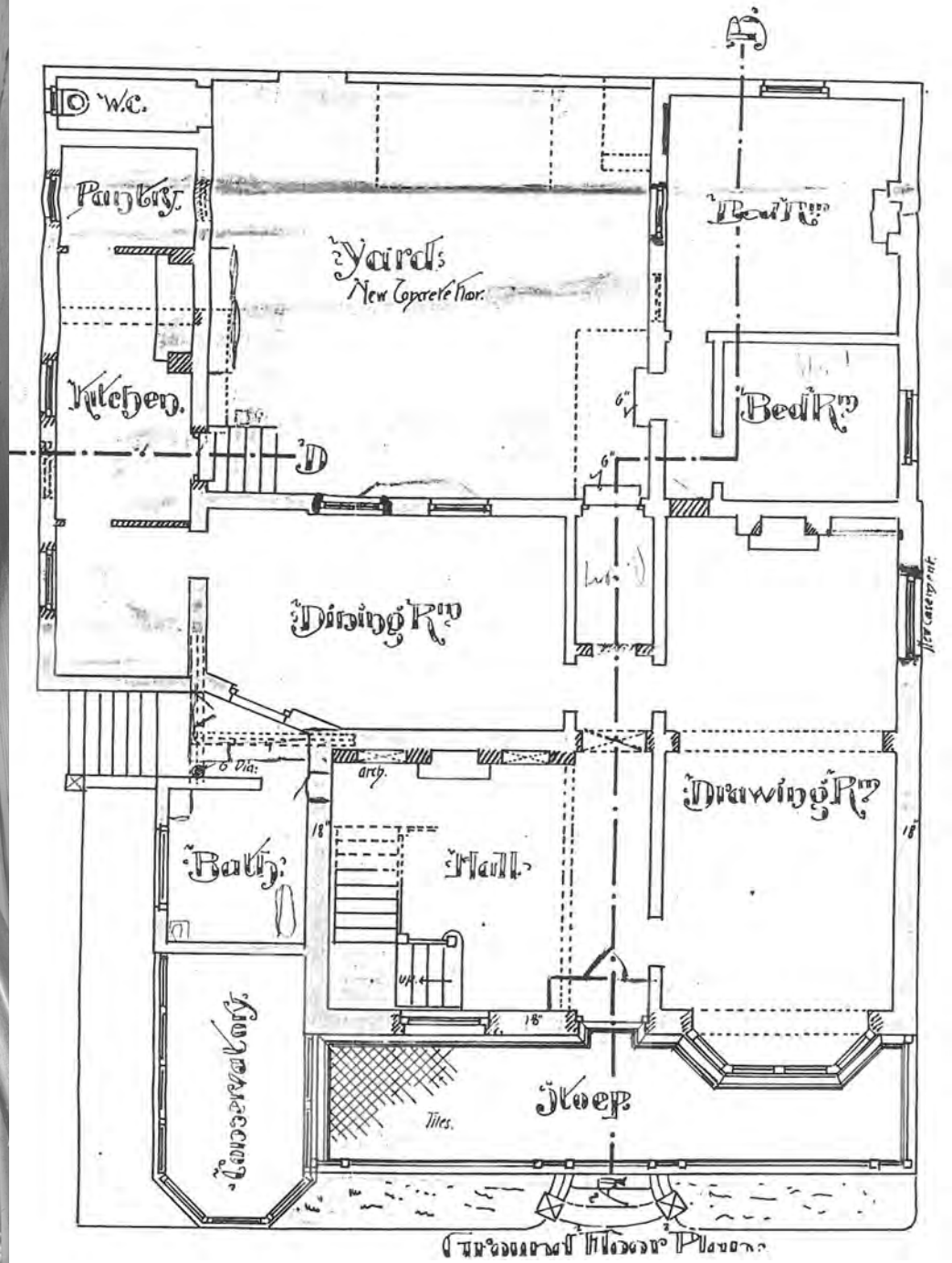


Front Elevation 2014  
1:500



MONTROSE  
HISTORIC EXISTING WALLS  
NOT DAMAGED BY FIRE  
1:200

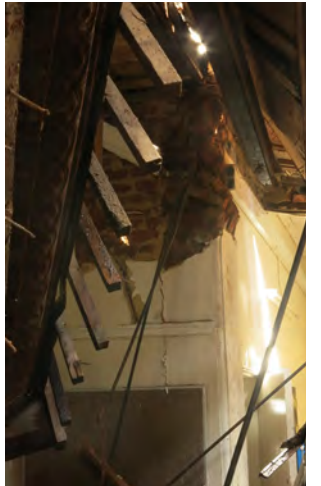
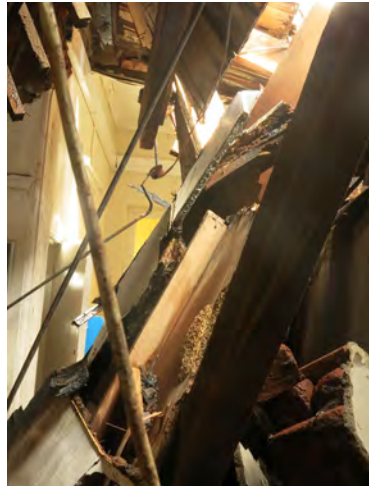




Montrose Ground Floor Plan of 1904 extension, nts









## PROGRAMMATIC AND URBAN RESPONSE TO A LAYERED MONTROSE

This project explores ways of making the Elizabeth Women's Residence site, renamed AS *The Montrose Precinct* to reflect its importance as originator of the project, and its many layers function as a more coherent whole. The opportunity of converting the complex into a satellite campus of CPU is explored. Different strategies of using existing structures are applied to different parts of the site in enhancing the character of the site as a whole. A range of strategies for building within an historic environment were thoroughly investigated and is contained in Appendix A.

### Adaptive Re-use

Of the 12 structures on site, two buildings have immense cultural and historic significance, Montrose and Beaufort House. The numerous additions and changes to Montrose over the years hide much of its original fabric and character. The fire and subsequent fire and water damage has exposed some of the historic layers. Montrose will thus be re-used in a layered way - the existing fabric will be used together with newer additions - old layers will be aimfully exposed and new layers added.

The original Beaufort House has stayed more intact and a more conservationist approach will be used in its re-use. Unsightly additions

will be removed and the aim is to restore it as a freestanding building. Small, unobtrusive moves such as inserting a roof light to capture more daylight in its dark interior will be made.

The two Victorian houses facing Hofmeyr Street has value for Hofmeyr Street and does not contribute much to the Montrose Precinct. I propose that they be restored, but not form part of the new precinct. Camelot and the 1950s Block have solid structures, but their positions and internal organisation are very haphazard. Their structures will be reused but the interior organisation and divisions will be thoroughly re-thought.

The largest structure on the site, the L-shaped face brick building will be re-used as far as possible and incorporated into the new precinct. Another level will be added on top of the existing building to increase accommodation density.

The other structures that cannot be incorporated will be demolished and where possible, bricks, rafters and other materials re-used in the new development.

### Green

The large open grassed area facing the Leeuwenhof Garden will be retained as a green link, connecting with the larger green link from Table Mountain to the Company's Garden. It also serves as buffer between the

bird sanctuary and increased density of the site towards Kotze Street.

The historic ravine north of Montrose will be retained as a link to the past and recreational quiet space for the new precinct.

All existing trees were mapped and named and categorised on a walk through the site with Ivor Jardine, an expert on indigenous trees. Although not many trees truly indigenous to the Cape Peninsula were found on site, trees which are indigenous to South Africa, and trees that have desirable qualities in relation to shade, aesthetics and bird life were marked to keep. Some trees like the English Oak (*Quercus Robur*) has historic value as they line Kotze Street and are markers of historic roadways on the site.

Alien invasive trees and shrubs were marked to be taken out. These include the poisonous Nerium Oleander, the Callistemon Viminalis (Weeping bottlebrush) which is Australian, Eucalytus trees and the South American Phytolacca dioica (Belhambra).

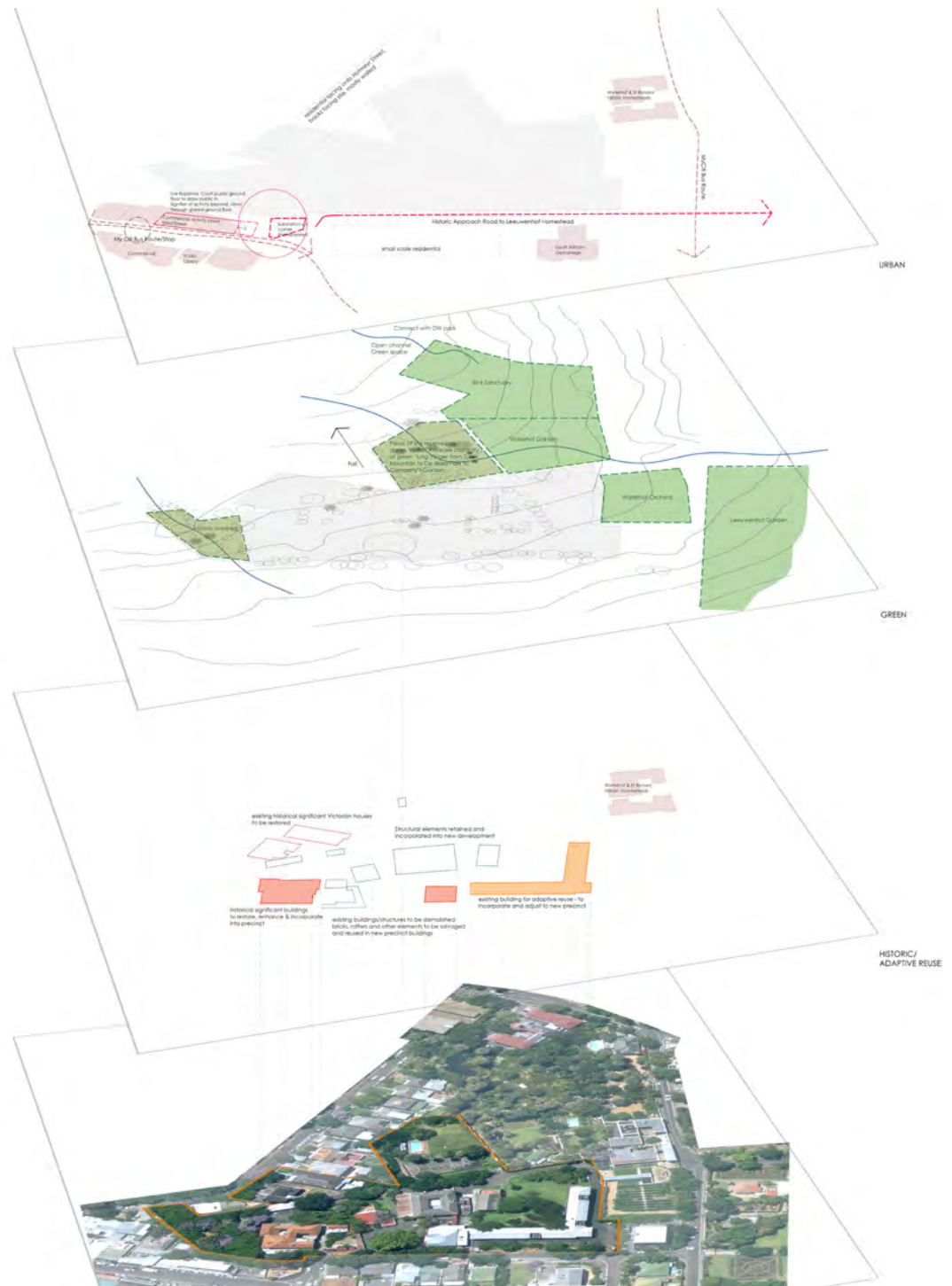
In general, it was recommended that the planting across the entire site be thinned out as it is very overgrown and not well maintained. Sun penetration is also prohibited by densely planted areas which make some parts of the site very cold and dark.

## Urban

On an urban scale, a greater connection with Kloof Street is encouraged. Firstly, the direction of Kotze Street is reversed. At the moment it is a one-way in a northern direction, towards Kloof Street. I propose that it is changed to be a one-way in a southern direction - reinstating it as an approach up to Leeuwenhof, as well as attracting visitors, and pulling people in from busy Kloof Street.

As the site has no direct link to Kloof Street, is very hidden and has no public face, I propose that Rozanna Court at nr 160 Kloof Street is incorporated into the scheme. This is in line with the history of the growth of the site, buying up adjacent properties as the need arises. The long thin building contains shops on ground floor and apartments on the first and second floors. This will provide the new scheme with an address on Kloof Street. I propose that its ground and basement floor are used as public space and that the top levels stay residential, as well as that the building is extended along Kloof Street, where there is currently a parking lot in order to capitalise on the commercial value of the land and to continue the urban wall of Kloof Street.

I also propose that the position of the historic bridge that led to the shape of Kotze Street is commemorated or hinted at through suggestive paving at the Kotze Street intersection.



Waterhof Garden



EWR reused and extended

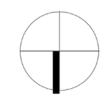
Beaufort House restored and later additions removed

Building structure retained and reused, inside gutted and roof lifted

Buildings demolished and materials salvaged and reused

Montrose re-used and expanded in a layered manner

Rozanna Court reused and extended



Existing Buildings  
1:1000

## Programme

The proposed new programme for the Elizabeth Women's Residence precinct responds both to the existing and the historic use of the site. The existing student accommodation function is retained, and improved. There is a need to increase the number of beds in residences in tertiary institution residences and the existing accommodation will be increased.

Montrose is reverted back into a boutique hotel, serving as a link with the public and the more institutional and domestic character of the rest of the site. It includes a restaurant and tea garden - the restaurant occupying the ground and basement floors of Rozanna Court and the tea room occupying the ground floor of Montrose, looking onto the historic ravine. This will provide a visual and movement link from Kloof Street to the rest of the precinct and serve as its public face. As the Montrose Precinct is mostly hidden from sight due to its slope, this public face will provide glimpses of Montrose from Kloof Street and provide moments of revealing.

The hotel and restaurant will provide the practical training ground for the CPUT's hospitality management courses. The students enrolled in these courses could make use of the student accommodation and conveniently stay on site.

The site is big enough to accommodate teaching spaces to support these

programmes and as such the precinct will be developed as a satellite campus of the CPUT. Seminar rooms, a large auditorium, classrooms and 2 culinary laboratories are included in the brief.

Cape Town's history of supplying food to passing ships and its inhabitants are reflected in this re-imagining of the precinct. The historic character of the area as productive landscape is reinstated in reverting the large open space adjacent to Waterhof back to a productive garden. This garden can supply

Horticulture of CPUT to practically apply their knowledge.

The precinct with its hotel, large restaurant and a variety of multi-purpose and teaching spaces lends itself to a conference and wedding venue as well. The student accommodation could double as affordable tourist accommodation during the long university holidays. During December and January, when the demand for accommodation in Cape Town soars, students are on holiday.

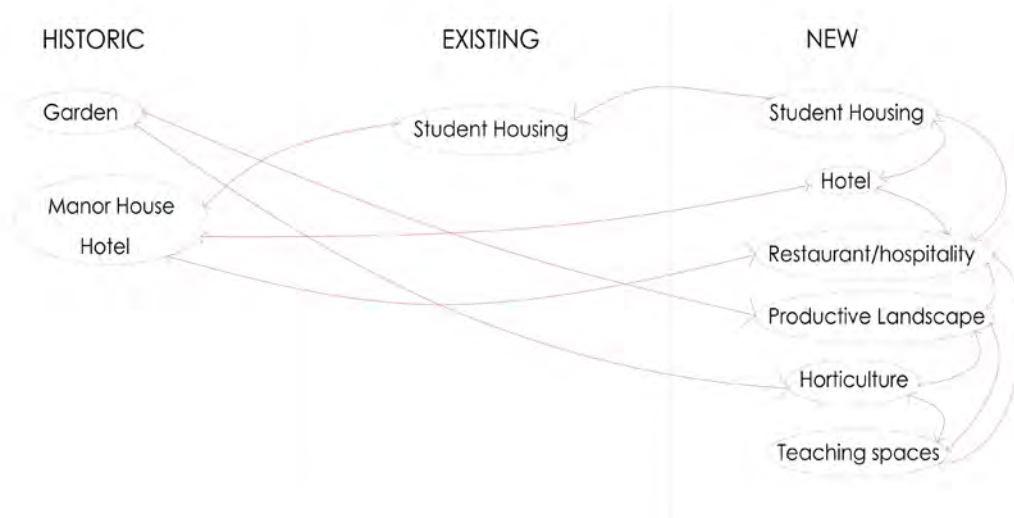
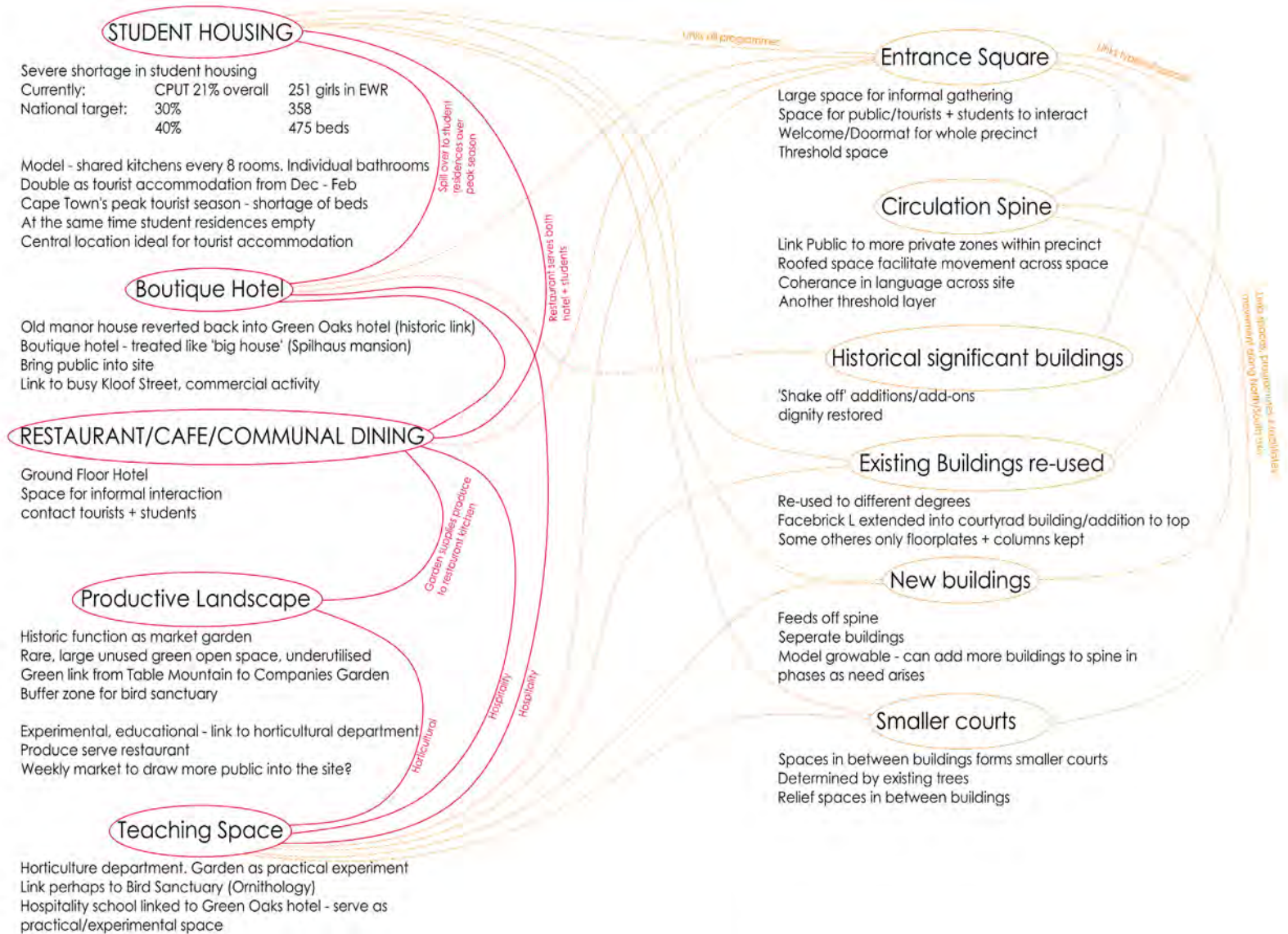


Diagram showing, existing, historic and new programme

the hotel and restaurant of fresh produce as well as provide space for students in the

# NEW PROGRAMME

# TYPES OF SPACES



Research into the space requirements determined the refinement of the site's spatial organisation. The Hotel School restaurant needs to host 100 people in a sitting arrangement. The ground floor of Rozanna Court contains the restaurant and offer glimpses through to Montrose. Descending down to the basement the views of Montrose becomes better and the path across the ravine appears.

Montrose and its extensions will house the Hotel accommodation, tea room and other relevant common spaces and service areas.

Adjacent to the Montrose courtyard, a multi-purpose space joins the main square with Montrose. This space can spill out both into the Montrose Courtyard and onto the main square. Facing onto the main square, the main institutional building will contain teaching spaces as well as the culinary laboratories.<sup>51</sup> More teaching spaces are possible towards the back of the site, facing the garden.

The 1960s face brick residence is extended to form a courtyard building. The roof is lifted and additional accommodation built on top. Communal kitchens and social spaces are inserted into the existing room layout.

QUALIFICATION NAME JULY 2014	PERIOD OF STUDY	Enrolments
B TECH: HOSPITALITY MANAGEMENT	4	42
National Diploma: HOSPITALITY MNGT: ACCOMMODATION	1	49
	2	43
	3	39
<b>National Diploma: HOSPITALITY MNGT: ACCOMMODATION Total</b>		<b>131</b>
National Diploma: HOSPITALITY MNGT: FOOD AND BEVERAGE	1	44
	2	39
	3	42
<b>National Diploma: HOSPITALITY MNGT: FOOD AND BEVERAGE Total</b>		<b>125</b>
National Diploma: HOSPITALITY MNGT: PROFESSIONAL COOKER	1	30
	2	24
	3	21
<b>National Diploma: HOSPITALITY MNGT: PROFESSIONAL COOKER Total</b>		<b>75</b>
<b>TOTAL NUMBER OF STUDENTS IN HOSPITALITY SCHOOL</b>		<b>373</b>

TYPE OF TEACHING SPACE	AMOUNT	SIZE
Large classrooms	2	40 students
		10-15 students
Smaller classrooms/Seminar rooms	4	40 students
Computer Room	1	110 students
Auditorium	1	32 stations
Culinary Laboratories	2	
<b>Training Kitchen in Restaurant</b>	<b>1</b>	<b>Hosts sitting 100 people</b>

<sup>51</sup> CPUT Hotel School numbers and space requirements obtained from Rianne Voigt, Head of Department, Cape



## STRUCTURING

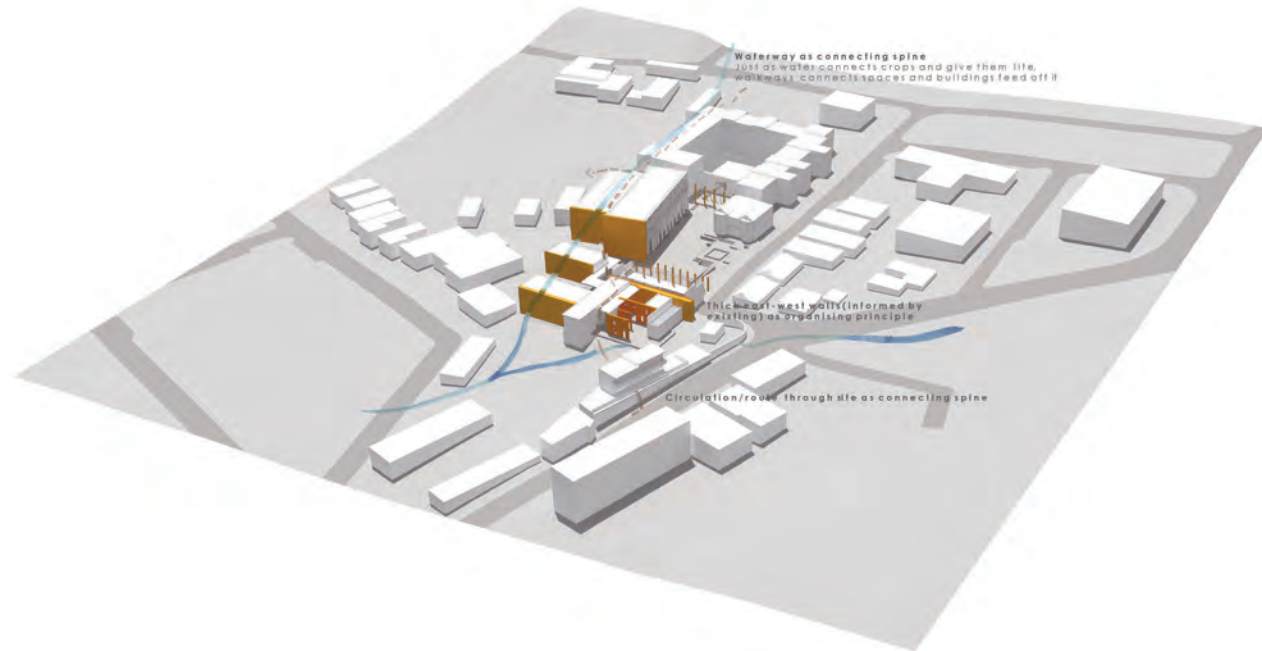
The historic waterways serves as inspiration for the circulation spine and together with the discovery of really thick historic masonry walls serves as organising principles, structuring the site.

### Water and Route

Due to the size and especially length of the site, it was developed as a campus made up of free-standing buildings. A route was developed stretching from Kloof Street on the northern end of the site, linking the restaurant, hotel, function and conference space, to the main square, teaching spaces, productive garden, to the residence building on the south.

The historic waterway on which the site's eastern property boundary is based (see Snow original map of 1862) serves as inspiration for this system. In the historic market garden layouts, water furrows or *leivore* were channelled from perennial streams. Based on their water needs, this determined how crops were organised. The water thus served to connect the productive lands and served as a connecting spine, with spaces feeding off it in the same way spaces feed off the circulation spine.

In response to Cape Town's harsh, rainy winters, a series of covered walkways connect the buildings along the route.



STRUCTURING

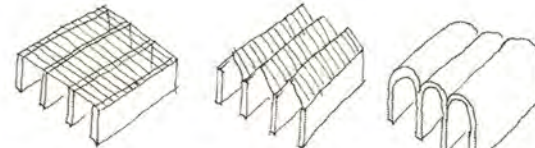
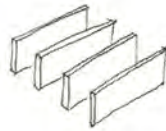
Where these walkways face the main square, they are expressed as colonnades, expressing a civic, formal attitude as well as setting up a rhythm and interest in otherwise simple buildings.

### The Wall

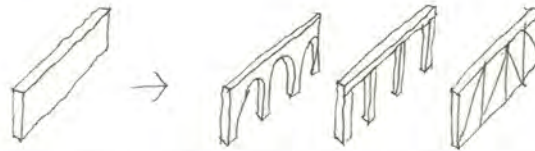
The discovery of really thick walls at Montrose serves as inspiration for the principle of using thick masonry walls as another ordering system. The original 600mm wide walls of Montrose are reinterpreted in new thick walls running in an east-west direction. This sets up long thin north-south facing buildings.

The existing thick walls are exposed and highlighted in the older buildings. The new thick walls are interpreted in different ways. They serve as heavy structural elements supporting new additions. In some cases lighter elements are hung from it or attached to it. In some instances the walls are exaggerated and carved away or inhabited to form storage and service spaces. The colonnades can also be seen as inhabited walls that are carved out and reduced to its minimal material form.

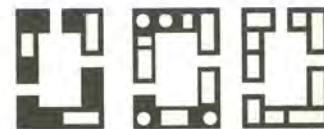
Rozanna Court, a long narrow building, and its extension, is seen as a garden wall, protecting the Montrose Garden behind. Other buildings are also positioned and treated as making and protecting the outside garden and courtyard spaces, acting as walls, rather than being treated as objects in a landscape.



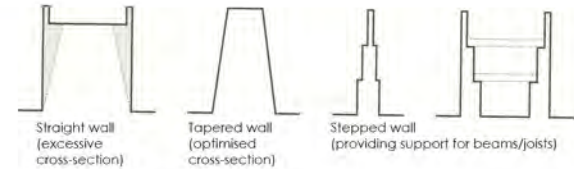
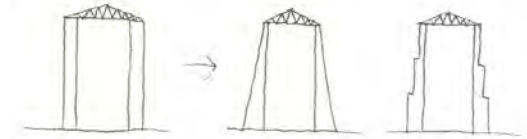
The wall as boundary and as load bearing element



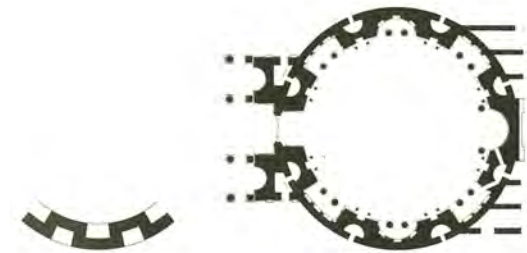
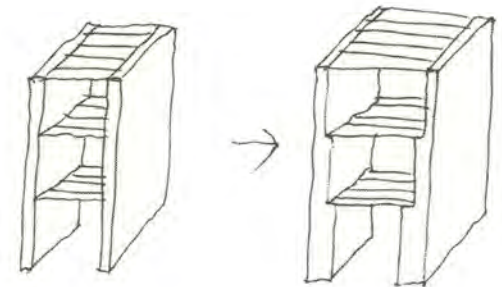
The wall's evolution from solid to arched to columns



Schematic plan layouts of European castles - the wall literally becomes the rooms. Maximum use of wall thickness is obtained as well as becoming sculpted surfaces



Optimised use of materials



Pantheon, Rome. Thick wall with omissions to form alcoves, which creates a ribbed effect

## LAYERING

Through the study of case studies it was found that architecture that includes the layered evidence of time and change is the most appropriate way to build within an historic environment (see Appendix A).

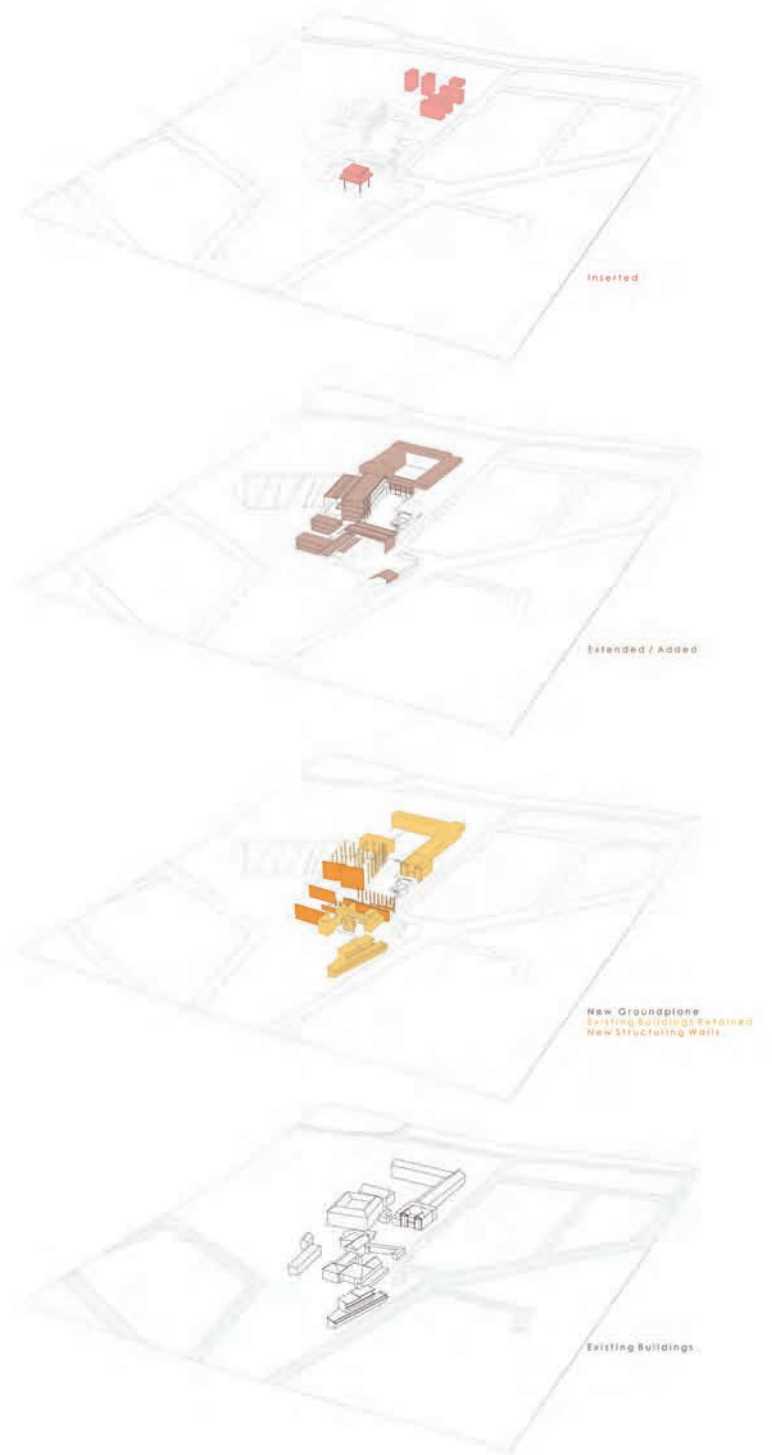
The principle of layering is applied in various ways. In terms of spatial layering, the progression of public to semi-public to semi-private to private spaces is used in individual buildings as well as in parts of the precinct in relation to the precinct as a whole.

Layering of time is also evident. Throughout the precinct, buildings or elements of buildings are layered and built over one another to form a rich, layered palimpsest.

Layering of materials is equally important. Old and new materials are layered across the precinct. Masonry is the building material most widely used in this project. It links the new buildings to the historic ones. The aim is to use a traditional building material but in a contemporary way.

In a project with strong links to the past it makes sense to use an ancient material with constructive intelligence instead of the newest developments from materials research, which are often a thin covering or veneer.

“The mesh of joints that covers everything, lends ... the surface not only colour and life in



a general way but stamps a sharply defined scale onto it and thereby connects it directly with the imagination of human beings".<sup>52</sup>

Understanding the way that masonry works and the manner in which historic buildings were assembled is intrinsic to our knowledge about our old cities.

In cultural terms, masonry represents a constant value - neither its functions nor its significance have changed substantially over time. It is always based on the same principles, despite the huge number of different architectural forms. And owing to its strength, its massiveness, and its stability it presumably represents the same values of safety, security, durability and continuity - in other words traditions - as well as discipline and simplicity always and everywhere.<sup>53</sup>

The shape and size of individual masonry unit are part of a system of governing dimensions - the part is a substantial part of the whole.

A clear distinction will be made between existing brickwork, new work using salvaged bricks and completely new bricks. The existing old bricks use an English cross bond as well as an English bond. Reclaimed bricks will be used using a stretcher bond and completely new brickwork will be done in a smaller brick size, in a header bond. The aim is to create

variety and interest through subtle techniques such as bonds, different brick sizes and colours. In-between or background walls will be bagged and painted white.



The fire at Montrose exposed brick arches as well as a palimpsest of old and newer infill bricks

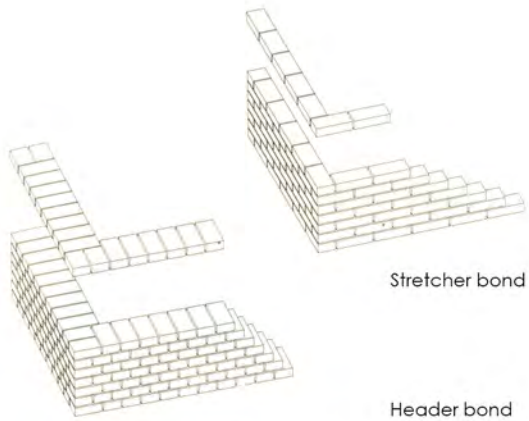


Allies and Morrison's Simon Smith building in Brighton (top right, 2 images) is built in an existing setting. The existing stone and masonry is complemented by new masonry work as well as layers of more contemporary materials such as the ceramic rainscreen. The Brighton House residence similarly references the existing historic building fabric, yet builds in a completely contemporary way. (images obtained from <http://www.alliesandmorrison.com/>)



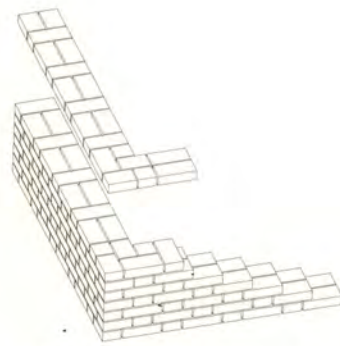
<sup>52</sup> Fritz Schumacher, in Deplazes, A. (Ed) 2008. *Constructing Architecture: Materials, Processes, Structures*. Basel: Birkhauser, 27

<sup>53</sup> Deplazes, 40

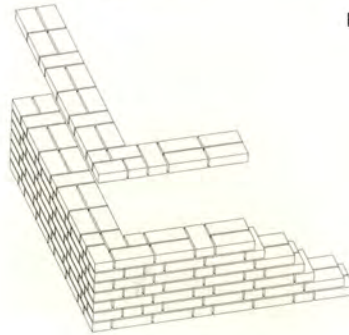


Stretcher bond

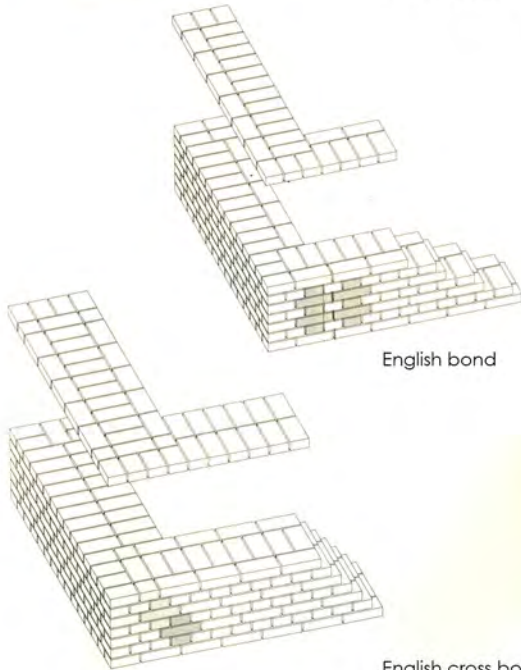
Header bond



Flemish bond

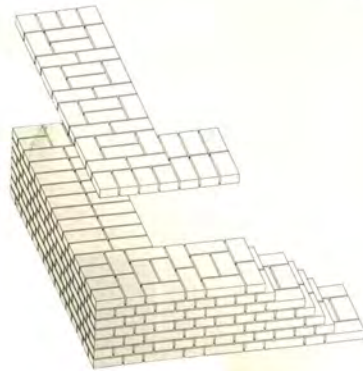


Mond bond

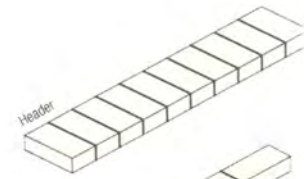


English bond

English cross bond

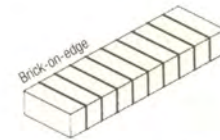


Dutch bond

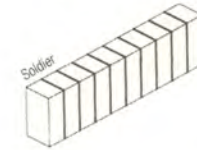


Header

Stretcher



Brick-on-edge



Soldier



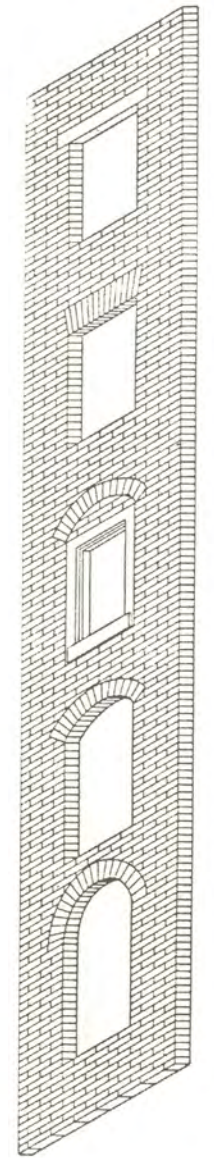
Dog-toothing with headers



Leaning soldiers



Dog-toothing with bricks on edge



## GROUNDING

The precinct is grounded in the landscape. The ground plane follows the slope of the land and forms inhabitable platforms. Cape vernacular architecture unmistakably made use of the wall and platforms in forming courtyards as well as extending low walls from buildings in order to organise yards and platformed gardens and crops.

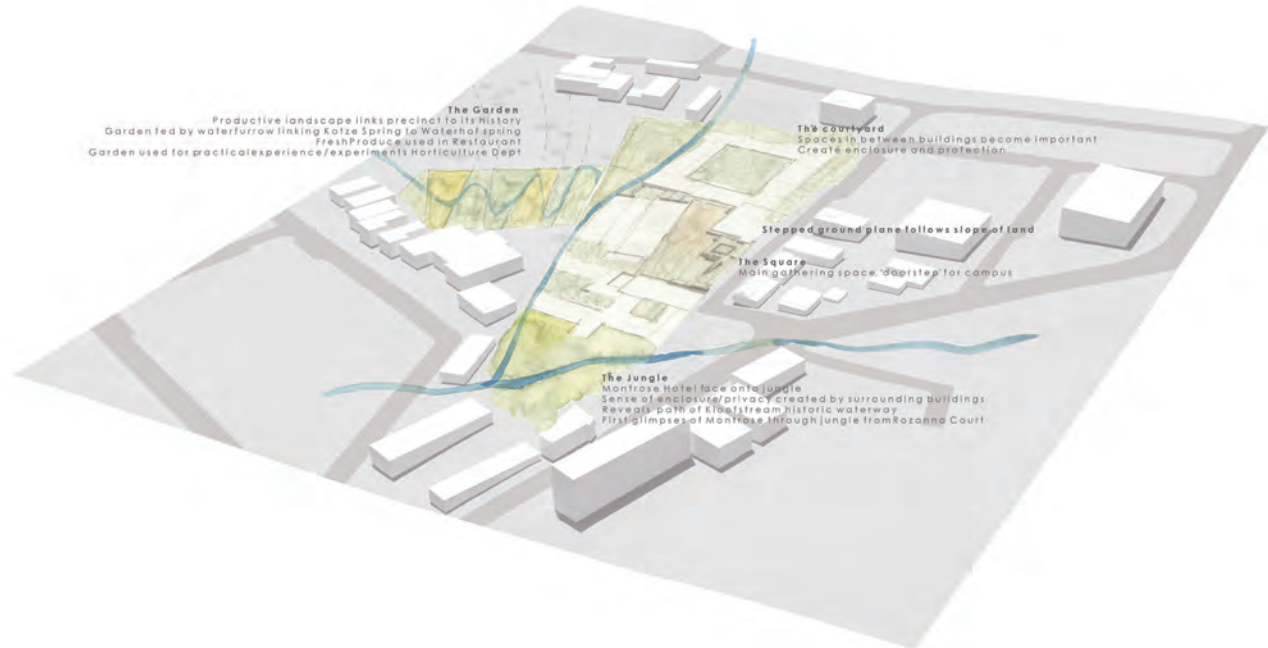
As the landscape and the garden play such an integral part in this project, in addition to the ground plane, four types of landscapes were developed - each with their own distinct character.

### The Ground Plane

The site slopes in two directions. In line with the overall strategy of using what could be seen as restraints in creating unique spaces, the ground plane is manipulated into steps, platforms and ramps rather than digging in to the landscape. The slope is used as opportunity to create platforms, seating and layered spaces.

The main square is a series of platforms that slope towards the main entry of the main educational building. These platforms and low walls form seating underneath the existing large London Plane tree and could be seen as an informal amphitheatre.

The productive garden is laid out in platforms following the natural contours.



## GROUNDING

### The Courtyard

Linked to the wall is the courtyard. As spaces in between buildings becomes more important, courtyards and moments of rest is created throughout the precinct. Smaller spaces in between buildings are treated like outdoor rooms, or courtyards. It has an enclosed character, yet a connection with the landscape and garden beyond is retained through existing trees. These trees are retained and new buildings are built around it.

### The Square

The large main square connects all the elements of the precinct, and serves as main entrance or doorstep to the campus. It is mostly hard landscaped, with some new trees.

The existing large London Plane tree is the central focus of the square and provides shaded seating. The square is stepped with the slope towards the entrance of the main educational building. These steps and low walls forms seating and the square feels like an amphitheatre.

The buildings looking onto the square has a more formal or civic character.

### The Garden

The productive garden links the precinct with its history of being part of one of the largest market gardens of the Upper Table Valley.



Lilliesleaf farm by Mashabane Rose Architects is an example where interest is created through the use of masonry as well as using the existing slope to create interesting seating spaces, walkways and planted areas (images on the right, obtained from <http://mashabanerose.co.za/projects/heritage/lilliesleaf.htm>).

The garden of Elizabeth residence and the Waterhof garden was historically part of the same productive landscape made up of cultivated land. Together with the adjacent bird sanctuary and the Waterhof Spring, they form a 15 832 square meter continuous green area that has never been built on and that used to form part of the productive landscape.

The garden is laid out in platforms following the natural contours. The platforms were conceived in a way that could be extended to the entire green area. It feeds off the water furrow that is diverted and channelled along the historic *leivoor*, which connects to the existing channel running from the Waterhof Spring.

Produce grown in the garden is used in the restaurant that serves a seasonal menu. Students in the horticultural department works in the garden to gain practical experience and to conduct experimental projects. Along the platforms, a few small-scale buildings are nestled in the landscape; a lightweight greenhouse, a barn-like multifunctional building that could be used for lectures, larger gatherings or a weekend market, and a third building containing more teaching spaces.

At the back of Elizabeth House, an orchard is laid out in accordance with the existing orchard at St Ronans. Trees are spaced to

allow cars to park in between them in the case of events that requires more parking.

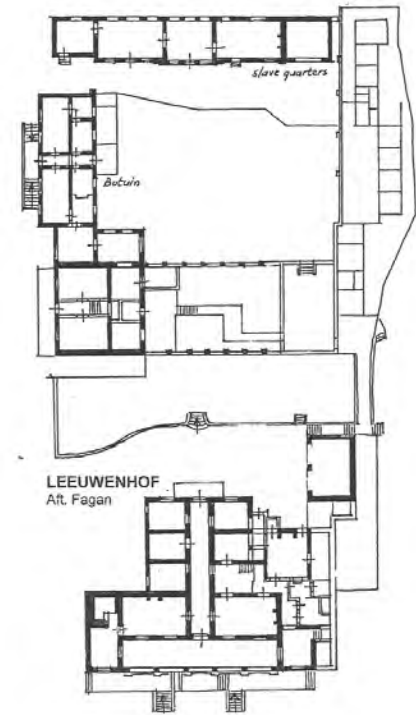
### The Jungle

The Montrose garden has a definite jungle-like character. The area contains many large and mature trees as well as shrubbery on the forest floor. Although some of the trees will be thinned out to let more light in, the essential forest-like feel is retained and celebrated with picnic spaces and a walkway that snakes through the trees.

It is also through this forest that visitors first glances Montrose from the restaurant in Rozanna Court on Kloof Street.

It is protected by Rozanna Court to the north and another garden wall at the back of Hofmeyr Street on its east.

Neighbouring Homesteads Leeuwenhof and Waterhof: making interior and exterior spaces with *walls* and *courtyards*. At Waterhof, the building becomes a wall, protecting the homestead from Hof Street. (Leeuwenhof plan obtained from John Rennie, Waterhof plan obtained from Trevor Thorold)



Waterhof site plan

## REVEALING

The purpose of this project is to bring the Montrose Precinct into the future with all the accompanying spaces and amenities that it requires as well as revealing and celebrating its rich history.

### Water

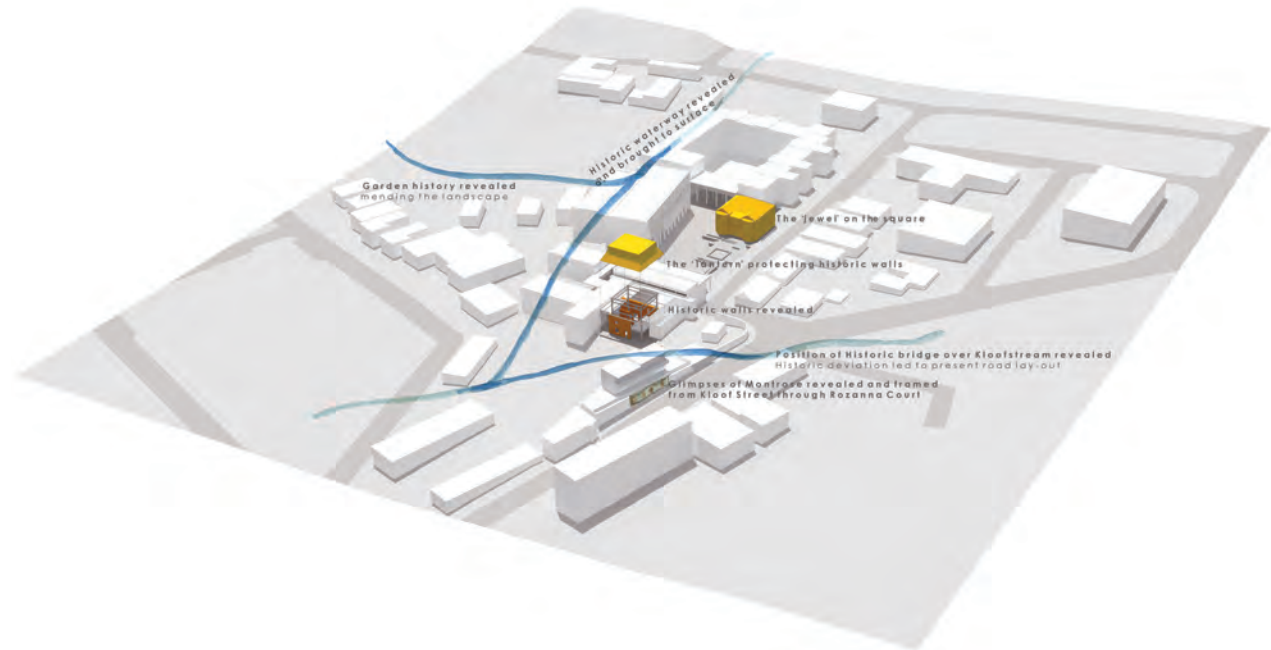
The historic waterway serves as one of the precinct's structuring principles and is given back the prominence which it once possessed.

### The 'Lantern' and the 'Jewel'

Existing buildings with historical value and character are retained and treated like special elements.

Beaufort House is treated like a freestanding jewel on the large public square. Later unsightly additions to its original plan are removed to reveal the original spatial volume of the house.

The original roofscape of the 1900 extension of Montrose is re-imagined as a lantern, rising above the flat roofs of the surrounding spaces. It is not supported by the original Montrose walls as they were damaged by the fire, but rather sits on lightweight steel columns. The walls are treated as valuable artefacts, protected by and signified by its new lantern roof.



REVEALING

## EXTENDING/INSERTING/ADDING

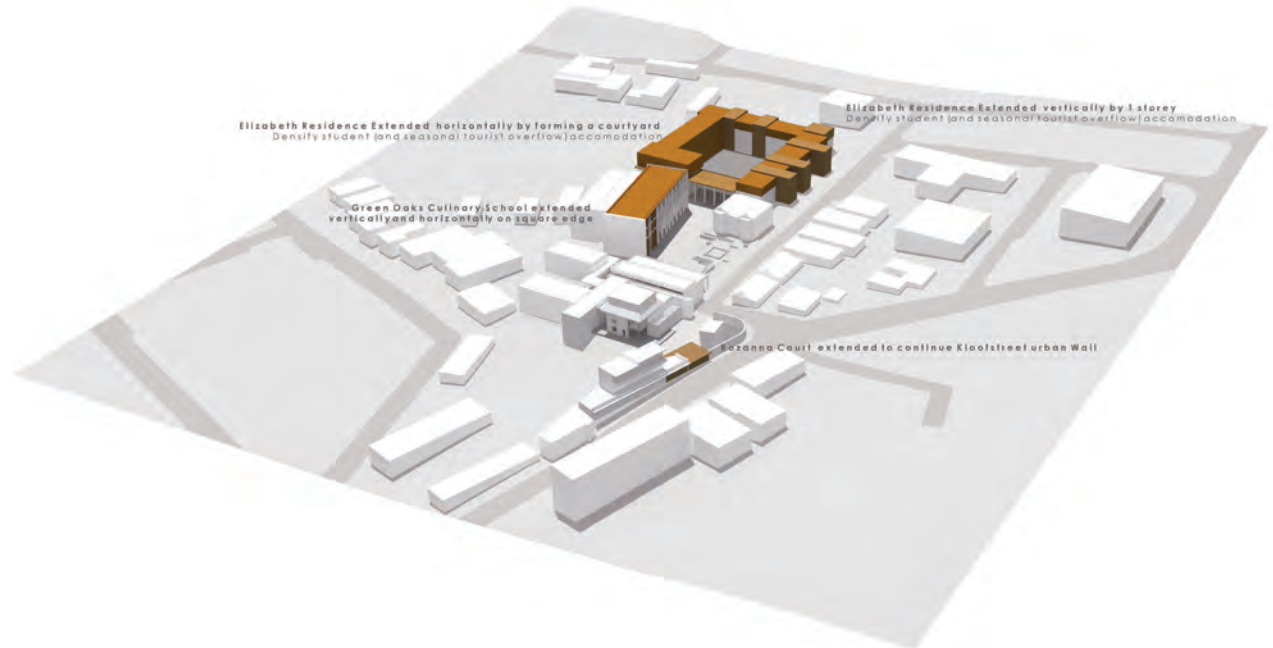
Existing buildings are incorporated as far as possible to retain their material value. Where their structures allow it, they are extended vertically and horizontally to aid in densification.

The Elizabeth House residence building is reused, and extended to close the courtyard its L shape forms with Camelot. 'Service boxes' are inserted in its very regular plan to allow for better vertical circulation and security and to allow for communal cooking and ablutions.

The same language is used in the vertical (and horizontal) extension of Rozanna Court. Currently, there is a parking area and substation adjacent to the existing building to the south. The building is extended southwards to form a continuous wall facing Kloof Street and protecting Montrose behind it. Its ground floor stays transparent to form a continuous glazed shop front that also acts like a picture frame for the views through to Montrose behind it.

On the upper levels, the existing residential units are retained and another 2 units added on top of the ground floor extension.

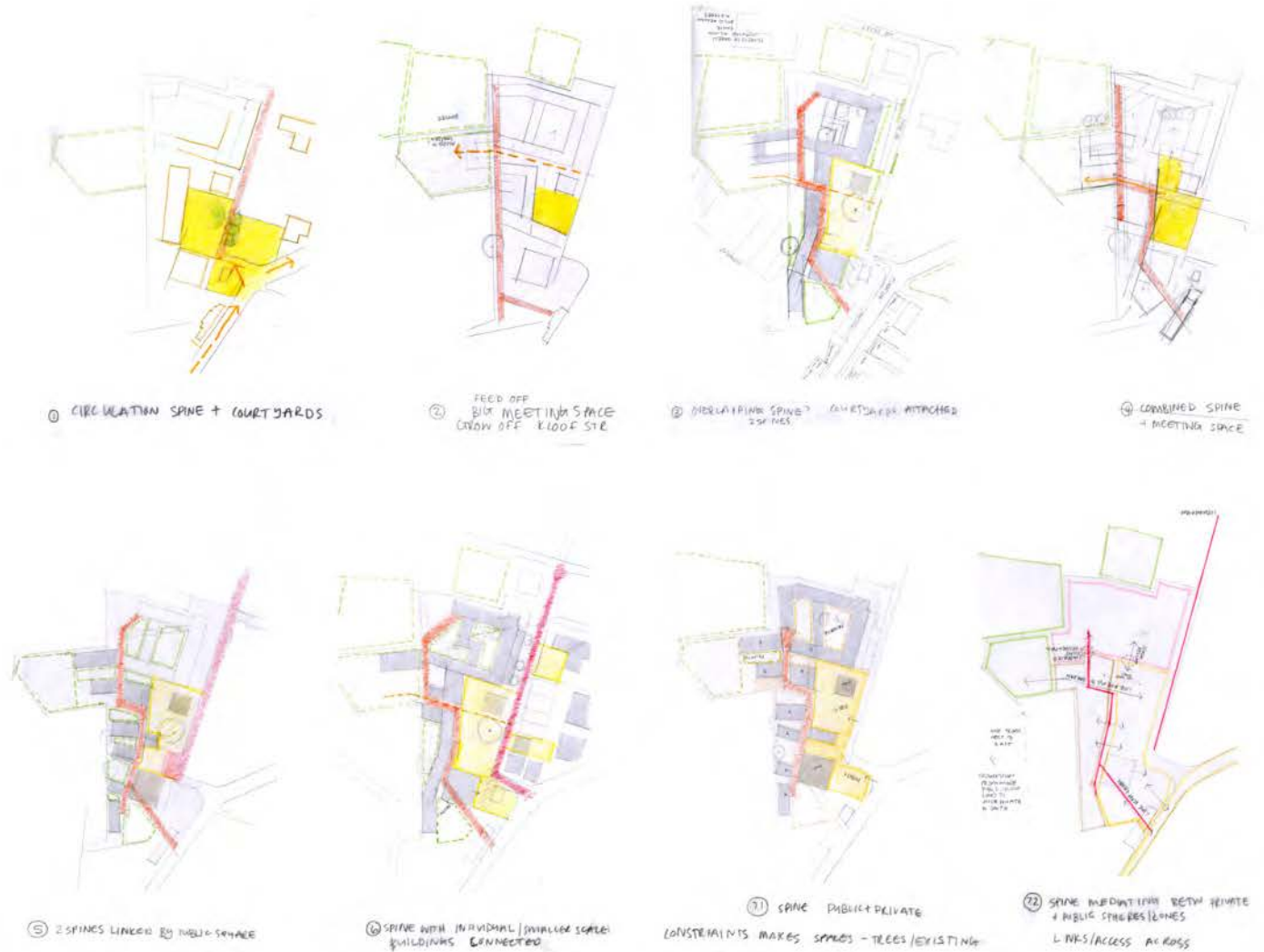
Where existing buildings are re-used and where the campus logic calls for buildings with an East-West orientation, vertical screening devices is used to ensure the comfort of inhabitants.



EXTENDING



DESIGN DEVELOPMENT



June 2014

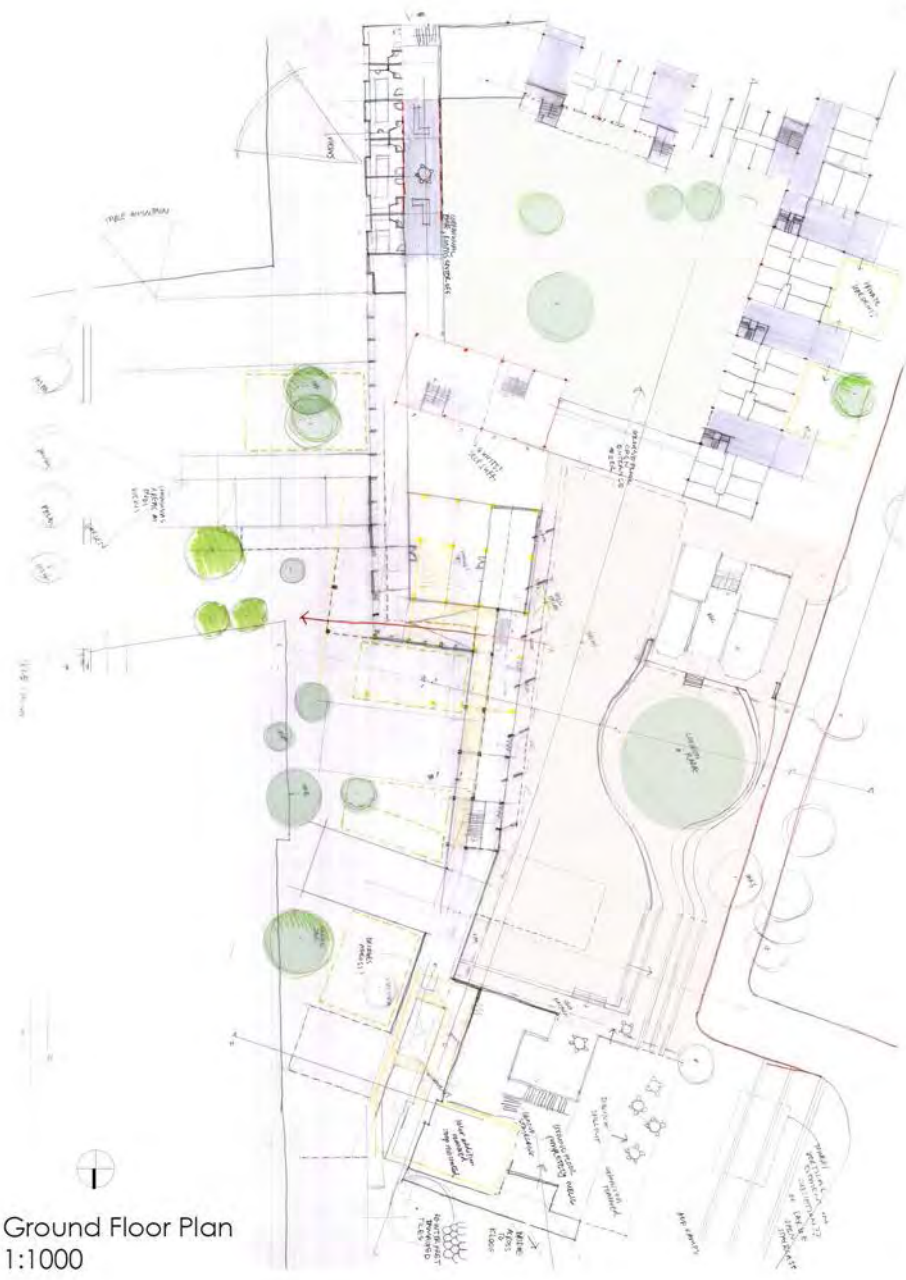
Establishing an organising system/principles. A circulation spine linking all the buildings and a large public space as the heart of the precinct is established. The large square serves as main gathering space for students and tourists and becomes the more institutional heart of the site that also provides access to the gardens behind.



1:5000

First Design Attempt  
June 2014

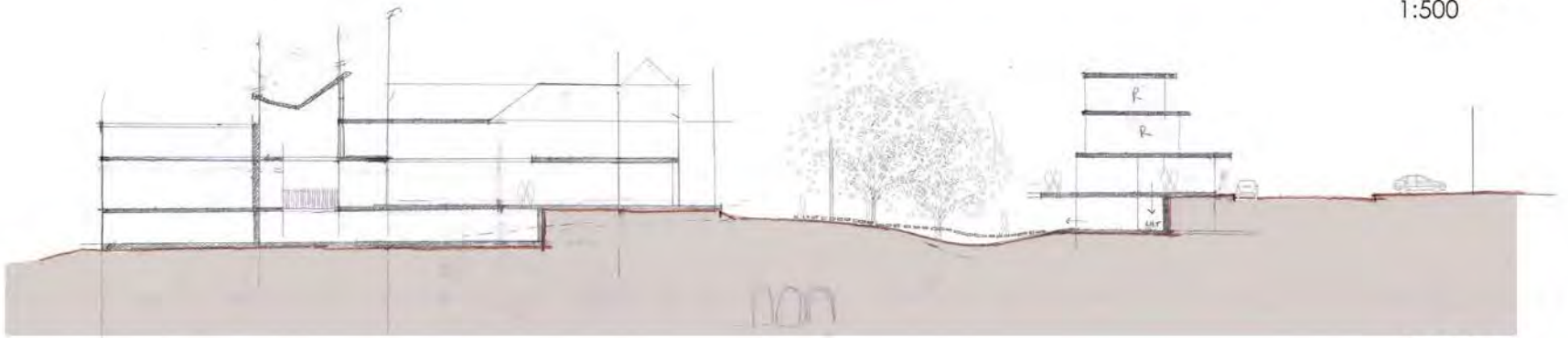
This initial proposal highlights the route through the site, the re-use of the residence as well as the importance of a central, stepped square - all features that stayed prominent throughout the design development.



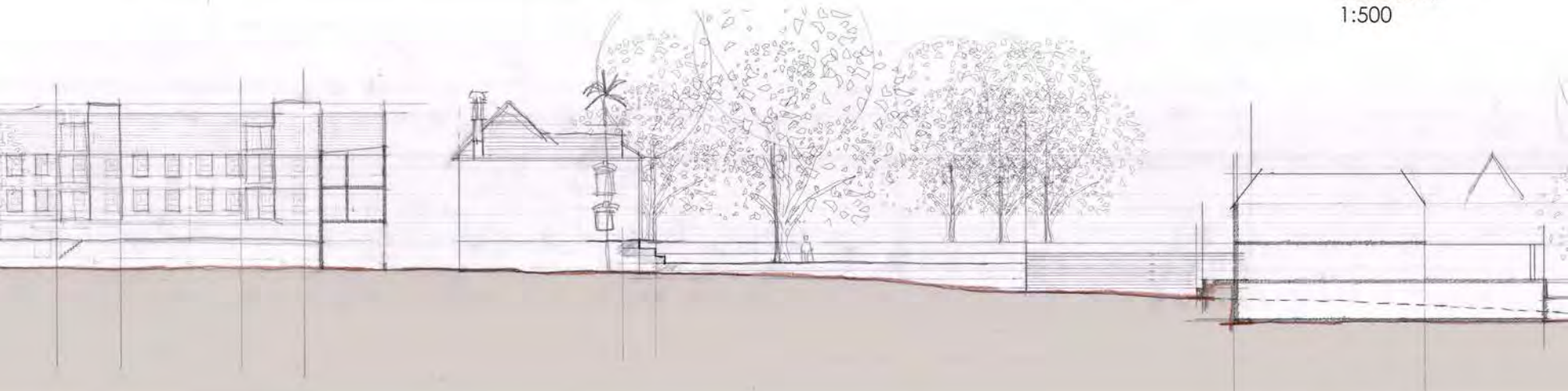
Ground Floor Plan  
1:1000



SECTION 1  
1:500



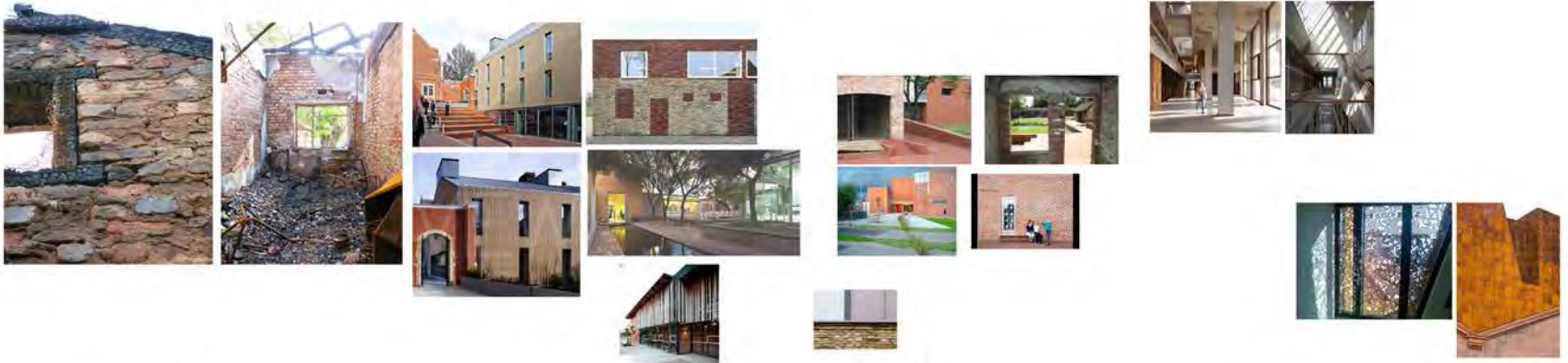
SECTION 2  
1:500



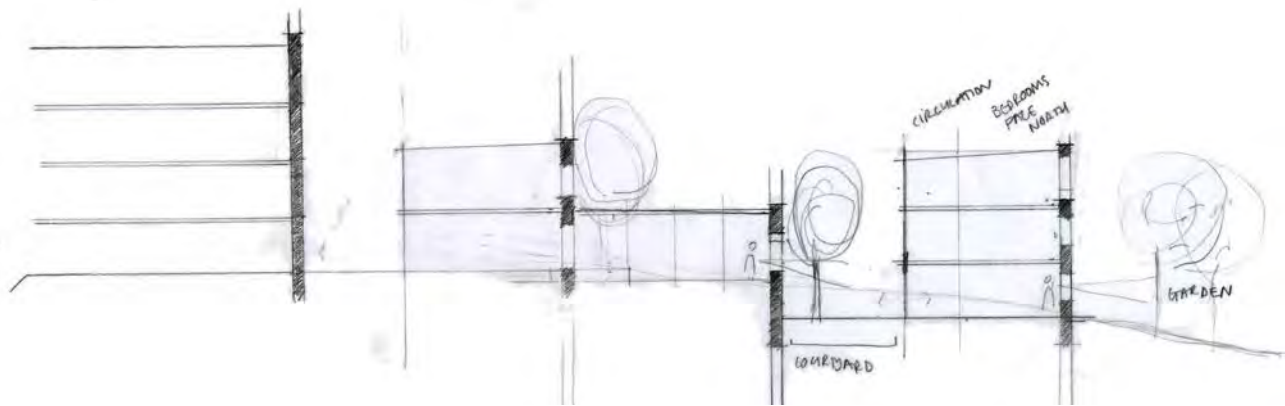
SECTION 3  
1:500







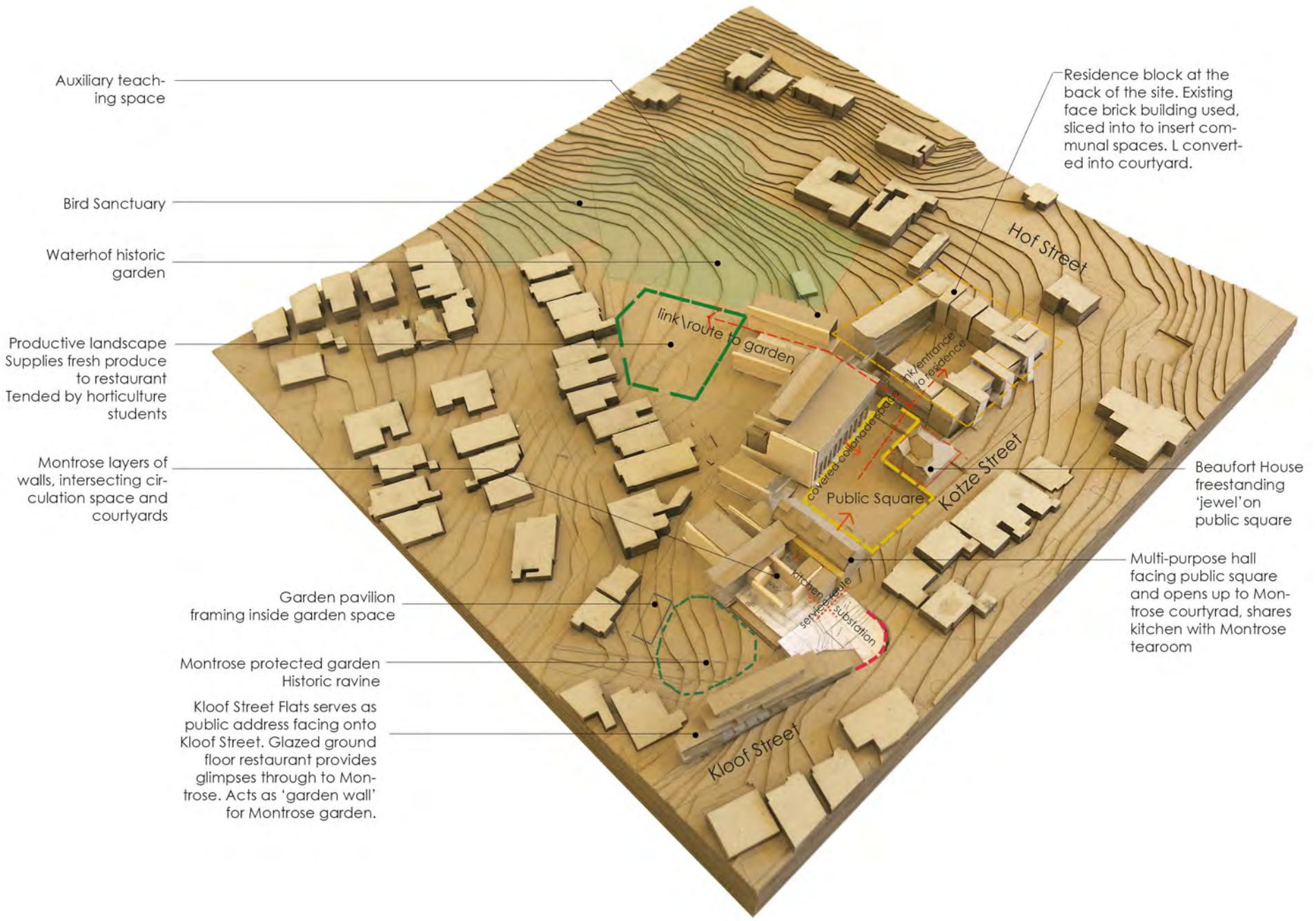
Layering of existing and new materials  
Product of an en loge, 11 August 2014



Sketch section showing walls as organising principle, with courtyards created in between.  
1:500, August 2014



Working out Montrose roof section



Auxiliary teaching space

Bird Sanctuary

Waterhof historic garden

Productive landscape  
Supplies fresh produce to restaurant  
Tended by horticulture students

Montrose layers of walls, intersecting circulation space and courtyards

Garden pavilion framing inside garden space

Montrose protected garden  
Historic ravine

Kloof Street Flats serves as public address facing onto Kloof Street. Glazed ground floor restaurant provides glimpses through to Montrose. Acts as 'garden wall' for Montrose garden.

Residence block at the back of the site. Existing face brick building used, sliced into to insert communal spaces. L converted into courtyard.

Beaufort House freestanding 'jewel' on public square

Multi-purpose hall facing public square and opens up to Montrose courtyard, shares kitchen with Montrose tearoom

link route to garden

link entrance to residence

coloured courtyard

Public Square

kitchen service substation

Hof Street

Kotze Street

Kloof Street



Model Exploration 20 August 2014

The building facing the square incorporates the structure of the 1950s existing building. Building contains most academic functions and displays a strong institutional character. It faces onto the main public square. Its collonade provides a covered walkway and seating.



The multipurpose hall also faces onto the square and its southern facade can open up completely. Its section ensures light into the interior and provides an interesting western facade that it visible from Kloof Street.

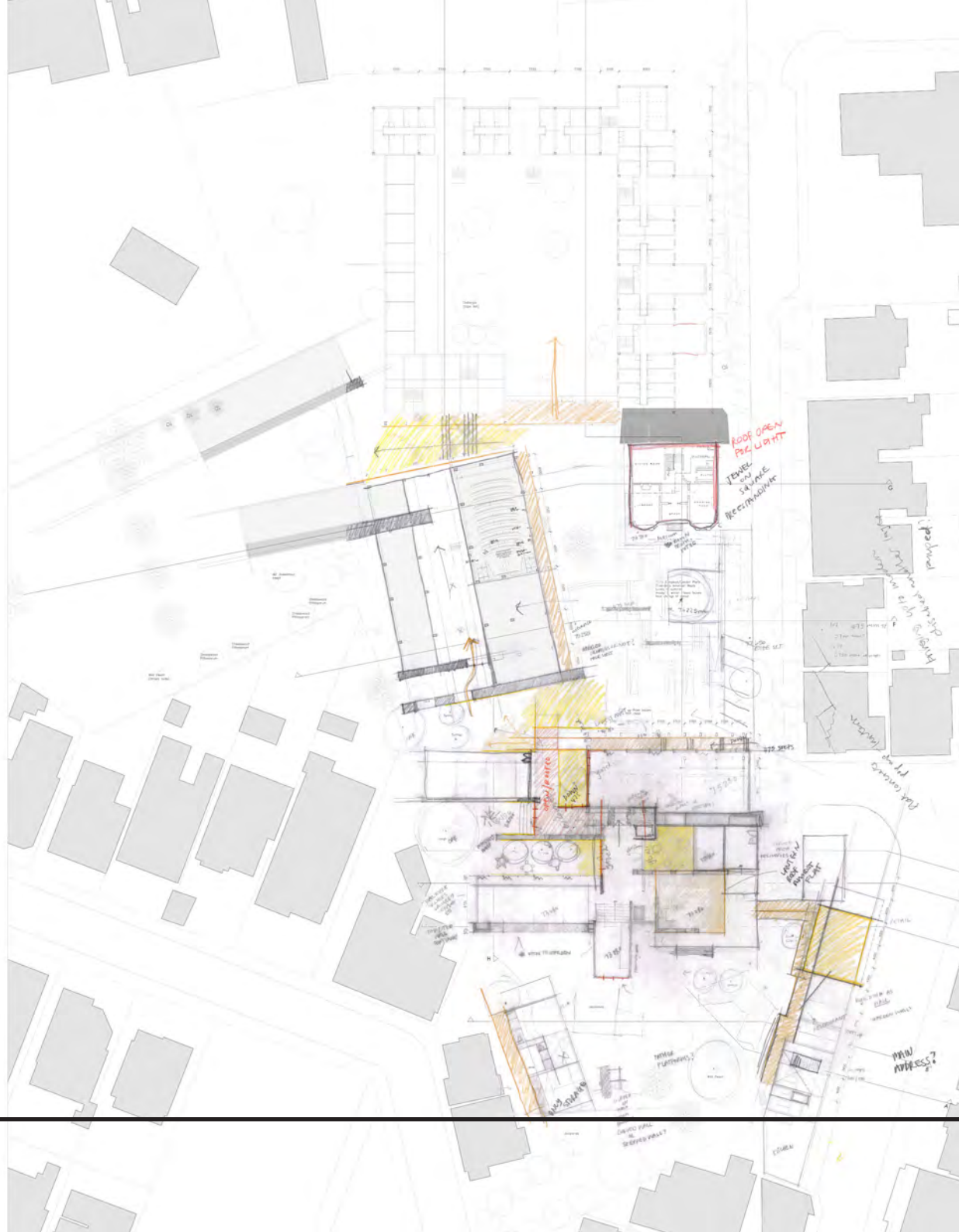


The main circulation spaces are visible in section and intersects with the series of walls.



Kloof Street flats provides glimpses through to Montrose through its glazed ground floor restaurant. It also acts as a garden wall, protecting the Montrose garden.





ROOF OPEN  
FOR LIGHT  
TOWER  
SQUARE  
RECREATION

Flat concrete  
slab  
with  
reinforcement  
at  
each  
column

Large  
open  
space  
for  
events

MIN  
ADDRESS?



Sketch plan of precinct, 1:1000  
September 2014.





Sketch plan of precinct, 1:1000  
7 October 2014.





Final plan of precinct, 1:1000  
17 November 2014.







Elizabeth Residence and Green Oaks Culinary School Plan, 1:500

Productive Landscape/Garden  
1:500





Waterhof Homestead

Kotze Street

Kloof Street

Hofmeyr Street



Figure Ground



Route through site



Programme

Site Plan + Site Diagrams  
1:1000



Green Wall  
Culinary Terrace  
New Dining Room  
15,842

Green Wall  
Culinary Terrace  
Seminar Floor  
11,332

Green Wall  
Culinary Terrace  
Office Floor  
18,213

Green Wall  
Culinary Terrace  
Office Floor  
18,213

NGL

Seminar Room

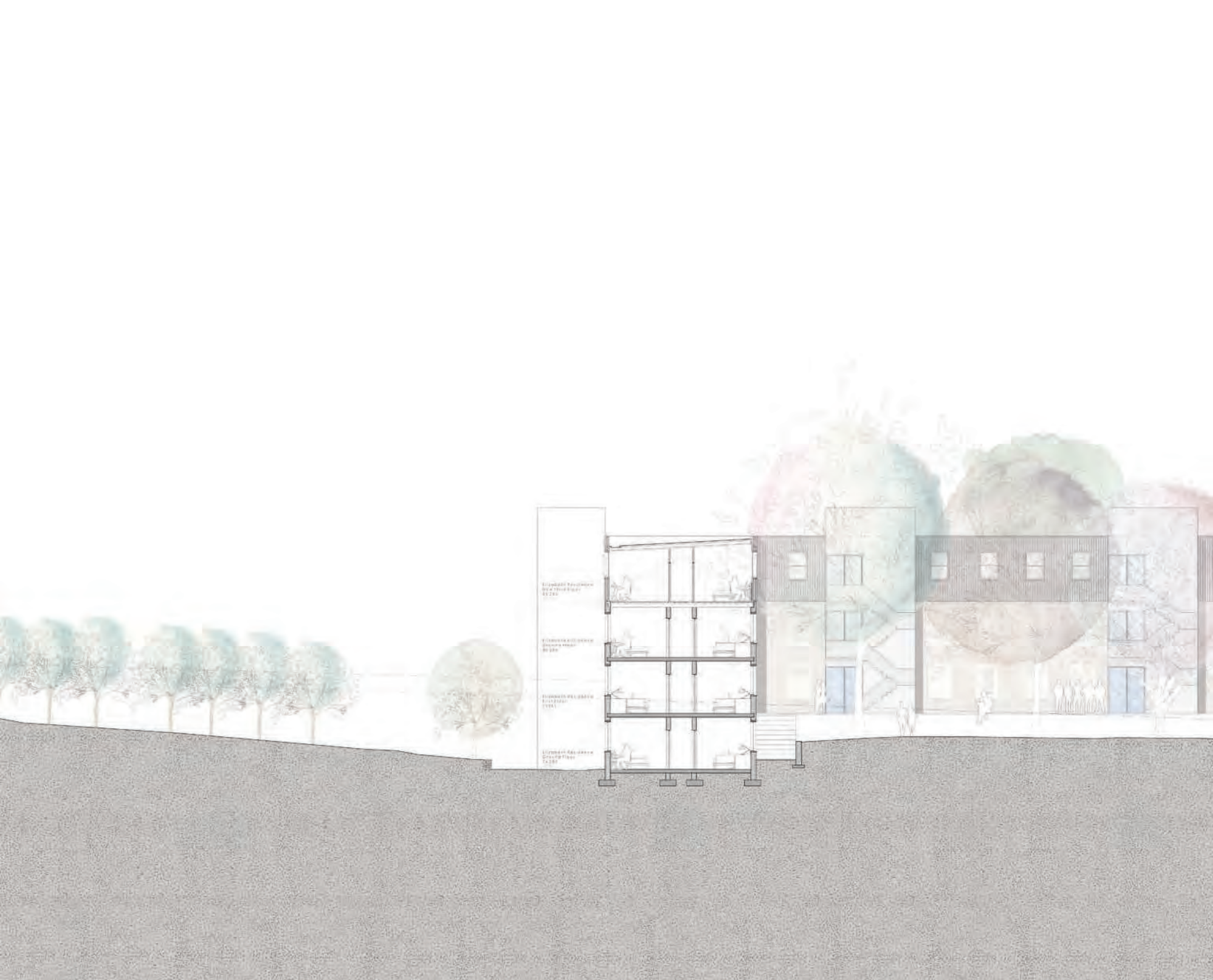
Atrium

Seminar Room

Office



Cross Section  
1:200



Etage des Résidences  
de la Tour 1000  
1000

Étage des Résidences  
de la Tour 1000  
1000

Étage des Résidences  
de la Tour 1000  
1000

Étage des Résidences  
de la Tour 1000  
1000



DOORWAY TO OUTDOOR SPACE  
ELEVATION  
12.200

EXTERIOR SPACE  
ELEVATION  
12.200

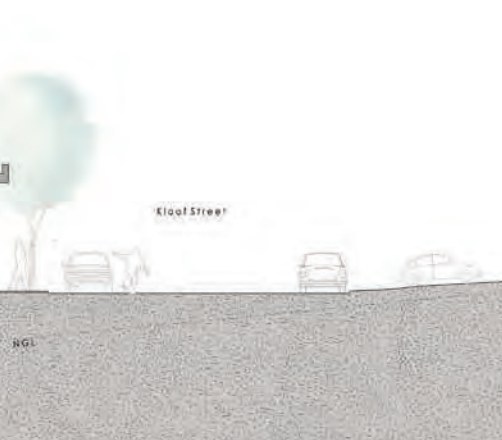
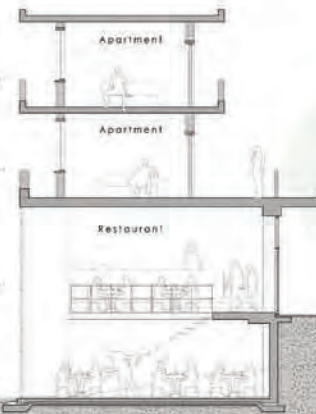
Long Section (BB) continues on next page  
1:200

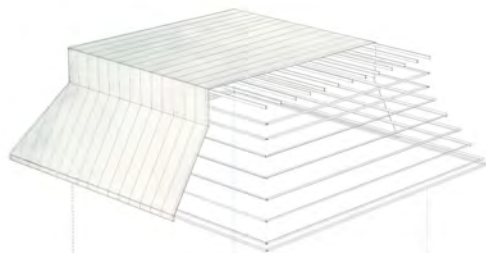


SOVA STREET  
7777

Multi-Purpose  
Event Space

Montrose Courtyard





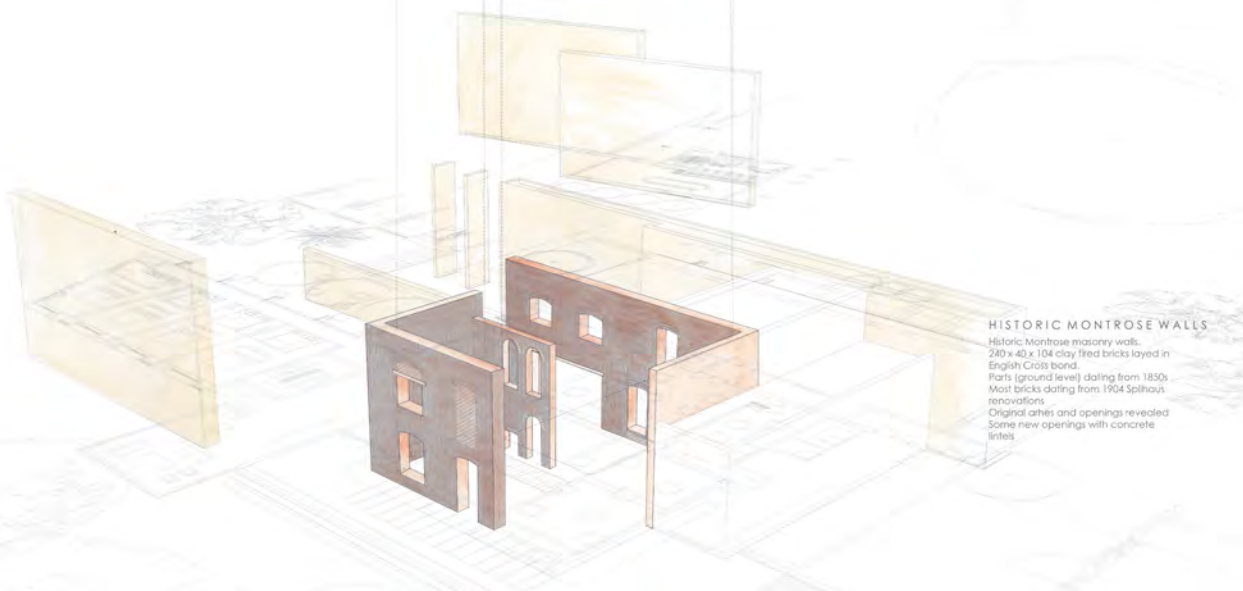
**THE 'LANTERN' ROOF**  
 Rheintank angled standing seam  
 sheathing, 25mm seam height, 12mm  
 seam width, 600mm girth  
 24mm Plywood sheet sheathing on  
 100 x 50 x 20 GMS lipped channel purlin



**LIGHTWEIGHT STEEL INSERTION**  
 305 x 165 x 40 GMS I beam steel box  
 305 x 165 x 40 GMS I beam turned  
 sideways to take L shaped truss", pitch  
 at 30°

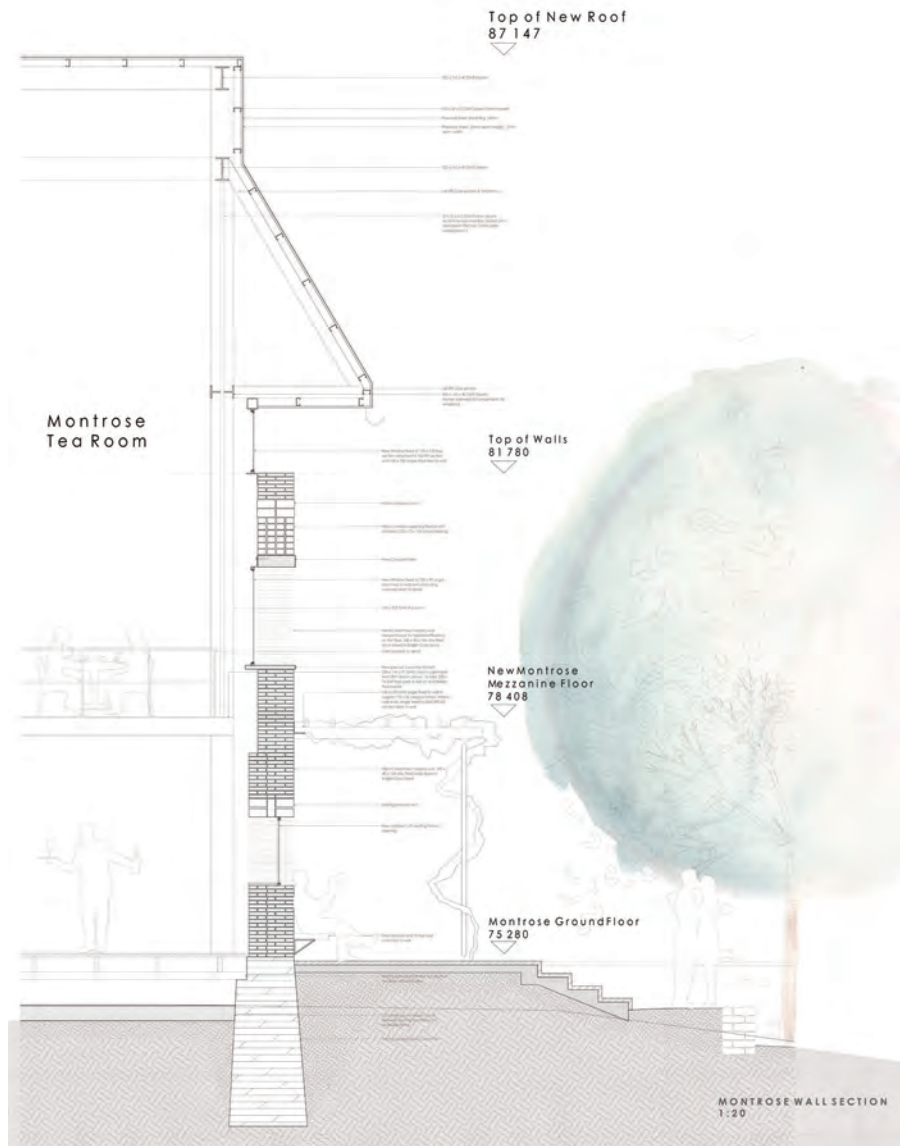


**SUSPENDED FLOOR & STAIRS**  
 254 x 146 x 31 GMS I beam suspended  
 from 305 I beam above with 50 x 50 x  
 4.5 GSM hollow square section tension  
 member. To take 228 x 76 SAP floor  
 joists @ 450 cc and timber floorboards.  
 Folded steel plate fixed to steel  
 substructure lightweight staircase  
 suspended from beam above with 50 x  
 50 x 4.5 square hollow section



**HISTORIC MONTROSE WALLS**  
 Historic Montrose masonry walls.  
 240 x 40 x 104 clay fired bricks laid in  
 English Cross bond.  
 Parts (ground level) dating from 1850s.  
 Most bricks dating from 1904 Spillhouse  
 renovations.  
 Original arches and openings revealed.  
 Some new openings with concrete  
 lintels.

Montrose Axonometric, showing walls and new steel structure with suspended floor



The Wall  
1:100



Interior Elevation Montrose  
1:100



Old Parallel, North/South facing walls and  
New North/South facing walls  
Conceptual Model





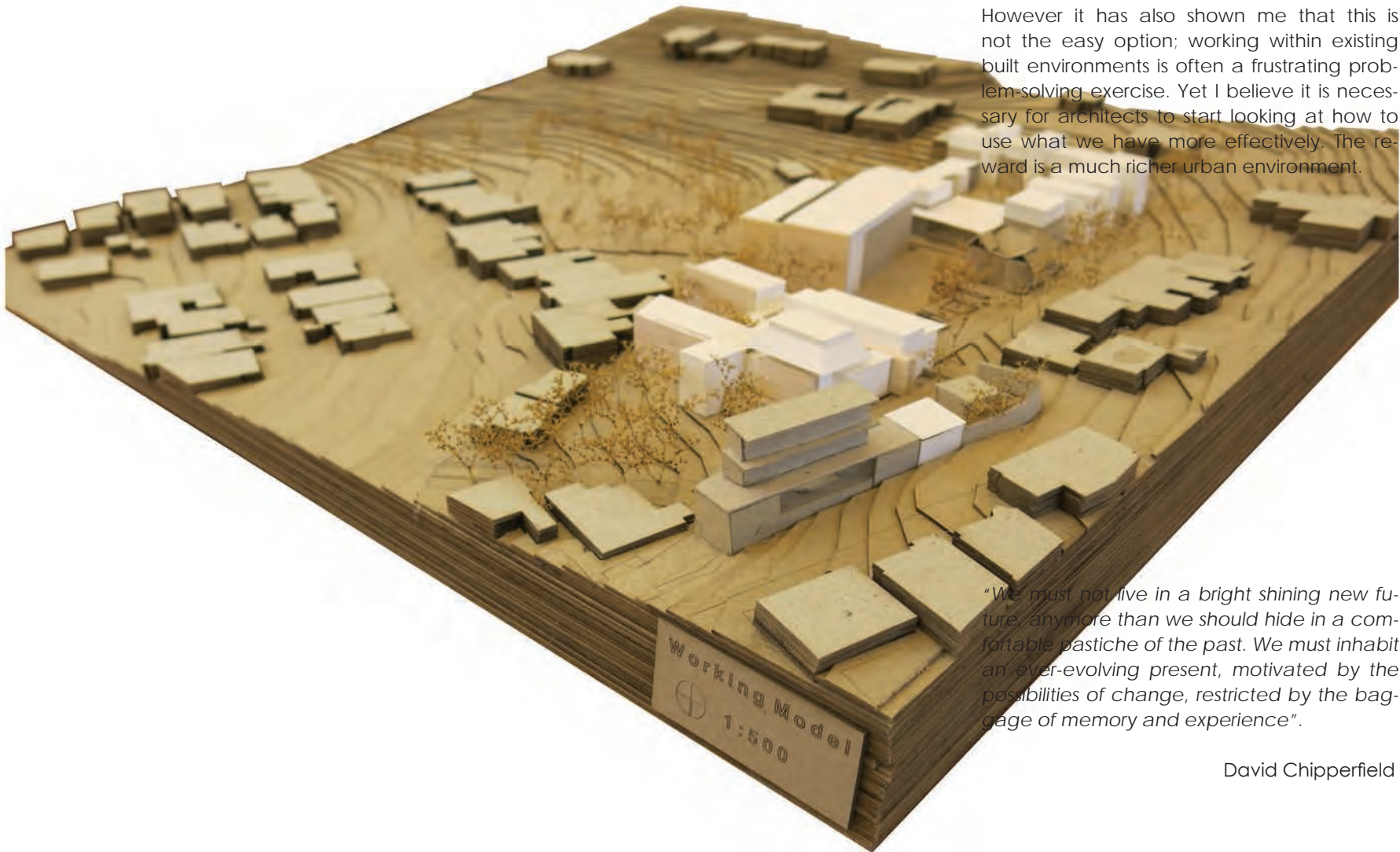






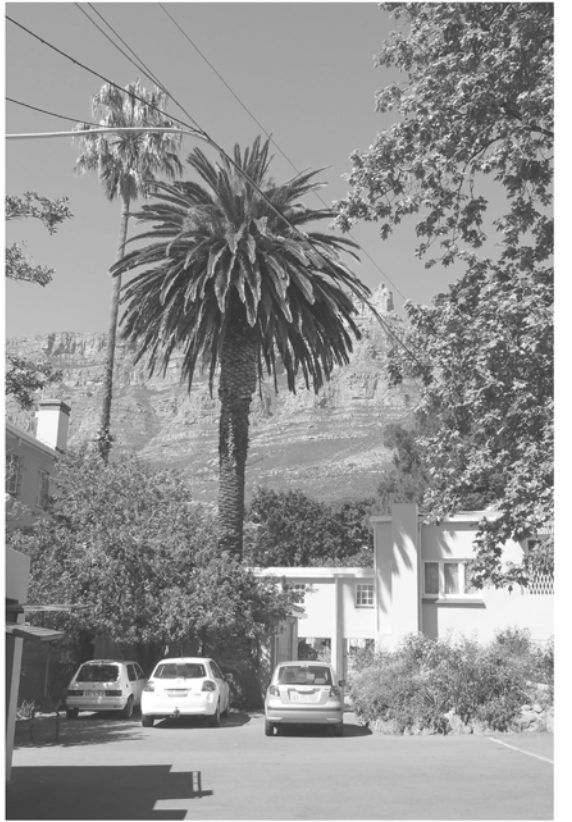
This process have reinforced for me the idea that buildings have lives, that they accumulate meaning and richness over time and that their re-use rather than their demolition and death is a better solution to both densification and sustainability questions.

However it has also shown me that this is not the easy option; working within existing built environments is often a frustrating problem-solving exercise. Yet I believe it is necessary for architects to start looking at how to use what we have more effectively. The reward is a much richer urban environment.



*"We must not live in a bright shining new future, anymore than we should hide in a comfortable pastiche of the past. We must inhabit an ever-evolving present, motivated by the possibilities of change, restricted by the baggage of memory and experience".*

David Chipperfield

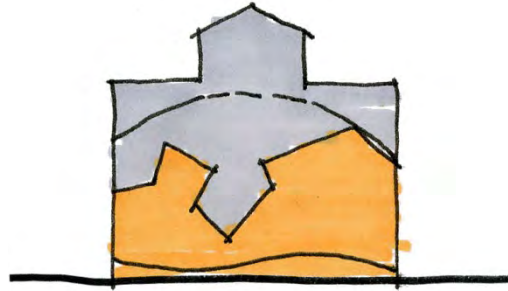


## APPENDIX A

### STRATEGIES FOR BUILDING WITHIN AN HISTORIC ENVIRONMENT

Time makes the high building cost of one generation the bargains of a following generation. Time makes certain structures obsolete for some enterprises, and they become available to others. Time can make the space efficiencies of one generation the space luxuries of another generation.<sup>54</sup>

This section looks at different strategies to build within historic environments. Each project re-uses an existing building and transforms it in terms of use, spatial experience and form. Although the strategies of *building within*, *building on top*, *building over*, *building in between*, *building with layers* and *building through salvaging* all approach building within existing environments differently, they all aim to preserve the cultural value of historic urban fabric.



#### Building WITHIN

The Danish Jewish Museum by Daniel Libeskind (2002-2004) holds a collection containing the history of the Danish Jews in Denmark since the beginning of the 17<sup>th</sup> century. The museum is situated in one of the oldest parts of Copenhagen in the brick Royal Boathouse built by King Christian the 4<sup>th</sup> at the beginning of the 17<sup>th</sup> century. Later the Royal Library was built around it and the museum now occupies a tranquil space in the south side of the garden of the Royal Library.<sup>55</sup> Iron rings attached to the old brick groin vaults indicate that the space was used for boat storage. But round holes at the crowns of the vaults for the escape of smoke attest to its subsequent use as a workshop as well. The ground floor of the old buildings approximates a 24m x 24m square, with a rectangular bite taken out for bathrooms.<sup>56</sup>

Libeskind stripped the interior down to the bare brick walls and then inserted the walls of

the gallery spaces in light brown Norwegian birch panels, which in turn are attached to black chipboard and supported by metal stud walls. Rising to different heights, the canted and split walls give the visitor a sense of being enclosed by the abstract forms of a ship's hull. This is in reference to October 1943 when thousands of Danish Jews crossed the narrow straits of the Oresund separating Denmark from Sweden to escape the Nazis.<sup>57</sup>

A fascinating tension is created between the wall mass and the perspective lines set up by the panel seams; what is up close slides away quickly and what is far away seems to move precipitously closer.

The conversion of the boathouse into a museum exhibition space meant that the building was stripped from its original meaning and character. But it was transformed from a very exclusive, private institution, to a building open to anyone. The intertwining of the old vaulted brick structure and the unexpected connection to the unique exhibition space creates a dynamic dialogue between the architecture of the past and of the future.<sup>58</sup> The contrast between the original brick structure of the old boathouse and the folded, irregular shapes of the vitrine objects is very evident. But it is not only the contrasting shapes, but also the difference in materials and textures

<sup>54</sup> Jacobs, J. 1969. *The Death and Life of Great American Cities*. New York: Modern Library, 247

<sup>55</sup> Adams, N. 2004. "Danish Jewish Museum, Denmark". In *Architectural Record*, April 2004: 141

<sup>56</sup> Adams, 141

<sup>57</sup> Adams, 142

<sup>58</sup> Unknown. 2006. "Daniel Libeskind, Jewish Museum in Denmark" In *Architecture and Urbanism*, September 2006: 68



Museum, showing granite benches at the entrance 2: Exterior of the Danish Jewish (Adams, 2004: 141)



Model showing floor plan (Architecture + Urbanism, 2006: 60)



Interior (Architecture + Urbanism, 2006: 73)

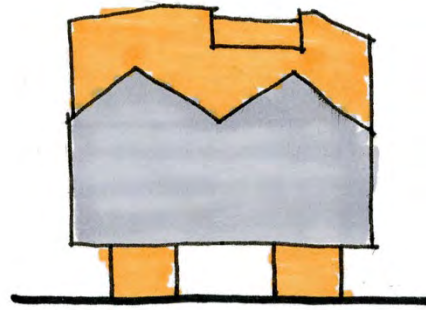
that makes obvious the transformation of the building.

The insertion transforms the interior spatial arrangement of the building, but the exterior is not altered at all. It is left unchanged on the outside in order to blend with the other buildings around the library garden.<sup>59</sup>

The technology of timber panels attached to black chipboard supported by metal stud walls seems like a theatrical stage set. The parallelogram-shaped glass vitrines placed in the walls and in some instances around corners, establish their own tangents. The results call to mind trompe l'oeil perspectives, the "forced perspective," that has long been used in stage-theatre set design that creates the illusion of a much deeper space than the actual stage.

The museum can be described as a maze inside an enclosed shell with no reference to the outside. Also, perhaps the building reduces the long history of progressive assimilation and relatively tranquil coexistence between Danish Christians and Jews to a single moment by focusing the building's concept quite literally on the dramatic crossing in 1943 and relying on by now familiar visual trickery for experiential qualities. Although the contrasting shapes and materials highlights the differences between the existing building and the new insertion, the opportunity to highlight the rich cultural value and history of the existing

building as well as the rich narrative of Jews in Denmark, was missed.



#### Building ON TOP

Herzog and De Meuron's converted Madrid's first coal-fired electric plant building, the 'Central Electrica del Mediodia' (1901) into the Caixa Forum (2007), a museum dedicated to programs in art, music theatre and literature.<sup>60</sup> It is situated directly on the Paseo del Prado, nestled between the Museo Nacional del Prado, the Museo Reina Sofia and the Thyssen Museum. Despite the turbulent history of the monolithic brick building, which is closely linked with the industrial and political development of the country, the building had survived into the twenty-first century, and its external form was to become part of the new museum building.<sup>61</sup>

The basic urban and architectural idea was to establish a pedestrian axis parallel to the street axis of the heavily trafficked Paseo del Prado, as a link between the museums. The space under the museum forms part of this connecting axis, which had the conceptual consequence of separating the granite plinth, the stone foundation, from the brick superstructure. The massive brick form is a giant block that floats over the plaza, supported by only three 'legs' that contain the vertical circulation and services - the entire above-ground building structure stands on these three legs, and the plaza is covered by the floating 'monolith'.<sup>62</sup>

The only part of the building protected by the local Heritage Commission was the classified brick shell.<sup>63</sup> The granite base of the original building is cut away, creating the illusion that the building floats mid-air, hovering over the covered entry plaza. The sheltered space under the Caixaforum offers shade to visitors who want to spend time or meet outside and is at the same time the entrance to the Forum itself. Problems such as the narrowness of the surrounding streets, the placement of the main entrance, and the architectural identity of this contemporary art institution could be addressed and solved in a single urbanistic and sculptural gesture.<sup>64</sup> With the addition of

<sup>59</sup> Adams, 143

<sup>60</sup> Cohn, D. 2008. "Herzog & de Meuron's Caixaforum" in *Architectural Record*, Vol 196(6): 109

<sup>61</sup> Personal communication: email from n.moritz@schnetzpuskas.com

<sup>62</sup> Personal communication: email from n.moritz@schnetzpuskas.com

<sup>63</sup> Chevrier, J. 2010. Herzog and De Meuron, 2005-2010, *Programme, Monument, Landscape*. EL CROQUIS, Issue152/152: 92

<sup>64</sup> Chevrier, 93



View from Paseo del Prado (Webb, 2008:108)



Existing Mediodia power station (Chevrier, 2010: 92)



two upper storeys clad in rusted cast iron and two underground levels, the building's height is doubled and its size is increased five times.<sup>65</sup>

Herzog & de Meuron filled in the windows, which helps to abstract the host building into a monolithic form. In the existing building, the architects have punched a couple of openings in the exterior fabric, not relating to the positions of existing windows.<sup>66</sup> This accentuates the novelty of the new windows, and from within creates a visual link to the Botanical Gardens across the road.

As if in homage to the Industrial Age technology once housed here, the architects have extended the building upwards in cast iron. "We were looking for a material that has the same texture, the same surface, and the same colour" said Harry Guggler, Herzog and De Meuron's project partner.<sup>67</sup> The plates are perforated in random patterns derived from the microscopic spread of natural rust, while the overall volume of the floors breaks up into bays and sloping planes that mimic the surrounding roofscapes.<sup>68</sup> The roof takes what looks like a building and turns it into an object.

The primary load-bearing structure consists of two main supporting elements: the three circulation cores and a perimeter wall that

<sup>65</sup> Cohn, 109

<sup>66</sup> Cohn, 112

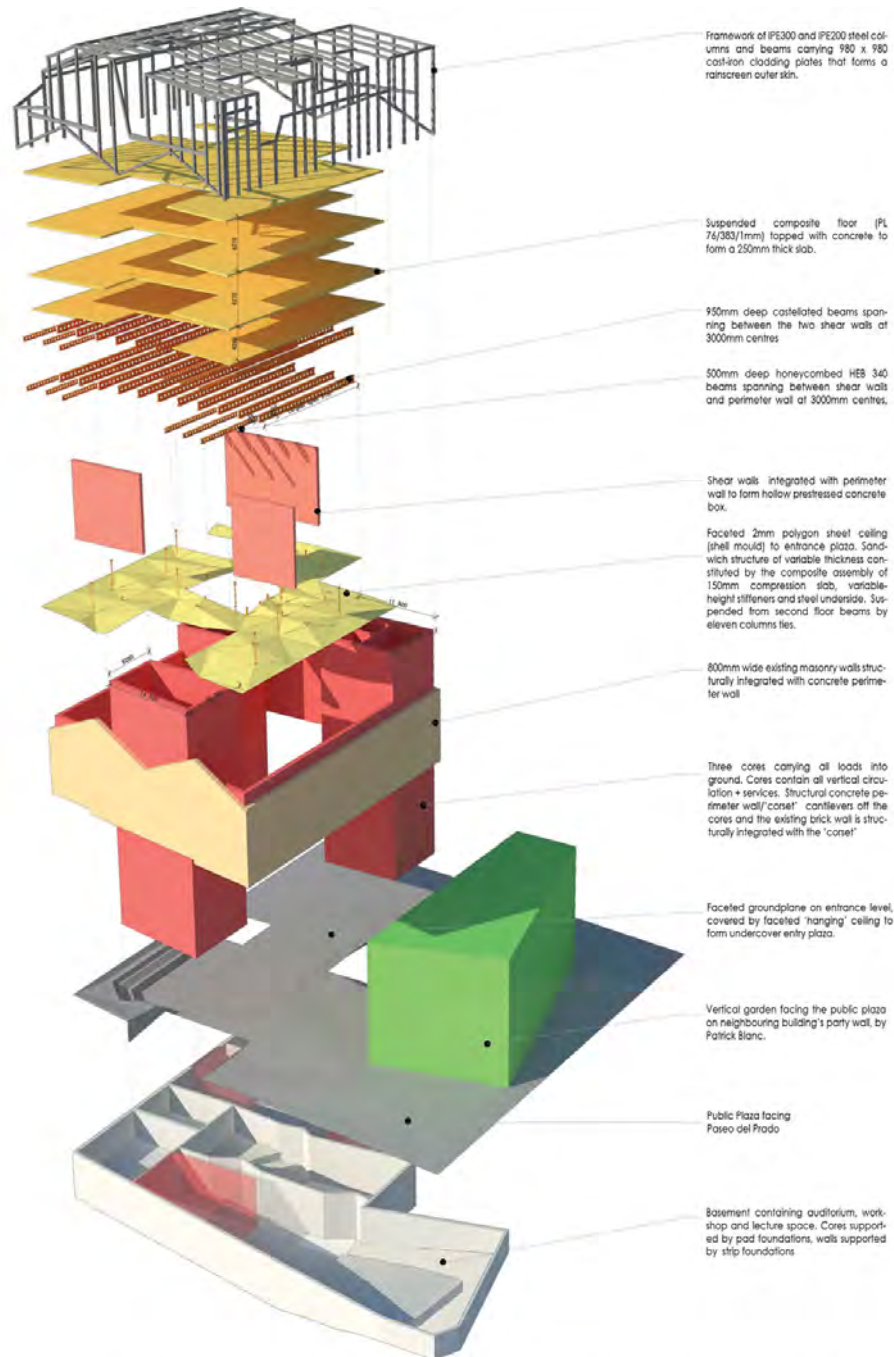
<sup>67</sup> In Cohn, 112

<sup>68</sup> Cohn, 115

wraps around these cores to join everything together. The three concrete cores transmit all the vertical and horizontal loads into the subsoil. The perimeter walls attached to the cores surrounds the load-bearing structure of the building like a corset. It carries the loads from the facade and the building, as well as the added, two storey steel construction that sits on top of the existing brick building. Together with two additional inner walls running parallel to each other and acting as shear walls, it forms a hollow, prestressed concrete box that acts as a macroscopic supporting structure to transfer all the building loads onto the cores.<sup>69</sup>

The existing building was completely gutted. Since the historical masonry facade is firmly connected with the newly created perimeter wall on the inside, the old brick exterior walls are fully integrated into the new building. Its brick skin is all that remains of the old Mediodia power station.

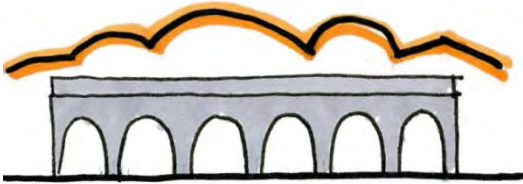
Extending the building upwards through building a lightweight steel structure *on top* was a very appropriate strategy in expanding the building's floor space. The cast iron complements the red brick of the existing building and its sculptural form makes the building an icon in the historic landscape. However, the existing building is used like a facadal skin only – another lost opportunity to retain some of its cultural



<sup>69</sup> Personal communication: email from n.moritz@schnetzpuskas.com

Structuring layering diagram, Ina du Toit, Advanced Building Report 2013)

value. The existing solid granite base was cut away – leading to incredibly complex structural solutions being sought for a new support system. A more appropriate response would have been to use the granite base, perhaps in a different and interesting way, and to have incorporated some of the existing building’s spatial character, rather than just using its brick skin as a faadal element.



### Building OVER

The Santa Caterina Market by Enrique Miralles Benedetta Tagliabue (1999) is located in the old part of Barcelona. The area is characterized by narrow pedestrian pathways with nodes, usually in the form of a public square located in front of important buildings. This dense and rich fabric has made modernization difficult as modern urban infrastructure typically requires a large amount of space to accommodate modern technology and modes of transport.<sup>70</sup> EMBT’s proposal contested such efforts, which they claim ‘are incapable of recognizing the complexity of the historic city’.<sup>71</sup>

<sup>70</sup> Cohn, D. 2006. “EMBT Daubs an Innovative Urban Renewal Strategy with a High-Spirited Riot of Colour in Barcelona’s Santa Caterina Market” In *Architectural Record*, Feb 2008: 98

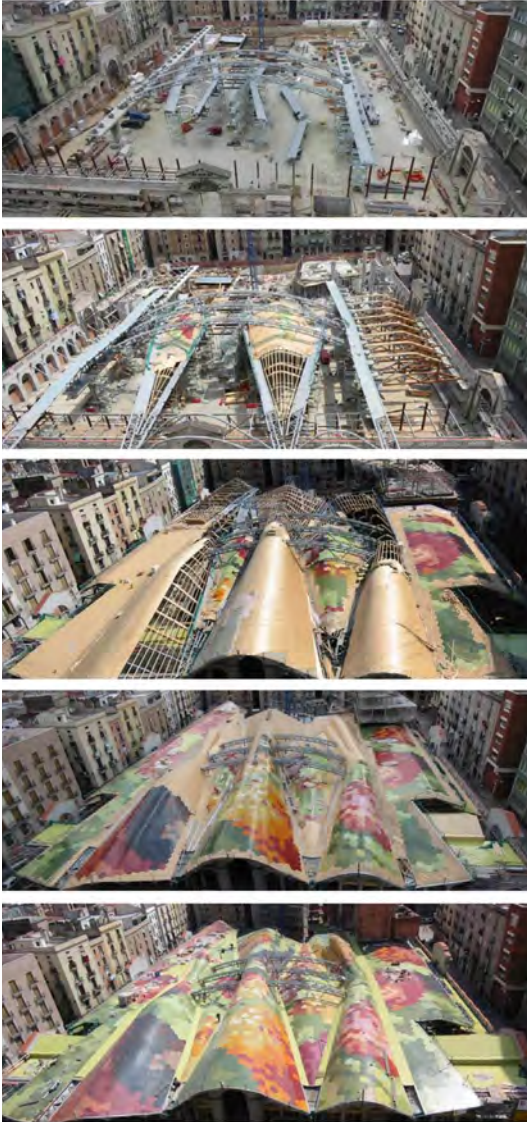
<sup>71</sup> Cohn, 2006, 100



Santa Caterina Market ([www.barcelona-home.com](http://www.barcelona-home.com))



Existing Santa Caterina Market ([www.barcelona-home.com](http://www.barcelona-home.com))



Construction Sequence

The site of the Santa Caterina Market is located at the intersection between two pedestrian routes, known as Cambo Avenue and the Carrier de Montcada, both of which protrude off two major nodes, the Catedral de Barcelona and the Basilica of Santa Maria del Mar. The Santa Caterina Market aims to strengthen these routes and to establish a node at the intersection.<sup>72</sup>

The project was aimed at renovating the existing 19th century market which had badly deteriorated. The existing building was rectangular in plan with low arched walls on each side and a badly deteriorating pitched roof system. The local municipality initially considered demolishing the market entirely to free the dense inner city space for redevelopment, but after public outcry it was decided to incorporate some of it into the new design.<sup>73</sup>

During site clearance and the excavations at the onset of construction, the ruins of a Roman necropolis were discovered under the existing market which halted the construction process and required a recasting of the design intent and the project as a whole. It was agreed that a small museum should be incorporated into the design, at which point the architects decided that a series of viewing pits should

be incorporated to allow visual access to the relics below.<sup>74</sup>

The spatial requirements of a market naturally lend itself to a large open plan space constrained within the ground floor to allow maximum exposure to the adjacent pedestrian routes.

The surrounding built fabric however consists of tall, slender buildings of an average height of seven stories, and as a consequence opens up the roof as the fifth (and biggest) elevation to be seen from the adjacent apartments. It also emphasised the new market as a node by breaking from the surrounding fabric – a wide and short design as opposed to the tall-and-narrow surrounding fabric.

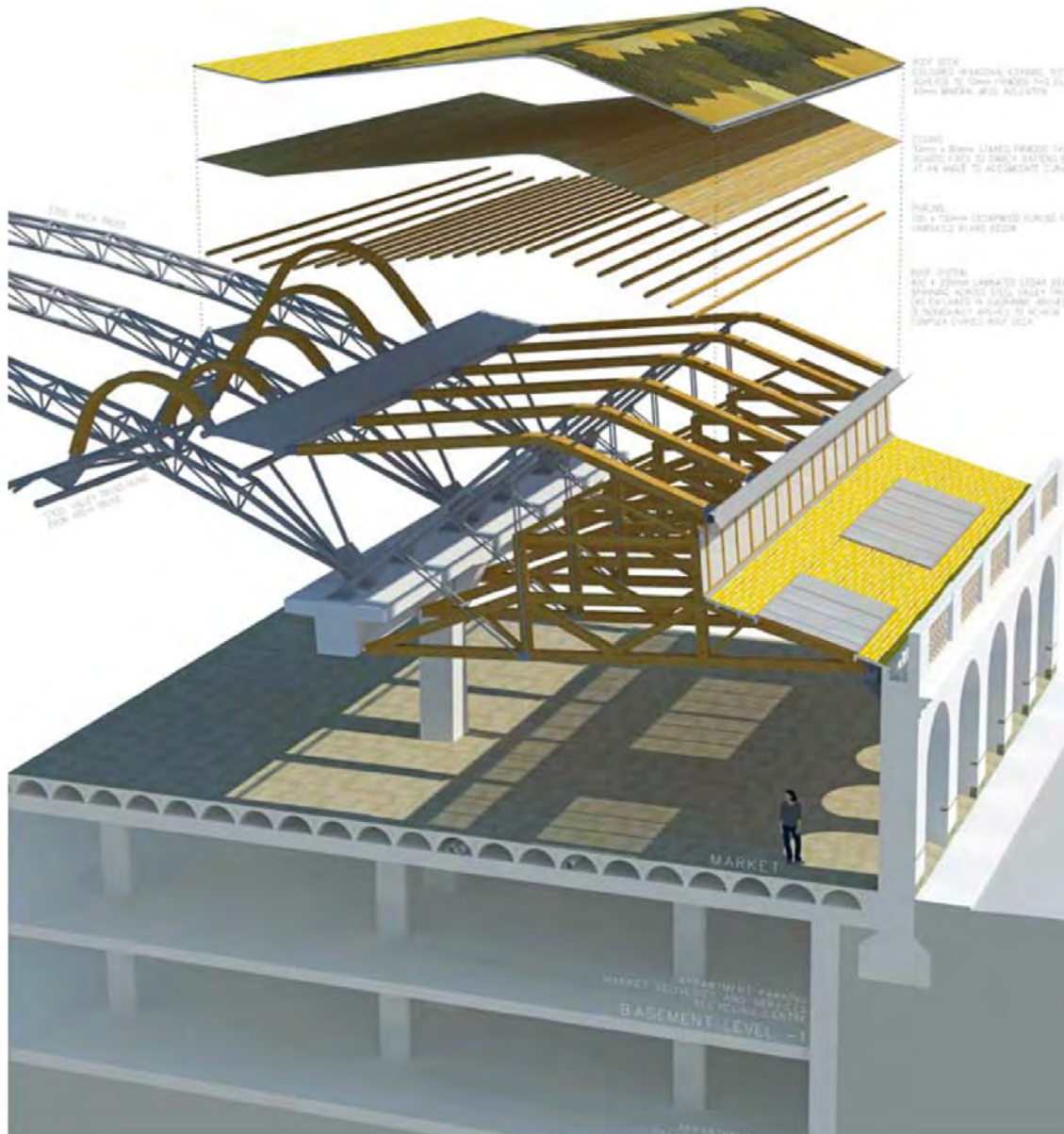
EMBT's response was a colourful, organic, undulating roof structure which, when viewed from the adjacent apartments above, represent the colourful market stalls below. The volume and curve of the roof are also intended as visual clues to the pedestrian route which is drawn into the building on the south-eastern side.

Apart from its main function as a public market, the brief required the building to house an automated recycling centre,

<sup>72</sup> Cohn, 2006, 100

<sup>73</sup> Cohn 2006, 103

<sup>74</sup> Slessor, C. 2008. "Market Forces" In Architectural Review, Nov 2007: 45



Structural layers diagram (Leon Bekker Advanced Building Report, 2013)

public housing for the elderly, as well as a large public parking lot to alleviate the parking problem in the old inner city.<sup>75</sup>

The existing neoclassical walls were retained on three sides of the rectangular 1845 market structure, with arched openings permeable to the surrounding streets. These arched walls of the old market are the first ordering structural members on site. As the only remaining element of the old market to be re-used, its existing height serves as the datum and setting out point for the rest of the structure. But structural loads on the existing walls are kept to a minimum. The primary structure is seven concrete columns which penetrate through the basement onto a foundation. Deep pre-stressed concrete beams run along the length of the building supported by the columns. The beams act as the main fixing platform for the remaining steel structure.

The elaborate steel structure supports the brightly coloured tile roof. The roof consists of ceramic tiles, on three layers of thin pinewood lathing which shape the curves, on hand-crafted laminated wood joists which transfers the load to the long-span tubular metal trusses.

The new roof over the market space is in stark contrast to the retained walls. The roof suggests a much freer structure to the more

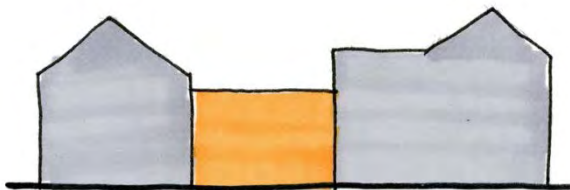
<sup>75</sup> Wigley, M. El Croquis. 2000. Renovations to the Santa Caterina Market. EL CROQUIS. Issue 144: 35

orthogonal form of the existing building. Within the arched openings in the retained walls, new window and door openings are set back from the walls to create the impression of an additional lighter plane behind the heavier solid walls.

By converting the Santa Caterina Market, Miralles successfully changed the existing building from being a monolithic structure into a new, multi-layered one. It reads less clearly as a figural whole and more as 'fragments in a field of forces'.<sup>76</sup> The rich historic layers of past buildings found on the site opens up an opportunity for a design that does not only speak of its own time, but that reflects on the built fabric that has been built and re-built on the same place over centuries using the existing structure as premeditating order. It thus preserves the cultural value as well as adding another layer.



Public entrance to the Pratt Institute (Nastasi, 2010)



### Building IN BETWEEN

Steven Holl's extension to Higgins Hall (2005) at the Pratt Institute in Brooklyn is flanked by the existing north and south wing of the

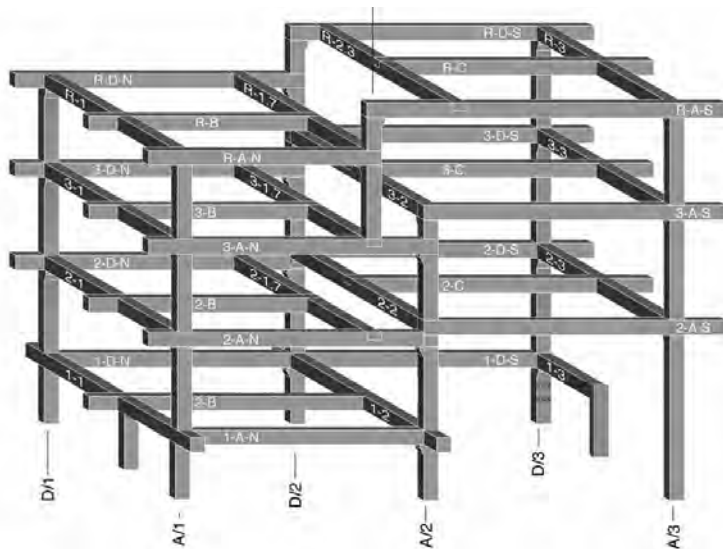


Dissonant floor levels (Nastasi, 2010)

<sup>76</sup> Le Cuyler A. 2001. *Radical Tectonics*. London: Thames and Hudson



Insertion of precast columns in between two existing buildings (Nastasi, 2010)



Column arrangement (Nastasi, 2010)

original Higgins Hall.<sup>77</sup> Pratt's Higgins Hall centre insertion take up the space first created by the original Higgins hall built in 1868. After the original building was destroyed by fire in 1996, only the north and south wall of the original Higgins Hall centre remained. Holl was commissioned to 'create a new door' into the architecture department and to stitch the two remaining wings together.

The difference in floor levels between the two historic buildings which increases sequentially from a mere 12mm at ground level to 2m on the fourth floor was the key factor in shaping the scheme.<sup>78</sup> Architecturally the building aims to dissolve together the cross sections of the two adjacent buildings which have different floor levels. The misalignment of the levels is expressed in the façades of the building and meets in what Holl calls the "zone of dissonance". Internally, this space is connected across levels with ramps with views out the east and west ends.

The façade is made with Corten steel and opaque glass channel planks, and clear glass in the dissonant zone which gradually opens up as you move vertically up the façade. In plan, along with its adjacencies the building forms an 'H' plan. By setting the building back he makes court yard spaces

<sup>77</sup> Lecuyer, A. 2006. "Artful Addition" in *Architectural Review*. Vol 219(308): 54

<sup>78</sup> Lecuyer, 54

that become social spaces.

Aside from studio space the building had to squeeze a host of programmatic functions including a new main entrance, basement auditorium, digital resource centre and lobby anchoring the Higgins complex as a whole.

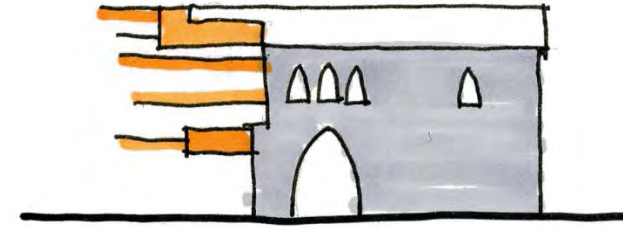
In keeping with the character of the 19<sup>th</sup> century brick buildings, the material vocabulary of the new infill is robust. The building's structural frame, independent of the old loadbearing masonry walls, comprises six large precast columns linked by beams. The age of the adjacent buildings required the new centre section to stand structurally free from the buildings flanking it, thus giving it no lateral support. They do however offer up space for vertical circulation and service stacks. Conventionally curtain walled buildings would have a lift, stairwell or service core that would provide lateral stability up the entire structure. But because these vertical connecting elements happen within the adjacent wings the columns have to accommodate this force.<sup>79</sup>

While the four corner columns are static, the central column on each façade shifts and mutates to accommodate the cranked beams of different floor levels on either side of the fissure.<sup>80</sup> The light façade is fixed to the

precast concrete slab which cantilevers off the precast concrete frame.

The light interior atmosphere is created largely by the design of the east and west facades, where structural glass channels filled with translucent white insulation provide diffuse daylight to the entrance lobby, gallery and studios. At the fault line, the thick translucent skin gives away to a patchwork of clear glazing in red oxide painted steel framing which marks the dissonant zone of the ramp and allows views out.<sup>81</sup>

The glass channels contrasts markedly with the historic buildings, yet Holl still describes the building as “a breath of connective tissue”. This connection is achieved through the spatial organisation of the building, not necessary through the choice of materials. The materiality gives the building a new contemporary identity. So the insertion bridges the two buildings, but it also retains a connection with its history. The building aims to balance the need for sensitivity to the historic buildings with the desire to create a new identity and a landmark on the street<sup>82</sup>.



### Building with LAYERS

Carlo Scarpa's approach to building within an existing setting is to repair fragments of it rather than reconstruct it in its entirety. At the remodelling and expansion of the Castelveccchio museum (1957-64 & 1967-1973), originally built as a defensive fort in 1354, he preferred adding to the existing building rather than designing a whole new structure.<sup>83</sup> Scarpa was determined to be a 'continuer of history'.<sup>84</sup> He believed passionately in the coexistence of his vocabulary with those of previous eras, the juxtaposition never subjective or uninformed, but always mutually beneficial. He refused to design in past styles and his work was a constant dialogue with history, as is evident in the Castelveccchio.

Scarpa juxtaposed old work with new, using an extraordinary palette of materials – concrete, stone, steel, bronze, timber and plaster – and capitalised on the great variety of spaces within the old building. He had a very clear strategy when it came to working

<sup>79</sup> Frampton, K. 2006. "Prometheus Bound and Unbound" in *Domus*, October 2006 (896): 47

<sup>80</sup> Lecuyer, 54

<sup>81</sup> Lecuyer, 56

<sup>82</sup> Lecuyer, 54

<sup>83</sup> Murphy, R. 1990. *Carlo Scarpa and the Castelveccchio*, London: Butterworth, 1-4

<sup>84</sup> Murphy, 12

on existing buildings. As a preliminary stage of this work at the Castelvecchio, he attempted to clarify and expose the layers of history embedded in a building, through the processes of selective excavation and creative demolition.<sup>85</sup> He attempted to cut and then disentangle one epoch's construction from another so that the building itself becomes a giant exhibit revealing its growth and change in nature.<sup>86</sup> This first step in his design process offered him all the data needed to unleash his creativity onto that historic canvas.

The second phase of the design process was reassembling and juxtaposing the disjointed members in a new composition. Scarpa was not primarily interested in *restoration*, but in an idea that made history clear; he made history visible through the co-existence of overlaying fragments of construction.

The new elements were all constructed using materials and techniques of its own time. Scarpa worked to accommodate the required function, reviving and redefining the environment accordingly. Thus, materials were chosen in relation to – not dependant on – the existing fabric as well as the new forms and uses of the building. The contrast between new and old is highlighted through the use of materials, orthogonal forms, and detailing. Scarpa used well-finished textures adjacent to rougher homogenous surfaces



Castelvecchio (modernpreservation.blogspot.com)



Courtyard wall (Saito, 1997: 178)

<sup>85</sup>Murphy, 18

<sup>86</sup> Murphy, 16



Castelvecchio layers (alessandrorocca.blogspot.com)



Castelvecchio stair details (www.thestraighttorquer.com)

and further emphasizes contrasting forms by using orthogonal shapes against freer forms of previous structures.

Another interesting strategy Scarpa uses in the Castelvecchio is the way in which new constructions are inserted into the existing structures; new and old are clearly distinguished by leaving a void between the two. These voids are the medium that both connects the two eras and points out their fundamental differences. The use of the void in this way is thus a continuation in his attempt to separate historic structures. It is confirmation of the new being another layer deposited on or inserted into the existing.<sup>87</sup>

Scarpa's skill in detailing most successfully shows his strategy of layering of materials and forms. The detailing of the junction between materials with different characteristics of texture, colour, surface and pattern, and the joining of various thematic elements to form an expressive composition is an example of his understanding of layering.

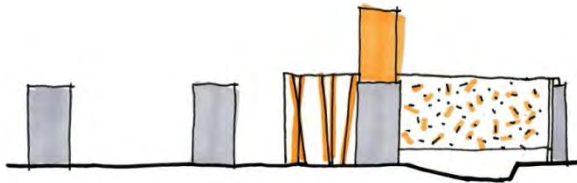
The courtyard wall of the Castelvecchio contains the idea of layering planes – new layers of glazed walls and opening are layered behind the façade of the existing building, emphasising the contrast between the new and the old. The transformation of the Cangrande space roof is another space where the layering of materials is most visible.

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<sup>87</sup> Murphy, 9

The eventual form delaminates its upper surface into Roman tile, copper and exposed structure and cuts away in an orthogonal but irregular plan. The enormous timber ridge beams are the only remnants of the former roof junction.

The term joining can also apply to the spatial character in the buildings. This is experienced at places where Scarpa creates thresholds between one space and the next. At the beginning of the staircases, he makes a special gesture of the first step. Layering in architecture is thus not only embedded in the materiality and the tectonic elements of the building, but also in the physical composition of layers defining space, making the most of the cultural value of the existing layers of history on site whilst adding another, contemporary layer for future generations.



### Building through SALVAGING

The new Constitutional Court in Johannesburg sits on a politically and historically fraught site. The building is part of an urban precinct that includes the Constitutional court, visitors centre, the offices for the Gender Commission, commercial office space and recreational space.

The site housed what used to be the old Johannesburg Fort, which incorporated the infamous Number Four “native” prison, and the Women’s Goal, in which, until its closure in 1983, numerous important political prisoners and antiapartheid activists were incarcerated. In this way the court embraces the trend of reappropriation, inversion and reinvention of the existing symbolic order. The Awaiting Trial Block of the Number Four prison had to be demolished in order to make space for a new square and building material from this building was salvaged and used in the Constitutional Court.

The first building to be erected on the site was a prison built in 1892 by Paul Kruger’s government of the Zuid Afrikaanse Republiek. It was to serve as a bastion against British incursion in the South African War (1899-1902). When the British invaded Johannesburg in 1900, the fort became a British bastion and a place where Afrikaners were humiliated and forced to surrender their muskets.<sup>88</sup> Once the war was over, the fort reverted to being a prison and that’s what it remained until 1983, when the prison was moved to Diepkloof.

The majority of the prisoners incarcerated here during Apartheid were criminalised by the colonial and apartheid race laws, people who in a just society would never

have been imprisoned.<sup>89</sup> Building the home of the Constitution atop of this place of oppression shows that it was a consequence of a long and difficult struggle. The strategies of incorporating existing buildings like the Women’s Goal and Number Four prison, with the new buildings reinforces metaphorical notions of rebuilding, reconciliation and reappropriation. The inversion from a place of a bad past to a future freedom; the precinct gives over space and iconographies to help its visitor construct an imaginary moral order that represents the extremes of human rights and their abuse.<sup>90</sup> The reinvention of the fort through a process of inversion is one that recurs in the various media through which the site and its symbolic contents have been addressed, of which the physical rebuilding constructs the most direct inversion.<sup>91</sup>

The court’s placement in the precinct creates a series of junctions between the building and the public realm. At the core of this space is Constitution Square, framed by the fort ramparts to the south, the court entrance to the east, Number Four prison to the North and the former women’s jail to the west.<sup>92</sup> One of the stipulations of the brief was that the Awaiting Trial Block was demolished to make space for the new building and square. The Court Chamber

<sup>88</sup> Gevisser, M. “From the Ruins: The Constitution Hill Project” in Nutall, S & Mbembe, A, *Johannesburg, The Elusive Metropolis*, Johannesburg, Wits University Press, 2008: 320

<sup>89</sup> Gevisser, 323

<sup>90</sup> Le Roux, H. (date unknown), “Hell/whole. The inversion of Constitution Hill” in *Art South Africa*, 39

<sup>91</sup> Le Roux, 40

<sup>92</sup> Le Roux, 42



View from Hillbrow along the Southern facade. Ramparts of old fort visible on the left (Law-Viljoen, 2006:45)



Constitution Square by night (Law-Viljoen, 2006:33)

Trial Block. With the demolition came the desire to commemorate the building and to incorporate its history into the new Court, to recognise that the court is the outcome of a historical process.<sup>93</sup> The building reflects that process physically as well as symbolically.

So the Awaiting Trial stair towers, which were left behind to mark the footprint of the original building, were integrated in the functioning of the building. One became a beacon of light that would be seen from afar, surmounted with a light box. The use of the Awaiting Trial block bricks in the building of the Court Chamber and the Great African steps also makes a symbolic and physical connection of history and place. Reusing the bricks and even the prison bars (as climbers for plants) suggests a complete intermingling of past and present – there are parts of the court where new and old stand side by side, indistinguishable from one another.<sup>94</sup>

While the central inversion in the fort's meaning is a functional one – from prison to a space of access – the design of the Constitutional Court building was intended to construct a parallel metaphor about the building's content. Access to the court is intentionally direct and speaks of openness and is translated from the image that the

<sup>93</sup> Janina Masojada in Law-Viljoen, B. 2006. *Light on a Hill: Building of the Constitutional Court of South Africa*. Johannesburg: David Krut Publishing, 39

<sup>94</sup> Janina Masojada in Law-Viljoen, 39



Figure 24: Constitution Square under construction, Awaiting Trial stair towers remained(Law-Viljoen, 2006: 34-35)



Figure 25: Reused bricks in foyer, reused old prison doors, prison bars reused as cladding, for creepers (Law-Viljoen, 2006: 36)



Figure 26: Textured surfaces of reused bricks, existing stair tower, alongside new bricks, new curved concrete wall and transparent surfaces (Law-Viljoen, 2006: 41)

architectural brief called “justice under a tree”.<sup>95</sup>

The translation of this into physical form is apparent in the entrance hall where the angled columns that looks non-structural hold up the roof slab that is pierced with trapezoidal lunettes that allow shards of light to dot the floor. The columns are decorated with mosaics that draw from organic forms and colours.<sup>96</sup> The leaf-like chandelier strengthens this metaphor.

The court foyer is the primary mechanism for the communication of the building’s symbolic intent. Rather than being an object in the landscape, it is a space. Rather than generating meaning through form, it expresses meaning in its void. Rather than being embellished on its external surface, its delicacy is expressed on its internal surfaces. The expression of its magnificence is on the inside.<sup>97</sup> It acts as some kind of extension of the square, and a threshold between the square and the court chamber. According to Janina Masojada, one of the architects, the aim was “to break down boundaries and to make the zones between public and private much softer, more democratic, less intimidating”<sup>98</sup>.

The integration of the new building with the existing site structures captures South Africa’s history, bringing the past into contact with

the present.<sup>99</sup> Salvaging the bricks and other elements from the Awaiting Trial Block and reusing them to construct the Constitutional Court quite literally interweaves and layers the past and the future. Symbolically our past and our present, the fragments, the memories and the dreams are woven together as one collective present experience.<sup>100</sup>

The projects analysed have all sought to transform existing buildings in terms of fuse, spatial experience and form. As can be seen in all six case studies, adaptive reuse is first and foremost a more sustainable alternative to both the processes of demolition and rebuilding, and the rapid development of open land on the fringes of our cities. Existing buildings should be regarded as a valuable resource for this generation and those that follow. Working within an existing environment necessarily constrains new building projects, but it is within these constraints that ingenious architectural projects are born. As these projects have shown, there are various strategies to building within a historic landscape. Through analysis I have come to the conclusion that a strategy of fusing past and present, the overlay of past and present modes of production and the overlay of past and present architectural styles as design narrative that does not discard the element of time serves these projects best.

Architecture that includes the layered evidence of time and change must form the basis for a design approach to work within historic landscapes.

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<sup>95</sup> Le Roux, 42

<sup>96</sup> Le Roux, 42, Andrew Makin (architect), in Law-Viljoen, 51

<sup>97</sup> Andrew Makin, in Law-Viljoen, 51

<sup>98</sup> Janina Masojada, in Law-Viljoen, 51

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<sup>99</sup> Janina Masojada, in Law-Viljoen, 24

<sup>100</sup> Janina Masojada, in Law-Viljoen, 165

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## ADDENDUM C: SIGNED ETHICS CLEARANCE FORM

### EBE Faculty: Assessment of Ethics in Research Projects (Rev2)

Any person planning to undertake research in the Faculty of Engineering and the Built Environment at the University of Cape Town is required to complete this form before collecting or analysing data. When completed it should be submitted to the supervisor (where applicable) and from there to the Head of Department. If any of the questions below have been answered YES, and the applicant is NOT a fourth year student, the Head should forward this form for approval by the Faculty EIR committee: submit to Ms Zulpha Geyer ([Zulpha.Geyer@uct.ac.za](mailto:Zulpha.Geyer@uct.ac.za); Chem Eng Building, Ph 021 650 4791). NB: A copy of this signed form must be included with the thesis/dissertation/report when it is submitted for examination

*This form must only be completed once the most recent revision EBE EIR Handbook has been read.*

Name of Principal Researcher/Student: **INA DUTIT** Department: **ARCHITECTURE, PLANNING & GEOMATICS**  
 Preferred email address of the applicant: **inadutit@outlook.com**  
 If a Student: Degree: **M.Arch (Prof)** Supervisor: **NIC COETZER**  
**N. LINDA SILVERMAN**

If a Research Contract indicate source of funding/sponsorship: **Architecture as palimpsest, a layered approach to building in historic Cape town: linking the past, present & future in a sustainable manner.**  
 Research Project Title:

#### Overview of ethics issues in your research project:

Question 1: Is there a possibility that your research could cause harm to a third party (i.e. a person not involved in your project)?	YES	<input checked="" type="radio"/> NO
Question 2: Is your research making use of human subjects as sources of data? If your answer is YES, please complete Addendum 2.	<input checked="" type="radio"/> YES	NO
Question 3: Does your research involve the participation of or provision of services to communities? If your answer is YES, please complete Addendum 3.	YES	<input checked="" type="radio"/> NO
Question 4: If your research is sponsored, is there any potential for conflicts of interest? If your answer is YES, please complete Addendum 4.	YES	<input checked="" type="radio"/> NO

If you have answered YES to any of the above questions, please append a copy of your research proposal, as well as any interview schedules or questionnaires (Addendum 1) and please complete further addenda as appropriate. Ensure that you refer to the EIR Handbook to assist you in completing the documentation requirements for this form.

#### I hereby undertake to carry out my research in such a way that

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

#### Signed by:

	Full name and signature	Date
Principal Researcher/Student:	<b>INA DUTIT</b> signature removed	<b>24/03/2014</b>
This application is approved by:		
Supervisor (if applicable):	signature removed	<b>25/03/2014</b>
HOD (or delegated nominee): <i>Final authority for all assessments with NO to all questions and for all undergraduate research.</i>		
Chair : Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the	signature removed	<b>25/4/2014</b>