THE SPECIFICITY OF DIGNITY

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Reconceptualising Gendered Spatial Boundaries through a Water Reclamation Plant for Cornubia, Durban.

By

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DECLARATION

I hereby declare that this dissertation is my own unaided work except where it has been otherwise acknowledged. It is being submitted to the School of the Built Environment and Development Studies, University of KwaZulu-Natal, Howard College campus, in partial fulfilment of the requirements towards the degree of Masters of Architecture. This dissertation has not been submitted before for any degree or examination at any other university.

Signed

_____

Adheema Davis

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For my parents.

I can only hope to have made you both proud.

ABSTRACT

The various manifestations of the effects of divisive Apartheid city planning has resulted in the city itself becoming an urgent social question - one such manifestation is the mixed-use megaproject of Cornubia. Diverse and complex as both a driver of economic growth and of social redistribution that simultaneously addresses and reproduces the unjust socio-spatial geography through the commodification of resources and the provision of housing as a band-aid solution to informal citizenship.

It is here that the relocated community of the Cornubia Phase 1A: Pilot Phase Housing Settlement are further divided through large scale organisation across the division of access, labour and gender. Literature has illustrated how critical gender and water relations are, with the right to water interlinked with that to equity, dignity and life – the paradox of this relationship is made manifest within Cornubia. Deconstruction as a lens has afforded the opportunity to work with the existing, to reconceptualise citizenship, accessibility and dignity through the paradox and possibility of gender and water relations. An extended method of "walking together", *Masihambisane* revealed more than just data, but insight to the way in which the lives of the relocated community are made and remade everyday. The conscientisation of the organic intelligence of the informal access, use and management of water by women in and as architecture has revealed itself as holding the potential to define a more equitable city.

Unpacking the concepts behind gender and water relations has proposed a design framework that can be used to inform a socially responsive architecture through dialogue and participation, the layering of social, economic and environmental programme and the changeability of the environment within the proposed, recognising the everyday as a claim to citizenship through A Water Reclamation Plant for Cornubia.

Keywords:
binary, citizenship, commons, community, deconstruction, everyday, gender, infrastructure, participatory practice, rights.

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"Architects, as imaginers of what is possible, are powerfully placed to deconstruct the physical, psychological and symbolic walls of social relations, building the kind of South Africa we all want to, and can, live in."

- Pierre Brouard, 2016: 30-31.

DEFINITION OF TERMS

The following terms have been defined within the context of this dissertation in order to determine a clearer understanding of the topic, theoretical and conceptual framework and overall research design. These definitions will however be elaborated upon in the later chapters, unravelling and revealing the topic within the body of this dissertation.

Binary: the relational pairs that are conventionally accepted, particular to this dissertation that of the city – formal and informal, and **gender** – men and women, that through the lens of **deconstruction** are revealed simply as differences socially constructed and manipulated by hierarchy. This dissertation seeks to displace these binary oppositions towards reinscribing meaning.

Citizenship: the contestation for inclusion within the city. Leonie Sandercock suggests that citizenship is fragmented by **identity** and the diversity of different groups of diverse peoples – not merely a universal whole as **community** or **public** – should be recognised and celebrated. Mundane forms of resistance as contestation of the spatial, social and economic inequalities within the city.

Commons: rather than simply referring to a common resource makes reference to a process, a set of social relations by which a group of people exercise their shared **rights** and responsibilities. The commons has to do with difference not commonality, always expanding on those who can participate within it. Within this dissertation, **the commons** seeks to displace public.

Community: a group of people sharing a common **identity** based on their relationship to the built environment or a particular social condition. This labelling of community may manifest as an assumption by outsiders, promoting labelling that perpetuates othering. Nabeel Hamdi refers to a knowledge of community of place, of interests, of practice or of culture as vital within **participatory practice.**

Deconstruction: the lens through which this research is viewed – Jacques Derrida's *deconstruction* of meaning prescribed by Western philosophy towards a construct of *différance* – the subject within its context. Deconstructing **gender** and water relations within disenfranchised **communities** affords a reimagining of this socialised relationship towards addressing socio-spatial inequalities.

Everyday: the exploration into *The practice of everyday life* by Michel de Certeau, and its relationship with the built environment. Towards this research, the everyday is used to

interrogate the accessing of resources – that of space and water – by women within disenfranchised **communities** in order to make suggestions that transform the notions of **citizenship rights**.

Gender: the different roles, **rights** and responsibilities of men and women, and the relationships between them. Gender refers not simply to the biological sex of a man or woman, but to the way their qualities, behaviours and **identities** are determined through the process of socialisation. As a social construct it is reimagined towards equitable **rights** socially, spatially and economically.

Hydro-social: affords us an understanding into the way in which social inequalities are produced and sustained through water relations within a particular **community**, and how within the context we can use the hydro-social to promote more equal socio-spatial **rights.**

Infrastructure: a mode of provisioning and articulation that make the city productive by reproducing it and positioning its places and resources where they can be most efficiently used to that end. AbdouMaliq Simone proposes an extension of this definition, in its physical terms to include a critical component of the city – the **everyday** activities of its urban residents (Simone, 2004). To this end, this dissertation seeks to explore the networks of concrete becoming within the city as infrastructure.

Mixed-use Mega-project: a large-scale mixed-use development through public-private partnership that seeks to transform land use over one contiguous area with substantial direct and indirect impacts on the environment, economy, and **communities**. In the context of South Africa, the mixed-use mega-project seeks to simultaneously address pro-growth and pro-poor agendas post-Apartheid.

Participatory practice: as defined by Nabeel Hamdi is the responsibility with authority in partnership with other stakeholders; a responsibility because **rights** come with responsibilities. Participation mobilises interests and resources on the ground, provides us inside knowledge to the desires and needs of a **community**, and allowing for alternative solutions to come to the fore by those who stand to benefit from it, and in turn providing continuity.

Rights: revisited through the discussion of Teddy Cruz's *Informal as Praxis* in which he suggests accessibility and the conscientisation of livelihood strategies alternative to the formal structure of the **city** as a gauge of rights to the city. "*The neutrality of the public versus the specificity of rights*" (Cruz and Forman, 2015) suggests socio-spatial equality as an exercising of **citizenship** rights and responsibility.

CHAPTER ONE | RESEARCH BACKGROUND AND METHODOLOGY

Figure 1: Cornubia: A Genus of Mites. Image Source: Jahangeer,2016.

1.1 Introduction

1.1.1 Background

"…if the 19th century gave birth to the horizontal city, and the 20th century … to the vertical city, then the 21st century must be for the diagonal city, one that cuts across social divisions."

- Alfredo Brillembourg, 2014.

The various manifestations of the effects of divisive Apartheid planning has resulted in the city itself becoming an urgent social question. With a vast majority of the population working and living in starkly opposing places within our splintered urban geography, how do we begin to define a dignified life in the city for all? This dissertation positions itself here, caught between the binaries of the post-Apartheid city, between the formal and the informal – within the potential of a city yet to come.

Within the context of the mixed-use megaproject, we see a national mandate that rather than addresses, perpetuates the unjust socio-spatial geography of Apartheid through the commodification of resources and the provision of housing as a band-aid solution to informal citizenship. Of concern to this research is the binary opposition that exists between the formal and the informal, and the reluctance in engaging the informal as praxis in addressing the socio-spatial inequalities that exist within the formal fabric of the city.

A resistance against imposed socio-spatial, economic and environmental inequalities, the informal exists as a foothold, a claim to citizenship rights that simply cannot be reduced to that of the provision of housing alone. Within city spaces, the conscientisation of the organic intelligence of the informal in and as architecture has revealed itself as holding the potential to define a more equitable city, addressing the socio-spatial inequalities of Apartheid.

This research thus seeks to reimagine citizenship, accessibility and dignity towards the equitable city yet to come. Reimagining architecture as the ultimate simplicity of being human with and to each other as a catalyst for change.

1.1.2 Motivation/Justification of the study

Figure 2: Cornubia defined as "A Genus of Mites". Image Source: Jahangeer,2016.

"How can we discuss social architecture if we don't ever consider the need for debate surrounding gender, class, and race?"

- Stephanie Ribiero, 2016.

Literature has illustrated how critical gender and water relations are, with the traditional role of women globally connected to water collection, sanitation and the homestead; and how inaccessibility has hindered the development of women, denying them access not only to water, but to education, development and an integrated environment (Sultana, 2009). This is no different within the South African context, where exclusionary Apartheid practices have concretised this relationship and the identity of women through a process of socialisation (Galvin, 2011).

South Africa's urbanisation trajectory post-Apartheid has created complex challenges to architecture and infrastructure as it seeks to respond to everyday life within the city (Simone, 2004). One such response are mixed-use megaprojects that aim to enhance economic growth, create employment, address the housing backlog and produce integrated human settlements - Cornubia, Durban exemplifies this new public-private development approach. The diversity and complexity of mixed-use megaprojects as both drivers of economic growth and social redistribution simultaneously address and reproduce socio-economic segregation as resources become commodified (Sutherland et al, 2015).

"We need to move from the neutrality of the public to the specificity of rights."

- Teddy Cruz, 2012.

This research is not focused on the right to housing per se, but concerns itself with the isolated and anonymous nature of the Cornubia Phase 1A: Pilot Phase Housing Settlement in perpetuating the divisive socio-spatial strategies of Apartheid. The right to water is interlinked with the right to housing, equity, and a dignified life within the city. If we are to take Teddy Cruz's rethinking of the meaning of "public" as accessible, the commodification of resources within these mixed-use megaprojects further exacerbates gender segregation through inaccessibility (Cruz and Forman, 2015).

This research is motivated by the paradox and possibility of gender and water relations within commodified landscapes, specifically within the disenfranchised community of Cornubia Phase 1A: Pilot Phase Housing Settlement. It seeks to unpack the concepts behind gender and water relations to propose a framework that can be used to retrofit a socially responsive architecture, that of A Water Reclamation Plant for Cornubia.

1.2 Definition of the Problem, Aim and Objectives

1.2.1 Definition of the Problem

"Why should men fetch the water? That is a woman's job."

- in Sultana, 2009:437.

This research locates itself within Cornubia, a much contested mixed-use megaproject in that seeks to address the socio-spatial inequalities of Apartheid planning, while at the same time generating its own tensions of pro-growth and pro-poor agendas (Sutherland et al, 2015). This context is revealed through the literature as having fallen short in its addressing of social concerns, in its provision of equal rights to the city to those previously disregarded – a context of commodification. It is in this context of commodification that socio-spatial inequalities are exacerbated, and disenfranchised communities are further divided through large scale organisation across the division of access, labour and gender.

The social construction of gender, through large scale organisation and everyday interactions has concretised the way that we perceive men and women and their respective social roles and identities. Sociologists have noted that gender is a major boundary around which resources, prestige and power are divided. Understanding

gender is critical to examining the apparent inequalities that exist between men and women and how these inequalities impact their everyday life. While persistent, these inequalities are based on socialisation and are thus not inevitable, allowing us to imagine an organisation of the world in a way that would benefit men and women more equally (Holmes, 2009:6). This imagination affords us an opportunity to turn a fresh eye on social organisation, including everyday gender practices, such as gender and water relations.

The primary problem identified within this research is the paradox of gender and water relations within commodified landscapes. The planning processes behind the mixed-use megaproject aimed at pro-growth concerned itself with proximities of economic benefit, disregarding the participation of the community in which it houses towards accessible and equal socio-spatial rights. It is within this context that the subject of this research, gender and water relations, through the exploration of the underlying social and physical principles reveals itself as both a paradox and a possibility, an urban lesson, towards retrofitting socially responsive architecture in disenfranchised communities – to truly address the socio-spatial inequalities of the Apartheid legacy.

1.2.2 Aim and Objectives

Dissertation Aim:

The primary aim of this dissertation is to explore the possibility of gender and water relations in reconceptualising gendered spatial boundaries within Cornubia. This dissertation will develop a theoretical outcome that would seek to address these findings through processes of community participation and suggest socio-spatial possibilities. This dissertation will further aid in retrofitting socially responsive architecture, that of A Water Reclamation Plant, into the Cornubia Phase 1A: Pilot Phase Housing Settlement.

Dissertation Objectives:

This dissertation endeavours throughout its discourse to:

1. Unpack the concepts behind gender and water relations within the Cornubia Phase 1A: Pilot Phase Housing Settlement.
2. Explore the spatial relationship that exists between gender and water within the Cornubia Phase 1A: Pilot Phase Housing Settlement.
3. Define architectural principles that can inform the retrofitting of a Water Reclamation Plant for Cornubia.

1.3 Setting the Scope

1.3.1 Delimitation of the research problem

This research will present an analysis of both social and physical aspects of gender and water relations with particular focus in areas with a similar set of defining issues as those found in the case study area of Cornubia Phase 1A: Pilot Phase Housing Settlement. This will inform the research as to how water can be accessed by women as a commons, towards retrofitting the housing settlement with an architecture that is socially responsive.

The researcher acknowledges that this research sits within a greater field of investigation – the problems are both socio-economic and political and extend beyond the field of architecture. Therefore, the researcher intends to investigate at best interpretations of the problem within the field of architecture and thus the complex nature of gender and water relations has, to some extent, been reduced only to the points that will contribute toward an architectural understanding. This research explores social theories and concepts to provide context for the built environment and solutions thereof, but not to define a social agenda per se.

While this dissertation intends to research gender and water relations within commodified landscapes, and make visible the possibilities of community building through acknowledging gender and water relations as an infrastructure, it is not the intention of this study to romanticise the mechanisms used by the sample, but rather an exploration towards providing socially responsive architectural solutions to address socio-economic and political conditions of gendered exclusion.

The researcher wishes to remain objective and not exploitative towards this dissertation; recognising that while mechanisms utilised by women within disenfranchised communities serve to offer valuable lessons towards inclusive planning, these mechanisms are resultant of dire need and are survivalist, not ideal.

This research aims to support disenfranchised communities relocated to housing settlements through the reconceptualization of gender and water relations towards the retrofitting of a socially responsive architecture such as A Water Reclamation Plant for Cornubia.

1.3.2 Stating the assumptions

This dissertation assumes that the current planning and policy of the mixed-use megaprojects as both drivers of economic growth and social redistribution simultaneously address and reproduce socio-economic segregation as resources become commodified. Furthermore, that this commodification exacerbates the social identity of women. Based on this assumption, it is assumed by the researcher that the relationship between women and water exists as both paradox and possibility in commodified landscapes.

1.3.3 Research Questions

1.3.3.1 Key Question:

Can the exploration of gender and water relations lead towards reconceptualising gendered spatial boundaries?

1.3.3.2 Secondary Questions:

1. Can the concepts behind gender and water relations be explored spatially within the Cornubia Phase 1A: Pilot Phase Housing Settlement?
2. How does gender and water relations exist within the Cornubia Phase 1A: Pilot Phase Housing Settlement?
3. Can gender and water relations be used to define architectural principles to retrofit the housing settlement with socially responsive architecture, such as a Water Reclamation Plant for Cornubia?

1.3.4 Research Methodology and Materials

1.3.4.1 Research Methodology

The research approach and methodology applied to this dissertation are outlined within this section. The procedures for both primary and secondary data collection, techniques and methods used to gather all data are defined here.

This research finds itself within the transformative research paradigm, the nature is that of an empirical study towards a qualitative exploratory research design. This research aims to understand the characteristics of an existing phenomena, gender and water relations within commodified landscapes; particularly around why and how this relationship currently exists and how it could be used towards the conceptualisation of the proposed.

This research is located within the case study area in Cornubia Phase 1A: Pilot Phase Housing Settlement, Cornubia, Durban, South Africa. The reason for this case study is the research's intention to define architecture as socially responsive within a disenfranchised environment, through analysis, thinking and acting, finding the unseen connections to facilitate a sustainably relevant and integrated environment.

Outlining the research methodology of this dissertation, the procedures for data collection will include case studies, semi structured interviews, and participatory engagement. The sampling strategy of this research would be a non-probability sampling technique, specifically snowball sampling, to facilitate engagement with those involved in the case study area who can provide relevant information.

The process of engagement would be ethical, with contact through a community leader, and through informed consent, providing anonymity where required.

- Population: Community of Cornubia Phase 1A: Pilot Phase Housing Settlement, Cornubia, Durban, South Africa.
- Sampling frame: Community leaders and the Women of Cornubia Phase 1A: Pilot Phase Housing Settlement, Cornubia, Durban, South Africa.
- Sample: A community leader and 10 women of the selected sampling frame in Cornubia Phase 1A: Pilot Phase Housing Settlement, Cornubia, Durban, South Africa.

Primary Sources:

Case Study:

1. Cornubia Phase 1A: Pilot Phase Housing Settlement, Cornubia, Durban.

The selected case study, that of the research area itself, Cornubia Phase 1A: Pilot Phase Housing Settlement, Cornubia, Durban, serves to materialise and support the theoretical and conceptual framework towards the research intentions as discussed within the theory and literature. Through the aid of dala, a currently active NGO within the area, make observations and engage with the community in conversation around the realities of the place.

Observations will be made on how the women of the relocated community engage with both place and water as resources to create their day to day life, how they seek to make a life for themselves here, particular interest will be placed on the use of water as a resource, water recycling and any food-based planting. The case study is more

immediately accessible and the findings thereof contextually relevant and applicable to the intended retrofitting the housing settlement with an architecture that is socially responsive, that of A Water Reclamation Plant for Cornubia.

The case study is discussed in Chapter Four through the themes generated by the overarching conversation, namely Hydro-social Infrastructure, Conscientising the everyday and Visualising the right to dignity towards the research intentions.

Semi-structured Interviews:

1. doung Anwar Jahangeer
   Architect and artist, co-founder of dala whose current work is based in Cornubia Phase 1A: Pilot Phase Housing Settlement. His experience of working within the city to reveal community networks around everyday practices and conscientising these practices through small, catalytic and artistic interventions would greatly benefit my research. His work is manifest of the notion of people as infrastructure, understanding the need for community participation in place making.

2. Catherine Sutherland
   Geographer and academic at the University of KwaZulu Natal with a wealth of knowledge on the problem. Having co-authored discussions around megaprojects within South Africa as well as the relationship between social structures and water governance, the interaction with Ms. Sutherland would greatly benefit this dissertation by unpacking and understanding the context and issues within them.

Spatial Mapping and Photographic Analysis:

It is crucial to this research that the spatial mapping of the sample is undertaken towards a better understanding of the socio-spatial relationships that exist within the research area. An understanding of the use of both space and water as resources within the research area will assist in providing spatial suggestions in response to the research questions.

An endeavour has been made by the author to photograph much of the work within the primary research personally. Spatial mapping and Photographic Analysis through both the case study and *Masihambisane*//Processes of Unlearning would assist in generating an analysis on the ground to support the discussions within the theory and literature.

***Masihambisane*//Processes of Unlearning:**

Masihambisane: walking together (isiZulu)

Figure 3: masihambisane: walking together. Image Source: D'Ahl, 2015.

A continuation of a process of engagement used in the Masters year one design studio towards the creation of equitable public space and architecture for a community of walkers along the pedestrian route between Cato Manor and Warwick Junction. *Masihambisane* sought to shift perceptions of spatial practice through alternative methodologies – affording an opportunity to ask the right questions.

1. Establishing contact: With dala, an organisation actively involved in the case study area of Cornubia Phase 1A: Pilot Phase, and with community leaders within the case study area.

2. Recognising networks: Through establishing contact with dala and community leaders, the otherwise invisible infrastructure of community networks that exist within are revealed and made familiar.

3. Architecture in three ways:
   3.1 Architecture as Dialogue (story-telling)
   Interaction with community leaders sparks opportunities for engagement with others, including the chosen sample. Architecture as dialogue affords insight into the realities of living in Cornubia and the conceptualisation of water there – of accessibility, sanitation, domesticity, and reclamation. Findings will be used towards informing the research within a given context to reveal how women interact with both place and water as resources to create their day to day life.
   3.2 Architecture as Event (screening)
   Working with dala within the case study area on their projects that seek to re-inscribe public space as performative, architecture as event is exercised through

film screenings that occupy the streets and bare walls of the housing settlement. This appropriation of space will serve towards informing my research of the potential of small change.

3.3 Architecture as Participation (workshop)

Architecture as participation, a development of site observations and interaction made with the sample, will allow for the notion of participatory practice to be manifested towards a small scale intervention for the case study area that will inform the findings of this dissertation. This process fosters a notion of continuity through engagement.

Secondary Sources:

This research is comprised of various published media including:

- Published Books
- Peer review journals
- Academic papers
- Past Dissertations
- Documentaries; and
- The internet.

1.3.4.2 Research Materials

The researcher will endeavour to build onto the theories and concepts pertinent to the research questions. The exploration of these various secondary sources will inform the theory and literature by building the discussion on the concepts behind gender and water relations to propose a framework that can be used to generate socially responsive architecture. The collected data will be familiarised and general codes and themes will be developed from this. The analysed data will then be refined according to the identified themes in order to best inform the conceptualisation of A Water Reclamation Plant for Cornubia as a retrofit of socially responsive architecture within the housing settlement.

Theory and Literature Synopsis:

The literature has been used to gather views expressed by authors that have written material on and around this study on gender and water relations within disenfranchised communities, such as the case study area of Cornubia Phase 1A: Pilot Phase Housing Settlement. The material used has included published books, peer review journals,

academic papers, past dissertations, documentaries and internet based-sources. The theory and literature chapter has been structured across three parts, determined by the interrelated questions outlined in the Key Questions and informed by the theories and concepts used to underpin data deemed relevant to the research. The three parts are structured as follows:

- Searching for *Différance:* Through this first part, a lens of deconstruction is set through which the literature is unpacked, analysed and discussed. Exploring the formation behind the research topic and its context as at once paradox and possibility towards the proposed.

- Desire Lines: Unpacking the notion of women's everyday practices in accessing, managing and utilising water as an infrastructure that urgently needs to be considered within the proposed to address the perpetuated socio-spatial inequalities faced by disenfranchised communities within private and public spaces.

- Paradox and Possibility: Unpacking gender and water relations towards socially responsive architecture comes full circle here, where an antithesis of the traditional relationship is suggested as one of the means in which to address the research problem. Through participating in the right to the city, the paradox of commodified resources becomes the possibilities of accessibility, a social re-appropriation of rights towards the intended retrofitting of the housing settlement with socially responsive architecture.

Precedent Studies:

Much like the case study, selected using the purposive sampling method off criteria based on materialising the discussion between the theory and literature, and as a result are analysed through the same themes in chapter three, and later towards the proposed design in chapter eight.

1. Quinta Da Malagueira, Evora, Portugal.

   Amidst the emergence of a communist political imperative, Siza's Quinta da Malagueira served as a pragmatic and flexible response to addressing the shortage of low-cost housing in Portugal in the mid 1970's. An example of large-scale housing that treads lightly, seeking to integrate the natural and built landscapes with houses arranged along the undulating topography, stitched together with exposed water-

based infrastructure, teetering the scales of architecture and infrastructure to define an urban character.

2. Incremental housing and decentralised Sanitation System, Savda Ghevra, New Delhi, India.
   Recognising the metanarratives of cities in transition, Julia King sought to explore how the everyday lives of the community of Savda Ghevra, a resettlement colony outside Delhi, worked towards finding solutions through it rather than romanticising the disjunctions that exist socio-spatially. The aim of the phased participatory project was thus to improve the lives of the community through the provision of sanitation – which is at the very core of a right to dignity and health.

3. Community Toilets for SPARC, Mumbai, India.
   Merging the urgent need for infrastructure and addressing community concerns of gender discrimination, safety and a need for public spaces, the community toilet project serves as a retrofit to informal settlements, materialising the relationship between the right to water and sanitation and the right to dignity.

1.4 Theoretical and conceptual framework

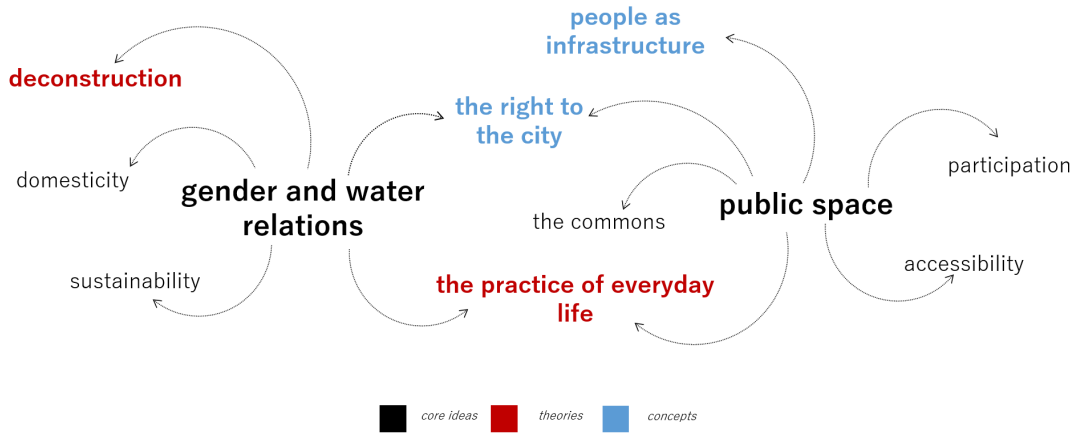


Figure 4: Mind map of Core ideas, theories, concepts and subsequent topics. Image Source: Author, 2016.

1.4.1 Theories

1.4.1.1 Deconstruction

Jacques Derrida's deconstruction can be described as a process which investigates the fundamentals of western thought (Wolfreys, 1998). Derrida discusses deconstruction as serving to offer an account at the way we look at the world by analysing historically the

formation of different layers that have built up the subject and its trajectory (Derrida, 1993). Through the lens of deconstruction, gender and water relations can be analysed through the formation of its layers towards improving it; in order to understand its trajectory, we are able not simply to rebuild, but to go further, to reimagine gender and water relations as an "other" (Derrida, 1993). Gender and water relations can be used to address the commodification of both space and water as public resources within these mixed-use megaprojects, and how women access them, not in the understanding of the traditional, restrictive relationship, but through one that is reimagined.

1.4.1.2 The Practice of Everyday Life

A theory of the productive and consumptive activity inherent in everyday life through the writings of Michel De Certeau, the practice of everyday life associates an active movement through time in space – a spatio-temporal activity as the materiality of the everyday, implying that space and the way that it is experienced is subject to transformation (Highmore, 2002). Through Walking in the city, everyday practices can be defined as an unconscious experiencing of space, a tactic that serves to transform space, an element of creative resistance to the commodification of resources enacted by women (De Certeau, 1984).

1.4.2 Concepts

1.4.2.1 People as Infrastructure

"The question, "What is it that we can do together?" whoever and wherever that "we" may exist – is largely a question of what is in-between us; what enables us to reach toward or withdraw from each other. What is the materiality of this in-between – the composition and intensity of its durability, visibility and so forth? What is it that enables us to be held in place, to be witnessed, touched, avoided, scrutinised or secured? Infrastructure is about this in-between."

– AbdouMaliq Simone, 2004.

The South African city post-Apartheid is dynamic, flexible and mobile in nature, characterised by the intersections of people and space resulting in a day to day making and remaking of socio-spatial relationships. On this basis, the definition of infrastructure can be extended to include a more ephemeral, emergent and provisional sociality, people's practices within the city - infrastructure as a platform for everyday life in the city (Simone, 2004). Literature reveals the distinction between infrastructure and sociality to be both fluid

and pragmatic, allowing us to include gender and water relations within commodified landscapes, specifically that of the mixed-use megaproject of Cornubia as an infrastructure, networks set up by women accessing water day to day.

1.4.2.2 The Right to the City

"The freedom to make and remake our cities and ourselves is, I [sic] want to argue, one of the most precious yet most neglected of our human rights"

- David Harvey, 2008:1-2.

Harvey's extension of Henri Lefebvre's original concept is contextualised, recognising that the right to developing life in the city should be shared by all inhabitants, regardless of gender, race, or socio-economic status. What brings a community together are shared issues of concern, accessibility to water and space as common resources thus require a shared response (Cruz and Forman, 2015). Common thinking of the right to the city provides the possibility of the spatialisation of a rights paradigm that transcends privatisation and is based on common responsibility and giving (Shiva, 2002).

1.5 Summation

This first chapter has, through the research background and methodology, established research and design parameters for this dissertation. Methods employed by the researcher have been recorded and all information collected has defined the theoretical and conceptual framework that will be referred to throughout this dissertation. The following chapters will expand upon and draw conclusions from the research towards unpacking the concepts behind gender and water relations to propose a framework that can be used to conceptualise A Water Reclamation Plant for Cornubia as a retrofit of socially responsive architecture within the housing settlement.

CHAPTER TWO | THEORY AND LITERATURE

Figure 5: The everyday. Image Source: Jahangeer,2016.

2.1 Introduction

Figure 6: The world turned upside down. Image Source: David Levine in Searle, 1983.

Towards addressing the research problem of this dissertation, the discussion held within this chapter sets out to provide a framework in which the concepts and core ideas of this dissertation can be contextually understood.

A lens of deconstruction is described and understood within the context of Cornubia, revealing the paradox and possibility of its people and place. Understanding the way in which women in disenfranchised communities practice their everyday life reveals the extension of the spatial segregation of Apartheid on women, and how this has impacted the way in which they engage with the resources of water and space. The possibility of people as infrastructure materialises gender and water relations and its critical role within communities, and the need for the urgent reimagining of our city spaces to accommodate it - this re-imagination as a claim for citizenship rights.

Through this discussion, theories and concepts are expanded upon through critical perspectives on gender and water relations within the Cornubia Phase 1A: Pilot Phase Housing Settlement towards specifying the right to dignity of a disenfranchised community.

2.2 Searching for différance

2.2.1 Con/text

This dissertation is researched through a lens of Jacques Derrida's deconstruction towards an understanding of the concepts behind gender and water relations. It is important to note that it is not the intention of this dissertation to apply a literal understanding of deconstruction as a tool or method for architectural thinking or form-making in the manner of post-Modern deconstructivist architecture, but rather to use deconstruction as a perspective towards understanding, recognising and making suggestion towards addressing the socio-spatial inequalities that exist within the city of Durban through socially responsive architecture.

Its predecessor, Structuralism, analysed the creation and reception of meaning through the binary oppositions of the *signifier* and the *signified* composing the linguistic *sign*; *langue* and *parole*, speech and text; synchronic and diachronic; and infrastructure and superstructure, and in true masculine form affording hierarchy to the former terms in each pair in an attempt to reduce a single meaning (Schrift, 2006). While deconstruction sought a more engaging reception of meaning outside of language as a closed system, placing emphasis on the event over the structure of language by exposing and dismantling the oppositions and vulnerabilities that structure a text (Nesbitt, 1996:36).

"The event, the singularity of the event, that is what différance is all about. . . It is another name for experience itself, which is always experience of the other."

- Jacques Derrida, 1993.

Seeking to undermine binary oppositions, the conceptual pairs conventionally accepted as self-evident and natural, Derrida proposed an interrogation of meaning by revealing that such binaries are not at all natural, but are culturally constructed, institutionalised at some precise moment in time – simply differences that had been manipulated by hierarchy. Through this interrogation Derrida displaces and reinscribes concepts into larger, all-encompassing contexts, by applying meaning and the potential of a concept against the limits within which it has been constructed (Payne and Barbera, 2010:180). Deconstruction is thus not a reversed construction, but rather an unravelling of the subject to expose its formation and trajectory to propose something that is informed, richer and attentive to otherness.

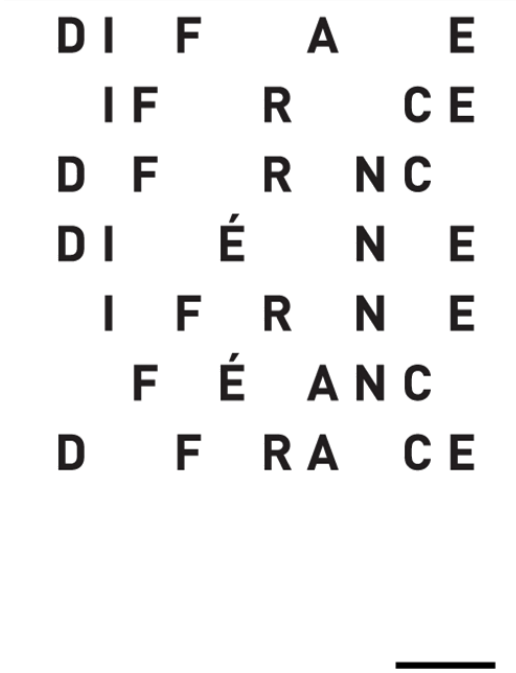


Figure 7: What is the Différance. Image Source: mutt.jp, 2016.

One such binary, that of *langue* and *parole*, speech and text, and the assumed priority given to speech, a masculine construct, over that of text, a feminine construct, is expressed by Derrida through the terms difference and *différance*. The difference between the two is marked only in text, taking a certain revenge on prioritised speech (Bennington and Derrida, 1993:70). Derrida questioned the priority given to speech over text by Structuralism, stating that text depends neither on the presence of the person that created it, nor on the presence of what it refers to – implying that meaning is then always provisional and approximate to its context, meaning becomes personalised, and the possibility for more than one meaning is open (Nesbitt, 1996:143).

Towards this end however, it is crucial to note that the intended "other" as revealed by a perspective of deconstruction seeks not to promulgate the notion of binaries, but rather to recognise *différance* and to address such binaries through a reinscription of meaning.

"Différance is never pure. One cannot make it into an absolute: it is always in between or in-the-process-of, never itself, never present. Let us attempt provisionally to think of it as a force…the force that produces and shakes up form…we must understand that one can only really understand force on the basis of différance – the idea of force only makes sense in a relationship of forces…"

- Geoffrey Bennington, 1993:80.

It is not the word that creates meaning, but rather its *différance* to other words that gives it meaning – meaning is established through relationships. Derrida's use of the term *différance* defines both the possibilities and impossibilities of finding a coherent meaning of a text. Through this revealing of the nature of deconstruction, we can begin to understand the value of its use as a perspective towards reimaging our splintered urban geographies – like that of Durban – and how *différance* can serve to celebrate the otherness that exists within it.

From this understanding then, deconstructing the concepts behind gender and water relations within the context of the post-Apartheid city of Durban, of a disenfranchised community without relevant public place, and of the possibilities of reimagining gender roles and citizenship rights through the everyday practices of women. Gender and water relations as a paradox within Cornubia can thus be understood as a possibility towards addressing the Apartheid legacy of socio-spatial inequalities that exist within the city of Durban, exacerbated by the top-down approach of the mixed-use megaproject development of Cornubia.

2.2.2 The commodification of the city

Contrasting the totalising epistemology of Modern urbanist theory and supporting the thinking that cities can be defined as places of layered formation, of multiple intensities, deconstruction offers a non-evolutionary view of the city as the layered site of multiple urban forms, narratives and identities (Parker, 2004:148).

With the prime principle of Apartheid planning as racial segregation, the urban form is highly fragmented, sprawling, and poorly integrated. The divide, under the premise of a number of residential, squatting, labour, and security legislations drawn up by the Apartheid government. As a result of complex forced removal policies around the existing principles of segregation and applied structurally over a larger area, was to enforce the dictated social roles by the government onto the people, dividing and depriving people based on the colour of their skin (Edwards, 1994:415).

The racially fragmented urban form meant that people of colour were moved out of the core in degrees of segregation, with the Black population to the under-serviced periphery, the Indian and Coloured populations to intermediate areas beyond the core, while the urban core remained reserved for the White population only (Todes et al, 2000:231).

Apartheid planning sought to create a fragmented whole in terms of an urban geography, segregating residential areas, land uses, as well as social infrastructure, allowing for little to no connection between the divided spaces, creating physical and metaphysical ramifications (Todes et al, 2000:231). While over time the dialectic of Apartheid has changed, the effects of the fragmentation upon people has responded in dispossession, denied access, and economic hardship (Edwards, 1994:415).

Rather than a progressive, consistent pattern of urban development over time, this disconnect between spaces resulted in socio-spatial inequalities. The urban geography today, as illustrated by the social tapestry exercise, is one of people living and working in two starkly opposing places, the formal core, and the informal periphery, an inequality along racial lines. This fragmentation as discussed through Edwards and Todes et al, is seen not only in South Africa, but across the Global South.

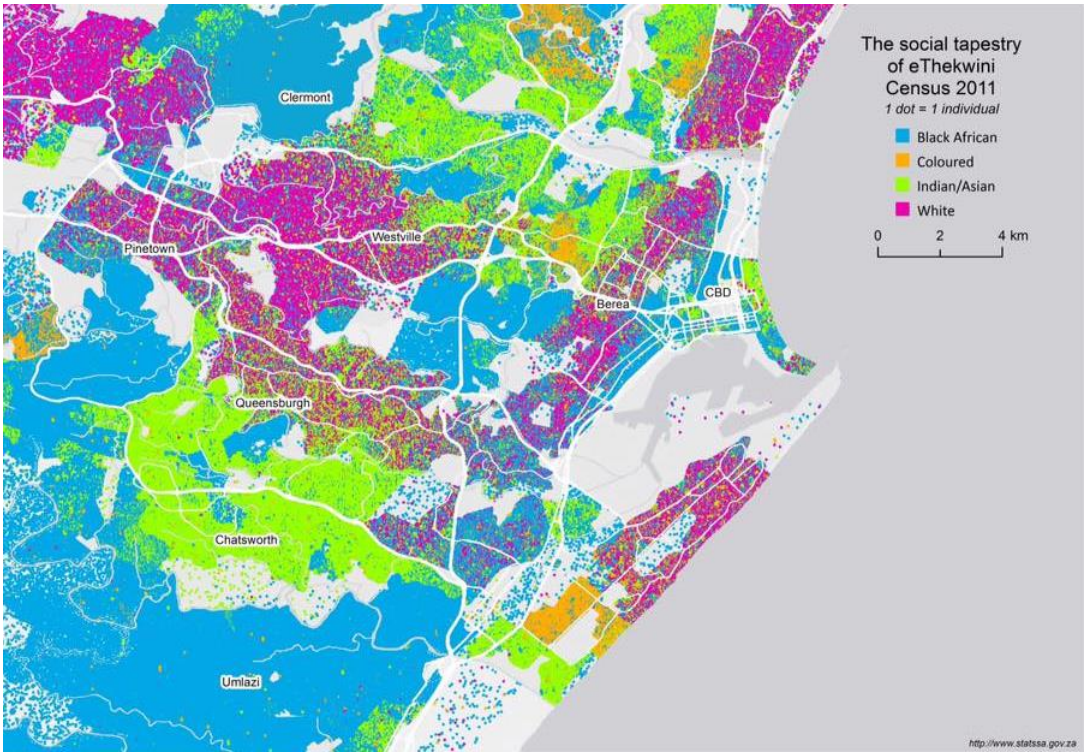


Figure 8: The social tapestry of eThekwini Census 2011. Image Source: Ndifuna Ukwazi, 2016.

The opposing spaces, as fragmented settlements experienced growth at varying rates and to varying degrees. The additional elements of urban sprawl and the emergence of informality within the city itself and not just in the peripheral settlements saw a clearer divide of what Keith Hart refers to as informal versus formal settlement development (Myers, 2011:71-74).

Attempts at redressing the spatial legacy of Apartheid have occurred, however, the fragmented urban geography poses a great many difficulties in urban development (Edwards, 1994:415). The idea of compact cities has been influential to the spatial development frameworks implemented Post-Apartheid, yet compaction has been difficult to achieve and the formulation needs to be considerate of the emerging social, political, and economic forces that exist within and between these spaces (Todes et al, 2000:231).

The current spatial development frameworks portray a future sustainable spatial growth path for the city, and have accepted a shift from compaction to developing settlements internally as nodes and connecting these fragmented parts to the core through corridors to create a better, equal whole (Todes et al, 2000:233-242). This national mandate of integrated planning serves to address the socio-spatial inequalities of Apartheid planning (Baud et al, 2014:4). Despite this apparent shift to a pro-poor agenda, the dominance of pro-growth neoliberal urban developments that promote extensive urban sprawl, such as public-private partnerships with the state, have revealed themselves through an increasing number of megaproject initiatives that portray the city as an image of competitive global investment (Robbins, 2014).

A number of international cities within the emerging economies of Brazil, India, Peru and South Africa have had to navigate complex development challenges, and as a result turned to promoting pro-growth future city visions that use megaprojects often complemented by pro-poor agendas to enable them to boast economic growth. Megaprojects facilitate cities to obtain tantalising global competitiveness, offering world class ideals, an improvement of the quality of life, and the inclusion of lower economic groups to eradicate slums and the visibility of poverty within the city by reducing social inequality and promoting spatial integration (Baud et al, 2014:1).

South African cities are situated within a system of governance that increasingly prioritises economic growth, and in this process recognises urban public space as central to this (Baud et al, 2014:4). The concern here, is that the diversity and complexity of mixed-use megaprojects as drivers of pro-growth and pro-poor agendas simultaneously seek to address and reproduce socio-economic segregation as these centralised urban public spaces become neutralised through processes of commodification (Sutherland et al, 2015:185-187).

The city [Durban] is growing rapidly, along with needs and demands of the urban population that are needing to be met at a faster rate, giving megaprojects the appearance of being seemingly more adapted to meet these challenges through infrastructure for basic needs or economic development (Kennedy, 2013:5). Whilst branded as holding the potential to exercise economic development, generate employment opportunities and address socio-spatial inequalities to ensure the benefit of those previously disadvantaged, the tension between pro-growth and pro-poor agendas within megaprojects are evident, leaving a rather bitter taste of it as an example of a turnkey, vanity project that only continues the splintered urban geography of our post-Apartheid cities.

2.3 Desire Lines

2.3.1 Ephemeral Infrastructure

"…to return to the 'right of way' of infrastructure—a sense of give and take in the relationships between sociotechnical systems and human operators. How material, built, social and human environments use each other, 'sense' each other as a constantly mutating process of affecting and being affected generates singular conditions within and between discrete urban domains."

- AbdouMaliq Simone, 2015:376.

Highlighting a more ephemeral, emergent and provisional sociality, this day to day making and remaking of socio-spatial relationships within the city defines a fluid urbanisation paradigm that serves to strengthen socio-economic spaces (Simone, 2004:407). Within this dynamic context of people and place, we need to ask the question, what is infrastructure?

According to its common dictionary definition, infrastructure is the basic physical and organisational make up needed for the operation of a society or enterprise, for example roads, buildings and power or water supplies. To interrogate this definition further, infrastructure is a mode of provisioning and articulation that make the city productive by reproducing it and positioning its places and resources where they can be most efficiently used to that end.

Simone proposes an extension of this definition, in its physical terms, to include a critical component of the city – the day to day activities of its urban residents (Simone, 2012).

"…we are concerned with exploring the relation between visibility and invisibility and with the 'networks of concrete becoming', as Simone puts it, at once engaging and going beyond the artifice of material infrastructure and physical site."

- Vyjayanthi Rao, 2010:23.

South African cities are dynamic, flexible and mobile in nature, characterised by the intersections of people living and making a life within the city by ways contrary to formal understanding. On this basis, infrastructure is thus twofold, on the one hand a localised, soft infrastructure of the everyday activities and networks of people within the city and on the other, a regional hard infrastructure of the bio-physical make up of our cities. While they operate at different scales, both are equally as important as the other. Extending the understanding of infrastructure as a platform to make and remake life in the city, and thus people themselves as infrastructure, we can constitute a platform for providing and remaking this socio-spatial everydayness.

The renewed interest in informality in the city has uncovered a conversation that seeks to address another way of practicing architecture, one that encourages improvisation and liberates the resourcefulness of those on the ground, tapping into the ingenuity around fewer resources within these contexts. As such, the role of the architect then is one that seeks to mediate power relations and explore new inter-relational social relationships between both natural and built environments, and people (Hamdi, 2014). As such, the socio-spatial relationships that exist within the informal themselves become a resource in which to be shaped rather than negated towards more equitable cities.

"Infrastructure exerts, channels and constrains force. Take a neighbourhood. Imagine all of the actions, events, gestures, exertions, speech and operations that take place simultaneously at any given time. No one situated in this neighbourhood or outside of it can possibly be aware of all of these occurrences. What they can be aware of, as well as the kind of impacts they can register among them—the impact each has upon the other—is largely a matter of the infrastructure available to them. For this infrastructure provides specific ways of witnessing or sensing what the intersecting trajectories of force bring about."

- AbdouMaliq Simone, 2004:375.

The potential this ephemeral infrastructure, when considered within the making and remaking of our urban geographies results in more sustainable and equitable cities. Edgar

Pieterse, in response to the splintered urban geography of our cities, discusses the twofold nature of infrastructure within the operating system of cities, proposing that in order to think through practical alternatives to address socio-spatial inequalities, we need to think of the city systemically (Pieterse, 2014).

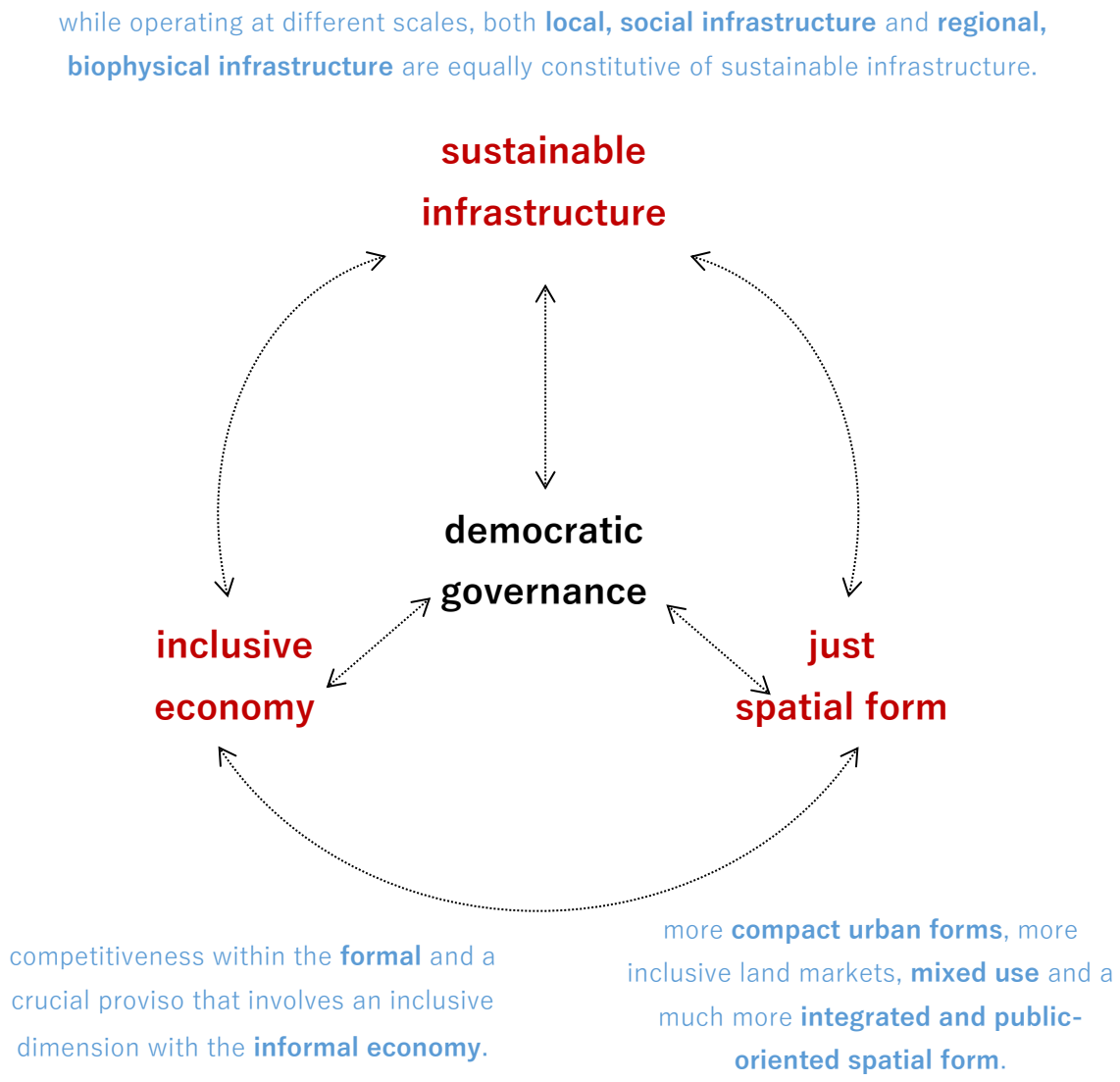


Figure 9: Operating system of cities. Image Source: Adapted from Pieterse, 2014 by author, 2016.

The diagram above helps to identify how to systemically transform the operating system of the city by using the normative and interdependent aspirations that include the extended definition of infrastructure, indicating the crucial role that ephemeral infrastructure can play towards a city that fundamentally and truly can transcend the socio-spatial inequalities of Apartheid.

2.3.2 The poetics of Everyday Life

The practice of everyday life associates an active movement through time in space as the materiality of the everyday – a spatio-temporal activity that suggests a journey that alters both the traveller and the space, encountered with *differance*. De Certeau's journey illustrates a sense of becoming as opposed to a sense of being in space and time, aligning to the thinking that people can define and redefine themselves and their lives through the way in which they engage with the city.

Walking in the city defined these spatio-temporal activities as ambivalent, first as those most unconsciously repeated navigations and secondly as value and quality 'everydayness', from an analysis of literary texts to the city streets, focusing on the way in which people operate or practice their everyday life (Highmore, 2002:146-156). Walking in the city is described as having its own rhetoric and as a subjective use of the urban space, bearing more fruitful to urban studies than that of simply viewing the city.

To illustrate everyday life within the city, De Certeau discusses walking in the city through strategies and tactics. The institutions and structures of power are described as the producers, while the individuals the consumers acting in environments defined by these strategies using tactics. The city is generated by strategies, as a unified, rigidly planned whole, and by contrast the pedestrian moves in ways through the city that are tactical – taking shortcuts across the grid. The play between strategies and tactics can be illustrated by means of the formal fabric of the city and the informal practice that emerges as an opportunistic resistance to it (De Certeau, 1984).

This view then redefines the informal as a place of presumed exclusion as a result of Apartheid planning, and a pocket of creativity and ingenuity that holds the potential to recreate the city (De Carli and Falletti, 2013:2). This is particularly relevant in the possibilities of using the everyday practices of people towards remaking city spaces that are more equitable - gender and water relations as a paradox within Cornubia then becomes a possibility of recreating the city to address the socio-spatial inequalities that exist.

De Certeau makes the suggestion of the pedestrians creating the city through their walking, this walking is their own language, creating new meanings to urban space and new uses than originally assigned – a new imagination of city spaces. A call for a reinsertion of the individual in constructing a reimagined vision of the city, revealing the constricts of

the city and providing for their own experience to be formulated within these constrictions (Highmore, 2002:146-156).

"desire line (di.ZYR lyn) n. An informal path that pedestrians prefer to take to get from one location to another rather than using a sidewalk or other official route. We use the notion of desire lines in a more general way to indicate the space between the planned and the providential, the engineered and the 'lived', and between official projects of capture and containment and the popular energies which subvert, bypass, supersede and evade them. In particular we have found this conceptualisation useful in looking at South Africa because here, as in many other colonial contexts, modernist planning coincided with forms of racialised population control."

- Noeleen Murray, 2007.

The path which the pedestrian takes is described as a long poem of walking, the formal system of the city as text with its literal meaning now subjected to a semantic drift and wandering by the enactment of the pedestrian, drawing emphasis to parts of the city through their path while causing others to disappear – shortcuts changing the text of the city, and fragmenting its rigidity to reveal new meaning (Collie, 2013:1). Infrastructure, as the provisioning and articulation needed for the operation of the city, becomes interchangeable with desire lines, serving to connect people with places and resources based on their own making.

The city reveals itself as a binary field, comprising the fluid and creative informal spaces moulded by the everyday life that emerge in contrast to the dominant formal spaces of the planned city. The spatial ordering of the informal is illustrated as one that is based on bodily experiences and material practices, as opposed to the rigid abstractions of the more technocratic urbanism, moulded by the multiple trajectories of city dwellers, an open on-going production of making a life within the city (Berenstein Jacques, 2011).

A theory of both production and consumption, De Certeau sees these actions much as he sees reading and writing within the context of text, as non-oppositional binaries folding back on one another (De Certeau, 1984). Within the context of Cornubia, the poetics of the everyday life are those activities within an environment strategically defined by institutions and structures of power, producers, marked and used tactically by a relocated people, consumers, 'making do' and 'making with' an imposed strategic product.

Figure 10: Walking the pink line. Image Source: Coppen, 2010.

"*…creative arrangements and re-arrangements of bricolage - resistance of cultural homogeneity…*"

- Ben Highmore, 2002.

The everyday of the dweller in Cornubia becomes a creativity of appropriation, relocated to an unfamiliar environment that serves economic ends, and is not an opportunity for the bricoleur. The idea of the poetics of everyday life emerges from the practices of everyday and allows them to become visible and audible – subtle and tactical enough to allow for differentiations of a multiple everyday – despite the repressive aspects of their environment. These poetics are considered as a poaching on the territory of others, using the rules and products that already exist in culture in a way that is influenced, but never wholly determined by those rules and products (Collie, 2013:2).

Given the splintered nature of our urban geographies, these desire lines, much like the movement path marked daily by the residents of Cato Manor can serve as indicators, for not just an acknowledgement, but a conscientisation of the practice of everyday life by the disenfranchised. This conscientisation is what drives this dissertation, the day to day accessing and use of water by women within disenfranchised communities as serving to remake the city in a more equitable manner.

2.3.3 Gendered Water, Gendered Space

Figure 11: An infrastructure? Image Source: Invest in Water, Invest in Women. Water Project 2012.

"…take it; cherish it as affirming your human dignity; nourish your humanity. With water we will wash away the past, we will from now on ever be bounded by the blessing of water…water is there in the nursery bedroom; water is there in the apricot tree shading the backyard, water is in the smell of grapes on an autumn plate, water is there in the small white intimacy of washing underwear. Water - gathered and stored since the beginning of time in layers of granite and rock, in the embrace of dams, the ribbons of rivers - will one day, unheralded, modestly, easily, simply flow out to every South African who turns a tap. That is my dream."

- Kader Asmal, 1997:1.

Gender and water relations as a paradox within Cornubia can be further explored to include an understanding of gender roles and relations and how these affect and are affected by water, towards ensuring greater sustainability. According to the Bill of Rights, everyone has the right to have access to sufficient water – water is at the origin of all things, and is justly a basic human right (Asmal in Department of Water and Sanitation, 1997:1).

The South African constitution further expresses an association between the right of access to sufficient water to property rights, environmental rights and of particular relevance to this dissertation, to the right to equity and the right to a dignified life within the city (Department of Water and Sanitation, 1997:7). As a result, water transcends the notion of simply being a resource and thus the need to revisit the way in which accessibility to water

and water resource management exists within our cities is a crucial matter of equity and access for all.

Within the growing population of South Africa, and within the legitimate demands of the disenfranchised for a right to access water, further demands have been placed on the resource and the provision and management thereof. It is evident that the way in which we access, utilise and manage water needs to be revisited in order to reap the social, economic and environmental benefits (Asmal in Department of Water and Sanitation, 1997:2).

"Water is not about water, water is about building people's institutions and power to take control over decisions."

- Sunita Narain, 2009.

Access to water is thus not simply a hard technical realm that is addressed through the provision of infrastructure, but a socio-political one that makes use of social organisation, values and behaviour. Within the context of the Cornubia Phase 1A: Pilot Phase Housing Settlement, the right to water and its association to the rights to housing and dignity is critical towards addressing the socio-spatial inequalities that have been perpetuated there.

Different and changing gender roles are bound up with relations of unequal power, developing clear gendered identities that depict the traditional role of women as that of water carrier – accessing water for domestic consumption, finding themselves responsible for educating children, caring for family health and wellbeing and ensuring that everyday needs of the home are met (Sever, 2005:4). This relation as it exists has been used to subjectify women within their socialised role.

By seeking to understand gender differences and engage with processes that eliminate gender stereotypes, water policies and interventions and how these manifest within architecture, we can plan around the way in which people access and use water on an everyday basis. This stresses the need for more responsive processes of engagement and consultation with women to inform design projects pertaining to the access, use and management of water resources, that ultimately can have an impact on addressing gender inequalities.

The commodification of water resources stands to negatively affect the way in which particular groups of people access and manage water resources, as public-private partnerships, such as the megaprojects discussed previously, and new technologies render water resources centralised. There is a need then for engagement within these processes to meet requirements of gender equity, poverty reduction and fair governance to ensure that all people have a recognised claim to their right to water towards both productive and non-productive ends (Sever, 2005:7).

The lived experience of gender and water is one that is productive and reproductive, in that an intricate overlapping of water usages takes place through women every day; this intricacy is often overlooked by gender identity presenting men and women with specific needs, uses and roles around water (Sever, 2005:6). Gender division of labour, ownership and control of productive assets, intra-household distribution of resources influence the responsibilities, roles, rights and norms and constitute the relations that men and women have to water (Sultana, 2009:430).

"Patriarchal social structures and institutions create embodied female identities, and these in turn limit women's spatial mobility."

- Glenda Laws, 2009:431.

Public spaces have been historically constructed as masculine and private spaces as feminine, while the boundaries that exist between the public and private are seemingly blurred, these boundaries are maintained through cultural and material practices. Mobility, however, is circumscribed within specific spaces and places, and the exercising of the need for water then causes gendered public and private space to collide, as such the private space activity of accessing water – a gendered task in itself – occurs in public space (Sultana, 2009:431).

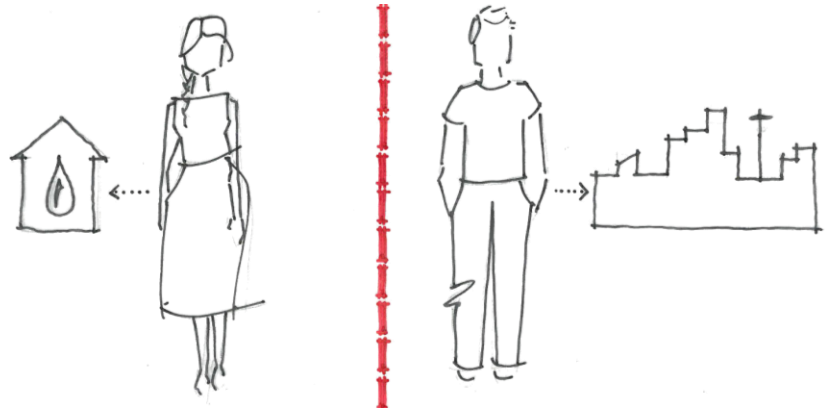


Figure 12: Different roles, different places. Image Source: Author, 2016.

The variety of ways that water plays a role in the production of gender identities changes across different contexts, but also across changing water conditions – water plays a role in how gender relations are negotiated and experienced. It is crucial to note that not only do different gender roles and meanings attached to them re-inscribe gender in water, but so do struggles in water accessibility itself reconstitute and reinforce different gender identities.

Understanding gender within Cornubia Phase 1A: Pilot Phase Housing Settlement is important to examine and explain the inequalities that exist between men and women and how they impact people in everyday life. The everydayness of gender provides the details of life, when most detail is taken for granted to turn a fresh eye on social organisation, including everyday gender practices (Highmore, 2002:146-156). As discussed, the patriarchal reduction of *différance* as hierarchical binary oppositions afforded masculine gendered identity hierarchy over the feminine, defining different roles that manifested as different places for men and women, only amplifying gendered segregation.

Through the understanding of gendered water, gendered space it is justly the intention of this dissertation to reveal the subject of gender and water relations as bearing the potential for the reimagining of gendered spatial boundaries, as a direct response to the particular problems and needs, but as the literature has illustrated, as a possibility towards addressing socio-spatial inequalities.

2.4 Paradox and Possibility

2.4.1 Social re-appropriation of rights

When faced with the need for social change when the city was increasingly owned by global capitalism, Lefebvre developed the idea of The Right to the City, seeing the catalyst for change with the working class labour force, continuing outside of the work environment into the city where they experienced their everyday life – an exploration of social organisation structures and space.

Capitalism was dependent on the urban, with its greater labour force achieving greater capital value, recognising this relationship, Lefebvre saw the potential in the working class to activate their rights to the city (Harvey, 2012: 32).

A call for social change, the right to the city was a political claim for the abolishment of unjust inequality; an appeal for human rights within a redefined city for all; a revolutionary call for working class individuals excluded from the planning of their urban environment. A critique of the exclusionary, divisive and non-transformative power structures within the city at the time. Lefebvre's socio-spatial theories allow for a re-evaluation of who the city is for, and as a result, what the city should be.

Through the discussion around the exclusionary social history and resulting splintered urban condition, as well as the production of an in-between space, we have gained an understanding of the need for rethinking the role of the city. Lefebvre's spatial theories create a backdrop for the right to the city, an opportunity to redefine the city and for whom the city functions. James Holston comments that the global south has adapted Lefebvre's initial thinking of what the right to the city is, the right to the city for the urban poor of cities within the global south to address basic issues of residence, amenities, and service delivery, over the predicted class conflict revolution described by Lefebvre when he wrote The Right to the City (Holston, 2010:5).

"*…this right [the right to the city] commands widespread acceptance in principle by those in every part of the world concerned with the development of urban life inclusive of all those living in cities, without discrimination or exception.*"

- Urban Policies and The Right to The City, 2005.

It is in these urban spaces where citizens level an understanding of their needs as a part of the city. These needs, manifested by their own etching of themselves into the city, translate into their claim for citizenship rights. Holston draws three points on Lefebvre's right to the city, firstly, that urban residents are realising that they have a right to the city and are taking just action; secondly that this action is not a revolutionary act as described by Lefebvre, but rather a social one – a case of citizenship; and lastly, that this claimed urban citizenship is distinct from any national citizenship, this is about a dignified life in the city – a right to redefine the city in which they live, work and play. The idea of a struggle for rights are often led by those marginalised by society, either historically culturally, or politically, for example, manual labourers, squatters, foreigners, and women (Holston, 2010:1-3).

Within the informal economy, women are faced with the difficulties of working and living in two opposing places, a disconnect that, as discussed earlier, has had both physical and metaphysical implications. Their uncertain presence as working in the city is met by a lack

of services, health and security concerns, poorly connected spaces, a lack of amenities, and unsecure tenure (Holston, 2010: 6). Women have had to overcome these socio-spatial inequalities on their own, as they themselves are defined as an in-between or otherness, and seek a dignified life within the city.

The everyday practice of women, living in impoverished conditions and finding informal employment within the informal economy, struggle to stake their claim to citizenship rights. These women exemplify the irony of the post-Apartheid South Africa, where previously excluded communities have gained the constitutional right to vote, but in the process have faced rapidly rising levels of inequality (Miraftab, 2009:40). The context of Cornubia makes manifest of this irony – a right to housing as a band-aid solution to evidently more complex and compounded socio-spatial inequalities that only exacerbates the struggle of women.

"*(It is) not only about mobilising resources and power, and changing institutions, but about also organising hope, negotiating fears, mediating collective memories of identity and belonging, and daring to take risks.*"

- Leonie Sandercock, 2013:9.

2.4.2 Productive Public Space

"We must question the role of architecture and urban planning in engaging the major problems of urban development today […] and their obsession with quantified data as the only way to measure social inequity without giving us any qualitative way out of the problem. In other words, it is not enough only to reveal the socio-economic histories and injustices that have produced these crises, but it is essential that theory and practice become instruments to construct specific strategies for transcending them."

- Teddy Cruz, 2012.

Through the gender, space and identity conversation we can support the idea of reshaping space through the reshaping of women's identity. This dissertation serves to redefine the relationship between women and water within disenfranchised communities as one that facilitates the development of socially responsive architecture and public space. In order to do this, we need to explore how architecture and public space can be contextualised and respond to social needs.

The discussions held have illustrated how women have been and continue to be marginalised by historical spatial planning, both globally and in South Africa – public space has emerged as a site for social organisation and civil expression throughout history. Our post-colonial, post-Apartheid spatial planning has created public spaces that were inaccessible for the majority of the population.

There exists a social legitimacy that people, and those disenfranchised in particular, have to public space. Achille Mbembe discusses the facilitation of income generating activities within urban public space not as a frivolous issue, that the right to access is not simply to participate within that space, but about the creation of conditions that allow a right to belong, a right to ownership of a space that is a public common good, an expanding of the sense of citizenship that bears a commitment to the idea of 'public' (Mbembe, 2015:4).

"It starts with a redefinition of what is public, i.e., what pertains to the realm of the common and as such, does not belong to anyone in particular because it must be equally shared between equals."

- Achille Mbembe, 2015.

The commodification and privatisation of urban public space entrenches the heritage of segregation. South African cities are suffering from a crisis of imagination, in order to challenge the scars of apartheid that remain on the public spaces within the city, the city needs to become the event in which to explore a public that allows for new ways of engaging, new acts of imagination (Mbembe, 2015:4-7).

The degrees of exclusionary and inclusionary processes of public space reflect the power dynamics – both politically and socially – that exist within a society. The binary opposition of gendered public and private spaces within the city affirms that a social reimagining needs to take place to counter the notion of gender as a divisive social construct but rather as an inclusive right to the city.

Doreen Massey expresses that the relationship between space and inequality, power dynamics, identity and exclusion can be countered by granting rights and responsibilities to the relations between people and the spaces that they create and occupy – a potential for the social transformation of public space (Cole, 2015:2).

Regardless of the exclusionary practices around accessibility of public space and the increasing (re)centralisation and privatisation of these spaces, these spaces need to be negotiated by the urban poor and women in particular as an asset towards making their lives within the city. Towards the topic researched through this dissertation, the literature has strengthened the participatory engagement needed between disenfranchised communities and women in particular and the production of urban public spaces that allow for inclusive access and ways of accommodating the variety of urban life needed.

The subject of this dissertation, that of gender and relations within commodified landscapes such as that of the context of the mixed-use megaproject of Cornubia, has led to a discussion that draws suggestions to addressing the socio-spatial inequalities within our city – each of these suggestions have drawn upon the need for focused development to be based on the acknowledgement, participation and conscientisation of communities and their everyday practices. But, within the context of Cornubia, the community that inhabits the housing project is one that is common to a place without identity, a place of relocation.

2.4.3 The visualisation of common citizenship

"…the commons may begin to reshape our understanding of citizenship and sustainability – and move the conversation beyond..."

- Justin McGuirk, 2015.

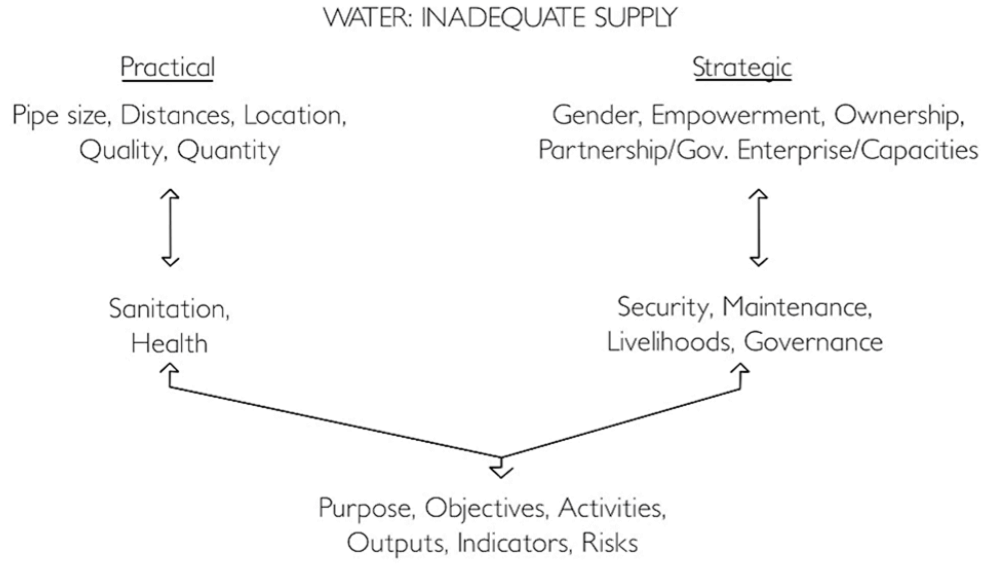


Figure 13: What is it about water? Image Source: Hamdi, 2014.

Recognising people as infrastructure and drawing this infrastructure as a dependent, independent and interdependent network within the city, through the discussion held between the work of Simone and Pieterse earlier, we can understand the need for participation as a necessary measure in implementing the proposed.

The commons, a place where common rights and common responsibilities are exercised, can provide the platform for the disenfranchised community to claim their citizenship rights. Justin McGuirk asks whether the commons, with its potent political dimension, can transcend extreme need and symbolic resistance commenting that perhaps if this platform is seen as an inclusive participatory community strategy of resilient regeneration, then it can (McGuirk, 2015).

Participatory practice is at the core of the ideals of sustainability, resilience, good governance and empowerment, illustrated below, that shows the interrelatedness of the elements of participatory practice, and as such these ideals are impossible to achieve without all of those involved and affected. It is fundamental to building community, fostering a social economy of both invisible and visible assets and expanding on the notions of freedom and choice. The capability of making visible the invisible structures of place, adds value through defining a social identity of place and sense of belonging that is so necessary to develop. It is these invisible structures that make a place work (Hamdi, 2014).

Figure 14: Participation. Image Source: Hamdi, 2014.

Hamdi proposes P.E.A.S - providing, enabling, adapting and sustaining - as a strategy through which to exercise participatory practice, an interrelated structure towards cultivating an architecture of opportunity and not one necessarily of form. Through it, he

places the rhetoric, *have we provided enough in order to enable people to adapt, but also to sustain what was provided in the first place?* Through processes of participatory practice we can see not only the design of a commons, of accessible and relevant public space and architecture but empowerment, gender resilience, sustainability, identity, community, equality and rights as outcomes (Hamdi, 2014)

The mutual making and remaking of people and the city can be considered as an expression of the materialist unfolding of history and the inherent ability to change things for the better. This relational identity of urban space explicitly relates to Lefebvre's advocacy for the potential of the city as being realised only through the participation and production of social relations that define the lived reality of cities (Lefebvre,1996).

"The right to the city manifests itself as a superior form of rights: right to freedom, to individualisation in socialisation, to habitat and to inhabit. The right to the oeuvre, to participation and appropriation (clearly distinct from the right to property), are implied in the right to the city […] The right to the city therefore signifies the constitution or reconstitution of a spatio-temporal unit, of a gathering together instead of a fragmentation. It does not abolish confrontations and struggles. On the contrary!"

- Henri Lefebvre, 1991.

Lefebvre's reference to participation and appropriation as a part of this advocacy within the city is made clear – the right to the city as a positive force inherently connected to the need for active participation within the social economy that produce our cities (Lefebvre,1996). Teddy Cruz suggests that this social economy, as informal modes of resistance, be used as praxis within the formal city, and promotes a rethinking of the meaning of public as a point of departure (Cruz, 2012). Towards this rethinking, public and accessibility collide – this collision is of particular interest to the context of this dissertation, the commodified landscape of the mixed-use megaproject of Cornubia, Durban.

"*We need to move from the neutrality of the public to the specificity of rights*"

- Teddy Cruz, 2012.

By addressing the definition of public, there should be less interest in the spatialisation of the social and more on the temporalisation of space through understanding the impact of people and economy in the mutation of urban fabrics (Cruz, 2012). This interrogation ties in with acknowledging the smaller networks of the everyday practice of people within

the notion of infrastructure, and how these dynamics can mutually make and remake themselves, transforming the city by negotiating time, space and resources and moving away from the harshly polarised urban geographies, representing the struggle in juggling global competitiveness and equitable rights to the city for the poor by cities across the global south.

Through deconstruction, the difference between the formal and informal of the city is made apparent in order to position otherness – a conception out of this collision, an other way of constructing the city (Cruz, 2012 and Derrida, 1993). In relation to the binary pair that exists as the formal and informal, and aware of the risk of perpetuating the opposition of these elements, acknowledging their difference avoids the blurring of differential categories and serves as a means to visualise, engage and enable this dialectical other (Cruz and Forman, 2015).

The tendency to avoid the binary pairs as a point of departure in the construction of new conceptual paradigms, driven by the idealist notions of a cultural ideology that elevated concepts such as cultural relativism, hybrid identities and the blurring of differential categories, while presenting new ways to negotiate hierarchical and rational structures of modern thinking, only further reduced the value of an other and advanced exclusionary neoliberal political economies (Cruz and Forman, 2015). In short, the call for inclusion by acknowledging the creative intelligence of communities with government support systems to reorganise institutional protocols and retrofit spaces of the city (Cruz, 2012).

Figure 15: Urban Crisis Image Source: Cruz, 2013.

Rahul Mehrotra, seeks to use the city and the particular regions of operation as a laboratory through which to test methods of practice – approach and vocabulary – that extract relevance from its socio-spatial context. Through this, the recognition of multiple disciplines and stakeholders needing to engage with the developing built environment of the city came to the fore. Participatory practice an endeavour to critique the effects of globalisation and celebrate a local specificity (Mehrotra, 2013:242).

"…'the fetish of local specificity' as a way of resisting the global – a superficial and perhaps symbolic gesture at best. In fact, the notion that globalisation amounts to homogeneity is perhaps not a useful object of resistance any longer; it has flogged for too long and has become unproductive for us as designers. This is because differences are not just about local specificity; in today's world the potency for design lies in the differences that are perhaps networked globally."

- Rahul Mehrotra, 2013:245.

Mehrotra describes Indian cities as bearing both physical and visual contradictions that are fragmented and polarised, yet in the process of both rich and poor jostling for access to amenities weave a new pluralism into the city. This pluralism requires planning and design thinking and practice that need to constantly mediate these differences, creating meaningful and engaging architecture and public place that is accessible and temporal to accommodate and empower these differences rather than perpetuate polarised binaries (Mehrotra, 2013:243-249).

Thus the notion of a commons, of a place where this collision can be made manifest as a visualisation of the claim to common citizenship rights, is promoted as a necessary alternative to governmental regulation or privatisation of resources – the design of a durable cooperative that is organised and governed by those who use the resource themselves (Ostrom, 1990). The driving of participatory engagement towards these rights supports the intention of this dissertation that seeks to display the potential of participation within the definition and access of citizenship rights as critical towards addressing the socio-spatial inequalities that exist within the city – both historically and through the roll-out of commodified spaces such as those of the mixed-use megaproject of Cornubia, Durban.

2.5 Conclusion

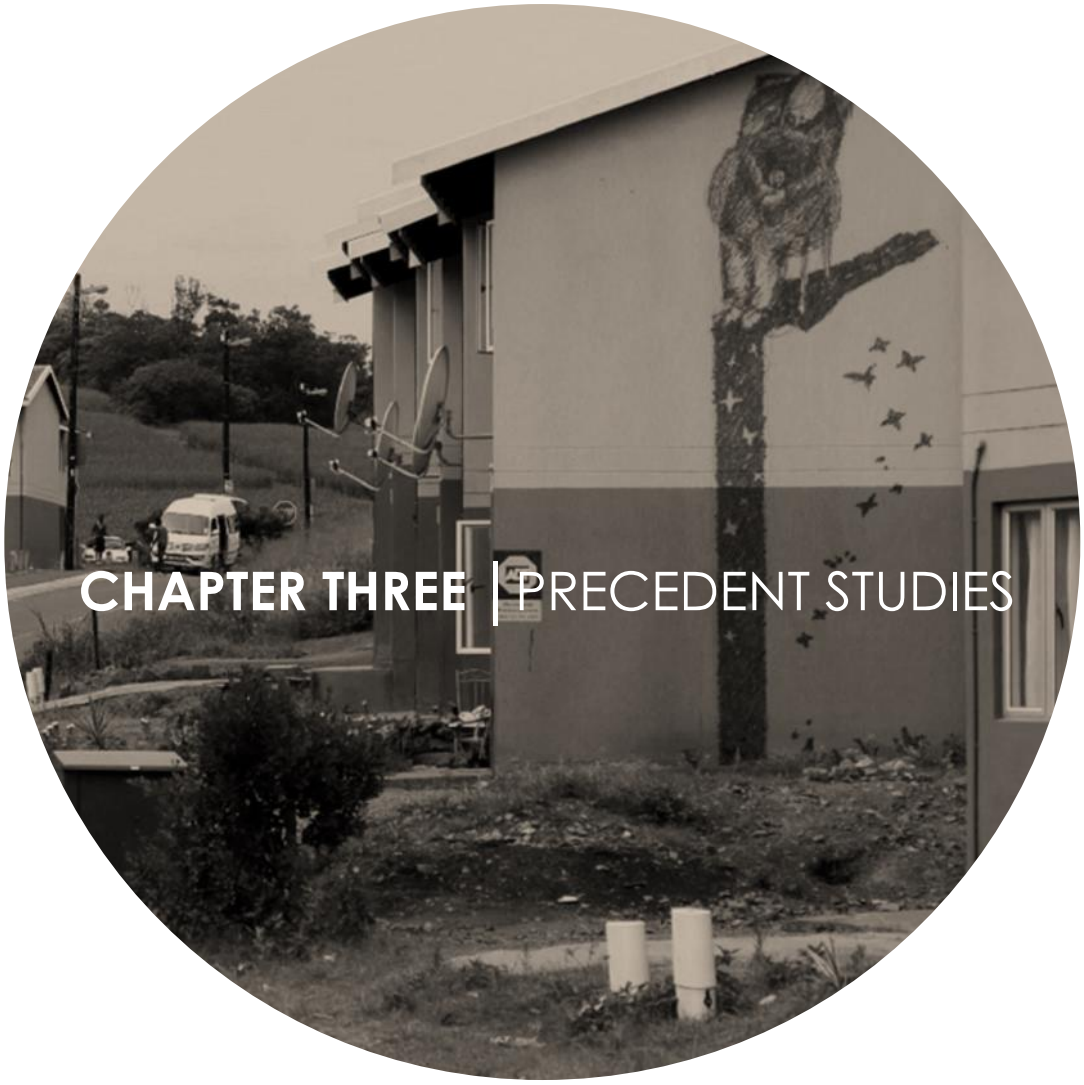
This chapter of this dissertation has not only set the context within which we find the subject of this research, but also the possibility of addressing the research problem – that of the paradox of gender and water relations within the commodified landscape of Cornubia, a mixed-use megaproject – through architecture and the built environment.

"…it is clear that inequalities are expressed in cities in a rather brutal way, it is not an abstract thing, but [one that is] experienced by people…The social pressure that is accumulating in the peripheries where basic human needs are satisfied, yet the feeling of that population is that they do not belong in the city – that anger and resentment as a result of experiencing this in a very concrete way manifests as a big issue. There may be an opportunity to use that same city that is accumulating that socio-political pressure as a way to improve people's quality of life through the built environment."

- Alejandro Aravena, 2016.

Deconstruction as a lens has afforded the opportunity of relooking at the formation of the subject within its context towards an other possibility. Through unpacking issues of gender identity – the reveal of different socially constructed gender roles and different places as defined by these roles, and the collision between the two evokes possibilities of reimagining gender roles and citizenship rights through the everyday practices of women. Exploring the formation of the splintered post-Apartheid urban geography, revealing the opportunities for addressing the socio-spatial inequalities that exist within the city through the way in which people engage with city spaces as they attempt to make their lives on an everyday basis.

Resistant to this making is the commodification of resources that rather than address socio-spatial inequalities, only further perpetuates them. The megaproject as a response to the backlog of housing delivery and an attempt at global economic competitiveness, an integrated human settlement, provides more contested discourse than responding to the rights of those previously disadvantaged, echoing the disconnect and concern in Aravena's statement as a relocated community now has the right to housing, but what of their rights to citizenship, their rights to a truly dignified life within the city? This making is revealed as a possibility through which to reimagine a more equitable city through disenfranchised communities actively participating in their right to dignity.



CHAPTER THREE | PRECEDENT STUDIES

Figure 16: Intentions and Possibilities. Image Source: Jahangeer,2016.

3.1 Introduction

The precedent studies were selected in an effort to draw parallels with the way in which socio-spatial inequalities manifest and are addressed in similar contexts to that of the case study area of this research. The studies selected serve to draw tangible relevance to the unpacking of the theoretical framework as discussed within chapter two, and as a result are discussed through the themes of Hydro-social Infrastructure, Conscientising the everyday and Visualising the right to dignity.

The concern of this dissertation serves not towards an outcome of housing, but rather a critique of the isolated manner in which the delivery of housing has been rolled out within Cornubia, proposing instead to retrofit the Phase 1A: Pilot Phase Housing Settlement with the much needed infrastructure and diversity towards challenging the existing socio-spatial inequalities.

As a result, the precedent studies reflected here are within housing settlements, through which architecture has served as infrastructure seeking to do much the same – recognising the everyday practice of the respective communities and working with them towards defining relevant space.

These precedent studies will later undergo a design analysis towards the conceptualisation of A Water Reclamation Plant for Cornubia as a retrofit of socially responsive architecture within the housing settlement.

3.2 Quinta Da Malagueira, Évora, Portugal. Alvaro Siza

Architect: Alvaro Siza
Client: Évora City Council
Completion Date: 1977-1998

3.2.1 Introduction and Justification

In searching to propose a retrofitting of infrastructure that serves as a socially responsive architecture for the residents of the housing settlement community. Siza's Quinta da Malagueira was selected to analyse the way in which water-based infrastructure can provide both services and social opportunities through its design.

3.2.2 Location and Social context

Figure 17: Locale of the settlement within regional Portugal. Image Source: Adapted by author from Google image search, 2016.

In 1974, the new political power saw the opportunity to address the critical social housing concerns across Portugal. Quinta Da Malagueira located outside the city of Évora was one of the projects that would provide housing as a satellite community that would eventually be owned by the cooperative organisation that resided in it. The settlement comprises 1200 terraced courtyard houses that follow the undulating topography across expropriated agricultural land outside the Roman wall of Évora indicated in the figure below.

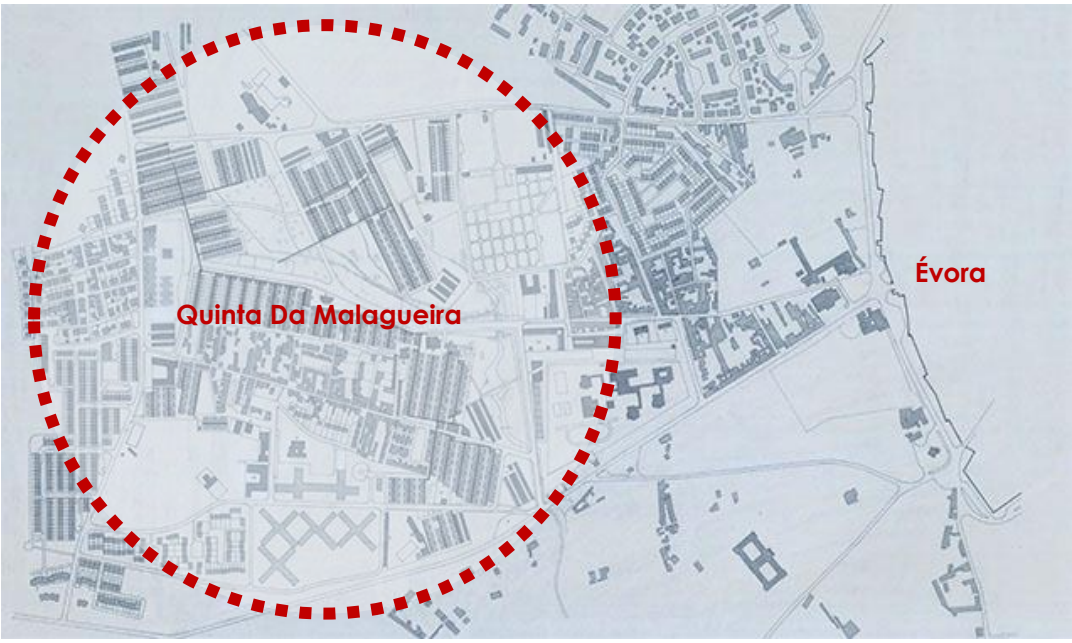


Figure 18: Quinta da Malagueira housing settlement outside of the city walls of Évora, clearly defined by the jagged line on the right-hand side of the image. Image Source: Adapted by author from The Architectural Review, 2013.

3.2.3 Hydro-social Infrastructure

The housing settlement, despite the complex site and limited resources made available to the architect at the time and given the nature of the project, was able to blend the environment of Roman Ruin with pragmatism and flexibility seamlessly.

A concern arose about the character of the housing settlement as appearing almost rural, devoid of the diversity that a city environment would offer despite its proximity to the centre of the city of Évora. The solution came in providing public facilities between the scale of the housing that were designed and proposed by the architect once the housing was all in place as not to depart from the initial need for addressing the housing issue, but also through defining an urban character along the streets of the housing settlement itself.

Figure 19: An urban framing of entrances. Image Source: Sherwood, 2002.

This was achieved through a system of elevated aqueducts carrying water and energy infrastructure across the housing settlement, connecting the housing clusters. Referencing the presence of a Roman aqueduct within the city, and acknowledging the budgetary constraints of the project, the concrete block aqueducts further framed the white walls of the terraced housing as well as entrances to public facilities, creating an arcade like structure that inserted an urban character into the housing settlement (Sherwood, 2002).

Figure 20: Referencing the old. The Prata aqueduct in the city of Évora. Image Source: The Architectural Review, 2013.

The hydro-social in the case of Quinta da Malagueira manifests as the opportunity provided by the water-based infrastructure to define socio-spatial exchanges that can occur everyday.

3.2.4 Conscientising the everyday

"…an episode in the history of the site's transformation."

- Ellis Woodman, 2016.

The relationship between the architecture and time is stressed by the architect within the project, realising that the success of designing for communities would be to allow time to play its significant role in creating socio-spatial relationships of relevance and meaning. A variety of unit designs were implemented, allowing for a degree of change within each of the dwelling units that would still allow for a common reading of a street edge based on the courtyard design.

This allowance for time provided the residents with the opportunity to personalise their environments based on their individual requirements. The architect himself dedicated two decades towards the development of Quinta da Malagueira, occupying one of the housing units and envisioning the whole environment based on his lived experience within the community and place (Woodman, 2015).

Figure 21: Same same but different units within. Image Source: The Architectural Review, 2013.

Siza structured the agricultural fields with a grid based on the assigning of a 12x8m plot for each house with uncommon orientation following the slope. As illustrated in the map of the settlement above, this defined two arms of housing around an agricultural open space, dotted with public spaces between.

Apart from this, the defined spaces between the houses were earmarked for public facilities, regrettably not all of these came to fruition due to a later shift in political power within the region, but the acknowledgement by the architect in understanding the variety needed to define a dignified everyday for the residents is clear.

Figure 22: Contemporary street life within the settlement. Image Source: The Architectural Review, 2013.

The lessons of engaging with a community in designing the environment in which they conduct their everyday life, as well as designing with the natural landscape not simply within it are those that can still be retrofitted into the case study area of the Cornubia Phase 1A: Pilot phase Housing Settlement.

3.3 Incremental housing and decentralised Sanitation System, Savda Ghevra, New Delhi, India. Julia King

Architect: Julia King

Client: Resettlement Colony of Savda Ghevra, New Delhi, India

Completion Date: 2013

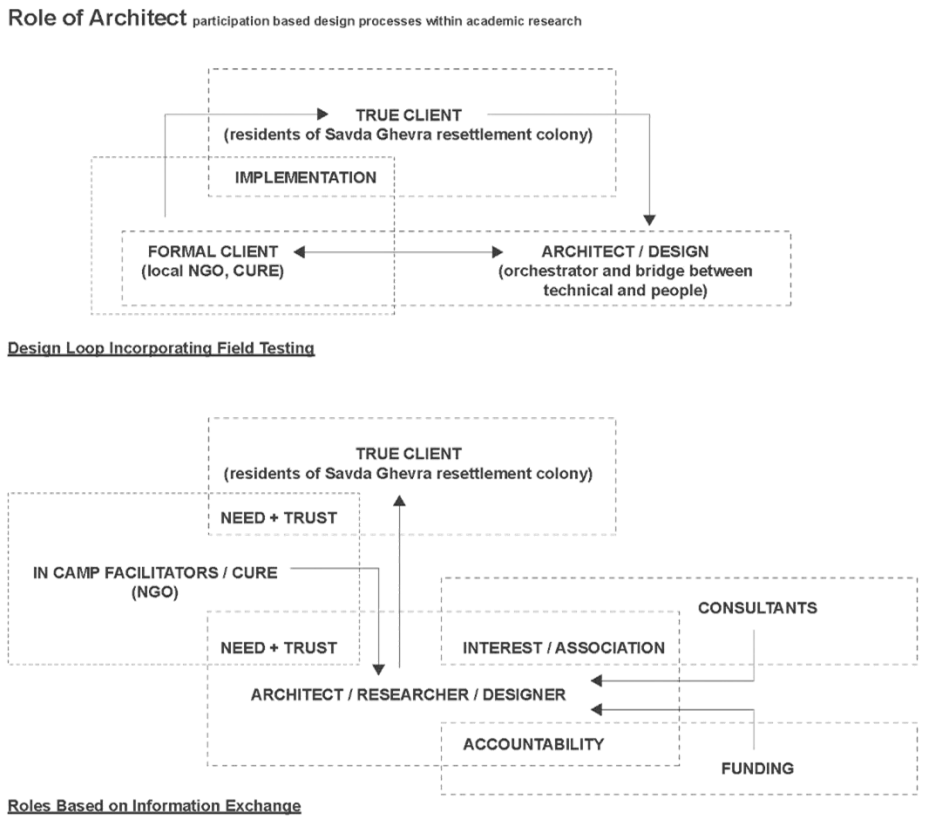


Figure 23: Role of architect: participation-based design processes within academic research. Image Source: King, 2013.

3.3.1 Introduction and Justification

The architect, recognising the metanarratives of cities in transition, sought to explore how the everyday lives of the community worked towards finding solutions through it rather than romanticising the disjunctions that exist socio-spatially. The aim of the project was to improve the lives of the community members through the provision of sanitation – which is at the very core of a right to dignity and health.

The context of the project, a resettlement colony set on the periphery of the city drew immediate parallels to Cornubia, and sought to address the right to dignity, empowerment and gender and safety concerns through sanitation. The project viewed infrastructural

development through participatory practice as architecture, developing a phased project that comprises street level infrastructure, decentralised wastewater treatment, and an incremental housing system based on the construction of toilets within each house (King, 2013).

While processes of engagement were not implemented within the planning of the housing settlement at Savda Ghevra itself, the project explored a retrofitting of a sanitation system that through community workshops and a practice of local engagement within an enabling environment would ultimately benefit the community and build a sense of shared local civic and political responsibility towards a collective good (King, 2015).

3.3.2 Location and Social context

Figure 24: Locality Map of Savda Ghevra indicated in red. Image Source: Google image search edited by Author, 2016.

Savda Ghevra is a Jhuggi Jhopri (JJ) Resettlement Colony built outside of Delhi by the government to house residents evicted from squatter settlements within the city located on public land to accommodate infrastructure projects needed for the upcoming Commonwealth Games held in the city in 2010. While implemented by government design and within the confines of the planned city, these resettlement colonies are treated as a distinct category, and as a result are not provided with sufficient basic services and are taken over by informal arrangements and ways of living (Sheikh, Banda and Mandelkern, 2014).

The Incremental housing and decentralised Sanitation System sought not only to address the jarring lack of water and sanitation infrastructure within the resettlement colony of Savda Ghevra, but to mobilise the community towards their own development. The "politics of the sewer" were turned on its head, seeing humiliation and victimisation being transformed into exercises of technical capacity and self-dignification (King, 2013).

3.3.3. Hydro-social Infrastructure

Lack of sanitation is one of the major problems plaguing underdeveloped settlements globally, King's additive strategy seeks to improve hygiene and strengthen social cohesion within the resettlement colony through processes of participation (King, 2014).

Located 40km north west of Delhi, Savda Ghevra sits within a largely rural landscape connected to the city by daily bus and rail services. The site is formally planned in a grid like formation, with its perimeter defined by the surrounding field and canal. The design intention of the government was to utilise the canal as a mains water supply, yet this would only be implemented upon full occupation of the settlement. Interim water and sanitation services have been planned, but never fully executed resulting in tanker based delivery that supplies only a limited demand, and charged toilet blocks that cannot support the community it is intended to serve (Jeffries, 2008:10-13).

The fully implemented proposal would provide sanitation infrastructure to the 322 households within the colony, with street level infrastructure and the retrofitting of households with new toilets through a viable system that would serve as a model for off-grid or decentralised sanitation solutions to low-income settlements within the context of redevelopment and slum upgrading. (King, 2014)

Through the proposed phased decentralised system, the black water reuse infrastructure of septic tanks and up-flow filters developed with and built partially by the community members trained for the task, as illustrated, and managed by a predominantly female operation and maintenance team address the much larger social issues within the resettlement colony through gender and water relations. This fundamental component of the participatory project set the platform for the next phase, assisting families to construct toilets in each of their homes to connect to the larger system (King, 2014).

Figure 25: Participating in the construction of the system. Image Source: King, 2013.

The resettlement colony was designed on the provision of land tenure to families who would then self-build their homes upon platforms along a designed grid. The relocation in itself has seen many of the families remain within the basic temporary structures of bamboo and tarpaulin, unable to make the financial leap towards a more permanent dwelling due to loss of income as a result of the relocation away from the urban core.

An extension of King's proposal is that of a participatory exercise in designing a housing unit that can be built incrementally and through the decentralised sanitation system, as shown in Figure 26 below. The participation of the NGO CURE has allowed for this community based decentralised sanitation system to incorporate micro-financing that enables families invest in their houses and make use of the proposed incremental housing typology with a 0% loan scheme, granting this colony a huge opportunity for bettering their lives at individual and community scales (King, 2013).

Figure 26: Incremental Housing Typologies. Image Source: King, 2013.

3.3.4 Visualising the right to dignity

Savda Ghevra is a response to the overwhelming visibility of illegal slum settlements within the city and part of a mass clearance programme initiated by the Delhi Government to beautify the city of Delhi by regenerating the green belt along the east bank of the river Yamuna where the community originally resided. The slum colony, despite being close to three generations old had no legal rights in the eyes of the government and could thus be forcibly removed. The resettlement was a government led initiative on the basis of the promise of land tenureship.

Figure 27, 28 and 29: Participation in practice (left, centre and right). Image Source: King, 2013.

An approach has been taken since by the government to employs platforms of engagement with the community to address the lack of resources and basic services within Savda Ghevra (Jeffries et al, 2008:7). The participation processes included settlement surveys and interviews with the residents of Savda Ghevra, and allowed for the

way in which houses transform incrementally and what the driving forces are behind the growth. The main driver in this instance being livelihood generation was used to incorporate the decentralised sanitation system (King, 2015).

This project addresses the issues of sanitation and hygiene that are linked to both a right to water and a right to dignity. These issues are an urgent problem not just for the resettlement colony of Savda Ghevra, but internationally and requires sound research and design implementations to address this element of citizenship rights.

The community residing in Savda Ghevra, resettled from an average of 5km from their workplace, to 40km to any such opportunity, the provision of housing is not enough and access to livelihood Is particularly important (King, 2013). Through the discussions around the social legitimacy that people, particularly those within disenfranchised communities, have to public space and for that public space to facilitate livelihood generation is made manifest here (Cole, 2015:2).

The resettlement colony offered homogenous housing typologies, that through processes of participatory practice revealed the potential for incremental growth, shown below in Figure 30, based on community sharing – making visible a community network and allowing an infrastructure to develop through it (King, 2014).

Figure 30: Building livelihoods and dignified living incrementally. Image Source: King, 2013.

The system that was proposed and subsequently built, as discussed earlier saw the incremental growth of the housing units go hand in and with the sanitation system, with more square meterage for livelihood generation also came the potential for the inclusion of toilets, water storage and washing and kitchen areas being fitted into transformed homes (King, 2014). Throughout the design development, participation and implementation of the project, there is a clear response not only to an issue of hard infrastructure but to that of the need to provide a community with citizenship rights – extending the potential of both water-based infrastructure and housing through participatory practice.

3.4 Community Toilets for SPARC, Mumbai, India. RMA Rahul Mehrotra

Architect: RMA Rahul Mehrotra
Client: Society for Promotion of Area Resource Centres (SPARC)
Completion Date: Ongoing

Figure 31: The SPARC Community Toilet within its context. Image Source: RMA, 2013.

3.4.1 Introduction and Justification

A government funded community toilet project through the NGO SPARC and the National Slum Dwellers Federation, the project saw a redesign of 300 public toilets for the slums of Mumbai by working within government specifications, but with spatial reconfigurations to provide not only maximum efficiency but to address social concerns of gender, safety and a sense of community (Mehrotra, 2013).

The innovative socio-spatial thinking behind the community toilets can inform the proposed Water Reclamation Plant as it seeks to engage, through a participatory process between the architect, the partners, namely SPARC and the National Slum Dwellers Federation, the sponsor as government, and the community itself through their community leaders, towards dignifying life within the city for disenfranchised communities through the right, access and provision of water and sanitation. The project, however, revolved around more than just the provision of an infrastructure, but that the infrastructure, through its process could become a place for community interaction (Mehrotra, 2013).

3.4.2 Location and Social context

"…what you have in the city of Mumbai is a situation where the real estate developers on the one hand, and the slum dwellers on the other are actually carving out the design of the city. The poor people are doing it because the plan has no space for them…"

- Sheela Patel (SPARC), in Urbanized, 2011.

Figure 32: Mumbai, in Maharashtra. Image Source: Google image search edited by Author, 2016.

Mumbai, as described by Mehrotra in chapter two as a city steeped in rich culture and history and is the most densely populated city in India. It boasts some of India's richest people as the financial powerhouse of the country, exotic birdlife and the largest tropical forest within an urban zone – yet it also houses some of Asia's greatest slums, hard-labourers, stray dogs, and even, *Slumdog Millionaire*. This city of vast contrasts sits as a living laboratory for the practice of Rahul Mehrotra, RMA (Mehrotra, 2013)

As discussed above, the social context is that of the slums of Mumbai, India, which house more than half of the 15 million population of the city itself, equipped with basic services of piped water supply, public latrines and drains yet given its vast numbers are a severely inadequate response and as a result poorly maintained (Architecture in Development, 2015).

3.4.3 Hydro-social Infrastructure

The opportunity of the hydro-social is illustrated here through the research process, design development and implementation phases of the project.

Figure 33: The SPARC Community Toilet clearly defined as a marker along the street in the distance. Image Source: RMA, 2013.

A retrofit to the existing settlements within the city, the opportunity to respond to the infrastructural concerns through the community provided an opportunity to address some of the larger social concerns of the community, particularly those directly affecting women and children.

The observations made by the project organisation itself founded few toilet seats to the numbers of people requiring them, toilets without doors and unable to lock, no dustbins, all amounting to an overused, dingy, smelly and dysfunctional environment that serves as a breeding ground for crime and harassment.

The provision of sanitation along with accommodation for caretakers from the community, raised an acute awareness of the temporal needs of the communities, providing opportunities for employment from minority communities that would create a safe space around the facility.

The retrofitted infrastructure would provide community toilets on the ground floor, along with caretaker accommodation as well as a community space on the first floor. The architects sought to advocate for the project to be off the grid, introducing solar panels on the roof above. The technology applied to a simple frame that can see itself being inserted easily across the already dense environment (Mehrotra, 2013).

3.4.4 Visualising the right to dignity

Along with the retrofit of vital infrastructure to the residents of the existing slum settlements within Mumbai, the SPARC Community Toilets. The intention of the project realised by the architects, was the opportunity to retrofit a sense of dignity.

"The big downside with informal settlements which need to be urgently resolved are the questions of health and hygiene. How do you bring sanitation, and how do you bring water supply etc. – that is I think what makes them [informal settlements] inhumane, unliveable and a complete reflection of the failure of society to create human habitat."

- Rahul Mehrotra in Urbanized, 2011.

The statistics within the Urbanized documentary from which the above content is extracted, discuss the crisis of having 60% of the population living in slums where there is one toilet seat to 600 people. The urgency of the sanitation crisis, as well as the human dignity crisis as stressed by Mehrotra comes to the fore and serves as precedence for the way in which we can address the right to dignity as architects (McGuirk, 2011). What this leaves this research with, is exactly this lesson – an opportunity of addressing water-based infrastructure with a social agenda through participatory practices that can retrofit a much needed sense of a dignified life within the city.

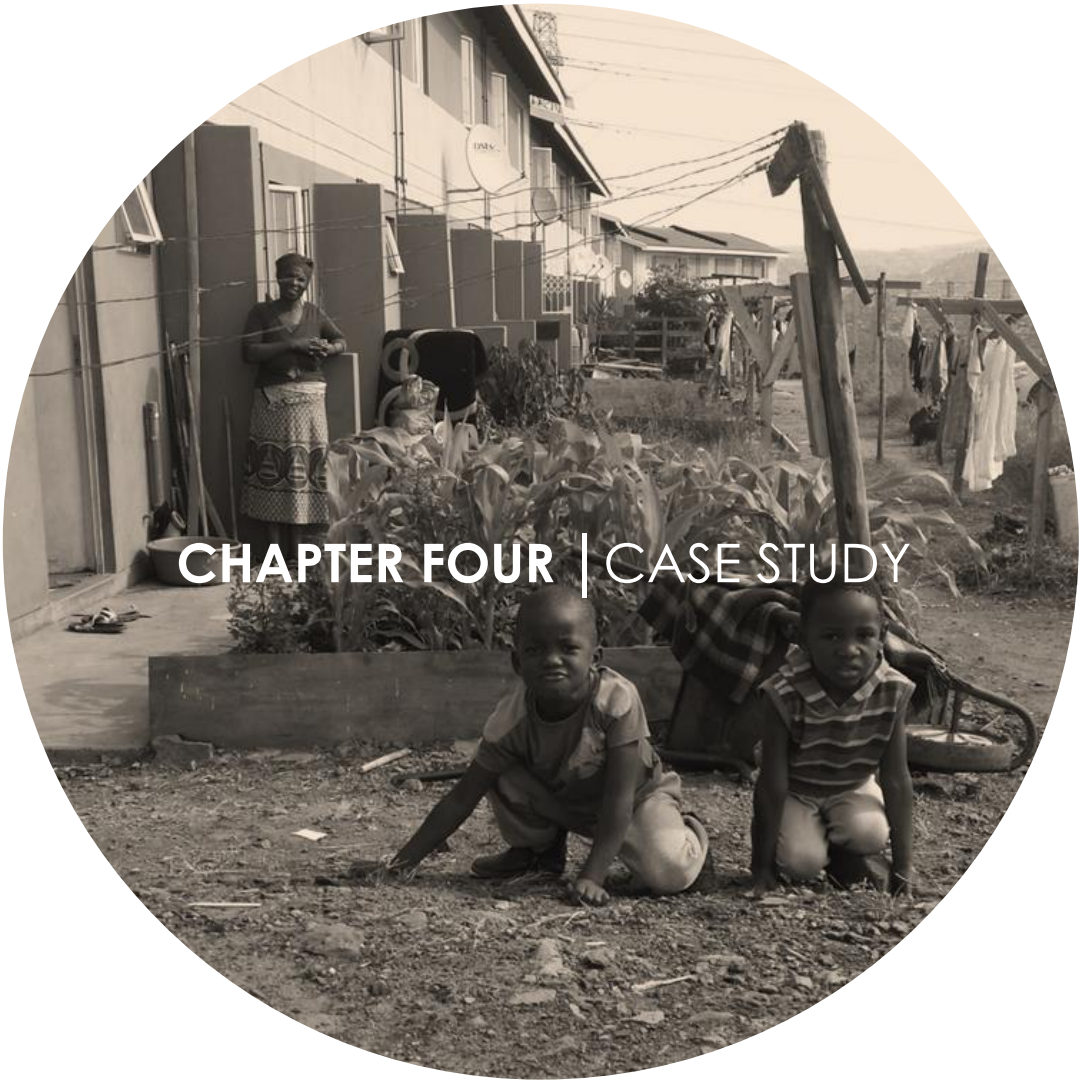
Figure 34: Providing community spaces through the provision of sanitation. Image Source: RMA, 2013.

3.5 Conclusion

"The principle that emerged was simple. Don't invest in building houses that people can do in any case for themselves and could do better with a bit of help. But rather invest in the collective good that people can't provide for themselves: in land regulation, infrastructure planning, security of tenure, self-build opportunity and credit provision."

- Nabeel Hamdi, 2010.

The study areas bear striking resemblances to the housing settlement, each providing opportunities towards the retrofitting of a socially responsive architecture addressing water-based infrastructure. Through them, we can make socio-spatial suggestions of the possibility of gender and water relations in addressing the inequalities that exist within the city, and specifically within the housing settlement through accessibility. Within the context of it being a relocated community, the opportunities for participating in the development of their place is interpreted as a visualisation of their rights, rights to a sustained environment, rights to water and a right to dignity. The element of self-construction of the hard infrastructure for this accessibility introduces a rich sustainability and engagement not only with processes but as community.



CHAPTER FOUR | CASE STUDY

Figure 35: Backyard living rooms. Image Source: Author,2016.

4.1 Introduction and Justification of the study

The selected case study, that of Cornubia Phase 1A: Pilot Phase Housing Settlement, was used to gain direct and first-hand information and better understanding of the issues relating to the research topic. The case study provided insight into the way in which the community exercised their everyday lives within the space, illustrating the unseen infrastructures of people as mundane acts of resistance within the rigid built environment.

Towards the proposed outcome of this research, the case study is observed from the perspective of deconstruction – working with what is existing, the paradoxical nature of the Phase 1A: Pilot Phase Housing Settlement, and recognising the possibility of a rearrangement of the layers of the place.

In continuing the overarching discussion throughout this dissertation, the case study is analysed through the themes of Hydro-social Infrastructure, Conscientising the Everyday and Visualising the right to dignity.

4.2 Cornubia Phase 1A: Pilot Phase Housing Settlement, Cornubia, Durban, South

Architect: Iyer Urban Design Studio supported by GAPP Architects and Urban Designers, Vela VKE and Goba and Dave McFarlan and Associates
Client: eThekwini Municipality, Tongaat Hulett Developments
Completion Date: Ongoing

Figure 36: Drawing parallels between the Durban city centre and the Cornubia mixed-use megaproject development. Image Source: Adapted from Google Earth image by author, 2016.

4.2.1 Location and Planning the megaproject

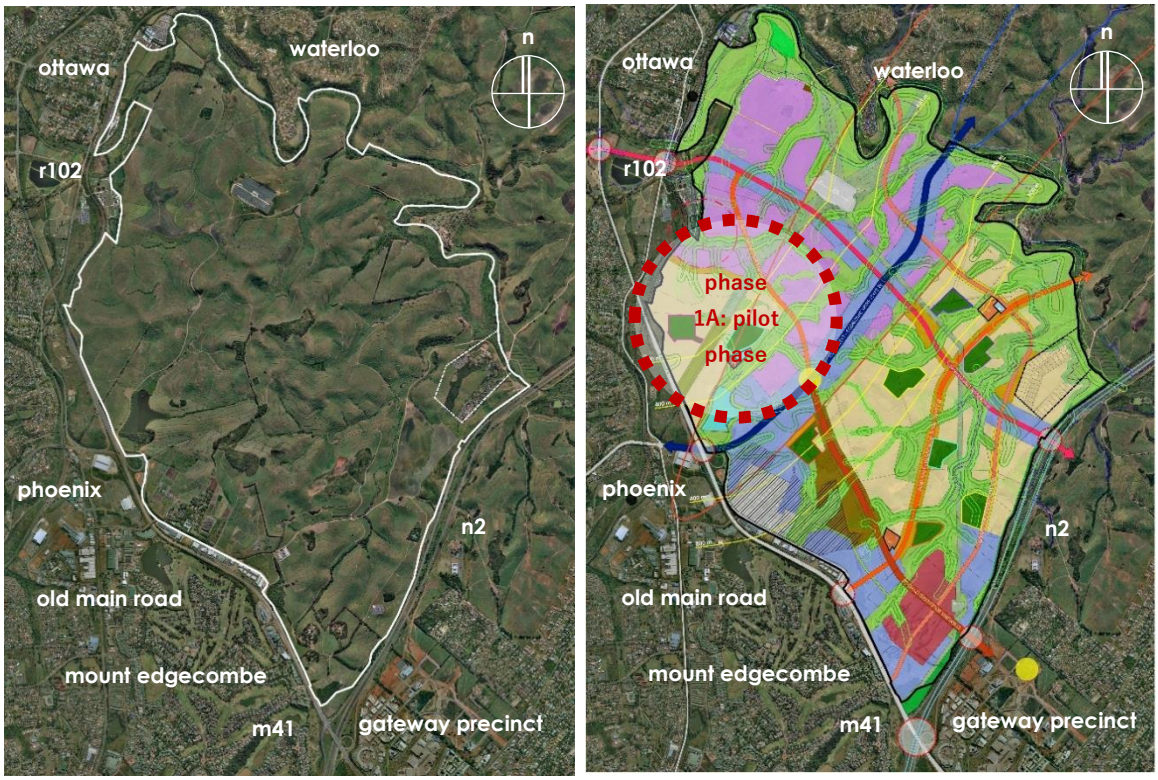


Figure 37 and 38: Cornubia before (left) and proposed (right) Image Source: Adapted from Iyer, 2013 by Author, 2016.

North of Durban, bounded by Umhlanga Ridge and Mount Edgecombe in the south, Phoenix and Ottawa to the west, with an eastern boundary formed by the N2, and Waterloo and the Ohlanga River in the north, we find Cornubia, a greenfield site as depicted in Figure 37 above earmarked by the public-private partnership between Tongaat Hulett Developments and the eThekwini Municipality, towards an integrated human settlement that seeks to address the socio-spatial inequalities of the past.

The site measures 1331 hectares in its entirety, as implied by the public-private partnership, this ownership is divided, with the eThekwini Municipality owning 517 hectares towards the primary intention of addressing the severe housing backlogs in the region through low income and affordable housing; and Tongaat Hulett owning 717 hectares of land to be developed towards general business, mixed use, light industry and medium density residential development. 28 hectares of land remain in the ownership of the Blackburn Informal Settlement that pre-existed the Cornubia development, and another 69 hectares owned by SASA. The commitment between the multiple land owners is to ensure the development of a sustainable and integrated human settlement (Iyer, 2011:5-6)

The exploration of the development of the mixed-use megaproject can aid an understanding of particular urban governance, revealing key role players and characterising the patterns of interaction that exist between these various role players; the kinds of knowledge that are mobilised to inform the development; and the way in which this knowledge is made accessible to the various role players (Baud et al, 2014:4).

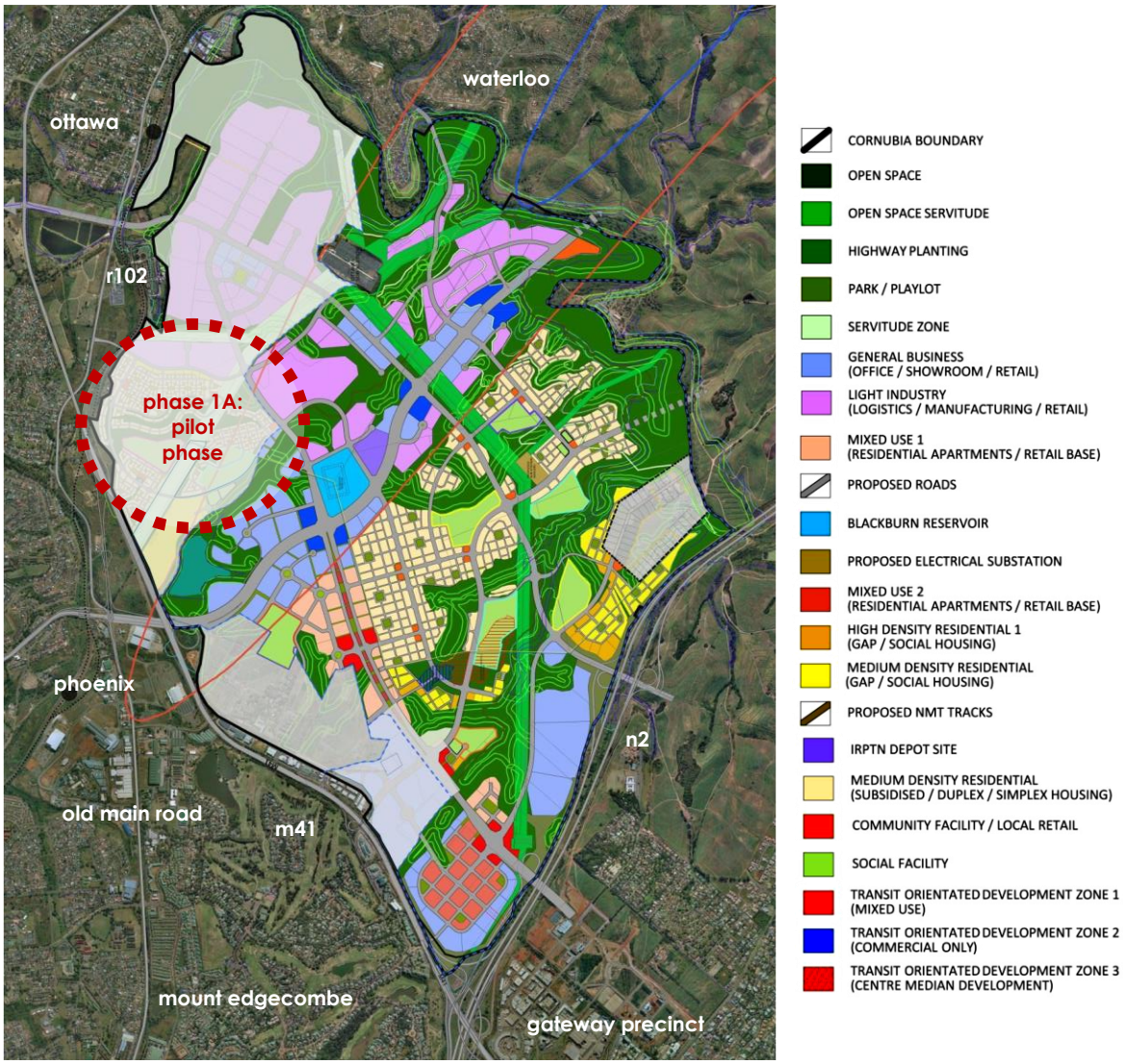


Figure 39: Cornubia Phase 1 Land Use Map Image Source: Adapted from Iyer, 2013 by Author, 2016.

South Africa's megaproject has manifested as an integrated human settlement development that engages the national, provincial and local tiers of government. The approach developed as a result of the ineffectiveness of prior programmes at having achieved integrated sustainable human settlements or addressing the housing backlogs

affecting the majority of the urban poor post-Apartheid (Charlton, 2009; Department of Housing, 2004; Sutherland et al, 2013). Located along the urban periphery on large areas of cheap, greenfield sites only, as illustrated in Figure 37 and 38 above, the mixed-use megaproject only promotes the notions of urban expansion conflicting with the need to integrate cities to reduce the distance related inefficiencies of divisive socio-spatial planning (Turok, 2015:5-7).

Given the nature of this research and its intended methodology, it is necessary to understand the intentions of the project from the perspective of the developers, along with the way in which people have constructed their lives within it on the ground. Through unpacking the documentation on the development, Cornubia is seen as having the capacity to meet a number of current development objectives within the region, defined as the Core Development Objectives:

- District integration: the location has the potential to stitch together previously splintered environments as a result of Apartheid planning, namely those of Phoenix, Mount Edgecombe, Umhlanga, Waterloo and Ottawa;
- Pursuing Integrated Human Settlement: as a greenfield project, Cornubia provides the opportunity of 'getting the basics right' towards a truly integrated settlement, i.e. one that combines the possibilities of housing within proximity of socio-economic opportunities;
- Pursuing Sustainability: transcending a 'green agenda' towards natural, social and economic sustainability;
- Building a Dynamic Region: positioning within the larger region to draw in greater economic opportunities
- Strengthening the Regional Logic of Space: enhancing the quality of the site through the open space opportunity and connectivity of the natural environment (Iyer, 2011:17).

From the objectives, Development Principles were then extracted towards informing the design philosophy of Cornubia:

- Access and Structure;
- Density and Compactness;
- Diversity and Complexity;
- High Quality Urbanism;

- Meeting Local Needs Locally;
- Public Transport and Non-Motorised Transport Focus;
- Access to Open Space;
- Public Space and Facilities (Iyer, 2011:18).

Moving forward, the intention would be to analyse if and how these objectives and principles have manifested on the ground, and how they have served to better the living environment of the sample within the Cornubia Phase 1A: Pilot Phase Housing Settlement in particular.

The development of Cornubia was an attempt through the public-private partnership of the municipality and Tongaat Hulett to simultaneously meet pro-growth and pro-poor agendas (Sutherland et al, 2014:185). Integration is strategically planned, but what is depicted is much more of an urban geography that perpetuates division than one that reads of integration, highlighted in Figure 39 – particular land uses occupying particular land parcels in degrees of proximity to either the Umhlanga Ridge or the historic township locations of Phoenix and Ottawa.

The Cornubia Phase 1A: Pilot Phase Housing Settlement is located along the western edge of the development, flanked by zones of light industry, general business and the open space buffer and divided from Phoenix by the M41 freeway – the promise of a mixed-use environment serving to address socio-spatial inequalities. Yet, when the development is observed within its larger context, these flanks appear to act as buffers, dividing land uses and people, perpetuating the very same inequalities that they seek to address.

Zooming in to the development plan of the Cornubia Phase 1A: Pilot Phase Housing Settlement, we see what is described by the developers as an integrated housing settlement, designed around the creation of a fine grain walkable residential environment in close proximity to social amenities, with row houses around a series of courtyards divided by defined streets towards building a sense of community and place (Iyer, 2011:16-23).

As it currently sits, the Pilot Phase Housing Settlement is surrounded by the undulating mounds of what once were sugarcane plantations along the coastal interior of Durban, suggesting an alignment to the way things happen within the formal roll-out of housing, as illustrated in Figure 40.

While this exercise was successful as a response to the severe backlog of the delivery of housing in South Africa as discussed previously, the translation of the formal and informal as binary oppositions within the context of Cornubia has materialised further socio-spatial inequalities.

Figure 40: Where the streets have no names. Image Source: Jahangeer, 2016.

Figure 41: Zooming in. Image Source: Jahangeer, 2016.

Figure 42: Dignity of Place. Image Source: Jahangeer, 2016.

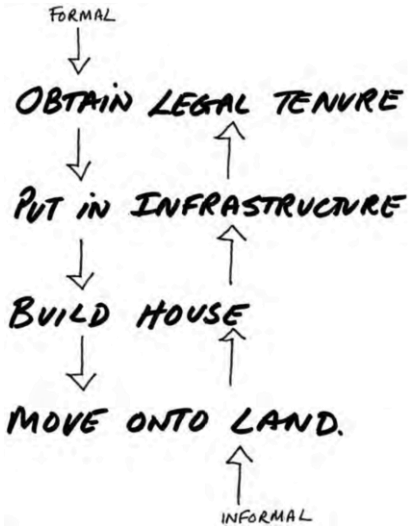


Figure 43: The way things happen. Image Source: Adapted from Ruth McCleod in Hamdi, 2010.

The promise of the proposal and the realities of the place paint two very different pictures. Towards this research, the case study area is analysed, as were the precedent studies, through Hydro-social Infrastructure, to develop an understanding of the relationships that exist between the community and water and how this manifests across the landscape; Conscientising the everyday as a gauge of how the practices of the community are exercised within the fabric, whether this be an accommodated activity or a mundane

form of resistance to it; and Visualising the right to dignity, how the accessibility and use of the resources of space and water represent a claim to citizenship rights.

4.2.2 Hydro-social Infrastructure

Hydro-social Infrastructure affords us an understanding into the way in which social inequalities are produced and sustained through water relations, and how within the context we can use the hydro-social to promote more equal socio-spatial relations. Within Cornubia itself, the delivery of housing brought the delivery of access to water to individual households; and the association of women to water by means of domesticity and gender roles, ties women to the household where water is central to her responsibilities. The intention then is to observe the way in which hydro-social Infrastructure has been planned and exists within Cornubia towards reimagining the spatial boundaries of women, and in turn the community of the case study area.

The commodification of resources has, in the opinion of this research, exacerbated the socio-spatial inequalities that exist post-Apartheid. Seeking to address the housing backlog, the response toward the generation of an integrated social housing scheme has been the initial outpour of low-cost housing, as illustrated in the figures, within the blank albeit beautiful undulating landscape.

The mixed-use megaproject, and the research area in particular, as discussed earlier was developed outside of the engagement with the residents. The hydro-social Infrastructure in the precedent studies discussed developed through participatory engagement with the respective communities, strengthened and enriched the notion of a sustainable and integrated environment – this is however, not the case, an exercise in top-down rather than participatory planning (Sutherland et al, 2014). In an effort to discuss the hydro-social infrastructure, observations have been made of the planning at both a micro- and macro-scale, and what this can suggest towards the intended architectural typology, that of A Water Reclamation Plant for Cornubia, as an outcome of this dissertation.

Figure 44 reveals the Proposed Open Space Structure across the unique landform of undulating topography, wetland areas and floodplains, covering 28% of the total site area the proposed is an integrated network linking the existing wetlands, drainage of the intended urban irrigation system of flows and storage, ecological buffers, and new linkages for the Cornubia mixed-use megaproject development (Iyer, 2013:7-8).

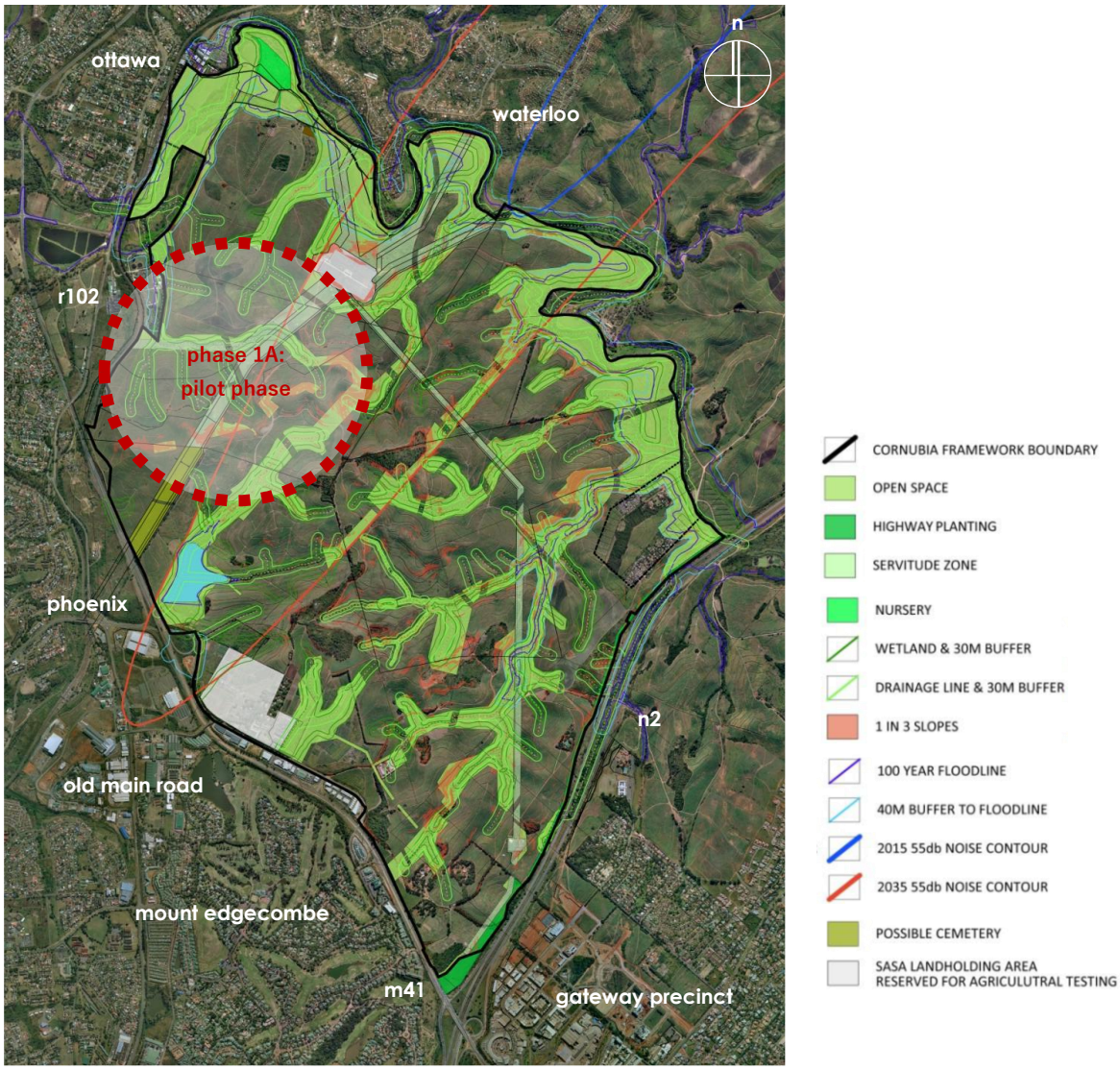


Figure 44: In relation, the Cornubia Phase 1 Proposed Open Space Structure and the Phase 1A: Pilot Phase Housing Settlement. Image Source: Adapted from Iyer, 2013 by author, 2016.

The proposed promises continuity of the natural habitat and recreational use and benefit, yet when observing the proximity of the housing settlement to the Open Space Structure, within the context of the planned development, there is little to no indication of connection.

The commodification of both water and public space as resources results in the socio-spatial divide illustrated in Figures x and x above, where the open space structure rather than integrating the varied land uses within the plan serve instead as buffers between them. Notions of integration and sustainability are made manifest superficially, perpetuating the socio-spatial inequalities that exist within our city spaces.

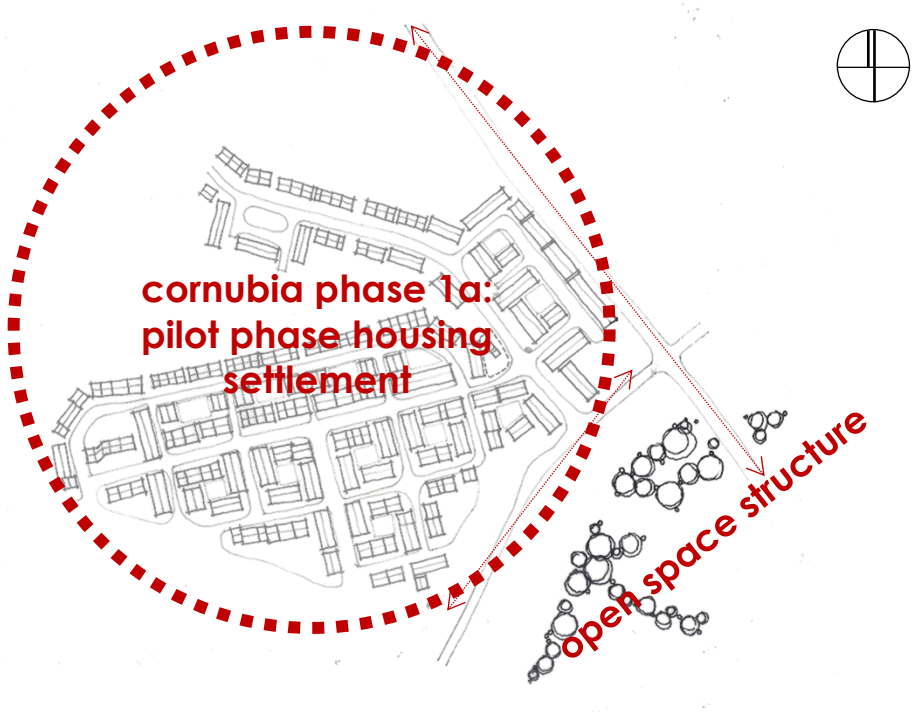


Figure 45: Integration? Image Source: Author, 2016.

As noted previously, the provision of housing within Cornubia has brought with it individual access to water within the individual houses, eradicating any previous issue with accessibility, whether it be distance related within a rural environment from dwelling to natural water source, or within an informal settlement where access to water is achieved by means of a communal standpipe. While the provision of water has removed the distance, quality and quantity related issues in accessing water, a divide still exists in this relationship. The provision of free basic water has provided women within the community access, but not a change in the way in which women are associated to water. The domestic nature has remained, keeping women at home to ensure that their roles as care-giver to their families are fulfilled.

What is observed on the ground is the everyday relationship that women have with water as a result of domesticity – that of cooking, cleaning and caring for their families all of which water is central to. The recognition of where this water comes from beyond the taps fitted to their kitchen sinks however, is severely lacking. The residents were conscious of the municipal supply of water to their homes, and that this supply might run out, but continued to use it without thinking of an alternative means of accessibility if this were to happen.

It is interesting to note that the hillside topography of the area and its proximity to the wetland areas in the adjacent open space structure has not led to a conscious collection of rainwater or any kind of grey water recycling within the case study area. The provision of water by the municipality serves all household needs – even those that could function through the use of grey water systems. The construction of the houses themselves do not have any rain water collection systems – the lack of rain water collection and topography has been expressed as major concerns by those of the community whose houses flank banks cut into the natural undulations and constructed without retaining walls – during heavy rainfall the houses flood and the opportunity to recycle and reuse this water is lost.

Unpacking the hydro-social within the case study area of Cornubia Phase 1A: Pilot Phase Housing Settlement can afford us the opportunity to make manifest a site for socio-spatial change through gender and water relations. Through the perspective of this dissertation, working with what exists, exploring the ways in which water relations exist and how they could occur within the area – through the social appropriation of commodified resources of both space and water – could make suggestions towards spatializing a socially responsive architecture.

4.2.3 Conscientising the everyday

It is noted early on in this dissertation that it is not the aim of the author to romanticise the day to day activities of the disenfranchised, that it is understood that these are survivalist tactics towards making a life within the city and are far from ideal. As such, this dissertation seeks to explore these tactics towards socio-spatial suggestions that can grant the residents of the disenfranchised community a right to dignity through the reimagined accessibility to water.

"Urbanizing Africans see cities as sites of opportunity, growth,and social and economic mobility. While there are risks and frustrations in these cities - as there are in cities throughout the world - those who choose to live there do so in hope of fulfilling their ambitions of personal development, escaping patriarchy, and accessing global networks…By grounding urban analysis in everyday lives, we come closer to understanding what the city means in people's lives and how urban actors in the margins and the centre contribute to its creation".

- Caroline Wanjiku Kihato, 2009.

While the right to housing and basic services is seemingly met by biophysical infrastructure,

the development planning of the implementation of the housing settlement without the provision of social infrastructure has led to the emergence of everyday practices to fill the gap that this has left. Edgar Pieterse's suggestion of transcending socio-spatial inequalities within the city through an operating system of cities as discussed within the theory and literature chapter stresses the importance of both biophysical infrastructure and social infrastructure – a nod to the extended thinking of Simone's people as infrastructure (Pieterse, 2014). Understanding the social infrastructure of people as described by Simone, Pieterse and Wanjiku-Kihato above is critical in achieving more equitable city spaces.

What is uncovered in the case study area is the number of ways in which people are seeking to define a dignified life for themselves within Cornubia. Using the relocation from various informal settlements within the eThekwini Municipality to the integrated human settlement as an opportunity to start afresh with more possibilities for themselves and their families (Real Consulting, 2015). What and how these everyday practices have materialised as within Cornubia is, as suggested by this research. a result of the spatial planning itself.

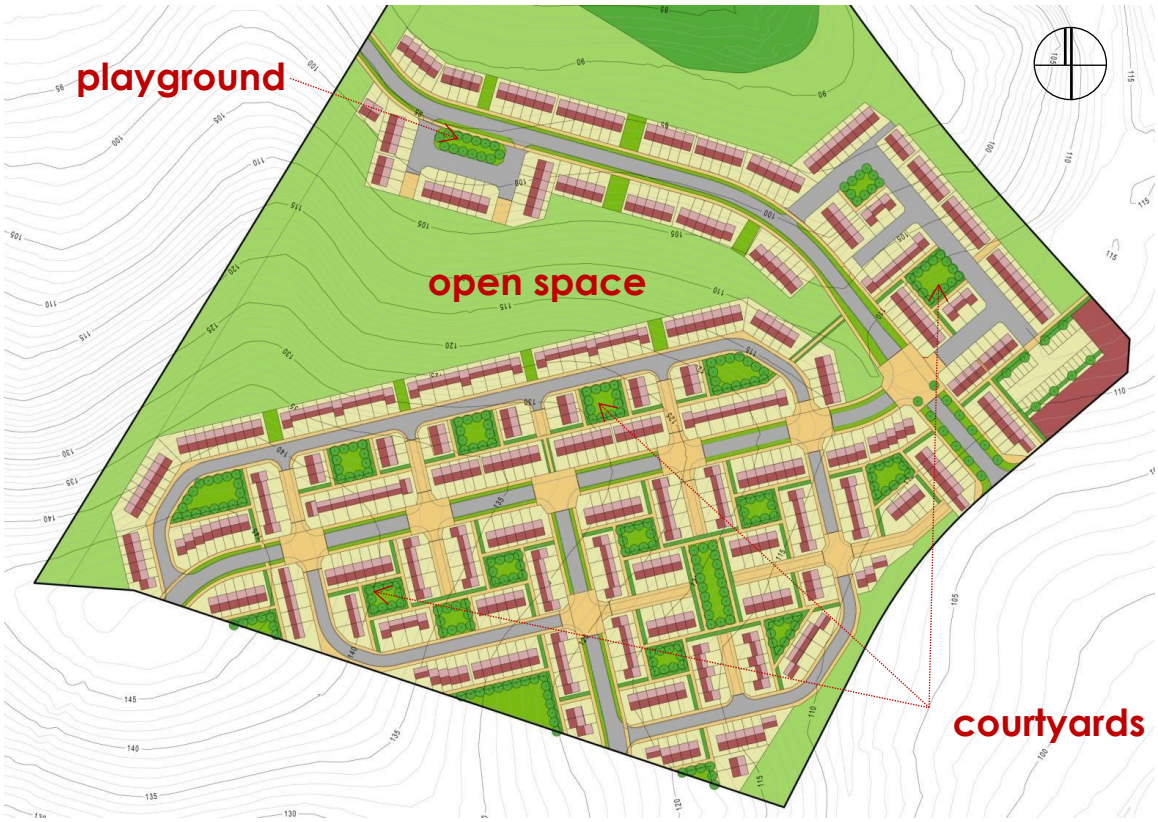


Figure 46: Cornubia Phase 1A: Pilot Phase Housing Settlement. Image Source: Adapted from Iyer, 2013 by author, 2016.

As indicated in the figure above, and discussed earlier, the housing settlement is designed with the intention of promoting a sense of community through walkability, housing clusters, defined streets and a series of courtyard structures (Iyer, 2013). Yet upon observation, the individual lots of houses are extended by their residents and the anonymity of open courtyards leave them unoccupied, bar the playground that sees smaller children engaging with the space, whether it be jumping rope in the quiet side street or taking turns on the jungle gyms.

Figure 47: Central courtyards planned as community gathering/public spaces, yet unoccupied. Image Source: Author, 2016.

Figure 48: Holidays spent on the playground. Image Source: Author, 2016.

The focus on building a sense of community within Cornubia has been planned, without the participation of those directly affected – the community itself. While granted the provision of safe and solid housing, the community of Cornubia Phase 1A: Pilot Phase Housing Settlement noted the following: concerns about living within a building site – safety, noise and dust pollution; concerns living a distance away from amenities and services such as schools, clinics and shops and without regular access to transport; and concerns about unemployment (Real Consulting, 2015:62).

	Beneficiaries in Sample study	**Male Beneficiaries**	**Female Beneficiaries**		
Population Sample	265	114	151		
Age	**Average Age**	**Ages 17-25**	**Ages 26 – 40**	**Ages 41 – 60**	**Ages 61 - 80**
	39	12%	49%	31%	8%
Gender	**Males**				
	43%	57%			
Race	**African**	**Indian**	**Coloured**		
	94%	5%	1%		
Education	**Nil**	**Primary**	**Secondary**	**Matric**	**Post matric**
	7%	20%	50%	6%	17%
Employment	**Unemployed**	**Employed**			
	72%	28%			
	Looking for jobs	**Looking for any job**	**Looking for semi-skilled jobs**	**In need of training**	
	85%	62%	7%	81%	
Income source	**Employment**	**None**	**Social grants**	**Self-employed**	**Other**
	16%	27%	29%	6%	22%?
Marriage	**Single**	**Married**	**Living with a partner**	**Divorced**	**Widowed**
	90%	8%	32%	1%	1%
Dependents	**Total**	**Below 18**	**Above 18**	**Male**	**Female**
	527	63%	37%	46%	54%

Figure 49: Socio-economic profiling of the residents. Image Source: Real Consulting, 2015.

The table above compiled in 2014 indicates the socio-economic profile of the community, depicting a majority female populace with alarming rates of unemployment, low standards of education, and high rates of dependency on minimal income sources. This

directly translates to the manifestation of the everyday practices of the community towards a dignified life within Cornubia as having an impact on the spatial planning.

Visually, these everyday practices manifest as vegetable gardens planted along the backyard spaces of the units by women wanting to ensure that their families are taken care of; negotiating a temporary primary school adjacent to the settlement while awaiting the formal schools; and through the spazas, uncovered as an integral network within Cornubia by a resident of the housing settlement, meeting the day to day needs of the community in isolation.

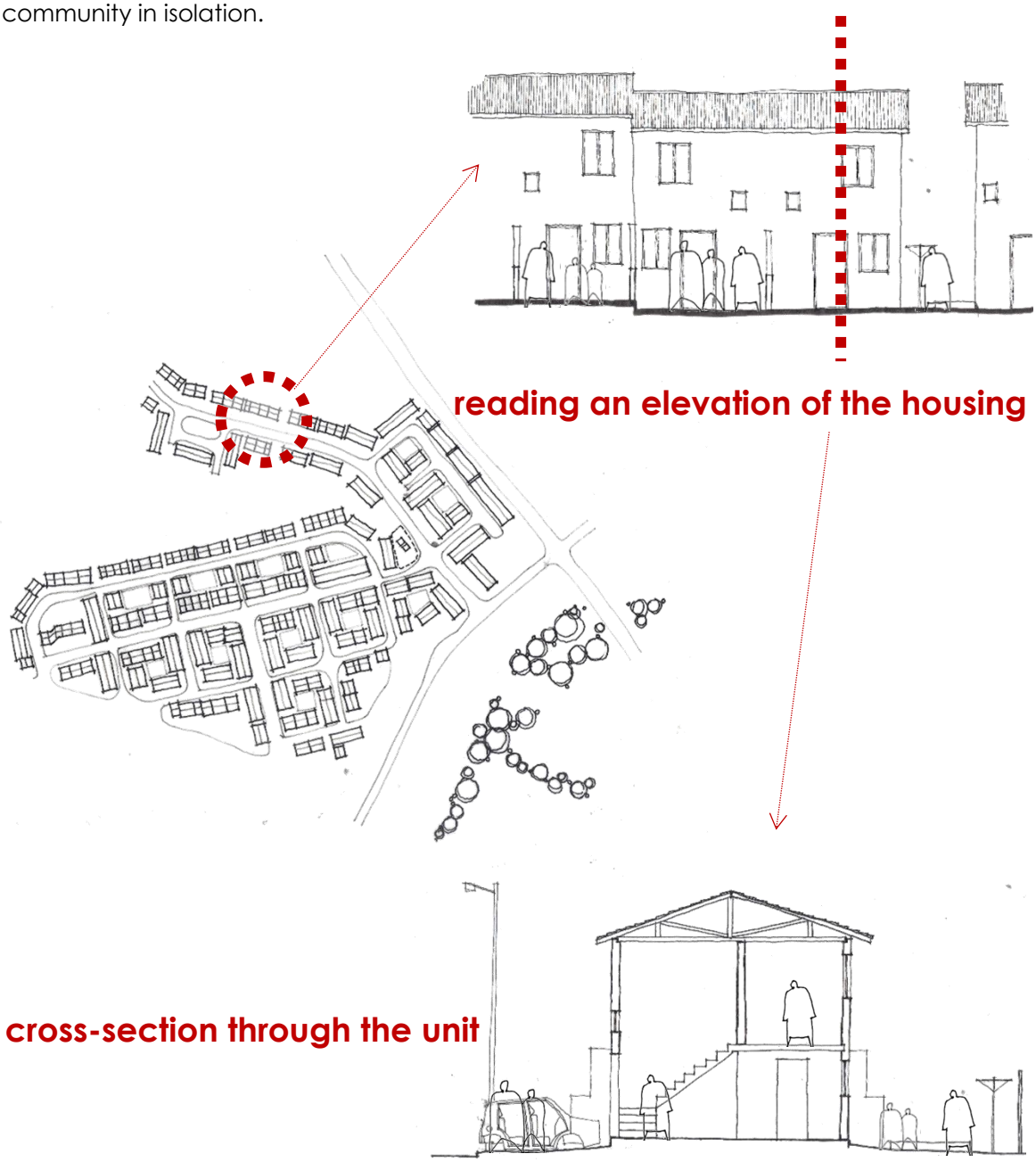


Figure 50: Getting to know the settlement. Image Source: Author, 2016.

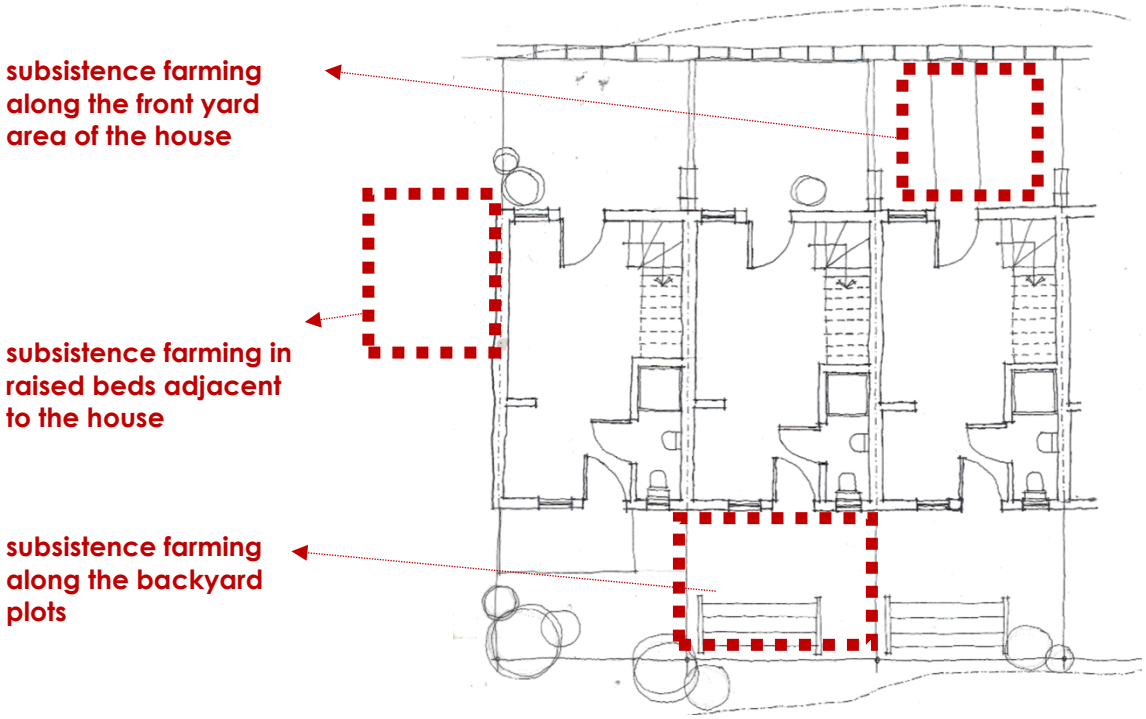


Figure 51: Manifestations of subsistence farming as occurring. Image Source: Author, 2016.

Figure 52: Growing a life. Image Source: Author, 2016.

The above depicts but one way in which small scale subsistence farming occurs within the case study area. Households occupy backyard spaces, frontyard spaces and open land adjacent to their homes to plant vegetables that would supplement their food supply for themselves and their families. This practice exemplifies the opportunities of occupying and appropriating otherwise anonymous spaces towards the everyday life of the community.

Figure 53: Making use of the seemingly inaccessible open green spaces. Image Source: Author, 2016.

As described earlier, the pilot phase sits in isolation within the greater context of the development, and as a result, temporary means have been made to address some aspects of this. Employment within the development itself – mostly construction and temporary public works in the maintenance and upkeep of the public spaces have been provided, along with a temporary primary school, erected using prefabricated containers in an open space adjacent to the settlement to accommodate the needs of the community until the formal schools are built.

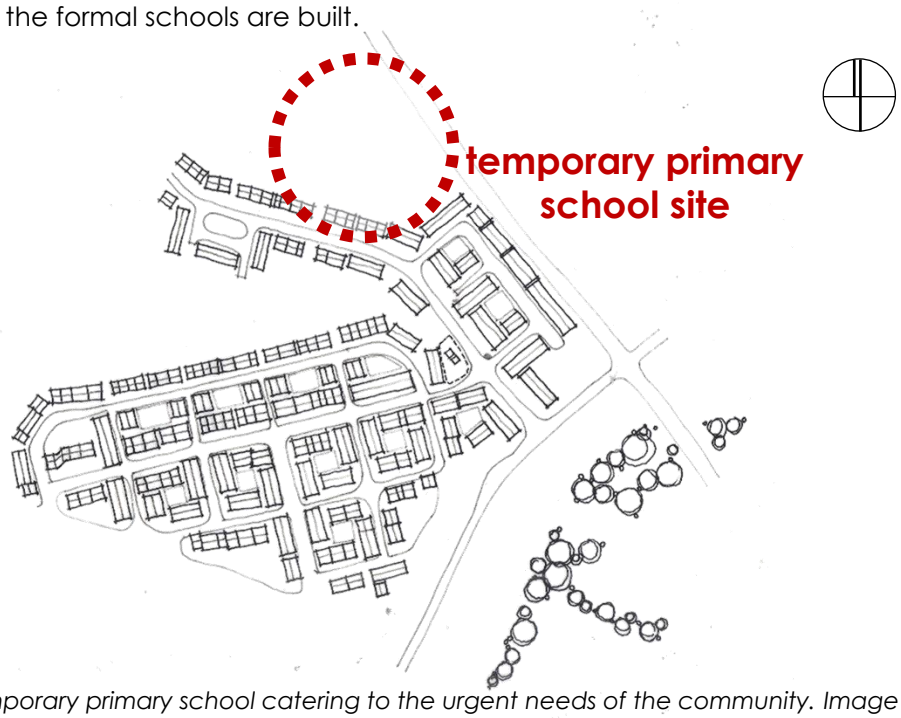


Figure 54: Temporary primary school catering to the urgent needs of the community. Image Source: Author, 2016.

Figure 55: Negotiating the everyday, a crèche in one of the unused containers of the temporary school structure. Image Source: Author, 2016.

The spaza network, as revealed to dala by a resident through a spatial mapping exercise within the settlement, is a critical component of the everyday life. Spaza owners, both as a continued practice from their previous places of residence and as a new start-up opportunity towards making a life here in Cornubia, sell basic goods to the community using what is there, and exemplifying their claim to a right to a dignified life.

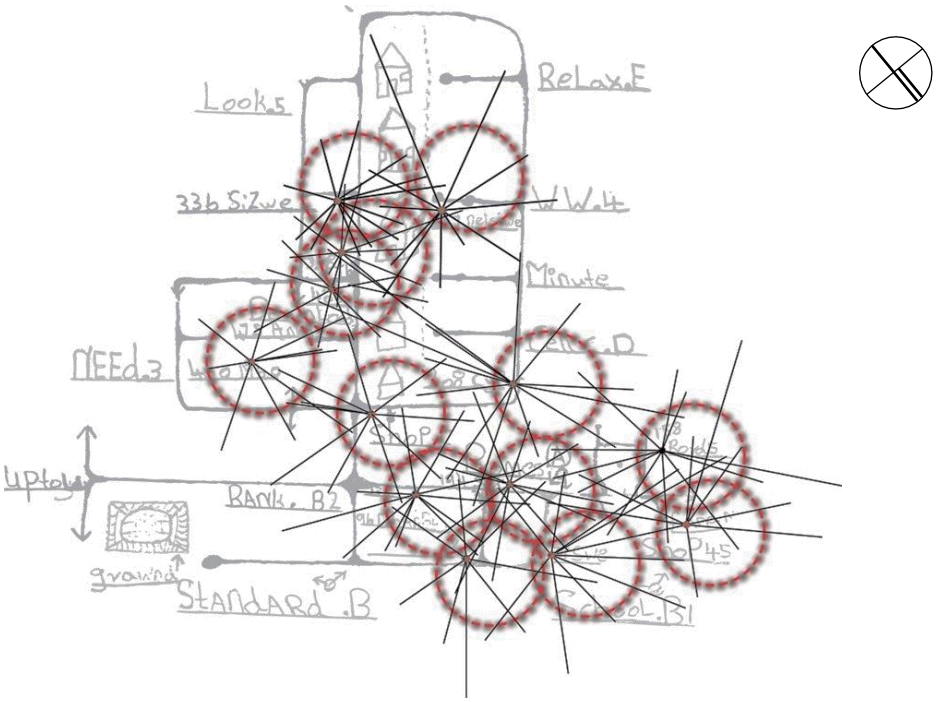


Figure 56: Mapping the spaza network across the Cornubia Phase 1A: Pilot Phase Housing Settlement. Image Source: Jahangeer, 2016.

Figure 57: Through the window, F and M spaza at house 45. Image Source: Jahangeer, 2016.

The row houses are transformed internally, sacrificing living space for a way to make a living when there is no other. As depicted in the spaza network image above, the spazas occur as almost the epicentre of smaller radii within the settlement, defining other ways of building a community through particular engagement, through the window of the spaza.

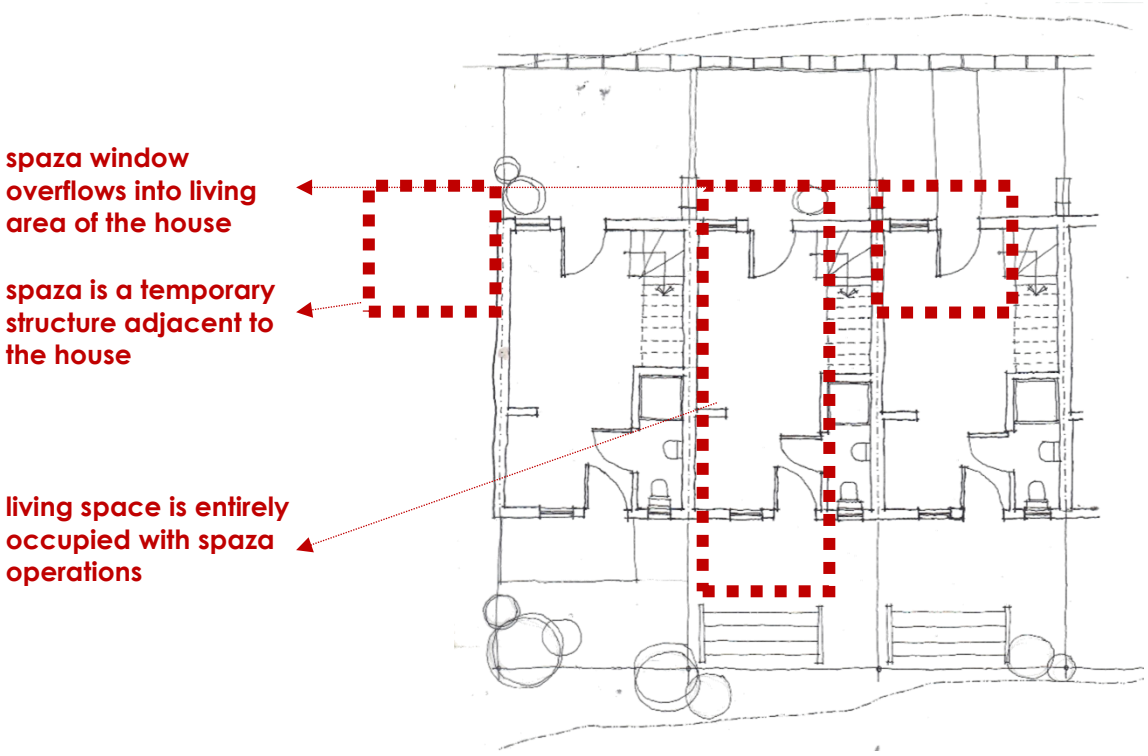


Figure 58: Varying manifestations of the "upgrades" of the spaza. Image Source: Author, 2016.

The discussion around the conscientisation of the everyday practice of the residents reveal that despite their relocated status, their struggle not just for livelihood generation but for a dignified life within the city through the day to day networks and negotiations that are intrinsic to the making of their spaces is shared.

4.2.4 Visualising the right to dignity

Figure 59: En route to Cornubia, a place of new hope. Image Source: Jahangeer, 2016.

The engagement with doung Anwar Jahangeer and his organisation, dala, who have been actively engaged within the case study area, has been of particular benefit to this dissertation in understanding the everyday practices of the community as not just a response to addressing their needs, but also one in response to aspirations. This thinking affirms their everyday practices as a claim to citizenship rights – a right to a dignified life within Cornubia and the city.

Towards the intention of this dissertation, to reveal the subject of gender and water relations as bearing the potential for the reimagining of gendered spatial boundaries, the conscientisation of these everyday practices as an exercising of rights is unpacked.

As previously noted as a concern from the community is the housing settlement in isolation, without the provision of accessible amenities and services, the everyday response to this lack has resulted in the manifestation of a spaza network operating through the formal housing structures to address the lack of basic goods; a temporary school that responds to the temporal needs of the community; as well as a series of participatory engagement events that make suggestion towards not just a house, but a dignified home and way of life.

Through exploring the spaza network, the ways in which spaza owners have adapted their homes to accommodate their businesses, at once catering to the community and creating a type of livelihood generation, and how this seemingly unseen practice forms a critical spine to the daily life within Cornubia defines desire lines of both the individual spaza owners and their customers (Murray, 2007). As discussed within chapter two, these desire lines sit between the rigid top-down planning and the informal, a key spatial suggestion towards the intended architectural typology of A Water Reclamation Plant for Cornubia.

Within Cornubia Phase 1A: Pilot Phase Housing Settlement, the spaza network illustrated in Figure 56, as one of the unseen networks that dala engaged with in order to facilitate a paradigm shift for both the community and those outside of it, saw dialogue, participation and small scale interventions through *amatuckshop*, an art/architecture event facilitated by dala as validating their claim to citizenship rights as well as their role within this new community. The spazas were documented, their windows decorated with brightly painted, ornate plaster mouldings, signifying the point of interaction at the spaza, the epicentre of community activity.

Figure 60: Revealing the spaza network through ama tuckshop. Image Source: Jahangeer, 2016.

The *pheshana*, a community newsletter facilitated by dala with the community solidified their presence with its first issue, distributed door to door within the case study area celebrating the seemingly mundane towards building a sense of community.

pheshana

issue no.1

the spaza affect

definition: spaza *noun* (South Africa) a small unofficial store in a township, often in a private house.
ORIGIN township slang, literally ***'camouflaged'***, of unknown origin.

Between 2010 and 2012 the Sustainable Livelihood's foundation's **Formalising Informal Micro Entreprises** (FIME) project conducted primary research in South Africa's informal economy. Over 6000 micro-enterprises in nine localities were surveyed covering an estimated population of 50.000 households. Over the many micro-enterprises they encountered during the extensive field work process, their findings showed that the most prominent business types is the grocery retailers. This includes **spaza shops**, **tuck shops** and **house shops**.
Spaza shops are essentially micro-convinience stores which operates in township residential areas, selling groceries,bread,cool drinks, sweets and cigarettes. Spaza shops can be distinguished from tuck shops and house shops from their business turnover, characteristic and distinctive branding and business operation. Spaza shops typically trade seven days a week and orperate from early morning to until about 10pm.**Tuck shops** and **house shops** sell a significantly smaller range of goods, have no branding and tend to operate less frequently.
The FIME has shown that each business operates in a localised area, providing a service to residents in the immediate vicinity of the shop.

picture above : The spaza-de-move-on design winner of the design matata award for innovative street trading solutions

announcements

- The Drama & Performance Studies of the UKZN will be running a 4 weeks drama workshop with Grade 6 & 7 of the Solomon Mahlangu Primary School (Cornubia)
- dala NPO will be running art workshops with Grade 1-5 in parallel with the Drama workshops.
- Mthabisi Phili, an artist from Zimbabwe is coming to work with Spaza owners to raise awareness about the Spaza culture. Spaza and Tuck shops owners are encouraged to participate.
- Projection of Popeye movies on Friday the 23rd October in front of F&M Spaza house 45
- If you want to place an announcement here pse contact the Editor Bantu Maluga from house 156 or on 0747255758.
- Should we have a Cornubia FaceBook page? Lets us know your thoughts!

South African **spaza**,**tuck shops** and **house shops** are practices that emerged from a long background of stoic survival in oppressive circumstances. These businesses have historically considered illegal and even today there are legal uncertanties on zoning and land use. Informal micro enterprises is an innitiave easy to get into therefore enabling women and unemployed persons to open shops within their homes. With the advent of pilot housing programs like the Cornubia Housing Project in eThhekwini and Cosmos City (north west of Johannesgerg) where the majority of the residents have been relocated from surrounding townships, there is a distinct migration of the ***spaza culture*** into the new developments from the respective townships. It would appear that the spaza culture within the marginalised poor, over the years, has become a ***cultural practice*** within the townships of South Africa as much as an economic one.

They are open long hours as the businesses serve residents throughout the day, both before and after hours. Trading occurs between the hours of 6 am and 10pm and key feature of the trade that allow these businesses to survive is the limited price competition between businesses.With shop-keepers agreeing, through informal rule making, to maintain prices at floor level sufficient to guarantee profitability for all stakeholders.Perhaps the time has come to pursue a deeper appreciation of cultural identities and dynamics that play out in the lived realities of daily life and identify symbolic socio-economic manifestations which could be nurtured in prerequisites for more appropriate urban transformations. It is improtant to value the importance and ability of grassroots projects as invaluable sites of experimentation with alternative ways of doing development where creativity, learning and innovation can play a big role.

" i am my spaza , it's not seperate from me"

Cornubia tuck shop owner

next issue on **15th November**

Pheshana people: **Bantu malunga** (editor), **doung Anwar Jahangeer** (text, design & layout), **Paulo Menezes** (Photography & editorial assistant), Spaza and Tuck Shop owners (distributers)

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Figure 61: The spaza effect, as reported by the pheshana, of and by the community. Image Source: Jahangeer, 2016.

The temporary primary school as discussed earlier, served the community with a safe place for their children to be educated in close proximity to their homes, while older children travelled to high schools in the neighbouring areas. The donated prefabricated containers in the round defined a place of learning, a place of possibility for the children within the city.

Here, despite the temporary nature of the structure, was already defined as a place of belonging for the children of the community – beyond their temporal occupation of the streets, jumping rope and racing barefoot while relatives looked on from their front yards – and dala's role was exploring this same sense of belonging at the scale of the settlement. Through a participatory project entitled *a place called home,* dala channelled the arts as a means to allow the children to express their rights to dignity. Participating in the exercise that made up an exhibition at the event – architecture as event was able to make manifest this simple right to dignity.

Figure 62: Drawing home. Image Source: Jahangeer, 2016.

Outside of the exercise, affording the children their own right to participate and belong within Cornubia despite its planning creating a place of isolation for the community, the temporary school served to connect the community, its fence physically flanking the backyards of some of the houses, and its service to the community solidifying that connection. The *pheshana* again detailed the event with the children, making news of building the community. One way that this has extended is the understanding of the school's administration of the varying needs of the community that have not otherwise been provided for.

Figure 63: Exercising their right to dance…I mean dignity. Image Source: Jahangeer, 2016.

Without the formalised social clusters as per the greater development framework depicted earlier, the community have, for the most part, developed a strategy of making do as making their lives within the area. Their everyday made manifest through the unseen networks, while fine grain walkable planning and open courtyards intended to build a sense of community simply do not meet their needs, the negotiations made between them do.

The school administration, in discussion with community leaders agreed to let unused containers be used by community members to provide other much needed services. During the week, two community members run a crèche, allowing for small children to have a safe place to learn, play and participate while their parents or guardians are out at work. And over weekends the containers are once again transformed into places of worship, providing a community service to the case study area in the form of prefabricated containers. This simple negotiation between key role players allows for a spatio-temporal understanding of community spaces.

Figure 64: Prefabricated possibilities. Image Source: Jahangeer, 2016.

The theme of spatio-temporal understanding ranges beyond the houses and the containers within the school property in the case study area and spreads into the spaces between. The streets within this walkable environment offer the most interaction between the residents of the community. The streets are the connectors, both internally and externally to this isolated community. It is fitting then that the streets themselves are explored as active public spaces, able to take on a new role much like the house as the

spaza, or the school as the church. The street becomes the cinema in night screenings that project movies ranging from *Sarafina!* to *Shark Tale* based on requests given to dala by the community members. The anonymous blank walls of the row houses and pavements provide a gathering like no other within the case study area. An appropriation for recreational activity otherwise not thought of as critical to the housing settlement.

Figure 65: Negotiating the everyday, a crèche in one of the unused containers of the temporary school structure. Image Source: Author, 2016.

Figure 66: Occupying public space during a screening held. Image Source: Author, 2016.

4.3 Conclusion

The observations made within the case study area, that of the research area of Cornubia Phase 1A: Pilot Phase Housing Settlement itself, has been critical towards the intentions of this dissertation - to reveal the subject of gender and water relations as bearing the potential for the reimagining of gendered spatial boundaries within its context.

As noted previously, the assistance of dala in initiating contact with the community leaders and providing support with the planning and execution of their own interventions within the area has proven to be of the utmost benefit to this research. Through the establishment of contact, the otherwise unseen and weary community revealed their day to day existence, their engagement with the space; the makings of their lives within the space as a new opportunity; as well as the ways in which these makings define a sense of belonging and a desire for participating within the city.

The themed conversation as continued from the precedent studies, ties the on-site observations to the theoretical framework as illustrated in chapters one and two of this dissertation, connecting and continuing a strand of thought that results in a possibility towards addressing the research problem.

The previous deconstructing of the subject of gender and water relations, has afforded an understanding of the interrelated nature of society – one that recognises those previously disregarded and as a result accommodates for all – and space, and how both of these constructs are viewed and can be reimagined towards more equitable spaces. Learning from the case study area, the intention of working with what exists within the development framework for Cornubia is ever more pertinent in addressing the socio-spatial inequalities.

Within this context, the everyday unseen infrastructures made and remade by people as they strive to stake their claim to citizenship rights has clear spatial suggestion supporting the aim of this dissertation in exploring the possibility of gender and water relations towards a more socially responsive architecture.

CHAPTER FIVE | PRESENTATION OF DATA AND ANALYSIS

Figure 67: House//home. Image Source: Author,2016.

5.1 Introduction

A presentation of the data collected and analysed through the methods defined within Chapter One of this dissertation, is provided within this chapter. The intention here is to continue the themed discussion, through those themes generated by the unpacking of the theoretical framework as noted within the theory and literature, precedent studies and case study as well as to address the key research questions.

The aim of this chapter is to develop an holistic understanding of gender and water relations as both a paradox and a possibility within commodified landscapes through an interweaving and critical analysis of the various data collected across the research materials and methodologies, allowing the discussion to come full circle towards generating recommendations to conceptualise A Water Reclamation Plant for Cornubia as a retrofit of socially responsive architecture within the housing settlement.

5.2 Hydro-social Infrastructure

Figure 68: A glimpse of the indoors. Image Source: Jahangeer, 2016.

Figure 69: Living and working spaces, illustrating the manifestation of domesticity within Cornubia. Image Source: Jahangeer, 2016.

Figure 70: Zooming into domesticity – items that make it a home, items that keep it that way. Image Source: Jahangeer, 2016.

The hydro-social has been discussed throughout this research as an opportunity to address socio-spatial inequalities through the very physical integration of society and water, and the metaphysical role in which women have to play in society wherein water is central. Both of these strands have been discussed within the research, affirming the social construct of gendered identities and their responding places as being open to a reimagining that sees gender and water relations as both paradox and possibility; and within the context of the Cornubia development framework, working with what exists and making suggestion towards what can be when the making of spaces are actively participated in by those directly affected.

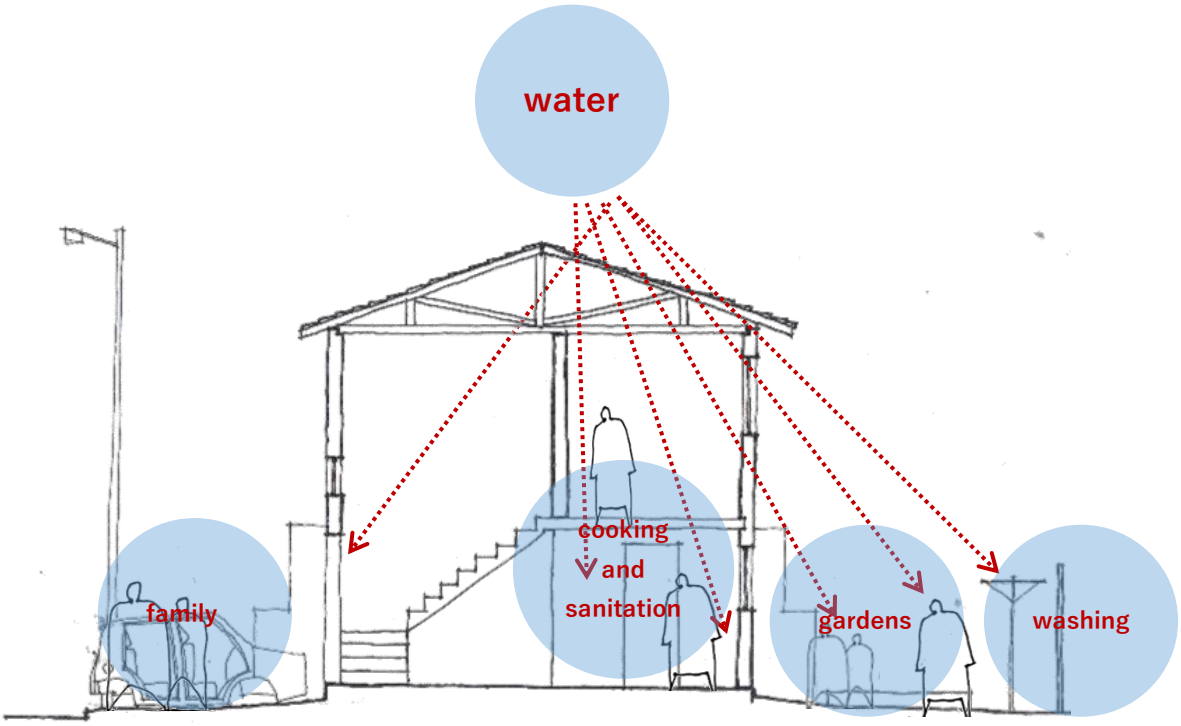


Figure 71: Water as central to the home. Image Source: Author, 2016.

The successes of the megaproject in delivering housing and providing opportunities for the community of Cornubia Phase 1A: Pilot Phase Housing Settlement have not gone unnoticed, the very urgent need to respond to the rapid urbanisation that the city of Durban, as many other cities across both the global north and south, is undergoing calls for such large scale solutions. This process of master planning, as noted throughout the literature, cannot function without the consideration of those affected. As noted within the case study, the response to the delivery of housing has been overwhelming, yet it is the smaller networks that define the place - particularly when that place is devoid of other services and amenities as is the case with the case study area.

"It's quite an interesting challenge, within the context of "delivery" that they are in, delivery of houses, delivery of water…any water source that isn't fresh, clean water out of the tap is seen as inferior. I would wonder how the residents would feel about accessing grey water, perhaps, or the conceptions of sanitation and electricity now that they have moved from an informal accessibility or standpipes. The access through a tap in their houses is an affirmation of finally being up to standard, and what does this do to the thinking behind water reclamation."

- Catherine Sutherland, 2016.

Given the current context of water shortages both globally and within our city, the need for greater awareness and opportunities to use rain water harvesting and water reclamation processes is vital to the responsible use and right to a sustained access to water, the response from the community itself has been somewhat divided.

The lack of understanding of what water is and how water is made; paired with the dependency on the water provided removes the distance related inequalities around the access and management of water as a resource, but has not moved beyond these physical aspects to one that can facilitate social change through the way in which water is accessed and managed. This reconceptualization of water that is promoted by both Catherine Sutherland, and the literature indicates a possibility for retrofitting sensibilities around the right to have access to water within the Cornubia Phase 1A: Pilot Phase Housing Settlement.

"People in general are so distant from water – the commodification of resources as a result of capitalism has revoked our feel for the environment, our feel for water. The residents of Cornubia here are victims of this too, being taken one step further from the reality of water."

- Catherine Sutherland, 2016.

Through the observations made in the case study area over the period of this research and through the interviews held with the sample, the women of the Cornubia Phase 1A: Pilot Phase Housing Settlement, what has become apparent are these smaller networks – the way in which the women, and the greater community have found ways of remaking their lives within the space. Towards addressing the topic of this dissertation, that of gender and water relations within the commodified landscape, understanding water as central to the home and this remaking is critical in the understanding of the topic as both a

paradox and possibility for reimagining their spatial boundaries.

"*…it's hard for a girl here…*"

- One of the women within the sample, 2016.

This thinking is materialised at varying scales, affording a number of possibilities to the way in which the proposed architectural intervention of A Water Reclamation Plant for Cornubia can occur.

"*We need to reconnect with the systems of how things work, and then address our ideas of accessibility.*"

- Catherine Sutherland, 2016.

Working off the very physical lack of rain water collection systems as noted within the case study, retrofitting sensibilities around rain water collection and then using this reclaimed water to address issues of domesticity and gendered segregation becomes a possibility for socially responsive architecture. Had the housing settlement been designed with the wanting to impart the reconnect that Catherine Sutherland refers to, perhaps the socio-spatial inequalities encountered, particularly by the women residents of the community, could have been avoided. The framework for using hydro-social infrastructure as defined within the theory and literature of this dissertation made manifest within the case study area as one possibility towards addressing the apparent inequalities that the community faces.

5.3 Conscientising the everyday

Domesticity and the everyday are critical components in understanding urban theory, they develop a series of unpredictable and interesting possibilities that can be explored (Wanjiku-Kihato, 2009). Throughout this dissertation, gender roles and their determinate places have revealed a possibility for addressing the socio-spatial inequalities that we face within our city, and within the megaproject of Cornubia. The unpacking of gender and water relations within the context of Cornubia is intrinsically linked to the everyday – how and why these everyday practices occur within the research area has been discussed within the case study, making manifest the theoretical musings of De Certeau, Collie et al as defined within chapter two.

Within Cornubia, it goes without saying that conscientising the everyday is pertinent to addressing the socio-spatial inequalities that exist – of the past and those exacerbated by the development itself.

"The urban poor are going to have their own agency, they are going to adapt things, the mundane forms of resistance - the everyday shifting and changing of the way things work to make things work."

- Catherine Sutherland, 2016.

The mundane, as the everyday practices – the unseen networks, the negotiations, the social infrastructure that provides important function to the community of the Cornubia Phase 1A: Pilot Phase Housing Settlement – as noted by Catherine Sutherland within our interview is clearly illustrated. The notion of making and remaking their lives, their opportunity at a new life within the city is revealed to be of particular relevance to the place itself and how it unfolds concurrent to the greater development of the megaproject. This manifestation of otherness can serve to provide spatial suggestions towards addressing the research problem – conscientising the everyday and accommodating for its temporal and dynamic nature.

"The spaza network within Cornubia is something else. Anywhere else, it'd be like a loose, headless chicken running around, but there, in Cornubia it is specific and well-constructed. People decided to activate the spazas and brings out a different kind of language or movement, and this brought out the potential of the spazas, as more than just the sellers of small stuffs, but its potential in making in Cornubia."

- doung Anwar Jahangeer, 2016.

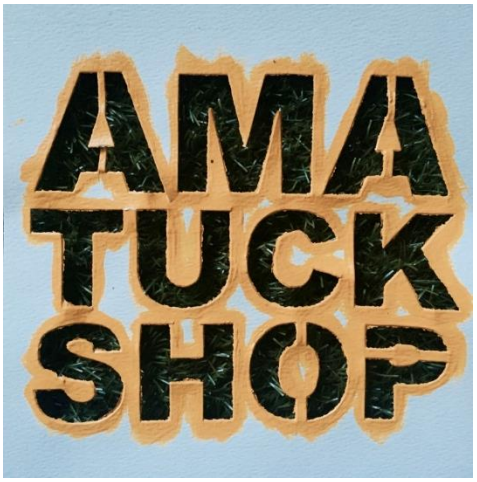


Figure 72: Cultural creativity of the mundane. Image Source: Jahangeer, 2016.

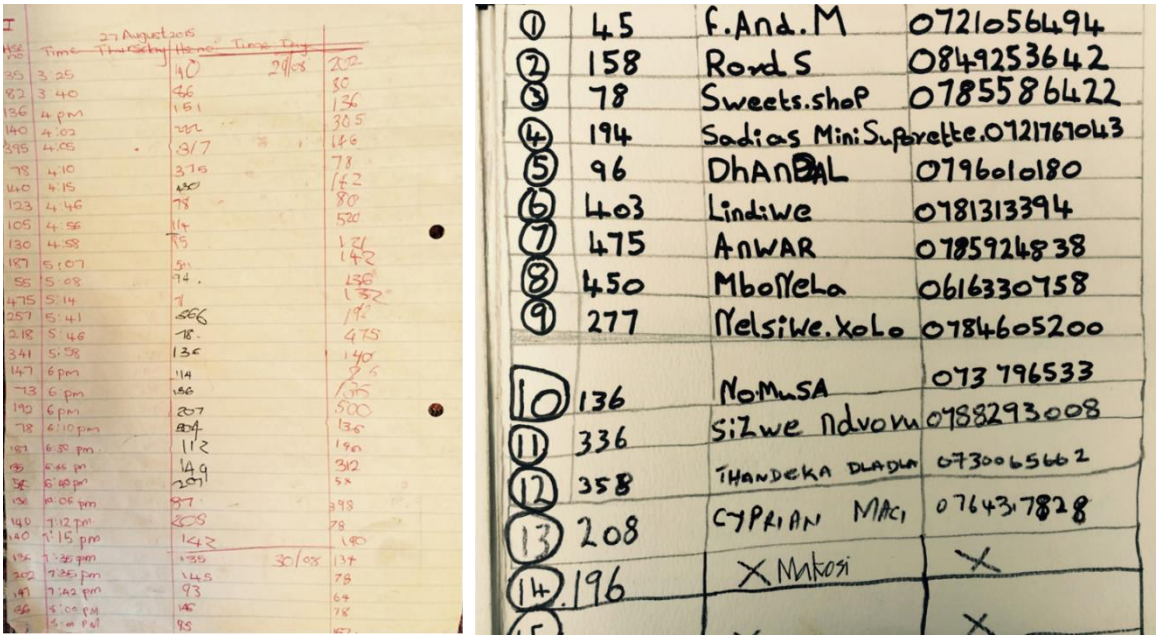


Figure 73: A collision of private and public. Image Source: Jahangeer, 2016.

"…the spazas, the tuck shops and house shops could be considered as sites of interface where the segregation of public and private spaces can be deconstructed into positive socio-economic processes and agents of social change in their own rights."

- doung Anwar Jahangeer, 2016.

Jahangeer references Wanjiku-Kihato in the discussion of the everyday activities that occur in our homes as having an urban impact – and the translation of this on the ground within Cornubia through the way in which women work within the domestic realm, accessing water, caring for their families, and developing the spazas is immediately noted. These mundane acts of resistance become key areas through which to develop the proposed Water Reclamation Plant for Cornubia.

As a continuation of the spatial mapping illustrated in figure 56, within figure 73, we see the number of customers that visit the spazas on an average day within the housing settlement. Looking at the volumes of people, the volumes of opportunity of defining relationships, it is hard not to see the collision of public and private space through women's everyday activities.

The extended intervention of *amatuckshop* by dala saw the physical installation of disassembled gazebo structures, much like those normally used by informal traders to

demarcate their stalls, being installed at the windows of the spazas in Cornubia Phase 1A: Pilot Phase Housing Settlement. These mangled metal sections represented the crossing interactions of the engagement in 3d at the spaza window – and throughout the case study observations, these interactions however brief showed glints of a sense of community. The smiles between spaza owner and customer and questions about their respective families extended the nature of the interaction as more than just a service rendered.

"…my daughter wasn't employed when we moved here, and although she is educated, she couldn't find a job so she started this business and now her spaza is a part of our home, it's a part of me now, you know? We all work to keep it running, it is a new chance for our family here in Cornubia…maybe she will get another chance for a job, but our spaza will keep going."

- One of the women within the sample, 2016.

The role of domesticity within the case study area is impossible to miss. Men are a rarity on the streets throughout the week, while women spend their days behind the windows of their spazas, minding the children as they water their vegetable gardens inspecting the options of what will meet the dinner table, or conversing with their neighbours while hanging washing out to dry. The organic extension of these home-based activities out onto the common areas of the pavements and streets define the realm of women within Cornubia stretching between private and public to accommodate their roles and responsibilities.

dala's continued engagement within the case study area is towards building not just a sense of community but one that is able to adopt a sustainable life of its own beyond the intervention. There exists an understanding that participation is not simply about the inclusion of community members by the government into forums, but rather that participation provides the platform for the community itself to mobilise their claim and bring that to table as an equal role player in the process (Hamdi, 2014).

Hamdi notes that participatory practice is fundamental to building community and social economy and expanding on the opportunities of freedom and choice – the interventions of dala towards conscientising the everyday first within the community itself, and then allowing for that understanding to permeate the way space is made and again remade is indicative of this.

Figure 74: Soft infrastructure becomes hard. Image Source: Jahangeer, 2016.

5.4 Visualising the right to dignity

The observations of children playing in the street, their easy transitions between spaces show a carefree appropriation of space – the pavements and streets come to life by means of chalk drawings and a variety of games. The appropriation of space for their temporal activity is far more fluid than that of the spaza network for example, whose existence deemed illegal within Cornubia has manifested as an unseen network – you need to be in the know.

"*…my conversations with the spaza owners who always spoke themselves of how they are victimised and threatened by the system, constantly reminded that this, their livelihoods, their every day, is illegal. And it is more than just a source of income, it is a source of education for their kids, so much more that we cannot focus on here. But for me, this idea of their lives as an illegality, was just unjust. For me it became more about this, the tension that lies between the reality of what and how much the third economy does for the country, and on the other hand how much they are victimised.*"

- doung Anwar Jahangeer, 2016.

Figure 75: Appropriating public space, or just jumping rope? Image Source: Author, 2016

The making manifest of one of the everyday practices that exist within Cornubia as a catalyst for others to stake their claim to dignity. What the observations through the case study, discussions held with the community and the interview and extended conversations with doung Anwar Jahangeer have revealed are that these everyday practices are far more than what meets the eye. As defined within the theory and literature of this dissertation, the everyday practices are the manifestations of the relationship between the *bricoleur* and the city being made and remade day after day (De Certeau, 1984). Within the research area, we find much the same, the everyday practices personalised by those participating within it towards an end that goes beyond livelihood generation, but rather one that has taken the opportunity of a new life in Cornubia to stake a claim to the right to dignity.

The research problem expresses the existence of the phenomena of gender and water relations within a particular context – a commodified landscape – and the literature has revealed the megaproject to be one such landscape (Sutherland et al, 2013 and Turok, 2015). Through the discussion held around the definition of the counter to this, of public as accessibility by means of recognising these claims to citizenship rights, the intention of this dissertation is supported – specifying a right to dignity by means of conscientising these everyday practices (Cruz, 2013).

"Totally agree with [Teddy Cruz's reference to move away from 'the neutrality of the public towards the specificity of rights'] …I think that if we remain within this system that we so delicately are trying to preserve (as architects) we are never going to be able to do that. In order for it to happen, we need to understand that this organism doesn't require the system to survive, nor does it require its validation for what it is…the truth is that these cultural practices are so much more intelligent and mature."

- doung Anwar Jahangeer, 2016.

With a wanting to not romanticise the everyday practices of the disenfranchised, but recognise that their tactics are survivalist working within what is accessible to them, the very human element of their practice as at once responding to both their needs and aspirations of a better life for themselves and their families signify the potential of understanding and validation of these networks towards any kind of intervention within the area in order for it to be successful – an endeavour outside of the wanting of the architect, and one left completely at the will of the community.

"*… it cannot without changing, it needs to lose control and learn from the simplistic ways of how this self-sustaining system works – outside of capitalism. It is like a powerful mutation."*

- doung Anwar Jahangeer, 2016.

Visualising the right to dignity within the housing settlement throughout this research and observations made within the case study, has revealed itself as an opportunity for participation with the community, who within their isolated environment appear unseen from the outside world. This opportunity for participation, while not afforded through the initial design, development and roll-out of the housing settlement still exists as an opportunity to create a dignified life through retrofitting needs and aspirations that can change the nature of the housing settlement from that of a space to a place.

"*Well, from dala's perspective, the main purpose was to develop a manual. A manual that would expose a qualitative process that could accompany the quantitative initiative of this housing project. Its constantly shifting, though. "*

- doung Anwar Jahangeer, 2016.

5.5 Conclusion

Masihambisane, an extended method of "walking together" has revealed in many ways more than just data, but insight to the way in which the lives of the relocated community of Cornubia Phase 1A: Pilot Phase Housing Settlement are made and remade within this blank slate. As defined by many of the residents when engaged in conversation, the acute awareness of this blank slate has afforded a richness to the practices that they undertake – their perceptions of this isolated reality.

"In fact, architecture as the autonomous thing is wasting its time there, unless there is a change of what is our preconceived notion of architecture we will not be able to plug in to it."

- doung Anwar Jahangeer, 2016.

Through architecture as dialogue, the research area and its community have unpacked the realities of the place, revealing the relationships between themselves and the place; through architecture as event, the potential of catalysing change through small scale interventions that validate and celebrate the way in which the community itself has sought to define their lives within the area; and through architecture as participation, making suggestion toward the possibilities of the place through engagement from all relevant role players. This method of engagement has afforded a richer appreciation and understanding of the relationships between people and place, and the possibilities of reimagining these constructs towards more equitable spaces through the paradox and possibility of gender water relations.

CHAPTER SIX | RECOMMENDATIONS

Figure 76: Appropriating the paradox. Image Source: Author,2016.

6.1 Addressing the data

"What is participation? It is responsibility with authority in partnership with other stakeholders. 'Responsibility' because with rights come responsibilities, and because it is fundamental to efficient work; 'authority' because inevitably the strategic agenda of power-sharing; and 'in partnership' because participation without partnership is meaningless."

- Nabeel Hamdi, 2014.

The research and analysis that has been carried out have had the intention of drawing conclusions and recommendations relevant to the research problem, *The paradox of gender and water relations within commodified landscapes,* specifically, through the exploration of such a problem within Cornubia. Illustrating the reality of the megaproject approach that sought to create an integrated human settlement to address the socio-spatial inequalities of Apartheid planning, yet as a result of isolated land use management planning and a lack of participation only perpetuated these inequalities on the ground.

The following recommendations seek to address the findings of the preceding research in an attempt to define design principles that can be used to propose A Water Reclamation Plant for Cornubia as a retrofit of socially responsive architecture within the housing settlement.

6.2 Recommendations

Now that the need for a retrofitting of water-based infrastructure within the Cornubia Phase 1A: Pilot Phase Housing Settlement has been identified through the unpacking of gender and water relations, how can it be used to collect, reclaim and harvest water towards social, environmental and economic gain?

Revelations of home-based practices by women not employed formally had been noted within the case study; how they adapted their homes, appropriated space, and used what was available to them to supplement their lives in the city. The opportunity exists to use the Water Reclamation Plant towards this end; recognising that these practices other to the formal environment occur; that they occur on smaller scales throughout the housing settlement; that they are not just as a response to a physical lacking, but towards

aspirations and claiming a right to dignity; and that dialogue can participation serve as vital tools towards a project of this nature.

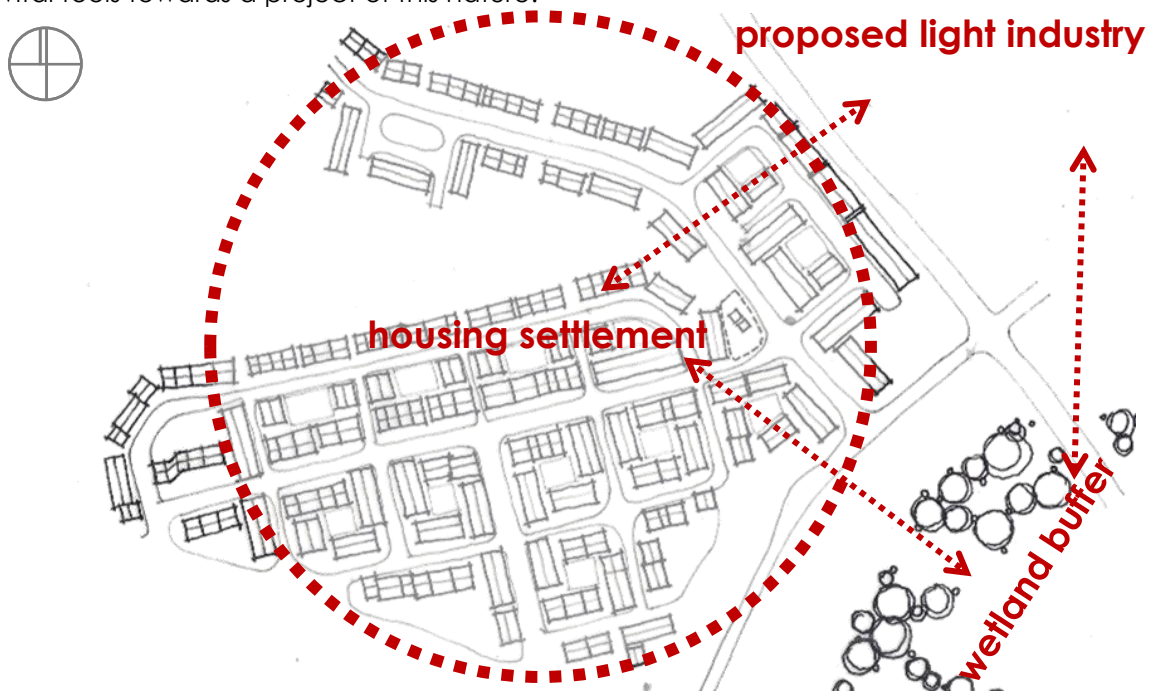


Figure 77: Reducing the divide between space, people and possibility. (NTS) Image Source: Author,2016.

As a result, the following recommendations have been drawn from the preceding presentation of data and analysis.

- Contextual *différance*:
  The research has recognised the efforts of the megaproject to connect disenfranchised communities with the opportunities of the city through its greater proposed development framework. Given the revelation of the shortfalls of the megaproject in achieving this and to some extent, perpetuating the very same socio-spatial segregation it sought out to address, the proposed would seek to spatially reconceptualise what exists within the Cornubia Phase 1A: Pilot Phase Housing Settlement to allow for change.

- Decentralisation as a Site Strategy:
  The site strategy for such a typology needs to take into consideration the existing spaces of the housing settlement towards an opportunity of retrofitting water-based infrastructure that can serve as socially responsive architecture. In order to facilitate rain water collection and harvesting the site itself would need to make

use of the undulating landscape, decentralising its programme along a gravity-fed path that would provide opportunities for inclusive socio-economic development through the sustainable management of water and space as resources.

- People's everyday practice:
  The intention in recognising the everyday practices of the residents, particularly those associated to women and water would further assist in determining the programme of the proposed. This is towards addressing the lack of job opportunities, skills, socio-spatial disconnect and to allow for the smaller networks developed by the people themselves to be recognised and given sufficient platform in order to make suggestions that transform the notion of citizenship rights within the proposed.

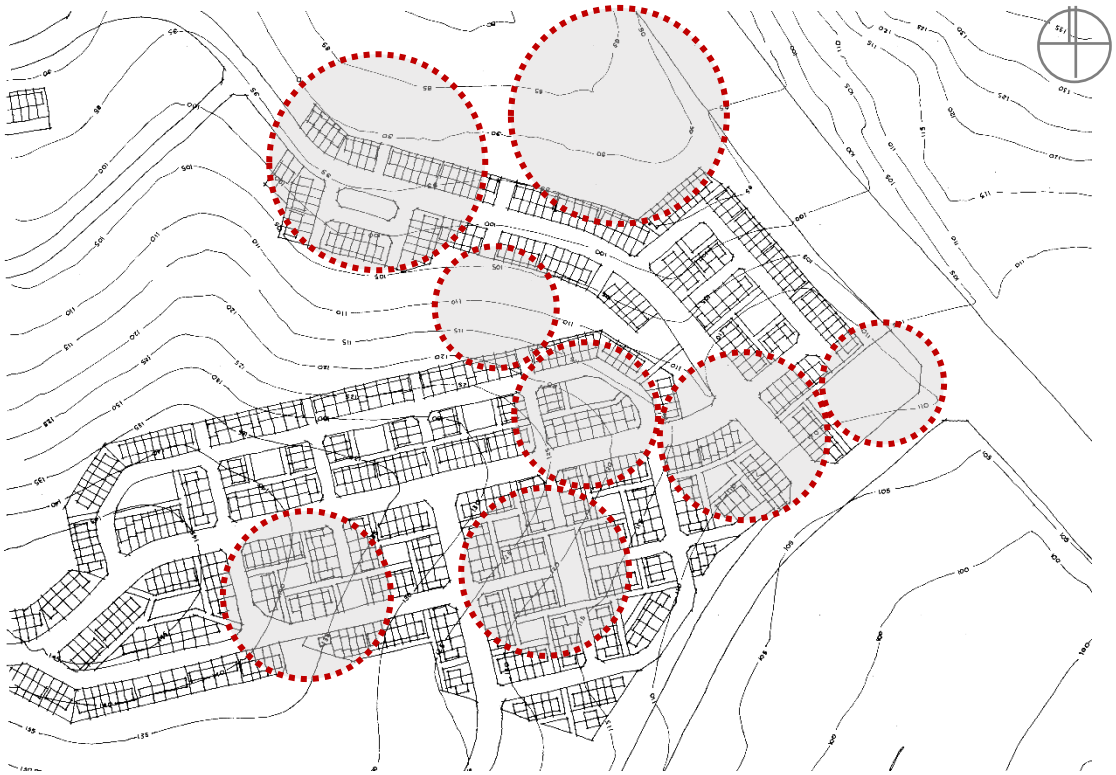


Figure 78: Continuing the spatial mapping in figure 56, marking areas of social engagement between, people place and possibility. (NTS) Image Source: Author,2016.

- Dialogue as a collaborative client:
  Learning from the art/architecture interventions of dala within the research area; and developing engagement with community leaders and the residents through their pre-existing relationships calls for representation within the proposed by

means of a collaborative effort. This collaborative would serve as an intrinsic component of the proposed whereby a system of knowledge transfer can occur that could generate a common sense of rights and responsibilities within the community.

- Participating in socio-spatial accessibility:
  The research into gender and water relations revealed the practice of women as having an immediate connection to the community as a whole. Participation in the making of public spaces and public buildings has been strongly suggested by the research in addressing the research problem as it seeks to mobilise common interests and resources, providing insight to needs and aspirations, allowing for alternative possibilities to come to the fore. To relieve the unused or anonymous nature of the open courtyards within the Housing Settlement and the adjacent open space structure, creating spaces that accommodate socio-economic, recreational and environmental opportunity.

6.3 A Narrative of Scales

In order to address the inequalities that exist on the ground, it is necessary to recognise that these inequalities manifest spatially at varying scales, firstly within the scale of the greater context of the proposed development plan of the megaproject; and secondly at the scale of the housing settlement itself.

As such, the proposed is seen not as "one building one plot", but rather as a multi-scalar retrofit. Both urban strategies as well as architectural principles will be generated towards the design of the proposed Water Reclamation Plant for Cornubia.

From the case study and wanting to make manifest the hydro-social infrastructure within it, the need for an architecture that is didactic is necessary, creating a wholly integrated environment through which the community it serves, as well as visitors to the site are able to learn from the multi-scalar architectural response and the systems it houses. This learning describes the potential of an integrated natural and built environment that seeks to create a self-sustaining systemic environment for those it serves through their everyday practices.

6.4 An Urban Strategy

Understanding the context within which this research finds itself, it is critical to consider an enactment of self-determination, having the capacity to be more relevant and responsive through the realities of change, motion, and action over time.

The following urban strategies have been employed to accommodate the socio-spatial recommendations of the research listed above, providing the necessary insight towards the generation of a socially responsive architectural typology of A Water Reclamation Plant for Cornubia.

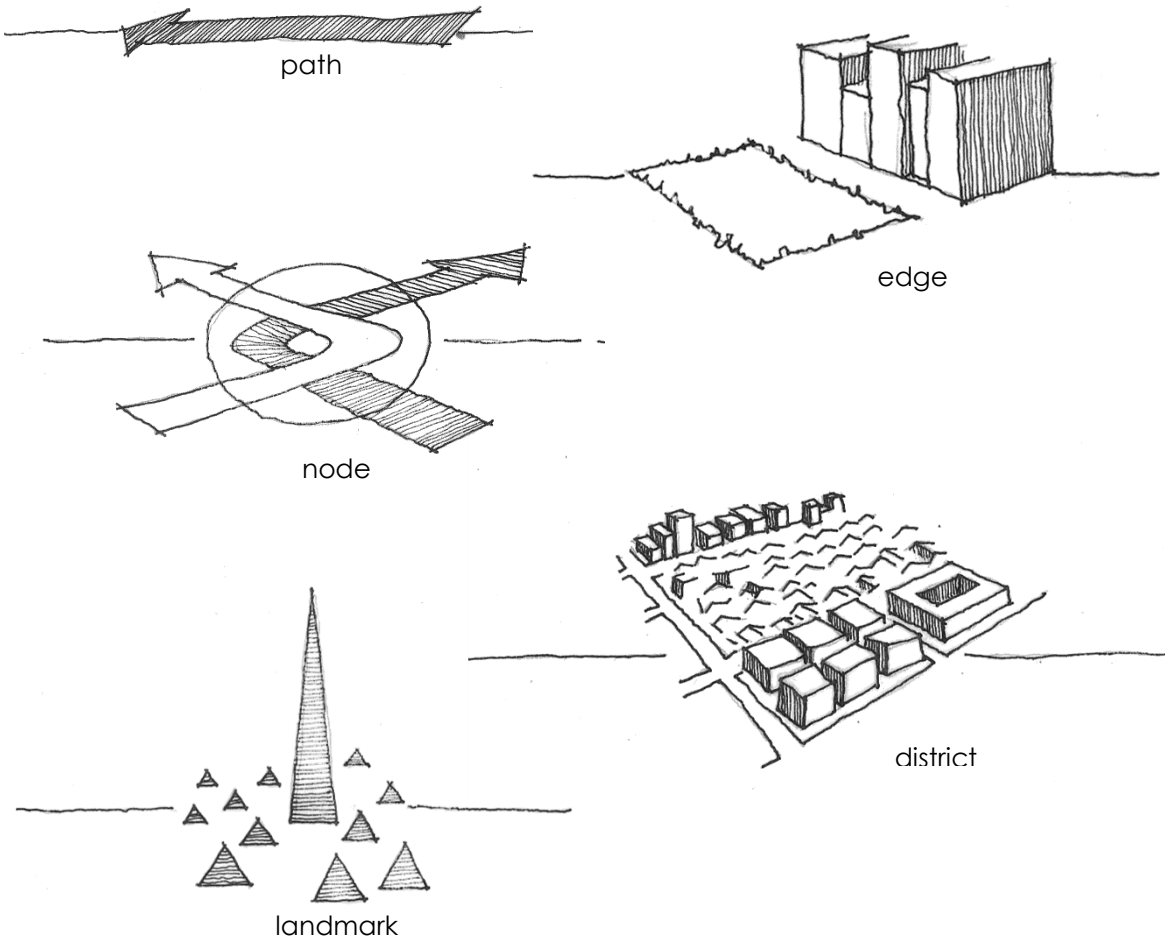


Figure 79: The five city elements. Image Source: Adapted from Lynch, 1960, by author, 2016.

1. Legibility:
   Addressing the lack of orientation that exists within the case study area, at both the scale of the houses and the settlement in order to understand and recognise

the layout of the place with clarity, heightening the depth of the experience of the place.

2. Hierarchy:

   An attempt to define the public and private realms in order to create a variety of possible interpretations in and between them.

3. Figure/Ground Relations:

   Inverting the figure/ground relations to reveal the unbuilt spaces between buildings as programmatic possibilities that can add both diversity and contrast to the built context.

4. Typology:

   Understanding typology as a heuristic response to the context rather than through formalist approaches, identifying what is there as bearing potential towards something new.

5. Character and Visual Richness:

   Recognising the five elements of orientation, namely paths, edges, districts, nodes and landmarks as a network of interdependent, dynamic and varying elements.

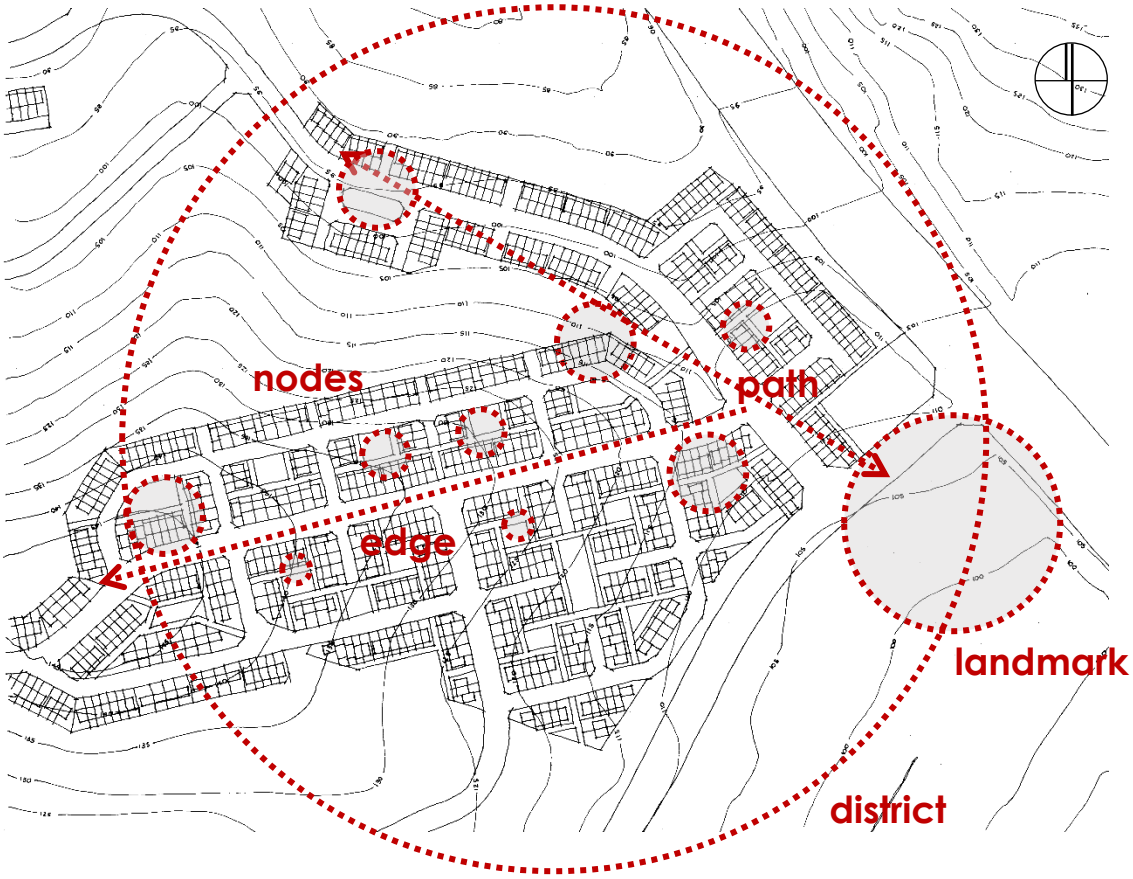


Figure 80: Diversifying the settlement through urban elements. Image Source: Author,2016.

6.5 Architectural Principles

From the abovementioned urban strategies, a series of architectural principles have been defined that can assist in translating the socio-spatial recommendations of this research on the ground.

1. Datum:

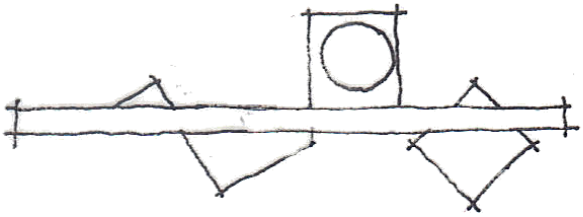


Figure 81: Datum. Image Source: Adapted from Ching, 2007, by author, 2016.

Linear Datum (street) Plane (facades) Volume (void). Retrofitting the existing housing settlement – defined by both monotonous row houses as well as anonymous community courtyards along endless streets as connectors. Intention to gather or embrace elements of both architecture and infrastructure – of social and physical natures – along it.

2. Decentralisation:

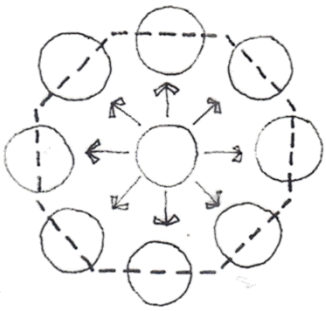


Figure 82: Decentralisation. Image Source: Adapted from Ching, 2007, by author, 2016.

Distributing the programme to provide opportunities to respond across varying scales in response to the existing nature of the place – the exaggerated linear nature of monotonous streets within the isolated housing settlement as well as the dotted landscape of the smaller, home-based networks. Incremental growth/accessibility can be achieved.

3. Transformation:

Adapting/retrofitting the formal structure of the housing typology through the processes of replicability, scalability and interchangeability.

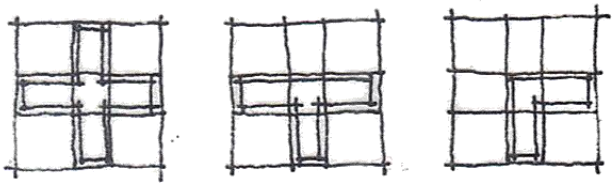


Figure 83: Transformation. Image Source: Adapted from Ching, 2007, by author, 2016.

Replicability: allows for the creation of a generic/specific module around a particular practice that can be inserted into a network or system.

Scalability: refers to acknowledging that practices, networks and systems will change over time in order to handle complexities, grow or reduce without changing the way in which it fundamentally works.

Interchangeability: needs modular systems with standardised units or dimensions for flexibility and variety in use.

CHAPTER SEVEN | CONCEPTUAL DEVELOPMENT

Figure 84: Asking the right question. Image Source: Jahangeer,2016.

7.1 Translating the data

"What we're trying to do by asking people to participate is envision what is the question, not what is the answer. There's nothing worse than answering the wrong questions well."

- Alejandro Aravena in Winston, 2016.

This chapter will document the translation of the data from the preceding chapters into the conceptual development of the design proposal, introducing the project's description, the organisation, their requirements and the resulting manifestation of the proposed Water Reclamation Plant on site within the Cornubia Phase 1A: Pilot Phase Housing Settlement.

7.2 Project Description: Design Brief

The notion of hydro-social infrastructure, of recognising women's everyday practices as central to water, and this serving as a kind of soft infrastructure within the case study area as discussed throughout this dissertation makes socio-spatial suggestion towards the Water Reclamation Plant and how this particular typology can materialise within the housing settlement as socially responsive architecture.

The narrative of scales as recommended would make manifest the observations made on site in support of the theoretical framework, allowing for architecture and infrastructure to define a much needed urban character for the housing settlement.

"Community is something we do together. It is not just a container."

- David Brain in Gerini, 2004.

Architecture and infrastructure provide the shell within which people live, within this shell is where people are able to sustain their livelihoods, as observed within the case study area, through education, agriculture, business, recreation, and spiritual celebration. What defines a place of strong community are these common understandings, needs and aspirations. The proposed, through these socio-spatial suggestions would seek to define and foster a strong sense of community.

The Water Reclamation Plant for Cornubia then serves to address the relationship that women have with water, and engage possibilities for a reconceptualization of how this happens both socially and spatially towards challenging gendered segregation. As

recommended within the previous chapter, the proposed will manifest as a multi-scalar retrofit to the housing settlement, with an urban component and architectural form as an integrated infrastructural system that serves at once as a vessel for rain water collection and harvesting and as a common platform for women's development through the engagement of social auxiliary programme by the project organisation.

7.3 Project Organisation

Figure 85: Mobilisation. Image Source: CORC, 2016

7.3.1 Implementing the commons

Taking precedent from the participatory processes as unpacked within chapters one, two and three, the proposed recognises the need for a project organisation, defining the everyday roles and responsibilities of each of the stakeholders towards relevant and collaborative goals.

The implementation of the proposed would require a socio-technical approach, recognising the two kinds of infrastructure that exist within the housing settlement and continuing *masihambisane* and the role of the architect within it in facilitating participatory processes throughout the development of the Water Reclamation Plant for Cornubia.

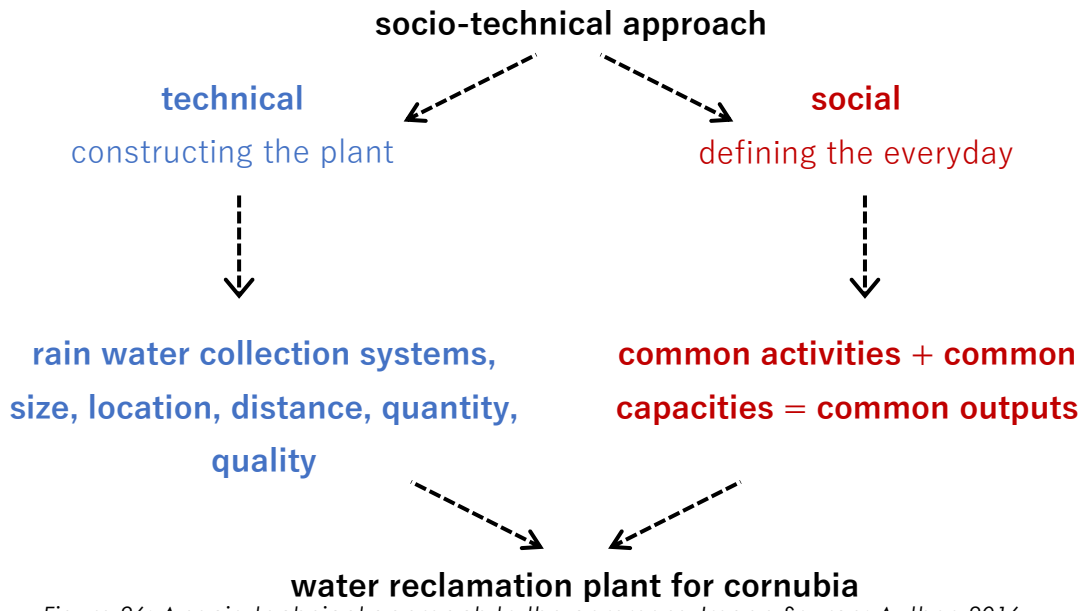


Figure 86: A socio-technical approach to the commons. Image Source: Author, 2016.

7.3.2 Client

The women of the relocated community of the Cornubia Phase 1A: Pilot Phase Housing Settlement.

7.3.3 Partners

dala, the NGO presently involved within the case study area, and the Federation of the Urban and Rural Poor (FEDUP) through their supporting framework with the South African Shack/Slum Dwellers International Alliance (SASDI).

Figure 87: dala logo. Image Source: dala, 2016

"dala. art architecture for social and spatial justice."

- dala mission statement.

dala, discussed throughout this document, have served as a facilitator for the community engagement processes that this research has undertaken. Through their active engagement within the case study area and relationships made with the people and the place, they would continue as a partner within the endeavour of retrofitting the housing

settlement with a socially responsive architecture – at once a part of the participatory process, activation and ongoing event of the proposed architecture (Jahangeer, 2016).

Figure 88: FEDUP logo. Image Source: CORC, 2016

"To build united, organised communities to address homelessness, landlessness and creating sustainable and self-reliant communities led by women and by using tools such as savings, gathering information through enumerations, exchanges, lobbying and advocacy, and by influencing government policies."

- FEDUP Mission Statement.

FEDUP, whose grassroots organisation has served to tap into the unseen knowledge and capacities of communities themselves, and of women within those communities in particular, would be a critical partner for the proposed Water Reclamation Plant for Cornubia. Their commitment to supporting communities as dignified citizens of this country through people-centred, participatory and empowering development at the intersections of women's movements regarding daily savings and livelihood strategies would serve to inform the proposed from inception to operation (SASDIA, 2016).

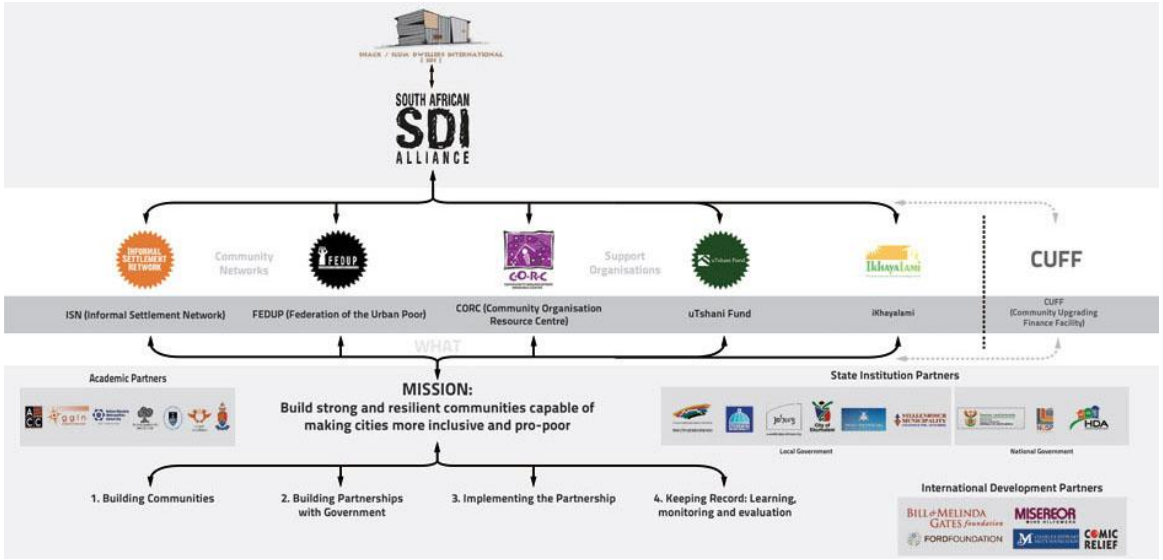


Figure 89: SASDI Alliance Organogram. Image Source: Adapted from SASDI by author, 2016.

Together, the partners along with the architect will assist in defining a participatory strategy towards the proposed, as well as strategies of continuity, recognising that in order for such a typology to work both for and in the housing settlement, it needs to be flexible and susceptible to the changing elements of time, need and aspiration.

7.3.4 Sponsors

Figure 90 and 91: Sponsor logos. Image Source: Iyer, 2014.

Given the nature of the megaproject itself, it seems only fitting that the sponsor for such a typology would be the present public-private partnership between the EThekwini Municipality and Tongaat Hulett Developments.

7.4 Project Requirements

The needs and aspirations of each stakeholder of the project organisation is recognised towards defining a programme within the proposed. The first of these being the client – the women of the relocated community themselves who have instigated this research.

The case study revealed the way in which the women have worked within their gender roles and the relational place of these roles, the existing housing settlement, to supplement their right to dignity. The subject of this research, gender and water relations, generated the proposed typology of a Water Reclamation Plant, however through the research and analysis, the typology has evolved to accommodate the needs and aspirations of the client to address the socio-spatial inequalities that exist within Cornubia Phase 1A: Pilot Phase Housing Settlement.

What is clear is that the women require a way to ease their day to day living, to which water is central, and this can be achieved through access and management of rain water collection. The additional source can supplement the use of municipal water supply both

within the household's internal water and sanitation requirements, as well as serve to develop communal activities around the water source – including the existing practices of cooking, washing and planting. At the larger scale, access to this water can provide a safer and active environment within the housing settlement as well as providing a shared community space that responds to livelihood generation as unpacked within the theory and literature.

The partners are recognised as facilitating these areas, and would require an administrative base through which to run their own activities, as well as community platforms through which to engage with the community.

The entire system, in response to the call of the Cornubia Development Framework developed by the public-private partnership of the sponsors in creating operational environments that link the social, environmental and economic programmes operates to address the creation of a sense of community through the recognition of women's practices; regenerate the wetland environment; and develop sustainable measures for livelihood generation.

7.4.1 Project Programme

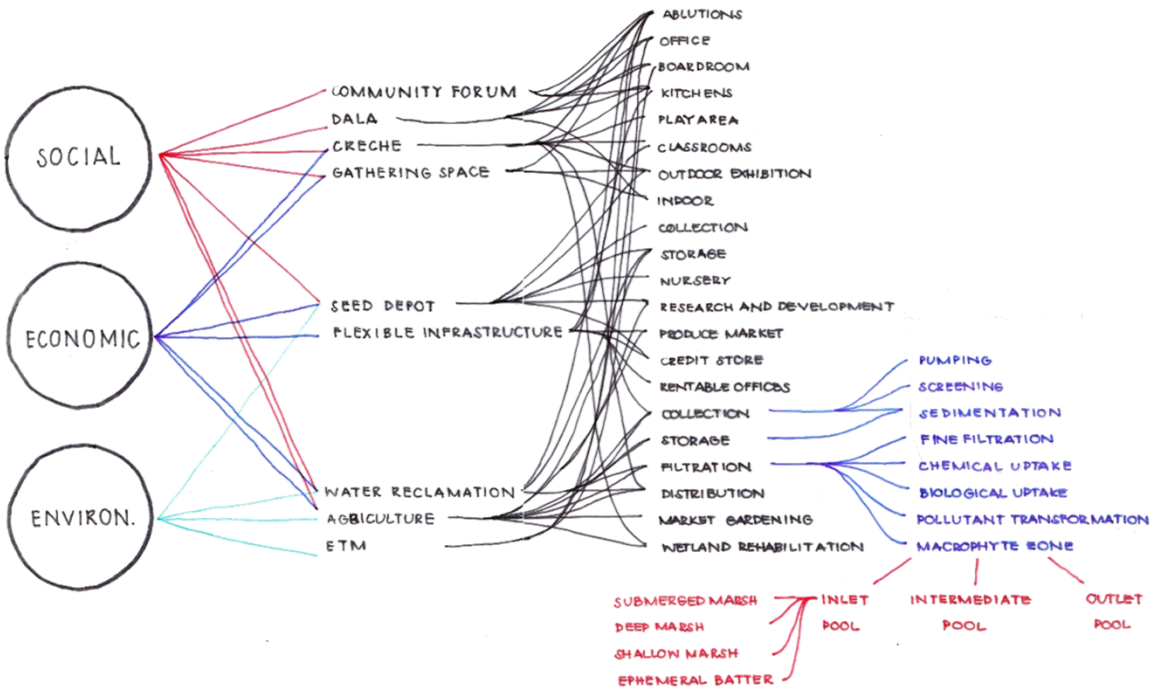


Figure 92: Integrating programme. Image Source: Author, 2016.

With the intention of the proposed to integrate the social, economic and environmental, the programme for the Water Reclamation Plant reflects accommodation that sits within and between each of these areas to challenge the monotony of the housing settlement through the retrofit of infrastructure.

Given the scaled proposal, the programme would be distributed across the system of water reclamation, defining an operational environment. The programme is explored in its associations to the collection, processing and harvesting of reclaimed water.

Water Reclamation Plant: Collection
Solids – Retrofitted Dwelling Units
Solids – Child Care Centre
Solids – Beacons
Voids – Plug-in Programme: Home-based Nurseries
Voids – Plug-in Programme: Plug and Play Pump stations
Voids – Plug-in Programme: Trade

Water Reclamation Plant: Processing
Solids – Reconstructed Wetland Surface Drain
Solids – Aqueduct
Voids – Canopied Streetscape

Water Reclamation Plant: Harvesting
Solids – Commons: Living Seed Depot
Solids – Commons: Partner Offices and Community Forum
Solids – Retail: Trading Veranda
Voids – A Reconstructed Wetland Park
Voids – Auditorium
Voids – Food Gardens

A network of solids and voids, appropriating spaces as noted within the case study within and between the housing settlement and the open space structure providing a multi-scalar retrofit of water-based infrastructure that responds to the everyday needs and aspiration of the community in which it frames.

7.5 The Site

7.5.1 Contextual Analysis

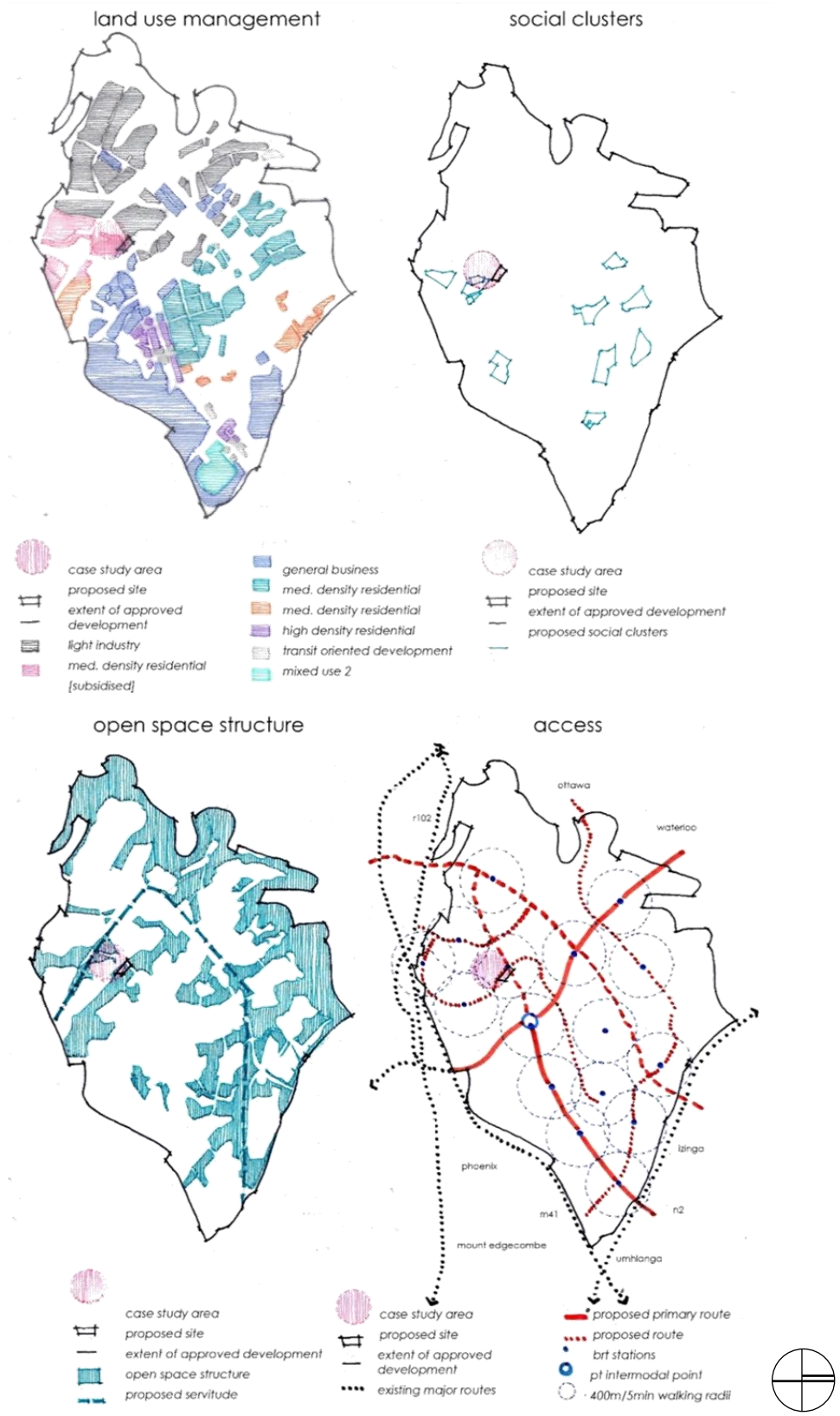


Figure 93: Cornubia Development Framework. Image Source: Adapted from Iyer by author, 2016.

Recognising that the site sits within a much larger development framework, as discussed within the previous chapters, it is necessary to understand the site within this context before zooming in to the scale of the settlement itself. Depicted previously are the land use management, social clusters, open space structure, and access plans of the Cornubia Development Framework that have been unpacked within the case study.

7.5.2 Selected Site

Drawing from the research towards the proposed, the selected site is positioned within the Cornubia Phase 1A: Pilot Phase Housing Settlement and in response to the recommendations, manifests as a multi-scalar self-sustaining system that uses the existing as a possibility towards addressing the research problem. The selected site is then comprised of an urban network along the major north-south street, including smaller community courtyard spaces and culminates on a site within the open space network.

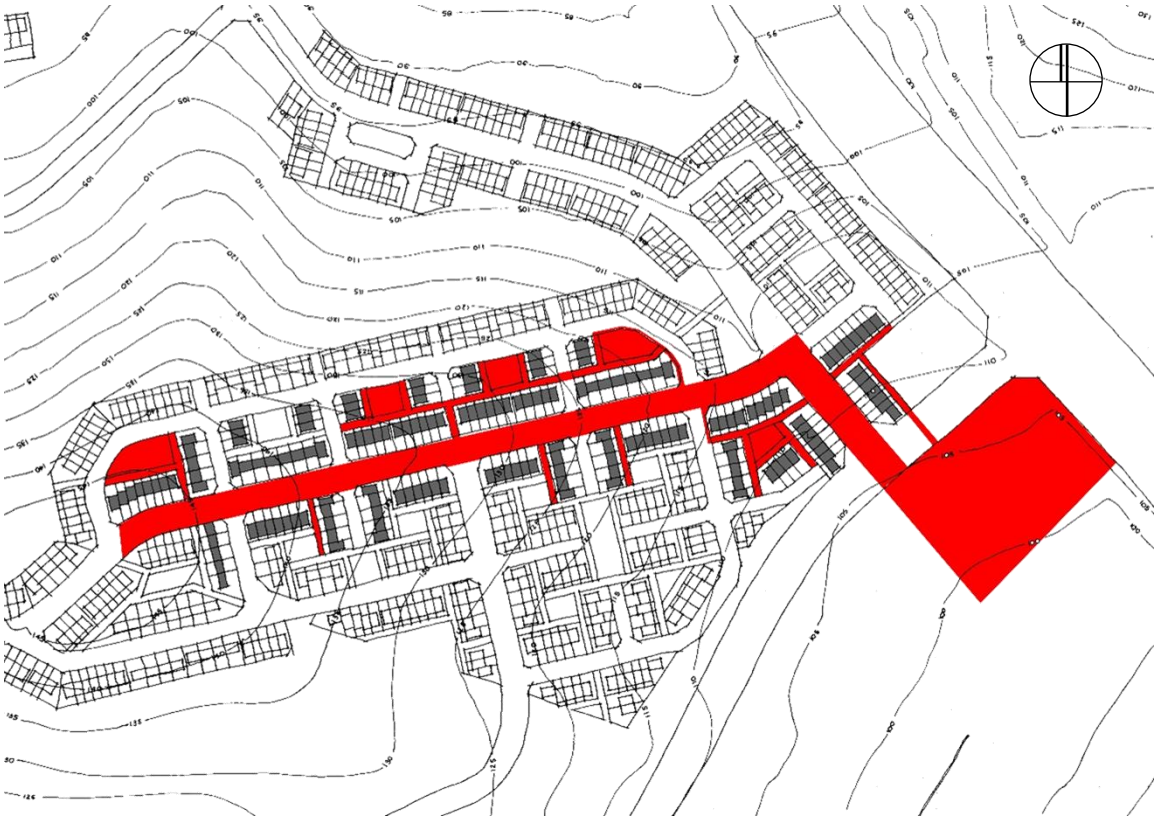


Figure 94: Selected site for the Water Reclamation Plant for Cornubia. Image Source: Author, 2016.

The programme above will, as suggested by the recommendations in the preceding chapter, be decentralised along the site marked in red in Figure 92. This will provide an opportunity for the Water Reclamation Plant to insert much needed social auxiliary

programme in and within the water reclamation system itself, integrating the social, economic and environmental.

7.5.3 Site Analysis

The site is analysed within its proposed context, and is expanded on depicting orientation, climatic conditions, accessibility and figure ground studies towards the proposed.

proposed form

existing dwelling units

site boundaries

22 december solar path

22 june solar path

21 mar & 23 sept solar path

prevailing winds: ne & sw

Figure 95: Site Analysis. Image Source: Author, 2016.

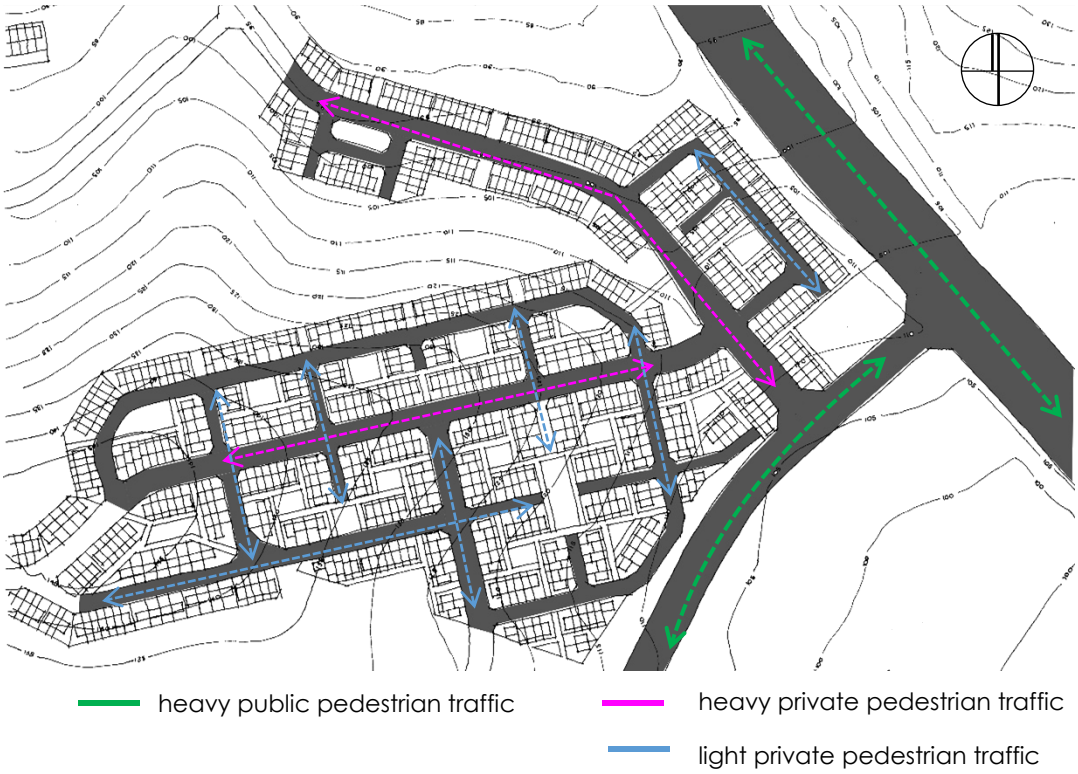


Figure 96: Pedestrian Accessibility. Image Source: Author, 2016.

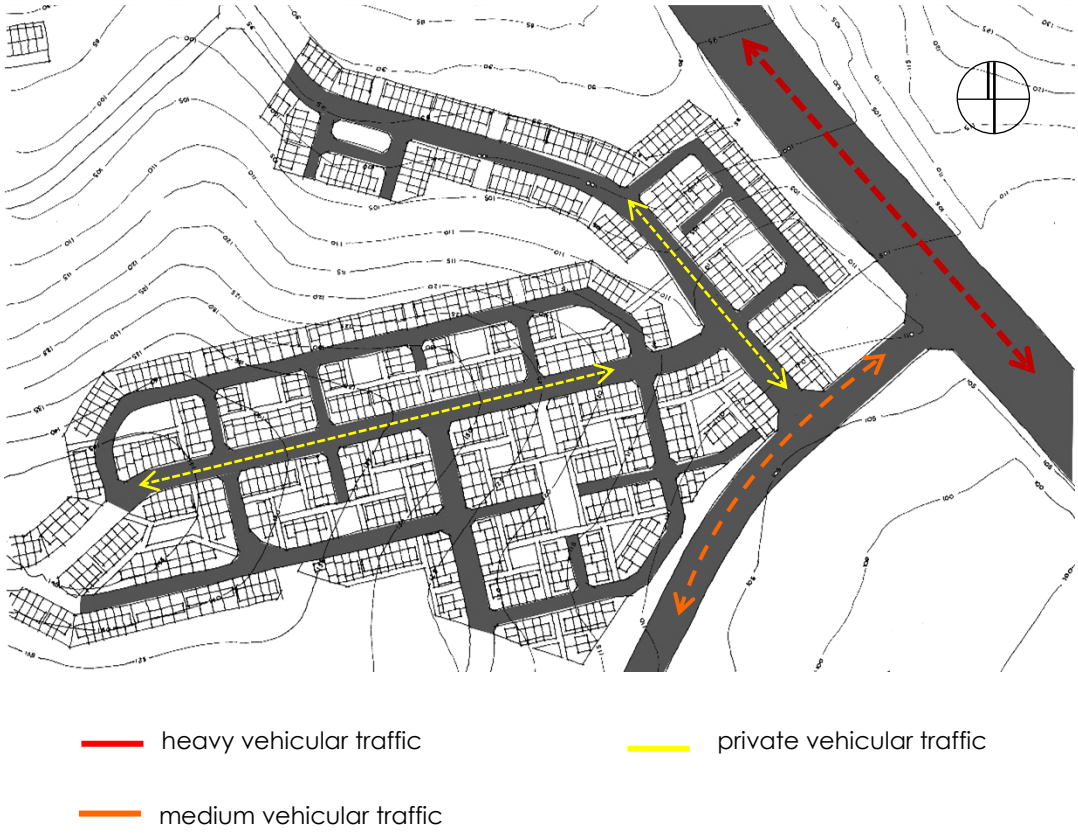


Figure 97: Vehicular Access. Image Source: Author, 2016.

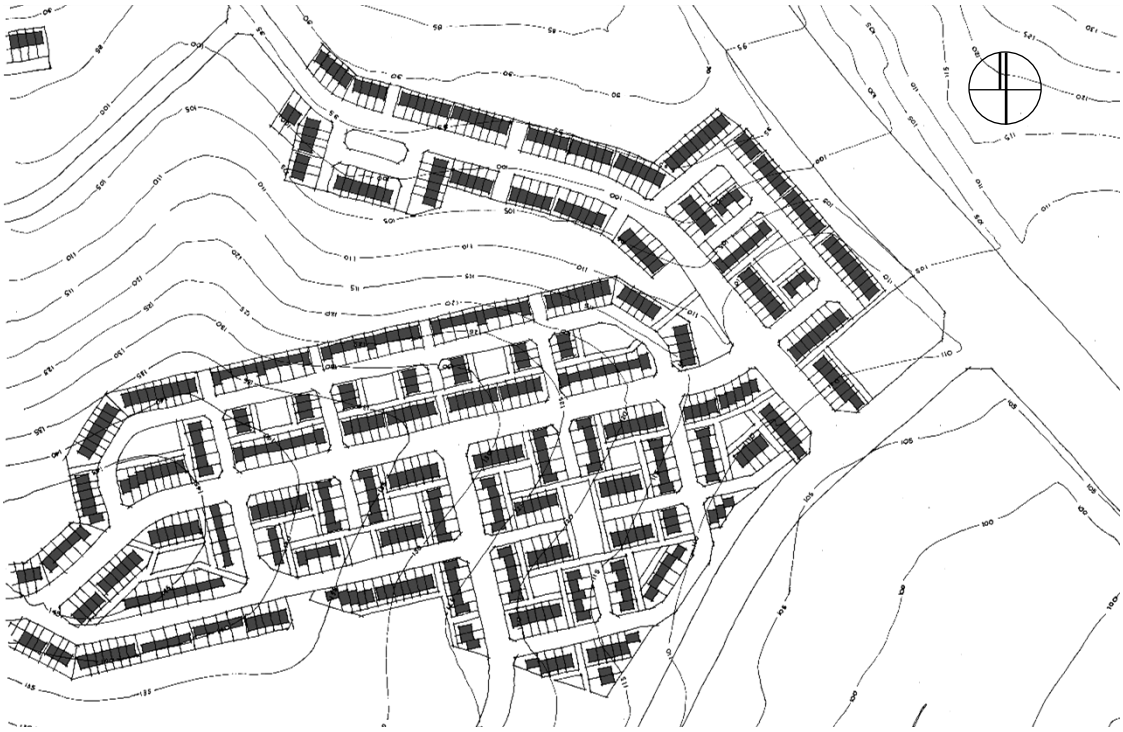


Figure 98: Figure Ground analysis. Image Source: Author, 2016.

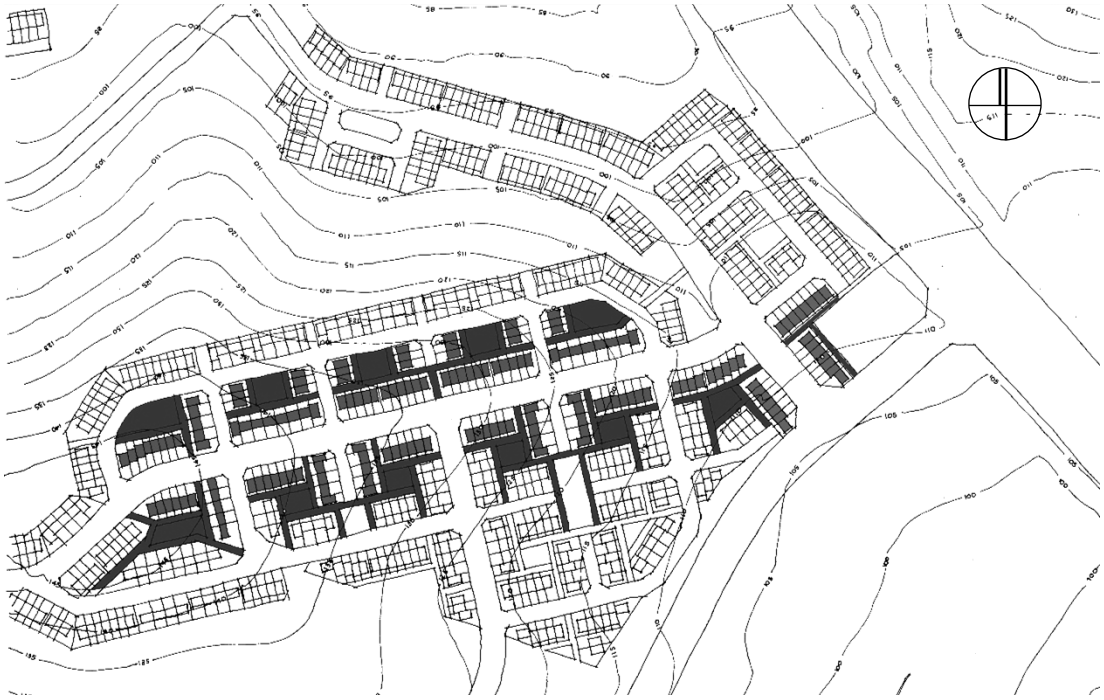


Figure 99: Solids and voids on the route. Image Source: Author, 2016.

CHAPTER EIGHT | INFRASTRUCTURE//ARCHITECTURE

Figure 100: Unseen infrastructure. Image Source: Jahangeer, 2014

8.1 The aqueduct

Learning from Quinta da Malagueira, this part of the dissertation seeks to analyse and unpack the aqueduct and its role in water supply and defining an everyday urban character towards the proposed. The aqueduct in Malagueira, as outlined in the precedent study sought to address the need for infrastructure within the budgetary confinements and serve as a defining element instilling an urban character, framing the uniformly white walls of the low-rise terraced housing settlement.

Figure 101: Contrasting formalism as the aqueduct meets the houses of Quinta da Malagueira. Image Source: Google image search, 2016.

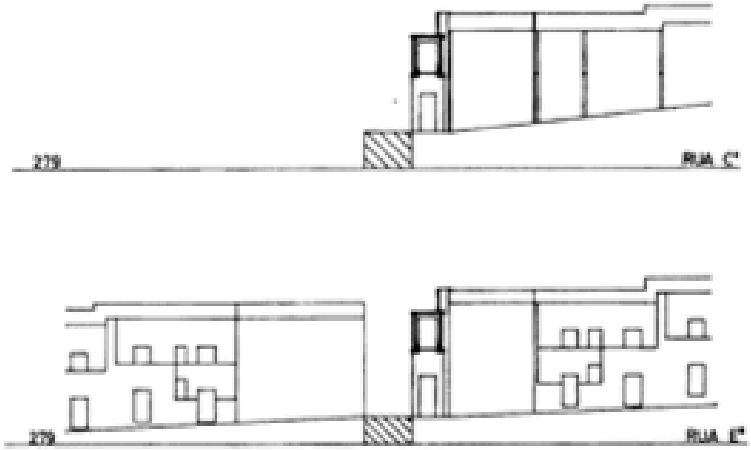


Figure 102: Sections illustrating the relationship between the overhead aqueducts and the housing. Image Source: The Architectural Review, 2013.

Within Cornubia, a defined infrastructure such as this could facilitate the retrofitting of rain water collection systems as founded in the case study and recommendations towards

supplementing the water use of the residents of the area on both an individual domestic use and as a common network resource.

The aqueduct at Malagueira was ordered to run the length and occasionally across the organisation grid of the housing, connecting one arm to the next, and defining smaller opportunities of space – shopfronts, arcades, and urban markers.

The existing housing settlement is organised as row houses around common courtyards, with each of these clusters arranged along two defined streets. This ordering provides a common pattern of solids and voids which could generate a structural grid around which to order a retrofit such as the proposed that responds to the scale and rhythm of the existing. The physical retrofit of a lighter frame system in and between the existing.

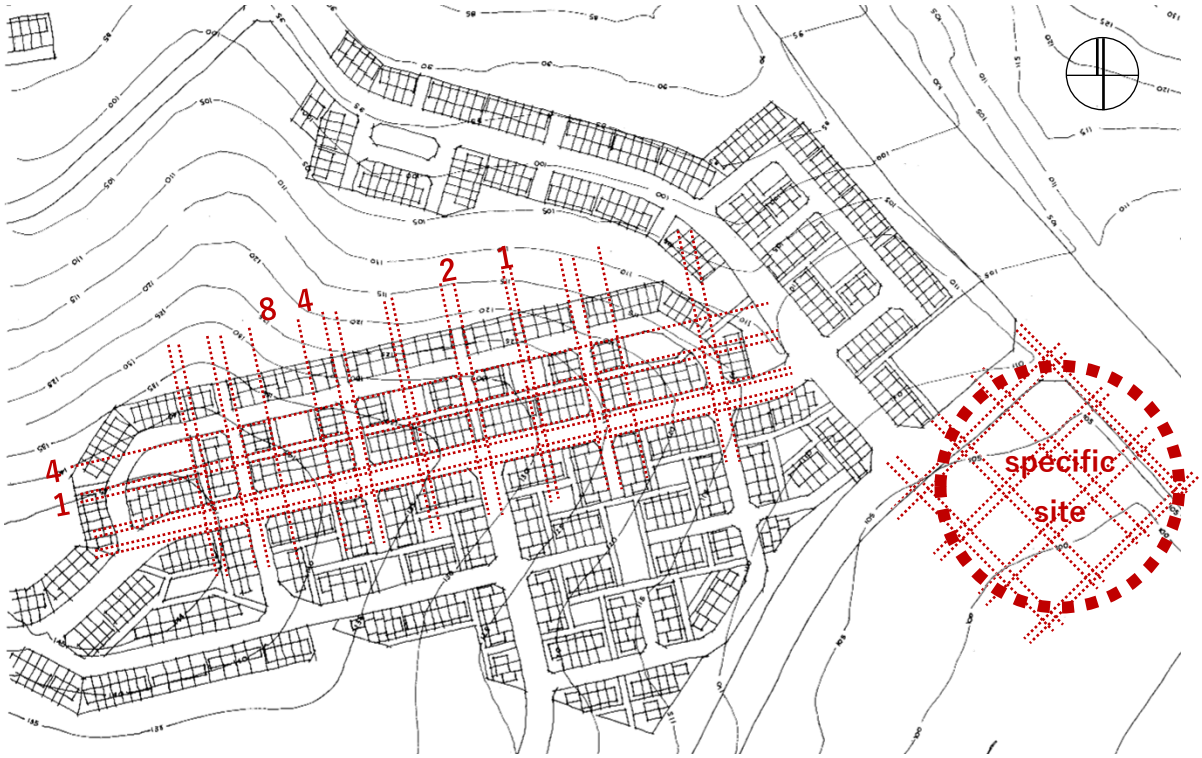


Figure 103: Emergent tartan grid. Image Source: Author, 2016.

The aqueduct could serve in collecting rainwater from rooftops and assist in transporting the water through filtration and storage towards a reuse possibility around the existing activities of home-based planting as noted within the case study. Not only would this provide a visual didactic but an opportunity to reconceptualise the collection, management and use of grey water by the community.

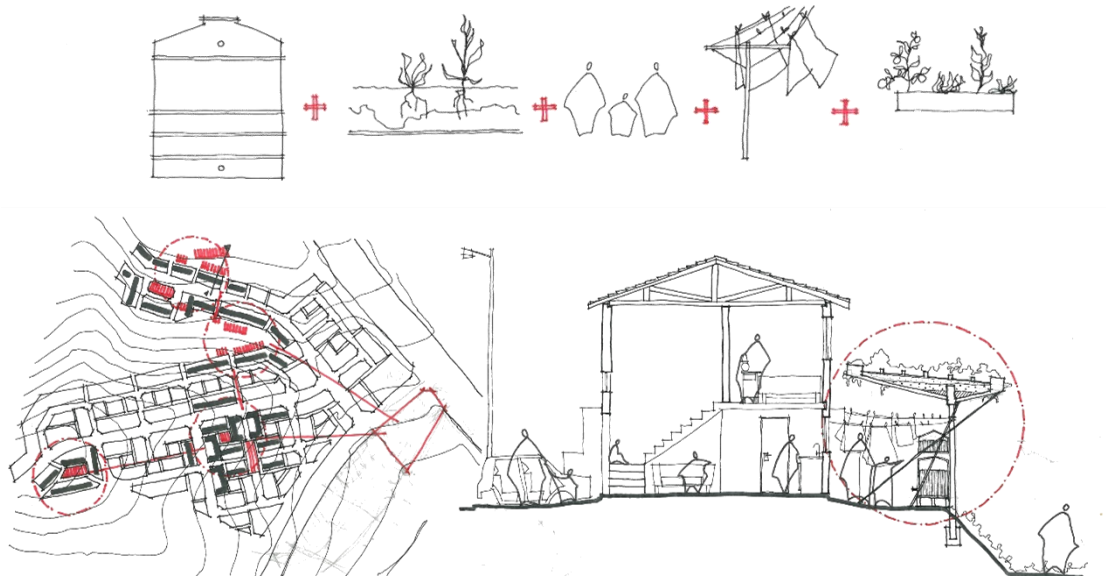


Figure 104: Explorations of the proposed schematic. Image Source: Author, 2016.

8.2 The surface drain

Exploring the proposed water-based infrastructure through street-level surface drains, much like those within Julia King's Incremental housing and decentralised Sanitation system for Savda Ghevra, towards diversifying the retrofit in Cornubia.

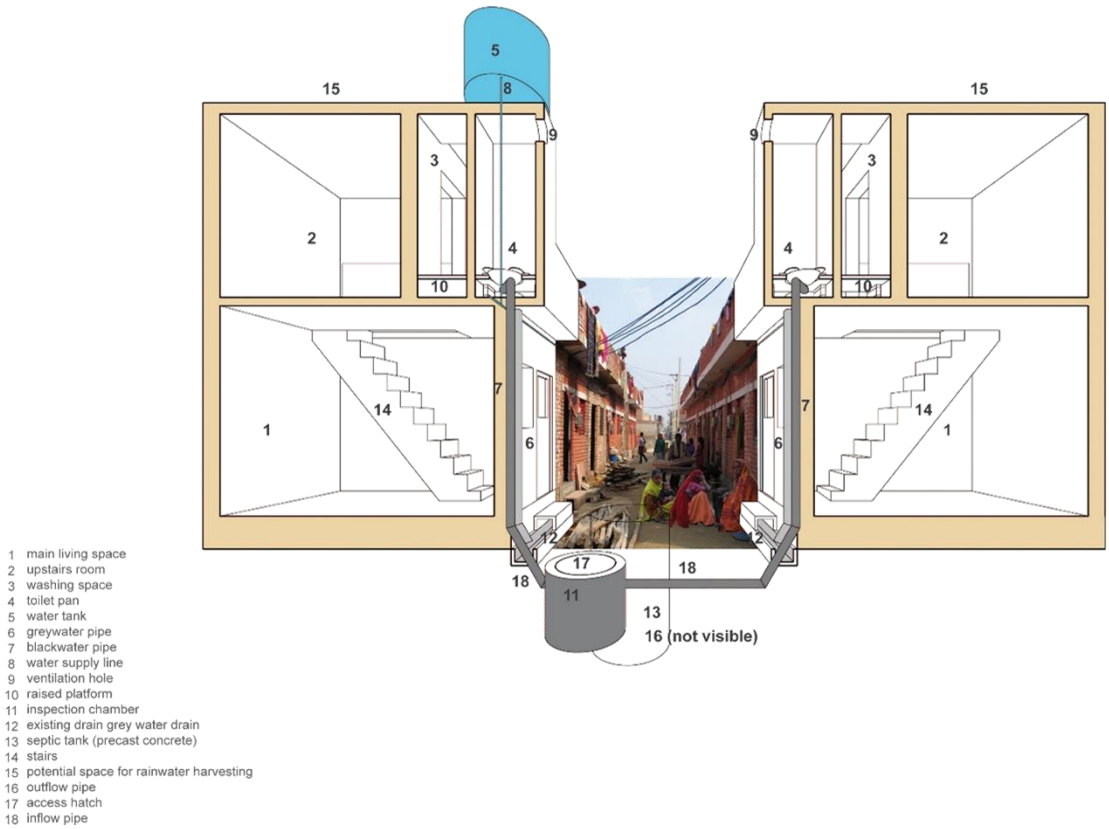


Figure 105: Section through houses showing retrofitted system. Image Source: King,2013.

The surface drains as part of the greater infrastructure are retrofitted at the scale of the houses, highlighting the micro- and macro- scales of the system. Above, the connections are invisible to the street, while below they manifest as visible, planted elements that line the streets of Savda Ghevra, connecting private and public spaces through access to water and sanitation.

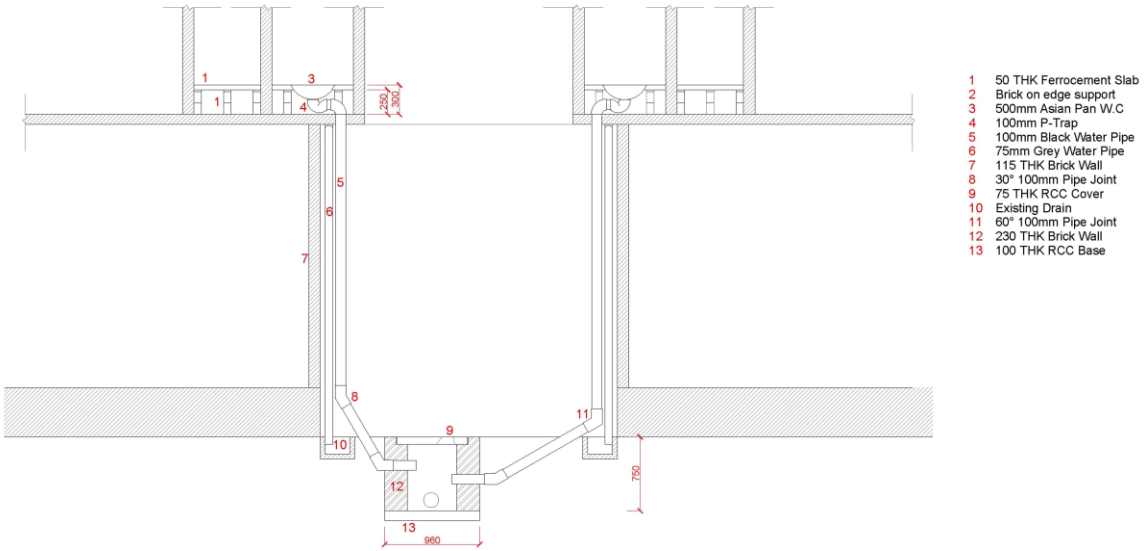


Figure 106: Section through sanitation upgrade. Image Source: King,2013.

While the precedent study illustrates a decentralised sanitation system, the opportunity exists to explore the surface drain within the proposed Water Reclamation Plant for Cornubia.

Figure 107: The surface drain on the streets of Savda Ghevra. Image Source: King,2013.

As noted in the case study, the wanting to create operational environments that seek to overlap the social, economic and environmental are a part of the agenda of the PPP. Towards this effort, wetland filtration processes can be incorporated into the surface drains as a natural filtration and attenuation process that would serve as a part of the system. Here aquatic plants, and sand and gravel filtration within a wetland condition can be used to absorb and retain pollutants and sediment, filtering water as it passes through.

The housing settlement stretches across the hillside and is flanked by the natural wetland area within the open space structure. This relationship to the undulating natural processes can be re-introduced through a reconstructed wetland drain system that spatially connects the disparate land uses and serves as a visual marker, extending the didactic effort of the proposed.

As a result of the valley altering, the wetland area itself is in need of rehabilitation, and at present is interspersed *with typha capensis, phragmites australis* and *cyperus textilis,* each emergent hydrophyte that can successfully filter contaminates.

Figure 108: Typha capensis, phragmites australis and cyperus textilis. Image Source: Author, 2016.

Regrettably, the housing settlement itself was not initially implemented with sustainable management systems for water reclamation, but what this has afforded are both pitched roofs and tarred roads for surface run off collection, as well as small community courtyards that can both be retrofitted with the proposed reconstructed wetland drain system.

Looking at the site, the ideal location for the drain would be along the street running north-south, a gravity-fed path through which collected water can naturally flow.

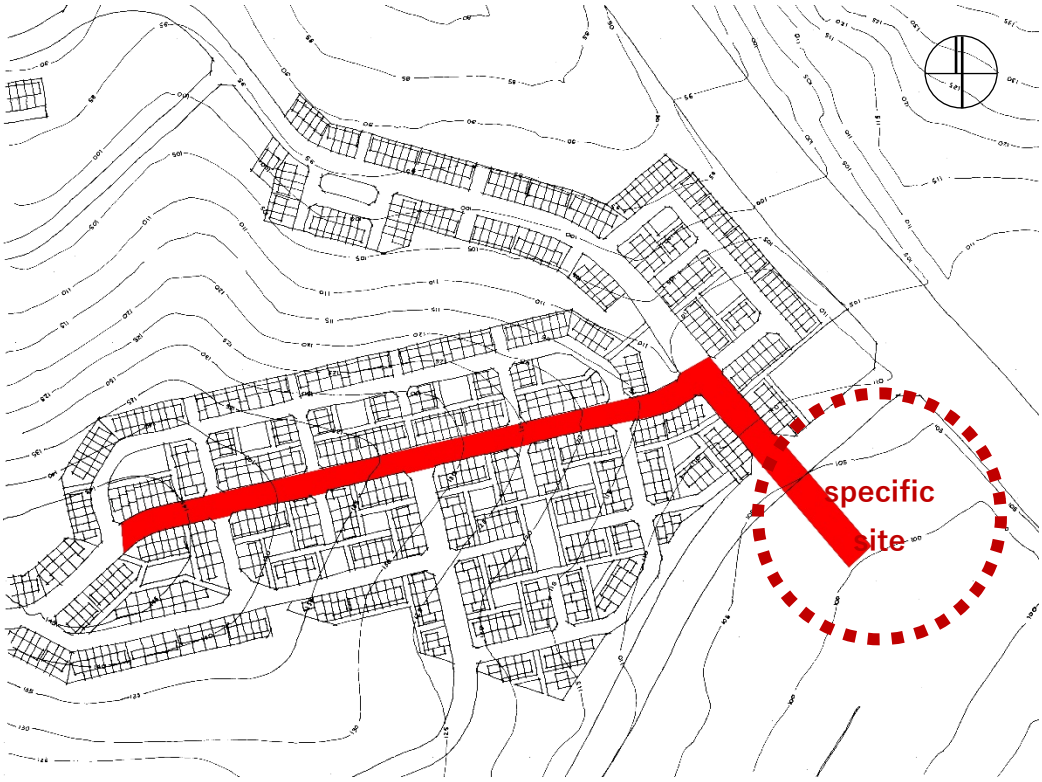


Figure 109: Highlighting the road as a river. Image Source: Author, 2016.

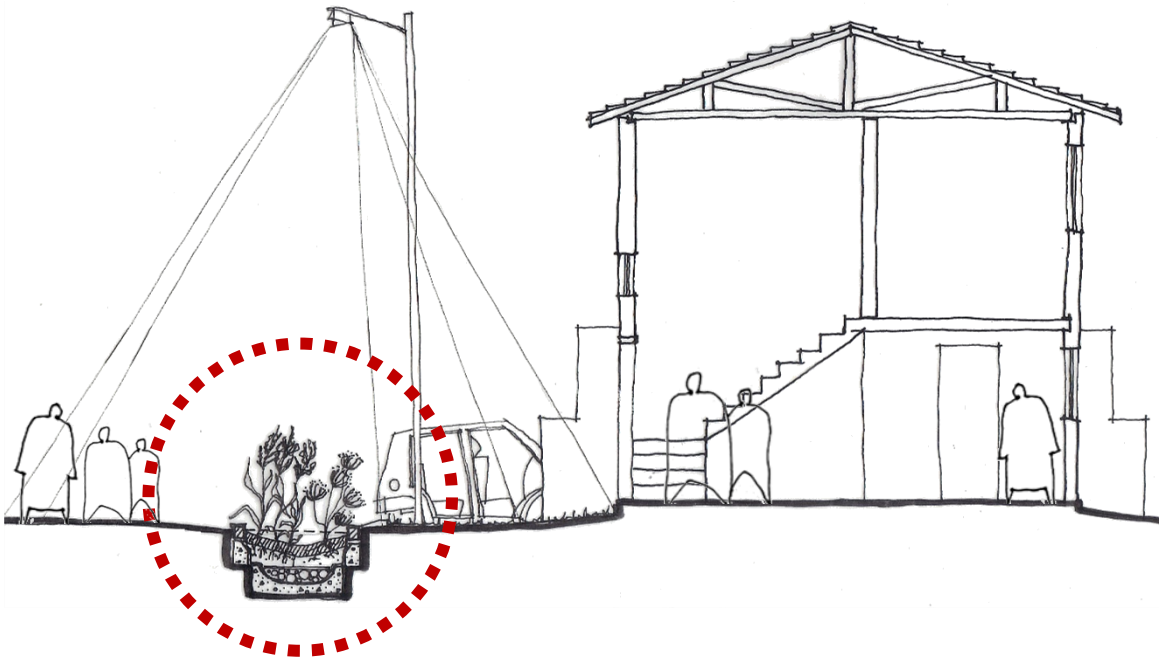


Figure 110: Inserting a reconstructed wetland drain system into the pavements. Image Source: Author, 2016.

8.3 The plug-in

Recognising the presence of organisational grids across the landscape, the plug-in provides an opportunity to address the smaller scale voids of the settlement, as illustrated by the community toilets for SPARC.

Realising the other two elements of the system, the plug-in provides an organic incremental development between them that can realise time and its relationship with the architecture. By providing a multi-scalar project that accommodates the home-based activities as noted within the case study, recognising that these activities have a life of their own and how this translates within the built form can define relevance and meaning of the project towards its intended function – of providing a sense of dignity to the community through a reimagined accessibility to water.

As illustrated by the RMA project, the retrofitted project was built around a modular that could be positioned within the existing to define space and stitch together architecture and infrastructure through a complex yet legible system.

Figure 111: Piecing together the SPARC toilets. Image Source: RMA, 2013.

Figure 112: Piecing together the SPARC toilets. Image Source: Architecture in Development, 2015.

The choice in materiality and construction translates the design decisions of defining distinct spaces for men, women and children providing privacy and addressing greater social concerns; creating a visible node of community space; and layering the plug-in as both a functional and aesthetic manner to change the mindset of the provision of sanitation within the dense city.

The project realised a research and engagement capacity beyond its own implementation, and through it provided a toolkit of sorts as to how to rethink the way in which community toilets need to and can be designed as a localised retrofit for disenfranchised communities that seeks to engage with the community through the use of local materials, craft and labour.

This research and implementation can be translated to inform the proposed immediately through its social responsibilities, and practically through its prototypical construction that can easily be placed along the proposed system and adapted to particular need as well as evolve over time based on the design parameters.

Within Cornubia, these plug-ins can provide the infrastructure for the home-based activities that occur within the area, providing nodes of common activity and space along the greater system that can adapt and grow as is required, yet still maintaining its function of providing character and visual richness to the otherwise monotonous housing settlement.

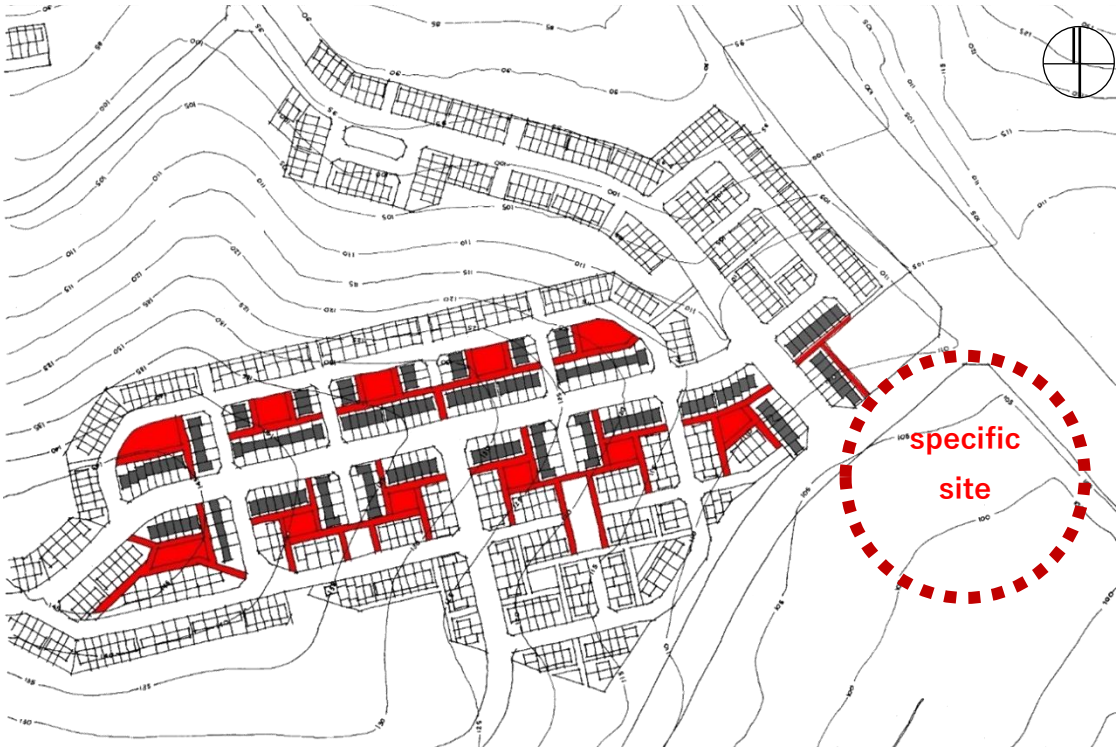


Figure 113: Solids and voids off the main street. Image Source: Author, 2016.

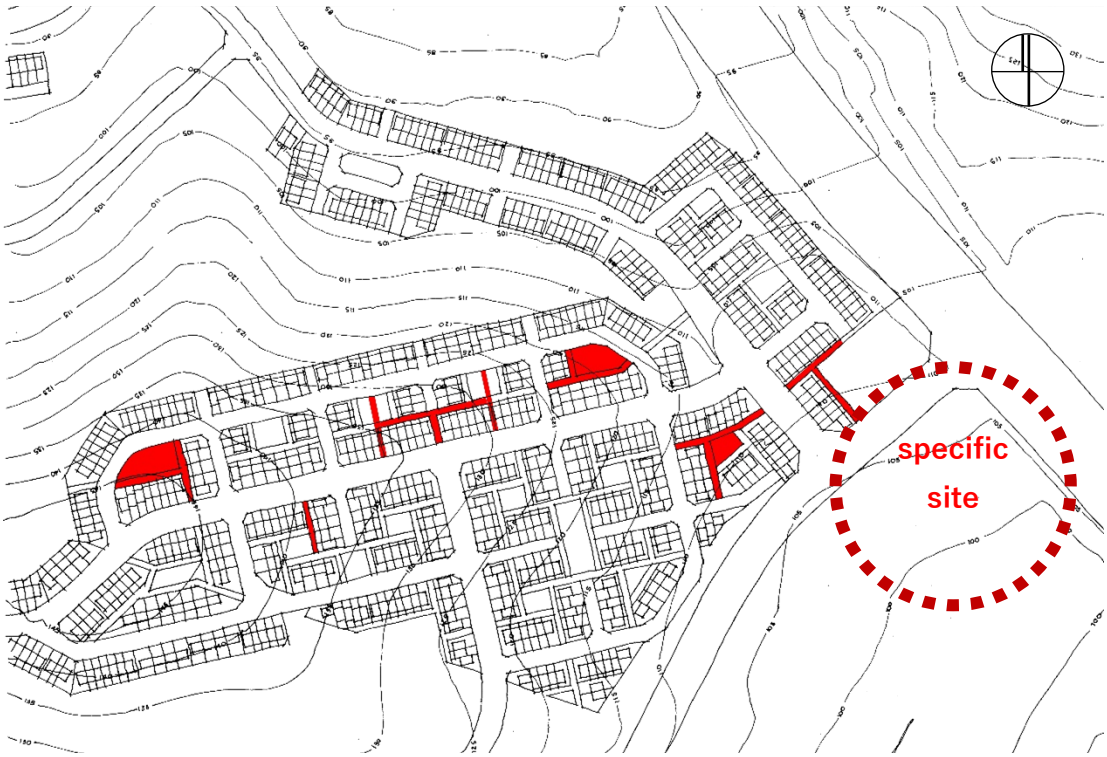


Figure 114: Potential locations of the plug-in. Image Source: Author, 2016.

Through lighter frame construction, as would be provided by the aqueduct element, the plug-ins would follow the grid organisation as proposed, defining rhythm and diversity.

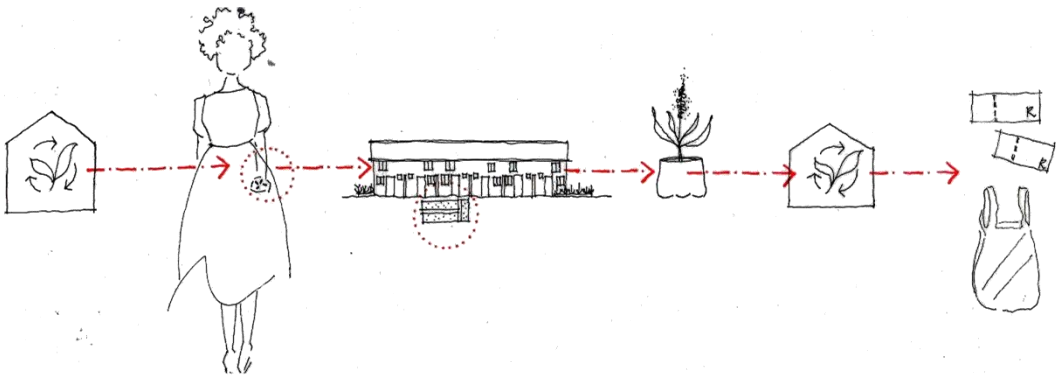


Figure 115: Opportunities in creating an operational system. Image Source: Author, 2016.

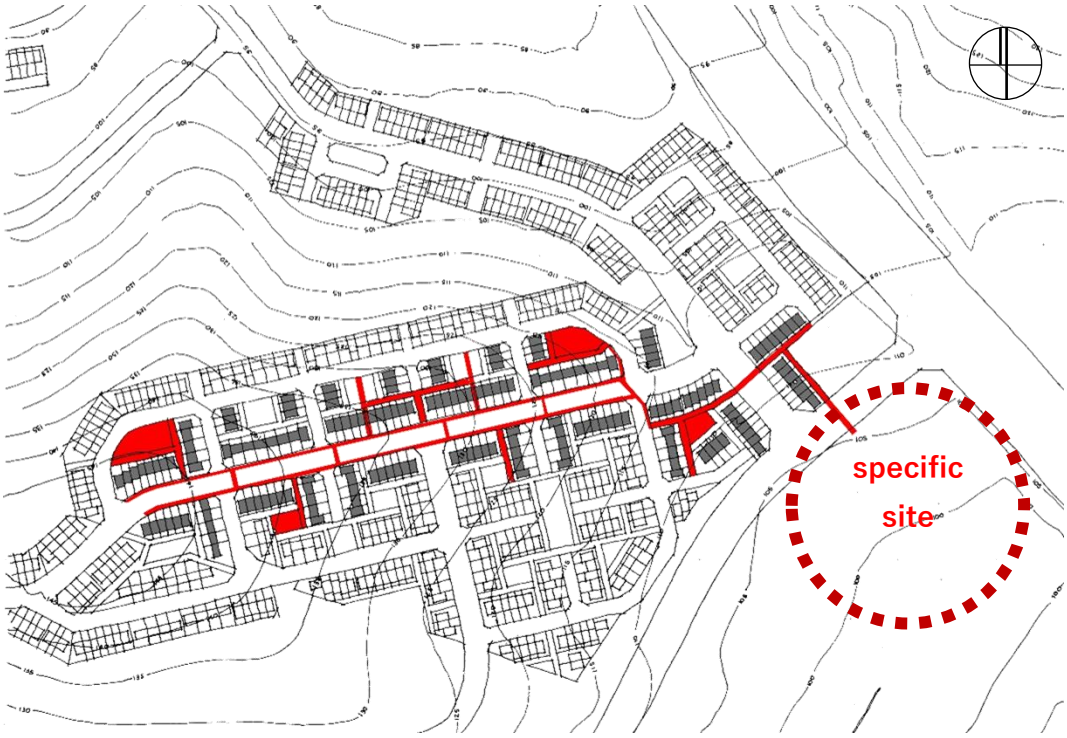
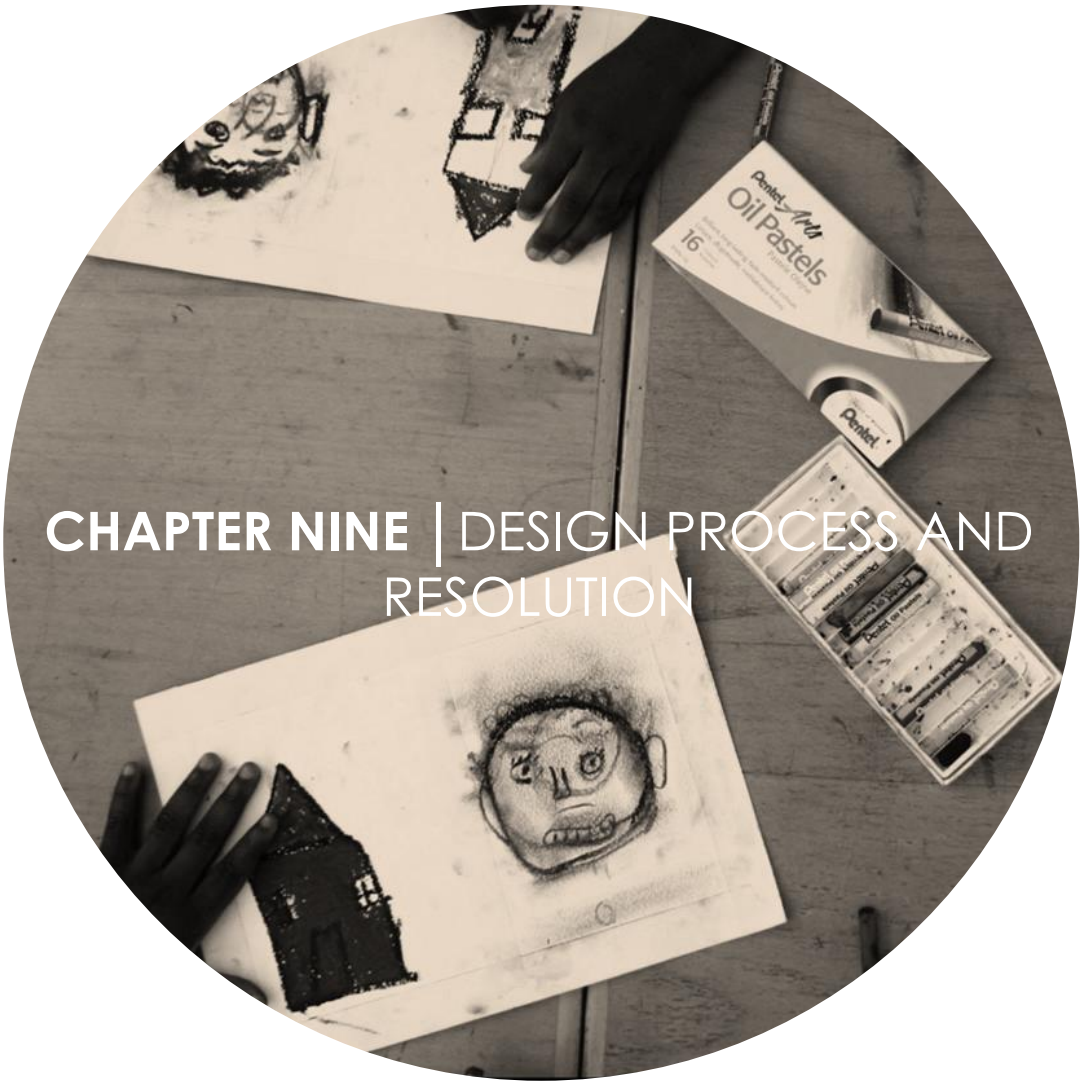


Figure 116: A system for Cornubia. Image Source: Author, 2016.

Collectively, the aqueduct, the surface drain and the plug-in each serve to collect, filter, store and harvest rain water towards addressing the needs of the community – supplementing a resource and providing an opportunity towards livelihood generation and making a dignified life within the city.

Retrofitting a community with necessary water-based infrastructure that recognises the networks of people as infrastructure and accommodates for them within its design. A self-sustaining system based around the possibility of gender and water relations. Each of these schematics will be taken across and further explored as components within the design of the proposed Water Reclamation Plant for Cornubia.



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APPENDICES

Appendix A: Semi-Structured Interview Schedule

Date: 9 May 2016

doung Anwar Jahangeer

Architect and artist, co-founder of dala.

Interview Schedule:

a. Why did you get involved with the Cornubia Project?

Well, look I didn't know why, but what I know was that the trajectory that dala's work had taken, and again, with the citiwalk and masihambisane its quite organic and fluid – it's about being a process, all of what we've done over the 14 years of existence has led us to kind of bring everything together in a context where we could bring all of that experience. Cornubia, specifically, not because of its housing or urban planning or architecture, but mainly because: One, it was a blank slate – a fertile ground for experimentation and unlearning. Two, because of people. It was the people that very much echoed the kind of social, psycho-pathology of a nation in this post-colonial, post-Apartheid South Africa. So those two points are what interested me.

There are a lot of people that have said that [Cornubia is a blank state]. People like Louis [another resident], say that 'we can do what we want; we can try things.' So that brings me to the thinking that Frantz Fanon talks about: If you want to make yourself understood to a people, you can do that by the choice of how and what language you use. So as a response to this, for me it was clear that people on the ground aren't stupid, they are able. What we assume of them is what makes them become that. But if we relinquish those assumptions of ours and 'go on the ground' you see that people are intuitively connected to what development is right or wrong for them. In fact, they are living it. Like the Spaza, it is a classic example.

b. What was the purpose of your involvement?

Well, from dala's perspective, the main purpose was to develop a manual. A manual that would expose a qualitative process that could accompany the quantitative initiative of this housing project. Its constantly shifting, though. It would be more of a manual that gives us an overall feeling as to how to engage with people, but it would come with a definite method of engagement that would focus on creativity as an area through which we can

then look at a set of methods to then look at this qualitative manual. Because of the nature of it, it can happen, before, with, after, during…a bridge for the next phase, it is again quite loose, an anti-structure, not a formula.

c. How did you make initial contact with the community?

It was through, firstly: the awakening of this context and its people, and secondly, educating the city about why Cornubia and the relevance of this blank slate in society. It was also going down on the street and meeting the community leader where he created a platform for us to present to the committee. You can imagine though, to talk about this notion of art or of creative practice that could become associated with social issues is quite alien to the community there because it's a different language. And now we're trying to bring this in, to collapse the binaries, you know. So as much as I tried to explain to Rasta (the community leader); he 'understood', but he couldn't understand. So one day we just showed him an example and we did the testing of the screening. That was what really opened up for me, and allowed us to engage in a dialogue with the community. Through this visual connection.

The screenings were calculated, what movies so that we could talk about different kinds of things, so it wasn't just anything. The first screening was set up to trigger curiosity, and then the kids came. And then that was left. I had no intention or expectation or need for response or feedback, appreciation or request. It again stayed like that, and then, they started to ask for more 'Pop-eye' by the kids, that was interesting, they were asking and I was being characterised by them and the screening, so this was the beginning of their involvement for me, of our participation.

d. How did the community react to your presence there, were they welcoming of your involvement there?

It was overwhelmingly positive and most of it – from the response from people – was because nobody goes there. And here I was, this guy that came, and I was talking what I always talk, and people felt it, it was honest and because of that it was not a problem to have doors opened.

e. Do you think the community could continue those kinds of initiatives without your presence?

Well I think more than it being continued itself - whether in the form of screenings or others - it was more about consciousness. It is tapping into shifting or adding a layer of how we perceived ourselves in a context or a context around us. It is a continuum – if we continue thinking about 'it' being something to be replicated, then what happens is that it becomes a formula for a very specific outcome. Here it was one of many actions which I do not know what form they might take if you ask me now. It is about providing a space for both us and the citizen around a kind of space towards a critical spatial practice. Which I think they are doing already, writing on the pavements etc. They are being critical about the context they are living in; the only problem is that they are not empowered by it because they do not that this is what they are doing. They do not know that what they are doing, actually, is producing their own liberation on a daily basis – like the spaza. All they know is that they are illegal as human beings because everything that they do is wrong – has always been wrong. So, for me, this kind of vehicle becomes a momentum that starts to engage in this kind of critical spatial practice, it is validating.

f. What was your initial impression of the proposed Cornubia Phase 1A development prior to visiting the site?

I didn't know about it, nothing.

g. Has this changed over the progression of your project there, if so, how?

Well, I got to know about it afterwards. It made me become even more reassured about how the system does not know what they are doing, on the one hand. If I then go further into that statement I could also say that maybe they know exactly what they are doing. So what they are doing there is really to maintain this oppressive regime. And then if I go back to the statement; maybe they do not know it consciously but unconsciously – with our socio-political and economic and gendered conditioning, we are practicing this. But well whether they know or not there is not enough questioning that is making them responsible, to not only what they are doing, but what they are not doing. My short answer, is that I have become even more unforgiving to these kinds of initiatives.

To come back to Fanon, he talks about how race and obviously the interconnectedness with race, class and gender, how race can become a re-enactment. A perpetuation through conditioning.

h. What lessons have you learned from working with this community?

What lessons I've learned? Well, I can only tell you that when I die, I won't be able to tell you that now, because its différance, its constant, perpetual différance within myself and as soon as I say it, I would stop it…[laughs].

Appendix B: Semi-Structured Interview Schedule

Date: 17 May 2016

Catherine Sutherland

Geographer and academic at the University of KwaZulu Natal.

Interview Schedule:

a. What sparked your interest with Cornubia?

Myself and other researchers were working towards a paper entitled Contested Discourses focusing on Cornubia, about four or five years ago. Since then I have obviously kept track with what has been going on in Cornubia, but I work more in Ocean Drive-In and Hammonds Farm – which are not that different to Cornubia – and my interest continued within this form of housing strategy towards informal settlements and housing across the city. Cornubia comes up throughout this work as it is presumed as this megaproject that everyone is going to land up in seemingly, but we know that that is not going to be the reality.

We had an EU project that had a number of work packages, one was on water and environmental risk, one was on substandard housing and social movements and how people respond to that, another on megaprojects and growth in cities, the fourth on spatial knowledge management and how spatial knowledge shapes decision making in cities and the last one on finance. The last two overlap but there were three apparent themes: housing; environmental; and economic and developmental growth. I worked mainly on the water governance package and the housing package.

When we started to look across the city, at the beginning of this project, as a comparison across cities, Cornubia linked housing, mixed use development and the megaproject idea- and became a good case study for us. The initial intent was to work with the Blackburn Informal Settlement community at the edge of the proposed Cornubia development site to see how they related to the project and address the need for housing in the city. This was why we did the first piece of research on Cornubia, interviewing to try to understand the different discourses or ways that the city, the settlers, Abahlali, all of the different actors in the space were conceiving of this particular project.

Another reason was that at the time, my Norwegian colleagues working in Cape Town, were working on the N2 Gateway project, similar to Cornubia at the time came out of the

Breaking New Ground project, and the Department of Housing had come up with the human settlements idea, changing the way we focus on housing and then the outcome from the national government level was to do the megaproject housing idea – the two flagship projects were of course the N2 Gateway project and Cornubia. There had been a lot of challenges at N2 Gateway so Cornubia was of interest.

b. Do you think that the mixed-use megaproject, such as Cornubia is a sustainable model to address the socio-spatial inequalities of our city?

It is a bit unusual as Durban has always delivered a lot of houses, a big roller out of the RDP, the earlier projects focused on the RDP were dislocated from any kind of opportunities for livelihood, with breaking new ground and the change from the Department of Housing to the Department of Human Settlements identifying the need for integrated human settlements and Tongaat Hulett having a big piece of land – these things converged at the same time.

As noted in our paper, the differing discourses going on at the time were quite interesting. Everybody was trying to achieve something differently. Housing draws in a whole lot of actors in different ways, different agendas and different ways of dealing with housing. Durban, while it has delivered RDP housing, it has also been quite progressive in how its dealt with informal settlers, allowing them to remain and working around them. But it has also been quite contradictory because the slums act emerged from KwaZulu Natal, it was this funny thing of the city allowing informal settlers while the housing department and provincial government wanted to eradicate slums. This eradication of slums was also driving this need to have big, large-scale mass-delivered housing. So, Cornubia obviously fitted that model because provincial government here was addressing slum elimination, local government was caught a little bit – visible politics in the contested discourses of what they wanted to achieve – and then national government looking for some flagship projects. The thing with Cornubia is that big piece of land, quite centrally located, given where we can put housing now, given the Umhlanga/Gateway node from an economic point of view it was very well-located land but obviously in private sector ownership as well as city ownership that then needed to be negotiated – a big parcel of land in which everyone is trying to achieve their goals.

Pro-growth and pro-poor is a hard one, because the pro-poor agenda is part of the national identity, there is a greater attempt to address this and bring poor people into

these spaces to benefit from the project and the city. But at the same time, Ocean Drive-In, an informal settlement next to the airport, was relocated because of the airport – they were given low-cost housing in the interior in Hammonds Farm, displacing people further away from the opportunities of the city. Cornubia will be interesting over time to see what extent they do integrate housing into the project. The housing approach is the same between Hammonds Farm and Cornubia, if you think of an integrated settlement, it needs to be more interconnected in order to provide this and be sustainable, and I still don't know whether they are doing that.

With all of these different discourses and agendas, maybe that is how space is made anyway you do have different views and it gets entangled somehow and produces something, but it's almost like who is keeping an eye on the poor in those projects so that marginalisation that can happen so quickly, doesn't happen.

c. In your work, you have discussed the "mundane forms of resistance" of on the ground agency in regards to the roll out of interventions by the government/municipality. Can you expand on an example of this?

South Africa is quite a controlling interventionist state – good in some ways because they deliver water and they deliver houses. We have seen it in the smaller technologies of the UDT toilets, so the state rolls out a programme and its intended plan, and then you've got human agents, so the agency of people on the ground is what's interesting to me, because they then have got to respond to that technology or roll-out and they then change that, and in changing it, change the response of the state – in a progressive group like eThekwini Water and Sanitation over time respond and change things as this interplay unfolds. So ordinary people on the ground are able through this to change the way in which these things roll-out, adapted, changed, and differ to what policy dictates. That is the interesting thing of life in the city, it is where these two things come together, in that space is where opportunity sits. To work here can result in a more positive response.

The urban poor are going to have their own agency, they are going to adapt things, the mundane forms of resistance- the everyday shifting and changing of the way things work to make things work. You see it a lot in water systems in the way people make water allocation work for them – while this does cause problems for the department.

d. It is interesting to note the relationship between the people living in megaprojects, such as Cornubia Phase 1A, and access to water. How do you perceive this accessibility?

Water is tricky. What would be interesting to see is how people thought of water before within an informal settlement, and how they perceive water now in Cornubia, there is a difference, and how the difficulties and strategies versus the water in the tap, how these conceptualisations of water in these two spaces change.

It's quite an interesting challenge, within the context of "delivery" that they are in, delivery of houses, delivery of water…any water source that isn't fresh, clean water out of the tap is seen as inferior. I would wonder how the community would feel about accessing grey water, perhaps, or the conceptions of sanitation and electricity now that they have moved from an informal accessibility or standpipes. The access through a tap in their houses is an affirmation of finally being up to standard, and what does this do to the thinking behind water reclamation.

People in general are so distant from water – the commodification of resources as a result of capitalism has revoked our feel for the environment, our feel for water. The community of Cornubia here are victims of this too, being taken one step further from the reality of water. Just because it comes out of a tap, you lose that feel, of the natural resource that water comes from, and then the processes that water goes through before it even meets our taps. We need to reconnect with the systems of how things work, and then address our ideas of accessibility.

Appendix C: Semi-Structured Interview Schedule

Date: 13 June 2016

doung Anwar Jahangeer

Architect and artist, co-founder of dala.

Interview Schedule:

a. You have referred to selecting to work in places of an in-between nature, places of differance. What, for you, defines différance within Cornubia Phase 1A?

It is interesting, I mean, différance because it is more of the same together – and that's it – you have six different townships, bearing six of the same issues, that have now been brought into the one space. So it is different, but it is the same. And it is the people themselves that say that, they say "it's a blank canvas, [when they heard that I was coming to work in the area] we can learn from this". That was the first time that I heard people on the ground being positive about their demise, if you will. And then it is the same, well, I bring it back to the citiwalk, to what I have learned, that is that we also remain with the ultimate simplicity of just being human with each other.

(That is quite interesting in two ways, the first because of the associations made between the township and Cornubia)

Their différance is in that, in recognising the same and the difference. Township…Cornubia, it's the same thing. It's just a word for the same thing.

b. In your opinion, has the planning of Cornubia considered the way in which the people living in Phase 1A live their lives? If no, how does one begin to address this? What was that compulsion for you, to address the lack of consideration of their lives?

(I know that you started the idea with tapping into the spaza networks…)

At first, I didn't, it was when Patrick did a drawing of his own Cornubia – of his own accord – this drew the presence of the spaza networks to our attention. The combination of this, and then later my conversations with the spaza owners who always spoke themselves of how they are victimised and threatened by the system, constantly reminded that this, their

livelihoods, their every day, is illegal. And it is more than just a source of income, it is a source of education for their kids, so much more that we cannot focus on here. But for me, this idea of their lives as an illegality, was just unjust. For me it became more about this, the tension that lies between the reality of what and how much the third economy does for the country, and on the other hand how much they are victimised. This kind of injustice sparked – then the potential of the spazas as a blank canvas.

The spaza network within Cornubia is something else. Anywhere else, it'd be like a loose headless chicken running around, but there, in Cornubia it is specific and well-constructed. People decided to activate the spazas and brings out a different kind of language or movement, and this brought out the potential of the spazas, as more than just the sellers of small stuffs, but its potential in making in Cornubia.

c. Teddy Cruz makes reference to the need to move away from "the neutrality of the public towards the specificity of rights", he holds this within his practice between politics and architecture. Do you think that public architecture can facilitate différance that exists? Do you think that there is the potential for architecture to facilitate these cultural practices that emerge – much like the spaza network?

Totally agree with that. However, I think that if we remain within this system that we so delicately are trying to preserve (as architects) we are never going to be able to do that. In order for it to happen, we need to understand that this organism doesn't require the system to survive, nor does it require its validation for what it is. In fact, architecture as the autonomous thing is wasting its time there, unless there is a change of what is our preconceived notion of architecture we will not be able to plug in to it. The truth is that these cultural practices are so much more intelligent and mature.

With the intention and wishes of the profession with what it has done in the past and what it thinks it can do in the future, it cannot without changing, it needs to lose control and learn from the simplistic ways of how this self-sustaining system works – outside of capitalism. It is like a powerful mutation.

d. Is there an example of this within our city? If so, where and why?

Outside of the grass growing through the crack in the pavement?

I think again it is not something that we immediately see with our eyes, in masihambisane for example, with your class last year, people didn't know what they were doing, and that was the point. In that unknowing, you won't see it when you're looking at it, its invisible and something that you feel. And I think that that is what can bring meaningfulness – an architecture of humanity, of renegotiating what it means to be human here.

The idea of this architecture – the word is so conditioned with expectations, burdened with them, that I don't know…I don't think that it can be associated, yet at the same time, the invisible feeling is in itself an architecture. Like the screenings at Cornubia, that feeling of event, that is the architecture.

The spaza network is that – an organic intelligence – the form is just always changing, it takes in the curveballs and emerges again, it is at once quite natural, and equally intelligent because of its natural ways. It is aware of its limitations; it is imaginative because of it.

Appendix D: Focus Group

Sample group of Women in Cornubia Phase 1A

An interactive story-telling session with the chosen sample, to discuss the realities of living in Cornubia and their relationship with water – accessibility, sanitation, homestead and domesticity - what accessibility to clean water means to them and how this can be used to generate urban development that is more socially responsive. Particular interest will also be placed on the use of water as a resource, water recycling and any food-based planting. The findings of this focus group will be towards informing my research within a given context to reveal how women interact with both place and water as resources to create their day to day life.

Interview Schedule:

a. Getting to know each other…
   - What is your name?
   - How old are you?
   - Which unit do you live in?
   - Are you currently employed?
   - Do you have any dependents?
b. As a woman, what does the relocation to Cornubia mean to you?
c. How did you access water before being relocated to live in Cornubia?
   - Was your access to water private within your homestead, or was it communal?
   - If access to water was outside of your homestead, how far did you have to travel to gain access to water?
d. Do you think that access to water has changed your day to day living and your livelihood?
e. Are you aware of rainwater harvesting, and recycling towards the use of reclaimed water?
f. How do you feel about using reclaimed water?