



RESEARCH ARTICLE

Socially responsive research-based design in an architecture studio



Carin Combrinck

Department of Architecture, University of Pretoria, Pretoria, Gauteng 2000, South Africa

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Abstract

Globally, the architectural profession faces complex challenges, bringing the transformation of the curriculum to the forefront of critical discourse. This article reflects on the Honors programme at the University of Pretoria Architecture Department during the first semester of 2016, where a research-based design approach has been established. In particular, the focus is on the informal settlement of Woodlane Village in Pretoria, situated on a contested site among private residential estates. From this study, it is argued that a research-based approach serves to prepare graduates for the complex decision-making and collaboration that is required for the development of socially responsive design.

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1. Introduction and literature review

The current discourse on architectural education in South Africa is captured in recent editions (2015 and 2016) of the Journal of the South African Institute of Architects (ArchSA) and is further expanded in the Architectural Education Forum (AEF) that formed part of the annual South African AZA student congress in September 2016. Topics raised by academics across the board included the requirement for the evolution of curricula in response to real-world

conditions of the new generation to allow the profession to remain relevant to our society.

In this challenge, the 1970s unit system of teaching of the British Architectural Association is introduced as a framework to the University of Johannesburg (Lokko, 2015) to investigate the development of tacit knowledge systems through collaborative design-build studios at the Cape Peninsula University of Technology (Delpont-Voulgarelis et al., 2016). At the AEF, Prof. Alta Steenkamp of the University of Cape Town explores the concept of *Sociability in Architecture* as an important theoretical consideration that deserves a profound reflection in the curriculum. However, Prof. Roger Fisher (2015) notes that despite the restructuring of the University of Pretoria curricula fifteen years ago, no significant movement in the academic environment has been observed. By contrast, he

E-mail addresses: carin@citicrew.co.za,
Carin.Combrinck@up.ac.za.

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proposes that *an even greater divide exists between the academy and the profession and greater mutual suspicion and diminishing synergy* (Fisher, 2015). He ascribes this scenario to the current academic imperative for promoting degrees by research, which seemed to have shrouded itself in mythical confusion, rather than encouraging a profound reflection on the profession. Prof. Fisher also offers pointers on establishing this elusive synergy and pragmatic and rigorous principles in which the process and production of architecture are demystified by forming a sound knowledge base.

The course content should be understood, and the design practices can no longer reproduce heroic architecture as promoted in the previous century. The highly politicized expression of tertiary education in South Africa, that is, *#FeesMustFall 2016*, is certainly viewed as an important watershed in terms of critical evaluation of the academic endeavor. The question of relevance across disciplines, including the architectural curriculum, is investigated.

The international discourse on architectural education is likewise concerned with the role of architecture in the calamitous wake of the twentieth-century conceptions of progress and power. Scholars recognize the urgency for architects to become extra sensitive to context and consequences of their actions (Feireiss, Boumann, 2011), thereby encouraging improved reflection and rational thought processes to balance the overemphasis on creative production (Cupers, 2014). Till (2011, 2014) encourages an architectural view that is focused on agencies rather than productions; thus, this perspective can *provoke answers around new modes of design that encompasses adaptation, redistribution, restarting, and optimization* (Till, 2014).

Similarly, Tzonis (2014) implores the architectural pedagogy to separate from the concept of *star architects*, who are lauded for their apparent ability to create “something out of nothing,” which calls instead for the type of creativity that embraces reality through *method, knowledge, and public responsibility* (2014). This view is shared by Bashier (2014), who recognizes the importance of balancing rationalism with creativity, specifically engaging in design processes based on empirical research (2014) to achieve social responsibility in architecture.

Therefore, imagination and creativity are no longer adequate platforms locally and internationally for teaching and practicing architecture. In an increasingly complex world, balancing the design process with a grounded knowledge base that responds to research that engages daily issues at their core has become imperative. The research definition and embedding this definition in the design studio varies significantly; thus, no single method or approach can offer a comprehensive platform of inquiry. For example, the literature on evidence-based design in architecture is focused largely on healthcare facilities and other similarly specific program-driven architectural typologies. Thorpe and Gamman (2011) argue that an appreciation of contextual complexity is required when considering the social impact of architecture and its possible contribution to social change. Designers should be aware of competing for resource requirements, goals, and needs to consider and decide the factors that should be prioritized in the design response. According to these authors, such socially responsive design is distinct from assuming ultimate responsibility for the complex array of consequences that are associated with design. The design is considered

sufficiently acceptable (Thorpe and Gamman, 2011, authors’ italics) for social, political, and ethical objectives.

The question is the extent of participatory research and mapping methods that were developed in the Honors program at the University of Pretoria, Department of Architecture. These methods offer students a useful vehicle through which they can develop such socially responsive design propositions. The program, which is based on three distinct research fields that were developed within a conceptual framework of sustainability, has evolved into a research-based design studio, which is focused on field research and community participation.

2. University of Pretoria Department of Architecture

The curriculum of the UP Department of Architecture, which has a strong tradition of teaching sustainability since the 1970s, was restructured in 1999 with the foresight of focusing on resource efficient design (RED). This approach to architectural education is based on an ecosystemic approach:

Ecosystemic consideration is regarding systems as nested, in which each as part of a large system, and made up of sub-systems and in turn as a part of a supra-system. These sub-systems can develop properties that are emergent and are unique properties of the supra-system and not found in the sub-systems. Thus, we can discuss the ecology of building materials because biologists would use the term, understand the term, and see each element as part of a large whole, which affects other sub- and supra-systems (Fisher and Clarke, 2011).

Fisher and Clarke (2011) mentioned that imparting such thought process depends on a student’s development of an empathetic understanding of necessities. Thus, the exposure to *actual problems with actual people with actual needs* is important. Engagement with sites that embody the tangible and intangible aspects of cultural palimpsest, time, climate, geomorphology, and natural ecologies situate the complexity of systems that inform the RED architectural response.

The following three discreet research fields based on this tradition have evolved as informants within the overarching concern for resource efficiency.

2.1. Human settlements and urbanism

Investigations are conducted on the current sociospatial conditions of our urban environments that are influenced by economic migration, political redress, and environmental distress. Design and intervention strategies are aimed at enabling emergent social structures and integrating into existing urban and natural processes with potential emotional ownership and reinvestment by the inhabitants. Engagement with communities of interest contributes to a participatory research process that underpins these investigations.

2.2. Heritage and cultural landscapes

Diachronic and synchronic understanding and analysis of the ecology of the cultural environment are applied to

the design of a developed environment. Solutions are focused on appropriate building form and space that is referenced to the legal heritage frameworks and current best practices. Theory of the relationship between human and landscape and of heritage conservation. Recording, investigation, interpretation, representation, and design response are carried out within the built environment in terms of places, structures, and artifacts of cultural significance and heritage value.

2.3. Environmental potential

Human development requirements and the potential of the environment to serve or provide for these requirements. Social consideration, environmental responsibility, and economic equitability result in regenerative design and development approaches, sustainable building methods, recycling and reuse of material, community benefits, and environmental restoration. (UP Arch, 2017)

Introduction to the three research fields occurs in the Honors year. Then, the professional Masters degrees by research should be positioned within one of the research fields considering the impact of the others. Therefore, the Honors program has become the vehicle for departmental research outputs under the guidance of research field leaders, who concurrently serve as the Honors studio masters. Research questions within each field arise from the fluid engagement with context frames, such as the annual studio themes that are intrinsically linked to particular sites of investigation, thereby resulting in a nested understanding of our urban environment, its challenges, and resources.

3. Honors program driven 2016

For the 2016 Honors studios, three sites of the investigation were identified to collectively frame an overall concern for resource efficiency in the urban ecosystem.

Two sites are included in the inner city of Pretoria, with the third city considered an informal settlement situated among the affluent suburbs of East Pretoria. The method of engagement was consistent throughout the studios, although each site has the opportunity to frame a particular research question.

The research field of human settlements and urbanism was introduced during the first quarter of the year. The students that work in groups to engage with specific community networks are active within their particular sites. These networks are representative of residents in the area, non-government organizations (NGO), and non-profit organizations that render support services, retail groups, institutions, informal vendors and settlers, or various tiers of homelessness. Participative mapping exercises of tangible and intangible aspects of the area were required as a basis for the proposed urban scenarios and block design strategies. In the second quarter, the research field of heritage and cultural landscapes served to deepen the student inquiry into the identity of the place, with physical documentation and narratives that present individual design proposals, which remained conceptually framed by the preceding urban scenarios. Therefore, the first semester

utilizes the research opportunity as an informant to the design approach, thereby encouraging a sensitized view of existing and preceding conditions.

The following section of the paper elaborates on the studio that focused on the informal settlement of Woodlane Village in the affluent suburb of Moreleta Park.

3.1. Woodlane Village, Moreleta Park

Woodlane Village informal settlement (also known as Plastic View) is situated at the south-east of the City of Tshwane (CoT). The area has developed mainly as a privatized residential area, which is prompted by middle-class flight from *crime and grime*, which is near the Pretoria Central Business District (Mini, 2013; Prinsloo and Cloete, 2002). Owing to this centrifugal development pattern, population groups that were systemically excluded from inhabiting the urban centers during nationalist rule have been experiencing difficulty in capitalizing on the lifting of institutionalized restrictions since 1994. A significant demographic shift has occurred in the high-density center of Pretoria in areas, such as Arcadia and Sunnyside (Prinsloo and Cloete, 2002); thus, considerable efforts of the government at redress have come in the form of single-family capital subsidy housing schemes (known as *reconstruction and development program housing*) situated on the periphery of the urban edge, where the cost of land and infrastructure dictated much of the development thrust (Budlender and Royston, 2016). Therefore, the much-maligned apartheid city model became ironically enhanced through this process (Fig. 1).

The formation of informal settlements, such as Woodlane Village, within this spatial organization is an indication of a natural attempt at redress, where individuals move closer to employment opportunity (Budlender and Royston, 2016; De Vos, 2014). The ANC-led government has shifted its view on informal settlements significantly from attempting and promising to eradicate informal settlements since 1994 (Huchzermeyer, 2011) to adopting the Upgrade of Informal Settlement Policy and implementing the National Upgrade Support Program in 2009 to assist the incremental in situ upgrade of such settlements. This shift is also recognizable in the recent adoption of the Spatial Planning and Land Use Management Act No. 16 of 2013, which suggested that all developments should consider the integrated progress of mixed use and income communities, with specific emphasis on the upgrade of informal settlements. However, such an important shift in policy is not beneficial to the development market or in the domain of public authority, as evident in the following story of Woodlane Village.

Economic opportunities came in the form of retail, construction, and service-related employment along with the market-driven development to the east of Pretoria. However, no accommodation allowance was provided for individuals that accept these employment opportunities; thus, they largely rely on accommodation in the dormitory townships, far-flung RDP housing developments, or the now-distant CBD rental stock. This disconnection, which is typical of the job/housing mismatch in South African cities as described by Budlender and Royston (2016), results in a direct cost to individuals in terms of time and transport fare.

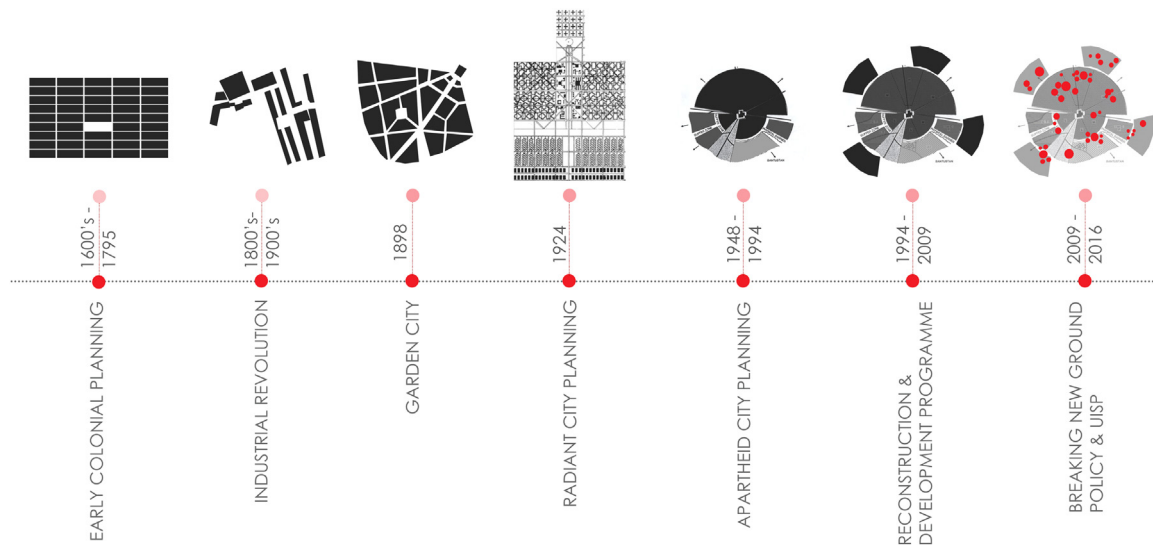


Fig. 1 The infamous apartheid city model has been ironically enhanced through peripheral development of subsidised housing, resulting in spatial redress through the formation of informal settlements (UP Arch MProf, 2016).

The direct result of these contributing factors could be seen from 2006, when there were the first indications of people inhabiting the open grasslands and shrubbery on the CoT council property; this city adjoins the newly constructed Moreleta NG Church across the road from the equally new Woodlands Boulevard Shopping Mall. Regular accounts of eviction by CoT authorities prompted Colin and Denise Dredge to establish the Tswelopele Step-by-Step NGO to protect the informal dwellers from these evictions (Peres and Du Plessis, 2013).

An agreement was reached by Tswelopele in 2008, that is, the executive leadership of Woodlane Village and the CoT, to establish a contained encampment of temporary dwellings, which are partially serviced by the council through four water tanks, eight portable WCs, and central refuse removal. The CoT attempted to sell the property on auction during 2015 despite being halted by an interdict sought by the Lawyers for Human Rights on behalf of Woodlane Village and this agreement of tenure. Subsequently, an agreement was reached in which the residents would be relocated to a serviced site in close proximity to the settlement, where container housing units would be provided for everyone, who was part of the Woodlane Village register (Citizen, 2016).

Meanwhile, relationships between the residents of Woodlane Village and the surrounding residential estates and the well-established Moreleta Church had undergone shifts that are similarly significant and independent of the contested claim to tenure. An increasing number of volunteer bodies and organizations started to rally in support of the Woodlane Village residents despite initial fear, anger, and resistance to the settlement by surrounding resident associations. Among these organizations, the most significant is Pure Hope Kids (Pure Hope, 2017), which was established by members of the church congregation. This initiative, which started as a day-care facility for children living in the village, has grown to accommodate more than 200 learners up to the level of Grade 2. Several classrooms within the church building are required for the growing primary school, which was originally

accommodated in the Sunday school classrooms below the main auditorium of the church (Anderson, 2016).

This process of spontaneous integration coincides implicitly with policy intentions to align a progressive constitutional underpinning of a complex democracy by using a spatial model that allows for opportunity and option in the urban environment. Students, who were enrolled in the Honors programs in Architecture and Landscape Architecture, were introduced to the founders of the Pure Hope Foundation and the leadership of Woodlane Village at the beginning of 2016.

3.2. Studio structure

3.2.1. Research process

The summary of quarter one described a two-phased approach as part of the human settlements and urbanism research field. The two approaches are a mapping process and developing urban and block design strategies. The mapping process includes the integrated mapping of historic and existing urban form, physical site conditions, and the understanding of social capital through documentation and visual representation of socially organized networks. Quarter two was focused on understanding the heritage and cultural landscape, where one of the focus areas was determining the story of a place through narrative and documentation.

The paradigm within which the studio is situated resonates with the so-called social constructivism that is associated with the *Social Construction of Reality* of Berger and Luckmann (1966) because this paradigm relies on the study of everyday knowledge and ideas (Vera, 2016).

It is qualitative rather than quantitative in its goal to derive an understanding of social phenomena through observation, thereby questioning the *structure and essence of the lived experience and conditions that shape the interpretations of human acts or products* (Rossman and Rallis, 2003). Its value lies in engaging with complexity when it

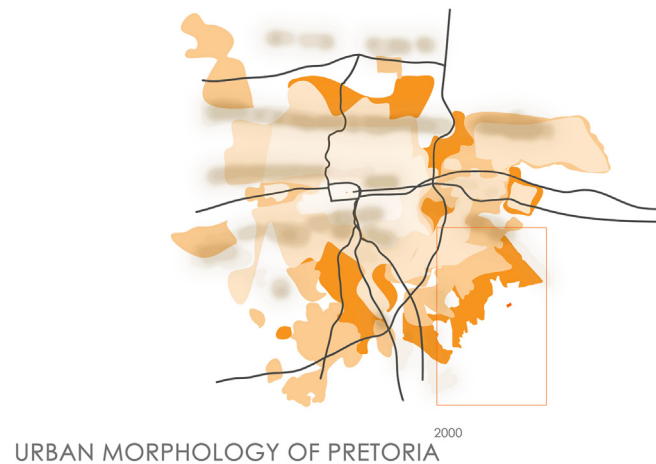


Fig. 2 The sprawling growth pattern of Pretoria is influenced by the geomorphology of the surrounding ridges as well as the city's uneven economic growth (UP Arch Honors 2016).

- occurs in the natural world,
- focuses on context,
- is emergent rather than tightly pre-figured (open-ended),
- is fundamentally interpretive,
- views the social world holistically (unified experience),
- systematically reflects on self,
- is sensitive to personal biography,
- uses complex reasoning,
- focuses on the acceptance of respondents on their own circumstances,
- ensures prolonged contact (continuing process), and
- learns by performing

(Ely et al., 1991; Groat and Wang, 2002; Rossman and Rallis, 2003).

The work conducted in the Honors studio fluctuates between the *interpretivism* description of Rossman and Rallis (2003), in which students are encouraged to document and understand the status quo based on observation and interviews, and *critical humanism*, in which students become involved with the communities in informal settlements, where design is an agency of empowerment.

3.2.2. Design approach

The quarter one summary called specifically for students to work in groups and position themselves in terms of the discourse that surrounds a process- or product-driven approach to architectural response. In the context of slum upgrading and public interest-centered urban regeneration, the concern is that the emergence process is easily undermined by professional determinism in the service of centrally administered state or donor agencies (Feireiss, 2011; Mitlin, 2013; Payne, 2008). Reliance on the typically individualized external authorship of architectural production contradicts the representation of a collective identity and aspiration that defines a residential community. According to Mitlin (2013), professionals should be prepared to develop the *appropriate attitude* to communities considering the inherent skill sets and knowledge systems before imposing assumed solutions to perceived problems. Such an attitude can be nurtured by close observation and

understanding of the complexity, rhythm, increase in density, labor division, social stratification, and workings of an emerging settlement (Kellett and Napier, 1995). The voice of the end-user can, therefore, be exposed through facilitation or agency by relinquishing the role of the primary author, as proposed by Fathy (1976), De Carlo et al. (2005), Kroll (1986), Turner (1976), Habraken (1972), and Till (2011). Roland Barthes eloquently described in his seminal essay, *The Death of The Author* (1967):

...the birth of the reader must be ransomed by the death of the author.

Foucault's (1969) response to this statement, however, challenges the value of who should claim authorship by arguing, rather than the value of the remaining *oeuvre* is crucial.

Thus, D'Anjou (2011) offers three models that describe the relationship between an architect and a client; these models determine whether existential authenticity of an *oeuvre* can be achieved through mutual dialog:

- *Paternalistic model (one-way communication): the architect makes all the decisions and denies the client any autonomy, thereby resulting in a degrading and dehumanizing condition.*
- *Client-autonomy model (one-way communication): clients dictate services that are expected and allowed, thereby restricting the freedom of the designer.*
- *Cooperation model: Communication is central; an individual does not control the conversation, but all parties are embedded in it; thus, the dynamics are guided by the subject matter at stake; shared decision-making and reflective dialog.*

The proposed urban and block vision aimed at the last model to establish a potential platform for authentic design dialog. Collaborative thinking and group dynamics are required in developing appropriate responses to the circumstances revealed through the research process. This approach reflects an attitude similar to that proposed by the *Community Architecture* movement championed by Rod Hackney in the 1980s:

Community architecture emphasized the relationship between the architect and the client and sought to strengthen this relationship to increase the relevance and appropriateness of the design approach and solution for the client who quite often could be a community organization or voluntary group (Jenkins and Forsyth, 2010).

3.3. Ethics and introductions

The participatory and qualitative aspect of the research relies on an authentic contextual engagement that necessarily implies an intimacy of observation and interference in the daily lives of people. An ethical consideration of the impact of researchers is required:

The act of observing influences – what is being observed – even at our most unintrusive; we influence the phenomenon we are studying (Ely et al., 1991).

The subject of the study may be exposed to manipulation or unintended impact by gathering data as an external party. Therefore, an agreement by all parties to the research should be ensured to obtain an informed consent and minimize personal exposure. Thus, documenting any forms of individual identification was explicitly ruled out. In the case of narratives, secondary sources are preferred; thus, structured interviews are not required.

A relationship was established between the Honors studio master and the community liaison officer of the NG Moreleta church before the academic year commenced. Further



Fig. 3 There is a marked decrease in compactness towards the eastern periphery, with higher densities towards the more established center of the urban fabric (UP Arch Honours 2016).

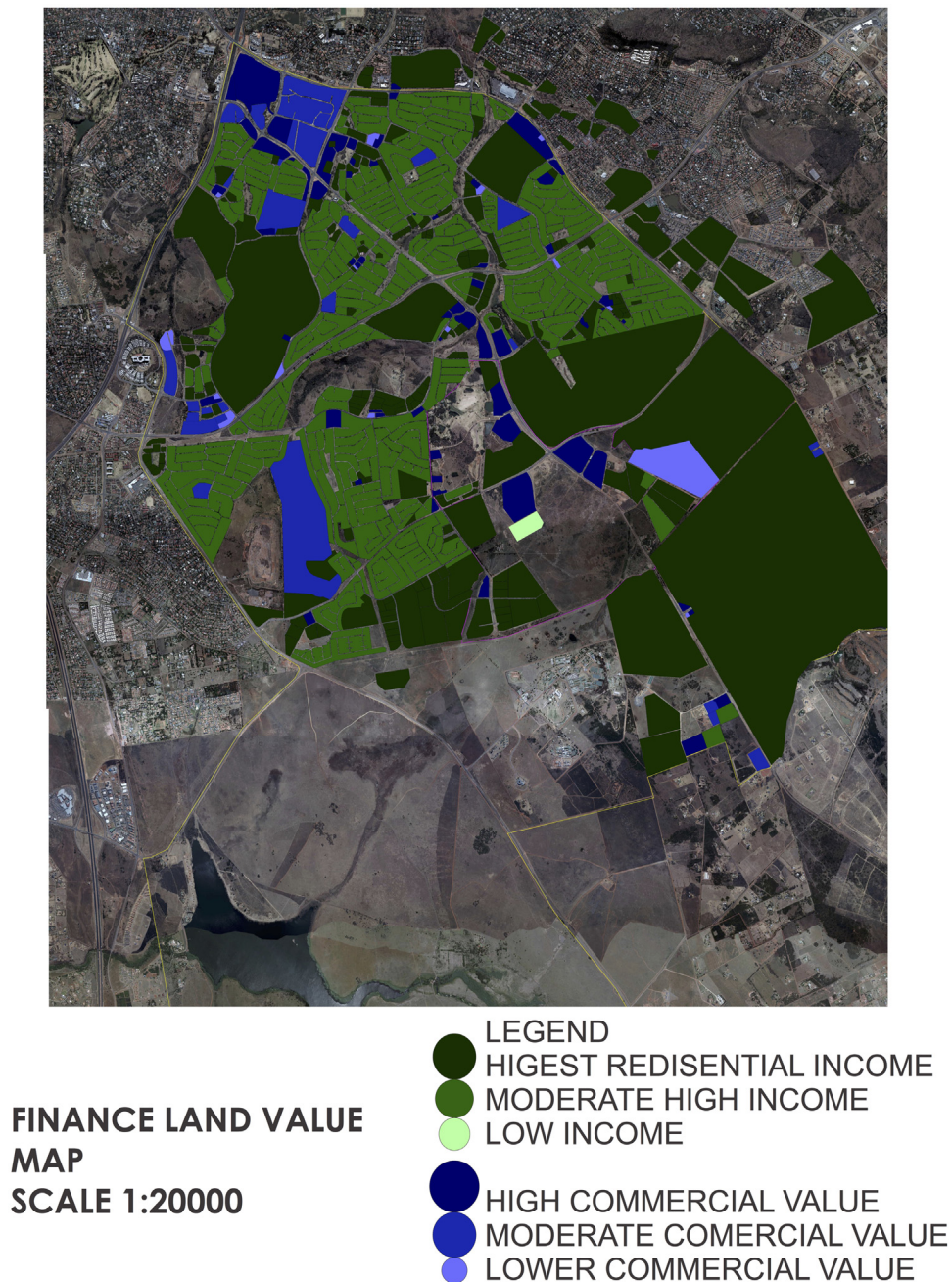


Fig. 4 A clear indication of value is attached to the lower density properties, as was evident from transaction values documented over the last number of years (UP Arch Honours 2016).

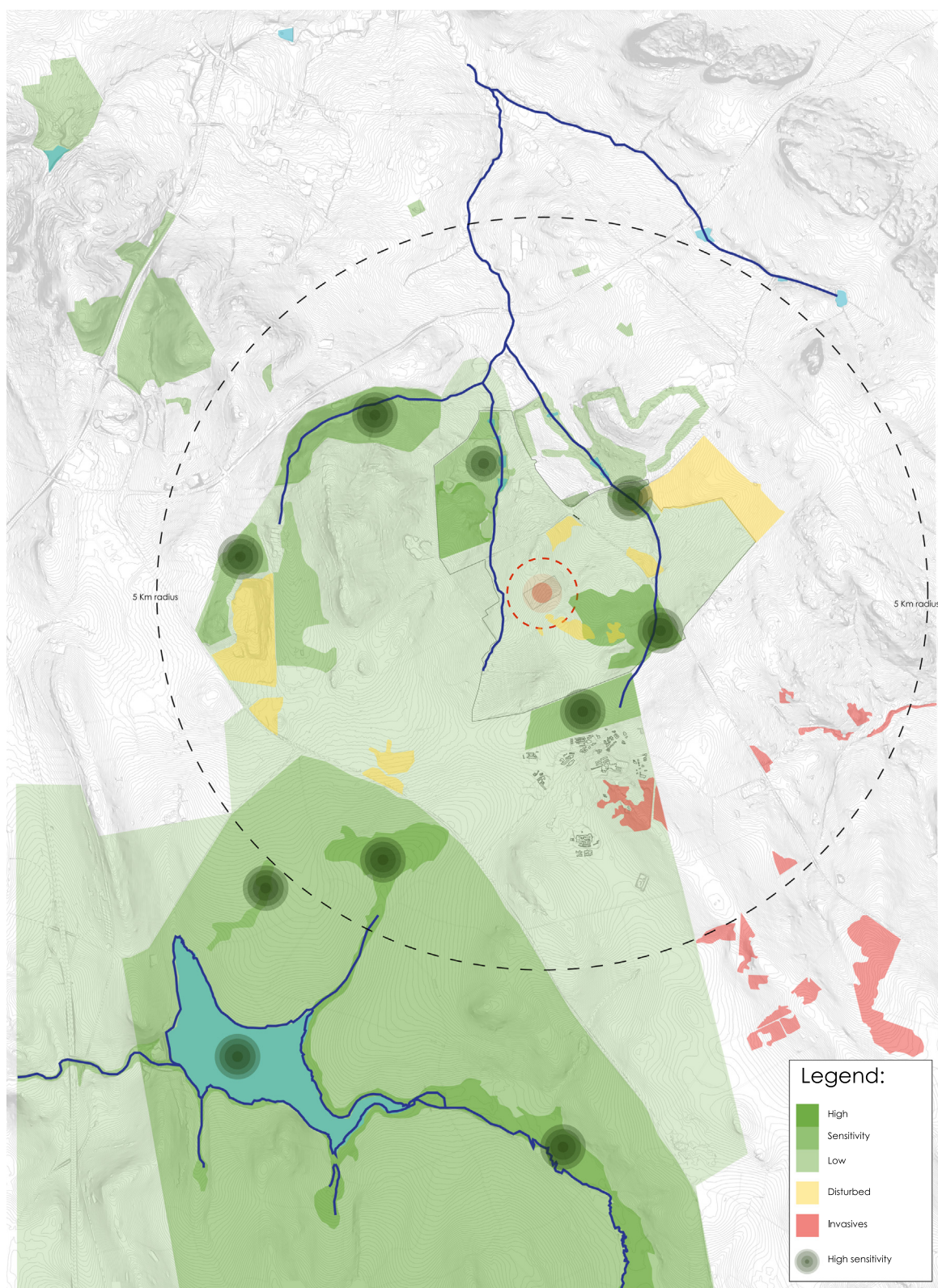
introductions then followed with the principal of the Pure Hope School, who is a minister of the church and the Woodlane Village executive council. The intentions of the Honors studio were established, and a general agreement was reached in terms of the access of students to the area and the level of interaction with the residents of the settlement and the school itself.

Entrance to the settlement was formally arranged through the stakeholder group where Woodlane Village volunteers accompanied the students on transect walks through the settlement, thereby serving as sources of information regarding the inner workings of the social system and translating when necessary. The formal study

program allocated one day a week for these structured field visits for the duration of the first quarter. Students returned to the site on a voluntary ad hoc basis to refine their observations or offer assistance to various groups within the settlement while the quarter progressed. These visits were not officially documented but contributed to the richness of their understanding of the area.

4. Method of inquiry

The method of inquiry relies on critical reflection, which is a term that can easily be confused with a superficial process that does not involve rigorous and scholarly engagement,



Sensitivity Map:

1:20000

Fig. 5 Hydrological sequences resulting from the geomorphology, the prevalence of invasive species and potential ecological links were overlaid onto a final map of significance (UP Arch Honours 2016).

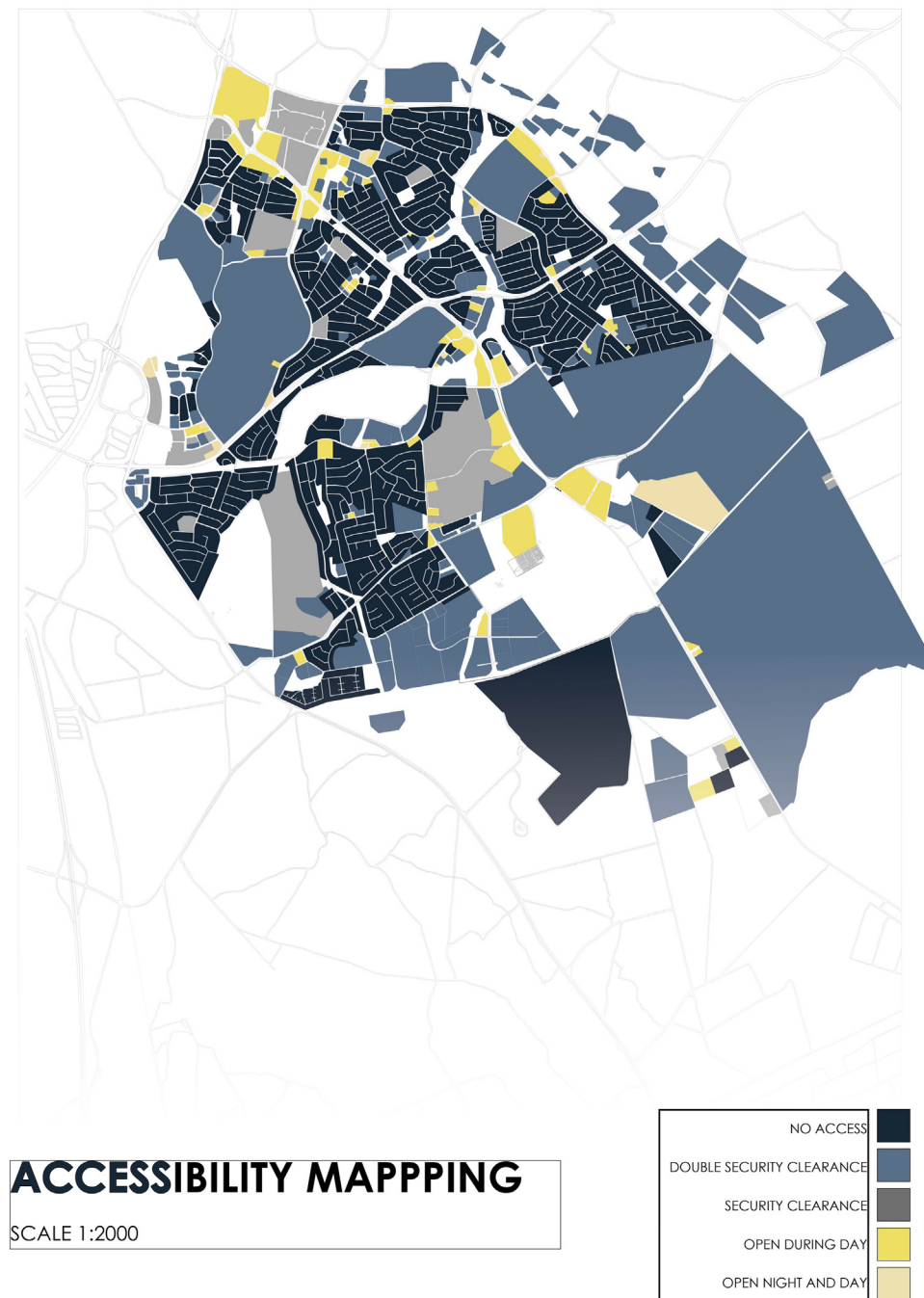


Fig. 6 Networks of private and institutional crime prevention were documented, along with a map of accessibility. More than any of the other layers of mapping, this lack of public access served to point out the heightened level of socio-political stress that defines the urban condition in this area (UP Arch Honours 2016).

according to [Fook et al. \(2006\)](#). The authors, therefore, suggest that the following aspects should be undertaken given various interpretations of critical reflection:

- *a process (cognitive, emotional, and experiential) of examining assumptions (of many different types and levels) embedded in actions or experience;*
- *linking of these assumptions with many different origins (personal, emotional, social, cultural, historical, and political);*

- *review and re-evaluation of these according to relevant (depending on context and purpose) criteria;*
- *reworking of concepts and practice based on this reevaluation.*

[Argyris and Schön \(1974\)](#) develop theories on single- and double-loop learning; these theories allude to these levels of understanding that evolve through iterative scrutiny by adopting methods that range from journals and critical conversations to facilitated workshops or narratives. In the evolution of the UP Architecture Honours program, regular

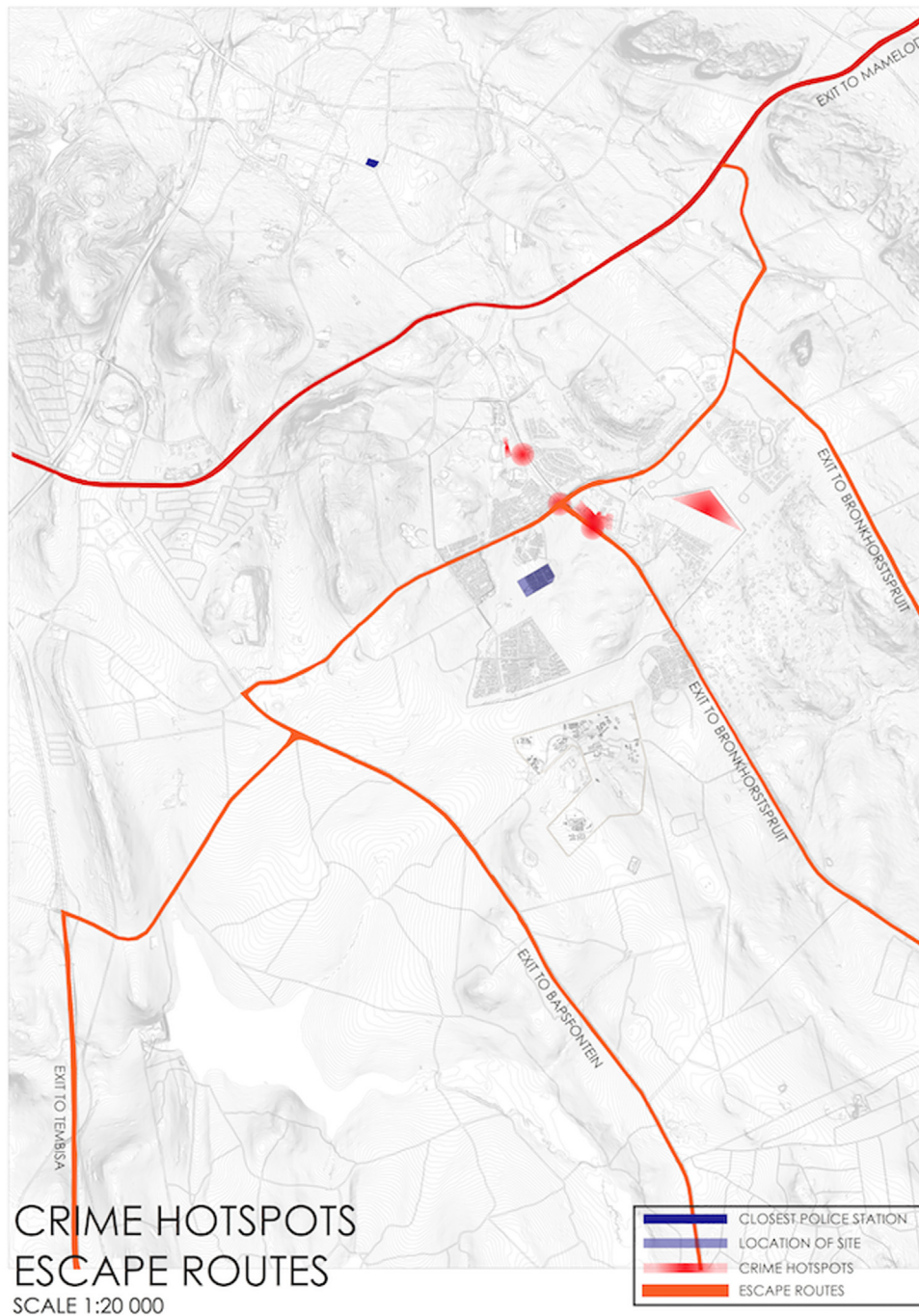


Fig. 7 A significant theme that marks development in this area is the prevalence of crime, along with the strategies put in place to ensure safety and security (UP Arch Honours 2016).

assessments by internal and external examiners and professional accreditation panels have contributed to this process of reflection. However, these learning loops induced the program to the current point of investigation and will therefore be excluded in the discussion.

The focus is on unpacking the work conducted in the studio during one academic semester in the context of an informal settlement, thereby exploring the process that followed and analyzing a selection of design proposals that emanate from the studio in terms of their thematic

response to the *social construction* (Berger and Luckmann, 1966) of the context.

5. Reflection on the mapping method

5.1. Assumptions

The UP Honors program is organized based on the research design, in compliance with the current discourse in architectural pedagogy (Bashier, 2014; Cupers, 2014; Till, 2011,



Fig. 8 Detailed drone imagery revealed that the apparent closing off of the encampment is breached at several intervals, where pedestrian footpaths offer evidence of high traffic levels to and from the surrounding areas. The paucity of services is equally evident from these aerial photos, with the impact of water delivery illustrated by the line of buckets at the water tank (UP Arch Honours 2016).

2014; Tzonis, 2014). Therefore, the work conducted in the studio incorporates field research that is reflected in mapping. A platform for social responsiveness in design can be provided when the work is based on such a process of mapping (Thorpe and Gamman, 2011).

5.2. Origins of assumptions

This approach to research-based design and presumed inclusion into the current Honors program originates from restructuring the course since 1999; the emphasis of restructuring on an ecosystemic ethos was established. Thus, the notion of socially responsive design as an attitude in the studio is similarly presumed to originate in this approach.

5.3. Review according to these criteria

5.3.1. Integrated mapping of historic and existing urban form (Figs. 1-5)

Students were encouraged to use existing databases, maps, aerial photographs, and all available electronic platforms, such as *Google Earth™* and *Mapable™*, to compile a visual layering of the formal development of the area. This documentation process supports a view of the city as an evolving organism that should be *interpreted as an intricate mesh, the sum of its parts, and a ledger of its history* (Kostof, 1991). Salat (2011) contends that considering the urban morphology is vital in engaging with the complexity of the urban environment because its social morphology is inseparable from its spatial manifestation. From these mapping processes, students were able to identify the tensions and consequences typical of the South African apartheid city model (Smith, 1992) that is currently marked by residential fortification strategies, congested transport

routes, continued development imbalances, and severe pressure on natural resources. The development of informal settlement on unoccupied land could be evidently observed from these desktop studies, thereby indicating an evolutionary response to the pressures on the urban system. Layers of documentations were loosely based on aspects of development or patterns as described by Salat (2011), with consideration of the writings of Alexander et al. (1977), Lynch (1981), and Kostof (1991) (Figs. 2-5).

The students displayed an assimilation of research informants that support an understanding of the systemic interplay of physical, economic, and political systems in the area of investigation through this morphological mapping.

5.3.2. Documentation of crime and prevention strategies (Figs. 6 and 7)

Important spatial patterns, which serve to illustrate the social tensions in the area, are identified by documenting the prevalence of crime and the accompanying measures of prevention (Figs. 6 and 7).

5.3.3. Aerial and street photography (Figs. 8, 9, and 10)

The detailed drone, street view images, and their graphic rendition offer a comprehensive visual lexicon against which proposals can be posited. These proposals include a sound body of reference to position possible intervention (Figs. 8-10).

5.3.4. Synthesis of existing urban frameworks (Fig. 11)

Several urban strategies have been developed by recognized urban design professionals and the CoT and Tswelopele Step-by-Step organization given the high level of interest that exists in this area. Thus, a general spatial intention exists to interpret the policies, which aimed at socioeconomic integration, with a sensitivity to the complex conditions that

are prevalent on the site, including environmental constraints and future expansion plans forwarded in the Spatial Development Frameworks of the CoT (Fig. 11).

From these considerations, the group could derive an understanding of issues that would normally fall beyond their scope of competence. Such preceding research and proposals are recognized to enrich the response in the design studio.

5.3.5. Community mapping (Fig. 12)

Hamdi (2010) suggests that the participation of individuals in the area by using transect walks and various graphics tools is required to assemble information into a site plan. Visual and verbal communication strategies, therefore, become a bridge between the students and the community, where organizational, social, environmental, technical, and economic factors can be gauged and documented.

Participatory processes included transect walks with a guide from the area, casual interaction, and conversation that was not viewed as a survey or questionnaire but as an opportunity to gain acquaintances. The value of purposely undirected exchanges, such as from buying refreshments at a local food vendor to pointing out important nodes on an aerial photograph, lies in the holistic integration of information at intellectual and emotional levels. The social change that results from participatory action research (PAR) in its full intention (MacDonald, 2012) is not part of the design studio, although these methods resonate with PAR. Alternatively, the participative approach is aimed at enriching the understanding of the students on the complexity with which they are confronted (Fig. 12).

The graphic representation of existing conditions may vary considerably according to the skill sets of the students

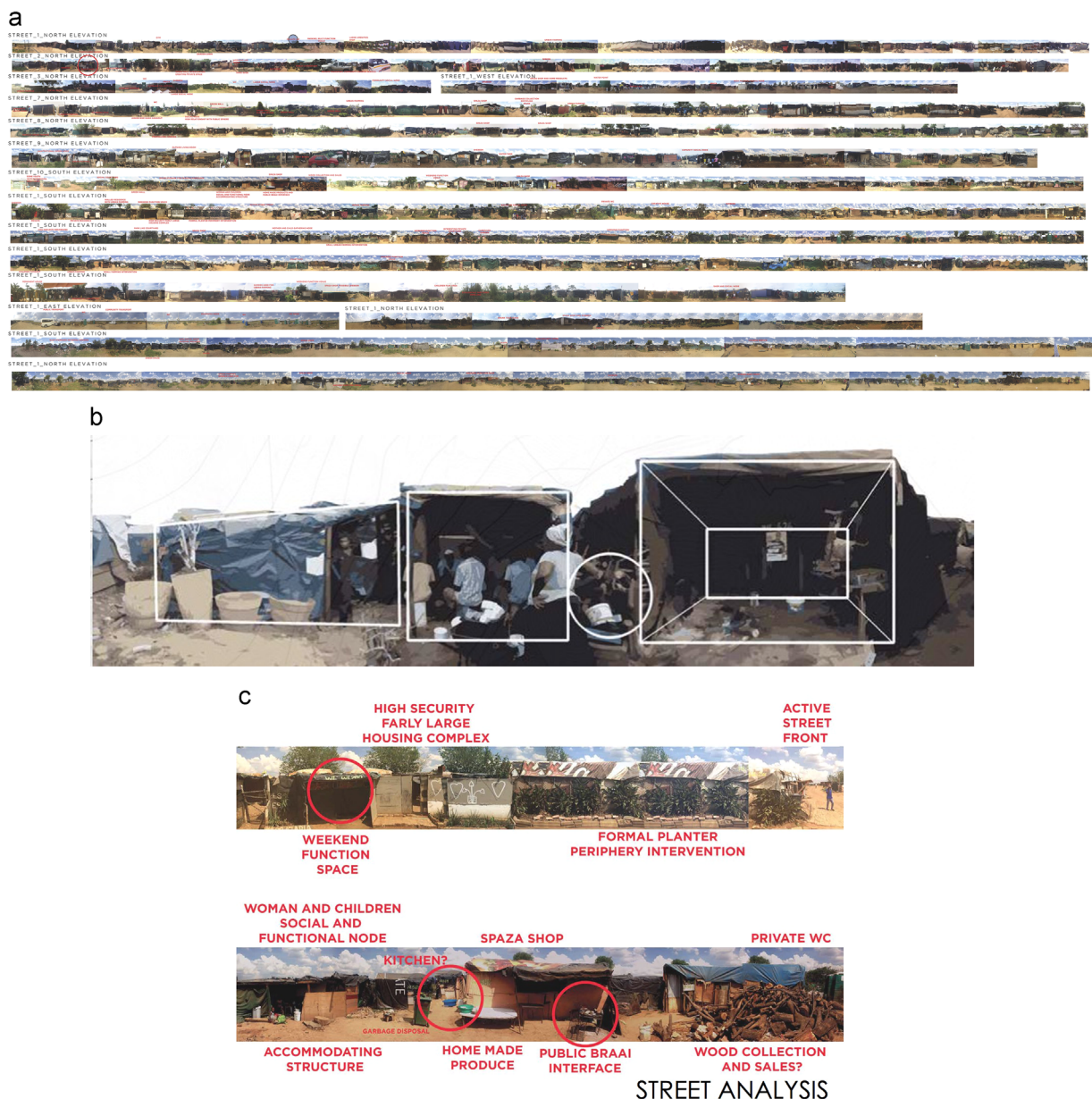


Fig. 9 a-e. Detailed documentation at street-view level serves as a repository for analysis of the spatial qualities and activities within the settlement (UP Arch Honours 2016).

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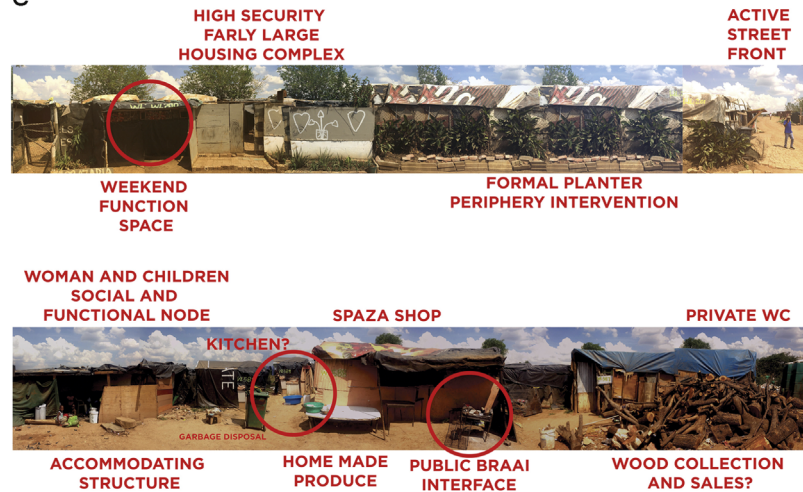


Fig. 9 (continued)

and their ability to engage successfully with the stakeholders from cartoon-like images to artistic collages, narrated films, or models. The success lies in the ability to respond with urgency to the verbal input of the residents of the area (Hamdi, 2010). In this process, Hamdi (2010) argues that an overlay between institutional and experiential parameters may be documented to reveal more than structured interviews and wish lists. Students can, therefore, *read* a precinct (as proposed by Geddes in Meller, 1990) to be responsive to their design strategies:

Local wisdom and innovative information-gathering processes could yield accurate, inexpensive, and instant information that was equally good for our purpose as an expensive high-tech information (Hamdi, 2010).

The establishment of a participatory map in circumstances, where language is frequently a barrier to communication, serves as a conduit that enables all the participants to transition between the objective and subjective experiences of the area; this channel is consistent with the connection between individual challenges and vast environment, thereby entering the space of shared ideation (Geddes, 1968; Hamdi, 2004; Sarkissian et al., 2010). The documentation of the physical site conditions offers a platform for developing intervention strategies that are grounded in the arena of consensus (Abbot, 1996).

Routes and economic activity, insight into the networks, and systemic relations that affect the area could be derived

because the local community contributed to these participatory mapping processes by revealing places of importance.

5.3.6. Social network mapping (Figs. 13 and 14)

Embedded in the Honors studio is the position that informal settlements are a naturally emergent form of spatial redress that offers a resilient urban opportunity for sustainable densification and development. Spatial patterns are, therefore, considered manifestations of complex inter-related living network systems, as described by Capra (2002). Such living systems can undergo continual changes while maintaining their inherent patterns of organization with a spontaneous emergence of order that occurs at critical points of instability or disturbance (Capra, 2002). This view offers an alternative to the typically linear Western thinking models that have evolved since the Enlightenment and requires an understanding of human system organizations that includes the following elements:

- *shared activities and affiliations of their members (Kossinets and Watts, 2006).*
- *nodes of individuals, groups, organizations, and related systems that tie in one or more types of interdependencies and the structure of these relationships (Serrat, 2009).*
- *embodying the natural sociality or “tribalism” of human beings (Gilchrist, 2000).*
- *non-material pattern of relationships (Capra, 2005).*
- *norms and networks that enable individuals to collaborate (Woolcock and Narayan, 2000).*

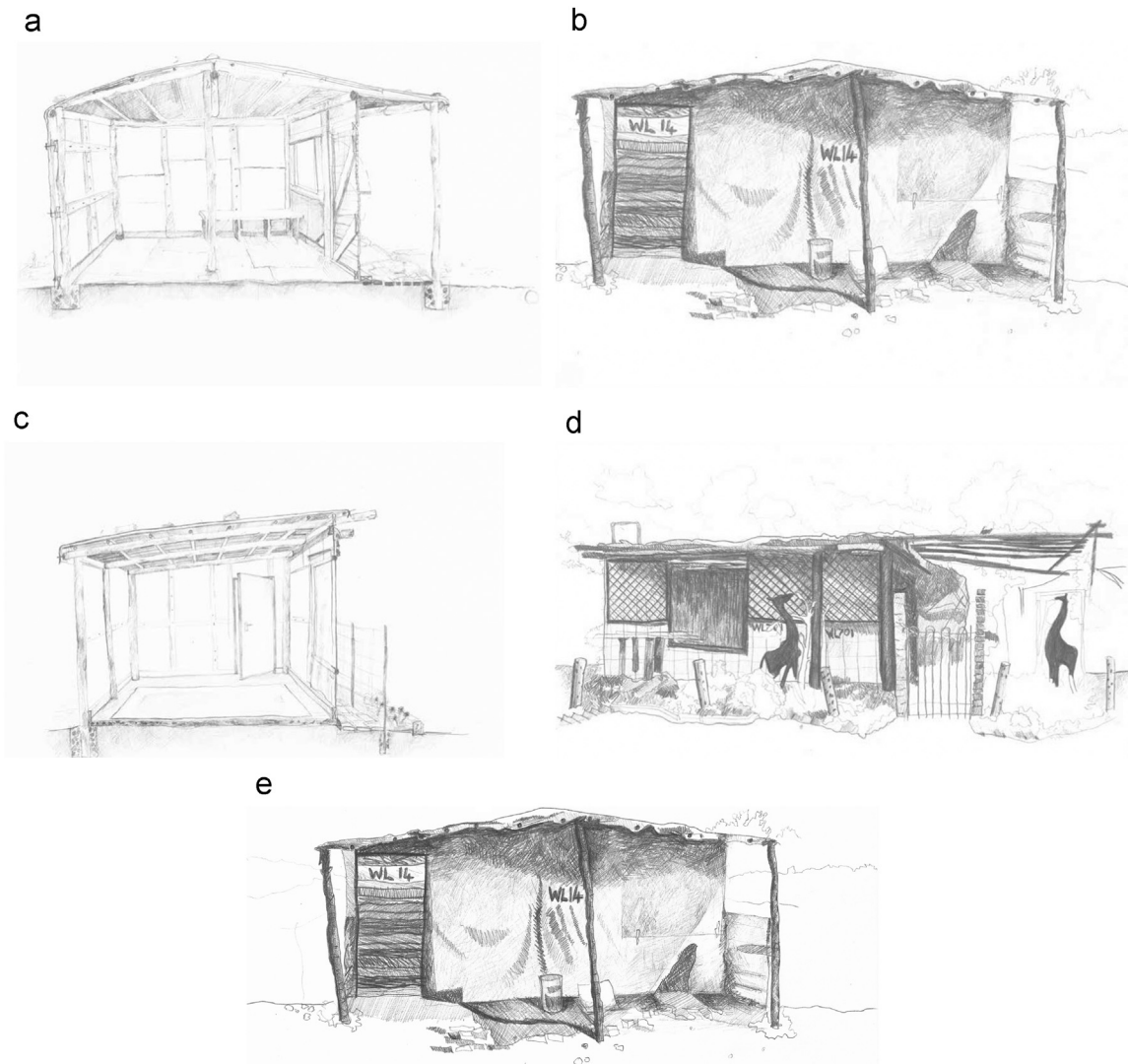


Fig. 10 Capturing the conditions graphically allows for a more emotive component to the process of documentation (UP Arch Honours).

The networks to be mapped are typically those that represent shared norms and a level of trust that may encompass friendship, family, work-related, or informal community engagement. Such networks may be vertically organized in terms of institutional relations or peer-to-peer horizontal connection. In Woodlane Village, the executive leadership structure was identified by Colin and Denise Dredge of Tswelopele Step-by-Step, from where a simple hierarchical system of communication connects the street leaders to the residents.

Collective and economic resilience frequently relies on the strength of a network (Gilchrist and Kyprianou, 2011), which also offers a mechanism for galvanizing collective action but cannot be created or shaped by public policy (Fukuyama, 2001; Gilchrist and Kyprianou, 2011). A focus on food security revealed networks of cooperation that are centered around the procurement of basic non-perishable foodstuffs from as far afield as Marabastad to the northwest of the Pretoria CBD, with a distance of 23 km. Here, the students were able to identify groups of women, who pool their resources to pay for transport and bulk purchasing of

flour, sugar, sweets, and treats that are then sold within the Woodlane Village settlement from homebased kiosks known as spaza shops. Mapping of these spaza shops within the settlement indicated an exact replication of goods at the same prices; these goods are distributed randomly throughout the settlement, thereby resulting in a decentralized network of equivalence (Fig. 13).

In marginal conditions, social networks may be temporal and vulnerable (Breed, Claassens and Bennett, 2012); thus, intervention by external parties assists in strengthening these networks (Gilchrist, 2000). This approach is contrary to the slum-clearance approach, where the physical destruction of the built fabric inadvertently eradicates the inherent social networks (Putnam, 1995; Woolcock and Narayan, 2000). The primary motivation for establishing the settlement relates to the proximity to employment opportunity, as described by Budlender and Royston (2016). Thus, a mapping exercise was performed to establish the interconnection of employment networks by documenting distances from the settlement to places of employment (Fig. 14). This documentation reveals that individuals take employment opportunities in many of



Fig. 11 A synthesised urban strategy could be derived from preceding and current frameworks (UP Arch Honours 2016).

the adjacent security estates, retail outlets in shopping malls, and private institutions, such as schools and private leisure facilities.

The negative aspect of social capital is equally important to map because stark differences between isolated networks lead to small circles of trust that engender a heightened sense of tribalism, corruption, fear, and crime (Fukuyama, 2001). Woolcock and Narayan (2000) argue that

...ideal economic development occurs through a mechanism that allows individuals to draw initially on the benefits of close community membership; however, the ideal economic development also enables these individuals to acquire the skills and resources to participate in networks that transcend their communities, thereby progressively joining the economic mainstream.

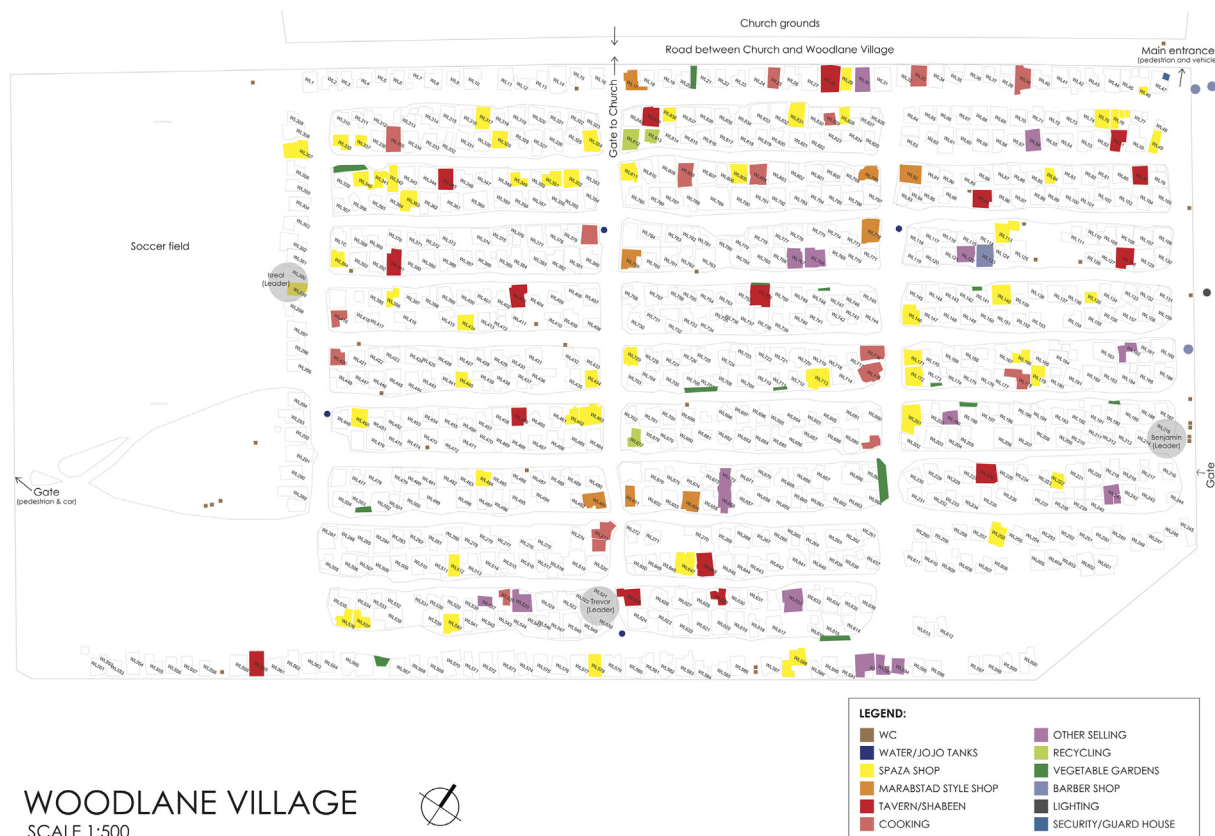


Fig. 12 Community map of Woodlane Village (UP Arch Honours 2016).

Hence, the partial mapping of taverns, otherwise known as *shebeens*, illustrated the presence of such negative social capital. An agreement establishes that no *shebeens* will be allowed in the village as part of the original arrangement with the CoT and Tswelopele (Dredge, 2016). These *shebeens* were clearly visible from the transect walks. However, their mapping would become a point of conflict. Rumors of corruption and police involvement in supporting alcohol delivery contributed to an understanding that this network represents the dark side of social capital (Fukuyama, 2001), thereby suggesting a closed circle of trust that does not benefit the development of the community.

Social network mapping, as a research methodology and part of the first quarter research, contributes to an improved understanding of the processes, impacts, and efficacies of the proposed development strategies (Ennis and West, 2013). These relational networks were revealed through diagrams; thus, the social capital inherent to the community is emphasized as a basis for defining urban and architectural intervention strategies that relate to the term *human horticulture* or the nurturing human endeavor, rather than *social engineering* (Gilchrist, 2000, 2011), where importance is attached to the role of facilitation over determination.

5.3.7. Narrative and Testimonio

The students were required to document the narrative of place as part of the focus of second quarter on heritage and cultural landscapes (Fig. 15). This process forms part of ethnographic studies and distinguishes between individual and collective narrative, with an emphasis on a particular

understanding of the term *Testimonio*, which is a story of opposition to domination that provides a voice to silenced groups:

Testimonio emerged in the wake of social movements, liberation theology, and other consciousness-raising grass-roots movements during the 1960s and 1970s when people who were once objects of anthropological and psychological studies began to write and speak for themselves (Brabeck, 2003).

Thus, students referred to *Homelands: A narrative inquiry into home and belonging in an informal settlement in South Africa* by Pieter De Vos (2014) that centered on the stories of Woodlane Village settlement. The relationship between individual and collective, shared moral values, and contextual response to historical chronicles of events are revealed by analyzing these narratives:

How things are said (is) frequently more important than what is said - pay close attention to ways in which social actors construct their self-presentations and negotiate their identities vis-à-vis their fellow actors (Coffey and Atkinson, 1996).

The integrity of the *Testimonio* relies on its collective verity, rather than on the singular: *...the self cannot be defined individually but only as a collective self-engagement in a common struggle (Armstrong, 2010)* and is valued specifically for its political intent to resist oppression (Brabeck, 2003; Perlman, 2010). The activist opportunity of *Testimonio* resides in its appeal to a shared humanity and

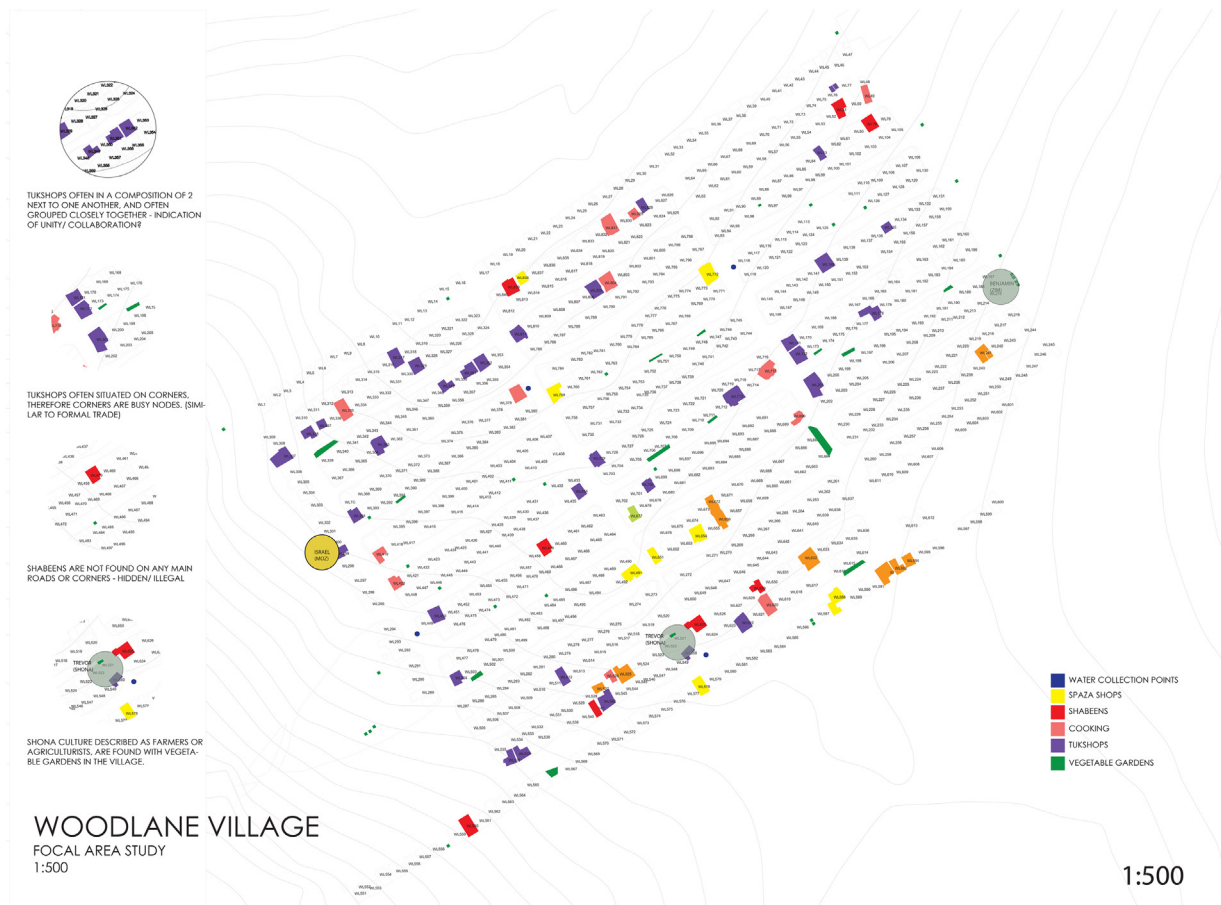


Fig. 13 Despite the site's location being within walking distance from commercial shopping malls, several kiosks (spaza shops) were documented. Individual crops of spinach and tomatoes were also noted, which were dried and sold at the kiosks with virtually no differentiation in offering or price (UP Arch Honours 2016).

a challenge to establish knowledge systems, where empathy and separation are concurrently recognized (Brabeck, 2003). Smith (2010) cites Zimmerman (1995) in describing *Testimonio* as an *intertextual dialog of voices, reproducing but also creatively reordering historical events in a way, which impresses as representative and true and projects a vision of life and society in need of transformation (Author's bold text)*.

5.4. Reworking of concepts

The method of representation is difficult to replicate because each student group used their own skill sets, which range from freehand sketches to a variety of software programs, although the mapping process is an acceptable reflection of the conditions encountered. This issue results in generalized and possibly inaccurate documentation of information that has significant intrinsic value if documented rigorously. Collaboration within

overarching multidisciplinary research projects, where more specific data are required, is unattainable without shared platforms of data gathering.

The documents, however, have served as scoping reports that may be followed up with rigorous data-gathering in subsequent years. The value of these mapping exercises lies in their speed and efficacy given this unstructured method, which serves to support the intention of the Honors program to encourage students to engage in various research methods that could enable a socially responsive approach to their designs. The amalgamation of the physical spatiality and the documentation of social patterns and activities that emerge as a result of spatial constraints and opportunities, thereby creating a rich platform of contextual understanding. The mapping process supports the intention of the program to provide an *understanding of the social construction of reality as an element of the continuing human activity in the world* (Vera, 2015). Thus, students appreciate the context, which is a requirement for socially responsive design according to Thorpe and Gamman (2011).

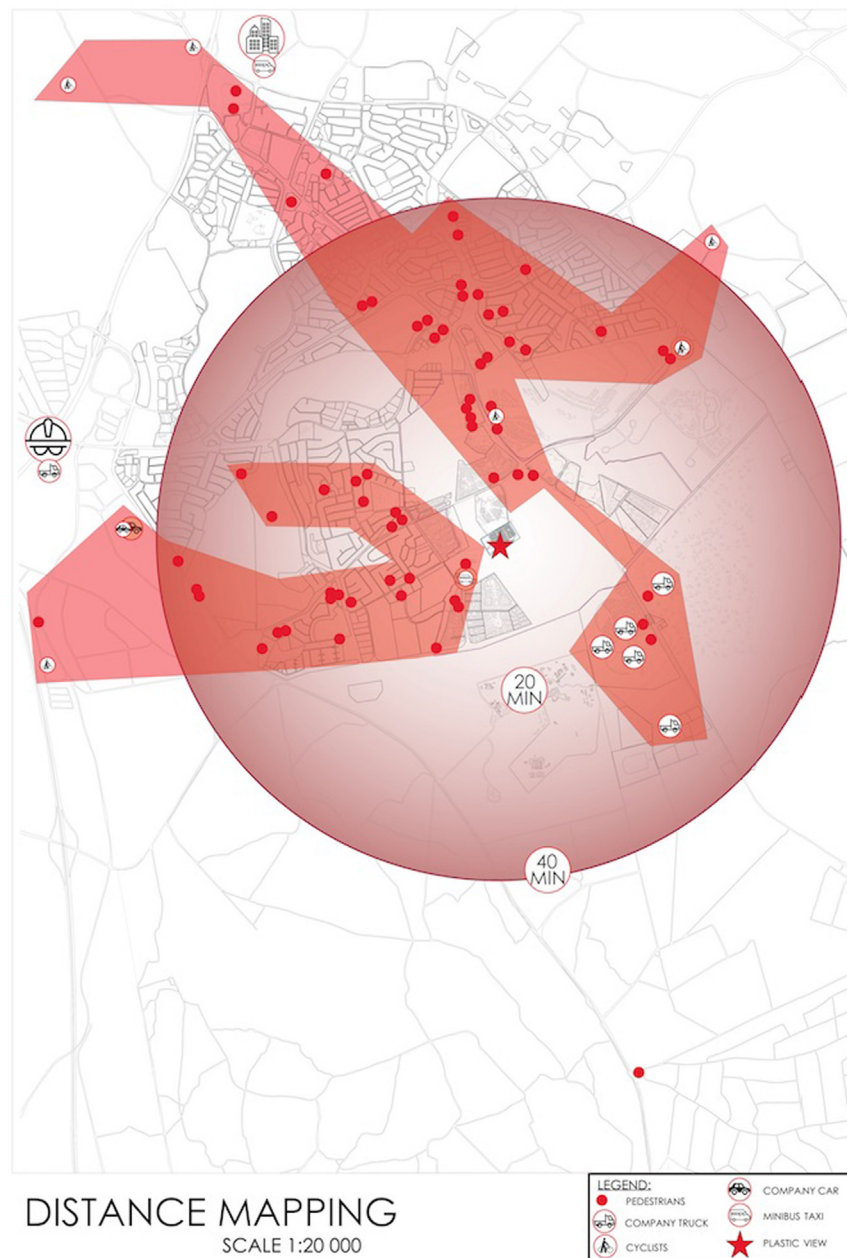


Fig. 14 Distances to work were documented by taking up position at the entrances to the settlement between five and eight o'clock in the morning, which is when the greatest part of the daily commute commences (UP Arch Honours 2016).

6. Critical reflection on the design process

6.1. Assumptions

The approach to collaborative design embodies a socially responsive attitude, where the development of design proposals is based on the field research and participation with residents of the area.

6.2. Origin of assumptions

This assumption originates from the binary opposition to a market-led approach to design (Thorpe and Gamman,

2011), where a product-driven emphasis results in the type of star architecture (Tzonis, 2014) without any relation to its ecosystemic or social reality.

6.3. Review according to these criteria

6.3.1. Group Example 1 (Fig. 16)

The prevalence of informal settlement could increase on the site by assuming a scenario of in situ upgrades. Thus, a significant emphasis should be placed on the provision of public space and amenities. In response to existing spatial and movement patterns, an incremental introduction of educational, health, and leisure

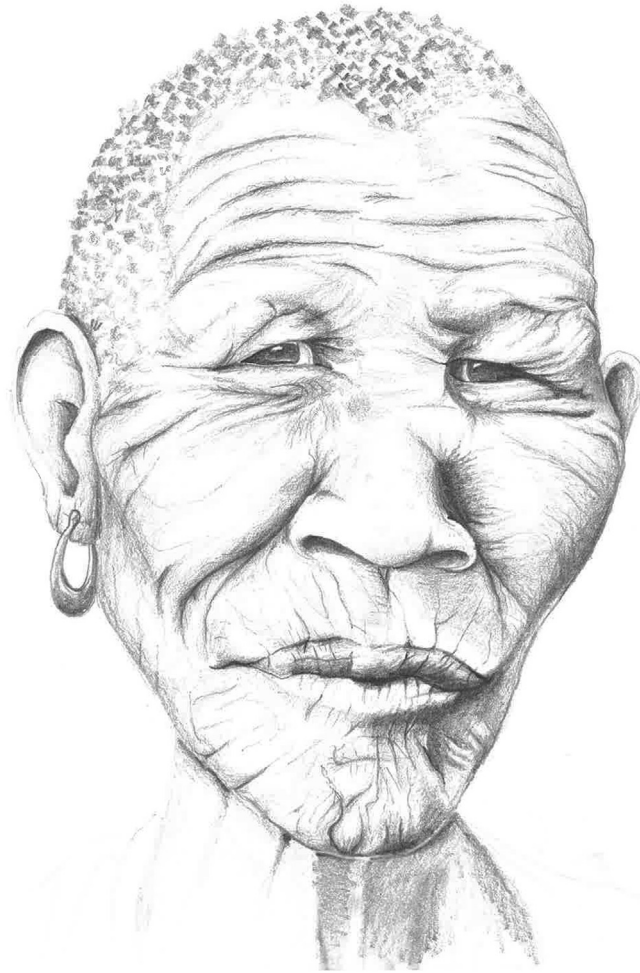


Fig. 15 Through regular engagements, the stories of place, hardships and aspiration were shared (Whitaker, 2016).

facilities with numerous opportunities for livelihood is required. The students refrain from applying a deterministic approach to design, thereby allowing for a process-oriented engagement toward form-making (Fig. 16).

This example illustrates the influence of the sociospatial conditions that are prevalent on the site on future interventions at an urban scale.

6.3.2. Group Example 2 (Fig. 17)

The proposition of housing provision on a serviced site in close proximity to the settlement led to the investigation of the South African Housing policy suite, from where a complex rent-to-own process was predicted. In this scenario, students used infographics to represent the suggested socioeconomic arrangement that underpins the spatial organization. Site plan layouts were also developed to accommodate public space and amenities with the housing units. (Fig. 17)

This example evidently denotes that the students grappled successfully with the complex interrelationship between the policy and the contested spatiality of housing provisions and the underlying issues of livelihood, thereby illustrating their capacity to represent the *dynamic*

production and reproduction of social life (Vera, 2016) as a function of a socially responsive design.

6.3.3. Individual Example 1 (Fig. 18)

The theme of recycling building materials was explored by expanding the narrative of a Woodlane Village resident, who currently collects and cleans discarded building wastes to resell them to the community. A detailed analysis of the spatial footprints, ergonomic scale, overhangs, and thresholds of the settlement became indicators of recurring patterns that were then viewed as an emergent post-industrial vernacular. The formal response to these indicators was a translation of mass, threshold layering, scale, urban connection, and materiality into an architectural language. The incremental changes to these make-shift structures over time influenced the students to provide a similar provision for such sequential development in the proposal. The establishment of such a recycling facility is proposed to gain spatial implication and opportunity that could support additional structures, such as housing and small-scale retail, considering the interconnectedness of the socioeconomic networks that are prevalent in this settlement. Thus, the students managed to convey the potential role that an architectural intervention could have in enhancing existing energy within the settlement while simultaneously suggesting

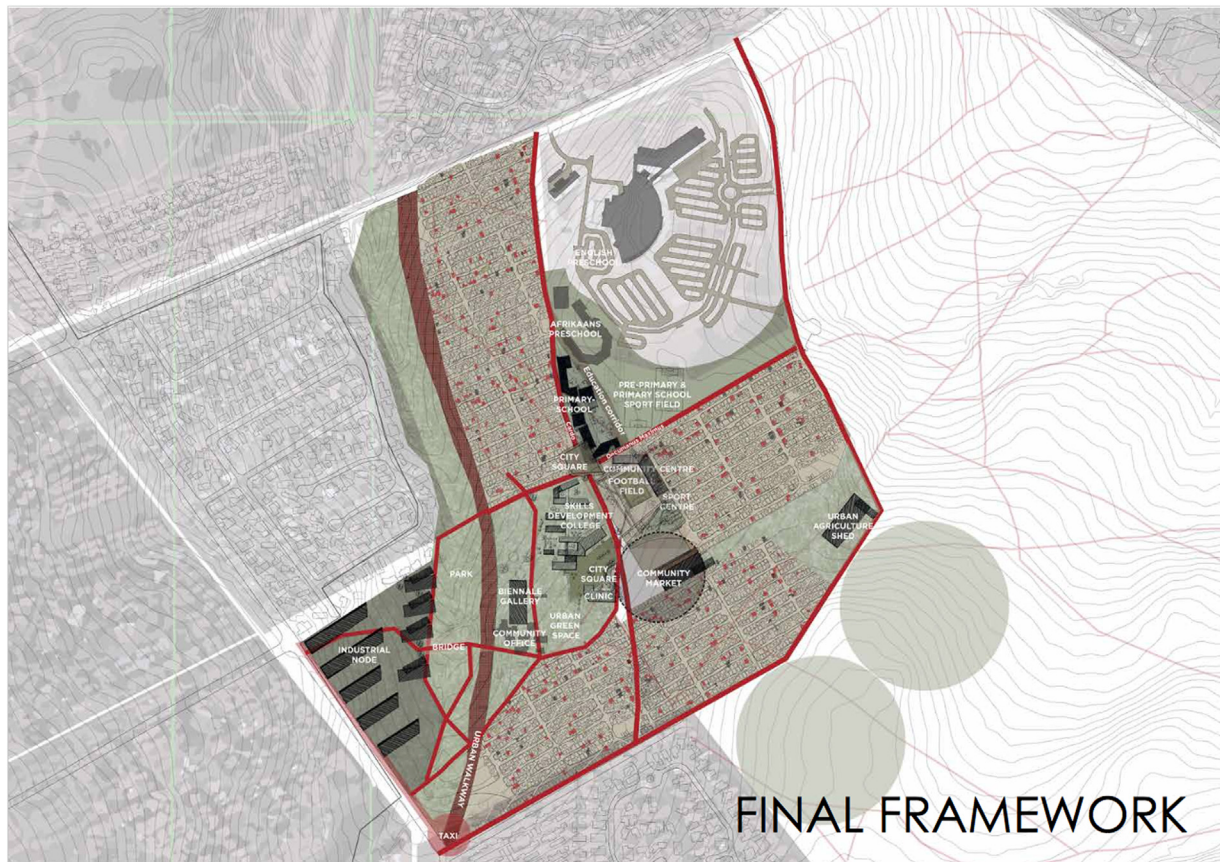


Fig. 16 An urban vision in which in-situ upgrade of the settlement was proposed: “Typology of Negotiation” (UP Arch Honours 2016).

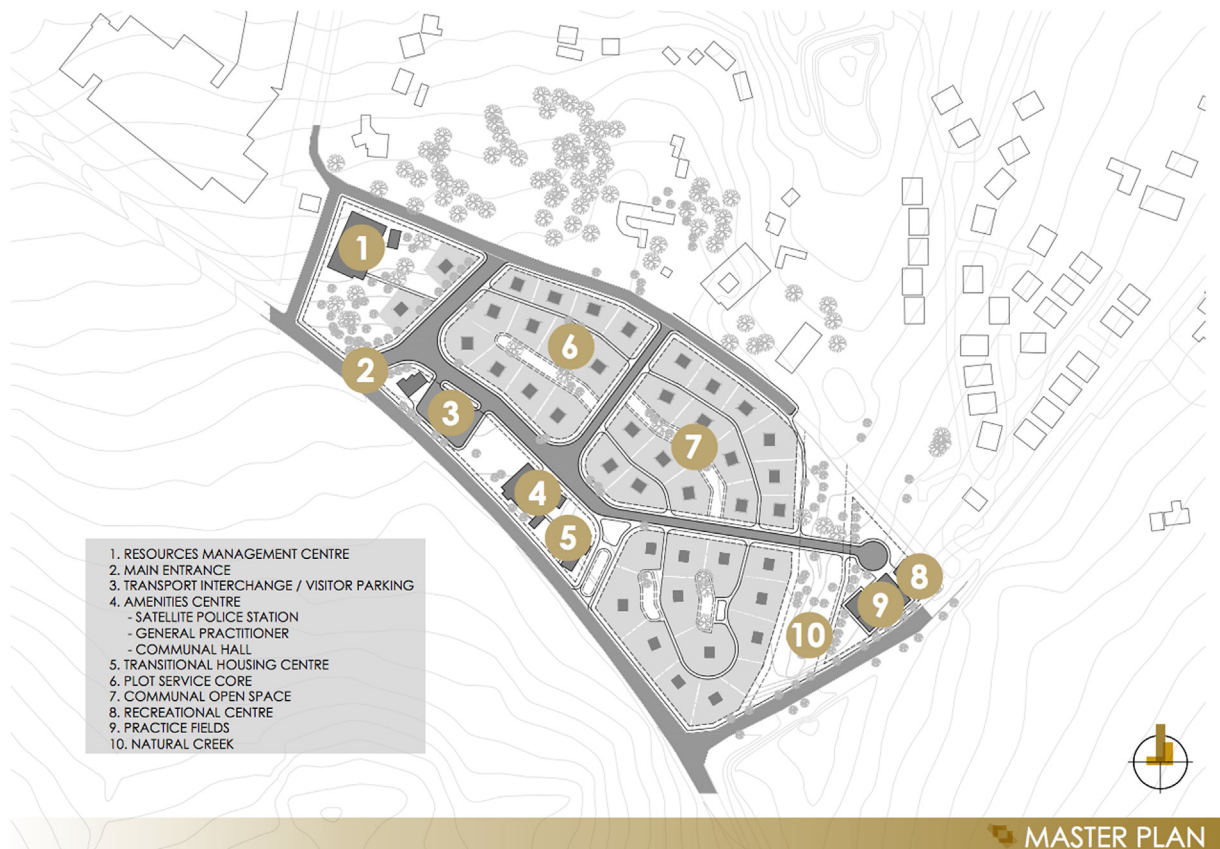


Fig. 17 The city of Tshwane's proposition of relocation was considered in “Halfway Housing” (UP Arch 2016).

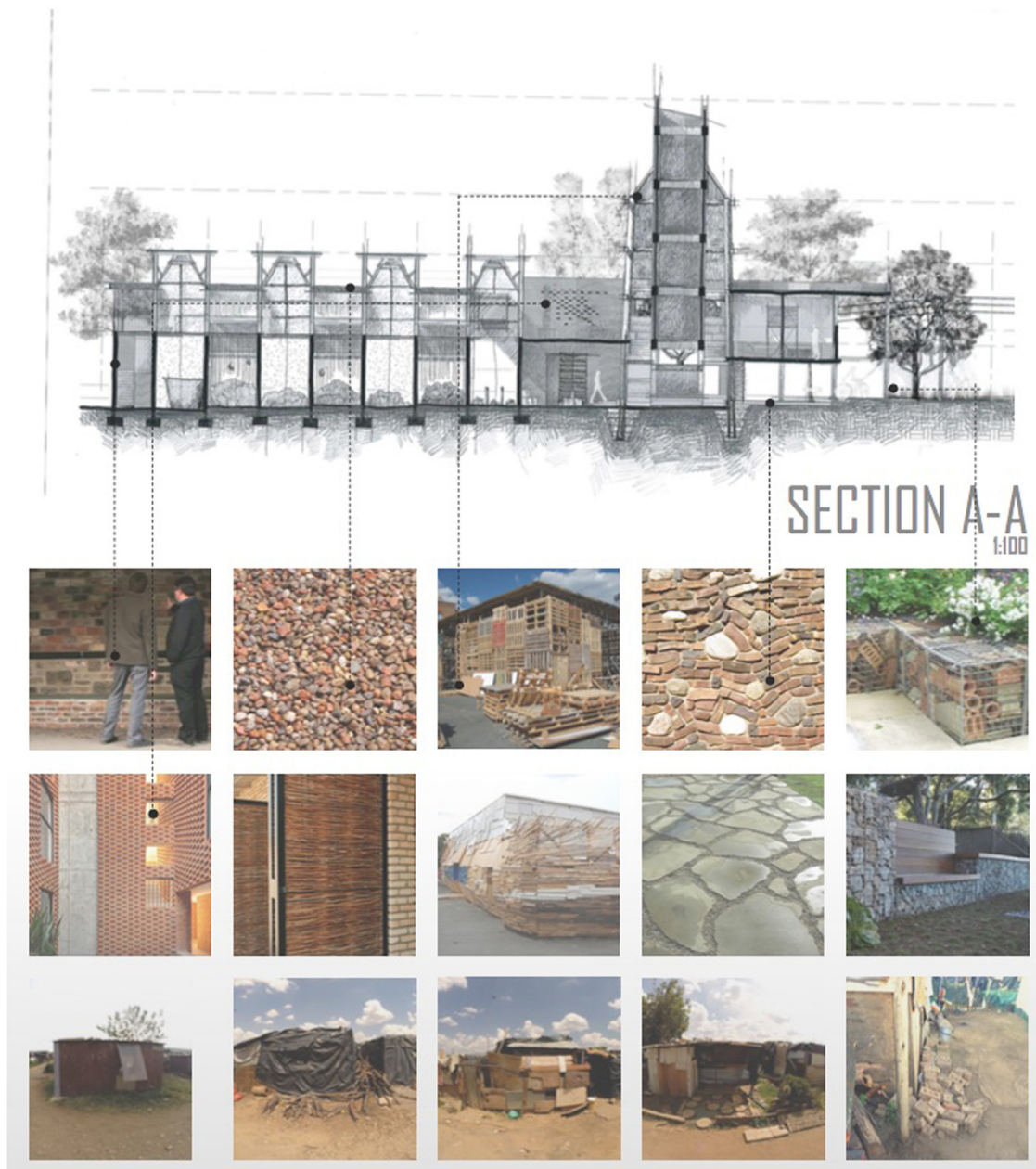


Fig. 18 A story of resilience and opportunity inspired a further investigation into the way place is currently being made through the use of recycled material (Hofman 2016).

an architectural identity in forms that present the authentic conditions of the context (Fig. 18).

6.3.4. Individual Example 2 (Fig. 19)

A landscape architecture student observed religious gatherings at specific points around existing trees to further document the open spaces around the settlement. A significant relationship between certain residents of the settlement and the natural landscape was revealed. African views on earth-bound ancestral connection indicated a severe disjuncture between imposed settlement patterns and an inherent meaning attached to sacred spaces. A detailed analysis of the patterns and the spacing between the trees for ritualized worship and movement patterns toward these

spaces influenced a responsive design approach. This analysis included the provision of three threshold spaces toward the sacred space, where minimal intervention was proposed, to strengthen the existing movement patterns while addressing the requirement for countering the effects of erosion, thereby allowing for pause and rest areas and acknowledging importance in the built environment (Fig. 19).

The student managed to reveal sacred relationships through the design proposition that speaks directly to understanding the social construction of multiple realities by engaging with the physical components of the site and the spiritual narrative. The research process, which was translated into a design proposition, was aimed at enhancing the existing on-site social networks.

a



b



Fig. 19 a & b. Religious gathering in the open fields around the settlement informed an approach to landscape intervention that recognizes the sacred relationship to land in African culture (Nel 2016).

6.4. Reworking of concepts

The design process is a successful outcome of the intention of the studio to encourage socially responsive design; this design is an approach that *foregrounds societal goals beyond the attainment of fiscal profit... driven by collective social values, rather than private financial ambitions* as described by [Thorpe and Gamman \(2011\)](#). Regular engagement with the

participants contributed to the development of design themes throughout the year, with several conceptual ideas form part of continued conversations, thereby provoking *answers around new modes of design* ([Till, 2014](#)).

Therefore, a rigorous documentation of the impact of such design proposals would contribute to this discourse based on a clear establishment of criteria and benchmarks that emanate from the field research and participation processes ([Bringle and Hatcher, 2000](#); [Mitlin, 2013](#)).

7. Conclusion

Students were able to navigate the space of research and infuse their approach to architectural resolution with a responsive and creative interpretation of the ecosystemic and social construction of the context through a critical reflection of work conducted in the first semester of 2016 in the UP Architecture Department Honors program. A reading of the existing conditions could be achieved by structuring the research process through participation with certain stakeholders. Thus, a rich layering of graphic renditions, including desktop mapping and detailed on-site documentation, was obtained. A profound understanding was facilitated by documenting the historical and cultural aspects of the place, where using a narrative became specially significant.

Ultimately, students were able to engage with the complexity of the problems faced by stakeholders in the area from various vantage points to the point of challenging their own professional positions in terms of the upgrade of informal settlements. This outcome relates to the statement of Low (2014), that is, a pedagogical mandate in South Africa toward the prevalence of informality, thereby inferring that a clear understanding of this phenomenon can only be achieved through participatory methods, where design responds to grounded knowledge.

The model of research-based design that has evolved at this school over the last decade prepares the graduates for a complex field of engagement, where well-grounded platforms for decision-making contribute to a socially responsive design ethos (Thorpe and Gamman, 2011). This concept confirms the value attached to imagination and creativity, which remains the cornerstones of the architectural endeavor. Furthermore, this concept is aimed at harnessing such creativity to establish a space of negotiation between the fluid and adaptive conditions, such as those found in emergent urban centers and the linear processes required of formal development.

References

- Abbot, J., 1996. *Sharing the City: Community Participation in Urban Management*. Earthscan, London.
- Alexander, C., Ishikawa, S., Silverstein, M., 1977. *A Pattern Language: Towns, Buildings, Construction*. Oxford University Press, New York.
- Anderson, R., 2016. Personal correspondence (7 January).
- Argyris, C., Schön, D., 1974. *Theory in Practice: Increasing Professional Effectiveness*. Jossey-Bass publishers, Michigan.
- Armstrong, S., 2010. Testimonios: an Indian perspective. *IRWLE* 6 (1), 1-11.
- Barthes, R., 1967. *The Death of the Author*, Aspen.
- Bashier, F., 2014. Reflections on architectural design education: the return of rationalism in the studio. *Front. Archit. Res.* 3, 424-430.
- Berger, P.L., Luckmann, T., 1966. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Penguin Books, London.
- Brabeck, K., 2003. Testimonio: a strategy for collective resistance, cultural survival and building solidarity. *Fem. Psychol.* 13, 252-258.
- Breed, C.I., Claassens, J., Bennett, J., 2012. The design of urban form as a response to elusive patterns and networks: examples from industrial and informal urban areas in Pretoria, South Africa. *Sp. Flows: Int. J. Urban Extra Urban Stud.* 2 (2), 215-243.
- Bringle, R.G., Hatcher, J.A., 2000. Institutionalization of service learning in higher education. *J. High. Educ.: Soc. Sci. Prem. Collect.* 71 (3), 273.
- Budlender, J., Royston, L., 2016. Edged out: spatial mismatch and spatial justice in South Africa's Main Urban Areas, South African Socio-Economic Rights Institute (SERI) (<https://www.escri-net.org/resources/edged-out-spatial-mismatch-and-spatial-justice-south-africas-main-urban-areas>) (accessed 03.08.2017).
- Capra, F., 2002. *The Hidden Connections: A Science for Sustainable Living*. Anchor Books [Division of Random House], New York.
- Capra, F., 2005. Complexity and life. *Theory, Cult. Soc.* 22 (5), 33-44.
- Citizen, 2016. "Right of reply: LHR gives its side of the Plastic View case." (<http://citizen.co.za/category/news/news-national/>), (accessed 11.08.2016).
- Coffey, A., Atkinson, P., 1996. *Making Sense of Qualitative Data: Complementary Research Strategies*. Sage Publications, London.
- Cupers, K., 2014. Where is the social project? *J. Archit. Educ.* 68 (1), 6-8.
- Prinsloo, D.A., Cloete, C.E., 2002. Post-apartheid residential mobility patterns in two South African cities. *Prop. Manag.* 20 (4), 264-277.
- D'Anjou, P., 2011. An ethics of authenticity in the client-designer relationship. *Des. J.* 14 (1), 28-44.
- De Carlo, G., Bauman, O., Van Toorn, R., 2005. Architecture is too important to leave to the architects: a conversation with Giancarlo de Carlo, *Volume*, no.2: 21-26.
- De Vos, P.F., 2014. *Homelands: A Narrative Inquiry into Home and Belonging in an Informal Settlement in South Africa*. Edmonton, Alberta.
- Delpont-Voulgarelis, H., Perold, R., Jordaan, J., 2016. Exploring Shared Knowledge in a design-build project A story from Hangberg, Hout Bay. *Brookes eJournal of Learning and Teaching*, 8; (<http://bejlt.brookes.ac.uk/paper/exploring-shared-knowledge-in-a-design-build-project-a-story-from-hangberg-hout-bay/>) (accessed 03.08.2017).
- Dredge, D., 2016. Personal correspondence, 20 April.
- Ely, M., Anzul, M., Friedman, T., Garner, D., McCormack-Steinmetz, A., 1991. *Doing Qualitative Research: Circles Within Circles*. The Falmer Press, London.
- Ennis, G., West, D., 2013. Using social network analysis in community development practice and research: a case study. *Community Dev. J.* 48 (1), 40-57.
- Fathy, H., 1976. *Architecture for the Poor: An experiment in Rural Egypt*. University of Chicago Press, Chicago.
- Feireiss, L., Boumann, O., 2011. *Testify! The Consequences of Architecture*. Netherlands Architecture Institute, Rotterdam.
- Fisher, R.C., Clarke, N.J., 2011. RED in Architecture: An Ecotrophic Approach. University of Pretoria Department of Architecture (<http://www.up.ac.za/media/shared/Legacy/sitefiles/file/44/1026/2163/8121/innovate7/redinarchitectureanecotropicapproach.pdf>) (accessed 3 August 2017).
- Fisher, R.C., 2015. Architecture and the academy - The research imperative. *Archit. SA* 76, 51-52.
- Fook, J., White, S., Gardner, F., 2006. Critical reflection: a review of current understandings and literature. In: White, S., Fook, J., Gardner, F. (Eds.), *Critical Reflection in Health and Welfare*. Open University Press, Maidenhead.
- Foucault, M. 1969. "What is an Author?" Lecture presented to the Societe Francaise de philosophie, translated by Josue v Harari.
- Fukuyama, F., 2001. Social capital, civil society and development. *Third World Q.* 22 (1), 7-20.
- Geddes, P., 1968. *Cities in Evolution: An Introduction to the Town Planning Movement First edition 1915: Williams & Norgate Limited Ernest Benn Limited, London*.
- Gilchrist, A., Kyprianou, P., 2011. *Social Networks, Poverty and Ethnicity*. Joseph Rowntree Foundation, York, United Kingdom.
- Gilchrist, A., 2000. The well-connected community: networking to the 'edge of chaos'. *Community Dev. J.* 35 (3), 264-275.
- Groat, L., Wang, D., 2002. *Architectural Research Methods*. John Wiley & Sons, USA.

- Habraken, N.J., 1972. *Supports: An alternative to mass housing*. The Architectural Press, London.
- Hamdi, N., 2004. *Small Change: About the Art of Practice and The Limits of Planning Cities*. Earthscan, London.
- Hamdi, N., 2010. *The Placemaker's Guide to Building Community*. Earthscan, London.
- Hofman, M., 2016. University of Pretoria Department of Architecture, Honors studio.
- Huchzermeyer, M., 2011. *Cities with 'Slums': From Informal Settlement eradication to a Right to the City in Africa*. UCT Press, Cape Town.
- Jenkins, P., Forsyth, L., 2010. *Architecture, Participation & Society, Chapter 2: A Brief Historical Overview of Community Technical Aid and Community Architecture*. Routledge, New York.
- Kellett, P., Napier, M., 1995. Squatter architecture? Critical examination of vernacular theory and spontaneous settlement with reference to South America and South Africa. *TDSR* vi (ii), 7-24.
- Kossinets, G., Watts, D.J., 2006. Empirical analysis of an evolving social network. *Sci. Mag.* 311 (5757), 88-90.
- Kostof, S., 1991. *The City Shaped: Urban Patterns and Meanings Through History*. Bulfinch Press, New York.
- Kroll, L., 1986. *The Architecture of Complexity*. BT Batsford Ltd [Translated by Peter Blundell-Jones], London.
- Lokko, L., 2015. A risky business. *Archit. SA* 76, 13.
- Low, I., 2014. Educating architects in Africa. *J. Archit. Educ.* 68 (2), 162-164.
- Lynch, K., 1981. *Good City Form*. The MIT Press, Cambridge, MA.
- Meller, H., 1990. Patrick Geddes: Social Evolutionist and City Planner. Routledge, London.
- Mini, S.E., 2013. *Spatialisation of New Modes of Power Relations in Post-Apartheid Urban Landscapes*. University of South Africa (UNISA): College of Agriculture and Environmental Sciences, Department of Geography (<http://hdl.handle.net/10500/15386>) (accessed 03.08.2017).
- Mitlin, D., 2013. A class act: experiences with providing professional support to people's organizations in towns and cities of the Global South. *Environ. Urban.* 25 (2), 483-499.
- Payne, G., 2008. Are architects and planners part of the solution or the problem? The role of professionals in facilitating or constraining access by the urban poor to land and housing in developing countries. In: *Proceedings of Barcelona Seminar*, Stockholm: Department of Urban Planning and Environment, The Royal Institute of Technology (KTH).
- Peres, E & Du Plessis, C., The threat of slow changing disturbances to the resilience of African cities, In: *Proceedings of CIB World Building Congress*, Brisbane, Australia, 2013. (http://www.conference.net.au/cibwbc13/papers/cibwbc2013_submission_199.pdf) (accessed 03.08.2017).
- Perlman, J., 2010. *Chronicles of Resistance: A Borderlands Testimonio* (Doctoral Thesis). University of Pittsburgh, Graduate Faculty of School of Education.
- Putnam, R., 1995. Tuning in, Tuning Out: the Strange disappearance of social capital in America. *Political Sci. Polit.* 28 (4), 664-683.
- Rossmann, G.B., Rallis, S.F., 2003. *Learning in the Field: an Introduction to Qualitative Research*. Sage Publications, London.
- Salat, S., 2011. *Cities and Forms: On Sustainable Urbanism*. Hermann Editores des Sciences et des Arts: CSTB Urban Morphology Laboratory.
- Sarkissian, W., Hurford, D., Wenman, C., 2010. *Creative Community Planning: Transformative Engagement Methods for Working at the Edge (Tools for Community Planning)*. Earthscan, London.
- Serrat, O., 2009. *Social Network Analysis*. Asian Development Bank, Cornell University ILR School.
- Smith, D., 1992. *The Apartheid City and Beyond: Urbanization and Social Change in South Africa*. Routledge and Johannesburg: Wits University Press, London.
- Smith, K.M., 2010. Female voice and feminist text: testimonio as form of resistance in Latin America. *Fla. Atl. Comp. Stud. J.* 12, 21-37.
- Thorpe, A., Gamman, L., 2011. Design with Society: Why Socially Responsive Design is Good Enough. *CoDesign*, 7; , 217-230.
- Till, J., 2014. Scarcity and agency. *J. Archit. Educ.* 68 (1), 9-11.
- Turner, J.F.C., 1976. *Housing by People*. Marion Boyars Publishers Ltd, London.
- Tzonis, A., 2014. Creativity real and imagined in architectural education. *Front. Archit. Res.* 3, 331-333.
- University of Pretoria Department of Architecture, 2016, Honors studio.
- University of Pretoria Department of Architecture, 2016, MProf studio.
- University of Pretoria Department of Architecture, 2017. (<http://www.up.ac.za/en/architecture/article/22145/research>) (accessed 03.08.2017).
- Vera, H., 2016. Rebuilding a classic: the social construction of reality at 50. *Cult. Soc.* 10 (1), 3-20.
- Whitaker, M., 2016. University of Pretoria Department of Architecture, MProf studio.
- Woolcock, M., Narayan, D., 2000. Social capital: implications for development theory, research and policy. *World Bank Res. Obs.* 15 (2), 225-249.