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PRACTICE AND EDUCATION: HOUSING AND URBAN ENVIRONMENTS IN SOUTH AFRICA

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Abstract

This paper is a brief portrayal of the state of housing policies and programmes in South Africa, as well as the role of the design professional in the context and teaching of housing at the Department of Architecture, University of Pretoria. It attempts to relate the issues to some of the themes of the conference: policy making, architectural design and urban principles, socio-economic concerns, environmental, social and cultural sustainability and affordability.

While South Africa has had success in the rapid delivery of houses, it has been acknowledged that there are still many challenges faced in terms of generating functioning neighbourhoods as opposed to house units.

Considering the complex political history of the country, as well as current challenges of crime and poverty, may allow for shared lessons with the context of Sudan, while issues of reconciliation and closing the gaps between the rich and the poor are similar. Further, dealing with the peripheries of cities is a shared concern. Debating environmental degradation, disconnected and uncoordinated developments could also allow for dialogue.

Both South Africa and Sudan need to learn from the vernacular and informality. They need to develop a distinctive approach to housing that relates to unique local concerns, as well as debate how these concerns relate to international knowledge and paradigms.

South Africa's concern with crime is in a way comparable to Sudan's concerns with political instability and dealing with the disruption caused by wars. The difficulties of dealing with racism, poverty and social exclusion are also comparable.

This paper attempts to portray some of the issues in the hope that a debate may be initiated as to how professionals can learn from each other and whether collaboration may be possible. At a meeting in 2005, and on finding out that one of the authors is from the Sudan, the current Minister of Housing Lindiwe Sisulu said with enthusiasm: "When we have solved the housing problem here, we will then go and solve it in Sudan!"

1. Introduction

In South Africa, as in many parts of the world, the wealth of knowledge in the field of housing has not always influenced implementation. As a result housing environments remain untransformed. In South Africa, housing landscapes have evolved into sterile, regimented and inefficient settlement patterns; the massive machine of the state continues to dominate housing delivery, in the process limiting interventions by other potential role-players. Architects have, understandably, distanced themselves from such ugliness [1].

During Apartheid, South African cities developed in a pattern very much dictated by policies with the intention of racial segregation. In Figure 1 it can be seen that the white suburbs around the Central Business District (CBD) were buffered from black townships by 'gaps', which consist of large tracts of land used as major highways or industrial areas. The black townships were isolated from the city but close enough to supply it with cheap labour.

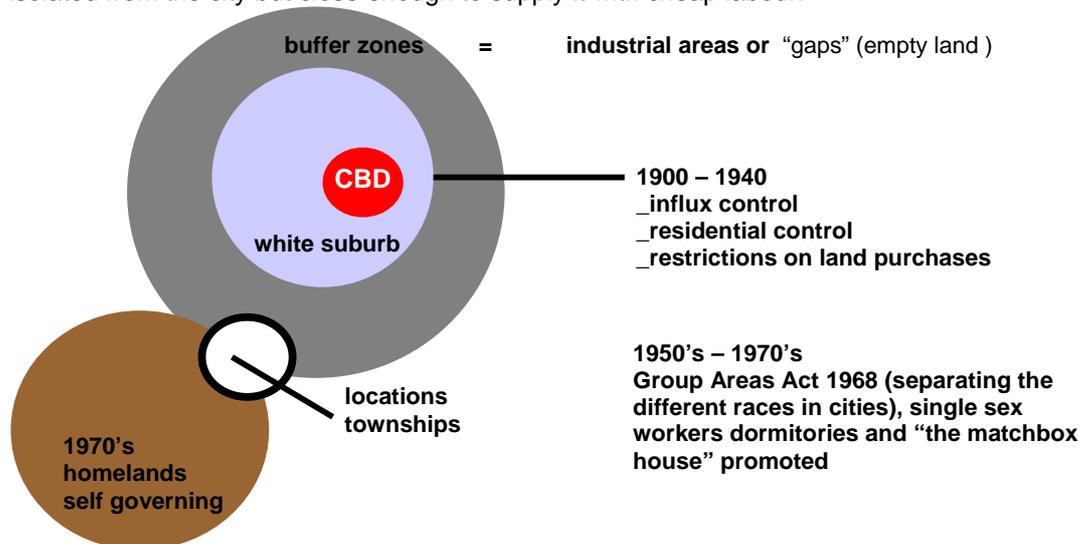


Figure 1: The structure of South African cities inherited from the Apartheid era.

After Apartheid the CBD has largely been abandoned by white owned businesses which moved into new centres in the suburbs and blacks took over the inner cities. Yet, the structure of the city remains unchanged and fragmented, the result is difficult access to work and services (disabling locations), bland landscapes and environmental degradation. This fragmentation also does not make sense economically as it causes dislocated or missed market opportunities. The CBD, new commercial centres, transport routes, the 'gaps' of land and the townships themselves should be connected so as to maximize the economic strength of the city.

Housing types that emerged from these policies were single-sex hostels for workers and the typical township house (referred to as the matchbox), which is a detached house in the middle of a small plot, an image that typifies the Apartheid period.

Housing reveals the social, cultural and political intentions of a people and in South Africa this has been particularly evident. Moreover, housing policy is reflected in the built product and in the form of neighbourhoods. Yet, housing is a process or activity that long precedes the planning and construction phase and extends beyond the owners taking up residence; it is not a commodity or product. While the current government intended to remedy this inherited fragmentation, they remained preoccupied with meeting quotas rather than developing quality environments. This is now being challenged by new and enlightened policy directions: the Breaking New Ground (BNG) plan, which is being implemented by the National Department of Housing.

Housing is not only concerned with the design of a specific number of units, but rather, the design of a whole environment that provides accommodation, jobs, education, health services and so forth. All this needs to be achieved within an accessible, safe, beautiful and sustainable context.

In order to facilitate this all-inclusive process, the politically motivated need for *speed of delivery* has to be challenged. While the country's housing programme has been one of the most successful internationally in terms of the number of housing units built per year (2 355 913 units, as at March 2007) [19], it needs to be acknowledged that programmes that only deliver housing units and quality environments are doomed to fail. Housing delivery needs to be combined with mechanisms for community upliftment, job creation, capacity building, empowerment and public utilities. It is strongly believed that housing delivery mechanisms will ultimately influence the spatial and physical characteristics of the resultant environment [2]. Moreover, the introduction of a new paradigm will challenge the current role of the state [3].

The state is anyway unable to deliver what it promises [4]. It is interesting to note that demand for houses increases proportionately to the government's subsidized provision of housing [5]. The Minister of Housing [6] has indicated that the number of houses the government can build per year is equivalent to the number of people who move to urban centres in the same period. Dewar [7] explains how the organisation of the struggle during Apartheid has not successfully adapted to becoming a mechanism for development. In the optimism after 1994, legislative obstacles were removed but operative barriers to the delivery of sustainable housing still remain. Recent new policy approaches, such as the BNG [8], could prove to be 'ground-breaking' only if new partnerships are set in place for effective implementation.

2. Pro-poor policies and the role of the design professional

Current debates in development in general, and housing specifically, favour *pro-poor* policies which means that efforts regarding practice need to be geared towards a large percentage of the population that are at present being marginalised. Gardener [9] also refers to 'missing rungs on the housing ladder' and calls for a finer grained response to patterns of accommodation demand. This call suggests possible target areas for intervention.

It is in this volatile political and policy context that professionals are trying to identify a role for themselves. Current housing delivery sets a very poor standard for low-cost housing and unattainable and unaffordable standards otherwise. Figure 2 identifies the neglected zone where it is believed professional involvement is needed.

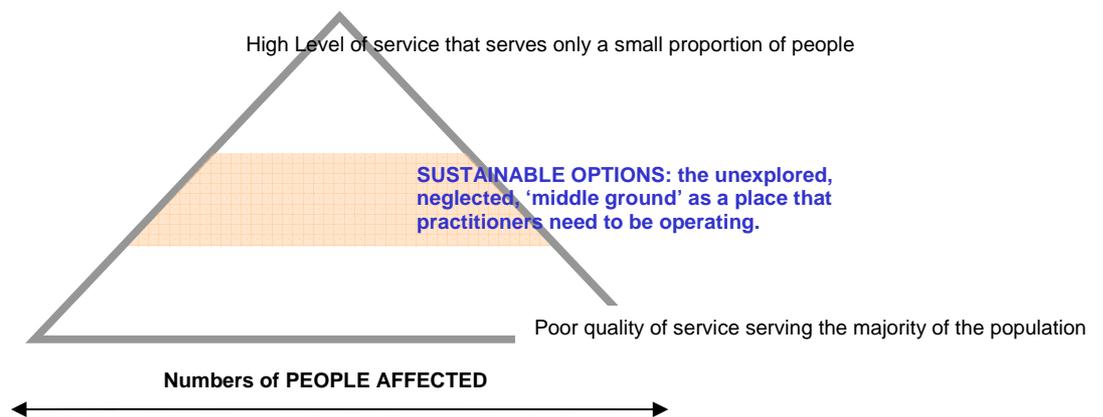


Figure 2: Where practitioners need to be operating in the field of housing.

Some principles and approaches for professional involvement are identified below such as learning from the vernacular, from emergent systems, urban design, increased densities, as well as change as a positive generator of housing forms and thus ultimately, urban forms.

Current government approaches now reflect a better understanding of concerns in housing and the dysfunctional structuring of South African cities, proposing to address these problems through a comprehensive plan for the sustainable development of human settlements. The BNG [8] approach claims to permit flexible application and hopes to facilitate innovation. It acknowledges complexity and multiple levels of reality, while the importance of informality and emergence as opposed to strict planning is yet to be appreciated. Although there is some focus on in-situ upgrading of informal settlements the main aim is to eradicate all informal settlements by 2014.

More research needs to be done to investigate how the BNG may address the issue of informality. When urbanized poor people need homes they either acquire them through land invasions or they wait for government provided housing.



Figure 3: Poor peoples options: a standard subsidized unit (on the left) or they erect a shack in an informal settlement (right).

Alternative solutions involve capacity building, saving schemes and job provision as part of a holistic approach require additional collaboration between diverse government agencies and participation by various stakeholders. This would generate a complexity that needs alternative systems of governance. Formalising housing and markets does not guarantee poverty alleviation and neglects the skills and knowledge that the poor may contribute to development.

It is believed that, in this context, any approach that does not acknowledge the presence of the 'informal' as a force that cannot be eradicated and as a legitimate power, the energy and form of expression is doomed to fail. Informality appears to be faster and more efficient when it comes to providing for the needs of the poor. Formal mechanisms of housing delivery are too slow and costly. While this approach to informality may not coincide with global intentions, there is already agreement that the 'south' needs to re-structure itself to become a stronger partner internationally, evident from re-alignments and partnerships such as India, Brazil, South Africa (IBSA) and the African Ministerial Conference on Housing and Urban Development (AMCHUD) initiatives. The Millennium Development Goals, agreed on at the United Nations Millennium summit in 2000, state the following goals: eradicate extreme poverty and hunger and ensure environmental sustainability. How approaches to housing should be developed to relate to these intentions has been debated in South Africa. One of the goals states: develop a global partnership for development. The fact that the country has aligned itself with Africa and countries of the 'south' has been an interesting progression in this process, at the same time a more enlightened approach to informality can be developed that addresses the unique realities of these countries.

Facilitating emergence and learning from the vernacular

"Places that happen and happen to work. Places that are made and don't." [5]

Patterns of emergent systems in cities are indicators of real need and the imposition of pre-determined plans should be avoided as professionals become more sensitive to context. Hamdi [5] explains how 'small' interventions grow and guide development and how the role of the professional becomes one of creating conditions for emergence and in this respect searching for catalysts. These catalysts then generate a process of 'negotiated reactions' [10], whereby continuous transformation is achieved within a stable environment. Harber [11] explains how a

squatter settlement develops in a process that is the exact opposite of a formal settlement: the land is occupied, buildings put up and services finally installed. He believes this usually generates an environment that is more layered, develops gradually and is less disruptive to the existing site. This gradual development is perceived as a common characteristic of successful urban places and is a quality found in vernacular settings.



Figure 4: A traditional rural setting, a shack and a window detail in an informal settlement and an innovative shack construction by a local carpenter, Sam Mpila, in Mamelodi near Pretoria.

Vernacular architecture can provide lessons for architects in housing design, more than institutionalised architecture can. Architectural history traditionally deals with individual buildings, while vernacular architecture is always about town planning, if there is a statement made by the vernacular built environment it is a collective statement [18]. Learning from traditional and emergent settings is more than imitating forms or spatial layouts; it is learning the process of 'negotiated reactions'. It is also about developing respect for what already exists on the ground and building on it. This can be demonstrated through different approaches in dealing with slums.

A pro-removal approach to slums neglects the fact that every shack is in reality a home. Squatter settlements are not undifferentiated areas of squalor but dynamic environments with unique characteristics that need to be properly researched before any intervention is made. Slum upgrades are complex processes requiring the combined efforts of a number of disciplines.

In the two examples shown in the images (Figure 5), it becomes evident that there is initiative and attempts in informal settlements to create positive spaces and more habitable environments. Driving through some of the informal areas in Omdurman it is apparent that the same degree of resourcefulness and initiative is visible. The question for architects is how lessons can be learnt from these process in both contexts.



Figure 5: A shack with a garden, shaded "stoep" (veranda) and a football as a letter box as compared to a, as yet, bland standard subsidized one room unit as provided through the government supported programme of the People's Housing Process.

Looking at some of the developments in progress or being planned in Khartoum, one is concerned about the disruption that is happening to the social, cultural and physical environment. Again speed of construction and a wiping out of localities is problematic. This applies to all types of developments, but as housing constitutes a large portion of any city, it becomes the most disruptive and takes up large compartments of land. Housing needs to be developed with full participation and preferably in an incremental manner at neighbourhood level and at the level of the individual unit.

Urban design, increased densities and spatial clarity

The scope of housing extends beyond the boundaries of a particular site. Gwendolyn Wright [11] refers to the 'site of each commission [being treated] as if it were a world unto itself' or 'bracketing'. Dewar [7] expresses it as 'the sea of space' between buildings, which has the potential to be the 'glue' that binds a development together. The building as an edge and as a connector; the building providing definition and boundaries to space is of utmost importance.

Dewar [7] believes that a positive environment can be achieved regardless of the quality of the individual buildings and emphasises environmental, social and economic benefits of high densities. He explains how, in positive urban environments, the urban fabric at the smallest scale is fine and complex. It is at this scale that most impact is made on the daily lives of people. With higher densities, small business and enterprises flourish as there is more critical mass to support them. Dewar [7] also makes the distinction between a road and a street. In this set-up, transport nodes are perceived as 'catalytic nodes' and the tensions created between these nodes is seen to generate a process where small informal businesses will be able to flourish initially as an area gradually develops [2].

It is believed that issues of housing and urban design cannot be separated. In South Africa this is especially critical as the fragmented nature of cities has generated poor quality urban structures.

In Khartoum, while densities are being increased rapidly, there is a lack of cohesion and urban clarity. There also seems to be serious lack of coordination between developments. Poor infrastructure also contributes to a disjointed city that is quickly becoming characterised by chaos.

Interface: designing the edges

Good urban design approaches acknowledge the surroundings and react to existing forces in an area, new residential buildings complement that. The desired design characteristics are listed as follows: High densities, well-defined routes, hierarchy of streets related to spatial hierarchy, streets with identity, legibility through strategically placed visual or functional nodes, mixed-use, high-density strip developments, buffer zones as threshold into private domains, and the differentiation between public, private and semi-private. The relation of the building to the street frontage is seen to be essential to the success of any design. Mixed-use strips are buildings which create a 'habitable wall' with different functions accommodated on the different levels, each interacting differently with the street.

Allowing residential buildings to be built up to the street boundary in Khartoum could facilitate better defined streets that are more protected, if there was more clarity in terms of building heights and relationships to generate and better coordination and unified street frontages.

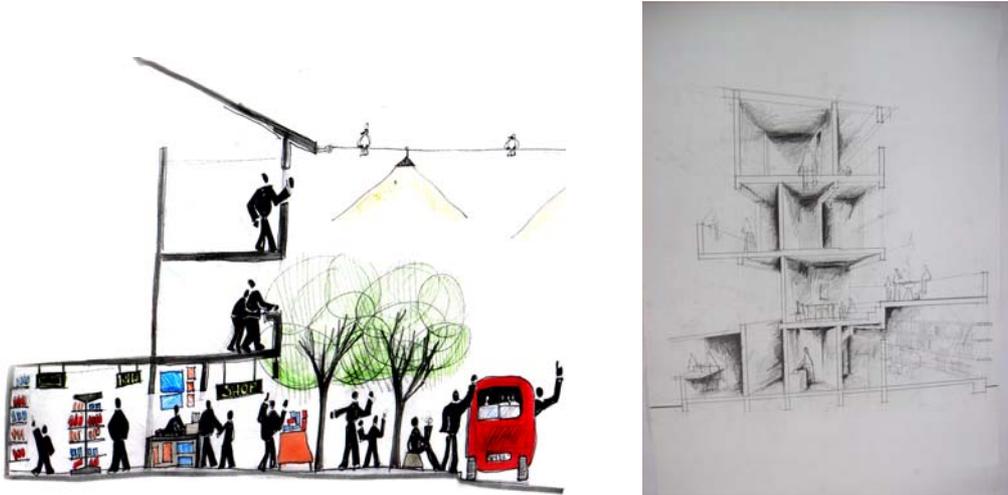


Figure 6: Sketches by Cennette Swart and Emmanuel Nkambule (UP Honours Housing Elective 2007) showing how residential buildings could interface with the street.

Gated communities and social exclusion across the economic spectrum

There is a trend, in South Africa, to close off residential areas, this is not only a characteristic of expensive homes in golf estates, but also evident in recent social housing projects in inner-city areas. This results in social exclusion; gated areas transform cities and how they function in ways. It is not only environmentally unsustainable but makes no sense economically. Combating this trend requires a major shift in the way we think about the morphology of human settlements as well as the processes by which they are created. It is argued that maximum surveillance can still be achieved through good design without losing the street/building interface that adds quality to the surrounding streets and public spaces.



Figure 7: Solid walls, electric fencing and barbed wire leave pedestrians and drivers very vulnerable on long stretches of road.

Long expanses of walls and fences generate streets that are hostile: economic opportunities are missed and pedestrians and drivers are left vulnerable to crime as there is no passive surveillance onto the streets. It is noted that some developments in Khartoum are taking the same approach. This is a trend that does not facilitate positive urban environments.

Infill opportunities: achieving quality in high density contexts

In South African cities the identification of gaps in the urban fabric to use for infill housing is very important, especially because of fissures created in cities due to the Group Areas Act in the 60s that saw neighbourhoods being demolished and people being relocated to areas designated for the different races. Besides to having to respect the existing city fabric, the design of these developments needs to be directed by the aim to create quality internal and external spaces. Identifying possible sites for intervention and densification becomes an important aspect of this exercise.

Some aspects being explored by professionals and academics are considered important in high density, inner city contexts:

- To take into account changing family structures and living patterns
- To propose ecologically defendable housing strategies in terms of designs that need less space, infrastructure, energy and materials
- To investigate new design types for high-quality, high-density living
- To re-establish a symbolic relation with nature for the nebulous city dweller
- To challenge the loss of (sub) urban living quality in high-density situations

Left over spaces, accidental gaps in the urban fabric are targeted for projects and it is attempted to allow everyone private access on ground level or above and a private exterior space (a big terrace, garden or roof garden). [14]

These projects have useful lessons applicable to South African, where urban environments are disconnected and developments are low-density. The challenge is to maintain quality environments while at the same time densifying.

Retaining pockets of tranquillity in the busy city

One of the problems with high densities is the loss of privacy and the individual's choice to withdraw when preferred. It is believed that this can be addressed through good design. In a recent development in Pretoria's CBD, Jubilee House [13], a refuge for women, was designed around an existing courtyard and play area for children. Despite the small spaces, quiet and busy zones were identified through design and the corresponding activities were placed adjacent to those zones. This distribution allows for a number of activities to proceed simultaneously and the different groups to use the spaces without intruding on each others privacy, which is indispensable for communal living. Differentiation between private and communal also needs to be emphasised so that people may socialise or withdraw when needed.

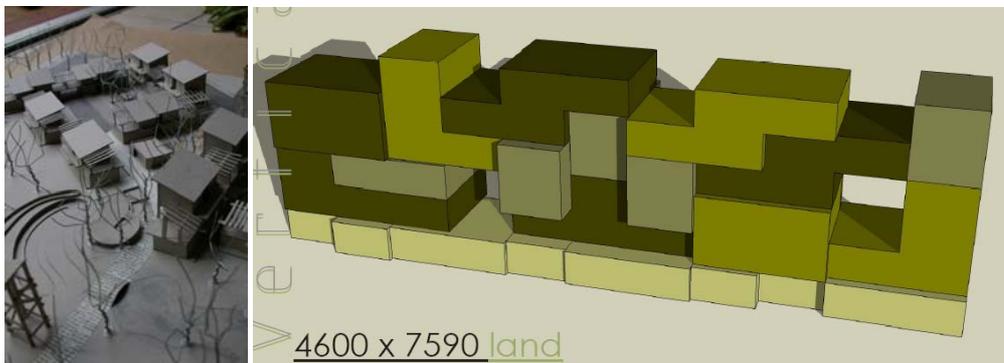


Figure 8: Projects by Elana van der Watt, Mirella Bandini and Ryno Dreyer showing how spaces of tranquillity and outdoor rooms can be achieved horizontally but also vertically in a multi storey development. (UP Honours Housing Elective, 2007).

In South African townships and in Khartoum open pieces of land are left unoccupied to be developed into parks and public facilities. Many times they remain in an undeveloped state for many years. The scale and design of these spaces is very important to make them conducive to being used for leisure and relaxation. This is especially so in a climate that is harsh and spaces need to be more protected.

3. Change as a positive generator of form

The built environment is not static and provides an interesting context in which to study the relationship between stability and transformation. Many people have experimented with this concept throughout the relatively recent history of architecture. The quality of changeability is

inherent in houses throughout the world [15]. This understanding of a house is not limited to low-cost housing but applies to all levels of housing across the economic spectrum: a house is many times a changing organism; it changes many times throughout its lifetime to suit changing social status, economic status and lifestyles.

The concept of *open building* studies this inherent characteristic of the built environment and distinguishes between fixed and flexible elements. There are special considerations South Africa that may support the implementation of open building, for example, the estimated percentage of the population in South Africa likely to be experiencing problems with the built environment, including their own homes, at 44% [16] (based on statistics, 1999, concerning the disabled, elderly, children and HIV+ people). Thus, environments need to be designed in such a way as to allow maximum accessibility and transformation so people may adapt buildings to their needs.

This approach also makes sense in terms of affordability, where the urban support structure is robust and of a high quality and the infill systems are of variable quality and cost to accommodate for a range of income groups. Rather than having a standard quality of infill for all the tenants, a consumer-oriented rent policy may be implemented to offer a flexible response to clients' needs in terms of infill quality [17]. The aim is to allow for flexibility without subtracting from an effectual urban identity.

By accommodating participation and change, it is possible, with innovative design, to successfully include poor people within the city on land traditionally thought of as being too expensive for social housing.

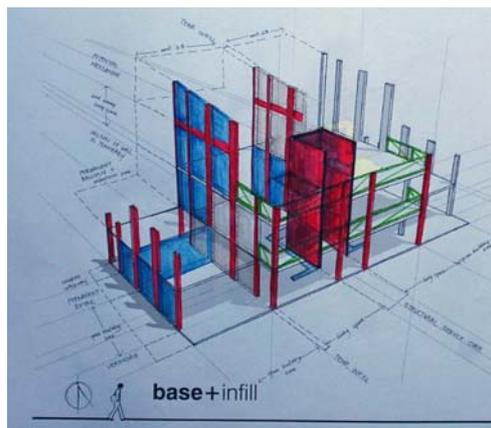


Figure 9: An adaptable interior designed by Elana van der Watt showing fixed and changeable elements in a residential building. (UP Honours Housing Elective, 2007).

4. Architectural education and housing: the housing and urban environments research field, University of Pretoria

The Urban Environments and Housing Research Field at the University of Pretoria hopes to play a more significant role in testing alternative approaches to the built environment, in particular housing, by developing interaction between the university and its context. The aim is to allow the architectural studio to move beyond the confines of the university campus.

In the process the university establishes a stronger connection with the city and communities within it. As a result the city becomes a laboratory for investigation and application of academic knowledge, while simultaneously building partnerships and networks. A further outcome is the development of a more enlightened approach to professionalism, which challenges elitist, expert-driven attitudes of the past by acknowledging and respecting 'local ways of doing'.

The research project, which is more concerned with process than product, explores how technical expertise may be imparted by means of a participatory development mechanism in architectural design and practice within a local context. It is believed that universities can play a meaningful role in the transfer of information on construction and housing through partnerships with local communities. Moreover, this two-way learning process establishes meaningful networks, where the students and community alike are educated and empowered through participation, skills-sharing, and cultural and technological knowledge transfer.

The main aim is to achieve long-term collaboration between the university, local industries and communities in the region. A workshop approach, "knowing by doing", is followed, which uses existing builder's yards and building sites as the locations for technological and cultural exchange. Utilizing locally available skills as the point of departure for the design process is tested, which reinforces the idea that technological innovation has to *adapt* to local capacities and not the other way around.

Small projects, therefore, are viewed as vehicles for collaboration, development and learning. While the projects are spatial in character, interventions may cut across the various scales and levels of the built environment. This is because the design department is comprised of three fields: architecture, landscape architecture and interior architecture, which includes product design.

Hamdi's [5] concern for the complexities of working with local communities is dealt with by identifying individuals who are perceived as champions in their community. In addition this results in a true appreciation of the context and the identification of potential projects and collaborators. Such individuals act as catalysts in the process in that they are known and respected, and many activities seem to either be initiated by them, supported by them or revolve around them.

Identifying where interventions could take place, what kind of intervention and anticipating the kind of influence it would have on the surroundings is critical. The result is an intervention that generates a response and allows more agents to become involved in the creation of the built environment.



Figure 9: A workshop space built by the honours housing elective students of 2007 in collaboration with local artists and builders. The students are photographer in the picture in the middle with Sam Mphili the artist who assisted them in the project.

5. Context and response: generating an architecture of place

The above briefly identifies possible areas for professional involvement and the design principles that would apply, as well as showcasing some student project examples from the University of Pretoria. It also attempts to highlight issues common to the situations in both countries and possible areas of academic debate and joint research efforts. The focus needs to shift from designing a housing unit to designing viable and functioning neighbourhoods. It is concluded that

any housing project needs to be adapted to a specific context and must ultimately uplift the whole area. Housing cannot be dealt with in isolation and must be a part of a complete setting in order to generate a meaningful architecture.

At the University of Pretoria, we are learning these concepts through our work with communities. This has proved to be a process of mutual learning. Community members have contributed in project criticisms and our students have made presentations to subsidy beneficiaries, local councillors and various government officials where we have managed to portray a more enlightened approach to housing issues and design. Our partners in the townships have assisted us in identifying student projects; they have been our guides and have helped us gain more insight and understanding into township contexts.

Participatory approaches in design can only be explored through real-life projects. This approach has, in the past (in the future), ultimately lead to questioning the very definition of architecture. Through experimenting and action research it is hoped that the skills needed for operating in a changing professional environment can be achieved.

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