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Architecture and Housing: Changing Perceptions in the New South Africa. The Case of Pretoria University

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Abstract

This paper investigates how staff and students perceive housing at the Department of Architecture, Landscape and Interior Architecture, University of Pretoria, South Africa. The Department's reputation is that of a strong design-oriented school, producing technically proficient graduates.This characteristic is possibly a reason why housing issues tend to be neglected. Slow developments in the fields of housing and socially responsible architecture within the Department could be attributed to its location in a conservative educational institution still adapting cautiously to the changing socio-political scene. The predominantly white middle-class staff and student profile plays a role in the apparent disinterest in community-oriented projects.

Housing landscapes in South Africa evolved into sterile, regimented and inefficient settlement patterns.Understandably, designers distanced themselves from such ugliness. Inner city areas and the notorious black townships are 'no-go' zones as the legacy of apartheid continues to filter through in the democratic era.Segregation is still evident. Students' responses to housing have proved to be very restricted to the typical 'matchbox' house, whose image influences many of their design endeavours-even if stacked into a high-rise concrete frame, attached to older buildings or filling in the spaces between existing buildings in the city.

This paper considers ways of arousing interest in housing in the above context and within the Department's ethos. Educational approaches appropriate for housing design will be covered and design methodology will be established as a vital area in theory where design tools for housing projects can be developed. Knowledge of a broader range of design methods is seen to increase the search area for appropriate solutions, thus rendering the architect's role more innovative and effective in housing processes. Through a methodical approach to design issues, it is believed that future architects will be more able to answer to contextual needs without compromising the high standard of design expected by the Department.

1 Introduction

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 (Lowe 1997:139). Housing is not only concerned with the design of a specific number of house units, but rather, the design of a whole environment that provides accommodation, jobs, education, health services, etc. All this is to be achieved within a context that is accessible, safe, beautiful and sustainable (Erskine 1998:22).However this is yet to be achieved in the context of South Africa.
Since 1994 South Africa has commenced with radical transformation of every aspect of society.An ambitious and far-reaching policy agenda is currently being tested by the challenges of implementation. Housing landscapes which evolved during the apartheid period still continue as sterile, regimented and inefficient settlement patterns.Subsequently, many designers perceive the issue of housing negatively.This is evident at the Department of Architecture, Landscape and Interior Architecture, at the University of Pretoria.However, it is believed that innovative and appropriate educational approaches toward housing can serve to equip future architects with the skills and attitudes that may enable them to answer to contextual needs without compromising a high standard of design.

2 Factors Influencing the Housing Process in SA

In the optimism after 1994, housing became a major political playing card. Many new laws were passed concerning land reform (Dewar 1998:369) and many subsequent promises were made. Although the old housing systems were rejected in the new political dispensation, yet in terms of implementation new processes and building typologies did not emerge. The government in collaboration with the private sector still largely controls housing. Community involvement, empowerment and capacity building are still not a reality. Although legislative obstacles were removed, operative barriers to the delivery of sustainable housing still remain (Dewar 1998:370). Frequently, fast growing informal (squatter) settlements are more sensitive to the landscape than developer built housing, where the land is flattened, trees removed, roads are unnecessarily wide and plots excessively big.

2.1 Innovations in Housing in SA

To encourage more interest in housing, alternative ways of housing provision in South Africa should be investigated and incorporated into the programme at the Department. In other words the Department should be in contact with current housing developments and changing approaches.Several alternatives for housing delivery are being investigated in the country. Three examples are briefly described here.
The People’s Housing Process(PHP) is aimed at very impoverished communities.By taking charge of the process, capacity building is encouraged and costs are greatly reduced. Future residents are educated in phasing mechanisms, designing, measurement/demystifying size, costing and recycling (Vilakazi 2002:Interview).Again, according to Vilakazi, smaller plots and higher densities are being encouraged. This process has met with success in a number of regions in the country and is encouraged by the subsidy system. It has become a major route for housing delivery and is gaining recognition as a means of infrastructure delivery. Student’s participation in community design workshops could be a valuable two way learning process.This is encouraged by the Department of Housing (Vilakazi 2002:Interview).

The Social Housing Foundation (SHF) and Social Housing Focus Trust (SHIFT) are aiming to change people's thinking on housing (SHIFT competition document:2002). The concept of social housing is based on European precedents.The SHF defines social housing as: "Social housing promotes improved quality of life and the integration of communities by providing affordable, high standard, subsidised housing with the added benefit of regenerating the area where the housing stock is located.The process is managed by viable and sustainable, independent institutions, which encourage the participation of residents in managing their own communities." (SHIFT competition document 2002:1).
According to Eglin (2002:Interview) housing cooperatives are also a form of social housing. In the first case the cooperative members, who are drawn from the participants, run the project and in the latter the managing body is the housing institution, which has representatives from the broader community including residents. Thus, the cooperative members do not have the skill of the housing institution, yet the experience of the PHP has shown that people can gain these skills through structured capacity building programs. (Eglin 2002:Interview)
Again, in both of the above cases, community education is vital to the process. Even though housing cooperatives are not defined by what the houses look like, since the members determine the whole process (Eglin 2002: Interview), good design principles can be encouraged through community workshops. These are the opportunities from which the Department can learn, as well as influence, housing processes.

3 Approach of the Department of Architecture, Landscape and Interior Architecture, University of Pretoria

The Department has the reputation of producing good designers with a high level of technical proficiency. Over time it developed an approach known as Pretoria regionalism in response to the characteristic highveld terrain and climate (Fisher 1998:123).The lack of a formalised approach to community-orientated projects is a problem with educational institutions in general where emphasis is mainly placed on research and teaching but very little on community outreach projects. Community service is less valued in the system. Moreover, the design professions are notorious for their lack of a sense of social responsibility and historically the architectural profession probably only became interested in housing when it proved to bring in more commissions. (Prak 1984:144).
The University's location in Pretoria, the traditional capital of the Afrikaner (Fisher 1998:126) and administrative seat of the former apartheid government has also influenced the development of the University and thus the Department.Although the University serves an increasing number of black students (Pistorius 2002:3), many are part-time or registered as distance learners (Sunday Tribune Perspectives 21 April 2002).Yet, the University of Pretoria's current position can be seen as either a hindrance or an advantage. According to the Vice Chancellor, Prof C Pistorius (2002:1) in the long term, slow transformation while maintaining high standards is the best route. However, this approach should be combined with establishing a systematic structure to ensure gradual and effective transformation of the university so that it comes to be more representative of the different peoples of the country.Through concrete interaction with communities in disadvantaged areas, the University can become a powerful force in the region addressing acute needs through educational research and community service. For example, the Department is currently endeavouring to identify learners from schools in underprivileged areas with a view to admission into the Department on government provided bursaries.

4 Curriculum and Teaching Strategies in the Department of Architecture, Landscape and Interior Architecture

4.1 Outcomes Based Education and Higher Education Reform in SA

Since 1994 educational transformation in South Africa, including higher education, has centred on the establishment of a National Qualifications Framework (NQF) in which all learning programmes in education and training must be registered and an outcomes based approach (OBE) adopted.This learner-centred approach to education and training replaces the rigid, content-centred and elitist approach of the previous dispensation (King & Van den Berg 1992).

4.2 Current Practice in Department of Architecture, Landscape & Interior Architecture

Despite the fact that the University is adopting the above OBE approach (Work Group Education Innovation: 2002) the Department is yet to apply these principles.The new paradigm is of particular relevance to design. The training at present tends to be product-orientated; subsequently students struggle to grasp the process of housing. Methodical, process-oriented approaches, though aimed for, are yet to be achieved. The focus in the Department is on competitiveness rather than co-operation, and individual rather than group work. This does not address the changing role of professionals who are expected to cooperate with communities and not function in isolation.A balance between the two approaches needs to be achieved.

4.2.1 Course Content

Curricula comprise the content, structure and sequence of a course of study. Housing is greatly undermined in the Department's curricula at the University of Pretoria in terms of content. Housing is mentioned inappropriately as Mass housing and Design of double storied domestic and public structures, in the second year design course (Regulations and Syllabi, 2002:73).Issues of integration, mixed-use and high-density developments, within the context of evolving post-apartheid cities, are not explicitly addressed. There is no structure to the contents in terms of housing issues and the sequence does not build up to a sound knowledge of the topic.

The curricula should achieve a degree of specificity to the South African context while also building knowledge of housing issues worldwide. The physical and visual legacies of apartheid have to be addressed through task-oriented courses as professionals need the skills to deal with the transformation of township landscapes, upgrading hostel compounds and creating mixed used and nodal developments to connect the isolated townships to the CBD.Building conversions also require attention as the inner city receives its new inhabitants with new economic activities. In the light of the very volatile legislative structures future architects should be trained to cope creatively with these restrictions through discipline-oriented courses. These are defined as follows: "…students learn a methodology that is applicable to a wide variety of situations." (Osman 1995:82). Thus, housing should be addressed in a problem-based and interdisciplinary manner in courses that cover knowledge-based, task-oriented and discipline-oriented methodological processes. (Rowntree, 1981:2-5) .

Housing involves a number of building types and can be learnt in a variety of ways, including the study of local precedents and history (Rich 2002: Interview).Thus, it covers both a variety of disciplines as well as a number of courses in an architectural school. In the under-graduate course, some aspects of housing need to be incorporated into existing courses such as architectural history and theory. The environmental and economic impact of housing as it is being delivered today needs to be tackled. Many such aspects are taught in various courses offered by the Department of Town Planning.

These include participatory planning, settlement design concepts, spatial concepts, etc. (Regulations and Syllabi, 2002:80-82). These issues should also be addressed from an architectural point of view and some co-operation may be encouraged between the two departments. An awareness of materials and construction methods suitable for housing is also important as well as a basic knowledge of infrastructure.
Furthermore, urban design principles should be established in undergraduate courses as an inseparable aspect of housing. The process of teaching housing could develop in phases. Students could begin with the design of the interior of a residential unit, addressing issues such as economy, accessibility and ergonomics. Thereafter the next phase follows: the design of a residential block, which addresses issues of form and street/building interface. Finally, students can be involved in projects, which consider outside spaces immediately surrounding a unit or block, whereby factors such as safety and privacy, both of the individual and at a communal level are considered, as well as issues of passive surveillance.

4.2.2 Process

The majority of time in an architectural school's timetable is allocated to 'design'. The deserted studios of many schools of architecture are characteristic but do not indicate the failure of the project system (Ritter, 1966:295). Problems with the studio system need to be addressed as the studio is seen as the appropriate place to instil the values necessary for socially conscious and democratic approaches to design.
The design/build studio has been a positive experience at the University of the Witwatersrand's Department (Wits), (SA Architect, June 2000) where the students have attempted to transform dilapidated inner city contexts through place-making exercises. Peter Rich, a lecturer at Wits (2002: interview) has set projects, a type of SWOT (strengths, weaknesses, opportunities, threats) analysis, where the context of a mall had to be compared to inner city streets. Studio projects need to be linked to authentic schemes and sessions with students should be organised to simulate the complexities of real-life situations, for example by means of role playing, debates and talks by community members or professionals involved in actual projects.
In the Department at Pretoria, an effort is being made to link theory and design in projects as well as to facilitate interdisciplinary projects involving students from different disciplines to work together as a team (e.g. annual Spring School).In two cases community members have assisted in setting the project brief and attended design critiques where the students' work was discussed and assessed. The students' designs were then exhibited to the communities. In a project in Kliptown, Soweto, the community then selected a design for a children's centre and are currently seeking funding and building approvals to have it built. These initiatives need to be encouraged and formalised through community partnerships.

4.2.3 Assessment

OBE specifies that learners must understand what is to be assessed and what is to be achieved (Mokhobo-Nomvete 1999:6). In the Department study guides inform students of the scope of the course work, outcomes, methods and criteria of assessment. Assessment is currently based on project work (aims at involving applied knowledge), examinations (written and oral) and critiques (design work).However, whether or not the lecturer bases his/her evaluation/mark awarded on inputs or outcomes has not been specified. In OBE, assessment is done by teachers/lecturers and through peer-evaluation. However, the practice of self-assessment is not formally applied in the Department. Self-assessment encourages learners to reflect and critically evaluate their work thus the process of assessment becomes both learning and teaching tool. Design assessment needs to be product-oriented while student assessment needs to be process-oriented in terms of positive attitudes; organisational abilities, cognitive skills etc. (Refer to Ritter 1966).

5 Possible Innovations

Housing quality not only involves technical aspects, construction, structures, services and maintenance costs but also the contribution of housing to the quality of life. Housing implies meeting a combination of social, political and cultural needs. In South Africa, a variety of sustainable housing options for a wider range of people and that are suited to South African economic realities need to be investigated (Osman 2000:1-2).

5.1 Key Curricular Issues

In the light of the above, the design professions should:

- Create dynamic urban contexts based on the urban design principles of phasing, privacy, variety and integration.
- Challenge the perception that limited funds mean poor quality.
- Create an enabling, inclusive, accessible context catering for the needs of all sectors of the target population.
- Achieve a visually dynamic context that is vibrant: places where people enjoy the daily experience of their surroundings and subsequently care for and further develop them.
- Provide efficient living units in optimal space, which link well with outdoor spaces.
- Incorporate social amenities and services as well as income generating functions into housing schemes.
- Explore different housing forms thereby eliminating the idea that NE51/9 (Non-European house designs developed during the 1950's) models and townships are the only solutions.
- Densify - to promote the belief that densification provides more viable urban areas and is appropriate not only for the urban poor but also for unsustainable suburban areas.

Corresponding skills should be incorporated into curricula and teaching methods in the Department. Revised curricula and teaching methods should enable students to:

- Provide design alternatives that cater for a variety of income levels and lifestyles through the use of different design aiding techniques.
- Operate in a team, which includes landscape and interior architects and to appreciate how the three disciplines function together.
- Create multi-functional and ergonomically designed spaces.
- Understand that housing is not just the individual living unit but encompasses all aspects in the macro- and micro- environment. Be aware of different types of housing typologies.
- Design high density, mixed use strip developments and urban blocks.

5.2 Design Methods

Methods that allow for user participation in design decision-making have been experimented with in the Department. Evolutionary housing design through generative graphs to allow users a larger degree of participation in the choice of space needs arrangements and sequence of growth is one approach. This system was devised by Raul di Lullo (1981) and is based on the open building concepts developed in the Netherlands (Habraken 1972). This has been integrated with a support and infill system (Osman 1995:205) and used in a variety of student's projects, where maximum freedom in spatial layout and installation of parts of the building is achieved.Morphological charts are also used to widen the search area for solutions for a design problem. (Jones 1976). (See diagrams below).

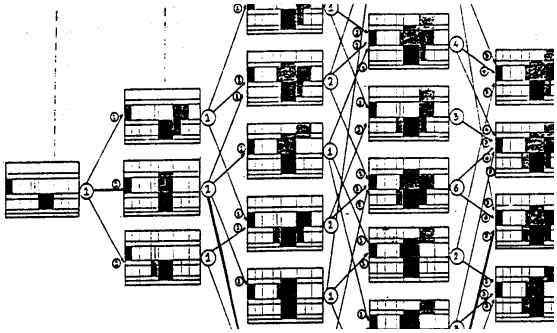

Figure1:Generative graph (Osman 1995:205)

SUB SOLUTIONS

ESSENTIAL FUNCTIONS						
1	◯	◯	◯			
2	◯	◯				
3	◯	◯	◯	◯		
4	◯					
5	◯					
6	◯	◯				
7	◯					

No = 3 x 2 x 4 x 1 x 1 x 2 x 1 = 48 SOLUTIONS

Figure 2: Morphological chart (Osman 1995:217)

These design-aiding techniques approach design as a process that optimises the contribution of role-players in housing through maximum transparency and effective communication. The house is seen as a flexible/adaptable product, as an armature (Macdonald 1996), rather than a fixed final product, through the use of matrices, generative graphs, support-infill systems, etc.

6 Conclusion

Housing is concerned with issues of funding, management, tenure, implementation and community administration. These factors ultimately impact on design decisions - thus there is a need for designers to be aware of, and to influence this multi-faceted process. Ideally, a professional interacts with, and is advised by the community during the process of designing buildings for housing within an urban design framework.

Housing should not be seen as an isolated element within an architectural course and should not be left to individual campaigners. Especially in the context of the Department where the teaching staff's active involvement in real-life housing projects is limited, thus their ability to apply their housing experience to the studio is also limited.

The paper has outlined course contents and teaching methods suitable to the topic of housing. It has emphasised that housing design should focus on participatory approaches as well as designing for alternative lifestyles, financial ability and changing scenarios during the lifetime of a house. Thus, it is seen that a housing project will have a very different product from that of other design projects and should be presented differently.

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