

SUSTAINABLE HUMAN(E) SETTLEMENTS

CONFERENCE: 17-21 SEPTEMBER 2012



UNIVERSITY
OF
JOHANNESBURG

A photograph of a city skyline at night, featuring various buildings and a prominent tower. The image is overlaid with a dark, textured pattern.

THE URBAN challenge

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PROCEEDINGS OF THE SUSTAINABLE HUMAN(E) SETTLEMENTS: THE URBAN CHALLENGE CONFERENCE

Edited by

Prof Amira Osman
Mr Clinton Aigbavboa

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HOST

University of Johannesburg
Faculty of Art, Design and Architecture (FADA)

FORWARD

On behalf of the Organising Committee, the delegates were welcomed to Braamfontein, Johannesburg for the Sustainable Human(e) Settlements: The Urban Challenge Conference.

The Sustainable Human(e) Settlements: The Urban Challenge Conference provided an international forum for researchers and practitioners from developed and developing countries to address fundamental problems, possible solutions and constraints that affect human settlements.

The conference brought together in a single forum researchers, academics, administrators and practitioners representing educational institutions, government agencies, construction firms, consulting firms, NGOs, SHIs, financial institutions, and other housing-related organisations. The topics organised around the conference theme were broad – with a specific area of focus being the issue of Residential Open Building.

These peer reviewed and edited proceedings are aimed at contributing to the body of knowledge in the science and practice of housing and human settlements. The international scientific panel was constituted with a view to maintaining a high academic standard. The conference organisers hope that these proceedings will contribute to the debate on human settlements – with the ultimate aim of influencing and improving housing delivery, practice and education in South Africa, and internationally.



Prof Amira Osman
Johannesburg,
South Africa
September, 2012

ACKNOWLEDGEMENTS

The Organising Committee of the Sustainable Human(e) Settlements: the Urban Challenge Conference wishes to express their gratitude to the University of Johannesburg and the CIB as well as the partners that have supported this conference in various ways.

The substantial financial support from the Cement and Concrete institute (CCI), COROBRIK, the National Research Foundation (NRF), the Netherlands Architectural Fund and the University of Johannesburg is acknowledged.

The contributions and unique support of the Technical and Scientific Committee who worked hard and long to prepare refereed and edited papers, and published proceedings of a high standard, that satisfies the criteria for subsidy of the South African Department of Higher Education, is truly appreciated.

Special mention needs to be made for the support provided by Prof Marian Sauthoff, executive dean of FADA, UJ and Prof Christo Vosloo, HOD of Architecture at FADA, UJ. The Multi-Media Department at UJ is acknowledged with special mention of Mr Mntambo Nduka of the University as well as Beate Lendt of x!image, Amsterdam.

CONFERENCE REPORT

Sustainable Human(e) Settlements: The urban challenge

International conference: Lamunu, Braamfontien, Johannesburg 17th-21st September 2012

In September 2012, the University of Johannesburg, with its partners and sponsors, hosted the international conference on Sustainable Human(e) Settlements: the urban challenge. This was an activity of the CIB W110 group on Informal Settlements and Affordable Housing, which is led by Prof Happy Santosa (ITS, Surabaya, Indonesia) and Prof Amira Osman (University of Johannesburg). This research group has also been closely collaborating with CIB W104 on Open Building Implementation.

The conference partners and sponsors were the International Council for Research and Innovation in Building and Construction (CIB), Cement and Concrete Institute (CCI), Social Housing Focus Trust (SHiFT), the National Association of Social Housing Organisations (NASHO), Council for Scientific and Industrial Research (CSIR), COROBRIK, National Research Foundation (NRF), 26'10 South Architects, Sharp Shop Architects, South African Institute for Architects (SAIA), Association of Schools of Construction of South Africa (ASOCSA), 1:1 Agency of Engagement and the Netherland Architecture Fund. The conference organizing committee was: Amira Osman, Finzi Saidi, Ferdinand Fester, Clinton Aigbavboa, Wellington Thwala and Jhono Bennett.

The conference was held at Lamunu, Braamfontein. This was an apt location because of the interesting urban regeneration that is happening in the area – which buzzes with student life due to the proximity to both the University of the Witwatersrand campus as well as the University of Johannesburg campus.

The conference was conceived as a “small but significant conference” intending to shed light on issues believed to add value to the debate on housing and human settlements in South Africa – ideally to be achieved through active engagement between the architectural profession and other professions and stakeholders in human settlements.

Architecture is a profession that is critical in the achievement of human settlements that are more equitable, more beautiful, more functional – human settlements that increase peoples' opportunities, offering people a better chance at improving their lives and livelihoods. It is a profession that has the potential to offer both technical and social expertise towards the enhancement of social cohesion and integration through the achievement of a mix of income groups, housing types, functions etc.

In other words, the architectural profession has the potential to make significant contributions to environments and human settlements that are more human(e). The role of architects and architecture is critical. Yet, the profession remains largely untransformed and disengaged from these issues... something that is changing, but too slowly. This needs to change and we need to re-think the way in which the built environment is conceived, designed and delivered.

The conference had a particular approach and aimed to promote thinking on alternative strategies for design and delivery of housing and human settlements – as well as emphasize the role of architects and the architectural profession in spatial transformation and achieving more sustainable, human(e) and equitable cities. The conference themes also built on a vision for human(e) settlements developed by a partnership of individuals from various agencies (CSIR, SHiFT, SAIA, SAICE etc.), calling themselves the Tsela Tshewu Design Team, which listed 10 principles for transformation in the built environment – these principles all emphasized the need for distributed decision making and innovation in the manner in which the built environment in general, and housing in particular, is designed, funded and delivered. The need for viewing the built environment at different levels requiring careful management of the relationships between the agents that operate at those levels as well as the need to “disentangle” those levels to allow for a degree of permanence without restricting the necessity for constant transformation becomes apparent.

The 10-point vision presented a set of guidelines to apply this principle in South Africa on new developments as well as in the transformation of existing suburbs and townships and in the upgrade of informal settlements. This approach allows for the integration of low cost housing within strategies that address the development of complete housing eco-systems rather than isolating housing for the poor. It also allows for the development of housing models that make “business sense” by allowing for the involvement of small-scale construction industries in the delivery of the “lower level” of the built environment (the infill or fit out levels) while the large and more experienced companies deliver the base buildings, that is the more permanent component of the built environment. The idea here is to allow for constant transformation and innovations at the lower level of the environment – with more players being involved in decision-making at those levels – while ensuring the delivery of high quality and efficient base buildings which might be leased or sold to various agents including, possibly, subsidised rental housing institutions.

Due to this particular approach to viewing the built environment, a strong link with Open Building thinkers and thinking led to collaboration between the CIB W110 research group on Informal Settlements and Affordable Housing and the CIB W104 group on Open Building Implementation. The focus on Open Building also generated a strong Netherlands influence and interest as it is premised on writings by key thinkers in the field such as John Habraken. The strong link with thinkers and projects in the Netherlands was evident in the papers presented, the delegates that attended and also influenced the movies that were produced.

The preparations for the conference started many months before with an important collaboration internally between the Multi Media Department at FADA, UJ and the Architecture Department. The intention was to produce two movies that looked at the South African situation and presented innovation in thinking about residential developments in the Netherlands. Produced in partnership with ximage, Amsterdam, the Sustainable Human(e) Settlements: the urban challenge documentary films premiered at the Urban Film Festival organised by UN-Habitat, World Urban Forum, Naples, 3rd-5th September 2012. The movies have also been selected for the India-AARDE Film Festival, partnering with the School of Architecture, Anna University in Chennai, December 20-22, 2012. The movies have been used for lectures and presentations nationally and in the Netherlands.

The movies were produced with an intention to initiate a debate on Open Building in South Africa. The workshops had a similar aim and started the day before the conference and overlapped with its activities. These workshops aimed to better establish OB thinking in South

Africa among practitioners, academics, social housing institutions and developers. Detailed reports on the workshops are being compiled.

The workshops and conference were addressed by key international figures in the field of Open Building thinking and practice. Stephen Kendall (Ball State University, USA) is one of the coordinators of CIB group W104 Open Building Implementation gave a keynote talk as well as jointly ran a workshop with Amira Osman (University of Johannesburg). Phil Astley (the Bartlett, London) led the workshop on Open Building for Healthcare Systems Separation with Georgio Macchi (Director and Chief, Real Estate and Public Buildings for Canton Bern) and Marianus de Jager (Sharp Shop Architects, Johannesburg). Jane Stanley (Director of People and Communities for the City of Ballart, Victoria, Australia), who was sponsored by the CCI, gave depth to the discussion by raising issues of participation, community engagement and re-defining community partnerships through her thoughts on “gnarly planning” and international experience in the field.

Other important events at the conference were:

1. Technical tours organized by SHiFT which aimed to introduce the delegates to different sections of Johannesburg and using the Rainbow Rating Tool developed by SHiFT to assess the viewed projects and neighbourhood in terms of various sustainability and design criteria.
2. A 3-hour debate on what the term “human(e) settlements” implied was hosted by Thorsten Deckler of 26’10 South Architects – the debate was convened by Anton Harber (author of the book “Diepsloot”) and the presenters were selected from a range of fields and people who had varied experience in the field of housing and informality.

One day of the conference also included academic presentations based on scientific papers, which had been subjected to a double, blind-peer review in a 2-stage process. The scientific committee and reviewers was comprised of national and international academics – this committee ensured the high standard of the papers presented and published in the proceedings.

The activities of the conference were endorsed by the South African Institute for Architects, SAIA, and are CPD accredited.

ORGANISING COMMITTEE

The Organising Committee for this conference comprises the following members:

Organising Committee

Prof Amira Osman
Dr. Saidi Finzi
Mr Ferdinand Fester
Mr Clinton Aigbavboa
Professor Wellington Thwala
Mr Jhono Bennett

All are staff of the University of Johannesburg, South Africa

SCIENTIFIC AND TECHNICAL COMMITTEE

Mr Stephen Adams, Independent Architect
Mr Clinton Aigbavboa, University of Johannesburg, RSA
Mr Nkhensani Baloyi, CSIR, RSA
Ms Peta De Jager, CSIR, RSA
Dr.-Ing. Paulus Bawole, Uta Wacana Christian University, Yogyakarta - Indonesia
Dr Antje Ilberg, Germany
Ms Suzette Grace, University of Johannesburg, RSA
Prof Aly Karam, University of the Witwatersrand, RSA
Dr. Jacques Laubscher, Tshwane University of Technology, RSA
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Ms Claudia Morgado, University of Johannesburg, RSA
Dr. Mrs. Ifeyinwa Ofong, Women in Development and Environment, Nigeria
Prof Amira Osman, University of Johannesburg, RSA
Prof Happy Ratna Santosa, Institute of Technology Sepuluh Nopember, Indonesia
Prof Deepti Talpade, Collective Research Initiatives Trust, India
Prof Wellington Didibhuku Thwala, University of Johannesburg, RSA
Mr Robert Van Katz, Blok, Kats van Veen architects
Dr Kevin Wall, CSIR, RSA
Mr Eric Wright, University of Johannesburg, RSA

ORGANISING COMMITTEE'S DECLARATION

All the papers in these conference proceedings were double-blind reviewed at abstract and full paper stage by members of the Scientific and Technical Committee. This process entailed detailed reading of the abstracts and papers, reporting of comments to authors, modification of papers by authors whose papers were not rejected by the reviewers, and re-evaluation of revised papers to ensure quality of content.

THE PEER REVIEW PROCESS

Because of the need to maintain and assure the quality of the conference proceedings and comply with the requirements for subsidy of the South African Department of Higher Education, a rigorous two-stage peer review process by no less than two acknowledged experts in the field was followed. In this context, each abstract received was twice blind reviewed in terms of:

- Relevance to conference theme and objectives;
- Originality of material;
- Academic rigour;
- Contribution to knowledge, and
- Research methodology.

Authors, whose abstracts were accepted, after the stage one review process was completed, were provided with anonymous reviewers' comments and requested to submit their full papers noting and addressing these comments. Evidence was required relative to the action taken by authors regarding the comments received. These resubmitted papers were twice blind peer reviewed again in terms of the above criteria and also looking at the:

- Robustness of analysis of findings;
- Empirical research findings, and
- Critical current literature review.

Authors whose papers were accepted after this second review were provided with additional anonymous reviewers' comments and requested to submit their revised full papers. These final papers were only included in the conference presentation programme and the conference proceedings after evidence was provided that all comments were appropriately responded to, having been double peer-reviewed for publication. At no stage was any member of the Scientific and Technical Committee or the editor of the proceedings involved in the review process related to their own authored or co-authored papers.

The role of the editor was to ensure that the final papers incorporated the reviewers' comments and arrange the papers into the final sequence in the table of contents. Of the 53 abstracts originally received, only 21 papers were finally accepted for presentation at the conference and inclusion in these proceedings, representing an acceptance rate of 39.60%.

September 2012

Dear Author

PEER REVIEW PROCESS: SUSTAINABLE HUMAN(E) SETTLEMENTS: THE URBAN CHALLENGE CONFERENCE, JOHANNESBURG, SOUTH AFRICA 2012

I confirm that the following peer review process was strictly undertaken in this conference. Because of the need to maintain and assure the quality of the conference proceedings and comply with the requirements for subsidy of the South African Department of Higher Education, a rigorous two-stage peer review process by no less than two acknowledged experts in the field was followed. In this context, each abstract received was twice blind reviewed in terms of:

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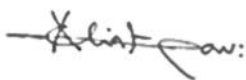
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Regards



Clinton Aigbavboa
Co-Chair: Academic programme

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COMMUNITY PARTICIPATION AS A CORNERSTONE FOR COMPREHENSIVE SLUM UPGRADING PROGRAMMES

Susana Restrepo Rico

M.Sc. – Architect, URBANgrad - Darmstadt Technical University,

suzirr@hotmail.com

Abstract

Cities are complex systems and networks which shape the character of communities and define the life quality of urban dwellers. In this sense, prompt urban expansion, inequality and social conflicts deform the perception of the city modifying the connection between different sectors of society, thus, compromising the possibility of low-income communities to influence the public agenda and become active participants in the construction of the built environment. Community-driven initiatives embedded within comprehensive upgrading programmes encourage sustainability of projects and improve the relationship with the city. However self-help has limitations; involvement of all sectors of society and support from government agencies are essential in order to promote holistic regeneration approaches. Although culture and context are crucial for conceiving integral strategies, the core elements of sustainable upgrading programmes present similarities when analysed in terms of the process of development; elements which can be classified in terms of physical development, legitimacy, social development and governance. These components become the framework for formulating comprehensive slum upgrading programmes, with community-based initiatives and participation as foundation for improving the built environment.

Keywords: Community Participation, Comprehensive Slum Upgrading, Informal Settlements, Urban Development, Governance, Self-help

INTRODUCTION

Comprehensive upgrading programmes can confront the challenges of exponential population growth in the presence of poverty, especially in the south, where 70% of the global population increase is expected to occur (UN- Habitat, 2003), a projection that questions the ability of governments to plan for the future. Understanding the importance of integral public policy, in addition to participative upgrading programmes could diminish vulnerabilities among existent low-income communities and empower them to improve their living conditions.

The problem of burgeoning informal settlements leads to enquire about the feasibility of upgrading slums in developing countries based on sustainable development. The research explored the growth, problems and consequences of informal settlements, as well as, successful responses of governments to alleviate the problems of the urban poor. The analysis of selected upgrading strategies implemented in Brazil, Indonesia and Thailand provided evidences to conclude that sustainable development of informal settlements can be achieved through comprehensive upgrading programmes, when the dimensions of poverty are understood and dwellers are encouraged to be owners, participants and initiators in the improvement of their own environment. In this sense, the discussion provides a framework for the formulation of sustainable upgrading programmes based on four components which could be adapted to the specific needs of communities, in order to reach real improvements in livelihoods and guarantee the sustainability of community-initiated projects focused on participation and incremental improvement.

The conclusions found in this research are the results obtained from the analysis of best practices in urban upgrading strategies, striving to undertake problems of informal settlements in cities, where poverty, densification, public infrastructure and scarcity of land become main issues to address. The case studies selected are: The Favela-Bairro Programme in Rio de Janeiro, Brazil; the Kampung Improvement Programme in Jakarta and Surabaya, Indonesia; and the Baan Mankong Programme in Bangkok, Thailand. The cultural, social, and political differences among these are important factors to be included in urban policy; however, the research has led to understand that certain similarities could be explored to find a common ground as basis for context-specific schemes.

The livelihood of the urban poor dwelling in informal settlements can be substantially improved through community-based initiatives. Participative projects have shown the multiple strengths of communal work, financial effectiveness and efficiency of results to meet the specific needs of informal dwellers, thus, ensuring sustainability of improvements through sense of place and empowerment (Pugh, 2000). However, self-help has limitations and setbacks related to improvement of public spaces, urban infrastructure and mobility; these communities lack, in many cases, technical, financial and legal resources for upgrading the built environment and connecting themselves to the city, therefore, support of government agencies is essential (Environment and Urbanization, 2001)

Additionally, the results illustrate the necessity for governance in conjunction with institutional flexibility for planning, execution and financing of projects when working with disadvantaged communities. Government support must come with deep institutional changes to cope with the human factor associated to the construction of the built environment, especially in informal settlements (Pugh, 2000). Likewise, advice and guidance from agencies and professionals should address the needs of people, solving local and context-specific problems but empowering residents to replicate projects by adjusting the measures to the emerging situations. On the other hand, societies must recognise the potentials of the urban poor, as collective, to organise and influence public policy and acknowledge them as active part of the contemporary city.

COMPREHENSIVE UPGRADING PROGRAMMES

Understanding the intrinsic dynamics of population growth is recognizing the inclusion of poverty in urban spaces, as well as, the consequences of negligence from the state towards a rising problem of migration, scarcity of land and social decline. In this sense, the research has evidenced similarities in the origin and evolution of informality, where globalisation, political and economic pressures influence the direction of development policies. Nevertheless, migration itself is not the problem, as it is the lack of vision of governments to foresee the consequences “laissez-faire” policies in the context of weak economies that led to segregation of the society (Davis, 2006), along with marginalisation of the poor, depriving them from their rights as citizens. Exclusion and economic stagnation reinforced the position of the informal sector, allowing them to be visible in the city, accounted as 30% of the total urban population (UN-Habitat, 2007). The ability of informality to adapt in size and scope becomes a significant factor as actor in urban development (Pugh, 2000). The urban image declined, poverty became customary rather than exceptional and forced governments to implement institutional transformations in order to address the rising urban problems in a holistic way (Briassoulis, 1999).

Evolution of Upgrading Strategies

The resemblance amid former upgrading strategies, along with the evolution from eviction, paternalism and site-&-services, towards self-help are associated to the influence of international institutions in urban policy throughout the 1970's and 1980's. As stated by the UN in "The Challenge of Slums", these programmes proved to be anti-urban in nature, as the foundation was liberalisation of markets. Governments continued to be providers of infrastructure and housing, approaching low-income communities through top-down policies, diminishing the efficiency of outcomes. These schemes addressed one aspect of poverty, neglecting its multidimensional complexity, e.g. the benefits of tenure were obscured by economic obligations derived from land ownership and mobility, giving as a result, the emergence of informal settlements, causing gentrification as well as expansion of the city boundaries (Perlman, 2006). Likewise, modernisation demanded more than physical improvement, an institutional reform was needed to compete in global networks; hence, a decentralisation process was initiated, delegating decision making as well as policy implementation to local authorities (Davis, 2006).

Decentralisation was higher in Brazil (Del Rio V., 2009) and Indonesia (Steinberg, 2007), allocating urban development on the hands of metropolitan authorities. The case of Bangkok illustrates different characteristics, as the urbanisation process in secondary cities was slower and weaker. Increased inclusion of low-income communities in projects gave rise to upgrading strategies which addressed the problem from a bottom-up perspective, transforming rigid schemes into adjustable structures where the community was an important element of the process (Chiu, 1984). Other influential element in the transition from top-down approaches to participation is the acknowledgment of existence of the urban poor. Although not completely comprehensive of the dimensions of poverty, renewed citizenship provides slum dwellers "De facto" tenure (van Horen, 2000), recognising the right to shelter and promoting self-help as the means for improving their own dwelling through incremental construction.

The success and failure of slum upgrading strategies led governments to understand the importance of community participation and locally-driven initiatives to improving the livelihoods of the urban poor. In Brazil the Statute of the City and the Social Function of the land opened the possibilities to exercise control over urban land and granted property right to dwellers. This paved the way for the Favela-Bairro Programme, where the design of the project was outlined with the community (Brakarz & Engel, 2004). This programme experienced a compulsory evolution from phase I which focused essentially on the built environment to phase II where the people and especially community associations played a major role in decision-making processes. Indonesia was as the first country to implement upgrading schemes with the Kampung Improvement Programme - KIP- (Kenworthy, 1997); however the strategy implementation in the early years in Jakarta ailed. A later revision of the programme led to a more inclusive strategy implemented in Surabaya (Silas, 1992) (Kenworthy, 1997) (Santosa, 2000), allowing participation of the community in the conception of the project and discharging maintenance responsibilities, along with shared ownership on the residents; a holistic approach to ensure sustainability of outcomes. In Thailand, The Baan Mankong Programme was the result of community cohesion and self- organisation. The need of the government to display power through physical improvement forced the stakeholders to seek in local partnerships the financial means to improve the life quality of the poor, motivating communities to organise themselves and empowering residents to look for opportunities beyond the common upgrading practices (Boonyabanha S. , 2009) (Posriprasert & Usavagovitwong, 2006).

DISCUSSION: FRAMEWORK FOR SUSTAINABLE UPGRADING

The framework proposed by this research consents the replication of projects, adjustable to the needs of communities in terms of knowledge, resources and finances, since the programme would be grounded on a flexible structure, empowering them to become active participants in development. The different elements of programmes have been categorised into four components, each comprising diverse topics which are fundamental for sustainable development. This classification highlights the strengths, as well as shortcomings, introducing preliminary conclusions about the feasibility of implementing sustainable upgrading in informal settlements.

Physical Development

The case studies demonstrate that small-scale improvements have great impacts on the livelihood of the urban poor, empowering them to organise and execute community initiated projects through incremental construction of housing and public space. Basic packages of infrastructure and secure connection to service networks reduce living costs, improving the socio-economic condition of settlements by offering on-site employment and offer of goods. (Jenks & Burgess, 2000). Mobility and accessibility allow physical and structural relationships with the city; footpaths and roads provide open spaces to develop community cohesion, as social spaces for recreational, communal and economic activities. Nevertheless, the access of motorised traffic must be restricted to avoid risks to pedestrians along with environmental problems. This control promotes the use of non-motorised transport modes, protecting the household income and preventing gentrification. (Newman & Kenworthy, 1999).

Infrastructure and community facilities generate an overall improvement in the sense of place of the residents, which combined with increased incomes encourage incremental construction of dwellings, consequent with the needs and resources of the community (Turner, 1978). Furthermore, in low-income settlements is common the personalisation of the dwelling through additional construction and decoration. This inevitable transformation of facades would boost identity and insert new dynamics to the neighbourhood.

PHYSICAL DEVELOPMENT		
COMPONENT	ACTIONS	METHODS & INSTRUMENTS
URBAN INFRASTRUCTURE	Water Sanitation & Drainage Public Lighting Waste Disposal	In-Situ Community Work Partnerships for improvements Public-CBO's Funding for infrastructure by municipalities Community working groups
MOBILITY & ACCESSIBILITY	Roads & Walkways Access to the formal city Restricted access for automobiles	Construction of paved roads and footpaths Physical connection to urban transport systems Promotion of non-motorised transport modes Layout adjustment
PUBLIC SPACE	Urban Renewal Communal facilities for social development Housing improvement	Improvement of open spaces Incremental construction Training skills for local construction
URBAN ENVIRONMENT	Construction of dwellings for essential resettlement Elimination of natural hazards	Relocation near former settlement Reforestation Management and prevention of natural events

Table 1: Physical Development. Constituents of Comprehensive Upgrading Programmes (Restrepo, 2010)

Legitimacy

The main evolution of upgrading programmes is the acknowledgment of the importance of legitimacy, since illegality hinders the possibilities for self-help, access to welfare, education and labour (Wakely, Mumtaz, & Clifford, 2003). Upgrading programmes grant instant de facto tenure, eliminating the fear of eviction and mending the relation of the inhabitant with the city

(van Horen, 2000). The degree of participation in decision-making processes, from planning to execution and supervision, legitimates the programme in the community promoting trust, as well as commitment from the city and the inhabitants (Brakarz & Engel, 2004).

LEGITIMACY		
COMPONENT	ACTIONS	METHODS & INSTRUMENTS
TENURE	Occupation & property rights Collective ownership and land tenure	<i>De facto</i> tenure Purchase or lease of land by CBO's Occupation rights
LEGALITY	CBO's Financial support Assistance in planning	Incremental construction recognised as legitimate production of housing and settlements as parts of the city Legitimation of community organisations Guidance provided by municipal agencies
PARTICIPATION & SENSE OF PLACE	Community Leadership Private-Public Partnerships Diversity of stakeholders	Local government committee Partnerships with private companies, government and scholars Shared project ownership Acknowledgement of social responsibilities

Table 2: Legitimacy. Constituents of Comprehensive Upgrading Programmes (Restrepo, 2010)

A difference has to be made between legitimacy and legality; although legality is necessary for social development, legal tenure is no guarantee for legitimacy and community participation. Legitimacy in the community is a tacit agreement defined by the understanding of the programme accompanied by the possibility to participate and influence decision-making (Macedo, 2008). Individual tenure symbolises risk of gentrification along with the emergence of new informal settlements. An alternative is conferring collective ownership or property rights which prevent gentrification, since individual trade of the dwelling in formal markets is hindered. Shared ownership imposes responsibilities for both community and government in the success of the programme as well as the achievement of outcomes and maintenance of improvements (Newman & Jennings, 2008). Additionally, self-organisation is essential for securing the means to finance improvements, protecting the vulnerable population. Finally, community cohesion and legitimacy are encouraged through the recognition of the ability of the poor to manage their own resources, granting them renewed citizenship which nourishes new partnerships with the municipality and the private sector (Community Organisations Development Institute, 2009).

Social Development

Although physical outputs are important for legitimacy, social development signifies an evolution in the socio-economic condition. The isolation of the poor is not only a physical limitation, is also a problem of restricted access to opportunities, ignorance about their rights and negligence of the state. Building social capacity encourages integration to the society (Prachakorn, 2006). Partnerships, shared ownership, collective tenure and legitimacy generate networks and spread knowledge. The horizontal structure of networks demand open spaces for discussion and participative decision-making, thus, mobilising the people towards integration and community cohesion (Newman & Jennings, 2008). Empowerment reduces vulnerabilities by promoting community-driven initiatives for physical, social and economic improvement. However, the strength of communities relies in the stability of organisations and legitimacy of actions. Community-based organisations build social capital, educate the people in participatory processes and provide working skills that could be employed later in the development of other settlements or in the formal labour market.

SOCIAL DEVELOPMENT		
COMPONENT	ACTIONS	METHODS & INSTRUMENTS
EMPOWERMENT	Community commitment Local cooperatives Participation	Encouragement for self-organisation Integration of the community to the formal society Information about democratic processes
SOCIAL CAPITAL	Social services Management & finances Community cohesion	Open spaces as stage for social development Facilities for knowledge transfer and training Self-organisation grants management abilities Community saving funds for financial autonomy
COMMUNITY CAPACITY	Social networks Economic development Education and training	Small-scale businesses for economic sustainability Open spaces suitable for economic development Community building groups for physical development

Table 3: Social Development. Components of Comprehensive Upgrading Programmes (Restrepo, 2010)

Governance

Decentralisation is the institutional transformation which allowed the emergence of comprehensive upgrading programmes; local authorities realised the need for institutional reorganisation in order to answer the call for empowerment. Governments experienced a learning process where they understood the limits of the internationally-driven initiatives caused by rigid programme frameworks (Storey, 2009). Moreover, self-organisation demanded participative approaches to implementation and planning. Participation steered municipalities to innovate in policies and institutional structure, opening to social networks and including diverse stakeholders in decision-making processes. The urban poor need guidance and financing, since community organisation is not enough to overcome poverty, illegality and stigmatisation. The municipality provides funding and guidance in management while the academy assists in planning; the private sector, in partnership with government agencies and the community, support implementation and sustainability.

GOVERNANCE		
COMPONENT	ACTIONS	METHODS & INSTRUMENTS
INSTITUTIONAL RENOVATION	Decentralisation Institutional autonomy Institutional reorganisation	Local initiatives encouragement Flexibility & Innovation Delegate responsibilities to local authorities
INTER-INSTITUTIONAL COOPERATION	Coordination of activities Partnerships Inclusion	Joint work between government agencies Diversity of stakeholders Economic motivation for inclusion of civil society
INCLUSIVE DECISION-MAKING	Empowerment Government as enabler Renewed citizenship	Community participation in decision-making Guidance to CBO's for the conception of projects Promotion of community-driven improvements City-wide community development plan
INTEGRAL PLANNING	Mapping Prevention Project replication	City-wide comprehensive survey Projects as learning centres for communities Pilot projects for promotion Comprehensive urban development plan for the city

Table 4: Governance. Constituents of Comprehensive Upgrading Programmes (Restrepo, 2010)

CONCLUSIONS

The analysis suggests that, although understanding the cultural context is essential to formulate integral strategies, the core elements can be classified in terms of physical development, legitimacy, governance and social development. Physical development enhances accessibility within the neighbourhood and to the city as well as better quality of the open spaces. These changes in the public realm encourage incremental construction and upgrading of housing, which result in an overall improvement of the built environment.

Legitimacy allows communities to become part of the formal city, promoting sense of place and participation. The urban poor understand their rights and obligations to the city as well as the opportunities and responsibilities in the development of the community. Social development is a learning process where empowerment, social capital and community capacity foster further social and economic activities to support the development of the settlement. Social development was the main component missing in former upgrading strategies, also the reason for the limited scope and success. Governance brings together diverse sectors of the society including communities in the definition of public policy. Inclusive approaches demand the construction of city-wide networks to spread knowledge, otherwise improvements of informal settlements become isolated projects with restricted relevance in the overall development of the city.

The poor are as well part of the city and the population are calling for integral development policies including the urban poor as active elements of the socio-economic and physical structure of cities. The research and results emphasize the importance of supporting initiatives of the community that allow participation and communication between the city and the inhabitants. Responding to the challenges of informal settlements relies on the development of integral policies at a city-wide scale, preventing the proliferation of informality, decentralising the economy, social welfare and education in order to reduce the need of migration as well as diminishing the gap between rich and poor, thus, encouraging social integration throughout the different sectors.

Further research has to be undertaken concerning the inclusion of upgrading programmes in the vision of public policy and how to balance the development of low-income communities with globalisation and modernisation pressures imposed by the international markets. The upgrading strategies exposed in this thesis aim to improve the livelihoods of the urban poor but show deficiencies in the inclusion of low-income population in the formal society and land markets. Urbanisation is an inevitable process of human society and as it has been shown in the predictions made by international organisations, the main increase in population will happen in developing countries, especially in urbanised areas where the quality of life decreases as the low-income population enlarges.

REFERENCES

- Boonyabanha, S. (2009). *Land for Housing the Poor-by the Poor: Experiences from the Baan Mankong Nation-wide Slum Upgrading Programme in Thailand*. *Environment and Urbanisation*, 309-329.
- Brakarz, J., & Engel Aduan, W. (2004). *Favela-Bairro: Scaled up Urban Development in Brazil*. *Inter-American Development Bank*.
- Briassoulis, H. (1999). *Sustainable Development and the Informal Sector: An Uneasy Relationship*. *The Journal of Environment and Development*, 8 (3), 213-273.
- Chiu, H. (1984). *Four Decades of Housing Policy in Thailand*. *Habitat International*, 31-42. *Community Organisations Development Institute*. (2009, 06). *CODI*.
- Davis, M. (2006). *Planet of Slums*. London: Verso.
- Del Rio, V. (2009). *Sustainability and Contemporary Urbanism in Brazil*. *Journal of the City and Regional Planning Department*.
- Environment and Urbanization*. (2001). *Aid and Urban Development: Where are the Views of the "Recipients"*. *Environment and Urbanization*, 12 (1), 3-9.
- Jenks, M., & Burgess, R. (2000). *Compact Cities: Sustainable Urban Forms for Developing Countries*. London: Spon Press.

- Kenworthy, J. (1997). *Greening the City: Kampung Improvement Programme*. Institute for Science and Technology Policy, Murdoch University.
- Macedo, J. (2008). *Urban Land Policy and new Land Tenure Paradigms: Legitimacy vs Legality in Brazilian Cities*. *Land Use Policy* , 259-270.
- Meadows, D., Randers, J., & Meadows, D. (2004). *Limits to Growth: the 30 Year Update*. Chelsea Green Publishing Company.
- Newman, P., & Jennings, I. (2008). *Cities As Sustainable Ecosystems*. Washington, DC.: Island Press.
- Newman, P., & Kenworthy, J. (1999). *Sustainability and Cities: Overcoming Automobile Dependence*. Washington, DC: Island Press.
- Perlman, J. (2006). *The Metamorphosis of Marginality: Four Generations in the Favelas of Rio de Janeiro*. *The Annals of the American Academy of Political Social Science*, 154-177.
- Posriprasert, P., & Usavagovitwong, N. (2006). *Communities' Environment Improvement Network Strategy and Process Toward Sustainable Urban Poor Housing Development*. *Journal of Architectural/Planning Research and Studies* .
- Prachakporn, S. (2006). *Social Capital and the Government Housing Program: A Case Study of Bann Mankong Programme in Bangkok*. Thesis. Master of Economics . Bangkok: Thammasat University.
- Pugh, C. (2000). *Squatter Settlements: Their Sustainability, Architectural Contributions and Socio-Economic Roles*. *Cities* , 17 (5), 325-337.
- Restrepo, S. (2010). *Sustainable Upgrading of Informal Settlements in Developing Countries: Brazil, Indonesia, Thailand*. University of Applied Sciences Frankfurt am Main
- Santosa, H. (2000). *Environment Management in Surabaya with Reference to Agenda 21 and the Social Safety Net Programme*. *Environment and Urbanization* , 175.
- Silas, J. (1992). *Government-Community Partnerships in Kampung Improvement Programmes in Surabaya*. *Environment and Urbanization* , 33-41.
- Steinberg, F. (2007). Jakarta: *Environmental Problems and Sustainability*. *Habitat International* , 354-365.
- Storey, D. (2009). *Inclusive Planning as Tool for Social Integration: Case Studies from Asia and the Pacific*. The University of Queensland.
- Turner, J. (1978). *Housing in Three Dimensions*. *World Development* , 1135-1145.
- UN-Habitat. (2003). *The Challenge of Slums: Global Report on Human Settlements*. London: Earthscan.
- Van Horen, B. (2000). *Informal Settlement Upgrading: Bridging the Gap Between the "De Facto" and "De Jure"*. *Journal of Planning Education and Research* (19), 389-400
- Wakely, P., Mumtaz, B., & Clifford, K. (2003). *Slum Spatial Analysis*. In UN-Habitat, *The Challenge of Slums: Global Report on Human Settlements* (pp. 79-95). London: Earthscan Publications Ltd.

BEYOND THE STEREOTYPE; DHARAVI

Martha Kolokotroni

PhD Candidate, D-ARCH, ETH Zurich

Future Cities Laboratory, Singapore ETH Centre

Singapore, CREATE Tower

Abstract

While Dharavi has been at the centre of academic discussions for more than a decade, its position in the future of Mumbai is still undefined. As discourse revolves around multiple definitions associated with Dharavi - slum, village, city, touristic destination - the diverse nature of these labels, unlocks further debates in academic research. This paper makes the case for a close examination of the emergence of three identities - The Fishing Village, the “Beautiful City” and the “Cancerous Lump in the city”- and their contribution to the construction of Dharavi’s definition. It seeks to outline analytical tools to expose mechanisms in the stigmatization of specific places. For the purpose of this paper, I take into consideration a series of diverse perceptions raised from multiple representations. The analysis of diverse experiences, a film, a book, or a predominant event develops the production of knowledge for understanding the place. All previous events build the basis for constructing Dharavi’s collective memory.

Keywords: perceptions, identity, Dharavi, stigmatization

INTRODUCTION

Dharavi has evolved to become a protagonist in a spectacle debated, described and investigated in various sources such as publications, newspapers, popular media, literature, films and academia. Its popularity among global audiences is affected by various understandings. The main objective of this paper is to address issues pertaining to these understandings, which define its role in the city’s context. For that purpose, three major stages in its evolution were selected: The fishing village, the projection of a “Beautiful City” (The Economic Times, January 22nd 2004) and its depiction as a “Cancerous Lump in the city” (Swarup, 2006). They all represent differences and continuities in time as they are structured around the past, present and future but they also interact through time in prospective plans revolving around a major redevelopment project in the last decade.

In this paper I choose to approach these three stages as what Arjun Appadurai in his work *Modernity at Last* called “mediascapes”: “Mediascapes tend to be image-centered, narrative based accounts of strips of reality, and what they offer to those who experience and transform them is a series of elements out of which scripts can be formed of imagined lives, their own as well as those of others living in other places” (Appadurai, 1996:35). Dharavi’s evolution is a key illustration of how media and other sources shape the cultural and geographical flows in a globalizing world.

A FISHING VILLAGE

History is an indispensable part for understanding a place. However, in an era of presumably “knowing everything”, the major problem as Beatriz Colomina argues in her book *Privacy and Publicity* is not the collection but the “classification of information” (Colomina, 1996:

213). Documentation as a method for constructing the history of a place is not sufficient, but if used as a proper tool it can offer a view to another experience of what we already recognize. To gain a better understanding of Dharavi's multiple identities, it is critical to explore inextricably its parallel relationship to the city's context. By tracing important historical facts since 1500, the objective in this part of the paper is to establish a connection between the development of Dharavi and the transformations of Mumbai.

Dharavi has a reputation for being one of Asia's largest informal areas with almost 1 million inhabitants, which is located in a globalizing Mumbai. Historically however, it was considered as a village in the city. Previous studies indicate its emergence as a fishing village when Mumbai was undergoing various transformations. Through economic, political and spatial reconfigurations, Dharavi has managed to adapt to Mumbai's different characteristics.

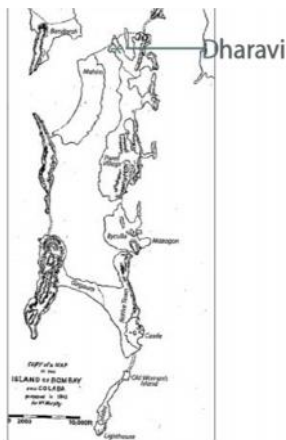


Figure 1: Bombay 7 islands. Source: S.M. Edwardes, 'The Gazetteer of Bombay City and Island', vol 1 (Bombay: Time Press, 1909)

Following the city's transformations, Dharavi proved to be fluid and adaptive to these changes until 2004, when "Dharavi Redevelopment Project" (DRP) was introduced to reflect Mumbai's global vision of a slum free city. At that moment and in the presence of another transformation, Dharavi's flexibility has evolved into spatial resistance. Mumbai's early history begins under the name "Heptanesia" in 150s A.D, which is uprooted from the Greek translation of the "seven islands" (Mehta, 2004:14) and was a reflection of the city's topography. Dharavi emerged as one of the 6 greatest fishing settlements on the shore of one of these islands. In 1836, when Bombay was under the protectorate of the British East India Company since 1667, the Ephistone Land Company was established as the first reclamation company of Bombay and the seven islands were combined into one mass.

Even though the city's land was increased, Dharavi was not affected as much as other areas. It existed in the north of the city, close to the sea and therefore its identity as fishing village was still very strong. In November 1869, with the opening of the Suez Canal and the end of the American Civil War, Bombay made a major economic turn. Strategically located between America and Europe, the city emerged as an important commercial passage for both continents (Markowitz, 1995). This was the catalyst for a large influx of wealth in the city. Due to the unexpected growth, Dharavi with its land availability, attracted immigrants and undesirable professions such as the highly polluting tanneries. Since then, Muslim tanners from Tamil Nadu and other areas established their own leather industries in the fishing village (Sharma, 2000).



Figure 2: Geological map of Bombay 1864. Source: A. B. Wynne, for Geological Survey of India

Parallel to that, in 1877, there was a major arrival of potters from Saurashtra in Bombay who, through years, relocated to Dharavi and they settled in “Kumbharwada” (the potters community). For the first time since its emergence, new social groups and professions inhabited Dharavi and its economic status expanded from fishing to new commercial activities. Dharavi’s multicultural character attracted workers and professionals who settled in with their families even though the housing availability was lower than demand. This resulted in the expansion of an unplanned urbanism in the city, often labeled as informal urbanism.

Meanwhile, new housing demand triggered intense discussions and revealed the need for a new systematic planning for the city. In 1898, Bombay City Improvement Trust was established to initiate Bombay’s planning and the infrastructure schemes. In the following years, schemes for city’s expansion into suburbs such as Dadar, Matunga, Wada and Sion were adopted. In the beginning of the 20th century, Bombay became identified by its mercantile power, with its port becoming a hub for trade and attracted a large number of immigrants from all over the country. To accommodate the flows of people, the city expanded rapidly reshaping its centre. Dharavi originally located in the north of the city, became part of Bombay’s centre. The discussions about the city’s regeneration accelerated after Bombay gained its independence in January of 1947. Villages, like Dharavi, were to be incorporated into the Greater Bombay, but due to bureaucratic and political impediments the plan was never implemented.

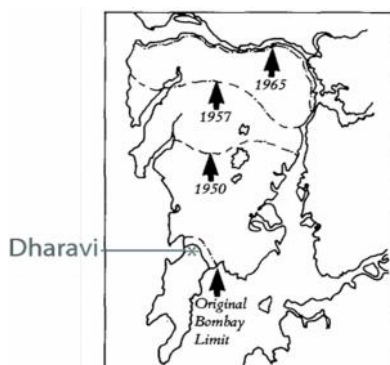


Figure 3: Bombay’s expansion. Source: Correa, Ch., *The New Landscapes; Urbanization in the third world*, (A Mimar Book, Butterworth Architecture, 1989: 26).

Although Dharavi historically emerged as a fishing village, its character was challenged multiple times over the past due to Mumbai's territorial transformations. The flows of immigrants and its position in the centre of Mumbai, slowly erased the identity of a village by replacing it with a more diversified settlement in the city. However, there are examples in various sources presently that revive and support this identity. A clear illustration of this can be recognized in Suketu Mehta's recent work. In his book *Maximum City: Bombay Lost and Found* in 2004, there is a representation of how Gautama, Mehta's six years old boy, categorizes areas such as Dharavi as they drive from the airport to the city: "Look, on one-side villages (showing the slums), on the other side buildings! He has identified the slums for what they are: villages in the city". (Mehta, 2004:14-15)

The story of how informality in Mumbai was perceived through a child's eyes is an illustration of how the memory of the village is still vivid in these areas. Due to Gautama's unfamiliarity with slums, "he identified them for what they are: villages!" Similarly, Kalpana Sharma an Indian independent journalist and media consultant with concentration on development issues, wrote in 2000 the book *Rediscovering Dharavi: Stories from Asia's Largest Slum*. Although the word slum is used to describe Dharavi in the title, her stories revive the sense of the village. To that end, through the chapters of her book she aims to uncover events of human interaction, displacing the predominant idea that Dharavi is a slum by rediscovering its memory as a fishing village. She writes: "It is entirely possible that by the year 2010, Dharavi as we know it today will be just a memory...Instead of the current medley of disorganized low-rise high density huts and a few scattered high- rises, the entire area could become another typical concrete conclave of high-rises. Given the rate of change in many parts of Mumbai, such transformation should not take anyone by surprise" (Sharma, 2000: 190).

In her words, she shares her awareness for the future of this place and the construction of its memory. Closer to a nostalgic reference to this village identity, she recalls Dharavi as an independent source of life in a global city and she revives the sense of the village in a "slum" by expressing the importance of its existence that can be emphasized by human and spatial interactions. According to her, the major threat for Dharavi is an upcoming real estate development project that follows Mumbai's global vision of a slum free city.

Analyzing this challenge, the following section of the paper depicts how political and economic hurdles in the redevelopment process that started in previous decades emerged and replaced the village identity over the years.

"A BEAUTIFUL CITY"

Along with the fishing village's legacy, efforts to establish Dharavi as a potential development site have already been conceived since the 1970s. Multiple projects fitting Mumbai's global vision, struggled to readdress its character.

In 1976, Dharavi was officially recognized as a slum with a population of almost 300,000 people (Lynch, 1979). The common definition of the slum is provided by UNHABITAT's Cities Alliance Action Plan, in 1999 as follows: "Slums are neglected parts of cities where housing and living conditions are appallingly poor. Slums range from high density, squalid central city tenements to spontaneous squatter settlements without legal recognition or rights, sprawling at the edge of cities." (1999:1). Following a survey in Mumbai, the slum dwellers were needed to acquire a photo identity card and by paying a license fee, they were officially recognized as residents in Mumbai. In addition they gained rights to vote and were eligible to

participate in slum rehabilitation or redevelopment projects. Since 1978, efforts were undertaken to redevelop slums all around Mumbai, with Dharavi in the centre of this process. Three of these projects are described and analyzed below.

In 1985, the “Prime Minister Grant Project” (PMGP), was initiated by Prime Minister Rajiv Gandhi, who offered an aid of Rs 1 billion (approximately US\$20 million) for slum redevelopment projects. The amount of Rs 300 million (approximately US\$6 million) was allocated for Dharavi’s housing and infrastructure improvement. It is understood that this project was introduced after Prime Minister’s visit in Dharavi (Weinstein, 2009: 83). Rajiv Gandhi, was the political heir of the old Congress party who was in power at the state and national level, while Shiv Sena, the extreme right party, controlled the city’s administration. According to that plan, the local communities could find their own architects but the building contractors should be appointed by the government.

Despite providing economic support for the implementation of the project, many slum dwellers could not afford the program. As Mukhija argues in his research book *Squatters as Developers*, sooner or later, the rehabilitation process “became a key arena for competition between the two political parties” (2003: 28). In order to make the program affordable for everyone, each party began offering more subsidies, which were underpinned by Mumbai’s rising real estate values. However, the lack of analytical mapping posed a major hurdle for the spatial interpretation of the project (Chatterji 2005) and in combination with the nonstop political “war”, the plan was never fully implemented.

In 1995, with real estate values around the city reaching new highs, the extreme right political party Shiv Sena came to power at the State elections. The new Government headed by Balasaheb Thackeray, suggested that due to the high property prices, it was not possible to provide free housing to all slum dwellers. Therefore, they buried the old PMGP plan, proposing an alternative solution to house 4 million slum dwellers at the government’s expense. The Slum Rehabilitation Scheme (SRS) was introduced in 1997, following recommendations of a committee set up in 1995 by the government, and was promoted as a “Free housing scheme” (Mukhija, 2003: 30). Under this plan the government would provide the land and infrastructure with private developers financing construction. As an incentive, developers would be granted additional air rights, transferable to alternative sites in Mumbai. However, due to a gradual real estate slowdown and lack of financing, the developers backed down from the offer and the project was not realized (Chatterji & Mehta, 2007: 145).

In 1999, the Shiv Sena party lost the State elections and the National Congress Party formed the new State Government. Once again, the government decided in 2000 that the previous scheme was not viable and initiated an alternative Slum redevelopment strategy (Chatterji and Mehta, 2007). Through all these years Dharavi was evolving as a slum in the city, which was not desirable in Mumbai’s vision of a slum free city.

Meanwhile, a new redevelopment plan for Dharavi, which started as a private initiative in 1997, was already in the makings. Since 1997, a US educated Indian architect who was facing the challenge of “fixing slums” (Jacobson, 2007), decided to implement his ambition “starting from Dharavi”. Mukesh Mehta introduced the plan to the government and in 2004, the democratic Government of Maharashtra approved the 5,600 crore (approximately US \$ 1.2 billion) Dharavi Redevelopment Project (DRP). The local press *The Economic Times* in January of 2004 released the news as “transform Dharavi into a beautiful city”. DRP was introduced as an attempt to establish a connection between Mumbai’s Global Vision (A Bombay First- McKinsey Report, 2003)- a report that aspired Mumbai as a global city

without slums by 2013- and its internal territorial organization. The originality of the plan was to invite global developers as well as local bids. The initial plan estimated the completion of the project within 7 years. According to this plan, by 2013 Dharavi would have been a “Beautiful City” in the center of Mumbai. The “surprise” is that today, 2012, Dharavi still keeps the same image and vibrancy of 2004, as DRP has not yet started.

The constant shift of power between the two political parties in elections, the economic recession of 2007-2008 and the role of the Non-Governmental Organizations, proved to be crucial for the evolution of Dharavi’s redevelopment process. However, Dharavi’s urban image these years has played an important role in attracting global interest from investors, visitors, artists, and producers. The ongoing spatial conflicts, the nostalgic image of the village but also the unknown future, appealed to a broader audience, and triggered interaction among different forces. Distinct events in multiple sources aimed to redefine Dharavi’s character by establishing a platform of critical processes for Dharavi’s present and future. The following portion of the paper examines the third perception of Dharavi, which emerged from the field of literature parallel to the evolution of Dharavi Redevelopment Project. By analyzing the protagonist role of Dharavi in a book and eventually in a film, this paper examines the representation as a force on space at a crucial moment for Dharavi’s future.

“A CANCEROUS LUMP IN THE CITY”

“Dharavi sits like a cancerous lump in the heart of the city. And the city refuses to recognize it. So it has outlawed it. All the houses in Dharavi are ‘illegal constructions’, liable to be demolished at any time” (Swarup, 2006:157). Parallel to Dharavi Redevelopment Project, Dharavi’s popularity increased through the book *Q&A*, written by Vikas Swarup in 2003 and published in 2005. The contradictions of living in Dharavi and simultaneously being a millionaire inspired him to invent the story of Ram Mohammad Thomas. The portrayal of Dharavi in this book, and eventually in the movie that followed (*Slumdog Millionaire*, 2008), was of a “Cancerous Lump in the heart of the city”. The projection of Mumbai’s illegal corners in a global audience was surely unattractive for Mumbai’s projected future of high- rise glass buildings and wide streets.

However, when Vikas Swarup was asked if he had ever visited Dharavi, he replied as follows: “I have never lived in Mumbai for any sustained period or time, and I have never visited Dharavi. But then India is a country where no one leads the life of an island. The lives of the rich and the poor, the high and the low, intersect everyday. And if one observes, and learns, then one can also project. One may not have seen Dharavi but one has seen slums. You just magnify the slums you have seen ten times, or maybe a hundred times, to visualize the scenario in Dharavi.” (interview in Swarup, 2006).

In his book, he projected the image of a slum in Dharavi without having visited it. Furthermore his work offered a construction of Dharavi’s image as a slum by erasing any nostalgic reference to the village legacy, in a critical period for its urban future. *Q&A* was published a year after the democratic Government of Maharashtra had publicly announced its intention to reshape Dharavi into a new sustainable development, better suited for Mumbai’s ambition of a global city. On May 30th, 2007, despite long bureaucratic procedures, the already delayed DRP was one step closer to realization. Under the slogan “The Opportunity of the Millennium” and “Is it enough to turn you on?” the Government announced an international tender to invite eligible developers across the world for the redevelopment of Dharavi.

By the end of August a total of 78 companies have applied to Maharashtra Housing and Area Development Authority (MHADA). 25 out of these were international firms. (Deshmukh, 2008). From these companies, 27 consortia were formed between local and global developers and after the first round 19 consortia were shortlisted: “Now the 19 selected consortiums will submit financial proposals, of which 5 will be selected for the project implementation. Financial bids have been invited by the end of January. The final selection will be done in March” (Tembhekar, 2008) However, the lack of clarifications about the bidding conditions, and the worsening investment climate due to the global economic downturn in 2008, further delayed the process.



Figure 4: *Global Expression of Interest, May 2007*

(source:http://www.rmaf.org.ph/madc/archive/files/toi-ad-page-19_1154761963.pdf, access 5th March 2012)

On November 12th 2008, a crucial moment for Dharavi’s future, the UK movie *Slumdog Millionaire* based on the book *Q&A*, was released. The day before (November 11th 2008), the *Times of India* warned of the financial crisis in Mumbai’s projects: “...Contractors are asking for more time as banks have made it tougher for them to avail of loans. Even the Dharavi redevelopment project is likely to be affected.” (Naik & D’Mello, 2008). At that time, the movie’s popularity spurred discussions globally on the evolution of Dharavi. Capturing the redevelopment challenge, there is a film clip, implying this possible future. Jamal Malik (Ram Mohammad Thomas in *Q&A*) and his friend Salim are sitting on the edge of an apartment floor under construction and they are discussing the future of Dharavi: “That used to be our slum. Can you believe that, huh?...We used to live right there, man. Now, it’s all business. India is at the center of the world now, bhai” said Salim (*Slumdog Millionaire*, 2008). Although the movie received a number of awards, including the Academy Award for best picture in 2008, a major debate unraveled about the benefits and limitations of how poverty is exposed. Alice Miles, a columnist for *London Times*, described the movie as “poverty porn” (Miles, 2009). Other journalist followed with similar statements: “Danny Boyle’s ‘poverty porn’ is damaging the image of a country on the brink of becoming a superpower. So far as I can tell, that’s a minority opinion” (Jack, 2009).

The reproduction of poverty from a Western film production highlighted the chasm between the diverse social groups and contributed to the construction of what Appadurai (1996) called a ‘mediascape’. A ‘mediascape’ along with other four ‘scapes’ (‘finanscapes’, ‘ideoscapes’, ‘ethnoscapes’ and ‘technoscapes’) are dimensions or expressions of the global cultural flow (Appadurai, 1996). In the case of *Slumdog Millionaire* the “damage of the image of a country” contributed to the construction of another image, another perception of reality in a imaginary landscape.

Meanwhile, establishing Dharavi as a slum and its residents as Slum- dogs, spurred tensions inside Dharavi. Protestors demonstrated against the movie's title in the streets of Mumbai: "Just because we are from the slums, it does not mean we are dogs" (Lobo, 2009) but as the researchers, Matias Echanove and Rahul Srivastava, with their article "Taking the slum out of 'Slumdog'" in *The New York Times* stated, what actually outraged the residents was the word "slum" and not the word "dog" in the title of the movie. (Echanove & Srivastava, 2009). The establishment of Dharavi's image as a slum in a global audience and the aspirations of a possible transformation to a beautiful city contributed in shaping its future.

CONCLUSION

Mumbai's ongoing changes have been a challenge for the transformation of its urban fabric. In Mumbai's vision of a global city 2013, Dharavi's urban image has played an important role in drawing investors, tourists, immigrants and researchers. The stories presented in this paper, are intended to be a reflection on the mutations of the definition of Dharavi through time and they should not be seen as conclusions, but more as starting points for further research. The construction of its definition appears as a product of interrelations among various events, and therefore, cannot be studied separately from its historical emergence. However, the exploration of Dharavi's history cannot be traced only in past events, but also in current occurrences that encourage a change of its character. Past, present and future are all constructions. The past pertains to various constructions of Dharavi's history and leaves its traces in current perceptions of the settlement, while the present relates to descriptions of its current state in view of potential future developments. The future on the other hand is unknown, but is formed by projections of what Dharavi might become. The precarious condition of the present at the threshold between past and future is given by the clash between what Dharavi is believed to be and what it might become.

The fishing village, the vision of a beautiful city and the portray of a cancerous lump in the city, represent three spatial perceptions that should be studied parallel to Dharavi's redevelopment process. A preliminary evaluation of these identities, can help us develop a more concrete definition of what Dharavi is thought to be today and what was in the past, in order to understand and perceive its future evolution.

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REFERENCES

- A Bombay First- McKinsey Report*, 2003. *Vision Mumbai: Transforming Mumbai into a world class city; A summary of recommendations*. [pdf] Mumbai: Bombay First, McKinsey & Company, Inc. Available at: <http://www.letemps.ch/r/Users/lelievre/Textes/McKinseyReporton%20Mumbai%20003.pdf> [Accessed 21 March 012].
- Appadurai, A., *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis: Uof Minnesota, 1996
- Chatterji, R. "Plans, habitation and slum redevelopment: The production of community in Dharavi, Mumbai", *Contributions to Indian Sociology*, 39, 2 (2005): 197 – 218
- Chatterji, R., Mehta, D., *Living with Violence; An Anthropology of Events and Everyday Life*, New Delhi: Routledge, 2007
- Colomina, B., *Privacy and Publicity; Modern Architecture as Mass Media*, USA: MIT Press, 1996
- Correa, Ch., *The New Landscapes; Urbanization in the third world*, A Mimar Book, Butterworth Architecture, 1989
- Deshmukh. S., "78 firms in race for Dharavi makeover", *DNA India*, August 31st 2007
- Echanove, M. and Srivastava, R., "Taking the slum out of 'Slumdog'", *The New York Times*, February 21st 2009
- Jack, I., "Saturday: Some say it's poverty porn- but not many: Here in India, films about poverty used to cause great offence. But not Slumdog Millionaire", *The Guardian*, January 24th 2009
- Jacobson, M., 2007, *Dharavi; Mumbai's Shadow City*, *The National Geographic*, May 2007, p. 68-93
- Lobo, J., "Dharavi on the Boyle, blame it on Slumdog", *DNA India*, February 4th 2009
- Lynch, O. "Potters, plotters, and prodders: Marx and meaning or meaning versus Marx", *Urban Anthropology*, 8, 1, 1979: 1-27
- Markowitz, C. "Bombay as a Business Centre in the Colonial Period: A comparison with Calcutta", in *Bombay: Metaphor for modern India*, New edited by Patel, Sujata and Thorner, Alice Delhi: Oxford University Press, 1995
- Mehta, S. *Maximum City: Bombay Lost and Found*, New York: Alfred A. Knopf, 2004
- Miles, A., "Shocked by Slumdog's poverty porn: Danny Boyle's Film is sweeping up awards, but it's wrong to revel in the misery of India's Children", *The Times*, January 14th 2009
- Mukhija, V. *Squatters as Developers: Slum Redevelopment in Mumbai*, Burlington: Ashgate, 2003
- Naik, Y., D'Mello, A., "Meltdown may hit infrastructure projects in the city", *The Times of India*, November 11th 2008
- Sharma, K. *Rediscovering Dharavi: Stories from Asia's largest slum*, India: Penguin Books, 2000
- Slumdog Millionaire*, 2008. [Film] Directed by Danny Boyle. UK: Celador Films, Film4, Pathé Pictures International
- "State declares Rs 5,600 crore plan for Dharavi, Rs 175- crore package for weavers", *The Economic Times*, January 22nd 2004
- Swarup, V. *Q&A*, London: Black Swan, 2006
- Tembhekar, C. "19 short-listed for Dharavi project", *DNA India*, January 9th 2008
- The Gazetteer of Bombay city and island*, Volume 1, Bombay: Time Press, 1909
- The World Bank & UNCHS (Habitat), Cities Alliance for Cities Without Slums: Action Plan for moving slum upgrading to scale report 1999*, [Online]. Available at: <http://www.citiesalliance.org/ca/sites/citiesalliance.org/files/CA_Docs/brln_ap.pdf>. [Last Accessed 11 April 2012]

Weinstein, L. *“Redeveloping Dharavi: Toward a political economy of slums and slum redevelopment in globalizing Mumbai”*, unpublished PhD dissertation, University of Chicago, 2009

PRIVATISATION OF SOCIAL HOUSING: EXPERIENCES FROM SOUTH AFRICA AND THE NETHERLANDS

Malefetsane Mokoena

*Mangaung Metropolitan Municipality,
South Africa*

Malefetsane.Mokoena@mangaung.co.za; mhabitat@telkomsa.net

Ellen Geurts

*The Institute for Housing and Urban Development Studies (IHS), The Netherlands,
e.geurts@ihs.nl*

Abstract

This paper explores the privatisation of former public rental stock to social housing institutions in South Africa and the Netherlands and how this has contributed to the development of sustainable human settlements. In both countries, social housing is primarily a subsidised rental housing option for low- and middle-income households, situated in well-located areas and providing a mixed housing solution. The paper shares experiences on privatised social housing projects in South Africa and the Netherlands, looking specifically at the privatisation process of former public rental housing and the role of social housing institutions in managing this privatised stock. The focus is on Mangaung (SA) and Rotterdam (NL) where the authors are currently involved in projects. The paper discusses the transfer process, the degree of privatisation, the tenure and management models and the legislative framework that are in place to deliver economically viable housing. All these factors are considered critical components for social housing to contribute to the development of sustainable and liveable human settlements.

Keywords: social housing, privatisation, public rental stock, tenure, management models, South Africa, The Netherlands

INTRODUCTION

This paper discusses social housing experiences and its contribution in the creation of sustainable human settlements based on some specific cases from South Africa and the Netherlands. It focuses on the privatisation process of former public rental housing and the performance of this stock in achieving sustainable human settlements post privatisation. The role of social housing institutions in managing this privatised former public rental stock has also been highlighted. It further touches on some of the best practises in as far as tenure and management models are concerned to ensure sustainable human settlements. Although we acknowledge that the design of social housing is another crucial aspect of creating sustainable human settlements, this is not discussed in the paper.

It must be noted that there is no international definition for social housing, although it is commonly understood as an affordable housing option provided by public or (semi)-private (institutional) housing providers. Having said this; social housing definitions generally refer to the: target group; tenure forms; delivery agents; and the subsidy framework.

Defining key aspects for social housing in Europe and South Africa

International experience shows that rental (social) housing tends to offer better location, services and infrastructure than equivalent ownership housing, and facilitates labour mobility, which is an important livelihood strategy of the poor (Gilbert, 1997). It has been argued that the availability of affordable rental housing is an essential element of any poverty alleviation strategy (Nordberg, 2000).

As already noted, there is no single definition for social housing, however the following keywords are central in the definition of social housing: target groups, tenure forms, delivery agents and the subsidy framework. The *target group* for social housing is often understood as those not catered for by the market, often referring to low-income groups, special need groups and increasingly pensioners. The income level of a household is for many countries a threshold for access to social housing, although the sector developed on a non-(income) discriminatory basis in the past in Europe. The dominant tenure form is rental housing, which has become an acceptable tenure for low-income households in the developed countries. This tenure form is yet to be fully embraced in many developing countries (UN Habitat, 2003). Although the term ‘private’ is often used in the case of social housing provision, these are in fact often ‘hybrid’ or ‘semi-private’ institutions because there is a large degree of government involvement and control. This is particularly true because of the subsidy frameworks utilised for social housing, which are essentially developed by the central government. At this policy level, roles of the local governments with regard to social housing are limited. Table 1 below gives an overview of these key aspects of social housing in South Africa and the Netherlands.

ASPECTS		SOUTH AFRICA	NETHERLANDS
Target group	Income threshold for social housing	(<7500 ZAR p.m.)	(<2840 EUR p.m.)
	Special need groups and age groups (seniors)	Not explicit	Yes
Tenure format	Rental	Yes	Yes
	Semi-home-ownership models	No	Yes
Delivery agents	(registered) Social Housing Institutions	Yes	Yes
	Local governments	No	Yes, very limited
	Private (commercial) companies	Yes (limited)	No
Subsidy framework	Capital subsidies	Yes	No
	Rental allowances/vouchers	No	Yes
	Cost-price rental levels	No	Yes
	Subsidised/Discounted rental levels	Yes	Yes, limited
	Regulated by central government	Yes	Yes

Table 1: Key aspects of social housing in South Africa and the Netherlands

In conclusion, it must be noted that throughout Western Europe, there is a long tradition of social housing as a key element of social policies. During the 20th century social housing stock expanded, but recently a decline can be observed. Another shift noted is that social (housing) policies no longer focus on increasing supply but rather are tackling intrinsic issues related to the existing stock (Whitehead and Scanlon, 2007). On the other hand Government policies in South Africa, as in many other emerging and developing countries, still aim to expand on the social housing stock. Similar to Europe, the trend in South Africa has shifted from state-delivery of housing to enabling the market to also provide affordable housing

solutions. However, compared to the Western Europe; the social housing sector in South Africa is still at its infancy stage.

PUBLIC HOUSING PRIVATISATION

The privatisation of public housing stock is informed and influenced by many reasons. Having said this, it must be noted that the main concerns over public expenditure have generally been the key driver for privatisation policies. Some of the genuine concerns expressed are related to the sale of municipal housing stocks and other social housing privatisation interventions which are said to contribute to the residualisation of social housing (Elsinga, 2011; Whitehead and Scanlon, 2007).

Different approaches to the privatisation of public rental housing are likely to determine the degree of government control. In many European countries for instance, the transfer of stock was made to semi-private or ‘hybrid’ institutions, which are still characterised by a high degree of government control. In South Africa there are several options or delivery agencies to choose from. With each option or choice comes a different level of control enforced through policy, performance agreement or legislation (Salga, 2007). It must further be emphasised that each choice depends on the local circumstances. The figure below shows the various degrees of privatisation over time for a selected number of countries. Most of these initiatives are still on-going (as indicated by the arrow) although the older initiatives have diminished to negligent numbers. The balancing-out agreement in the Netherlands was the only privatisation model that occurred at one single point in time. Figure 1 only refers to the transfer of public housing stock and therefore only shows part of the country’s housing policies. From the information provided in *Figure 1*, it is clear that the UK took a more radical approach as opposed to the Netherlands where the process was more phased.

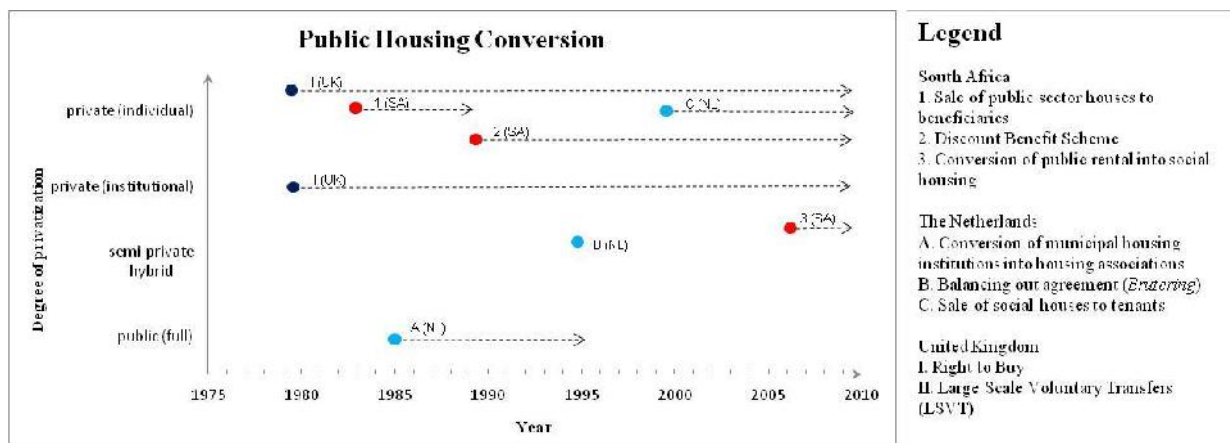


Figure 1: overview of public housing conversion degrees over time for selected countries

Process in South Africa

Figure 1 provides an overview of public housing conversion in South Africa over the years. When the Apartheid regime in South Africa announced a large scale sale of state-owned houses in 1983, through which 500,000 public sector houses would be sold off to beneficiaries, it was typically and in a sense rightfully seen as the South African version of Thatcherism or neo-liberalism and the state’s attempt to discard its housing responsibility (Sefika, 2010). Although the selling of public housing units did not receive any significant

buyers, the apartheid government continued with their housing privatisation approach in the late 1980s and early 1990s through the discount benefit scheme (Emdon, 1993; Bond, 2000). Interesting enough, the discount benefit scheme continued in a post-apartheid dispensation after the democratic transition in South Africa since 1994. Criticism of this approach also continued emanating from certain circles although the debate calmed down – possibly because of the new housing policy debates which were initiated (Tomlinson, 1998; Bond & Tait, 1997). Today more than 90% of these originally state-owned houses in former black townships have been sold off or transferred by means of the discount benefit scheme to individual owners.

On the other hand the process of converting public rental housing into social housing has just started in South Africa. In the main this process is informed by a municipal strategy emanating from the Integrated Development Plan (IDP). The transfer should therefore be the outcome of a strategic decision making process and be undertaken as a means to a clear end, with clarity about how it contributes to the municipality's development strategy encapsulated in its IDP (Development Works, 2005). At the core of the IDP is the development of sustainable human settlements (MLM, 2003). Although different cities or municipalities in South Africa approach the conversion process differently and in consideration of the prevailing local circumstances; at the end such projects must be bankable to qualify for subsidies. Over and above this and regardless of the approach followed, projects must be located in restructuring zones, promote integration and address structural, economic, social and spatial challenges in the city.

Process in the Netherlands

The public housing conversion in the Netherlands is generally understood to encompass three different privatisation paths as shown in figure 1. Although they tend to follow a historical order, they continue to occur simultaneously too. The three main privatisation processes include: the transformation from municipal housing companies into housing associations (>1980s); the increasing independence from government of the social rented sector (+/- 1993); the sale of dwellings to individual households (>2000). (Smeets, et. al., 2009; Stephens, et. al., 2008). The conversion of municipal housing companies into housing associations was predominantly an administrative matter and both were in fact regarded as public entities; barely privatisation. Besides a few exceptions, this process is finalised. In 1995 the grossing and balancing operation greatly accelerated the process of privatisation and the managerial and financial independence of housing associations. This process entailed the settlement at once of all the money owed to the housing associations by the State (subsidies) against the outstanding money from housing associations to the State (loans). Since then *private* social housing associations provide social housing, which still fulfil a *public* role of providing housing to those not served adequately by the market. In order to ensure this public role, the social housing sector remains regulated by the Government through the Decree on Social Housing (BBSH) and the Rent Act. Since the turn of the century housing associations have started to sell off houses to tenants and other potential buyers. . The Netherlands was relatively late in its privatisation of the social housing stock compared to other European countries and has undergone a strong maturation with substantial capital accumulated in the housing stock. The financial position of housing associations was therefore very healthy at the time of privatisation (Boelhouwer, 2003).

Challenges arising from public housing conversion

The regulatory framework is to some extent comparable between the two countries and the current subsidy framework in South Africa resembles to a large extent that of the Netherlands prior to 1993. However, it is difficult to make a direct comparison between the Dutch and the South African situation as the conversion of public housing took place over different time periods and within different policy frameworks. In Netherlands for instance, the sector developed for over a century before privatisation, with many decades of deep subsidies.

It must be noted, though that privatisation of public housing or assets have been among the most criticised and disputed aspects of neo-liberalism. It contains processes characterized by transferring the property from public ownership to private ownership. Research has shown that the policy of privatisation has indeed had negative impacts on the poor (also see Malpass, 1999; Wang, 2000). At a political level, this argument tends to affect processes that are aimed at privatising public rental stock. The concern and/or perception that the privatisation of public rental stock elevates the role of the private sector; and the latter does not deliver adequate housing options to cater for the low to middle-income households on the one hand; but also that good quality social housing projects in well-located areas tend to exclude lower- income groups, is in our view genuine concern. However, the specific experiences in Mangaung and Rotterdam demonstrate that this is not necessarily the case. If local policies are well-designed and implemented in close cooperation with social housing providers, sustainable human settlements can be created through private social housing. The cases described and presented here are unique and indeed the experiences do not provide a blueprint for other cities.

EXPERIENCES OF PUBLIC HOUSING CONVERSION Mangaung, South Africa

In South Africa, the policy of privatisation has taken two main forms; namely transfer of public stock private people through discount benefit scheme and transfer of the public rental stock to social housing institutions. In Mangaung, over 6,085 public rental housing units constructed with funds from the National Housing Commission were identified in order to be transferred through the discount benefit scheme to individual households. Many of these houses were sold under the National Sales Campaign, either by way of Terms or Cash Agreements. Some of them were transferred to individuals through the Scheme thus promoting home ownership and reducing the burden of budget deficits which were mainly borne by the Rate Payers of the Municipality. Due to apartheid planning, this stock is mainly located in the townships and does not address integration aspects fully. Furthermore; the stock does not fully fit the definition of social housing and is therefore not classified as such in South Africa.

Parallel to this process of transferring to individuals is the transfer of public rental housing to social housing institutions. For the delivery of social housing in South Africa a municipality has a choice of a delivery agent from one of the following three options:

- Municipal Entity
- Public Private Partnership (PPP)
- Third Party

All of these three options have different levels of ownership or involvement of the municipality. In terms of the Social Housing Act, 16 of 2008; the meaning of Social housing

incorporates a rental or co-operative housing option for low to medium income households. It requires institutionalised management which is provided by social housing institutions in approved projects and in designated restructuring zones. It is not an option to have social housing units developed and managed by government/municipal housing department (SALGA, 2007). The establishment of the Free State Social Housing Company (FSHC) as a section 21 Company in Mangaung to take ownership of the Brandwag public rental stock was established as a result of this policy imperative. The transfer to FSHC was motivated by a municipal housing strategy (MLM, 2003) and was considered a suitable and appropriate option which would contribute to the restructuring of the City in order to achieve a non-racial and integrated society living in sustainable human settlements (DoH, 2005). Diagram 1 below captures the Brandwag Social Housing Project in relation to socio-economic amenities and the Mangaung Township. This situation informed the City's decision to transfer the Brandwag public rental housing to the FSHC to promote and contribute to the development of sustainable human settlements. The City has entered into a performance agreement with the FSHC to ensure that once completed, these social housing units are allocated to the correct target group.

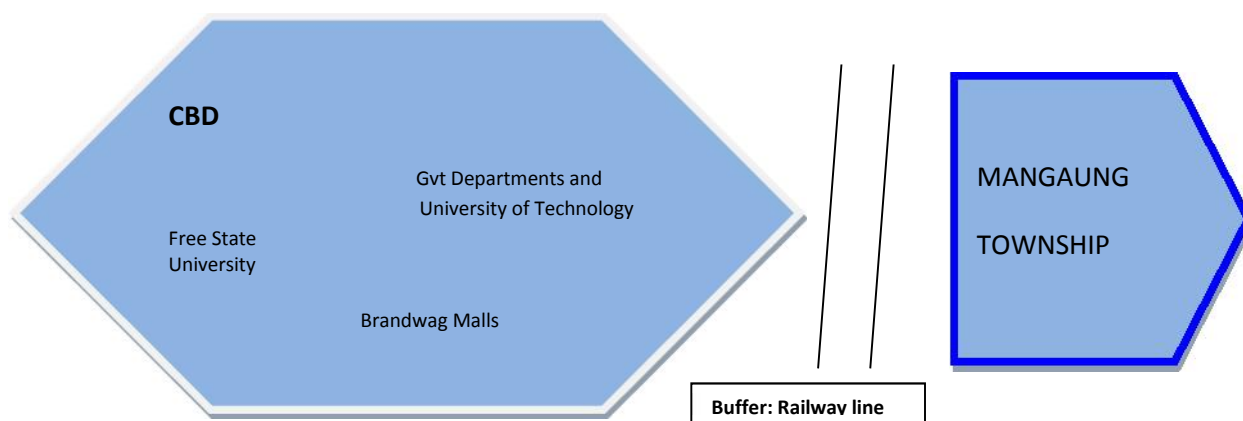


Diagram 1: The Mangaung Township in relation to the Brandwag Social Housing Project

To give a brief project context; the 351 Brandwag Municipal Flats were built in the late 1950s for the low to middle income families in what used to be whites only area of Brandwag (Barclay, 2010). The Brandwag Social Housing Project opened this area up and made it accessible to middle income target market who subsequently had easy access to more socio-economic opportunities. Through this intervention, the quality of human settlements in the area improved. Further, this privatisation of the Brandwag public rental housing contributed to the development of liveable neighbourhoods and has provided affordable, decent and quality housing in the City. In this project the density is high which contributed towards urban compaction and in creating higher thresholds which can potentially facilitate greater levels of service and facility provision.

Rotterdam, the Netherlands

The housing market within the Rotterdam municipality is dominated by the rental sector, which accounts for approximately 65% of all housing stock in 2011. The municipality still owns and manages few dwellings (<0.02%) but intends to sell-off all of these in the short term. Most rental stock is owned and managed by housing associations; 72% in 2011. This therefore makes housing associations key players in the housing market. Rotterdam has experienced the merger of several active housing associations over time. Currently there are four main organisations, dominating in different parts of the city. Through this model the

housing associations can really fulfil their mandate of developing liveable neighbourhoods over and above providing decent quality and affordable housing. (DS+V, 2012).

This is in-keeping with the current municipal policy which is focussed on four main objectives namely: improving housing quality; matching demand and supply; improving affordability; and improve neighbourhoods. In order to achieve this, the municipality has entered into an agreement with the housing associations to create more affordable home-ownership opportunities. The municipality of Rotterdam has the highest number of low-income households in the Netherlands; due to this reason one of its key strategies is to attract more middle- and high-income residents to the city and for those who are already living there not to leave (e.g. university students receive attractive packages to remain in the city). The City also encourages housing associations to develop more expensive rental and ownership housing within the municipality of Rotterdam, provided that they deliver more affordable rental housing in the adjacent municipalities, where currently relatively low numbers of low-income households live. This privatisation process contributes to the overall development of sustainable human settlements. (Gemeente Rotterdam, 2012)

REGULATION, PRIVATISATION TRENDS AND MANAGEMENT MODELS

Regulation

The regulation of the social housing sector in the Netherlands and South Africa shares some similarities although the current subsidy frameworks for social housing differ. It is also noted that the current subsidy scheme of the social housing sector in South Africa is somewhat similar to that of the Netherlands during the period before 1995. One major difference is that in South Africa the (institutional) subsidy for social housing is exclusively geared towards social housing institutions and private companies, to the exclusion of local authorities, whereas in the Netherlands private companies are excluded but not local authorities. On the other hand, the Community Residential Units (CRU) subsidy does bring the local authority back into the fold in the sense that it is available for existing municipal stock and such stock can be managed by the local authority as an option. CRU is meant to provide secure, stable rental tenure for lower income people (DHS, 2006).

Although the social housing sector was privatised in 1995 in the Netherlands, it is still heavily regulated. All housing associations require approval of their status under the Housing Act and their functions and conditions of operation are laid down within the Decree on Social Housing (BBSH). The BBSH stipulates that all approved housing associations have the task of providing good, affordable housing to those who are otherwise not catered for by the market. Over and above this, local government policies also have to be taken into account (e.g. through performance agreements). In 1997, the concept of ‘liveability’ was added to the BBSH and has since become a major goal for the social housing sector to achieve. This goal compares well with the development of ‘sustainable human settlements’ as it is known by in South Africa.

Regulations for the social housing sector in South Africa area laid down in the Social Housing Act of 2008. This Act describes the roles and responsibilities of the different spheres of government, the social housing institutions and provides the basis for the establishment of the Social Housing Regulatory Authority (SHRA). Since 2010 the SHRA regulates the social housing activities in South Africa. The Social Housing Policy (2005) addresses itself to the

national priority of restructuring South African society in order to address structural, economic, social and spatial dysfunctions and to improve and contribute to the overall functioning of the housing sector. The introduction of Restructuring Zones provides a further measure to create social housing as part of sustainable human settlements (Social Housing Policy, 2005). Keeping the social housing stock affordable is one of the main objectives in both countries. In South Africa, a set of capital subsidies is available to finance the social housing stock, which is connected to income levels of future beneficiaries. In the Netherlands, rental allowances are available for tenants depending on the rental amount as well as the income of the household. These interventions are regulated in both countries and in both instances the expected outcomes are the construction of good quality housing stock, the building of viable neighbourhoods and the provision of affordable rental stock. Indeed all these are premised on the implementation of appropriate management and tenure models for social housing.

Privatisation trends

Social housing in South Africa still has to grow and at this stage cannot compare with housing associations in Europe. Across European countries, housing associations are increasingly facing a paradoxical challenge in which they are expected to fulfil a social mission (creating liveable and sustainable human settlements) and at the same time operate more like a business. This is true considering business principles such as 'performance management' and increased 'market orientation' introduced in their operations. Their social role has in fact even expanded given the withdrawal of the States from the provision of social services and the cutting of the welfare budget. Indeed it can be seen that national governments put an increased pressure on social housing providers to deliver social services beyond housing in order to address even the increasing challenge of urban decline and segregation (Czischke, 2009).

In the Netherlands the financial and property crises of the last 5 years has seriously impacted on the business models for social housing and has put the social policy of income redistribution model under threat (Elsinga, 2011). The current neoliberal policies focus primarily on home-ownership. Social housing is increasingly regarded as a safety net only for the poorest households. However, this approach does not encourage the development of sustainable human settlements.

Tenure and management models

As a consequence of the Dutch governments' withdrawal of subsidies, social landlords experienced increased pressure in terms of improving their performance efficiency and effectiveness. Social housing institutions' main focus is the management of their housing stock as a development activity and the strategic asset management has subsequently become the core of their business models. (Gruis, et.al., 2004). The main criterion for management decisions is the achievement of social housing objectives, which includes affordable and good-quality housing and building sustainable communities. Financial performance is not the key driver, although in South Africa social housing institutions are expected to be sustainable.

In the Netherlands, the social housing associations have a choice of different business models for allocation policies; stock quality; policy of housing sales and financial returns. This also includes a range of tenure options. In South Africa, only rental or co-operative housing options are available for low to medium income households at a level of scale and built form which requires institutionalised management and which is provided by social housing

institutions or other delivery agents in approved projects in designated restructuring zones with the benefit of public funding (Social Housing Policy, 2005).

In the Netherlands, sustainable human settlements are understood to be liveable neighbourhoods with mixed income and tenure forms. In order to ensure the development of liveable neighbourhoods, social housing associations have developed intermediate tenure formats that also enable lower-income households or specific target groups to become home-owners in these neighbourhoods, by entering into specific sale contracts, that give housing associations the right to buy back these houses when they are re-sold. There are different tenure formats available, known as e.g. ‘koopgarant’, ‘koopcomfort’, and ‘MGE’ – societal ownership; they are similar in the sense that houses are sold at a price below market value, sometimes with added conditions, and have to be re-sold to the seller (which is the housing associations). These tenure forms are commonly accepted by the main mortgage banks, which subsequently provide mortgages to home-owners.

Experiences show that only a limited percentage of the social housing stock is available in these tenure forms whereby sustainable human settlements could be ensured. According to Zijlstra the positive impact can only be seen where housing associations are selling off their, ‘crown jewels’, in already well-located, well-maintained and desirable stock (Zijlstra, 2011). In the same breath, the Mangaung case study also show-cased a very rare and unique opportunity where the former public housing stock is so well-located in relation to socio- economic amenities compared to other former public housing stock which is located in the townships.

CONCLUSION

This paper has explored the privatisation of former public rental stock in the Netherlands and in South Africa. It demonstrated that the privatisation of public rental housing in both countries has stimulated the rental housing markets for low- and middle-income households and has contributed to the development of sustainable human settlements. Although the impact of these conversions and the contributions of social housing remain relatively small, focussed legislative and subsidy frameworks in both countries remain critical for the ‘private’ social housing sector to continue to achieve its objective of providing not only an affordable housing solution but also providing housing in well-located areas thereby contributing to liveable and sustainable human settlements.

REFERENCES

- Barclay E, 2010. Brandwag Municipal Flats Study. Research Publication No. 27. Department of Urban and Regional Planning. University of the Free State
- Boelhouwer, P., 2003. Social Housing Finance in the Netherlands: the road to independence. *Housing Finance International*, 17 (4), 17-21.
- Bond, P., 2000. 1980s Housing Boom, in: P. Bond (eds) *Cities of Gold, Townships of Coal*. Africa World Press. New Jersey.
- Bond, P. and Tait A., 1997. The failure of housing policy in post-Apartheid South Africa. *Urban Forum*, 8(1), 115-149.
- Czischke, D. 2009. Managing Social Rental Housing in the EU: A Comparative Study. *European Journal of Housing Policy*. Vol. 9, No. 2, 121 – 151.

- Development Works, 2005. Guidelines: Public Housing Stock Transfer to Social Housing Institutions. 22 July 2005
- Department of Housing, 2006. Policy Framework and Implementation Guidelines for the Community Residential Units Programme: Pretoria: Government Printers-November 2006
- Department of Housing, 2004. Revised Social Housing Policy. Pretoria: Government Printers- November 2004
- Department of Housing, 2005. Breaking New Ground: A Comprehensive Plan for the Development of Sustainable Human Settlements. Pretoria: Government Printers
- DS+V, 2012. Department of Housing and Planning, municipality of Rotterdam. ww.rotterdam.nl: accessed 28 April 2012.
- Elsinga, M. 2011. Is de Volkshuisvesting uitgewoond? [Is there a future for social housing?] Inaugural speech for Professorship at TU Delft, 4 March 2011. [translations by author]
- Emdon, E., 1993. Privatisation of state housing, with special focus on the greater Soweto Area, *Urban Forum*, 4(2), 1-13.
- Gemeente Rotterdam, 2012. Municipal website www.rotterdam.nl: accessed 28 April 2012.
- Gilbert, A., 1997: "On subsidies and home ownership", *Third World Planning Review* 19(1), pp. 51- 70.
- Gruis, V. and Nieboer, N., 2006. Social Housing Investment without Public Finance: The Dutch Case. *Public Finance and Management*. Vol. 6, Nr. 1, pp. 122-144.
- Gruis, V., Nieboer, N. and A. Thomas, 2004. Strategic Asset Management in the Social Rented Sector: Approaches of Dutch and English Housing Associations. *Urban Studies*, Vol. 4, No. 7, pp. 1229-1248.
- Malpass, P., 1999. Housing Associations and housing policy in Britain since 1989, *Housing Studies*, 14(6), 881-893.
- Mangaung Local Municipality (MLM), 2003. Housing Sector Plan. Bloemfontein. Nordberg, R., 2000: "Alleviating poverty through housing development", *Habitat Debate* 6(4).
- Republic of South Africa, 1997. The Housing Act, 1997 (Act No. 107 of 1997). Pretoria: Government Printers.
- Republic of South Africa, 2008. Social Housing Act, 20081997 (Act No. 16 of 2008). Pretoria: Government Printers.
- Republic of South Africa, 2005. The Social Housing Policy. Pretoria: Government Printers.
- ACN, 2004. People and Places: An Overview of Urban Renewal. SACN
- SALGA, 2007. Municipal Social Housing: Toolkit for the Development of a Municipal Policy, Second Edition, SALGA, June 2007
- Sefika MS, 2010. The Privatisation of Public Housing in South Africa: Incremental Upgrading Processes in Mangaung: A thesis submitted in fulfilment of the requirement for the degree of Doctor Philosophae: University of the Free State: Unpublished
- Social Housing Foundation, 2006. Ensuring Readiness for Transfer of Municipal Housing Stock: Lessons Learned From Experiences of the Metropolitan Municipalities of Cape Town, Ethekwini, Nelson Mandela and Johannesburg
- Smeets, J., Dogge, P., Soeterbroek, R. and S. Tshenkova, 2009. Chapter 4 The Netherlands in Management of Privatised Housing. *International Policies and Practice*. Edited by V. Gruis, S. Tshenkova and N. Nieboer. Wiley Blackwell.

- Stephens, M., Elsinga, M. And T. Knorr-Siedow, 2008 The privatisation of social housing: three different pathways, Chapter 8 in *Social Housing in Europe II, a review of policies and outcomes*.
- Tomlinson, M., 1998. South Africa's new housing policy: an assessment of the first two years, 1994-1996, *International Journal of Urban and Regional Research*, 22(1), 137-146.
- Ouwehand, A. and Van Dalen, G., 2002. *Dutch Housing Associations. A model for social housing*. DUP Satellite: Delft.
- UN Habitat, 2003. *Rental Housing: an Essential Option for the Urban Poor in Developing Countries*. UN Habitat: Nairobi.
- Wang, Y.P., 2000. Housing reform and its impact on the urban poor in China, *Housing Studies*, 15(6), 845-864.
- Watson, V., & McCarthy, M., 1998. Rental housing policy and the role of the household rental sector: Evidence from South Africa. *Habitat International*, 22(1), 49-56.
- Whitehead, C. and K. Scanlon (eds), 2007. *Social Housing in Europe*. LSE London: London School of Economics and Political Science.
- Zijlstra, S. 2011. *Mixing Dutch Neighbourhoods through the Sale of Social Housing*. Paper presented at the ENHR conference in Toulouse, 5-8 July.

ARCHITECTURAL DESIGN IN RESPONSE TO VULNERABLE NETWORKS

Jhono Bennett

University of Pretoria

jhonobennett@gmail.com

Ida Breed

University of Pretoria

ida.breed@up.ac.za

ABSTRACT

This article maintains the importance of a contextual and humanist understanding for the design of public space through the incorporation of concrete and changing realities in the analysis of the urban environment. In an attempt to reach a greater understanding of the construction of space through social networks, qualitative fieldwork methods are used to document the flows of social process and physical matter in the immediate context of a chosen site for intervention. The importance of these networks for the design of built form and space is determined by a critical process of engagement. The research underpins the design relevance in architecture (and contemporary urban life) of social activity, movement, temporality versus permanence (in form), and mobility versus fixity (in location). It places in question the traditional role and definition of architecture and its present relevance in the developing world. The result is an alternative set of considerations that define the architectural brief assuring: integration with the public realm; inclusion of emergent functions; and awareness of the importance of temporality and flexibility (with regard to spatial structure and appropriation).

Key words: Architecture; Urban Space; Emergence; Qualitative; Networks; Developing.

INTRODUCTION

The postcolonial spatial layout of South Africa is considered in the same post-modern condition as almost anywhere in the globalizing world where poverty and wealth are becoming increasingly polarized (Watson, 2002:34). The large gaps that exist between economic classes contain risk factors that extend beyond social degradation and poor quality of environment. The legacy of apartheid's spatial planning has further marginalized a large proportion of the country's population by locating people far away from social and economic opportunities which remains a spatial challenge in most urban centres (Roux, 2009:ii).

Midyear population estimates (for 2009) state that more than sixty percent of the population in South Africa now live in urban centres (Stats SA, 2009:56). Yet, one in six of this growing sector in the population was counted to be living in informal dwellings in 2003, with twenty five percent of this total occurring in Gauteng province (Stats SA, 2009:78). In contrast with the social and infrastructural challenges there lie many opportunities, as cities in South Africa present possible sites of engagement for re-configuring and remixing of identities (Deckler, Graupner, & Rasmuss, 2006: 9). This on the other hand causes concern about built structure supporting culture and identity within the social-political context in which these structures are made and used. Between the looming resource crisis, the 'jamming together' of previously distinct social categories and their associated distinctly formed spaces, the spatial disciplines are, and will remain, to be confronted with new sets of challenges, specifically the practice of architecture. (Murray, Shepherd, & Hall, 2007:7). These challenges call for an adaptation of

traditional thinking around urban spatial understanding and the architectural form.

Within the South African developing context, spatial professionals are expected to design buildings in spaces that are by current spatial definitions considered 'fluid' - as is the case of informal settlements (Deckler et al., 2006:8). These interventions are thus expected to be more responsive, more responsible and consider more than ever their effects on future resources both tangible and intangible. In reference to these areas of instable development, Murray (et al., 2007) comments that it is impossible to ignore the ways in which architecture continues to give form to what Foucault calls the spaces of *heterotopia*. These heterotypic spaces are seen in the simultaneously mythic and real spaces that remain exclusionary, 'privileged' and 'underutilized' (Deckler et al., 2006:6).

Current urban theorists put forward that in order to engage with and understand these spaces, an approach that goes against 'business as usual' is required, within this statement an alternative set of parameters that define the architectural brief is required to break this paradigm. However, when reviewing theory and practice in architecture in the past fifty years, it renders architecture in most cases to its 'traditional brief' in the developing world. Two main avenues were explored in this paper in order to bring forth a more responsive brief for architecture: participative and systemic processes (Habraken, 1972) connected to the theory of emergence (Hamdi, 2004) and ethnographic field work methods that provide qualitative data and enable inclusive design in public spaces (Schuler & Namioka, 1993).

John Habraken's 1972 publication of *Supports: an alternative to mass housing*, outline a strong conceptual notion embracing participative and systematic processes of design and construction that is still considered as one of the more appropriate approaches in regard to critical engagement with developing contexts. Habraken (1998), states that the act of building, by professionals or inhabitants, is an expression of control over form. Although this control takes place while a building takes shape, it is ultimately temporary (Habraken, 1998:88). The principle taken from Habraken's work is that a traditional architectural intervention is often too permanent in form and ownership and not necessarily the best way to engage with a fluid and dynamic context.

An approach that allows spatial designers to map the manifestations of tangible form from intangible networks within society is the use of ethnographic field work methods as advocated in *Participatory Design, principles and practices*, by Schuler and Namioka (eds., 1993). Within this approach the scope of spatial professionals has extended beyond traditional tools of the spatial disciplines and more critically addresses the subjectively described 'messy' field of engagement in the social sciences (Murray et al., 2007:23). In line with phenomenological theory, to harvest a level of understanding of the social relationships, one has to engage with a social network on a personal basis and interpret the reality that is revealed through the process of interaction. What is discovered is a network of intangible relationships between the individuals and the objects and actions within that network. This description of classifying social groups by what connects them offers a clearer understanding of the relationship between the individuals and the objects (and built environment) within these networks.

The following case study deals with an informal housing settlement in Mamelodi, Pretoria. This area lies on the periphery of a formerly segregated township that is still spatially removed from the social and economic resources of the central business district. The case

study sought to engage with the inherent social capital that exists within the cohesive networks of the developing context in order to define an architectural intervention that not only engages with an existing vulnerable network, but through a symbiotic relationship enhances both the building and its host network (Bennett, 2011).

CASE STUDY: PLATFORMS OF ENGAGEMENT, MAMELODI, PRETORIA

Platforms of Engagement was completed as an architectural dissertation at master's degree level and has not been implemented. The field work application therefore remains on a theoretical premise, with regard to design decisions of architecture and form. The area of study was chosen as the laboratory of research due to the existing influx of people from rural environments, the rapid rate of urbanization, a history of mass housing projects and its 'informal' character. Mamelodi is a former segregated township area on the outskirts of the city of Pretoria in the greater Tshwane Metropolitan Area (for an overview of the history and existing conditions in Mamelodi, see Bennett, 2011: 37 or Breed, 2012).

The research focussed on the intensive networks found in developing areas of vulnerability that display strong cohesion due to activities surrounding the production process. The hypothesis that led the research stated that through a process of engagement, a review of strengths, weaknesses and opportunities would lay the foundation of designing an architectural intervention that seek to exist in balance with a contextual network. The premise being that architecture can be designed to not only engage with such a network, but through a symbiotic relationship both the building and its host network can be enhanced.

RESEARCH METHODS

It is appropriate in this context and this debate to view 'communities' in South Africa more as organic and complex networks than simply space and service sharing neighbourhoods. An understanding of the flows of energy and matter within these networks was crucial to better engage productively and determine what would be required in the area both structurally and spatially. Engagement with this 'community' is not just a process of understanding the network, but of forming a relationship that allows one to cooperatively enter into a dialogue and optimizing the effectiveness of such a proposed intervention (Bennett, 2011: 28). These participative processes, largely achieved through the method of participant observation, interviews and analytical evaluation should cover the period of research, design and ideally construction to be truly effective (for an explanation of the research method (see Spradley, 1980; Breed, 2012). Since it was hypothesised that the participative mapping of and with a network can be translated into architectural components that will support and facilitate these relationships, an existing network had to be necessarily identified and mapped within the research area.

During the initial site visits to Mamelodi, the discovery of several backyard concrete block factories was made, these are referred to as 'cement bricks' in the area (see fig: 1; 2). Initially these businesses seemed haphazard, but after several brief interviews with brick makers, a larger network was believed to exist behind the small businesses. It became clear that there was a larger supply chain of resources and a market that fed the demand for 'cement bricks'.

These bricks were being used to supplement and add to the government provided housing. The bricks were also being used to support transitory housing in the developing areas of Mamelodi. Many of the brick makers were registered companies managed by a family member, and generally represented supplementary businesses to other forms of income.



Figure 1: Photograph showing a backyard brick making factory in Mamelodi (photograph by Bennett, 2011).



Figure 2: Profiles of some of the concrete brick makers that were interviewed (photographs by Bennett, 2011).

An analytical study was conducted with data being taken from several interviews with the brick makers. This process of engagement was documented and captured by photographic, video and field notes (see fig: 2) and was held over the week of 21 April to 1 May 2011. Over twenty recorded survey interviews were conducted, with thirteen unrecorded informal interviews taking place within twelve independent site visits. An in-situ documentation of the flows of energy, information and resources sought to identify how an intervention could begin to positively affect the identified network without disrupting negatively any of the strong relationships between its components.

During the onsite investigation several core findings became clear: The connections between the brick makers lay mainly in the supply and distribution of the materials used i.e. sand,

cement and water; Generally the brick makers have a strong connection with transport networks in the area as well as with the government supplied services (connected to housing) in the form of water and electricity; People buy materials incrementally, storing bricks and other building material around their homes; The forms of supply exist in balance with centralised and de-centralised sources, and each of them functions to various sectors of the market; The brick makers expressed major concern about cash flow problems related to their overheads and unpredictable rise and fall in demand. (see fig: 3)

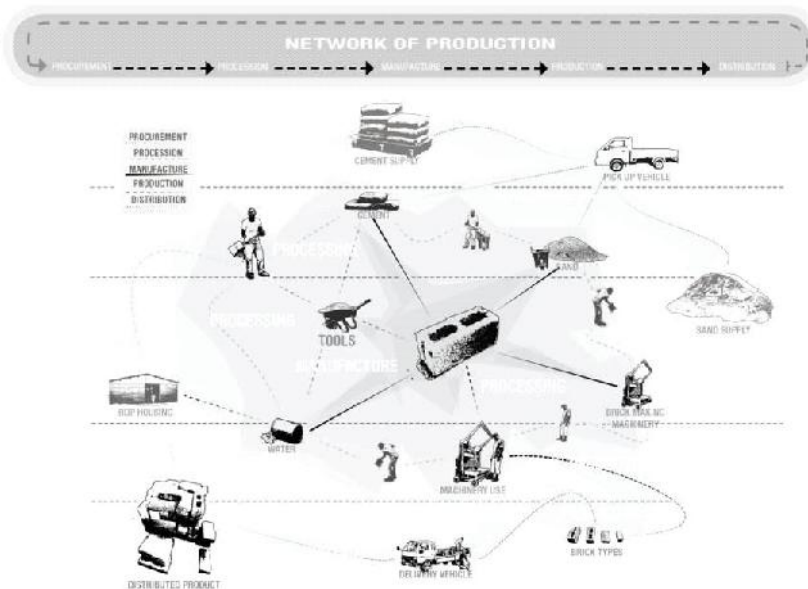


Figure 3: The network around the concrete brick makers as mapped during the field work (image by Bennett, 2011).

It was further observed that the growth patterns of houses were in steady but varied states of growth and adaptation, according to home owners' or residents' needs and requirements (see fig: 4; 17). Structures that appeared permanent and fixed were highly mobile and adaptable, being changed and moved according to the needs of the inhabitant, sometimes on a daily basis. Certain commercial structures throughout Mamelodi exhibit similar aspects of mobility in the form of 'shipping container shops', fruit and vegetable stands and various other commercial operations that are being run from 'mobile platforms'. Amidst various states of flux there appeared to be several connections between the structures and the occupants.

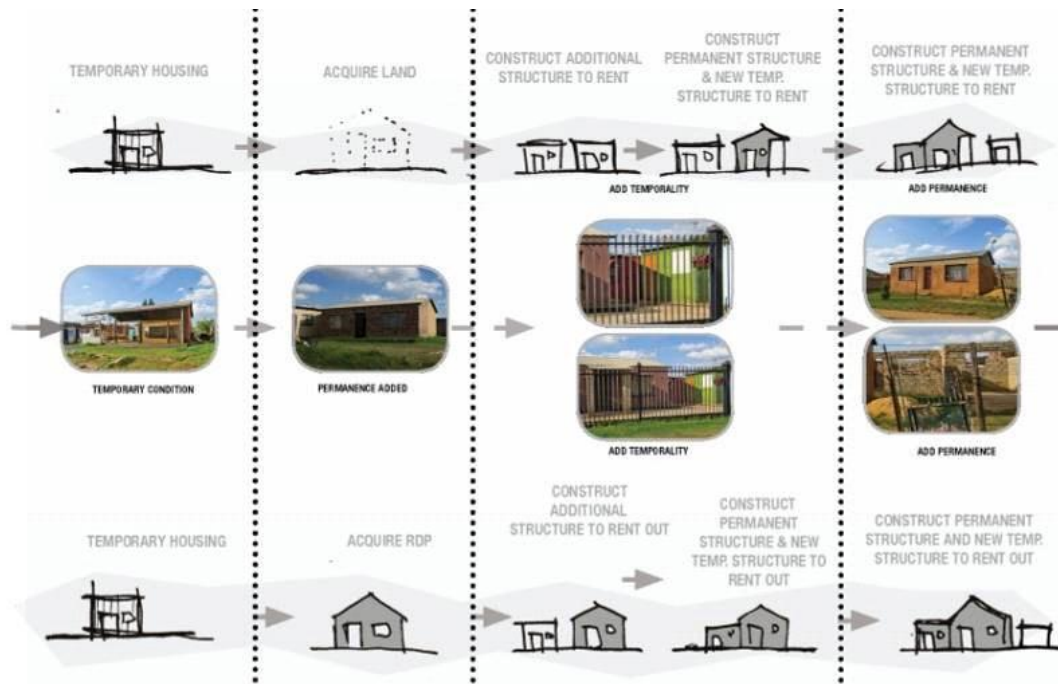


Figure 4: The different states of flux between permanent and temporary structures in houses in Mamelodi (images by Bennett, 2011).

DISCUSSION OF FINDINGS

From this observation, certain key concepts emerged: structure in Mamelodi existed in various states of temporality, permanence (in form), mobility and fixity (in location). These varying states of existence create a flowing condition in the nature of the structures and the processes around them. Strong links between the permanent and the temporary were apparent. There is also an impression of hierarchy within the levels of permanence and temporality attached to the contextual structural and personal elements. Permanence, in the form of bricks, is a status symbol in the context of developing South Africa. On the other hand, the aspects of temporality provide a flexible structure for an individual, through thresholds of emergence, to gain permanence when needed. In this condition a person is not limited by mobility and temporality, but enhanced by it.



Figure 5: Various examples of permanent and temporary structures in and around homes in Mamelodi (photographs by Bennett, 2011).

Mobility has been described by Cresswell (2011: 168) as “*dysfunctional, as inauthentic and rootless and, more recently, as liberating, anti-foundational and transgressive*” in forms of representation. Cresswell further notes that mobility has an inherent duality as a product of social relations that simultaneously acts as an agent of social production (Cresswell, 2011: 169). Due to past restrictions and control of government over people’s spatial movement and place of habitation, mobility in the South African context, can be regarded as an expression of freedom today. In the case of the concrete brick network of production, the aspect of mobility is vital in terms of accessing services, supply and distribution.

Another aspect that surfaced through the research is that of architectural flexibility. The subject of flexibility is considered a modern issue, becoming a crucial aspect when designers realized that attempting to fit a building form precisely to its function might fail the potential and inevitable growth and change that will occur over time (Otts, 2011: 105). Consequently a number of strategies have been proposed in architecture for achieving the needed flexibility. This flexible architecture is designed to accommodate a fixed range of current and future uses, it anticipates a limited number of likely changes to occur and provides in built potential for those changes to occur.

Six variations in flexible architecture were identified from well-known architectural interventions, these are: *Adaptable Architecture*: adaptable structures features repositionable partitions or are changeable per user or occupant e.g. Rietveld House by Gerrit Thomas Rietveld; *Universal Architecture*: what typifies a universally flexible building is its ease of adaptation per use. These buildings are often characterized by open floor plans and typology free design to be accessed and used by all e.g. Eames House, Crown Hall by Mies Van Der Rohe; *Movable architecture*: movable flexible buildings consist of relocate-able or repositionable structures or buildings capable of being dismantled and reassembled in another location e.g. Nomadic tents, Airstream Trailers; *Convertible or transformable space*: relies upon technology to quickly change the characteristics of space with a minimum effort. They are characterized by modular design that is capable of adding or removing units or components, such as hotel ballrooms, that can be converted from one large space to many smaller spaces e.g. Archigram’s Plug-in City, University of Phoenix Stadium; *Responsive space*: involves architecture that moves, as it responds to changing demands e.g. Jean Nouvel’s Di Monte Building; *Multi strategic space/loose fit*: mainly accommodates growth in design. Buildings are designed to be too large and grow as infill increases. (Otts, 2011: 106).

The themes identified as a result of the participatory process (temporality, permanence - in form; mobility, fixity - in location) are key aspects in defining the architectural intervention to not only be embraced by local networks when completed but to be appropriated while in intermediate states of construction, thus working within the fluctuating patterns of vulnerable networks.

CONTEXTUAL APPLICATION

The research phase of the study formed a conceptual idea for an intervention. In terms of its context the architectural intervention, while alien at first, is required to ‘grow’ with its immediate context. This would allow the local context to witness and be part of this growth, further increasing the possible levels of appropriation. In regard to the site, the hypothesis called for a platform of engagement that embodied this concept, occupying the space between

the intangible connections of the brick makers and sub networks around cement use, and the tangible connections of the mobility route network. (see fig: 6).

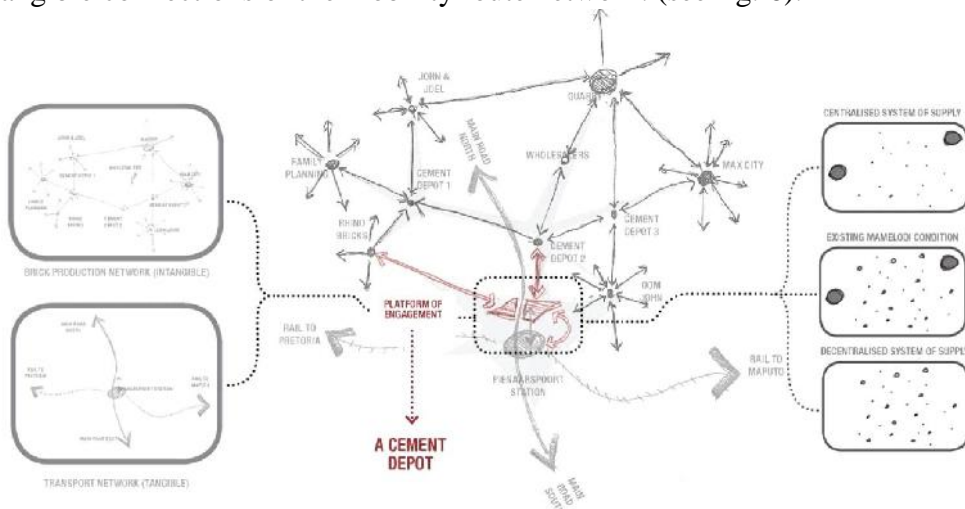


Figure 6: Diagram indicating the niche intervention within the tangible and intangible networks on site (image by Bennett, 2011).

At present there are small retail ventures, near the Pienaarspoort station, feeding off the current pedestrian movement, including a tailor, several *spazas* (shops) and a handful of smaller stands providing vegetables, phone access and other pedestrian hand held retail (see fig: 8). Although major housing development is planned for the future of the area, strong pedestrian and automobile based retail remains the major programme in the area, coming to a head at the crossing point on the rail line (see fig: 7).



Figure 7: Site analysis summary of movement and retail at Pienaarspoort station (image by Bennett, 2011).

Conceptually, to co-exist with the network, the intervention needs to embrace the mobility and flexibility inherent to Mamelodi, by responding through its own patterns of growth in a



similar fashion. The intervention also needs to reach a symbiosis with its context and from this point begin to ‘die’, making way for future needs and unforeseen design challenges - leaving behind only those components that are necessary in each scenario, based on the needs of that user. (Bennett, 2011: 36)



Figure 8: Small retail and housing, currently at Piensaarspoort train station (photograph by Bennett, 2011).

Drawing from the process of participation and engagement, clues from the structures and materials in the context were analyzed and lessons drawn from each instance (see Table 1). What reoccurred in each form was the appearance of a ‘portal’ that was used temporarily until filled at a later stage. This portal structure allowed for flexibility of use while setting the demarcation of space for a future stage at the same time. It accommodated both the temporary and permanent factors, as its placement responded to human mobility in regard to the road networks and pedestrian paths. This portal became the conceptual tool from which to explore the idea of an organic de-centralised self-built factory. By breaking the factory typology into its primary programmes of production, distribution, storage and retail the tectonics that made these spaces were separated to analyse the process if done as business as usual.

A historical and locally contextual exploration of the various planes, points and lines as drivers of form and grid organization followed. A unit of growth was determined based on the most appropriate multi adaptable and flexible system, namely the vertical point (see table 1 for summary of the local exploration).

VOLUMETRIC UNIT	EG. FOUND IN MAMELODI	STRENGTHS AND WEAKNESSES
 <p>GIVING LINE</p>	Lamp posts and street signs	These elements displayed strong ordering principles, giving land mark properties to the area. They lacked in examples of appropriation due to their social role in context.
 <p>GIVING VOLUME</p>	Self-built homes and apartments	Best examples of volumetric appropriation, responded to contextual edge conditions and were the strongest element in consideration.







  <p>GIVING PLANE</p>	<p>Government subsidised homes (RDP)</p>	<p>Worst examples of future appropriation and growth, difficult to attach to and gave only the basics of form for growth. These elements did give some ordering principles by virtue of permanence.</p>
  <p>GIVING VOLUME</p>	<p>Informal housing/ 'shacks'/'mokhukus'</p>	<p>Strong example of self-build, limited in verticality and ordering principles.</p>
  <p>GIVING PLANE</p>	<p>Shipping containers</p>	<p>Strong in ordering principles and gave a ready to use, easy to maintain and adaptable plane from which to appropriate.</p>

Table 1: The table below shows the analysis of strengths and weaknesses found in existing examples of construction in Mamelodi, and the volumetric units employed (Bennett, 2011).

THE UNIT OF GROWTH

Based on the research and on site observations of the verticality provided by point elements in the context and the potential they offered for structural appropriation, they appeared to be the most appropriate element to work with to promote the aforementioned principles for development (see fig: 9). The chosen form was based on the lamp post and its vertical role in place making, form giving and social function in the context. The pre-cast concrete lamp post is a stereotypical element in developing areas as they are robust and elegantly simple elements of service provision. Besides providing light, this element is then modified to work as a structural and service element.

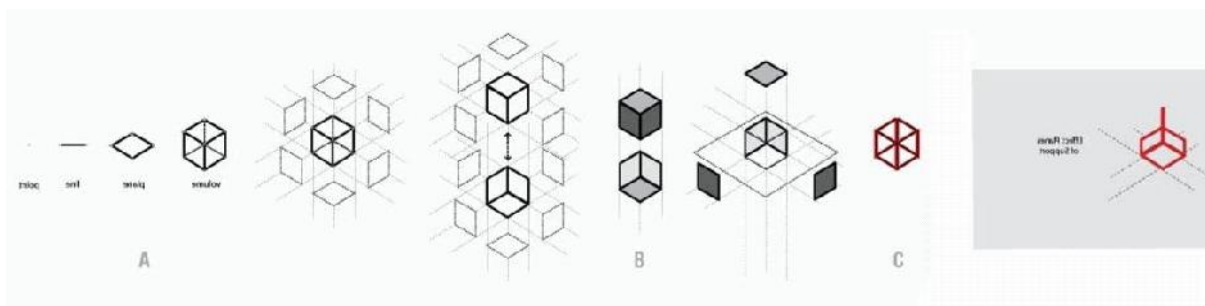


Figure 9: Spatial exploration of point, line, plane and volume to determine spatial support and infill unit (image by Bennett, 2011).

After some technical exploration, it was decided that this post would need to be developed with a minimum of two arms as a starting point. A lifting mechanism would allow for the

occupant to grow the unit with the ‘standard pieces’ (off the shelf building elements from local hardware and industrial areas) as well as special structural elements (a timber composite light weight beam). Depending on the required need, context and available energy, pieces could be added as required, horizontally and vertically (see fig: 10). In this way, these architectural elements would first work as simple elements, but can later provide support for more complex functions.

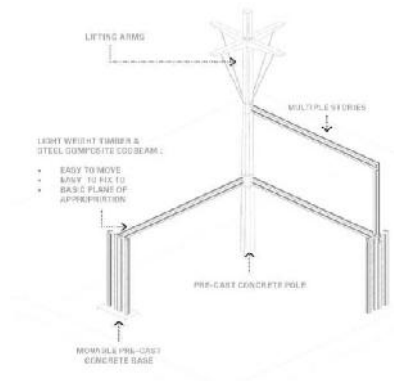


Figure 10: Structural resolution of unit of growth, resolving form, profile and lifting device (image by Bennett, 2011).

What emerged is a piece of architectural infrastructure that aims to facilitate ground up growth, while guiding larger scale development. This unit of growth allows network members to take ownership through a self-built building and control system (see fig: 24). The system of growth embraces the spirit of place while still facilitating sustainable and ordered developmental growth. It works with all contemporary methods of infill seen in the context, while providing autonomous and sustainable resources in energy and water collection. By creating the platform for engagement with local municipality and the public realm development can begin to grow from the ground up while still meeting the standards and resource use of more traditional building methods as illustrated in figure 11.

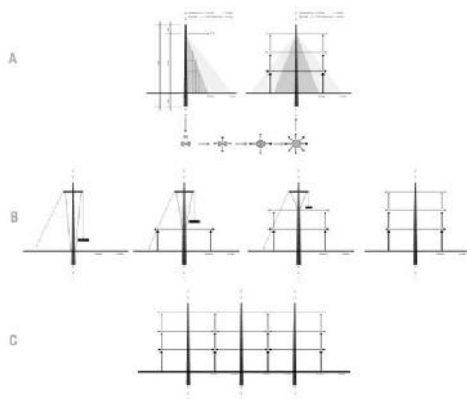


Figure 11: The architectural elements will first work as simple elements, but can later form a structural system that supports more complex functions (images by Bennett, 2011).

In terms of potential building programs, the following development phases were projected for the unit. It reveals the intimate steps in the growth and depicts the flexibility of the unit, along with the process of support and infill in its placement:

Phase 1 - independent cement retailers mixed with other retail forms, use the structures.

Phase 2 - cement retailers form a consortium and get assistance from a sponsor (see fig: 12).

Phase 3 - fuelled by the cement distribution and collection the site has become a larger retail depot for any consumable goods required in the area (see fig: 13).

Phase 4 - cement trade has died down, but the precinct has grown into an important retail and transport hub.

Phase 5 - the precinct become the major train station for the east linking to the transport interchange planned by the City of Tshwane Urban Framework.

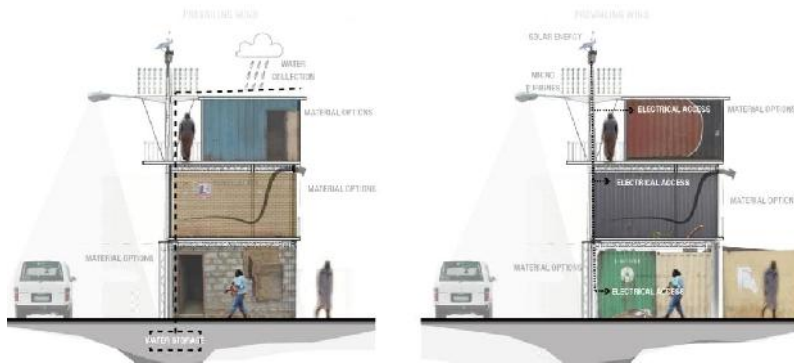


Figure 12: Analysis of the potential of the vertical element of support, in terms of structural ordering. This depicts the various materials, services and program options of the unit (images by Bennett, 2011).

The speculation of growth was conceptually illustrated and then focussed around the cement retailer at a specific phase in the development (phase 3, the depot, see fig: 13). The eventual architectural intervention becomes an exercise in roofing and planning of the larger construction elements, but still aims to retain the ethos of the incremental self-built.



Figure 13: The speculation of growth is conceptually illustrated around the cement retailer depot. The architectural intervention consists mainly of roofing and planning of elements, but aims to retain the ethos of the incremental self-built (image by Bennett, 2011).

RECAPTURING THE CASE STUDY

The case study analysed an existing vulnerable network around the production process to generate an architectural intervention that can exist in symbiosis with the network. A unit (and network) of growth was developed that: reflects the current ethos of the production

process in Mamelodi of temporality versus permanence in form; and mobility versus fixity in location. It then draws on examples of flexible architecture (and the example of the 'portal' observed in Mamelodi) to incorporate flexibility, temporality and mobility in architectural resolution, along with the more traditional concepts of fixity and permanence.

Current principles applied to architectural intervention in South Africa are based primarily on resilient networks, while not regarding responses to vulnerable networks. (Bennett, 2011: 37) The dissertation process revealed an undercurrent of uncertainty in this specific field of architectural intervention, as professionals and academics who were involved in the process were troubled since they could not comment on the nature of the design in traditional architectural terms. The actual architectural component was more a 'service engineering with social allowance' exercise than the spatial and structural programming of conventional architectural projects. Nonetheless, what emerged through the process was an understanding of what questions architects need to be asking in these types of contexts. This type of intervention embraces wholly the organic nature of settlement as stated by John Habraken (1998: 7):

"If the built environment is an organism, it is so by virtue of human intervention: people imbue it with life and spirit of place. As long as they are actively involved and find a given built environment worth renewing, altering and expanding, it endures".

CONCLUSION

The circumstances and growth rate of urban settlements in the developing world calls for changes to be made in terms of architectural design responses. It is necessary to explore beyond traditional thinking to avoid responses that currently remain limited and unsatisfactory. The research attempted to identify an alternative set of parameters that define the architectural brief in the developing world and to explore in a highly 'fluid' environment a central role for architecture in relation with daily life. It has been argued that the key lies in a contextual and humanist understanding that can be attained through the incorporation of concrete and changing realities in the analysis of the urban environment. An aspiration of which is stated by Murray in her writing of the notion around the Architecture of 'here' and 'now'; she puts forward that this state comprises of buildings (as real spatial objects) that are engaged within social space and real time and professionals should consider, when engaging with such spaces, the signifying role of architecture in relation to the whole sphere of the built object as well as its social biography.

In this case study critical field work methods are used to obtain qualitative data from the immediate context and ascertain inclusive design in terms of the immediate social networks and their potential appropriation of the architectural design. Specifically the qualitative field work was indispensable in capturing data and allowed the detection of social patterns and (vulnerable) networks.

Systems theory and the concept of emergence remained central in the architectural design development. The aim being, not to give a comprehensive response to the current urban scenario but rather to react suitably to the spatial context, thus allowing for new emergent functions to attach themselves to the infrastructure that was provided. Traditionally the architectural brief often fails to address the wider urban spatial context; it stays limited to the interior function and process of the building. The intervention, in its comprehension of social

networks and systems, extended the response to the surrounding transport networks and pedestrian movement patterns, considering integration at a human scale in terms of movement and activity where architecture meets public realm.

The case study offers an 'architectural alternative' through the development of a technical spatial unit of growth (vertical element of support) that could be managed through incremental self-build into a larger structural network or system. The issues of temporality and mobility radically influenced the architectural brief, obliging structural explorations in achieving flexible architecture. The final outcome is in the hands of the inhabitant and remains fairly unpredictable in form. This example is particularly controversial in terms of its denial of the modern role of architecture as being decisive in terms of volume and space. Nevertheless the vulnerability of existing networks in the informal environment pointed towards an architectural intervention that allowed not only to be embraced by local networks when completed but to be appropriated while in intermediate states of construction.

REFERENCES

- Aguilar Díaz, M., 1998. Espacio público prensa urbana. En N. García Canclini (coord.) *Cultura y comunicación en la ciudad de México. La ciudad y los ciudadanos imaginados por los medios. (Segunda parte).* UAM-I/Grijalbo, México.
- Bennett, J. J., 2011. *Platforms of Engagement: a process of critical engagement within a developing context.* MProf dissertation. Pretoria: University of Pretoria. Unpublished. Found online at: <<<http://upetd.up.ac.za/ETD-db/ETD-search/search>>> As of March 2012. (alt. www.jhonobennett.com)
- Blomberg, J., 1993. *Ethnographic field work methods and their relation to design.* In D. Schuler, & N. Namioka, (eds.) *Participatory Design: Principles and Practices.* London: Lawrence Erlbaum Associates.
- Breed, C. A., 2003. *El Proyecto Urbano. Un acercamiento cualitativo para el diseño de la ciudad. El caso de Mamelodi-Este, en Pretoria, Sudáfrica.* Disertación de Maestría en Diseño. Mexico: Universidad Autónoma Metropolitana. No publicada.
- Breed, C. A., 2009. *Mindscape: exploring living space in the urban environment by means of photographic interviews.* *South African Journal of Art History.* 24 (1) p.89- 105.
- Breed, C. A., 2012. *The transient aspects of city life: their understanding and interpretation for design purposes.* In H. Stoffberg, C. Hinds, & L. Muller, (eds.) *South African Landscape Architectural Reader.* Pretoria: UNISA.
- Carmona, M. Heath, T. Oc, T. and Tiesdell, S., 2003. *Public Places, Urban Spaces: The Dimensions of Urban Design.* Oxford: Architectural Press.
- Cresswell, T., 2011. *Towards a politics of mobility.* In N. Edjabe, and H. Pieterse, (eds.) 2011. *African Cities Reader II: Mobilities & Fixtures.* Cape Town: Chimurenga, African Centre for Cities. Found online at: <<http://www.africancitiesreader.org.za/reader/ACR2_LowRes.pdf>> Accessed 15 March 2011.
- Deckler, T. Graupner, A. and Rasmuss, H., 2006. *Contemporary South African Architecture in a Landscape of Transition.* Cape Town: Double Storey.

- Edjabe, N. and Pieterse, H., (eds.) 2011. African Cities Reader II: Mobilities & Fixtures. Cape Town: Chimurenga, African Centre for Cities. Found online at: <<http://www.africancitiesreader.org.za/reader/ACR2_LowRes.pdf>> Accessed March 2011.
- Habraken, J., 1972. Supports—An Alternative to Mass Housing. London: The Architectural Press.
- Habraken, J., 1998. The Structure of the Ordinary. Cambridge: MIT Press. Hamdi, N., 2004. Small Change. London: Earthscan.
- Hidalgo, M. C. & Hernandez, B., 2001. Place attachment: conceptual and empirical questions. *Journal of Environmental Psychology*, 21 (3), p.273-281.
- Murray, N. Shepherd, N. and Hall, M., 2007. Desire Lines. Space, Memory and Identity in the Post-Apartheid city. London & New York: Routledge.
- Ott, K., 2010. Decoding TheorySpeak: An Illustrated Guide to Architectural Theory. London & New York: Routledge.
- Porter, T., 2004. Archispeak. London: Spon Press.
- Roux, N., 2009. Migration and Urbanization. Cape Town: Department of Social Development, Republic of South Africa.
- Schuler, D. and Namioka, A., 1993. Participatory Design: Principles and Practices. London: Lawrence Erlbaum Associates.
- Spradley, J., 1980. Participant Observation. New York: Holt, Rinehart & Winston.
- Statistics South Africa., 2009. Found online at <<www.statssa.gov.za>> Accessed 3 March, 2011.
- Watson, V., 2002. Change and Continuity in Spatial planning: Metropolitan Planning in Cape Town under Political Transition. London: Routledge.

USERS' PERCEPTIONS OF URINE DIVERSION DRY TOILETS IN HULL STREET MEDIUM DENSITY MIXED HOUSING, KIMBERLEY, SOUTH AFRICA

Gertrude Matsebe

The Council for Scientific and Industrial Research (CSIR), Built Environment unit, South Africa

gnmatsebe@csir.co.za

Brian Boshoff

Development Planning Department, School of Architecture and Planning, Faculty of Built Environment and Engineering, University of the Witwatersrand, South Africa

brian.boshoff@wits.ac.za

Abstract

The South African government provides a range of technical options for basic dry and wet sanitation. The urine diversion sanitation system seems to be a potentially sustainable solution for the water scarcity challenge facing South Africa. The urine diversion dry (UDD) technology uses relatively less water than the conventional flush system and has been widely implemented in rural settlements. This paper presents the findings of a study that sought to understand the socio-cultural perceptions and practices of users of the UDD toilet in the Hull Street Medium Density Mixed Housing (MDMH) project in Kimberley, Northern Cape Province, and the extent to which users accepted or rejected these toilets. The study was qualitative in nature and employed a case study research design with purposive sampling. Semi-structured interviews were used to collect data, which was then subjected to content analysis in order to reveal salient themes regarding the use of UDD. The findings of the study revealed a high degree of user dissatisfaction regarding the use of urine diversion dry toilets, which emanated primarily from poor design. The low acceptance of the UDD technology may also be attributed to a lack of institutional support from politicians and officials at the local municipality. Consequently, the Sol Plaatje Housing Company which manages the Hull Street project has taken a decision to convert the UDD system into the waterborne system.

Keywords: Urine diversion dry UDD toilets, medium density mixed housing (MDMH), socio-cultural perceptions, and users/residents.

INTRODUCTION

South Africa is a water-scarce country and this situation is likely to be exacerbated by the spectre of climate change, it is vital that wider sustainability concerns are tackled. The government has explored a range of sanitation technical options, which includes among others, waterborne, the Ventilated Improved Pit (VIP) toilet and composting/Urine Diversion Dry (UDD) toilet widely known as ecosan (Matsebe, 2011). Of these, UDD sanitation technology seems to be a potentially sustainable solution to address this major challenge. This technology does not use water for flushing, separates collection of human excreta with

less damage to the environment (EcosanRes, 2008). In South Africa, this technology has been implemented mostly in some rural and peri-urban residential settings (Duncker *et al.*, 2007). Since the sanitation function (previously with the Department of Water Affairs and Forestry) has become an integral part of the Department of Human Settlements in 2010 (Matsebe, 2011), it was therefore, deemed necessary to explore the integration of the UDD toilets in medium density mixed housing (MDMH).

BACKGROUND

This paper presents the findings of a research study conducted, with an aim to understand the socio-cultural perceptions and practices of the users of the UDD toilets in Hull Street medium density mixed housing (MDMH) project in Kimberley, Northern Cape Province, and the extent to which users accepted or rejected this technology.

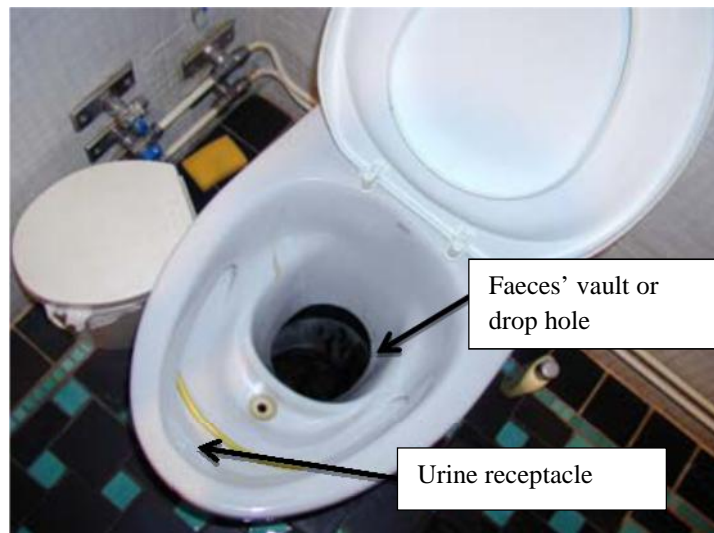


Figure 1: UDD toilet in Hull Street **Figure 2:** UDD toilet (Source: EcoSanRes, 2008) (Source, 2001).

MDMH refers to a housing development that has a minimum of 50 dwelling units per hectare (du/ha) and a maximum of 125 du/ha (Landman *et al.*, 2007 and Osman, 2010). These various densities have different spatial and physical manifestations. MDMH is generally characterised by ground level entry, private external space for each dwelling unit, close proximity to secure parking and ground related – thus these developments are rarely over 3-4 stories above ground. These characteristics promote integration and facilitate some social and spatial mix within a housing development (*ibid*). The building typologies are varied and may include stand-alone houses.

According to the Department of Housing (2004), such a housing typology is advocated in the South African Department of Human Settlements's plan known as "Breaking New Ground" (BNG). The objective of BNG is to ensure that this housing typology has a greater mix, as well as a higher density, than is current the case. Part of the significant aspect of MDMH is its ability to accommodate a large number of people in a small place with easy access to services and facilities (Landman *et al.*, 2007 and Osman, 2010).



Figure 3: Single and double storey units in Hull Street (Source: Landman *et al.*, 2009)

RESEARCH METHODS

The study was qualitative in nature, i.e. the focus was on providing explanation and description rather measurement, with an intention of gathering as many diverse options as possible (Matsebe, 2011). The rationale behind this method was mainly to understand the participants' feelings, experiences, social situations, or phenomena in their natural setting.

The research used a case study research design, defined by Yin (1984:23) as an “empirical inquiry that investigates a contemporary phenomenon within a real life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple scores of evidence are used”. Furthermore, a phenomenological research design was used and is concerned with understanding social and psychological phenomena being studied (Welman *et al.*, 2005).

Purposive sampling, also referred as judgemental, selective or subjective sampling is a non-sampling technique used in the study to select the participants involved in the study (Matsebe, 2011). That is, the researcher selected participants with specific purpose in mind (Neuman, 2003). Characteristics for selected participants included among other: race, gender, position in the household, age, language, duration of stay at Hull Street, preference for the UDD toilet and unit size. The study was conducted from 29 to 31 August 2011, with all racial groups of South Africa represented, namely, coloureds on the majority, followed by blacks, whites and only one Indian household. Both males and females participants, who have been staying in Hull Street from the inception of the project (more than eight years) and new ones (less than two years). The sample size comprised 16 participants, 13 of whom were residents of the Hull Street housing projects and three were employees of the Sol Plaatjie Housing Company, which oversees operation and maintenance of Hull Street.

Semi-structured interviews and a Dictaphone recorder were used to collect data, which was then subjected to content analysis in order to reveal salient themes regarding the use of UDD toilets (Matsebe, 2011). These interviews were conducted with the use of an open-ended questionnaire. One of the benefits of semi-structured interviews is that an interviewer is free to stray from the interview guide, and allow him/her to elicit information through probing, in order to get clarity and in-depth information on the subject (RWJF, 2008; Welman *et al.*, 2005). In addition, semi-structured interviews were suitable for this study as the topic of discussion was very sensitive for some users. Conversely, semi-structured interviews have a number of limitations,

including the fact that they are costly and time consuming. Moreover, participants may not trust the researcher, and therefore, withhold relevant information and responding less frankly (Cargan, 2007).

FINDINGS

The findings of the study revealed a high degree of user dissatisfaction regarding the use of the UDD toilet, which emanated primarily from poor design of the toilet facility. Overall perceptions of users of the UDD toilets were summarised into four categories (Matsebe, 2011):

Design, use and functionality

Some users perceived the toilet to be smelly, unhygienic, backward and of an inferior standard (referred to it as a bucket toilet/system) unsuitable for an urban modern housing development like Hull Street. According to Matsebe (2011), the obtained findings revealed that some users of UDD toilets did not find it easy to use it due to its design, especially in terms of sitting positions as one has to aim properly when sitting depending on the purpose of using the toilet (urinating or defecating). Furthermore, it was highlighted that some women users (particularly large body size) experienced discomfort in terms of the seating position that is, moving forward when urinating and backward when defecating.

The study further revealed that the design of the toilet poses health risk as some female users felt uncomfortable using the toilet, particularly when the wind blows into the pedestal from outside (lid of the vault not properly sealed). This led to an assumption that the wind was responsible for the contracting of diseases such as infections (suffering pains from womb). Some users complained of inhaling lime when sprinkled on top of faeces. Snakes were also reported to be found in the toilet entering from the lid of the vault.

Operation and maintenance

All the participants were knowledgeable on how the UDD toilet functions as per policy of the Sol Plaatjie Housing Company (SPHC) to educate potential residents when viewing the units. This was also reinforced by the maintenance staff members when emptying faeces' vaults on a weekly basis.

Despite the fact that maintenance measures to address odour have been put in place such as the installation of fans and use of lime to cover faeces, participants still find the odour disturbing, especially when cleaning the toilet. The cost to operate and maintain the toilet was perceived to be higher than a conventional flush toilets as users or residents spend lot of money to buy a range of detergents and disinfectants to keep the UDD toilet clean and alleviate the smell. The respondents also indicated that since the maintenance people from the SPHC collect bags of faeces once a week, they (the participants) had to pay R10 for extra collection in that week (two or three times) as they felt that collection once in a week was not enough because the vault was small and smelled when faeces was stored for a longer period. Participants paid an extra cost to run an extraction fan that consumes lot of electricity. However, to counter these costs, there is a free basic water service of 6000l available to every household per month. The UDD toilet has a positive spin-off in that users save on water that is flushed away in a waterborne system, which contributes towards increasing the water bill.

Some users found it a daunting task and an embarrassment to explain to visitors how the toilet functions. This ultimately resulted in the correct use of the toilet and some avoided hosting visitors in their homes. However, a large number of informants mentioned that they found it easy

to clean the toilet. The residents' level of commitment towards the operation and maintenance of UDD toilets is low, particularly as they were not owners of the housing units yet (all residents are tenants since the rent-to-buy tenure status is not yet applicable in practice).

Users' perceptions and attitudes

The findings of the study revealed that most of the users preferred a flush toilet to the UDD toilet and would not recommend it to other people. They were also willing to pay extra for flushing water.

Despite the fact that one of the benefits of installing the UDD toilet is the production of fertiliser from nutrients in human excreta, participants did not buy into this idea as most of them felt that they did not need or use it in the garden. They considered it waste, and hence would rather have a flush toilet. Moreover, participants perceived the UDD toilets to be unpleasant and unhealthy due to offensive odours (Duncker *et. al.*, 2006). All these resulted in low acceptance of the toilet.

Although most participants had knowledge of the fertilizer value of human faeces as compost from various sources, they still regarded it as waste and as unhealthy. Most of them had gardens (lawn, plants, flowers and fruit trees), but only a few of them were using dry faeces as compost on non-edible plants or lawn. Non-acceptance of the UDD toilets ultimately resulted in conversion of the system into a waterborne system.

Socio-cultural influences/impact

The obtained results revealed that Muslim participants felt that some of the principles of the UDD toilet conflict with their culture of using water for anal cleansing, thus influencing their reluctance towards a UDD toilet. The Islamic religion requires cleaning of all body openings, including anal cleansing as a common practice for purification rituals prior to praying. However, one of the principles of the UDD toilet was to avoid water inside the faeces' vault as it aggravates the smell. It is therefore necessary to ensure that the design of the toilet is appropriate and suitable to use by all targeted users.

The results of the the study showed gender bias in terms of cleaning the toilet. Most participants cleaning the toilets were females who were responsible for the upkeep of the entire household. Although they did not like cleaning the UDD toilet, they felt obliged to do so since it was part of general cleaning of the household.

RECOMMENDATIONS

Given the above challenges, a number of recommendations were highlighted: Planning is political. There is a strong need to get a buy-in from politicians and government officials for the success of developmental projects. Despite efforts put by the SPHC to promote and provide training on the UDD systems, the project could not succeed owing to lack of institutional support (for the project). Since South Africa is a water-scarce country, there is a need for government to invest in continuously raising awareness to the general public. on the wider benefits of the UDD sanitation technology and environmental sustainability aspects, notwithstanding that surveys have revealed that UDD obviously requires institutional and technical modification. The target group should include among others: politicians and government officials responsible for making and implementing decisions, as well as policy makers. The UDD sanitation system is in this regard one of the possible solutions towards

addressing this challenge as it is a waterless system. The orientation of the UDD toilet in a house should be such that the vault is exposed to the northern sun to enhance faecal drying. The window should face the opposite end of the vault to allow ventilation of the unit.

It is important to first establish if there is a real demand for an organic best fertilizer (human excreta) from a sanitation system and then design the sanitation system accordingly taking into account the needs and cultural norms and values of the targeted users. The UDD sanitation system should be made available to everyone, particularly those with an interest in environmental aspects or who will derive some benefits from them (e.g. farming communities).

To counter the low acceptance of the technology, it is of great significance to ensure that innovative technology is firstly introduced at the upper level of the market (celebrities, elites etc.). It is essential to pilot the UDD sanitation projects in well-frequented places (e.g. community centres). For instance, a practical approach was followed by France whereby the UDD toilets were introduced to communities through events and users were then requested to share their opinions on the system. This is significant in identifying a system that meets the needs of the users. This approach is also appropriate in creating public awareness.

An integrative approach to housing and UDD sanitation supply is recommended, where both fields are viewed as equally important issues in delivery of sustainable human settlements. It is therefore, necessary to ensure that potential users are thoroughly engaged throughout the process in order to be well informed about the UDD sanitation system.

CONCLUSION

Overall, the UDD toilets appeared not to have been accepted by the users, primary due to design aspects. The project lacked institutional support from politicians and officials at the local municipality. This could have also attributed to low acceptance of the technology. The Sol Plaatjie Housing Company then decided to convert the UDD system into the waterborne system. Therefore, it is of great significance for future research to explore the UDD system addressing the key challenges that are design-related. Operation and maintenance costs of the UDD toilets were higher than the flush toilet, thus defeating the purpose of water saving. In addition, there is a strong need for implementation of sanitation technologies that are environmentally-friendly, such as UDD toilets. Other strategies need to be explored that focus on ensuring that technical innovation should emerge from the context and not be forced onto the community. Emphasis should be put on continuous education of the public at large to the sustainability aspects of the UDD technology, so as to change perceptions about it.

REFERENCES

- Cargan, L. *Doing Social Research*. Rowman and Littlefield. Social Science, 2007
- Department of Housing. *Breaking New Ground: A comprehensive Plan for the Development of Human Settlements*. Pretoria, 2004.
- Duncker, L.C., Matsebe, G.N. and Austin, L.M. Use and acceptance of urine diversion sanitation systems in South Africa. Water Research Commission Report No 1439/06. ISBN NO 1-77005-454-5. ISBN Set No 1-00775-452-9, 2006.
- Duncker, L.C., Matsebe, G.N. and Moilwa, N. (). *The Social/Cultural Acceptability of Using Human Excreta (Faeces and Urine) for Food Production in South Africa*, 2007. EcoSanRes. The EcoSanRes Programme for Improved Livelihoods Around the World, 2008. http://www.ecosanres.org/pdf_files/ESR-factsheet-03.pdf - accessed on 12

August 2011.

- Landman, K., Ntombela, N. and Matsebe, G. Medium Density Mixed Housing Developments: an overview of International and South African policies and practices. CSIR/BE/RIS/IR/2007/0079/B. Pretoria, 2007
- Landman, K., Mmonwa, M., Matsebe, G. and du Toit, J. Medium Density Mixed Housing in South Africa: the case of Hull Street. CSIR/BE/PSS/IR/2009/0181/B, 2009
- Matsebe, G.N. Perceptions of the users of urine diversion dry (UDD) toilets in medium density mixed housing (MDMH) in Hull Street, Kimberley. Master's Thesis, University of the Witwatersrand, Johannesburg, 2011.
- Neuman, W.L. Social Research Methods: Qualitative and Quantitative Approach, 3rd Edition. Boston: Allyn & Bacon, 2003.
- Osman, A. Medium Density Mixed Housing to support sustainable human settlements. CSIR Sciencescope, Vol 5(1), September 2010.
- RWJF: Robert Wood Johnson Foundation. Qualitative Research Guidelines Project. Semi-structured Interview, 2008. <http://www.qualres.org/HomeSemi-3629.html> - accessed on 23 March 2011.
- Welman, C., Kruger, F. and Mitchell, B. Research Methodology (3rd Ed) Cape Town: Oxford University Press, 2005.
- Yin, R. K. Case Study Research: Design and Methods. Beverley Hills, Calif: Sage Publications. Fourth edition, Vol 5. Sage Publications, 2009.

ASSESSING FINANCIAL VIABILITY AND SUSTAINABILITY OF LOW-INCOME HOUSING REDEVELOPMENT SCHEMES IN MUMBAI, INDIA

Deipti M. Trilokekar

Institute for Housing and Urban Development Studies, Erasmus University, Rotterdam, Netherlands
deiptimtrilokekar@gmail.com

Abstract

Housing delivery for low income groups in Mumbai is largely done through redevelopment projects which follow a very distinct model of delivery. This model of delivery has not been very successful in the past, giving rise to gentrification over and above other housing issues. The paper identifies the composition of this model and critically studies it to reveal its financial viability and sustainability. An assessment framework is researched and developed to measure these criteria for studying this complex model. The research has identified an alternative best practice in redevelopment for low income group in Mumbai which involves a self-development approach by the community towards housing. The paper shows a comparative analysis of both the typical and the alternative model using the assessment framework to reveal their strengths and weaknesses. The study reveals that the alternative approach has a very high potential to succeed in providing solutions to affordable housing to the low income communities but also has drawbacks in terms of lack of government assistance, long period to bring about development, very few examples of community initiated projects and politically unsuitable scenario for the private sector developer lobby.

Key Words: Housing Delivery system, Low Income Group, Sustainability, Organisational Arrangement, Self-Help housing, Redevelopment Scheme.

INTRODUCTION

Delivering low-income redevelopment housing projects in the city of Mumbai has always been problematic as has been observed in the past. (Shetty, 2003; Mukhija V, 2001) To accommodate for housing demand and keep development process running in the city there have been various incentives given by the government for redevelopment. The redevelopment process involves a typical model where, on land occupied by slums or poor housing, government opens the plot to the market, gives the private developer incentive for densification on it so that the sale of the extra built-up area can be used for cross-subsidizing for housing the low income groups. This method of housing delivery has not been very successful (Mukhija 2001) for: developers who have not profited out of the projects on non- marketable property, or to the community who have not found the housing socio- economically sustainable and to the government who have not been able to unlock unmarketable lands.

The paper intends to assess a typical redevelopment housing practice and a best practice/alternative approach by using an assessment matrix measuring financial viability and sustainability of low-income housing, in Mumbai. The assessment will allow us to look at the advantages and drawbacks of both the models, hinting towards building a more sustainable and viable solution for housing the LIG.

Background of Housing for Low Income Groups in Mumbai

Post-1990, following the policies of liberalisation, the Indian government involved the private sector in delivering public services, one of them being housing. The role of the state changed from the provider to enabler even for a social welfare sector like housing. (Sivam & Karuppappan, 2002) This pulled in various city actors with varied interests within the developmental process besides the government and community. (Yogita, 2005). In the case of LIG, the government largely depends on the private sector for housing provision and delivery in return for developmental incentives. Urban housing schemes are based on two most important components: income groups of households and the floor space index concept (a development control regulation which calculates the ratio of the built-up area permissible to the area of plot).

The majority of the housing market caters to the middle income group whereas the formal low income housing is under shortage. (Monitor 2009) High percentage of LIG live in existing settlements which either need upgrading, or are under pressure of redevelopment.

Redevelopment schemes

The schemes used in Mumbai for slum rehabilitation of persons with title deeds, redevelopment of cessed buildings, rehabilitating low income groups and village settlements are similar. These schemes are formulated under the Development Control Regulations for the city, framed by the state government and the responsibility for approval and procedures are allotted to either type of the state housing bodies like MHADA, SRA and CIDCO depending upon the type and ownership. Under these schemes the model used are very typical where the existing community form a co-operative, unanimously decide for the redevelopment, or are mobilised by NGOs, approach a developer and the developer takes care of the entire process, right from vacating the land to cross-subsidising the housing units. Usually, the developer approaches the community to ask for permission to build, but if there is resistance, there are other ways used to either convince them or evict them. The policies that are followed in each case differ only in terms of the size of tenement provided, development rights (FSI), income group and involvement of separate government agencies. The financial viability of the projects from the developers' perspective will differ based on the marketability of the location, the resistance from the community and the cost recovery for capital and operational costs. Most of the redevelopment projects also have been unsuccessful for the developer due to lack of favourability of these conditions. Where projects have worked, they have fared badly for the community because they have not been sustainable for the community socio-economically. (Mukhija 2003)

Problem with the Redevelopment schemes

If we consider a low income household wanting to get affordable house, he would usually consider being a part of the redevelopment process on the same plot and get a new house in exchange for his old one without any new expenditure. (Mukhija, 2003) This process though sounds pro-community; the consequences have been just the opposite. Following are the issues that have been observed on implementation of these schemes. To incentivise the process, government relaxes the minimum areas of open spaces within the building complex to give incentive to developers to build more and gain profit. Majority of slums have small scale industries along with their residences. A minimum standard area is supposed to be provided to the community as per regulations which do not address these living-working spatial needs of the community. (CRIT, 2007).

The quality of spaces in the redeveloped buildings is very poor and infrastructural services are limited. (Vertical city, 2010). Since the developers are profit driven, they do not consider the socio-economic aspects of the community.(Mukhija 2003). Most of the times, the

maintenance of the building is not affordable by the community. Disregard to spatial needs or displacement due to the project affects the livelihoods of the community. These conditions force them to leave their newly acquired houses. (Vertical city, 2010). Knowing the fate of such projects, most of the times the community agrees for redevelopment of the property since they know that it would fetch better prices for the new asset. Therefore they succumb to the housing demand for newly built units in the market by selling them informally (Shetty, 2003). The redevelopment process leads to forced gentrification due to lack of decision making opportunity by the community in the development process.

Alternative Approach: Bharatnagar project

If we specifically look at the Bharatnagar project which the author is involved in, the project tries to experiment with an alternative approach with a change in the housing model. If the project were to be developed in a traditional way, where the developer takes the responsibility of redevelopment; the community would have to compromise on size and nature of spaces allotted, deal with the disregard to their current livelihoods, take up onus of the high maintenance of the building and face threats for them to leave the property.

But alternatively, the community has willingly taken up the responsibility of self-developing and has proposed to turn the ratio of the allowable built-up area where instead of the private developers getting 75% for sale and 25% for rehabilitation, the community; now a self-developer; would occupy 75% for rehabilitation and sell off 25% to a private developer, thereby deriving returns to fund the project. The research tries to put forth this approach as a comparison to the typical redevelopment approach and evaluates it. The research attempts to find the answer to the following question:

Is the alternative model of the Bharatnagar project the most financially viable and sustainable redevelopment model for the LIG in Mumbai?

Does it provide a more equitable development process, which is also beneficial to the inhabitants and society? Could there be improvements in the typical model as well as the alternative approach? These are some of the questions the research intends to answer.

THEORETICAL FRAMEWORK FOR ASSESSMENT Financial viability

In housing, financial viability can be calculated using cash-flow analysis where the costs incurred in the projects can be compared to the property rate generated after the construction of the units. The variables such as construction cost, transaction costs, operational funds, temporary rehabilitation, premium to state, corpus, municipal taxes, subsidy, land cost, loan amount, interest rate and professional fees are considered to calculate financial viability of any housing project.

Sustainability

The housing model could be called sustainable when the external source of help has ended and when it has stimulated self-sufficient, independent and lasting processes. (Frank 2008) The research uses the criteria for analysis of Sustainability using the framework designed by Daphne Frank in the book Sustainable Housing Finance for Low Income Groups: A Comparative Study, 2008 because the book has a framework developed for weighing sustainability in housing for low income groups internationally which corresponds to the exact requirements of the paper. The framework for research is further developed based on workshop on Project Sustainability conducted by ESPIG/IGS/IHS, authored by Aloysius Bongwa and George Wasonga in Nairobi in December, 2010 since the workshop highlights some very important factors that need to exist

for a sustainable project. Both these studies in combination reveal the most vital variables; for housing of low income groups.

ECONOMIC SUSTAINABILITY

This deals with the economic aspects which include relationships between supply and demand side partners that finance, offer loans, subsidise and support financial activities. The criteria also measure the diversity in funding sources and financial activities that continue running in the project even after the funding ends. The Funding should be ensured for long- term for similar projects. Community should get initial help from other bodies. There should be a balance between community contributions, finance from other bodies and access to loans.

Macroeconomic Situation

Macroeconomic situation is a very big factor in deciding if the housing program would work or not. Factors like economic growth, inflation rate, and political instability greatly affect the overall economic condition of a country and would affect the government funded/subsidised housing programs.

Government finance

When the government finances the program, it is strength for the housing program because then the program can operate more independently from international agendas. But the funding is a sustainable solution only if it can recover its costs from the program, through administration or market.

International Funding

The lower the international funding the better because their intervention may be for a limited time in support of the program and could lead to lack of guarantee for the program to continue for a long-term.

Families' contribution

The program is sustainable when the families contribute by saving, labour or managing project tasks. This is financially sustainable because it makes the community responsible towards their own project and when interest is localised it is a sure method of making that housing project sustainable.

Access to Loans

If loans are provided, it makes the program more sustainable because then the financial institutions share the risk with the borrower would help the program in strengthening their financial discipline without depending on government finance.

Percentage of Loan Repayment

If the loan can be repaid through the program, then the program is sustainable, otherwise, if the loan does not get repaid, the lending institution would foreclose the property of the borrower and would not continue taking further risks on such a program. This affects the sustainability of the program and hence the capacity to repay a loan needs to be checked before opening up loan facilities.

Subsidies

To start up a program and incentivise the development process, it is sometimes better to provide low subsidies either through the government or international institution. But if the program provides high subsidies for a long period through the program, there is possibility of

system breakdown as well as dependency of the receiving bodies (beneficiaries/construction sector) on those institutions forces restriction on their capacity to grow and become strong entities.

Direct delivery of subsidies to Beneficiaries

Direct subsidies reach the beneficiaries and help them directly than the subsidies given through private construction sector or other institutions because there could be manipulations at the intermediate level restricting its reach to the target group. The downside of direct delivery of subsidies is that it could bring in corruption or dependency on such a subsidy and could impede growth of the program.

Land and construction costs

If these costs are low, the program is much more sustainable, but if they are high, it could lead to building in the outskirts of the city which would impact in social segregation and community dissatisfaction. The other problem being that the high prices of the new accommodations would force or tempt the occupant to sell and leave the property, hence tending to make the program unsustainable.

INSTITUTIONAL SUSTAINABILITY

The institutional arrangement could be strong or weak depending upon the partnerships and co-operation between the main actors which include government bodies, NGOs, CBOs, Construction companies, financial institutions at the national, state, local and international scale. It will also include the diversity in collaborations and non-financial contribution towards the project after its completion. Following are the criteria which would decide the sustainability of the program.

Political support

The program is likely to be sustainable if there is a strong political support, which means that there is backing from either the local leaders, government officials or other decision makers at the community level which accelerates the processes of the program and all actors convinced about its possibility to work.

Links with the Parliament

A program that is locally articulated by the state bodies has a strong chance of support and survival if the parliament provides for political and financial support to it.

Participation of Private construction sector

The participation of private construction sector assures efficiency in delivery and hence sustainability. It also helps build the market and indirectly bring about economic growth of the city if this sector involved in the program.

Participation of Financial Institutions

Financial institutions are part of the larger economy. If there is participation of these institutions in development process, there is generation of income within the economy besides just provision of credit to the borrowers for the program.

International Cooperation

The program is more sustainable if the international participation is low. Though in some

cases, to initiate a process, it could be needed; but co-operation from international institutions could bring about dependence of the program on them financially and in decision making, which would weaken the economic and political system at the receiving end.

Participation of NGOs

NGOs are bodies which support the community at the local level and work for social-economic causes to bring about improvement in the city/nation. The participation from NGOs assures growth and hence makes the program sustainable.

Localised implementation

If the program is carried out at the local level, it is more sensitive towards the local context, where the decisions and procedures are taken as per local needs; hence it is more sustainable than a centrally managed implementation.

Provision of Technical Assistance

The program is more sustainable if technical assistance is provided to the community which could be either through government officials, NGOs, academicians or private sector professionals.

Amount of Paperwork

The higher the paperwork the more chances of bribes and more costs involved besides the time and money spent on getting them correctly completed. It reduces incentive and is a deterrent for the community or developer to undergo high paper work process; hence the program is more sustainable if the amount of paperwork involved is less.

Process speed

Faster process speed influences the entire process of development, because not only does the community get its needs fulfilled quickly, but also the effect of growth in inflation rates and rise in construction costs for the developing bodies, is avoided.

Diversity of institutional actors

If the actors involved are varied, it shows that the strength of the project would be higher due to contributions of varied skills and capacity from each actor making the program much more sustainable. What becomes critical here is the management of all the actors in the process and caution for negative participation which could ruin the program.

SOCIO-ECONOMIC SUSTAINABILITY

These deal with the social networks that exist, the extent of participation of the community in the housing activity, the economic levels of the community and the capacity to maintain good living conditions based on their income levels, affordability to maintain good housing condition, contribute non-financially towards the project and strong reasons to assure their inhabitancy after the project ends.

Decision power of the community

The most important decisions if taken by the community, the program would be more sustainable because the willingness to maintain their housing, improve it and level of satisfaction would be much higher.

Support of Self-Help Activities

The project is bound to be more sustainable if the activities are self-help in terms of funding, managing, liaisons, technical expertise, etc since it brings about responsibility and more improvement towards the project.

Improvement of Socio-Economic situation

If the program contributes towards improving living standards, creating jobs, contributing towards community development or boosting local commercial enterprises, then it contributes towards sustainability as well.

Fixed costs after construction

If taxes payable to the public institutes or the costs incurred for maintenance after the completion of the construction of the project, are low and can be easily afforded by the occupants, then the program is bound to be sustainable.

Creation of local jobs

The creation of jobs through a program is an added feature which would contribute towards the local economy and improve the local economy hence making the program more desirable and sustainable.

Location close to jobs

A housing program that manages to avoid displacement of the community and retains the proximity to their jobs is likely to be more suitable. This maintains low travel costs from home to work.

Extent of participation of community groups

The program is more sustainable if the community groups participate, social-networks are maintained and low-income groups get involved in maintaining their neighbourhood.

PHYSICAL SUSTAINABILITY

This part assesses whether the physical aspects of the housing makes it sustainable for the users. This includes the location of the building, infrastructural facilities available, the quality of construction and the quality of living spaces.

Quality of construction

At times there are possibilities that the quality of construction for low-income groups is compromised to make the project financially viable or profitable. But if the quality of construction is not satisfactory and demands higher maintenance costs, the construction would not last for long; hence it forms a very important factor in sustainability.

Non-Peripheral Locations

If the re-settlement is located in the peripheries of a city, the community would have to spend on travel costs apart from disruption of their social ties within the city. Hence non-peripheral locations are preferable to make the program sustainable.

Provision of Infrastructure and facilities

The program would be sustainable if infrastructure and facilities are provided to maintain good health conditions and good hygiene standards in the settlements. However, the provision should not be unaffordable costs for the community.

Quality of living spaces

The quality of living spaces forms a very important factor in determining sustainability of a project. If the community is forced to live in congested unit sizes, badly ventilated housing, with narrow passages and lack of open areas (parks), it is likely that the program would not sustain for long.

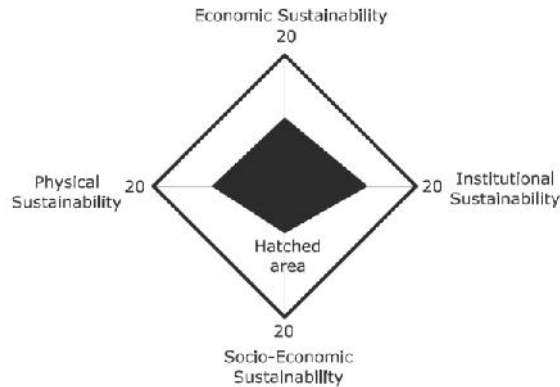


Figure 1 Radar Diagram

A radar diagram is used to determine strengths and weakness of the cases, where the hatched area indicating the score of economic, socio-economic, institutional and physical indicators of the housing model.

RESEARCH METHODOLOGY

Two case studies based on redevelopment schemes in Mumbai are chosen to be analysed. One case is a typical case and the other is an alternative case/best practice case. The variables used in the theoretical framework for measuring financial viability and sustainability are operationalized by identifying their indicators, collecting data from relevant sources and further analysing them for appropriate results. Both primary and secondary data was collected through interviews, databases, journals, policy documents and legal papers.

The Financial viability analysis consists of collecting numbers which are asked directly. For example the values to be collected from the state will include the land cost and subsidy, for community and private developer variables like revenue to the state, construction costs, operational costs, etc and for financial institutions loan amounts, rate of interest and risk factors. These variables are analysed using cash-flow analysis to derive surplus/profit and internal rate of return.

The Sustainability analysis has variables which needed in-depth interviews with a sample size of 3 from each stakeholder group. The five main stakeholder groups included community, public sector, private sector, financial institution and NGOs. A questionnaire was prepared for each stakeholder to assess all the four categories of sustainability, ie. economic, institutional, socio-economic and physical. Questions such as, 'What is the amount of paperwork involved? How has the project speed been? etc., were few questions that were asked to each stakeholder involved to

analyse institutional sustainability of the model. The judgement of the appropriate answers is based on triangulation method as well as observation. A scoring system is developed to weigh variables of higher priority over variables of low priority in each main criterion of sustainability. For example, in the main criterion Institutional sustainability; variables such as Political support or Process speed are given higher priority over International co-operation and Amount of paper work. Data collected against each of these variables is further judged based on whether it strengthens or lowers the sustainability. Based on the scores of each of the sustainability criteria, a radar diagram is made which graphically indicates the strengths and weaknesses of the model against each criterion. (Refer to fig 1)

RESEARCH FINDINGS AND ANALYSIS

CASE STUDY 1: Typical Housing Redevelopment Model

The typical housing redevelopment model as explained in the introduction, is a market-driven housing process prevailing in Mumbai, where the basic process is that the government gives an extra development right to the private developing sector in the form of FSI, generate commercial benefit from it and cross-subsidise to rehabilitate the current community on the site for free. Though legally it is allowed for a co-operative housing society to develop their project using this scheme, the process is much more difficult, lacks support and can take a longer time to process. (Mukhija 2001). The case is based at a very prime location in Mumbai where the property rates are high. To procure land the developer had to go into various illegal practices which involved transactions through black money and the figures include the inflated amount. To protect the developer and community from any penalties, I will be keeping the identity of the project unrevealed in this thesis as promised by me to them.

Financial viability

The project is highly financially viable with 27% IRR, and since it is market-oriented, the main intention is to make profit. The project includes sale of the incentive area and the calculation has taken the fixed sale amount only, although the developer could have plans of renting a part of the area, which would generate more inflow every month.

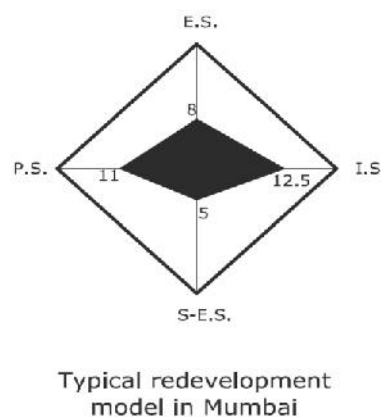


Figure 2: Radar diagram for Case 1

Economic sustainability

The reason for this category scoring low is due to high dependence on the private sector for all the responsibilities of redevelopment ranging from finance, management, land procurement, maintenance cost of the building and service provision with no diversity in funding sources at all. There is no contribution of any form from the community during and after the project, no supply-side subsidies and no international funding. This not only burdens the developer but also brings the developer at a high position of domination in the project leading to compromises on many aspects including better quality spaces. Also if due to market turbulence the developer fails to invest in redevelopment projects, the low income group would not have any subsidised housing.

Institutional sustainability

The model of this scheme was developed to satisfy all the actors directly involved in development, hence scores well. The government has institutionalised this model, developer is willing to develop it for high profits, community agrees for the model as they do not have to contribute at all and the financial institutions, though minimal, get involved in lending to the developer as well as the potential buyers of the saleable units. The diversity of the actors in the model is fair too.

Socio-Economic Sustainability

The contribution of this model towards improving the socio-economic conditions of the community is at its least because that is not one of the conscious aims of the policy. There whatsoever is no participation of the community in the development process, and hence no decision making power for fulfilling their wants toward improvement of their social knits and economic growth. There are no guarantees of the community to continue living in the arranged units, which emerges from the problem of the community being fragmented and not taking responsibility for the maintenance apart from the costs for it being unaffordable.

Physical sustainability

The profit making mechanism leads to compromise on quality of living spaces for the communities and since their own participation is not involved in the designing and planning process, they are obliged to accept lack of sufficient community spaces.

CASE STUDY 2: Alternative case, Bharatnagar

It is an alternative approach to the Typical housing redevelopment models in the city for the low income group. Due to high market value of the land, it follows similar model of redevelopment, where development rights to build for higher density are given and extra built-up area would be sold in the free market, the difference being that the community takes up the higher decisions in the redevelopment of the government land instead of the private sector. The strategy of land sharing is applied, where after getting the rights to build on the land from the state body MHADA, a part of the development rights would be sold to the private sector and the sale amount generated would be used by the community to build their own accommodations on the same property. The community participation in this case is the beginning as well as an end-product.

The community gets help from the NGO in terms of planning, design and technical expertise. The community initiates the land procurement process with the help of NGOs and makes space for negotiations with the government on decisions of premiums as per the regulations of the scheme. Then it negotiates with the private construction company that would be interested in

purchasing from them the newly acquired development rights. It also proposes for the same company to construct the community residential building and recover the construction costs from part of the sale amount that they gain from the same company for selling the development rights. The architect and technical team is decided by the community, which is the NGO that has been supporting the community in this process. The architectural design and type of living spaces is decided by community by negotiating with the hired architects.

Financial Viability

The Bharatnagar model, is a mixed/hybrid of self-help approach and market-oriented approach. The IRR is 35%. Since there is component of attracting the market to cross-subsidise the project through high demand land, the project becomes highly financially viable. Since the NGOs have given technical help to the project, the costs on expertise have been very minimal.

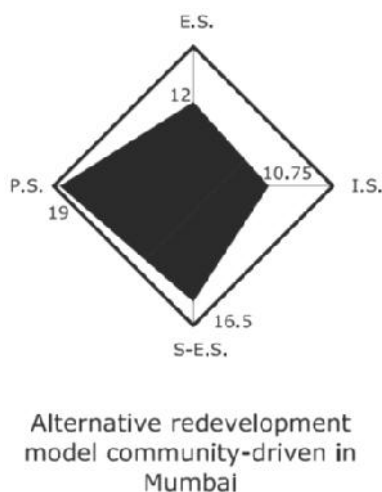


Figure 3: Radar diagram for Case 2

Economic Sustainability

The real estate in Mumbai has been going through very little fluctuations and though the prices are highly inflated, real estate development forms a high investment sector generating maximum revenue. Although the project is market-oriented, it is also equally community-driven and there is financial strength shown by the community in terms of their savings and financial management. The land is provided by the state in return for agreement of compensation from the community. Sustainable high property rates, private sector interest, community interest and government provision of land are all factors that contribute towards economic sustainability.

Institutional Sustainability

The approach has not yet been institutionalised, but got support from the state housing body. Diverse actors get involved in the process like the state, the private construction sector, politically strong and technically sound NGOs and more importantly the community, but the financial institutional support for the project is minimal. The government still continues to play the role of the facilitator and hence there have been no special treatment to create a space for negotiations and speed the process of development for a community-approach. There will have to be many more additions to the system to lure more such approaches and to make it more

institutionally sustainable.

Socio-Economic Sustainability

The decision power rests with the community and they are not only participative but they control and drive the entire process of development. Their aim of improving their standard of living through the project drives them into participating at every level of planning, design and property related negotiations. There are possibilities of having self-generating finance even after completion of the project. Besides permanent housing, temporary rehabilitation also will take place on the same site.

Physical Sustainability

The selection of Construction Company as per their quality in construction would be taken by the community with help from the NGOs, to assure good quality construction. The site planning and design also is decided by the community's co-ordination with the NGO-CRIT whose main focus is about designing for better quality spaces.

SUSTAINABILITY ANALYSIS FINDINGS

In terms of economic sustainability, the alternative approach case study shows high economic sustainability due to noticeable pressure and response from community, government, NGO and the market dynamics. The typical case scores poorly either due to high government provided subsidy, dependence on markets to drive the project, domination of only one actor over the others or high dependence on informal finance production.

The institutional sustainability of both the projects is more or less average. This is a case because the programs selected have a sufficient participation from all different kinds of actors. The typical case is less experimental and follow the government schemes stringently, scores higher since the governments' efforts are already institutionalized.

The socio-economic sustainability is highest in the case of Alternative re-development case. The reason being, that the community in all these cases is the decision-making entity. They play an important role in their self-development process. But in the typical case, the social-knits of the community are affected due to displacement of housing of the communities towards the periphery making travel costs to work unaffordable; also, no participation from the community affects economic growth too.

The physical sustainability in the case of the Alternative redevelopment case scores exceptionally high because the community is involved in the main decisions in the quality of construction and quality of spaces along with their technical experts and their wants are supported by the market too, hence it is effective. Even the location of resettlement is the site itself. In the Typical redevelopment case, the private developers compromise on the space and quality of construction, sometimes on location of resettlement too, for gaining maximum profit.

CONCLUSION

The findings reveal that the alternative model is more financially viable than the typical redevelopment model used in the city. The financial analysis is done without considering the free sale rental component which might generate more income in the typical model case for

the developer than the one in the alternative approach because more of the commercial component is constructed and sold in the first case. Since there is technical assistance from the NGO at subsidised rates, the project tends to benefit more than the developers' expenses on fees for technical purposes to architects, lawyers and other consultants that do not differentiate their fees for low income housing from other projects. The IRR for the Alternative self-development model is 35% whereas for Typical redevelopment model situated in the same location it is 25%. In the typical redevelopment model, the developer is dominant with high profits generated by him in the housing process. Even though the units are free for the community and where community does not take part in the business of the project, it suffers from displacement of their locations or very bad quality spaces, which they usually sell formally or informally in the market and move out. Hence eventually there is no gain for the community.

In the Alternative approach case, even though the community is the main decision maker, the project is viable for all the actors. Premium is paid to the state after negotiations, private construction company gets benefits from the sale land and community gets surplus amount after selling part of the development rights to the private sector. NGOs currently subsidise their services but after strengthening the model and with institutionalisation, might increase their fees. But overall the model is a win-win situation financially to all actors involved. The analysis of sustainability for Bharatnagar model revealed that the system of integrated mix of community empowerment, government assistance, NGO help and strong market component makes it the most sustainable approach than the typical model. The economic, institutional, socio-economic and mainly physical sustainability scored relatively well and suggested that this composition of housing delivery would be suitable for the city. With involvement of the community towards taking larger decisions of the development process, the sustainability of the program increases because the responsibility of maintenance and further community growth will be smoothly taken care of by the community. Government participation to support the community's decisions is a crucial factor because they help them in providing good quality housing, besides helping in negotiating with the government. The involvement of the market sector for the project makes it complete due to effective standards being met apart from generating income from sale of development rights. The only factor that went missing was the political turmoil that would be created if the project is instantly institutionalized. The dependence of a very large lobby of politicians and developers on the existing system would create objections to the alternative approach. The typical redevelopment model scored less in almost all aspects of sustainability. The developer lobby dominating development process, high dependence on market, with lack of government's active participation and no involvement from the user community, makes the scheme extremely unsustainable.

Apart from the advantages of the model there are likely to be disadvantages too. There are possibilities that after being granted development rights to the land, the community could sell off the property to the private developer or construct the building and then sell and move away to find less expensive accommodations in the city. Hence in the process though the community would get participation in the development, there are chances of reducing its role merely as business profit making actors through business and misuse their development privileges as low income groups. This model is one of its kinds and would require more such initiatives from community groups to make formal space of negotiations with the institutional system of housing delivery. Due to high market value of their land, this project was actively taken by the community for development. But in places where there are badly managed settlements or slums and the community is passive in initiating improvements, the government may have no option but to use the threat of eviction as a condition if groups do not

approach for improvement. This although is a negative way to mobilize the communities, it brings homogeneity in their decisions for development.

RECOMMENDATION

If the alternative case is treated as a pilot project in Mumbai, it will have to go a long way to form a product out of it which would be acceptable by all the stakeholders and actors involved. To even out the advantages and disadvantages of the Alternative self-development model and improve it more, further are some suggestions that are made. These suggestions are directly through the study as well as insights from interviews with the main actors during the field trip.

Housing Approach

There needs to be a balance maintained in market oriented approaches to check that not only low income groups dwelling on high property lands are developed and the others ignored. The proposal of a 'Collaborative approach', rather than a 'Community-driven' approach needs to be focused on.

Organizational arrangement

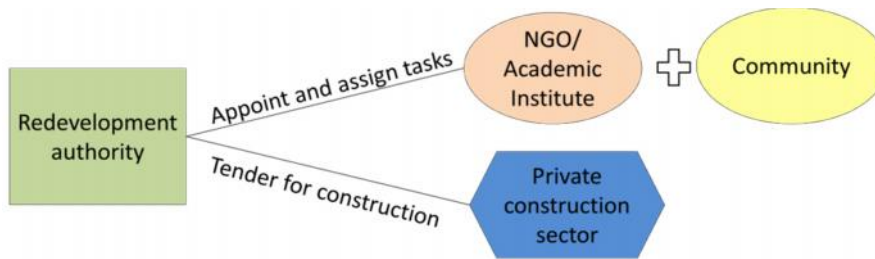
The market oriented approaches could be used only for parts of the project as shown in the alternative model, but this negotiation of the community and the private sector should have a fixed range and should be supervised by the public sector institutes at the local level. Community should not be seen as a weak segment of the society but should be considered a powerful entity by themselves as well as other actors and NGOs should play a role in empowering the community. NGO support should be higher to mobilize maximum communities and turn their attention towards the lack of improvement that exists in the current redevelopment model. The government should play a higher role in dealing with redevelopment projects at the local level to assure good quality spaces, restrict greediness of the private sector and the community and control private sector domination in the process.

Housing Finance system

There should be a better product derived from the given case study which allows for the community to borrow from the bank with group loans for construction purposes, where the government body could be the guarantor. The government subsidies could be provided when initiatives are taken by the community in forming groups, maintaining saving portfolios and developing business plan. These subsidies should not only be in the form of development rights as it exists today, because the advantage of the additional space is minimal and it adds on to high densification in the city which leads to scarcity in infrastructure provision.

Process

Single window and faster approvals for community approached projects could form a way of institutionalizing community group effort. The architectural and design academic institutes should, in their syllabus include slum improvement and redevelopment proposal designs where creative ideas will be generated and at times the academic institutes could also be the appointed to be a part of the development teams of the actual project. The figure 4 shows the stage wise intervention that could take place if the approach is a collaborative one.



STAGES OF REDEVELOPMENT IN HOUSING

I- SURVEY	II- DESIGN	III-CONSTRUCTION	IV-ASSEMENT
<ul style="list-style-type: none"> • Survey of land • Survey of structures/units • Mobilising community(con-cent) • Identification process. 	<ul style="list-style-type: none"> • Participatory design process 	<ul style="list-style-type: none"> • Construction process monitored by authority and architects and NGO. 	<ul style="list-style-type: none"> • To check if the delivery is satisfactory or not.

Figure 4 : Suggested structure of development process

In this figure, the development process for housing redevelopment of low-income and economically weaker section is shown. The organizational arrangement is such that the development authority takes more responsibility at the local level and appoints for NGOs and Architects on the land procured for redevelopment (usually government lands).

Stage I: The NGOs and academic institute/ architectural firms are appointed the tasks of surveying the land, plot limits, area and tenements on the property. In this process the community would be mobilized by the NGO into the formation of co-operative societies and made a part of the team such that they contribute actively towards the survey.

Stage I: The design process would involve the active participation of the architects and the community in deciding on the possible typologies for the site and integrating the living and working patterns of the existing communities within the design.

Stage III: Simultaneously the tender for the construction of the property will be floated by the authority, in which the best bidder will be selected and assigned the work of construction as well as negotiating for the extra area to be capitalized. The design process, with the collaborative efforts by the team architects and the construction company will be worked out for implementation. The construction process could be monitored by the NGOs and the authority officials.

Stage IV: The assessment of the project will take place after a period of few months to access whether the development process has impacted the community positively, does it still have loop-holes, whether the delivery of services and their maintenance is managed by the community

Scope for further research

The research has been oriented towards studying more about community self-development model for the city, which in the process also covered market oriented approaches. The research can be continued to explore more collaborative approaches by all actors and check

its strengths and weaknesses. The housing models identified, can be imagined in another study site and simulated to generate patterns of impact due to different context of macroeconomic situations, cultural behaviors of community, market behaviors, etc. This would make the research specific and would also articulate the conditions in which the housing delivery takes place.

REFERENCES

- Arnstein, S 1967, 'A Ladder of Citizen Participation', Journal of the American Institute of Planners, vol 35, no. 4, pp. 216-224.
- Balaji, V & Rajmanohar, T 2008, Housing Sector in India: Issues, Opportunities, Challenges, The Iefai University Press.
- Bongwa, A & Wasonga, G 2010, 'Operationalising city development strategies: Project Sustainability Management', ESPIG/IGS/IHS Workshop, Nairobi.
- C.K.Pralhad 2006, Fortune at the Bottom of the Pyramids: Eradicating poverty through profit, Wharton school publishing, Pennsylvania.
- Cain, A April 2007, 'Housing microfinance in post-conflict Angola. Overcoming socioeconomic exclusion through land tenure and access to credit', Environment and Urbanisation.
- CensusofIndia 2010, India online, viewed 4 June 2011, < [HYPERLINK "file:///E:/MSc/Thesis/www.indiaonlinepages.com/population/mumbai-population.html"](file:///E:/MSc/Thesis/www.indiaonlinepages.com/population/mumbai-population.html) www.indiaonlinepages.com/population/mumbai-population.html >.
- CIDCO 2011, City and Industrial development corporation of Maharashtra Ltd., viewed 3 June 2011, < [HYPERLINK "file:///E:/MSc/Thesis/www.cidcoindia.com/cidco/formationofcidco1.aspx"](file:///E:/MSc/Thesis/www.cidcoindia.com/cidco/formationofcidco1.aspx) www.cidcoindia.com/cidco/formationofcidco1.aspx >.
- Coit, K 1994, 'Self-Help Housing for the Poor: A cross-cultural study', Cities, vol 11, no. 2, pp. 115-124.
- CRIT 2007, 'Housing typologies in Mumbai', Collective research and initiatives trust, Mumbai.
- Daemen, H 2011, 'Government to Governance: Even in the times of Crisis', Erasmus University, IHS, Rotterdam.
- Daphnis, F & Ferguson, B 2004, Housing Microfinance- A guide to Practice, Kumarian Press, Bloomfield, CT, USA.
- Edifice 2006, Repairs and Maintenance funds, viewed 12 August 2011, < [HYPERLINK "http://www.buildingmaintenance.co.in/repairfunds.html"](http://www.buildingmaintenance.co.in/repairfunds.html) http://www.buildingmaintenance.co.in/repairfunds.html >.
- Frank, D 2008, Sustainable Housing Finance for Low-Income Groups: A Comparative Study, Nomos Verlagsgesellschaft, Munich.
- GlobalPropertyGuide 2008, , viewed 25 February 2011, < [HYPERLINK "http://www.globalpropertyguide.com/investment-analysis/Most-expensive-cities-in-2008"](http://www.globalpropertyguide.com/investment-analysis/Most-expensive-cities-in-2008) http://www.globalpropertyguide.com/investment-analysis/Most-expensive-cities-in-2008 >.
- IFMR, I 2007, 'A report on Low Income Housing in India: Challenges and Opportunities for Microfinance', Habitat for Humanity India, Chennai.
- IHS.a 2011, 'Housing Development and Strategies', Institute of Housing and Urban Development Studies, Rotterdam.
- IHS.b 2010, 'Economic and Financial Analysis', Institute for Housing and Urban Development Studies, Rotterdam.
- IHSd 2011, 'Urban Infrastructure and Finance'. IHS.e 2010, 'UAE Housing Strategy'.

- MCGM 2011, Municipal Corporation of Greater Mumbai, viewed 3 June 2011, < HYPERLINK "file:///E:\\MSc\\Thesis\\www.mcg.gov.in" www.mcg.gov.in >.
- Ministry of Urban development, GOI 2011, Ministry of Urban development, viewed 2 June 2011, < HYPERLINK "file:///E:\\MSc\\Thesis\\www.urbanindia.nic.in\\the%20ministry\\ministry_page.htm" www.urbanindia.nic.in/the_ministry/ministry_page.htm >.
- Mitlin, D 2007, 'Finance for low-income housing and community development', Environment and Urbanisation, vol 19, no. no.2 , pp. 331-336.
- MMRDA 2011, Mumbai Metropolitan region development authority, viewed 3 June 2011, < HYPERLINK "file:///E:\\MSc\\Thesis\\202.71.136.179\\mmrda\\index.html" 202.71.136.179/mmrda/index.html >.
- Monitor, G 2009, 'Market based experiences in Low-income housing in India', Presentation to the Workshop on Housing Finance, Jakarta.
- Mugambe, P 2009, 'Access to Housing Finance by Urban Middle-low Income Salary Earners in Kampala City, Uganda.', IHS, Rotterdam.
- Mukhija, V 2001, 'Enabling Slum Redevelopment in Mumbai:Policy Paradox in Practice', Department of Urban Planning, UCLA, California.
- Mukhija, V 2003, Squatters as developers.
- Mukhija, V 2003, Squatters as developers?Slum redevelopment in Mumbai, Ashgate, Aldershot.
- Mukhija, V 2004, 'How is housing financed?The case of groups of tenements who became property developers in Mumbai, India', Dept. of Urban Planning,School of Public policy and Social research, Los Angeles.
- Muller, A & Mitlin, D 2007, 'Securing inclusion: Strategies for community empowerment and state redistribution.', Environment and Urbanisation, pp. 425-439.
- Nallathiga, R 2005, 'Impacts of density regulation on cities and markets: evidence from Mumbai', International Journal of Regulation and Governanace, pp. 13-39.
- Nenova, T 2010, Expanding Housing finance to underserved in South Asia. Market Review and forward agenda, The World Bank, Washington.
- Ostrom, E & Hess, C 2007, Understanding Knowledge as a Commons: From theory to Practice, 2007th edn, MIT Press, Cambridge.
- Platteau, J-P & Gaspart, F 2003, 'The Risk of Resource Misappropriation in community driven development', World Development, pp. 1687-1703.
- Prahalad, CK 2010, Fortune at the Bottom of the Pyramid, Pearson Education Inc., New Jersey.
- Renaud, B 1998, 'The Financing of social Housing in Integrating Financial Markets: aview from Developing Countries', Urban cities, vol 36, no. 4, pp. 755-773.
- Richardson & Tim 1996, 'Foucauldian discourse:Power and Truth in Urban and regional policy making', European planning studies, Vol.4 Issue 3, pp. 279, 14.
- Shetty, P 2003, 'Gossip and the city: Investigations into urban information systems', UMC 9 Thesis, Institute of Housing and Urban development Studies, Rotterdam.
- Sivam, A & Karuppanan, 2002, 'Role of state and market in housing delivery for low-income groups in India', Journal of Housing and the Built Environment, p. 69-88.
- Skinner, R November 1984, 'Community Participation in Third World Housing: Potential and Constraint', Cities, pp. 564-574.
- SRA 2011, SRA responsibilities, viewed June 2011, < HYPERLINK "file:///E:\\MSc\\Thesis\\www.sra.gov.in\\htmlpages\\Responsibilities.htm" www.sra.gov.in/htmlpages/Responsibilities.htm >.
- Stein, A 1991, 'A Critical Review of the Main Approaches to Self-Help Housing programmes', Dissertation, Development Planning Unit, University College , London.
- Stout, M 2009, 'Climbing the Ladder of Participation: Establishing local policies for

- Participatory Practice.', *Public Administration and Management*, vol 15, pp. 46-97.
- Turner, J 1978, 'Housing in three Dimensions: Terms of reference for housing question redefined', *World Development*, pp. 1135-1145.
- Turner, J 1986, 'Future Directions in Housing Policies', *Habitat International*, vol 10, no. 3, pp. 7-25.
- UN-Habitat 2005, 'Financing for Social and Rental Housing', *Financing Urban Shelter: Global report on Human Settlements*, pp. 87-97.
- UN-HABITAT 2008, 'Housing Finance Mechanisms in India', *United Nations Human Settlements Programme 2008*, Nairobi.
- Vertical city 2010, CD, *Public Service Broadcasting Trust Presentation*, Prasar Bharati, Mumbai, India. Direction by Avijit Mukul Kishore.
- Walgate, R 2002, *Bulletin of the World Health Organisation*, viewed 27 February 2011, < HYPERLINK "<http://www.scielosp.org/pdf/bwho/v80n8/v80n8a16.pdf>" <http://www.scielosp.org/pdf/bwho/v80n8/v80n8a16.pdf> >.
- Welsh, S & Bongwa, A 2005, 'Glossary of basic terms used in housing finance', Rotterdam.
- WorldBank 1991, 'Housing: Enabling Markets to Work.', A World Bank Policy paper with
 Technical Supplements, World Bank, Washington DC.
- Yin, RK 2003, 'Case Study Research: Design and Methods', Sage.
- Yogita 2005, 'Politics of Urban Development', KRVIA fellowship program, Mumbai.

REFLECTING ON THE LEARNING CENTRE REQUIREMENTS OF SOCIAL URBAN HOUSING PROJECTS IN JOHANNESBURG

Andrew Gill
University of Johannesburg
South Africa

Robyn van Ryneveld
University of Johannesburg, South Africa
robynblaze1@yahoo.com

Abstract

This paper reflects on an interior design study conducted on the afterschool learning centres established by 'Makhulong A Matala' the community development wing of the Johannesburg Housing Company (JHC). Makhulong A Matala's function is to address community development needs and other social support services. Currently there are seven learning centres housed within the JHC's buildings which are dispersed across the Johannesburg CBD. These centres target learners from grades 1-7 and are meant to offer educational and play opportunities in a safe and structured environment for the children of the residents. The aim of the study was to identify the common flaws pertaining to the spaces currently housing the learning centres and to develop a design solution for alternative spaces that would address the shortcomings and present a more sustainable option. The critical design issues that needed to be addressed were identified as: the need to create environments that are conducive for teaching and learning purposes, resolve the current spatial constraints and variable user needs presented at each site, and specifically the need to change the perception of the residents in order to increase their participation.

Keywords: Interior design, teaching and learning environments, modular design, social housing support services.

INTRODUCTION

Perpetuated by the ever-growing evidence that there are direct links between the physical environment and the teaching and learning process, and in turn children's cognitive development (Slavin, 1991; Hutchingson, 2003; Inong, 2009; Pick, 2008), the 'learning environment' has become an important space for the implementation of human-centred design. This approach supports the transformation of learning by considering the needs of learners and educators alike. The current Johannesburg Housing Company's (JHC) learning centres provided an ideal opportunity to investigate this proposition from an interior design point of view. The spaces currently used for the learning centres differ greatly due to the varying spatial arrangements of each of the respective buildings in which the learning centres are housed. The study therefore aims to present a new design solution proposing the relocation of the learning centres, that could feasibly be implemented at the majority of JHC building sites and be flexible enough to address the varying user-needs specific to each site.

RESEARCH POSITIONING AND PROCESS

In this paper 'design' will be considered as a solution to a problem and in order to accept a design as a reasonable solution to a problem it becomes of utmost importance to first clearly define the problem (Häggström, 2008:153). The research methods typically used for this type of interior design research and development study are often positioned in an interpretive paradigm which is described as "a qualitative methodological approach [such as phenomenology, ethnography, and hermeneutics], and is characterized by a belief in a socially constructed, subjectively-based reality, one that is influenced by culture and history" (O'Brien, 1998).

It could be argued that a study of this nature would fall within the context of human geography if one were to accept its definitions as being; the manner in which place, space and environment are subsequently formed as result of human activities, and the resulting relationship between humans and their surrounding physical environment (Gregory, Johnston, Pratt, Watts & Whatmore, 2009:350). In order to understand environmental design problems generated by this phenomenon it becomes epistemologically critical to determine empirically why they are happening. According to Tannen (2009) quantitative methods used alone may provide scientific credibility, but may not account for the specifics of the particular situation. Conversely qualitative methods can be performed contextually, and provide deeper detail and relevance, even if not as scientifically rigorous. Therefore multiple research methods are recommended, with a balance of quantitative studies, qualitative interviews and/or surveys and personal observation said to offer 'best value' for designers. The initial research question to be asked was; why are the JHC's learning centres not functioning to their full potential? The interpretation of the research data collected will therefore respond to the 'why' which requires of the researcher to develop causal explanations to that particular phenomenon (De Vaus, 2001:2). The data collected can also be compared to selective theories regarding social and built environmental issues to further define the problem. The research findings will be interpreted by the researcher (who now takes on the role of the designer) into a set of context specific design considerations/criteria on which to develop a design solution.

BACKGROUND TO THE SOCIAL DEVELOPMENT OF THE JOHANNESBURG HOUSING COMPANY

The JHC was launched in 1995 in an attempt to meet the growing demand for social housing in the inner city of Johannesburg (About the Johannesburg ..., [sa]). The JHC currently owns and administers 27 buildings in Johannesburg offering social housing accommodation within the city (JHC annual report, 2010: 48), where according to Wilson (2000:4) "Social housing aims at the creation of sustainable habitats supported by all basic amenities that sustain human activities such as living, working, learning, relaxing, caring, etc" To date, 9000 individuals on a low to middle income bracket have benefitted from the JHC social housing programme (About the Johannesburg Housing Company, [sa]).

The JHC believes that the only way to provide sustainable housing solutions is through community development programmes which serve the individuals that constitute the need for such housing solutions and therefore they emphasise the importance of integrating community development with client service management (Relationship between the landlord..., 2008:17). 'Makhulong a Matala' meaning 'Greener Pastures' was established in 2004 as the JHC's community development wing. It was formed to solely address the needs

that arise as a result of the social housing within the JHC programme and it has contributed significantly to meeting the varied social demands that arise as a result of communal living. 'Makhulong a Matala' focuses on activities which could have a fundamental and long term impact on the growth of communities in and around the JHC buildings. (Makhulong a Matala, [sa]). The Learning Centres for grades 1-7 are one of their core programmes.

THE RESEARCH METHODS USED

In order to collect the necessary data for the study, interviews were conducted with a representative from 'Makhulong a Matala', a representative from Social Innovations (an external educational development programme consultancy), and the community development facilitators at all the seven learning centres. Site surveys were conducted at all the learning centres. Case studies were conducted on similar existing learning environments, existing literature regarding teaching and learning environments and statistical data were analysed in order to draw conclusions relating to the current underperformance of the learning centres.

SUMMARY OF RESEARCH FINDINGS Attendance and parental support

At the time of the study there were seven learning centres spread across the 27 JHC buildings namely; Tribunal Gardens, Carr Gardens and Brickfields in the Newtown area, Rondebosch and Gaelic Mansions in Hillbrow, Douglas Rooms in Troyeville, and Elangini Gardens in Marshalltown. JHC statistics (2011/0512) reveal that 25.3% of all tenants living in the JHC buildings are children (18 years and younger) and belong predominantly to the household structure types of nuclear families (32.7%) and single parent households (16.9%). These two household structures account for nearly half of all tenants residing in all of the JHC's buildings. The average age of the resident children is given as eight years old and 46.8 % of children are of a pre-school age. These statistics reinforce the need for the services offered at the learning centres.

The research revealed that less than ten percent of tenants living in buildings with learning centres (which contain 1504 units in total) are attending the homework programmes. This figure also includes children coming from other buildings that do not have their own learning centres. It is this disproportionate attendance of children that is seen as the biggest flaw regarding the success and ultimate sustainability of the learning centres, as the "need for these centres manifests in the form of learner attendance" (JHC 2009 Annual report2, 2009:24) and therefore their success is directly linked to number of learners in attendance and it is also the learners in attendance who define the need for these spaces. The representative from Social Innovations, suggests that "The response of the learners and their parents also needs to be considered as a measure of success of the learning centres" (Liaison with Social Innovations, 2011) and can be determined by those parents that pay the minimal attendance fee. Currently only about one third of the learners who are attending are paying fees and five of the seven centres receive no fees payment at all. The reasons given being that parents either do not want to pay the fees or cannot afford to pay the fees, and also a general lack of interest by both parents and learners.

As 'Makhulong a Matala' functions as a non-profit organisation they rely heavily on these fees and other donations for the upkeep and further development of the learning centres. Other expenses incurred by Makhulong a Matala' include paying the JHC itself for the rental of the spaces and payment for tutor managers and tutors. This lack of payment of fees has contributed significantly to the unsustainability of the learning centres, which on the whole

lack the basic resources to facilitate the growth of learners who attend the after school programme (Liaison with Makhulong a Matala, 2011). Another reasons given for lack of payment by parents is described as a misunderstanding by the tenants who mistakenly consider the JHC and not 'Makhulong a Matala' as the service provider and therefore feel that the learning centre service should be freely provided (Liaison with Makhulong a Matala, 2011).

GENERAL SUMMARY OF THE CONDITION OF THE LEARNING CENTRE INTERIORS AS OBSERVED

The average number of learners in attendance ranges from a minimum of 15 and a maximum of 30. The majority of the learners fall within the target age of 7-12 with the exception of Rondebosh learning centre which accommodates children up to 16 years of age. The vast majority of learners reside in the buildings in which the learning centres are housed.

The spaces used for the learning centres are dependent on the spatial context of the buildings in which they are situated and vary accordingly, ranging from a prefabricated structure to the conversion of a previously rented housing unit. The spaces are also often used for other non-educational purposes. The spaces range in size from 18m² to 176m² and are considered by the community development facilitators as generally suitable in terms of size with the exception of Bonvista learning centre (24m²) which is inadequate and confined for the number of learners regularly attending.

In general the choice of furniture was considered by the facilitators as functionally suitable, although in short supply for the amount of learners who required seating. Much of the furniture was in disrepair indicating a lack of maintenance. The condition of the flooring varied according to the different types of floor finishes used. In most instances wear and tear was evident and in two cases the floor covering was excessively damaged due to water seepage. The lighting in the centres was described as sufficient by the facilitators with the majority making use of natural lighting. In the cases where artificial lighting was used, this was due to a shortage of windows or windows that had been permanently covered for security reasons. The facilitators either open the windows or doors to allow for air circulation and temperature regulation. Only one centre is fitted with an air-conditioner, which at the time of the site survey was out of order. All the learning centre environments were described as cold and uncomfortable during the winter months.

More than half the centres do not have their own toilet facilities requiring of the learners to either make use of their private home toilets or use shared facilities. In cases where the centres do have their own toilets they are either insufficient in size or aesthetically unpleasant from lack of appropriate finishes. Despite the intention for all learning centres to have computers the majority do not, which could possibly be attributed to a lack of funds. The facilitator at Bonvista felt that this caused the learners to go elsewhere for internet and other computer-related tasks which compromised their safety. The initial intention was for all centres to have computers. Those that do have experience a problem with insufficient power supply points. These findings support the spatial constraints that were identified by Social Innovations (Liaison with Social Innovations, 2011) and were described as:

- The current spaces cannot be defined as interactive or stimulating for the overall development of the learners.
- The biggest problem with the spaces is a lack of structure and organisation (The lack

- of an appropriate storage system was particularly evident during the site surveys).
- Many of the spaces are far too small without the possibility for expansion due to the spatial constraints of the buildings.
- The current designs (of the spaces) cannot be described as effective or beneficial to the learners.

INTERPRETING RESEARCH DATA INTO A DESIGN SOLUTION

Once the critical problems are identified, design decisions still need to be substantiated in order for the design solution to be convincing (Häggström, 2008:153). This is achieved by consulting related research and theory and existing case studies. The problems identified through the research are often interrelated; therefore the optimum design decisions are made to simultaneously address multiple problems as illustrated in the table below.

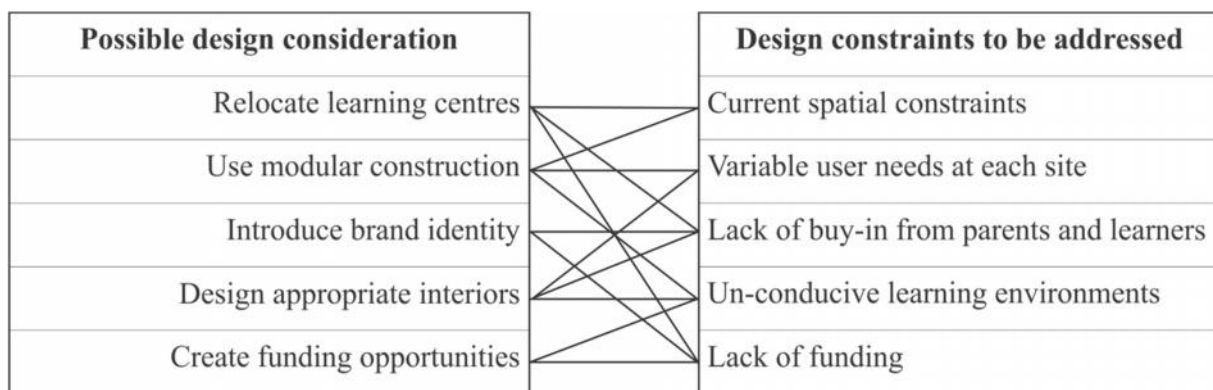


Figure 1: Interrelatedness of design problems and solutions.

Relocating learning centres

Currently many of the learning centres are not ideally located within their respective buildings for a variety of reasons. For example; the centre at Douglas Rooms is a converted housing unit on the second floor and is indistinguishable from the other housing units. The existing layout functions as an ideal ‘bachelor’ unit resulting in a space that is cramped and inadequate as a learning centre. The learning centre at Bonvista Mansions is a confined space situated near the entrance of the building on the ground floor adjacent to a main road. In this position it is subjected to a number of constant distractions from both the internal and external building environment. At Tribunal Gardens a prefabricated structure is used as a learning centre due to the shortage of available sheltered space for tenant-related activities. It is situated at the congested entrance to the complex. This was done intentionally as a marketing strategy despite the availability of more suitable locations on site. The centre would benefit from being removed from the busy pedestrian and vehicular traffic flow, make better use of northern sunlight and be closer to more extensive outdoor play areas.

Considering modular construction

Modular building construction is said to provide an innovative building solution for the provision of additional educational spaces where financial resources are somewhat limited (Attrell, 2011). The production of prefabricated modular classrooms involves a series of factory controlled processes and assembly line production techniques, and can deliver safe, durable, cost-effective, sustainable solutions meeting or exceeding all applicable building codes (Hardiman, 2011). The growing demand for innovative yet sustainable classrooms to meet the ever expanding nature of classroom sizes under consistent financial constraints has led to a

number of significant advancements in the modular construction industry.

A modular approach could offer flexibility of spatial arrangement for improved space planning and would resolve the variable spatial constraints at each of the JHC learning centres. Associated benefits would be: Improved indoor air quality, better thermal comfort, (Hardiman, 2011) and 'economy of scale' implying that that a repetition of prefabricated units leads to considerable reduction in production costs (Rogan, Lawson, Bates-Brkljac, 2000: 10). This approach may also support the option of relocating the learning centres to more suitable locations.

Introducing brand identity

Branding is considered immensely important when providing any type of service or product to a respective client and may ultimately determine the overall success of a service or product (Healey, 2008:10). Healey (2008:10) presents the following benefits that can be achieved through proper branding: "Reinforce a good reputation, encourage loyalty, assure quality, convey perception of greater worth and grant the buyer a sense of affirmation and entry into an imaginary community of shared values". If the JHC learning centres were to be appropriately rebranded it may be possible to resolve some of the tenant's negative perceptions surrounding the learning centres forming part of the JHC. In turn the tenants may begin to understand the worth of the service being offered, take on a sense of ownership and become encouraged to pay the allocated fees.

According to Henry Beer (in Trulove, Sprague, Colony, 2000:39) the process of establishing a unique identity for the learning centres would not only incorporate the implementation of two dimensional branded signage, but this brand 'language' should also be carried through into the interior design. In other words, in order to create a strong, consistent visual message to both JHC tenants and learners respectively, the identity of the learning centres should be 'embedded' in the design of both exterior and interior of the proposed new structures.

Designing appropriate learning environments

Throughout their development children experience rapid physical, cognitive and social development which are not only interrelated but are also largely affected by the environment in which they grow up (Slavin, 1991:58). The ideal learning environment should provide an engaging yet stimulating space that enables learners to fully explore and experience the world that surrounds them. Similarly, these spaces should be safe as well as aid the overall cognitive development of children who inhabit the space (Pick, 2008:3). The proposed learning centres will cater for children in both the 'preoperational' (2-7 years) and 'concrete operational' (7-11 years) stages of cognitive development as described by Jean Piaget the Swiss development psychologist (Cockroft, 2002:180-189).

Various authors (Bridgman, 1989; Pick, 2008; Slavin, 1991; Engelbrecht, 2003) concur that ideal teaching environments should encourage children to engage in childlike activities and holistically stimulate the senses and that it is imperative for the physical, cognitive and socio-emotional development of children. Therefore the design of these spaces should:

- Encourage the process of exploration.
- Offer a richness of texture and colour.
- Promote learning through play with appropriate apparatus and learning materials
- Provide areas that promote the investigation of balance and scale through a play on height and changing floor levels.

- Be zoned for various activities to provide intimate, open and general areas.
- That the zones have contrasting floor finishes, both soft and hard to accommodate the different activities provide in each area.

Creating funding opportunities

The repositioning of the learning centres into more 'visible' locations could provide an opportunity to create rentable advertising hording surfaces. "Advertising is prevalent in consumerist driven economies, contributes to healthy competition and plays a role of informing the consumer about products and services" and it is said that "The outdoor advertising industry... serves as a source of revenue for local authorities and other institutions" (Benefits of outdoor advertising and signs, [sa]). Therefore any revenue generated from 'selling' advertising space could be used to contribute towards the economic sustainability of the learning centres.

Additional design considerations

Three further criteria were identified by Social Innovations in order to ensure functionality of the learning centres (Liaison with Social Innovations, 2011). These were:

- That the space should be dedicated entirely for the function of a learning centre as this will prevent the rearrangement of furniture within the spaces and will ultimately instil a sense of ownership and pride amongst the parents and learners that pay for the service.
- To encourage a sense of order, structure and predictability in the operation of the learning centres. A consistency of use will allow the learners to gain a familiar understanding of how the space should function.
- That the learners should be divided into intermediate and foundation phase respectively and there should be a library as well as an area for independent study.
- In addition a number of significant design criteria were identified through the case studies conducted which could be incorporated into the interior design of the learning centres and serve as guidelines for other similar installations.
- Large open-plan age-specific spaces help to promote flexibility within the space as furniture can be set aside or stored to allow for alternative use of the space.
- The space should cater for the unique development of each respective age group.
- Storage and task lighting should be provided in all areas used by staff and learners.
- Provide a multifunctional space that can be used for a number of alternative functions.
- The physical space should serve as a teaching aid for children and be rich in patterns, colours and interesting shapes.
- Shared spaces should be centrally located and should be easily accessible from different sides in order to create a functional environment.
- Spaces which serve a number of functions should include suitable storage applications in order to aid in the transformation of a particular space.
- All railings, furniture and fixtures need to be ergonomically considered for both child and adult use.
- The application of easily understood way-finding mechanisms such as wall or floor motifs can serve the function of: allowing for free traffic flow, putting precautionary fire evacuation methods and procedures into practice, aid in helping children identify shapes and symbols.
- The environment should include an area that promotes further development of gross motor skills.
- On inclement days the spaces provided should also be able to serve as interior play environments without being too congested.

- Vinyl flooring with coved skirtings help eliminate the accumulation of germs and dirt and are ideal in child care environments, however carpeted areas are required for certain activities.
- Sophisticated HVAC systems should be installed as a means to improve overall indoor air quality.
- The whole space should adhere to applicable fire evacuation methods and procedures.
- Central floor drains are ideal for cleaning and help to maintain the overall hygiene of toilet facilities.
- The application of mirrors within a child care environment helps develop ‘self-concept’ and a good body image.
- It is important to note that the larger the space is the less control one is able to impose within a learning environment.

PRACTICAL DESIGN SOLUTION

A practical design proposal was developed based on these research findings. A solution was presented that broadly accommodated the general needs of all users as mentioned above whilst still adhering to the concept of adaptability by addressing the specific context of each respective site. The design proposal offers three rather similar final solutions for three different sites, varying slightly in response to the specific needs at Douglas Rooms, Bonvista Mansions and Tribunal Gardens respectively. These three sites were used as they presented a number of common underlying issues and greatest number of variables to be addressed. The design proposals and accompanying design principles and criteria can be viewed at <http://design-interest.wozaonline.co.za/products>.

CONCLUSION

This study, despite being conducted primarily for a BTech degree in interior design, does however raise some important issues relating to the effectiveness of support services being offered within the context of social housing environments. As an academic exercise the study presented an ideal opportunity for design to be used to address a ‘real-life’ problem and develop a context specific solution, both of which are considered as critical learning outcomes of this design degree programmes.

The design solution may be criticized for being overly idealistic as it was developed without any budgetary constraints but it does nonetheless demonstrate that with sufficient incentive a more functional and sustainable solution that addresses the majority of the learning centres’ flaws could feasibly be achieved. The study also demonstrates the trend towards ‘social upliftment through design’ that many of the educational design institutions are embracing and including in their curricula. This study makes evident that social housing providers and design institutions could both benefit from more formalised collaborations.

REFERENCES

- About the Johannesburg Housing Company. [Sa]. [O]. Available: http://www.jhc.co.za/about_us/about_johannesburg_housing_company Accessed 12 March 2011
- Attrell, J. 2011. The advantages of modular construction. [O]. Available: <http://www.religiousproductnews.com/articles/2009-September/Feature-Articles/The->

- Advantages-of-Modular-Building-Construction.htm
 Accessed 1 June 2011
- Benefits of outdoor advertising and signs. [Sa]. [O]. Available:
<http://www.environment.gov.za/samoac/docs/Benefits%20of%20Outdoor%20Advertising%20&%20Signs.pdf>
- Accessed 7 March 2012
- Bridgeman, A. 1989. Early childhood education and childcare. Virginia: AASA Publications.
- Cockroft, K. 2002. Theories of cognitive development, and information processing theory, in *Development psychology*, edited by Hook, D, Watts, J, Cockroft, K. Cape Town: UCT press: 175-199
- De Vaus, D.A. 2001. *Research design in social research*. London: Sage.
- Engelbrecht, K. 2003. The impact of colour on learning. [O]. Available:
<http://www.coe.uga.edu/sdpl/HTML/W305.pdf>
- Gee, L. [Sa] Chapter 10. Human-centered design guidelines. [O]. Available:
<http://www.educause.edu/learningspacesch10> Accessed 20 March 2012
- Gregory, D., Johnston, R., Pratt, G., Watts, M.J. & Whatmore, S. (eds) 2009. *The Dictionary Of Human Geography*. 5th ed. [O]. Available:
http://walk2geographies.files.wordpress.com/.../gregory-et-al_dictionary_human_geography_2009.pdf Accessed 26 April 2011
- Häggström, C. 2008. The relevance of academic writing in design education: academic writing as a tool for structuring reasons. *Journal of Writing in Creative Practice*, 1(2): 151- 160
- Hardiman, T. 2011. Sustainable modular classrooms, school planning and management. [O]. Available: http://www.peterli.com/spm/resources/articles/archive.php?article_id=3000 Accessed 1 June 2011
- Healey, M. 2008. *What is branding? Essential design handbooks*. Switzerland: RotoVision SA
- Hutchinson, L. 2003. ABC of learning and teaching educational environment. *British Medical Journal*, 326, April: 810-812.
- Inong, J. 2009. Does classroom environment affect young learners. [O]. Available:
<http://www.helium.com/items/1590638-classroom-environment-does-affect-young-learners> Accessed 25 May 2011
- JHC 2009 Annual report 2009. 2009. [O]. Available:
http://www.jhc.co.za/files/file/JHC%202009%20Annual%20Report2_0.pdf Accessed 26 April 2010
- JHC 2010. Annual report 2010. [O]. Available;
http://www.jhc.co.za/files/file/flip_book/2010/index.html Accessed 16 March 2012
- JHC statistics. (mpolokeng@jhc.co.za) 2011/0512. E-mail to R van Ryneveld (robynblaze1@yahoo.com). Accessed 12 May 2011
- Liaison with Makhulong a Matala. 2011. Interview by R van Ryneveld. [Transcript]. 23 February. Johannesburg.
- Liaison with Social Innovations. 2011. Interview by R van Ryneveld. [Recorded]. 19 May. Johannesburg.
- Makhulong a Matala [Sa]. [O] Available:
http://www.jhc.co.za/community/makhulong_matala Accessed 12 March 2011
- O'Brien, R. 1998. An overview of the methodological approach of action research.[O]. Available: <http://www.web.net/robrien/papers/arf.html> Accessed 24 February 2012
- Pick, Jr, H.L. 2008. Cognitive development of children. [O]. Available:
http://www.informedesign.org/_news/learn01_08.pdf Accessed 9 June 2011
- Relationship between the landlord and its tenants and community development. 2008. [O].

- Available: http://ftp.shf.org.za/workshop_rel_client_08.pdf Accessed 1 June 2011.
- Rogan, A.L., Lawson, R.M., Bates-Brkljac, N. 2000. Better value in steel: Value and benefits assessment of modular construction. Published for the 'Modular Matters' conference, London, 12 September.
- Tannen, R. 2009. Designers, Take a Look at Evidence-Based Design for Health Care.[O]. Available: <http://www.fastcompany.com/blog/rob-tannen/designing-humans/using-evidence-based-design-methodology-all-design> Accessed 28 March 2012
- Slavin, R.E. 1991. Educational psychology. New Jersey: Prentice-Hall. Third edition
- Wilson, A. 2000. The formulation of quality guidelines for the design of social housing schemes. Paper presented at: Strategies for a Sustainable Built Environment, Pretoria, 23-25 August.

DEVELOPMENT OF RATING PERFORMANCE CRITERIA FOR THE CONSTRUCTION INDUSTRY IN GHANA

Kinsley Afre Nduro

*Building and Road Research Institute, UPO Box 40, KNUST, Kumasi-Ghana
knduro100@yahoo.co.uk*

Ernest Osei Tutu

*Building and Road Research Institute UPO Box 40, KNUST, Kumasi-Ghana
fasota@yahoo.com*

Abstract

Performance rating of contractors is very important to both the client and contractor especially in an emerging construction industry like the Ghanaian construction industry. In recent past, performance rating has become vital to the achievement of business and organizational goals. Indeed, previous studies internationally have indicated that the development of a set of measurable criteria is key to performance rating. In the absence of any empirical data for legitimizing performance assessment in the Ghanaian Construction Industry, this study provides a set of criteria that could be applied in rating contractor performance in the Ghanaian construction industry. A survey was conducted in Ghana among professionals to identify a set of performance criteria that many think would be relevant and applicable for assessing the performance of contractors in the Ghanaian construction industry. In all 65 respondents completed the questionnaire. The data obtained was analyzed using One Sample T-test with the help of Statistical Package for the Social Sciences (SPSS) software. The findings suggest that in the Ghanaian context the key criteria should be quality of final building product, standard of workmanship, site management practices, labour relations at site, relations with subcontractors and statutory authority, appropriateness of organizational structure, employee development, client satisfaction, equipment holding and financial stability. Though, the study is based on the opinion of consultants within the industry, it is expected that the findings of the study could be relevant for future policy guidelines for rating contractor performance in Ghana.

Keywords: Contractor performance, performance rating, performance criteria, construction industry, Ghana

INTRODUCTION

Over the last decade, there has been an increasing demand for better performance and quality in the total building process and this has resulted in the development and resultant acceptance of quality assurance in building works (Lai, 2007). The construction industry in Ghana like in many other countries plays an essential role in the socio-economic development of the country. The activities of the industry have great significance in the achievement of national socio-economic goals of providing infrastructure like roads, housing, ports, water supply and irrigation (Field and Ofori, 1988). Besides, the industry generates substantial employment to the unskilled, semi-skilled and skilled work force and provides a growth impetus to other sections of the economy.

Although, the significance of the industry in terms of contribution to the assets and

employment are well recognized, there have been constant criticisms of the performance of the major players; especially contractors (The Ghanaian Times, Thursday, 12th March, 2009, pg. 9). The Ghanaian contractor has been accused of not being able to deliver completed projects to specifications and quality standards. These remarks sometimes go to the extent to say that foreign contractors using only Ghanaian artisans and materials perform better than their Ghanaian counterparts. While these concerns may be valid they are often based on the perceptions of the people making these claims and could be described as anecdotal. With these concerns, one may ask, what basis can be used to objectively compare the output of contractors? This paper presents a set of criteria that would be applicable in rating the Ghanaian contractor's performance within a proposed framework in a bid to have an objective assessment of what constitutes a good or acceptable performance by contractors in the construction industry.

BACKGROUND: COUNTRY CONTEXT

Ghana is acclaimed as a fast growing developing country in Sub-Saharan Africa. Political stability since 1984 coupled with investor confidence generated by multi – party democracy since 1992 has helped Ghana to deliver one of the best growth policies in the sub-region. Subsequently, it has been able to deliver and sustain real GDP growth of above 4% and per capita growth of about 2% for the past decade and over. On the Composite Index of Economic Activities (CPIA) which measures the quality of economic policies, Ghana rose from a medium performer (3.6) to strong performer (3.9) and the evidence indicates that, this has helped in lifting about 5 million Ghanaians out of poverty over the past decade (GSTD, 2010). Ghana is an investor friendly country as manifested by the presence of the donor community in supporting its poverty reduction and millennium development goals. Private foreign capital inflows are also on the increase totalling US\$ 1.070 billion in 2007 (GSTD, 2010).

Sector Context

The significance of the Ghanaian Construction Industry (GCI) in the nation's socio-economic development agenda is well recognized and undisputed. In 1980, overall construction output was estimated at US\$ 180 million, and within the last two decades, this has more than doubled to about US\$ 450-550 million with labour earnings totalling approximating US\$100- 150 million (GSTD, 2010). The industry in 2011 employs approximately 250,000-300,000 people especially in the informal sector and the employment rate is projected to grow at 10- 12% annually.

In 2003 and 2004, the industry contributed 8.8% to GDP ranking third behind agriculture and government services in terms of economic importance. In 2006, it emerged as the fastest growing sector in the economy with growth rate of 8.2 as against a national average of 6.2. Ghana's population now stands at 24 million and growing at a rate of 2.4% per annum (Ghana Statistical Service, 2011). It is not in parallel with housing growth rate in the country. An analysis of Ghana's housing situation reveals that on a national basis, 48.9% of households live in accommodation associated with the compound. Another 25.3% live in detached houses and 15.3% reside in semi-detached houses. Housing deficit in the country as of 2010 was between 800,000 and 1,000,000 units; and it is said that 500,000 houses are needed annually (GREDA, 2000). Though the real estate companies such as Regimanuel Gray, Manet Cottage and Ayensu Real Estates Limited have constructed houses for sale, the prices have been high, ranging from US\$35,000 upwards. Hence, individual construction has

been the main approach by “accommodation seekers”. These constructions are mostly undertaken by construction artisans who are mostly on the job-trained artisans turned contractors with not much regard for standards. This situation as is also occurring in South Africa underlines the importance of ensuring that contractors have standards to follow and implement these standards in their performance.

INTERNATIONAL PERSPECTIVE

Within this context, recent experiences from emerging countries show that indeed the effective exploitation of construction resources can provide a net gain for socio-economic improvement especially with regard to job creation and poverty alleviation. For instance, in Singapore, it has been established that the construction industry played a significant role in the development process of the country. The success story of Hong Kong from 1985 -1995 is also strongly linked to an increase in construction activities during that period. There are also success stories of many other emerging countries such as Malaysia, Chile, China and Brazil where the construction industry has been used as powerful engine for economic growth, thereby creating many jobs to lift millions of their citizenry from poverty. In Africa, Ghana can also draw some useful lessons from South Africa and Mauritius where the construction industry is faring relatively better.

Thus, there are a number of international success stories to encourage Ghana that continued but performance related investment into construction has the potential for contributing more to economic growth if especially the resources are effectively exploited. A concerted effort towards appropriate skills and technology improvement interventions are options that cannot therefore be underestimated. The key actors identified include the Central Government, Contractors as well as Construction Clients.

DEFINITION OF PERFORMANCE RATING

In theory, performance rating appears to be one of those “suitcase words (Bourguignon, 1995) in which everyone places the concepts that suit them, letting the context take care of the definition”. This definition carries with it the idea of using the context to clarify the meaning to help create a basis for understanding and discussion, yet it may engender ambiguous definition. Before proceeding to define performance rating, it is necessary to look at the definitions of the two words.

- Performance: Everybody has an idea of what the term performance means and therefore makes it difficult to define. It is sometimes used to describe the manner in which something is done, how effectively somebody does a job or something that is carried out or accomplished. Two key definitions suited the purpose of this paper:
- Performance is the calculation of achievement used to measure and manage project quality’. (Project Management Book of Knowledge: Glossary of Terms, PMI 1987).
- Performance is the degree to which a development intervention or a development partner operates according to specific criteria/standards/guidelines or achieves results in accordance with stated goals or plans (A guide for Project M & E: Glossary of M & E Concepts and Terms).

From these two definitions, it is evident that performance involves carrying out a task, the progress of which can be measured and compared using a set of stated requirements. These

requirements when fully met make a product or an output satisfy set or stated needs.

(a) Rating: From www.answer.com, a lot of definitions have been given with respect to rating. For example:

- 1) Rating is a position assigned on a scale
- 2) Rating is the evaluation of the financial status of a business or person
- 3) Rating is a specified performance limit as of capacity, range or operational capability.

For the purposes of this paper, rating is defined as “the evaluation or assessment of something in terms of quality, quantity or a combination of both (Project management Book of Knowledge; Glossary of Terms, PMI 1987). The definition carries the idea of a judgment that is made against a scale based on how much or how little of what is required has been attained. The criteria here involve looking at the standard that characterize what is required and the amount or numbers that have been achieved.

Therefore, performance rating in very simple terms, describes the process whereby objective data on the achievement of a deliverable is collected, measured and given a score or a rate. This rate reflects the level of achievement in both qualitative and quantitative terms on a predisclosed scale. The emphasis is on the use of an objective set of data providing information on the performance of a contractor.

PERFORMANCE MEASURES AND PERFORMANCE INDICATORS

Before any effective performance rating can be undertaken, there is the need to develop an objective and consistent measurable criteria. Previous studies have classified these measurable criteria into performance measures and indicators.

(Mbugua et al, 1999 and Love et al, 2001 have identified a distinction between performance indicators and performance measures. According to (Mbugua et al, 1999), performance indicators specify the measureable evidence necessary to prove that a planned effort has achieved the desired result. In other words, when indicators can be measured with some degree of precision and without ambiguity they are called measures. However, when it is not possible to obtain a precise measurement they are usually referred to as performance indicators. On the other hand, performance measures are the numerical or qualitative indicators (Sinclair and Zairi, 1995). In response to calls for continuous improvement in performance, many performance measurement measures have emerged in management literature. Some examples include the financial measures (Kangari et al, 1992), client satisfaction measures (Kometa, 1995), employee measures (Bititci, 1994), industry measures (Latham, 1994; Egan, 1998).

Again, (Cordero, 1990) also classifies performance measures based on the method of measurement and areas of measurement. The methods of performance measurement can be in terms of the technical performance, commercial performance and the overall performance. Furthermore, he proposes a model of performance measurement in terms of output and resources to be measured at different levels. Outputs are measured to determine whether they help to accomplish objectives and resources are measured to determine whether a minimum amount of resources is used in the production of outputs. However, in his model, Cordero failed to reflect the interest of stakeholders, their needs and expectation. That is, if construction organizations are to remain competitive in the long run, they need to develop and better understand their relations with their customers, suppliers, employees, lenders and the wider

community as suggested by (Love et al, 2000). Hence, performance measurement has to incorporate the interest of stakeholders. In addition, (Love et al, 2000) proposed a model known as Stakeholders Perspective Measurement (SPM) that adequately considers relations with customers, suppliers, employees, financiers and the wider community.

Furthermore, in (Zavadskas and Kaklauskas, 1996) bid to determine who an efficient contractor is, identified estimated cost of project, duration of construction, quality of final building product, standard of workmanship, ability to formulate practical programmes, employee development, relations with sub-contractors and statutory authorities, degree of co-operation with stakeholders among others as criteria for determining an efficient contractor.

Performance Criteria

An extensive review of literature and follow up interviews of construction professionals in the Ghanaian construction on contractor performance presented some criteria [Table (i) below] that could be applied in rating contractor performance.

Table (i): Contractor Performance Criteria

Item	Performance Criteria
1	Quality of final building product
2	Duration of construction (delivery on schedule)
3	Ability to formulate and maintain practical programmes
4	Standard of workmanship
5	Site Management Practices (i.e. effective quality control system on site)
6	Labour relations at site
7	Relations with sub-contractors and statutory authorities
8	Attention to site welfare and health and safety
9	Degree of co-operation with stakeholders
10	Appropriateness of organizational structure in managing the project (i.e. well laid out lines of responsibility and delegation at site)
11	Effectiveness of communication (i.e. managing information flow and consultants correspondents)
12	Employee development (i.e. qualified staff, motivation and training)
13	Prompt correction of defects
14	Creative and innovative ability in executing the project (i.e. ability to propose alternative constructional methods at site)
15	Effective risk management (i.e. managing the activities that can lead to financial loss and delay in delivery time)
16	Environmental management (i.e. managing the impact of construction activities on the environment)
17	Client satisfaction (in terms of product and service outcome)
18	Financial Stability (i.e. access to credit)
19	Equipment holding (i.e. equipment in use at site as against equipment listed during tendering)

Conventionally, it has become impossible to develop a set of performance criteria for the construction industry without incorporating the traditional measures of time, cost and quality. The reason these measures based on the iron triangle are so popular is that they are simple to apply and also objective. However, recently, limiting performance criteria to these traditional measures eliminate the interest of stakeholders (Atkinson, 1999).

In this regard, researchers and practitioners in the project management discipline like (Turner, 1993; Atkinson, 1999 & Wateridge, 1998) have proposed some unconventional measures which have the potential to satisfy the interests of other stakeholders. Some of these measures are effective risk management, client satisfaction, co-operation with stakeholders, environmental management, health and safety, to mention but few have become accepted for assessing performance. These go to suggest that the criteria identified from literature on contractor performance for this study are widely supported by performance measurement literature and are not limited to only the traditional measures but also represent the interest of stakeholders. Again, a review of performance measurement in the construction industry generally has reaffirmed the need to have an objective rather than a subjective technique of measuring contractor performance.

RESEARCH METHODOLOGY

(Hernes, 1998) suggested that in identifying contractor improvement needs, information should be obtained from contractors, clients and independent professionals who work closely with contractors. Hernes was of the opinion that the professionals would probably be more objective in judging contractors' performance. In this regard, the target population for this study (i.e. professionals like architects, engineers and quantity surveyors) were drawn (using purposive sampling techniques) from the various professional bodies in the Ghanaian construction industry.

Subsequent to a pilot survey in July/August 2009, 126 structured questionnaires were administered to professionals in the construction industry. The questionnaire was designed into three main parts. The first part dealt with the demographics of the respondents with respect to their professional background and working experience in the construction industry. The second part of the questionnaire provided professionals with the opportunity to indicate their perception of the Ghanaian contractor's performance generally. The third and final part dealt with information on performance criteria with the view to elicit from respondents their perceived importance of the 19 performance criteria adopted for this study. Respondents were asked to indicate the degree of importance of each performance criteria based on a five-point Likert rating scale (outstanding performance=5, above satisfactory performance=4, satisfactory performance=3, below satisfactory performance=2, unacceptable performance=1). A total of 65 completed questionnaires representing 52% response rate were returned. It was evident from the demographics of the respondents that they all possessed not less than five years of working experience in the construction industry. Again, 55% of respondents indicated satisfactory performance generally for the Ghanaian contractor.

DATA ANALYSIS

The statistical analysis employed in analyzing the performance criteria is the one sample t- test. The one sample t-test was employed to ascertain the relative importance of the variables. The procedure, findings and relevant discussion follows.

One sample t-test for ranking of performance criteria for contractor performance rating.

A one sample t-test was used to establish the mean difference between the sample and known value of the population mean. The hypothesis for the one sample t-test was set as ($H_0: \mu = \mu_0$) and ($H_a: \mu <, > \mu_0$) where H_0 means the null hypothesis, H_a means the alternative hypothesis and μ_0 means the population mean. As with confidence intervals, the central limit theorem states that normal distribution can be assumed when the sample size is more than 30. (Field,

2005) also argues that with a sample size of more than 50, the sampling distribution will almost always approach normal distribution notwithstanding the size of the sampling frame or population. Therefore, with a sample size of 126 out of 917, the underlying assumptions of the central limit theorem were applied to firm the decision that the sample size is relatively adequate to use statistical inferences.

With the foregoing, SPSS was used to perform a statistical test to establish whether the population considered a particular criterion to be important or otherwise. The statistical t-test analysis produced two tables, namely, the one sample statistics and the one sample test showing test significance. The details of the two tables are indicated in Tables (ii) and (iii). The mean, standard deviation and standard error for each performance criterion are presented in Table (i). As defined above, the null hypothesis for each criterion was insignificant, the alternative hypothesis for each criterion was significant and μ_0 as the population mean. With reference to the Likert rating scale adopted, the population mean was set at a suitable level of 3. (Ling, 2002). The significance level was also set at 95% in accordance with predictable risk levels (Cohen, 1992). Therefore, with reference to the five-point Likert rating scale, a performance criterion was considered significant if it had a mean of 3.5 or more. In the event where two or more criteria had the same mean, the criterion with the lowest standard deviation was assigned the highest importance ranking (Field, 2005).

The standard error is a measure of how representative a sample is likely to be to the population (Field, 2005). A big standard error gives an indication of the variability between the means of different samples. A small standard error gives an indication that most sample means are similar to the population mean and so the sample is likely to be an accurate reflection of the population. An observation of the standard errors indicates that they are in the neighbourhood of zero, which implies that the sample chosen is an accurate reflection of the population. See Table (ii) below.

Table (ii): Results of t-test showing One Sample Statistics

Criteria	N	MEAN	STD. DEVIATION	STD. ERROR MEAN
Quality of final building product	65	3.985	1.125	0.140
Duration of construction (Delivery on schedule)	65	3.585	1.158	0.144
Ability to formulate and maintain practical programmes	65	3.308	1.014	0.126
Standard of workmanship	65	3.877	1.097	0.136
Site Management Practices (i.e. effective quality control system on site)	65	3.708	1.011	0.125
Labour relations at site	65	3.292	0.861	0.107
Relations with sub-contractors and statutory authorities	65	3.754	0.952	0.118
Attention to site welfare and safety	65	3.462	1.160	0.144
Degree of co-operation with stakeholders	65	3.431	1.089	0.135
Appropriateness of organizational structure in managing the Project (i.e. well laid out lines of responsibility, delegation and communication at site).	65	3.739	1.065	0.132

Effectiveness of communication (i.e. managing information flow and consultants correspondents)	65	3.662	0.957	0.119
Employee development (i.e. qualified staff, motivation and training)	65	3.292	0.980	0.122
Prompt correction of defects	65	3.609	1.121	0.140
Creative and innovative ability in executing the project (i.e. ability to propose alternative constructional methods at site).	65	3.415	1.130	0.140
Effective risk management (i.e. managing activities that can lead to financial loss and delay in delivery time)	65	3.508	1.002	0.124
Environmental management(i.e. managing the impact of construction activities on the environment)	65	3.415	1.102	0.137
Client satisfaction (in terms of product and service outcome)	65	3.954	1.096	0.136
Financial stability (i.e. access to credit)	65	3.785	0.960	0.119
Equipment holding (i.e. equipment in use at site as against equipment listed during tendering)	65	3.939	1.029	0.128

Out of the 19 criteria, 14 had standard deviation values which are greater than 1.0, which suggests that respondents had different interpretations for the criteria. However, the remaining 5 had their standard deviation values less than 1.0, which also suggests some agreement among respondents in how the criteria were interpreted. In furtherance, discussion on the t-test below is expected to give some possible reasons. The t-test (Table iii) shows the mean (i.e., test value) of the population mean, t, which is the one sample t-test, df, which is the degree of freedom and the significance (i.e., p-value). This p-value provides a basis for a statistical decision to be made as to whether or not the population mean and sample mean are equal. From the t-test table, the p-value is for two-tailed test and since the study is interested in one-tailed test, the p-values have been divided by two. The results of the criteria are detailed in Table (iii).

Table (iii): Results of One Sample Test showing test significance

Criteria	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Diff.	95% Confidence Interval of the Diff.	
					Lower	Upper
Quality of final building product	3.473	64	0.001	0.485	0.206	0.763
Duration of construction (Delivery on schedule)	0.589	64	0.558	0.085	-0.202	0.372
Ability to formulate and maintain practical programmes	1.529	64	0.131	-0.192	-0.444	0.059
Standard of workmanship	2.770	64	0.007	0.377	0.105	0.649
Site Management Practices (i.e. effective quality control system on site)	1.656	64	0.103	0.208	-0.043	0.458

Labour relations at site	-1.945	64	0.056	-0.208	-0.421	0.006
Relations with sub-contractors and statutory authorities	2.149	64	0.035	0.254	0.018	0.490
Attention to site welfare and safety	-0.267	64	0.790	-0.038	-0.326	0.249
Degree of co-operation with stakeholders	-0.512	64	0.610	-0.069	-0.339	0.201
Appropriateness of organizational structure in managing the Project (i.e. well laid out lines of responsibility, delegation and communication at site).	1.806	64	0.076	0.238	-0.025	0.502
Effectiveness of communication (i.e. managing information flow and consultants correspondents)	1.362	64	0.178	0.162	-0.076	0.399
Employee development (i.e. qualified staff, motivation and training)	-1.709	64	0.092	-0.208	-0.451	0.035
Prompt correction of defects	0.780	64	0.438	0.109	-0.171	0.390
Creative and innovative ability in executing the project (i.e. ability to propose alternative constructional methods at site).	-0.603	64	0.548	-0.085	-0.365	0.196
Effective risk management (i.e. managing activities that can lead to financial loss and delay in delivery time)	0.062	64	0.951	0.008	-0.241	0.257
Environmental management (i.e. managing the impact of construction activities on the environment)	-0.619	64	0.538	-0.085	-0.358	0.189
Client satisfaction (in terms of product and service outcome)	3.339	64	0.001	0.454	0.182	0.725
Financial stability (i.e. access to credit)	2.390	64	0.020	0.285	0.047	0.523
Equipment holding (i.e. equipment in use at site as against equipment listed during tendering)	3.436	64	0.001	0.438	0.184	0.693

Table (iv): Summary of t-test showing rankings, results of 1-tailed test and significance

Criteria	Mean	Standard Deviation	Ranking	Sig. (1-tailed)	Statistically Significant
Quality of final building product	3.985	1.125	1	0.0005	Yes
Client Satisfaction	3.954	1.096	2	0.0005	Yes
Equipment holding	3.939	1.029	3	0.0005	Yes
Standard of workmanship	3.877	1.097	4	0.0035	Yes
Financial Stability	3.785	0.960	5	0.01	Yes

Relations with sub-contractors and statutory authorities	3.754	0.952	6	0.0175	Yes
Appropriateness of organizational structure in managing the Project (i.e. well laid out lines of responsibility, delegation and communication at site).	3.739	1.065	7	0.038	Yes
Site Management Practices	3.708	1.011	8	0.05	Yes
Effectiveness of communication (i.e. managing information flow and consultants correspondents)	3.662	0.957	9	0.089	No
Prompt correction of defects	3.609	1.121	10	0.219	No
Duration of Construction	3.585	1.158	11	0.279	No
Effective risk management (i.e. managing activities that can lead to financial loss and delay in delivery time)	3.508	1.002	12	0.4755	No
Attention to Site Welfare and Safety	3.462	1.160	13	0.395	No
Degree of co-operation with stakeholders	3.431	1.089	14	0.305	No
Environmental management(i.e. managing the impact of construction activities on the environment)	3.415	1.102	15	0.269	No
Creative and innovative ability in executing the project (i.e. ability to propose alternative construction methods at site)	3.415	1.130	16	0.274	No
Client satisfaction (in terms of product and service outcome)					
Ability to formulate and maintain practical programmes	3.308	1.014	17	0.0655	No
Labour relations at site	3.292	0.861	18	0.028	Yes
Employee development (i.e. qualified staff, motivation and training)	3.292	0.980	19	0.05	Yes

The details in Table (iv) reveal that quality of final building product came out as the highest ranked criteria for rating contractor performance whilst employee development emerged as the lowest. Apart from quality of final building product, client satisfaction ($p=0.0005$), equipment holding ($p=0.0005$), standard of workmanship ($p=0.0035$), financial standing ($p=0.01$), relations with subcontractors and statutory authorities ($p=0.0175$), appropriateness of organizational structure in managing the project ($p=0.038$) and site management practices ($p=0.05$) emerged as criteria that could be used in rating contractor performance. Largely, the findings support other studies (Xiao & Proverbs, 2003; Zavadskas & Kaklauskas, 1996) to mention but few on assessing contractor performance with regards to quality, client satisfaction, financial stability, etc.

It is surprising to acknowledge that, whilst prompt correction of defects and duration of construction were ranked 10th and 11th respectively and were not statistically significant, labour relations and employee development ranked 18th and 19th respectively but were statistically significant. A possible reason for this surprising result can be attributed substantially to its potential for inclusion in the next valuation for payment. The ranking suggests that, generally, prompt correction of defects qualifies to be a criterion for rating contractor performance but not significant in the context of the Ghanaian construction industry.

The position of duration (which is among the traditional criteria of cost, time and quality) of construction on the ranking scale, i.e., 11th suggests that, generally, it is an important criterion. However, professionals in the industry do not consider it as statistically significant since payment schedules for construction projects are generally not reliable and consistent. Again, most government (largest in the industry) funded projects extend beyond their expected completion dates with major reason being delay in payments (Ahadzie et al, 2007). This suggests that delivery on time is not an issue of concern to major stakeholders in the construction industry but stakeholders are more concerned with quality and client satisfaction.

Table (iv), again indicates that the 18th and 19th criteria on the ranking scale, i.e., labour relations at site and employee development. Their positions on the ranking scale suggest that they are not important but professionals in the industry consider the two as statistically significant, in that, improving labour relations at site and skills of personnel have the potential of improving the overall performance of contractors. Other interesting findings that the analysis produced were that effectiveness of communication and effective risk management ranked 9th and 12th respectively but both emerged statistically insignificant. This possibly could suggest that in practice, communication channels are established right from the onset and access to contractual information is easily accessible. On the issue of risk management, most contractors in the industry are confronted with the risk of securing loans from financial institutions. The major reason is that the interest rates (42% per annum, Bank of Ghana rates, 2009) charged on these loans are so high. Now, with contractors having in mind the erratic payment schedules in the industry the option is to allow the project to be self-financing rather than incur losses through loan acquisitions, Thus, it affects the delivery of the project, in that, completion schedules are not achieved and also time value for money promotes cost overruns on the projects. This to some extent suggests why the criterion, ability to formulate maintain practical work programmes was ranked 17th and did not emerge statistically significant.

It is important to note that attention to site health and safety and environmental management were not considered statistically significant by professionals in the industry. Again, it is worth noting that in Ghana, only the mining industry is openly seen to be concerned with environmental management and health and safety as almost every contract within the mining industry demands evidence of environmental impact assessment report and health and safety policy. However, experience and practice have shown that tender data in most tender documents in the construction industry do not require potential tenderers to submit such reports as part of the qualification documents. Furthermore, the cultural and technological advancement of the country do not promote the enabling environment for these criteria to be well appreciated. In addition to the criteria discussed as statistically insignificant so far, degree of co-operation with stakeholders and creative and innovative ability in executing the works were also considered statistically insignificant, though, have the potential to improve overall performance of contractors.

CONCLUSIONS AND RECOMMENDATIONS

Rating contractor performance is very important to the growth of an emerging construction industry like the Ghanaian construction industry. The absence of a set of criteria to evaluate the performance of contractors may expose clients to the risk of awarding projects to incompetent contractors. In the study's bid to present an objective assessment of what constitutes a good or acceptable performance by the contractors in the Ghanaian construction industry, nineteen (19) performance criteria were identified from the literature review of various authorities in

performance measurement for consideration in rating contractor performance. These criteria were also identified with construction professionals in Ghana through a questionnaire survey.

These criteria were then ranked by the professionals as per the ranking scale adopted by the study. The study then went further to test for their level of significance. After the test for significance, ten (10) criteria were then established as criteria that could be applied in rating contractor performance in the Ghanaian construction industry. The criteria were: quality of final building product, standard of workmanship, site management practices, labour relations at site, relations with sub-contractors and statutory authorities, appropriateness of organizational structure, employee development, client satisfaction, equipment holding and financial stability. It is therefore expected that the findings of the study could be relevant for future policy guidelines for rating contractor performance in Ghana.

The study has established that there is no documentary evidence of a set of criteria for rating contractors in the Ghanaian construction industry. This suggests that the level of acceptable performance is determined by the individual's involvement or subjective assessment. It is therefore recommended that contractor performance rating mechanism be introduced in the Ghanaian construction industry to ensure systematic and sustainable development in the industry. Again, it is recommended that further research should be undertaken to identify a set of performance criteria that clients and contractors would propose in rating contractor performance in order to have a set of contractor performance criteria that would reflect the opinions of major stakeholders in the Ghanaian construction industry.

REFERENCES

- Ahadzie, D. K., Proverbs, D.G and Olomolaiye, P. (2007) Critical success criteria for mass house building projects in developing countries. *International Journal of project management*.
- Atkinson, R. (1999). Project Management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria. *International Journal of Project Management*, 17(6): 337-342
- Bank of Ghana (2009) Financial Report for the fiscal year 2009
- Bititchi, U.M: Carrie, A.S and McDevitt, L. (1998) Integrated performance measurement systems: an audit and development guide. *The TQm Magazine*, 9(1), 46-53
- Bourguignon, C. (1995). Peut on definir La performance? *Revue Francaise de Comptabilite*, no. 269, July-August
- Cohen J. (1992) *Statistical Power Analysis*, Curr. Dir psychological Sci, Vol. 1 (3) pp. 98-107
- Cordero, R. (1990). The measurement of Innovation Performance in the firm: an overview. *Research Policy* Vol. 19. Pp 185-192.
- Egan, J. (1998), *Rethinking Construction: Report of the construction Taskforce on the scope of improving the quality and efficiency of UK Construction*, Department of the Environment, Transport and the Regions, London.
- Field, A. (2005) *Discovering Statistics, Using SPSS for Windows*, Sage Publication, London
- Field, B and Ofori, G (1988) Construction and Economic Development – a case study. *Third World Planning Review*, 10(1), 41-50
- Ghana Statistical Service, (2011), 2010 Population and Housing Census; Provisional Results. Accra, Ghana.
- Ghana Skills and Technology Development Project Report, 2010
- Hernes, T. (1998) *Training Contractors for Results; A guide for Trainers and Training*

Managers, ILO, Geneva

- Kangari, R. Farid, F. and Elgharib, H.M. (1992) Financial performance analysis for construction industry. *Journal of Construction Engineering and management*, ASCE, 118(2): 349-361
- Kometa, S.T., Olomolaiye, P., Harris, F.C (1994) Attributes of UK Construction clients influencing
- Lai, A.W.Y. (2007) Quality Perspective of Contractor Performance Appraisal
- Latham, M. (1994) *Constructing the Team*, Final Report of the Government/Industry Review of Procurement and Contractual Arrangements in the UK Construction Industry HMSO, London, 1994, p.7.
- Ling, F.Y.Y. (2002) Model for Predicting Performance of Architects and Engineers, *Journal of Construction Engineering and Management*, ASCE, Vol. 128 (5), pp. 446-456
- Love, P.E.D., and Holt, G.D. (2000). Construction Business performance measurement: the SPM alternative. *Business Project Management Journal*, 6(5): 408-416
- Mbugua, L.M., Harris, P., Holt, G.D., and Olomolaiye, P.O. (1999). A Framework for determining critical success factors influencing construction business performance. In: Hughes, W. (ed) *Procs. 15th Annual ARCOM Conference*. September 5-7, Reading: ARCOM. 1: 255-264
- Project Management Book of Knowledge, Glossary of Terms, PMI 1987
- Sinclair, D. and Zairi, M. (1995). Effective process management through performance measurement: part III-an integrated model of total quality-based performance measurement. *Business Process Re-engineering & Management Journal*, 1(3): 50-65
- The Ghanaian Times, (2009) *The Construction Industry-challenges and the way forward*, Thursday, March 12, 2009, page 9.
- Turner, J.R. (1993) *The Handbook of Project Based Management*, McGraw-Hill, London
- Wateridge, J. (1998) How can IS/IT projects be measured for success, *International Journal of Project Management*, 1998, 16(1), pp. 59-63
- Xiao, H. & Proverbs, D. (2002) Construction Time Performance and Evaluation of Contractor from UK and US. *Journal of Engineering, Construction and Architectural Management*, 9(2), pp 81-89.
- Zavadskas, E. and Kaklauskas, A. (1996) Determination of an efficient contractor by using the new method of multicriteria assessment.

FUTURE-PROOFING THE ENVIRONMENTAL PERFORMANCE OF LOW-INCOME HOUSING: A SOUTH AFRICAN CASE STUDY

Naa Lamkai Ampofo-Anti

Building Science & Technology, Council for Scientific and Industrial Research (CSIR) Built Environment, Pretoria campus, South Africa

Nampofoanti@csir.co.za

Abstract

The construction of homes provides social and economic benefits to society, but contributes significantly to environmental degradation. The focus of both international and South African efforts to improve the environmental performance of the residential building sector is household energy efficiency – a valid priority, given that household energy use typically accounts for 80-90% of a home’s total life cycle energy. However, as household energy efficiency is attained, the environmental burdens of building materials are gaining in importance and need to be addressed if sustainable housing is to be achieved. Furthermore, the electricity demand of South Africa’s low-income residential sector is predicted to remain low, due to affordability issues. By contrast, the building materials demand of the national housing programme would need to increase substantially if the huge housing backlog is to be cleared. This paper reports on a CSIR BE research project which demonstrates how and in what way innovative material technologies could be implemented to foster the delivery of sustainable, low-cost housing in South Africa. International trends in the delivery of sustainable housing were reviewed. A situational analysis, based on a desk-top literature review and three modelling studies, compared the performance of a Standard Subsidised House (SSH) to that of an experimental CSIR House (CH). The results suggest that to deliver sustainable low-cost housing in South Africa, substitution of conventional with innovative material technologies may need to be prioritised over energy efficiency.

Keywords: sustainable housing, life cycle, innovative technologies, sustainable materials

INTERNATIONAL CONTEXT OF SUSTIANABLE HOUSING

The construction of homes provides social and economic benefits to society, but contributes significantly to resource use and pollution. The energy needed to heat, cool and light homes, operate appliances, heat water and cook accounts for between 20-25% of global primary energy use (NHBC Foundation, 2011). Around the world, households account for the largest share of freshwater and raw materials use; and generate inordinate quantities of solid and liquid wastes. The greater part of prime agricultural land lost to farming is used for home building. Nearly 50% of all global greenhouse gas (GHG) emissions are the result of energy use in homes. Furthermore, it is likely that by 2050 the global number of households will increase by 67%; and residential sector GHG emissions will double if allowed to continue unchecked. Thus, for many governments, improving the environmental performance of the residential building sector is central to their ability to meet national sustainable development targets.

To foster sustainable housing, both developed and developing countries are updating their building regulations and codes to include minimum environmental standards. The common environmental issue driving these efforts is current and future household energy efficiency – a valid priority, given that the Use Phase energy of a home typically accounts for 80-90% of the total life cycle energy (Kotaji et al, 2003). For example, Britain’s Code for Sustainable Homes

(2006) is an environmental standard which is mainly concerned with achieving Use Phase energy efficiency. The key interventions include installation of smart metres, upgrades to insulation and boilers, appliance labelling and promotion of energy efficient lighting. Similarly, as one of the fastest growing economies in transition, India promotes appliance labelling and widespread use of solar water heaters as the ultimate means to improve the environmental performance of the residential building sector.

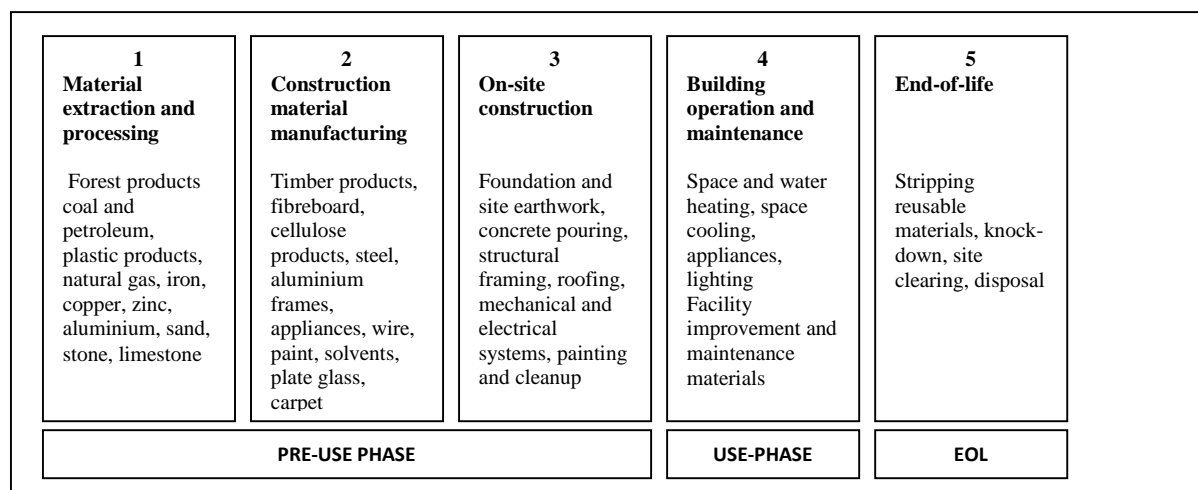


Figure 1: Generic life cycle stages of a building (adapted from Keoleian et al, 2001)

However, the delivery of sustainable housing requires a life cycle perspective. This is because the life cycle of a typical building includes three phases, namely, the Pre-Use Phase, Use Phase and End-of-Life (EOL) Phase. Therefore, the narrow focus on household energy efficiency during the Use Phase overlooks the energy use and other environmental burdens of the Pre-Use and EOL Phases. These burdens are mainly attributable to the materials life cycle. Their importance is gaining ground as household energy efficiency is attained. When Keoleian et al (2001) compared a standard home (SH) and an equivalent energy efficient home (EEH), a significant reduction in life cycle energy, 60%, was achieved by the EEH over the SH. They also found that as life cycle energy decreased, Use Phase energy decreased and the embodied energy of construction materials increased. More recently, Sartori and Hestnes (2007) validated this result in sixty case studies, despite climatic differences, and regardless of building type and other contextual factors.

This paper reports on a CSIR BE research project which demonstrates how the implementation of innovative material technologies in the context of the national housing programme could potentially future-proof the environmental performance of low-income homes and thereby contribute to national sustainable development targets. The need for a sector-specific approach to sustainable low-income housing is highlighted. The key national policies for delivery of sustainable human settlements are reviewed. The results of three comparative modelling studies are presented and the lessons learnt are discussed.

NATIONAL POLICY REVIEW

Low-cost housing provision is of major importance to government in post-apartheid South Africa. The Constitution, Act 108 of 1996, Section 26, enshrines housing for all as a basic human right. In the first decade of democracy, the national housing programme focussed

more on delivering large numbers of low-cost housing units than creating an enabling environment for sustainable housing delivery. Despite this, the vision of completing about 350 000 units per year was not achieved. This is because the rate of growth in the number of households exceeded the pace of completion of new houses. The strong focus on sheer numbers also promoted the use of a standard house plan and specifications informed by conventional material technologies and well-known best practices. The key national policies constituting an enabling framework for the design and delivery of sustainable housing are:

- Breaking New Ground - A Comprehensive Plan for the Development of Sustainable Human Settlements,
- National Housing Code
- Energy Efficiency Strategy of the Republic of South Africa

Breaking New Ground, also known as BNG, moved the national housing programme beyond the mere provision of basic shelter towards a broader national vision of “sustainable human settlements”, that is “Well-managed entities in which economic growth and social development are in balance with the carrying capacity of the natural systems on which they depend for their existence” (DHS, 2004). However, the BNG strategy is concerned with the social and economic aspects of sustainability. It refers to the use of alternative material technologies but does not elaborate on how these could serve to improve the environmental quality of homes built through the national housing programme.

The *National Housing Code* sets out minimum norms and standards applicable to dwellings constructed through the national housing programme. The *Technical Provisions to the Housing Code* sets out extensive design guidelines on “sustainable energy” and “sustainable water” (DHS, 2009). The *Technical Provisions* point out the importance of selecting construction materials to maximise their contribution to the thermal performance of low-cost housing; and lists construction materials to be avoided for their detrimental effects on human health. The *Technical Provisions* are however silent on the issue of sustainable materials.

The Energy Efficiency Strategy of the Republic of South Africa sets a national, long term target for energy efficiency improvement of 12% by 2015 (DME, 2008). *The Strategy* aims to reduce pressure on the electrical power supply which does not meet the demands of South Africa’s economy. In line with international trends, the residential sector-specific energy reduction target of 10% is to be achieved by means of household energy efficiency. The proposed interventions include but are not limited to subsidised solar water heating, environmental labelling of appliances and mandatory application of the national standard *SANS 204 Energy Efficiency in Buildings*. Standards for non-electric stoves were also developed to encourage low-income households to switch to safer cooking methods.

RATIONALE FOR A COUNTRY-SPECIFIC FUTURE-PROOFING APPROACH

Low-income families account for only 10% of the residential sector electricity demand, but represent approximately 50% of South African households. Despite government’s commitment to provide free, basic electricity to all poor households, the electricity demand of the low-income residential sector is expected to remain low due to affordability issues (UNEP/CIDB, 2009). The planned electricity price increase of about 25% per year is likely to exacerbate this issue. Reliance on energy sources other than electricity has also been linked to poor air quality in around low income settlements, frequent fire outbreaks, burns and other human health effects. The interventions planned under the EES may protect human health and reduce the

incidence of household fires. It may however contribute only marginally to the residential sector energy demand reduction target.

By contrast, cement and cement-based materials, which are energy intensive in their production, are the key building materials for the national housing programme. When Mapiravana (2010) investigated the most widely sold and used building material groups in South Africa, he ranked cement and concrete in first place with a market share of 35%. Although figures are not available to confirm the split in market share, cement-based masonry may account for about 60% of the total market for masonry. In 2006, the split in cement demand between residential and non-residential buildings was 68%: 32% (CIDB, 2007). Figures are not available to confirm the residential sector split in cement and cement-based materials demand between the national housing programme and privately constructed homes.

However, the following suggests that the national housing programme may account for the larger market share, namely:

- The low-cost housing backlog is currently more than 2 million units. Government aims to speed up delivery in order to clear this backlog by 2014.
- Government allocates about 10% of the annual infrastructure budget (about R 10 billion Rand per annum) to housing development. It is therefore likely that materials manufacturing contributes more to the environmental burdens of South African low-income homes than household energy use. Furthermore, when the input costs of home building are analysed, the split between construction materials and labour is typically 60%: 40% Mapiravana (2010).

Giving priority to the efficient use of cement and cement-based products, or alternatively substituting these with materials known to have lower environmental burdens is therefore likely to yield a range of benefits. These may include energy demand reduction, reduction in local air pollution and human health effects, cost savings and materials savings.

CSIR ADVANCED CONSTRUCTION TECHNOLOGY PLATFORM MODELLING STUDIES

This case study arises out of a Department of Science and Technology contract awarded to CSIR Built Environment in 2008. The contract mandated CSIR BE to develop, test and implement innovative technologies capable of improving the performance of standard subsidised housing built from the National Home Builders Registration Council (NHBRC) approved plan. CSIR BE aimed to achieve comfortable subsidised housing that performs as well as conventional suburban housing, is durable, and quick to build, readily alterable, and easily extendable. The research project was carried out on the basis of two experimental houses, the standard subsidised house (SSH); and the CSIR house (CH) both of which were built on the CSIR Pretoria test site. Both buildings are based on the 40m² standard plan approved by the NHBRC for subsidised housing. The two houses are distinguished from each by means of the differences in technology of the construction materials. SSH serves as a reference building against which the performance of the new improved version CH can be measured. SSH was therefore built in accordance with NHBRC specifications. The conventional material technologies which characterise SSH are:

- Substructure – concrete strip foundation on hard core fill, solid concrete block

foundation walls and 75mm concrete floor slab on hardcore fill.

- Superstructure – solid concrete blocks
- Finishes – 25mm thick floor screed and StippleCrete to external walls

The innovative material technologies which distinguish CH from SSH are the following:

- Substructure: CSIR 50mm thin concrete raft foundation on stabilised fill
- Superstructure: Modular, hollow concrete blocks; and precast concrete window frames
(applied to four out of seven windows to minimise thermal bridging).
- Finishes: Insulated ceiling board; and thermal plaster to external walls
- Three modelling studies were carried out to assess and compare the environmental and cost performance of SSH and CH. The results are reported and discussed in the sections below.

Comparative study 1: Whole life cycle resource use and GHG emissions

This study relied on a Life Cycle Assessment (LCA) methodology to compare SSH and CH on the basis of resource intensity (energy, material and water consumption) and contribution to GHG emissions. The temperate climate of Pretoria and the soil conditions of the CSIR test site were assumed to be representative of South African building conditions. The study investigated the Pre-Use Phase and the maintenance materials needs of the Use Phase (Figure 1). The results suggest that the substitution of conventional with innovative technologies results in overall improved environmental performance of a subsidised low-cost house (Ampofo-Anti, 2010):

Construction materials: The Pre-Use Phase of CH required about 35% less material resource input by weight as compared to SSH. The significant material demand reduction is due to savings on concrete blocks, sub-structure concrete, foundation wall, sub-structure mortar and floor screed. Over a building service life of 50 years, CH requires about 50% less maintenance materials input by weight due to the use of lighter finishing materials. The substitution of short-lived with long-life finishing materials would further increase the advantages of CH over SSH.

GHG emissions: As compared to SSH, CH contributes less to climate change. The potential savings are about 685kg CO₂ equivalents. In the large scale context of the national housing programme, this saving will translate to substantial quantities of national GHG emissions avoided.

Energy: As compared to SSH, the embodied energy of CH is higher. The increase in embodied energy is caused by the insulated ceiling board which relies on energy as feedstock. The potential increase in embodied energy is about 70kg oil equivalents. The slight increase in embodied energy per house needs to be viewed against the overall environmental gains to be made if CH were to be substituted for SSH.

Water: As compared to SSH, CH contributes less to water demand. The potential savings are about 20m³ of water. This should translate to a substantial water demand reduction in the large scale context of the national housing programme. The use of concrete and other cement-based materials in the Pre-use Phase accounts for about 80% of the water demand, suggesting that building contractors have a key role to play in construction-related water conservation. The water demand of CH could therefore be lowered further by minimising the use of concrete, mortar, screed and plaster.

Comparative study 2: Use Phase energy and thermal performance

To save costs, the standard house plan of the NHBRC does not make provision for ceiling or wall insulation. SSH is therefore subject to large, daily variations in temperature. It is common practice for the occupants to burn coal or wood inside the dwelling for space heating. However, the building envelope has a limited ability to retain heat, thus very little can be done to maintain a reasonable interior temperature on the coldest days and nights of the year. The cold conditions which result, and the prolonged exposure to smoke, leads to increased levels of sickness and place a financial burden on the poorest section of society.

The following measures were applied to improve the energy and thermal performance of CH:

- Appropriate north-south orientation;
- Appropriate roof overhang combined with north-facing windows;
- Cavity walls (modular, hollow concrete blocks);
- Insulated ceiling; and
- Insulated external walls (thermal plaster).

The study used computational modelling to quantify and compare the thermal performance of SSH to that of CH. The study found that (Osburn, 2010):

- CH needs only 40% of the operating energy of SSH to maintain a comfortable indoor thermal environment.
- CH would require active heating on the coldest days of the year. The variations in the indoor temperatures are however much lower – the indoor temperature did not exceed 25°C on the warmest days. This is a comfortable temperature for most individuals.

The thermal performance of SH can be improved considerably by the addition of a carpet on the floor and the provision of ceiling or wall insulation.

Table 1: Energy loading of SSH and CH (Osburn, 2010)

House type	Heating load (GJ)	Cooling load (GJ)	Total load (GJ)
Subsidy House (SH)	12.32	6.78	19.10
CSIR House (CH)	7.66	0.00	7.66

A switch in the subsidy house design from SSH to CH will therefore translate to a number of economic and environmental benefits. These include savings on the energy bill for poor families; improved air quality and human health; an overall decrease in the operational energy demand of the low-income residential sector; and a corresponding decrease in the GHG emissions of the sector.

Comparative Study 3: Pre-use Phase costs

The costs of labour and materials for SSH and CH were monitored and documented throughout the building process. Study 3 was limited to the Pre-Use Phase only thus no attempt was made to predict the cost of building maintenance and repair over the estimated building life cycle of 50 years. The results show that as compared to SSH, CH costs R 18 856.11 or 41.43% more. The substructure and services components of CH cost less than the equivalent components for SSH. However, the labour and materials costs for the superstructure, roofing and finishes of CH all cost more than the equivalent components of SSH.

Table 3: Comparative costs of SSH and CH (De Villiers, 2011)

Ref	Work description	Subsidy house (SH)			CSIR house (CH)			CH as % of SH
		Labour cost	Material cost	Total cost	Labour cost	Material cost	Total cost	
1	Substructure	2 710.35	7 078.44	9 788.79	2 608.66	6 704.77	9 491.58	96.96
2	Superstructure	3 237.00	13 960.69	17 197.69	4 518.00	25 773.35	30 291.35	176.14
3	Roofing	1 485.00	7 157.04	8 642.04	3 522.00	10 596.72	14 118.72	163.37
4	Finishes	2 697.50	4 514.10	7 211.60	3 696.25	4 343.63	8 039.88	111.49
5	Services	1 391.25	1 281.20	2 672.45	1 283.25	1 143.90	2 427.15	90.82
	Totals	11 521.10	33 911.47	45 512.57	15 628.15	48 562.37	64 368.68	141.43
					135.65%	142.87%	141.43%	

As an experimental work, direct comparisons on time and labour may not be relevant. The building team erected SSH without any need for instruction or supervision. Erection of CH on the other hand entailed training, demonstration and instructions throughout. A later attempt to build CH on the CSIR Kleinmond site showed that all the walls could be built in one day, suggesting that the additional costs due to labour can be easily addressed with appropriate training. The higher cost of materials for CH is partly due to the thermal plaster and insulated ceiling board which were added to CH, but not to SH; and partly due to the higher cost of the modular, hollow concrete blocks. The increase in time and cost also needs to be viewed against the considerable gains in environmental performance demonstrated by the first two modelling studies (de Villiers, 2011).

CONCLUSION

The CSIR investigations presented in this paper lead to the conclusion that to future-proof the environmental performance of the low-income residential sector, the national housing programme should prioritise the substitution of conventional with innovative material technologies. This assertion was put to the test through three modelling studies based on experimental buildings, which evaluated the life cycle resource use and GHG emissions; Use Phase energy demand and thermal comfort; and initial building costs. Each of the three studies compared conventional material technologies, as represented by the NHBRC's standard subsidy House (SSH), to innovative technologies as represented by a new improved version, the CSIR House (CH). The results of the studies suggest that potentially:

- The mass of materials used to build two units of SSH could build three units of CH. CH is also likely to require about 50% less maintenance materials by mass when compared to SSH
- The embodied energy of CH is likely to be higher than that of SH. However, the material-intensity, water demand and GHG contributions of CH are all likely to be lower than that of SH. The embodied energy of CH could be improved by selecting finishes which are highly durable or maintenance-free
- A switch in technology specification from SSH to CH will translate to a number of economic and environmental benefits. This is because CH will need only 40% of the operational energy of SSH to maintain a comfortable indoor environment
- The initial building cost will be higher, but CH can be erected faster than SSH. The increase in cost needs to be viewed critically against the environmental benefits and shorter lead time highlighted by the three studies.

REFERENCES

- Ampofo-Anti, N.L. 2010. Comparative life cycle assessment study of the CSIR house and the standard subsidy house. CSIR DWDMS No. 190724.
- CIDB, 2007. The building and construction materials sector – challenges and opportunities. (online) Available from: http://www.cidb.org.za/knowledge/publications/industry_reports/default.aspx (Accessed 20 January 2012)
- De Villiers, A. 2011. Comparative analysis of innovative and conventional building technologies in low-income building. CSIR GDWMS No. 202046.
- Keoleian, G.A., Blanchard, S. and Reppe, P. 2001. Life-cycle energy, costs, and strategies for improving a single-family house. *Journal of Industrial Ecology*. 4(2): 135- 156.
- Kotaji S., Schuurmans A. and Edwards, S. 2003. Life cycle assessment in building and construction: A state-of-the-art report. Pensacola Florida, USA: SETAC Press.
- Mapiravana, J. 2010. Building materials research and development priorities. CSIR DWDMS No. 174946.
- NHBC Foundation, 2011. Zero carbon compendium – who’s doing what in housing worldwide (2011 edition). (online) Available from: <http://www.nhbcfoundation.org/Researchpublications/ZeroCarbonCompendium2011/tabid/467/Default.aspx>, (Accessed 07 February 2012)
- Osburn, L. 2010. Energy performance evaluation of formal low income housing within South Africa. CSIR, Pretoria.
- Sartori, I. and Hestnes, A.G. 2007. Energy use in the life cycle of conventional and low-energy buildings: a review article. *Energy and Buildings*, 39(2007): 249-257.
- South Africa. DHS, 2004. Breaking new ground - a comprehensive plan for the development of sustainable human settlements. Pretoria: Government Printer.
- South Africa. DHS, 2009. National housing code – Part B: Technical provisions. Pretoria: Government Printer.
- South Africa. DME, 2008. National energy efficiency strategy of the Republic of South Africa – First Review. Pretoria: Government Printer.
- UNEP/CIDB, 2009. Greenhouse gas emission baselines and reduction potentials from buildings in South Africa – a discussion document. (online) Available from: http://www.cidb.org.za/knowledge/publications/industry_reports/default.aspx (Accessed on 20 January 2012)

UNDERSTANDING THE WELL BEING OF HOUSEHOLDS IN AN INFORMAL SETTLEMENT IN SURABAYA, INDONESIA

H. Santosa

*Prof Institut Teknologi Sepuluh Nopember / ITS Surabaya, Indonesia
happyratna@yahoo.com*

R. Potangaroa

*Associate Prof Dept of Architecture, Unitec, Auckland NZ
rpotangaroa@unitec.ac.nz*

H. Siregar

*Researcher Institut Teknologi Sepuluh Nopember / ITS Surabaya, Indonesia
hsiregar@its.ac.id*

Abstract

An understanding of what forms “well-being” is perhaps fundamental to achieving any outcome let alone a sustainable one for members of a community. This paper sets out to understand aspects of well-being by applying a Quality of Life (QoL) metric called the DASS42 to 85 households in kampong Tunjungan, an informal settlement located in the CBD of Surabaya, Indonesia. The tool was used to group households into two; those with the lowest and those with the highest QoL. The data then associated with each group of households that includes demographics, income, employment, views on kampong development, housing and the environment were analysed for matches and mis-matches both within each group and then between them. Those findings and their implications for prioritization of improvements in the kampong are then presented. The robustness of the approach together with the ability to “validate” via the community suggests a process whereby the social dimension of sustainability can be readily applied in other kampongs or sustainable human settlements.

Keywords: well-being, quality of life model, social dimension

INTRODUCTION

An understanding of well-being can be broken up into objective well-being (OWB) and subjective well-being (SWB) approaches. The OWB approach “focus on the satisfaction of basic human needs and rights as being a crucial pre-requisite before people can ‘flourish’ and live well” while SWB approaches “concerns peoples’ self-reported assessment of their own well-being. Survey questions of this nature aim to capture an individual’s well-being by measuring how people think and feel, for example, by asking about their life satisfaction, happiness, and psychological wellbeing” (Tinkler et al, 2011). Tinkler et al go on to make the distinction that “what makes the questions subjective is that the questions ask respondents to rate their feelings rather than recall factual information. This approach is in contrast to the more traditional approach which uses objective indicators such as level of educational attainment, health, and employment to determine well-being”.

OWB measures are important but unlike subjective ones they do not account for human perception which seems to be fundamental to an understanding of an individual’s well being

and hence the families, communities, neighbourhoods and ultimately the nations where they live (Webster et al, 2006). Nonetheless, research suggests that subjective well-being measures do correlate well with objective indicators of well-being (Dolan et al, 2008) and Layard proposed that the order of importance of the top 5 should be as follows: family relationships, financial situation, work, community and friends, and health (Layard, 2005). This can vary for individuals at different scales (would you be happier if you were richer?) (Kahneman et al, 2006), in different societies (Veenhoven, 2006) and in different developing/developed economic situations (Zhang et al, 2009).

There are interesting paradoxes such as income in relation to happiness or well-being (the terms seem interchangeable in the literature) mentioned above. It appears that at some point that the well-being returns of higher income decrease and potential become negative. Easterlin for example notes that while there had been a two to five fold increase in incomes for the United States and Japan, the average self-reported happiness stayed constant (Easterlin, 1995). It could be assumed nonetheless, that those more vulnerable parts of both these nations would have enjoyed increased well-being? And while it would seem that differences within developed (or wealthy) nations can be perhaps explained by social relationships than by income; in developing (poorer) nations this link remains (Gleisner et al, 2011).

A range of essentially OWB theories have developed that includes the following (Clark et al, 2007):

- the basic human values approach,
- the intermediate needs approach,
- the universal psychological needs approach,
- the axiological categories approach,
- the domains of subjective well-being approach,
- the central human capabilities approach.

And perhaps the most influential is Sen's conception of well-being (Sen, 1993). This approach assesses well-being in terms of the capabilities or freedoms to "opportunities". Sen identifies five instrumental freedoms that contribute to the general capability of a person to live more freely that are as follows (Sen, 1999):

- political freedoms
- economic facilities
- social opportunities
- transparency guarantees
- protective security.

He argues that freedom, in all its dimensions, is both "the primary end and the principal means of development". In his view, neither opulence (income, consumption) nor utility (happiness, satisfaction of desires) constitute or adequately represent human wellbeing and deprivation contrary to what has been stated earlier. Hence, poverty is understood as a basic capability failure, inequality as disparities in key human capabilities, and development as a capability expansion. The selection of relevant capabilities according to Sen depends on the purpose of the evaluative exercise as well as the values of the people concerned. Nonetheless, the approach has been criticised for a lack of important capabilities, is not useful for making interpersonal comparisons of inter-personal wellbeing and the high informational overheads.

SWB approaches are based as mentioned earlier on people's self-evaluation and self-reporting

methodologies. Commonly used are the multi-item Positive and Negative Affect Schedule (PANAS) scales and the Satisfaction With Life Scale (SWLS) (van Hoom, 2007). The PANAS approach uses a list of feelings and emotions and asks respondents to indicate the extent to which they felt this way during a given period, e.g. the past week. In a similar way the SWLS solicit responses from individuals about the extent to which they agree or disagree with certain statements designed specifically to capture satisfaction with life. One key advantage noted by researchers is that SWB are usually sampled in their “natural” setting while this may not be the case for OWB approaches (Kahneman et al, 2006). Moreover, modern information and communication technologies may offer further future enhancements. Other advantages include being able to both validate and verify and also being able to identify vulnerable groups (within a wider neighbourhood) as part of an inclusive society.

THE INFORMAL SETTLEMENTS IN SURABAYA

Kampung Tunjungan shown in figure 1 below is an informal settlement located in the CBD of Surabaya, Indonesia and is bounded by major roads and buildings. Its location means that residents are able to find employment in the nearby offices or by operating small businesses (often home based) such ready made food, barbers or tailors. Nonetheless, some do travel out from the Kampung. The site was selected because of the previous contacts and work that ITS University had completed in the Kampung, consequently access was readily available.

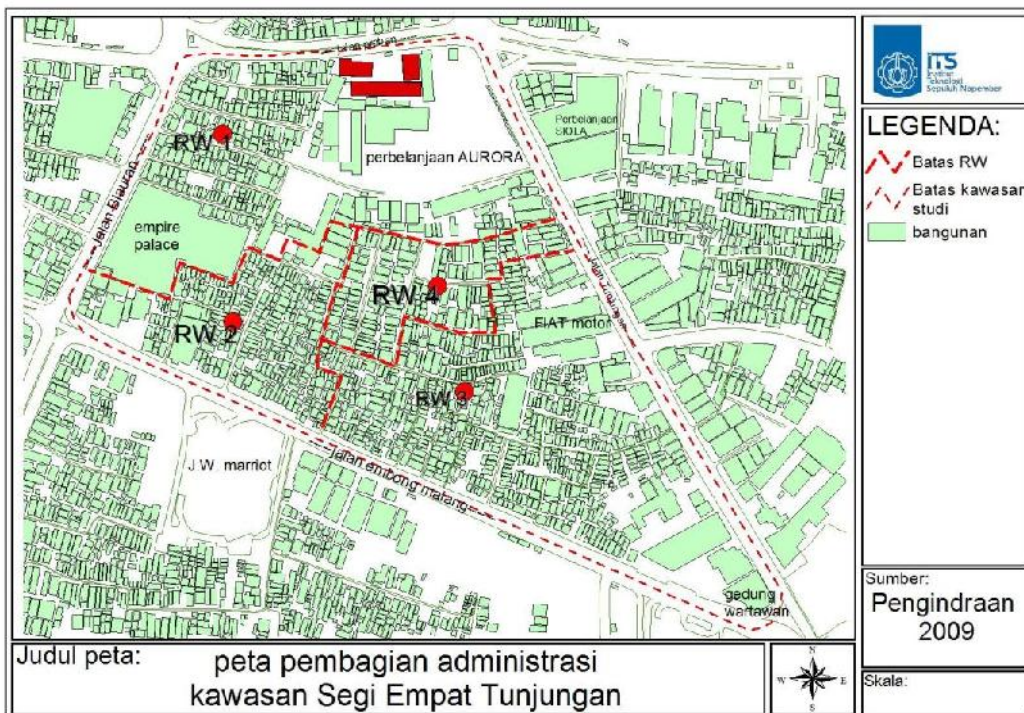


Figure 1: The Map of Kampung Tunjungan from ITS

There are no parks or open public areas within the Kampung though residents often grow potted plants and flowers; lanes are narrow (typically 2.5 metres overall); and children by necessity play in the lanes. Houses built in the 1930’s seem to be better quality than those built later in the 1970’s and the pressure to build has resulted in some houses not actually facing a lane. Some houses have a city supply water system, most do not and hence water purchase from shops or cartage from nearby wells is a constant requirement. Drainage is by gutters built in response to annual flooding of the Kampung and is usually maintained by each resident.

Waste water is via these drains. House plots vary from 2.5x5 to 10x20 metres and some residents have constructed 2 storey homes. It is made up of 4 separate areas (RW1 to 4) as shown in the map below.

METHODOLOGY

The methodology adopted in this research was to use a Quality of Life (QoL) tool called the DASS42. (note that QoL and well-being become interchangeable from this point). It is a SWB approach developed at the University of New South Wales, in Sydney Australia (Lovibond, 1995) that has several advantages over the SWB approaches mentioned earlier. And these advantages are discussed later. The DASS42 consists of 42 questions and is a “set of three self-report scales designed to measure the negative emotional states of depression, anxiety and stress” and was “constructed not merely as another set of scales to measure conventionally defined emotional states, but to further the process of defining, understanding, and measuring the ubiquitous and clinically significant emotional states usually described as depression, anxiety and stress” (DASS, 2006). The characteristics of high scorers on each DASS scale are as follows:

- Depression scale: self-disparaging, dispirited, gloomy, blue, convinced that life has no meaning or value, pessimistic about the future, unable to experience enjoyment or satisfaction, unable to become interested or involved, slow, lacking in initiative.
- Anxiety scale: apprehensive, panicky, trembly, shaky, aware of dryness of the mouth, breathing difficulties, pounding of the heart, sweatiness of the palms, worried about performance and possible loss of control.
- Stress scale: over-aroused, tense, unable to relax, touchy, easily upset, irritable, easily startled, nervy, jumpy, fidgety, and intolerant of interruption or delay.
- The DASS42 survey tool had previously been translated into Bahasa by the Legal Department of Sykat Kuala University in Banda Aceh and checked by the Jesuit Brothers in Yojarkarta and used in over 10 different locations in Indonesia. Nonetheless, the version was review by the ITS team and some minor modifications made.

An essentially OWB list covering basic demographics, economics, employment, income/expenditure, savings, development and environmental sanitation were also set based on previous experiences in this and other Kampung in Surabaya.

Both SWB and OWB surveys were completed by 85 head of households (approximately 20 in each of the 4 sub areas of RW1 to 4) that were randomly selected (in as much as possible). The OWB data was then analysed using data from all 85 households and then repeated but splitting that data into those that were “happy” and those that were “not happy” (having a reduced QoL) based on results from the DASS42. The two separate analyses (completed using EXCEL spreadsheets) were then compared and conclusions drawn about firstly our understanding of what were the issues under each approach and to draw conclusions about the usefulness of QoL models. Training was given to the members of the 4 survey teams prior to their work in the field (one team for RW1 through 4). It consisted of a PowerPoint presentation covering previous experience with the DASS42, a review of all 42 questions and how they should be asked, the modality of surveys (one on one preferred with around 50% women and 50% men). This was followed up by a walk through the Kampung where the logistics and practical procedural aspects were resolved. For example, it was felt that to get the male head of households that surveys would probably need to be after work or on weekends. Surveys were then completed in May 2011 under the supervision of one of the authors.

THE ADVANTAGES OF THE DASS42 QoL APPROACH

There are apparently 38 QoL tools (Sharp et al, 2005) and the usefulness of such tools according to Malcolm is to provide “an approximate measure of the right things [as being] more meaningful than an exact measure of the wrong things”(Malcolm, 2006). Polletti perhaps puts it best with the comment that such approaches “aims for better (as opposed to perfect) information with which to make a case for plausible (as opposed to proven) associations”(Polletti, 2004). Thus, the role of the DASS42 is not necessarily to show absolute quantitative differences but rather to suggest reasonable and credible cause and effect linkages. This is the recognised ability of SWB approaches to firstly validate (ensure that it is what people in the community actually want) and perhaps to a lesser extent verify causal links to enhanced well-being that OWB approaches alone may not be able to identify.

However, there are distinct advantages of the DASS42 over the other 37 QoL models that has been confirmed by previous work which include the following (Potangaroa, 2006):

- The DASS42 does not need a before and after survey to draw relative comparisons. Most/all of the other QoL models need to do a before and after study which means that results, trends or tendencies are not known till after any “intervention” has been completed. This is problematic operationally as identifying vulnerability, targeting assistance, informing programmes, comparison across programmes and early metrics for aid, and monitoring are not readily achieved.
- The DASS42 has been designed for use by non psycho-social professionals and can (and should) be used by architects and engineers to understand the impact of their work. It allows an out comes approach rather than the usual an out puts one. It deals with the ubiquitous non clinical context of QoL. And while social scientists can at times object it was certainly the intent of Lovibond and also the need for for built Environment professional to be able to better link their perhaps objective “engineered” interventions to the social outcomes for communities of concern. The questions that form the DASS42 are phenomena-logically based and based on field experience are largely trans cultural. The questions are almost mundane and feel like the sort of questions friends might ask of each other. Approximately 5 questions need to be carefully worded and these are covered in the training sessions. For example, what does “feeling blue” mean in an informal Kampung in Indonesia?
- It does not generate expectations amongst the surveyed population. This particularly important in operational programmes where surveys can generate other unintended problems. For example questions aimed to identify whether vulnerabilities can convey the idea that if one were “vulnerable” that they could get more and potentially get it quicker.

The ability to characterize results and therefore not need a before and after study is because of the “severity” table feature of the DASS42 (refer to table 1 below). Consequently, results can be classified as normal, mild, moderate, severe and extremely severe that then allows both an individual and an aggregated classification. This aggregation means that comparison between different types of programmes such as health, housing and employment and also between different geographical zones is possible. This was not required for this study. This provided the second tool for this work.

	Depression	Anxiety	Stress
Normal	0 – 9	0 – 7	0 – 14
Mild	10 – 13	8 – 9	15 – 18
Moderate	14 – 20	10 – 14	19 – 25
Severe	21 – 27	15 – 19	26 – 33
Extremely Severe	28+	20+	34 +

Table 1: *The DASS42 Severity Index Table (Deville, 2005)*

RESULTS

The analysis of the OWB data shows the following with comparisons take from Setijanti (Setijanti, 2006):

- 78% of households consist of 1 household while further 205 consist of 2 households.
- 33% of these households consist of 3 people or less with a further 54% consisting of 4-6 people. These differ from what Setijanti found in Kampung Kaliasin (also in Surabaya) of 40% and 26% respectively.
- Employment was divided into the follow 4 groups of Group 1(civil servants/armed forces/police/entrepreneurs), Group 2 (employee/middle entrepreneur), Group 3 (temporary employee/labour/small entrepreneurs) and group 4 (Unemployed) and showed the following 3%, 21%, 29% and 47%. Again these differ from Setijanti figures of 11%, 48%, 23% and 18%; particularly for the unemployment percentages.
- 60% of household income/month (despite the apparent high unemployment) were under 2 million rupiah (2011 figures) while in Setijanti's study it under 1 million (2006 figures). These seem to be consistent allowing for inflation.

By now the criticisms of an OBW approach seem to be borne by the on-going analysis above. The selection of relevant capabilities are problematic (despite our access to previous studies such as Setijanti's), it is difficult to draw any bench marks or conclusions (even when there is a comparable study from a neighbouring area) and as found earlier would not be useful for making any interpersonal comparisons and has significant informational demands. How then does the application of a QoL open up such data?

Firstly, the DASS42 QoL results indicated the following:

- RW1: 4 reduced QoL factors involving 2 households
- RW2: 13 reduced QoL factors involving 7 households
- RW3: 0 reduced QoL factors
- RW4: 24 reduced QoL factors involving 16 households
- 25 households in all.

Hence, RW3 would appear to have the best QoL followed by RW1, RW2 and finally RW4. It is noteworthy that RW4's ranking was consistent with the "feeling" within the survey teams. This alone is useful in understanding well-being within Kampung Tunjungan. However, what emerges if the data is now broken up and analysed between those with and without reduced QoL?

The first observation was that family demographics (number of household and the number of people) do not impact on the well-being of these families. Percentage profiles are similar.

On the other hand, it does seem (not surprisingly as suggested earlier) that employment and hence household incomes do impact on well-being. 42% of those with a reduced QoL/well-being are unemployed and 60% earn less than 1 million rupiah/month compared to 17% and 2 million for those without a reduced QoL/well-being. As a further consequence most spend less than 100,000 rupiah on either building taxes and electricity compared to 100,000 to 500,000 rupiah for those without a reduced QoL/well-being. Interestingly both groups spend similar amounts on clean water. 32% of those with a reduced QoL/well-being indicated they could or did save regularly compared to 52% without. Both would agree and be involved in Kampung development.

The income gap is also evident in the type of business. 71% of those with a reduced QoL/well-being are involved in sales compared to 47% without but what seems more evident is that 40% of those without a reduced QoL are involve entrepreneurial asset based activities such as boarding houses compared to 0% for those with a reduced QoL. Finally, none of the environmental factors (questions 15 to 24) seemingly impact on the QoL/well-being.

Hopefully, the usefulness of the DASS42 (SWB) in achieving the analysis gains above using the same data is evident. But what has actually been achieved (and which it appears is not recognised in the literature) is the linking of both SWB and OWB approaches. And this perhaps should be explored further?

CONCLUSIONS

The DASS42 QoL is a compact tool that can be readily used and appears to deliver significant insights into complex issues of QoL and well-being. It does not seem to suffer from informational overheads as has been observed with OWB approaches. But it also allows the coupling of a SWB and OWB approach (or perhaps more accurately the review OWB data) which is an approach that is seemingly not recognised in the current literature.

In this example with Kampung Tunjunang in Surabaya, this approach was able to set contextual bench marks by using data for those with a reduced QoL/well-being against those without a reduced QoL/well-being and from that gain insights into the background factors of QoL/well-being. Not surprisingly employment/income is one of the key factors but it was also interesting to track this cause through other factors. Consequently, it appears to offer promise in terms of research and also operational aspects of development and assistance programmes.

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REFERENCES

- Clark D, McGillivray M, (2007) Measuring Human Well-being: Key Findings and Policy Lessons Policy Brief number 3, 2007 United Nations University, 2007 ISBN 978-92- 808-3037-8
- DASS (2006) Depression Anxiety Stress Scales (DASS) Psychology Foundation of Australia Viewed 26 April 2006 <http://www.psy.unsw.edu.au/Groups/Dass>
- Devilly G (2005) Depression Anxiety Stress Scale 42 (DASS 42) Viewed 26 April 2006

<http://www.swin.edu.au/victims/resources/assessment/affect/dass42.html>

- Dolan P, Peasgood T, White M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with Subjective well-being. *Journal of Economic Psychology*, 29, 94-122.
- Easterlin R. (1995) "Will raising the incomes of all increase the happiness of all?" *Journal of Economic Behavior and Organization*, Vol. 27, pp.35-47.
- Gleisner B, Llewellyn-Fowler M, McAlister F (2011) Working Towards Higher Living Standards for New Zealanders New Zealand Treasury Paper 11/02 May 2011 pg 15
- Kahneman D, Krueger A, Schkade D, Schwarz N, Stone A. (2006) "Would you be happier if you were richer? A focusing illusion". CEPS Working Paper 125. www.princeton.edu/~ceps/workingpapers/125krueger.pdf
- Kahneman D, Krueger A. (2006) Developments in the Measurement of Subjective Well-Being *Journal of Economic Perspectives*, Volume 20, Number 1 Winter 2006Pg 3–24
- Layard R. (2005) "Happiness: lessons from a new science". London: Penguin
- Lovibond S. Lovibond P (1995). *Manual for the Depression Anxiety Stress Scales*. (2nd. Ed.) Sydney: Psychology Foundation.
- Malcolm M-J (2006) Ripples in the pond: assessing the impact of a growing Not for Profit management programme in NZ and the Pacific. Unitec NZ Graduate Diploma in Not for Profit Management 2006 conference.
- Polletti T (2004) Inter-Agency Health Evaluations in Humanitarian Crises. A Background Issues Paper. London School of Hygiene and Tropical Medicine March 2004 pp41 of 57.
- Potangaroa, R. T. (2006). Measuring the qualitative aspects of a reconstruction programme: Aceh, Indonesia. In D. Alexander (Ed.), *Proceedings of the 3rd International i-Rec 17-19 May, Firenze, Italy*.
- Potangaroa R, Gosh A (2008). The DASS42 Plus. The 4th International Post Disaster Reconstruction Conference i-Rec2008 30 April– 2 May 2008. Christchurch. New Zealand
- Sen A. (1993) Capability and Wellbeing. In Nussbaum and Sen (eds).*The Quality of Life*. Oxford: Clarendon Press, pp.30-53.
- Sen, A. (1999) *Development as Freedom*. Oxford: Oxford University Press.
- Setijanti P (2006) *Low Income Inner City Settlement Processes: A Surabaya Study* PhD study University of Melbourne Aug 2006 pgs 182-235
- Sharpe A, Smith J (2005). *Measuring the Impact of Research on Well-being: A Survey of Indicators of Well-being*. Centre for the Study of Living Standards CSLS Research Report Number 2005-02 February, 2005 pp 119
- Tinkler L, Hicks S (2011) *Measuring Subjective Well-being Supplementary Paper*: Office for National Statistics UK July 2011 download at: www.ons.gov.uk April 2012
- Veenhoven R. (2006) "World Database of Happiness: continuous register of scientific research on subjective enjoyment of life". Erasmus University Rotterdam, Netherlands.
- van Hoorn A (2007) *A Short Introduction to Subjective Well-Being: Its Measurement, Correlates And Policy Uses* 2-3 April 2007, University of Rome 'Tor Vergata'
- Webster A, Bode G, Posselt H (2008) *Measuring wellbeing – the Australian Bureau of Statistics' framework for social statistics* Australian Bureau of Statistics at the United Nations Expert Group Meeting on The Scope and Content of Social Statistics 9-12 September 2008 United Nations, New York
- Zhang J, Yang Y, Wang H, (2009) Measuring subjective well-being: A comparison of China and the USA *Asian Journal of Social Psychology* (2009), 12, 221–225

APPENDIX A: The DASS42 Survey (in English)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There is no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of time
- 3 Applied to me very much, or most of the time

1 I found myself getting upset by quite trivial things	0	1	2	3
2 I was aware of dryness of my mouth	0	1	2	3
3 I couldn't seem to experience any positive feeling at all	0	1	2	3
4 I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 I just couldn't seem to get going	0	1	2	3
6 I tended to over-react to situations	0	1	2	3
7 I had a feeling of shakiness (eg, legs going to give way)	0	1	2	3
8 I found it difficult to relax	0	1	2	3
9 I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10 I felt that I had nothing to look forward to	0	1	2	3
11 I found myself getting upset rather easily	0	1	2	3
12 I felt that I was using a lot of nervous energy	0	1	2	3
13 I felt sad and depressed	0	1	2	3
14 I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	0	1	2	3

15 I had a feeling of faintness	0	1	2	3
16 I felt that I had lost interest in just about everything	0	1	2	3
17 I felt I wasn't worth much as a person	0	1	2	3
18 I felt that I was rather touchy	0	1	2	3
19 I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion				
0	1	2	3	
20 I felt scared without any good reason	0	1	2	3
21 I felt that life wasn't worthwhile	0	1	2	3
22 I found it hard to wind down	0	1	2	3
23 I had difficulty in swallowing	0	1	2	3
24 I couldn't seem to get any enjoyment out of the things I did	0	1	2	3
25 I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
26 I felt down-hearted and blue	0	1	2	3
27 I found that I was very irritable	0	1	2	3
28 I felt I was close to panic	0	1	2	3
29 I found it hard to calm down after something upset me	0	1	2	3
30 I feared that I would be "thrown" by some trivial but unfamiliar task				
0	1	2	3	
31 I was unable to become enthusiastic about anything	0	1	2	3
32 I found it difficult to tolerate interruptions to what I was doing				
0	1	2	3	
33 I was in a state of nervous tension	0	1	2	3
34 I felt I was pretty worthless	0	1	2	3
35 I was intolerant of anything that kept me from getting on with what I was doing				
0	1	2	3	
36 I felt terrified	0	1	2	3
37 I could see nothing in the future to be hopeful about	0	1	2	3
38 I felt that life was meaningless	0	1	2	3
39 I found myself getting agitated	0	1	2	3
40 I was worried about situations in which I might panic and make a fool of myself				
0	1	2	3	
41 I experienced trembling (eg, in the hands)	0	1	2	3
42 I found it difficult to work up the initiative to do things	0	1	2	3

APPENDIX B: Survey Questions

HOUSEHOLD

1. How many family members in this house?
 - A. The number of households: A. 1 households
 - B. 2 households
 - C. over 2 households
- B. The number of people:
 - A. 1 person
 - B. 4-6 people
 - C. 7-10 people
 - D. over 11 people
2. What is the family job?
 - a. Father
 - A. Group 1(civil servants/armed forces/police/entrepreneurs)

- B. Group 2 (employee/middle entrepreneur)
 - C. Group 3 (temporary employee/labour/small entrepreneurs)
 - D. Unemployed b. Mother
 - A. Group 1 (civil servants/armed forces/police/entrepreneurs) B Group 2 (employee/middle entrepreneurs)
 - C. Group 3 (temporary employee/middle entrepreneurs) D. Housewife
 - c. Son/Daughter
 - A. Group 1 (civil servants/armed forces/police/entrepreneurs) B. Group 2 (employee/middle entrepreneurs)
 - C. Group 3 (temporary employee/middle entrepreneurs) D. Student/college student
 - d. Others(specify who.)...
 - A. Group 1 (civil servants/armed forces/police/entrepreneurs) B. Group 2. (employee/middle entrepreneurs)
 - C. Group 2. (temporary employee/middle entrepreneurs)
3. How much is the family income?
- A < Five hundred thousand rupiah
 - B Five hundred thousand – one million
 - C 1-2 million
 - D Over 2 million
4. How much is your household spending/month?
- a. Building taxes
 - A. <One hundred thousand
 - B. 1-5 hundred thousand
 - C. five hundred thousand – 1 million
 - D. >1 million
 - b. Electricity
 - A. <One hundred thousand dollars
 - B. 1-5 hundred thousand
 - C. Five hundred thousand – 1 million
 - D. > 1 million
 - c. Clean Water
 - A. Thirty thousand rupiah
 - B. Thirty thousand rupiah – one hundred thousand
 - C. > 1-5 hundred thousand
 - D. Five hundred thousand
 - d. Cost of Living
 - A. < five hundred thousand
 - B. Five hundred thousand – 1 million
 - C. 1-2 million
 - D. >2 million
- d. Others.....
- A. < five hundred thousand
 - B. Five hundred thousand – 1 million
 - C. 1 -2 million
 - D. > 2 million
5. Can you save regularly every month?
- A. Yes (see number 6)

B. No (pass number 6, go to number 7) Why.....

6. How much can you save/month?

A. < five hundred thousand

B. Five hundred thousand – 1 million

C. 1 -2 million

D. > 2 million

URBAN KAMPUNG DEVELOPMENT

7. Do you agree if there is a kampung redevelopment?

A. Yes

B. No Why.....

8. Would you participate in the kampung redevelopment?

A. Yes

B. No why.....

9. How many floors in your house?

A. 1 floor B. 2 floor C. 3 floor D. >3 floor

10. How side is your house?

A. <30 square feet B. 30-60 square feet C. 60-100square feet D. > 100 square feet

11. Is there any economy activity in your house?

A. Yes (see number 12)

B. No (pass number 12,go to number 13)

12. Mentioned:

A. Sale and purchase

B. Service

C. Boarding business

D. Other, mentined:

HOUSES AND ENVIROMENTAL SERVICE

14. Where do you can forget clean water for?

a. Toilet facilities

A. PDAM B. Well

b. Cooking

A. PDAM

B. Mineral water

C. Refill water

15. Where do you channel House water?

a. Ditch

b. Septictank c. Catchment

16. Do you think. Action in number 15 is allowed? Mention reason a. Allowed

b. Not allowed

17. Questions below about toilet in your house? Answer the question below a. Do you have any toilet?
- A. Yes
 - B. No
- b. Is the toilet has septictank?
- A. Yes
 - B. No
- c. Since when did you have the toilet? Mention the year..... d. Are you satisfied with the toilet?Mention why?
- A. Yes..... B. No.....
18. Where the toilet waste goes?
- A. Ditch
 - B. Septictank
 - C. Jumbleng (lavatory hole)
19. How many times do you drain your toilet?.....times in.....year
20. How much do you spend for your toilet drain?
- A. fifty thousand rupiah
 - B. Fifty thousand rupiah – one hundred thousand
 - C. Hundred thousand
 - D. >five hundred thousand
21. What do you think about the household waste(like question number 15) that channelled trough the pipe under the alley and then channelled to the waste treatment facility? And mention why?
- A. Agree
 - B. Disagree
22. do you know about the toilet ECOSAN?
- A. Familiar
 - B. Non Familiar
23. How do you know about ECOSAN toilet?
- A. From friends
 - B. From newspaper/magazine
 - C. From internet
 - D. Others.....mentioned.....
24. What do you think about ECOSAN toilet? Mentioned why?
- A. Agree.....
 - B. Disagree.....

SATISFACTION LEVEL WITH NEIGHBOURHOODS IN LOW-INCOME HOUSING: A CASE STUDY OF JOHANNESBURG, SOUTH AFRICA

Mr. Clinton Aigbavboa

*Department of Construction Management and Quantity Surveying
University of Johannesburg, Doornfontein Campus,
aigclinton@gmail.com*

Prof Wellington Thwala

*Department of Construction Management and Quantity Surveying
University of Johannesburg, Doornfontein Campus,
didibhukut@uj.ac.za*

Abstract

For the past 17 years, the South Africa government has been providing housing schemes for the low-income and disadvantaged group. These low-income housing schemes have not, however, been holistically evaluated. Based on a post occupancy evaluation protocol of occupant survey of low-income housing scheme in Johannesburg, South Africa, the article presents the beneficiaries' judgement and assessment of the environment in which they are living. Face-to-face interview with 78 occupants revealed that they attached great importance to the level of satisfaction with their neighbourhoods. The most important factor associated with their neighbourhood satisfaction was privacy, which was a reflection of their previously living background.

Keywords: residential satisfaction, neighbourhood, low-income housing, Gauteng

INTRODUCTION

The perception of residents toward their housing condition can be studied by examining their housing satisfaction. Residential satisfaction has been a popular research topic over time for the following reasons. First, residential satisfaction has been accepted as important component of individuals' quality of life. Second, individuals' or household appraisals of their housing and neighbourhood determine the way they respond to residential environment and this in most cases form the basis for public policy feedback. Hence, the awareness about factors that shapes residential satisfaction is critical for a better understanding of how household forms the notion of satisfaction with a housing unit or how they form their mobility decision process (Lu, 1999).

Residents' housing satisfaction refers to the degree of contentment experienced by an individual or families relative to their current housing situation (McCray and Day, 1977). However, the theories of residential satisfaction are based on the perception that residential satisfaction measures the difference between households' actual and desired housing and neighbourhood situations (Galster and Hesser, 1981). Households or individuals thus make their resolution about residential conditions based on their needs and aspirations. Besides, satisfaction with their residential conditions indicates the absence of complaints as their needs meet their aspirations. Contrariwise, they are likely to be dissatisfied if their housing and neighbourhood conditions do not meet their residential needs and aspirations. Morris and Winter (1978) informs that housing satisfaction is an index of the level of contentment with current housing conditions. Morris further states that the term refers to an entire variety of satisfaction from 'very dissatisfied' to 'very satisfied' rather than just a state of being 'satisfied'. Also, Husna and Nurizan (1987)

inform that satisfaction with a given housing unit results from fulfilment of any need and dissatisfaction which exists when needs remain unfilled. The concept of housing satisfaction has been studied by many researchers (Awotona, 1990; Bruine and Cook, 1997; Connerly and Marans, 1985; Carvalho et al., 1997; Husna and Nurizan, 1987; Morris and Winter, 1978). Erstwhile studies on residential satisfaction have examined many attributes such as the dwelling unit, neighbourhood and environment, and users' characteristics that affect residential satisfaction (Lu, 1999). However, satisfaction with neighbourhood has been noted to be an important factor of housing satisfaction as the literature show that residents would rather remain where they are, even if it means continuing to live in dilapidated or run-down structures than to move to new units away from friends and the familiarity of their homes and neighbourhoods (Gruber and Shelton, 1987). Typical neighbourhood features includes neighbourhood facilities, such schools, clinics, shops, community halls, amongst others. To this end, the concept of residential satisfaction has been used, among other uses, as:

- a key predictor of an individual's perceptions of general 'quality of life' (Campbell et al., 1976);
- an indicator of incipient residential mobility, and hence has altered housing demands and affected neighbourhood change (Varady, 1983);
- an ad hoc evaluative measure for judging the success of housing developments constructed by the private sector (Zehner, 1977) and by the public sector (Marans and Rodgers, 1975);
- an assessment tool of residents' perceptions of 'inadequacies' in their current housing environment in order to improve the status quo (Michelson, 1977).

Research assessing residents' satisfaction with their dwellings has characteristically focused primarily on the dwelling unit itself with negligible or limited emphasis on the surrounding environment (McCray & Day, 1977). Yet, housing cannot be separated from its surrounding neighbourhood as the level of acceptance or satisfaction may be more dependent on where the unit is situated than on its actual or perceived quality in most cases. Therefore, Onibokun (1974) argues that the habitability of a house is determined not only by the engineering elements, but also by social, behavioural, cultural, and other elements in the entire societal-environmental system. The dwelling according to Onibokun may be adequate from the engineering or from the design point of view but may not necessarily be adequate or satisfactory from the inhabitants' point of view. Thus Onibokun established that the house is only one connection in a chain of factors which determine people's relative satisfaction with their accommodation. Therefore the objective of this paper is present beneficiaries' judgement and assessment of their housing neighbourhood and environment through a post occupancy evaluation protocol of occupant survey of low-income housing scheme in Johannesburg, South Africa.

NEIGHBOURHOOD SATISFACTION

The term neighbourhood is often used to describe the sub-divisions of urban or rural locations such as cities, villages, and towns. In its purest definition, a neighbourhood is the vicinity in which people live. People live next to or near one another in sections of an area and form communities. Those sections have some particular physical or social characteristics that distinguish them from the rest of the settlements. The basic physical attributes of the space defined by the term neighbourhood have been described in detail by Duany, Zyberk, and Alminana (2003) as a comprehensive planning increment.

The literature on neighbourhoods defines neighbourhood in many ways. Brower (1996) informs that its form is derived from a particular pattern of activities, the existence of a common visual motif, an area with continuous boundaries or a network of often-travelled streets. Diverse definitions serve different interests, so that the neighbourhood may be seen as a source of place-identity, an element of urban form, or a unit of decision making. It is presumed that research uses multiple definitions of a neighbourhood simultaneously to reflect the fact that neighbourhood is not a static concept but rather a dynamic one (Talen & Shah, 2007). Likewise, planners and designers have also thought of the neighbourhood setting as a fixed, controllable, and imaginable physical area.

Researchers agree that a neighbourhood should comprise a walkable distance (the distance that a person could pleasantly walk, a 3MPH pace in 5 minutes). However, the actual walkable distance considered has varied from a quarter-mile to one mile from centre to edge (Colabianchi et al., 2007; Hoehner et al., 2005; Talen & Shah, 2007). According to Ladd (1970), black youths drew a much smaller neighbourhood boundary (approximately 0.008- square mile distance that includes 1 block or less). This is consistent with an alternative micro-neighbourhood theory, which considered the neighbourhood as an area that a resident could see from his/her front door, that is, the five or six homes nearest to their house (Ladd, 1970). Similarly, Appleyard (1981) used the term, home territory, where he looked at residents' conception of personal territory in three streets with different traffic hazard. The findings revealed that residents drew their territorial boundaries to a maximum of a street block (between intersections with approximately 6-10 buildings each side), and to a minimum of their own apartment building. Research showed that the micro-neighbourhood deals more with social relationships among neighbours than the physical environment.

Neighbourhood satisfaction refers to occupants' overall evaluation of their neighbourhood. Scholars from many disciplines have examined neighbourhood satisfaction (Amerigo, 2002; Amerigo and Aragonés, 1997; Carvalho et al., 1997; Hur and Morrow-Jones, 2008; Marans and Rodgers, 1975). They have used a variety of terminology such as, residential satisfaction, community satisfaction, or satisfaction with residential communities (Amerigo and Aragonés, 1997; Cook, 1988; Lee et al., 2008; Marans & Rodgers, 1975). The transposable use of these terminologies, in spite of correlations between them is a problem (Carvalho et al., 1997; Francescato, 2002; Hur and Morrow-Jones, 2008; Lu, 1999; Marans & Rodgers, 1975). For instance, Marans and Rodgers (1975) measured satisfaction with the community, the macro-neighbourhood, and the micro-neighbourhood, and found that satisfaction with community related more to social factors while satisfaction with neighbourhood related more to physical factors. The residential environment includes physical dimensions other than the neighbourhood, such as the dwelling and the neighbours (Amerigo, 2002); and the community environment includes the social aspects as well as the physical ones (Marans and Rodgers, 1975).

Previous studies on housing satisfaction revealed that several features are required to determine the housing satisfaction of a given household or individual. For instance, the availability of desired features and structure types are related; accordingly, different services as provided by different structure types which also affect satisfaction with housing units. Also, the availability of space depends on the structure type, and the amount of space in a dwelling unit correlates with housing satisfaction level (Aigbavboa 2012). Building features have also been found to be strongly related to housing satisfaction (Kaitilla, 1993). Likewise the number of bedrooms, privacy, and the location of the kitchen contributed to the level of dissatisfaction among residents of the core housing program in Nigeria (Ozo, 1990). Further, satisfaction is also associated with the quality of the housing unit (Lord and Rent, 1987). Therefore, residents'

satisfaction is not absolute, and housing conditions are not static, thus, the residents' satisfaction with a set of features or conditions at any given time can be measured only in relative terms (Ukoha and Beamish, 1997).

Satisfaction with neighbourhood features have been observed as a vital determinant of residential satisfaction (Vrbka and Combs, 1991) to the extent that residents are willing to compromise the inefficiencies within the dwelling unit because of the satisfaction that is provided by the neighbourhood facilities and features (Ukoha and Beamish, 1997). Neighbourhood features refer to the location of the dwelling unit, neighbourhood relations, distance to the shopping areas, distance to the workplace or school, distance to the police services, distance to recreational facilities secure and clean environment, the building image and parking facilities amongst others (Aigbavboa and Thwala, 2012; Awotona, 1991). Hence residents of a given housing scheme are most likely to be dissatisfied with housing facilities that require residents to travel or walk long distances to school; to workplace, shopping areas, medical centres and the geographical areas around their dwelling units. Easy access to good public transportation, community and shopping facilities and physical environment variables will provide residents' satisfaction with their housing units.

Research conducted by Bjorlund and Klingborg (2005) in eight Sweden municipalities found the following top neighbourhood factors amongst others to be related to residential satisfaction, these include proximity to commercial areas, building exteriors with high aesthetic values, proximity to open spaces, less noisy environments with no traffic congestion, good reputation, good quality along the housing surroundings, proximity to town centres and a conducive environment. On the other hand findings of a study conducted by Abdul (2006) on residential satisfaction shows that neighbourhood facility factors are the most dominant factors in determining the level of satisfaction towards housing. The study further revealed that factors of neighbourhood facilities that caused a low level of satisfaction were poor public transport, lack of sport fields, lack of multipurpose halls, lack of parking areas and lack of safe facilities for the disabled. Also, Ramdane and Abdul (2000) study on the factors of neighbourhood facilities to evaluate the level of residential satisfaction; found that neighbourhood factors have a huge impact on the overall satisfaction with the housing facilities. Moreover, Troy (1973) informs that households or individuals decide the area to inhabit based on their social status. However, Troy further states that when a household lives in area that fits their social status, their level of satisfaction with the neighbourhood facilities will increase, emphasising the significance of social class to residential satisfaction. This is not necessarily relevant as individuals can live in environment below their social status provided it meets their housing norm (Gruber and Shelton, 1987; Vrbka and Combs, 1991).

Furthermore, a study on residential satisfaction in student housing (Aigbavboa and Thwala, 2012; Thomsen, 2008) find that the distance students have to walk to classes, student centres, security services, school bus station, sport field, gymnasium, computer laboratories and worship facilities are major factors that determines satisfaction in student housing. In addition, Khozaei et al. (2010) says that student living on campus are mostly satisfied with student neighbourhood facilities that are close to classes, food cafeterias and exposure to opportunities of meeting new people. In addition Kollekci and Berköz (2006) submit that satisfaction with neighbourhood facilities reflects the resident's satisfaction towards the housing facilities and its surroundings.

Research has pointed out the complex characteristics of neighbourhood satisfaction (Marans & Spreckelmeyer, 1981). It has also been identified that aesthetics, or pleasantness to the eye, is one of the most important factors in neighbourhood satisfaction (Kearney, 2006; Sirgy &

Cornwell, 2002). Whilst, social and personal characteristics such as neighbourhood cohesion, or network, were other factors associated with neighbourhood satisfaction (Chapman & Lombard, 2006; Morrow-Jones, et al., 2005; Okun, 1993; Westaway, 2007). The neighbourhood and environmental features which are considered for the present study are summarised in Table 1.0 below.

METHDOLOGY

Low-income housing schemes are perceived by the South Africa government as the way for the poor, low-income and the previously disadvantaged groups in the country to own their houses. Also, it enables them to live under better housing conditions by ensuring the provision of minimum acceptable standards, amenities, and facilities within and outside the dwelling units. The philosophy behind this is to contribute to an improvement in their quality of life. Amerigo (1990) in a study on the residential satisfaction in council housing in Spain emphasised the significance of obtaining distinct geographical placement of a residential satisfaction samples. In this study, the geographical area chosen is Johannesburg in the Gauteng Province of South Africa. There are various government subsidised housing schemes in, Johannesburg, Gauteng Province.

Gauteng is a province of South Africa. It was formed from part of the old Transvaal province after South Africa's first all-race elections on 27 April 1994. It was initially named Pretoria-Witwatersrand-Vereeniging (PWV) and was renamed Gauteng in December 1994. Gauteng, (a Sesotho word for 'place of gold') serves as the economic engine room of the country and the subcontinent, responsible for over 35% of the country's GDP. Despite it is geographically the smallest of the nine provinces. The main cities in Gauteng Province are Greater Johannesburg region, the biggest city in southern Africa, and Pretoria, the administrative capital of the country. Gauteng Province is currently home to about 22.4 percent of the country's population, or 11.328 million people. The City of Johannesburg (CoJ) has the largest population share of the province, at 34.3 percent or 3.884 million people. This is followed by Ekurhuleni at 26.8 percent and the City of Tshwane (CoT) at 23.2 percent (Gauteng Provincial Government, 2012). The growth is mainly because of the high influx of people from other provinces (rural urban migration), neighbouring countries, and others. This is due to the fact that Gauteng is considered the economic hub and power house of Southern Africa and contributes heavily in the financial, manufacturing, transport, technology and telecommunications sectors, and construction amongst others. Hence, because of the high influx of people into the province, housing provision has become a burden and a nightmare to the Gauteng Provincial Government (Provincial Housing Department) and the National Department of Human Settlement, with a majority of the low-income housing construction in the country being given the almost consideration in Gauteng-Johannesburg and its associated towns to be specific. Past neighbourhood satisfaction studies have utilized different data sets, and some have been made publicly available (Rossi & Weber, 1996). One example is the American Housing Survey (AHS), a national survey based on a non-random sample of 50,000 households administered by the U.S. Census Bureau every other year, which measures neighbourhood satisfaction and perceived quality (Greenberg & Crossney, 2007). AHS Survey is about the quality of the neighbourhood, asking respondents the following question: How would you rate your neighbourhood on a scale of 1 to 10? Where 1 is bad and 10 is best (Chapman & Lombard, 2006; see also Lu, 1999). Examples of AHS indicators are crime, heavy traffic, bad smells in the neighbourhood, abandoned or rundown buildings, trash and junk in the street, problems in neighbourhood schools, or housing satisfaction (Greenberg & Crossney, 2007). The AHS approach is also used in the current study, however, but on a scale of 1 to 5. Where 1 is bad (strongly dissatisfied) and 5 is best (very satisfied). Other studies have

used proprietary data sets to study neighbourhood satisfaction and perception (see Kasarda & Janowitz, 1974) which has not been adopted in the present study.

This study uses data from occupants of four different housing subsidy schemes in Johannesburg. The four housing subsidy schemes chosen are Ivory Park Extension 2, Kanana Zone 12, Reiger Park, and Diepsloot. These four chosen developments are all houses given to the low-income group through the South Africa housing subsidy scheme. The average size of a housing unit in this location is 40m². A structured questionnaire was used to conduct interviews with beneficiaries at the four locations. This approach was followed to improve consistency in the responses and ease of analysis. The method was also considered appropriate for a study amongst the low-income group. This is because it has been suggested that when dealing with a population likely to be of the low-income and disadvantaged group with low interest and motivation, the structured interview for data collection is the preferable option (Fowler, 1993). The questionnaire was designed to seek the opinion of the respondents on their level of satisfaction/dissatisfaction on a set of listed neighbourhood features. The respondents were asked to indicate the level of satisfaction/dissatisfaction on a scale of 1 to 5 Likert-type scales. The Likert scale ranges from 1 indicating 'very dissatisfied' to 5 indicating 'very satisfied' was used.

Beneficiaries were randomly selected in all four locations visited; these were interviewed given the fact that they have been resident in the areas for more than a month. Out of the 120 questionnaires sent out, 78 were received back; representing a sixty five percentage (65%) of the total sampled frame. The data collected were analysis using both descriptive and inferential statistics. The data presentation and analysis made use of frequency distributions and percentages of all the respondents. The questionnaire was administered to the heads of households or to the spouses of the heads of household in the sampled household. One household head per house was engaged in the questionnaire administration.

FINDINGS AND DISCUSSION

Findings emanating from the post occupants survey when the residents' length of occupancy was assessed revealed that about 29.50% of the occupants have been living in the subsidised housing unit for more than five years. Those who have lived there between three and five years are 21.80% and 25.60% for those who have been living there for less than one year. In essence recipients of the housing subsidies who have lived in their housing units for many years completed most of the questionnaires. It can therefore be inferred that the respondents have adequate knowledge of their living apartments and neighbourhood.

Further, when the beneficiaries' intended duration of stay in the housing units beyond what has already be reported above; findings showed that about 94.90% of the occupants indicated that they intend to live in the housing units for more than five years while 3.80% indicated they intend not to live in the units for a period of 3-5 years and 1.30% indicated they intend not to live in the area for more than one year. This is a further validation that the occupants' response in the neighbourhood satisfaction survey is based on unpretentious motive, because there is an attachment to the neighbourhood.

In addition, when the residents were asked of their previous accommodation status, before the units were allocated to them, 81.0% revealed that they were living in shacks; 17.0% were living in informal settlement, while 2.0% were homeless (absolute homelessness) before the allocation. The finding revealed that the progressive realization of the right to adequate housing as contained in the South Africa Constitution is being achieved. Also, in line with the housing

strategies as contained in the housing policy document; to prioritize the housing needs of lower income and disadvantage groups, the result revealed that the government is giving assistance to low-income groups and the homeless enabling them to become homeowners and improving their quality of life. Also, when occupants were asked the impact of the allocated housing units to them, 29.6% indicated that it has met their shelter need, while 16.6% said it has met their privacy need compared to their previous accommodation, 9.1% indicated it has met their investment need as they have now been able to use the money they would have used for paying rent for other investment.

The survey also revealed that all the occupants were South African citizens; because all respondents were born in South Africa and from the nine provinces. This was in line with the basic requirement of the South African government to qualify as a beneficiary for a housing subsidy. It further confirms the government responsibility in providing housing for its citizens. This made through the housing clause on the freedom charter, that “there shall be houses, security and comfort for all... All South Africa citizens shall have the right to be decently housed and to bring up their families in comfort and security”. Findings also showed that 34.6% of the respondents are originally from the Limpopo Province. While only 10.3% came from Gauteng Province. This shows why the Gauteng Province has always had the highest number of housing backlog in the country, revealing that most occupants (beneficiaries of low-income housing) who had been given houses and others on the housing waiting list might not necessarily be from Gauteng province.

Table 1 shows the distribution of the mean item score of occupants’ level of satisfaction based on the assessed neighbourhood elements. The numbers of the respondents who are satisfied with each of the neighbourhood and environmental attributes are indicated starting with the highest. This implies that the criteria having the least mean will have the highest level of satisfaction, while the criteria with the highest mean will have the highest level of dissatisfaction. Hence, the survey findings revealed that, privacy from other neighbours (M=1.85; SD=0.808) and absence of heavy traffic in the neighbourhood (M=1.89; SD=0.812) were rated as very satisfactory; followed by the location of the dwelling unit in the neighbourhood (M=1.95; SD=0.908), and Good relationship with the neighbour (M=1.96; SD=.697). Likewise, physical condition and appearance of the neighbourhood (M=2.64; SD=0.895), general cleanliness of the neighbourhood (M=2.73; SD=0.816); incidence of burglary activities (M=2.80; SD=0.893) were all rated as very dissatisfactory by the occupants. The level of occupants’ satisfaction with privacy from other neighbours is a direct reflection of their previous accommodation as findings above have revealed. Findings from the study conform to previous studies on housing satisfaction as revealed that several features are required to determine the occupants satisfaction with their neighbourhood and environment.

Table 1: Neighbourhood and Environmental attributes

Neighbourhood attributes	M	SD
Privacy from other neighbours	1.85	.808
Heavy traffic	1.89	.812
Location of dwelling unit	1.95	.908
Good relationship with the neighbour	1.96	.697
Closeness to workplace	1.96	.880
Closeness to shopping areas	1.99	.786
Closeness to schools	2.04	.861
Closeness to hospitals/clinics	2.32	.752
Closeness to the place of worship	2.34	.870

Public transportation and services	2.37	.969
Landscape of the neighbourhood	2.49	.876
Parking facilities	2.51	.685
Walkways and access to main roads	2.51	.702
Trash and junk in the street	2.52	.702
Closeness to playground and other recreational facilities	2.53	.704
Problems in neighbourhood schools	2.59	.860
Street and highway noise	2.62	.960
Secure environment	2.63	.979
Physical condition and appearance of the neighbourhood	2.64	.895
General cleanliness of the neighbourhood	2.73	.816
Proximity to Police services	2.74	.885
Police protection	2.78	.759
Incidence of burglary activities	2.80	.838
Crime	2.95	.893

Furthermore, the study also support Bjorlund and Klingborg (2005) findings done in eight Sweden municipalities, where it was found that residents neighbourhood satisfaction is related to the their satisfaction with proximity to commercial areas, building exteriors with high aesthetic values, proximity to open spaces, less noisy environments with no traffic congestion, good reputation, good quality along the housing surroundings, proximity to town centres and a conducive environment. On the other hand the current study findings did not support the study conducted by Abdul (2008) where it was highlighted that the neighbourhood facility factors that are most dominant in determining the level of satisfaction towards housing are low level of satisfaction with the public transport, and lack of parking areas. However, the present study finding is also consistent with the alternative micro- neighbourhood theory, which deals with social relationships among neighbours as the present study has shown - Good relationship with the neighbour ($M=1.96$; $SD=.697$). Further finding also identified that aesthetics, or pleasantness to the eye, is one of the most important factors in neighbourhood satisfaction as supported by the works of Kearney (2006) and Sirgy and Cornwell (2002). The result from the research further revealed the complex characteristics of neighbourhood satisfaction as also pointed out by the works of Amerigo and Aragonés (1997), Marans and Rodgers, (1975) and Marans & Spreckelmeyer (1981).

CONCLUSIONS AND RECOMMENDATIONS

This paper examined neighbourhood satisfaction in the context of some selected features in four subsidy housing schemes in Johannesburg. Findings from the study supported work done by previous scholars that satisfaction with neighbourhood features is a vital determinant of residential satisfaction to the extent that residents are willing to compromise the inefficiencies within the dwelling unit because of the satisfaction that is provided by the neighbourhood facilities and features. Also, the survey findings revealed that, privacy from other neighbours was rated as very satisfactory by the occupants' which was a reflection of their previous accommodation. Further findings revealed that the occupants' were very dissatisfied with the physical condition and appearance of the neighbourhood, general cleanliness of the neighbourhood; incidence of burglary activities because of the high level of crime in the housing locations.

Further findings from the research revealed that the progressive realization of the right to

adequate housing as contained in the South Africa constitution is being met by the government, as a majority of the beneficiaries that were allocated houses were South Africa citizens who mostly were living in shacks and some even homeless. It can be concluded that the South Africa government is responsible to the disadvantaged group (even though there are issues with the pace of service delivery and the quality of the delivered housing); and it is still the major player when it comes to the progressive realization of the right to sustainable human settlement for the poor and low-income groups in the country.

Though findings from the study revealed the neighbourhood features which subsidised low-income housing occupants are satisfied with; however, the study only focused on four low-income housing locations in Johannesburg, Gauteng Province. Findings from the research do show a level of biasness because a limited area was sample. But findings are indicative of the determinants of neighbourhood and environmental features that bring about residential satisfaction in low-income housing. In terms of reliability of the methodology adopted, when the procedure is followed in a larger population, findings would justify the current study. Therefore, the results revealed in this study gives valuable insights for the Department of Human Settlement towards the improvement of much better low-income housing neighbourhood space in future development and in the modification of exiting housing location. That said, the study suggests ways in which the Department of Human Settlement could improve low-income housing neighbourhood:

- They should first improve the physical upkeep of the neighbourhood;
- Next, they should increase the amount of vegetation – plant flowers and trees;
- Encourage residents to do gardening, by doing so, they could provide eyes-on street, maintain higher upkeep, and make residents satisfied with (visual) diversity in the neighbourhood;
- Location low-income housing close to Police services, thus combating the incidence of burglary activities and crime providing a secure environment;
- Locate the playground and other recreational facilities closer to the housing location and
- They should locate low-income housing closer to amenities and not at on urban peripheries, far from jobs and services.

REFERENCES

- Abdul, G. S. and N. A. Yusof (2006). Residential Satisfaction in Low-cost housing in Malaysia. Report of Research
- Aigbavboa, C. O. (2012). Post Occupancy Evaluation of Housing Subsidy Beneficiaries: A case study of the Gauteng Province of South Africa. Holland, LAP Lambert Academic Publishing.
- Aigbavboa, C. O. and W. D. Thwala (2012). An appraisal of housing satisfaction in South Africa low income housing scheme. *The International Journal of Construction Management* 12(1): 1-21.
- Amerigo, M. (2002). Residential environment: Choice, satisfaction, and behaviour. A psychological approach to the study of residential satisfaction. J. A. Aragonés, G. Francesca and T. Gärling. Westport, CT, Bergin & Garvey: 81-99.
- Amerigo, M. A. (1990). The perception of residential environment and environment role. *Culture, Space and History*. R. Pamir, V. Iuramoglu and N. Teymur, Ankara, M.E.T.V.: Faculty of Architecture. V.
- Amerigo, M. A. and I. J. Aragonés (1997). A theoretical and methodological approach to the

- study of Residential satisfaction. *Journal of Environmental Psychology* 17: 47-57.
- Awotona, A. (1990). Nigerian Government Participation in Housing: 1970- 1980. *Habitat International* 14(10): 17-40
- Brower, S. (1996). *Good neighbourhoods: Study of in-town and suburban residential environments*. Westport, CT, Praeger Publishers.
- Bruin, M. and C. Cook (1997). Understanding constraints and residential satisfaction among low-income single-parent families. *Environment and Behavior* 29(4): 532-553.
- Campbell, A., P. E. Converse, et al. (1976). *The quality of the American life: Perceptions, evaluations, and satisfaction*, New York: Russell Sage Foundation.
- Carvalho, M., V. R. George, et al. (1997). Residential satisfaction in condominiums exclusivos (gate-guarded neighbourhoods) in Brazil. *Environment and Behavior* 29: 734-768.
- Chapman, D. W. and J. R. Lombard (2006). Determinants of neighbourhood satisfaction in fee-based gated and nongated communities. *Urban Affairs Review* 41(6): 769-799.
- Urban Affairs Review 41: 769-799. Colabianchi, N., M. Dowda, et al. (2007). Towards an understanding of salient neighbourhood boundaries: Adolescent reports of an easy walking distance and convenient driving distance. *International Journal of Behavioural Nutrition and Physical Activity* 4(66).
- Connerly, C. E. and M. R. W. (1985). Comparing two measures of perceived neighbourhood quality. *Social Indicators Research* 17: 29-47.
- Duany, A., Z.-P. E., et al. (2003). *The New Civic Art: Elements of Town Planning*. New York, Rizzoli
- Galster, G. C. and G. W. Hesser (1981). Residential satisfaction: An empirical critique. *Environment and Behavior* 13(6): 735-758.
- Gauteng Provincial Government. (2012). "Socio-economic review." Retrieved 23 June, 2012, from <http://www.finance.gpg.gov.za/GDFDocuments/SERO/SERO%202012.pdf>.
- Greenberg, M. R. (1999). Improving neighbourhood quality: a hierarchy of needs. *Housing Policy Debate* 10(601-624).
- Gruber, K. J. and G. G. Shelton (1987). Assessment of neighbourhood satisfaction by residents of three housing types. *Social Indicators Research* 19(303-315).
- Hoehner, C. M., L. K. Ramirez, et al. (2005). Perceived and objective environmental measures and physical activity among urban adults. *American Journal of Preventive Medicine* 28(2S2): 105-116.
- Hur, M. and H. Morrow-Jones (2008). Factors that influence resident's satisfaction with neighbourhoods. *Environment and Behavior* 40(5): 619-635.
- Husna, S. and Y. Nurizan (1987). Housing provision and satisfaction of low-income households in Kuala Lumpur. *Habitat international* 11(4): 27-38.
- Kaitilla, S. (1993). Satisfaction with public housing in Papua, New Guinea: the case of West Taraka housing scheme. *Environment and Behavior* 25: 514-545.
- Kasarda, J. D. and M. Janowitz (1974). Community attachment in mass society. *American Sociological Review* 39(328-39).
- Kearney, A. R. (2006). Residential development patterns and neighbourhood satisfaction: Impacts of density and nearby nature. *Environment and Behavior* 38(1): 112-139.
- Kellekc, O. L. and L. Berkocz (2006). Mass housing; User satisfaction in housing and its environment in Istanbul, Turkey. *European Journal of Housing Policy* 6: 77-99.
- Khozaei, F., N. Ayub, et al. (2010). The factors predicting students' satisfaction with university hostels, case study, universiti sains Malaysia. *Asian Culture and History* 2(2): 148-58.
- Ladd, F. C. (1970). Black youths view their environment: Neighbourhood maps. *Environment and Behavior* 2: 74-99.
- Lu, M. (1999). Determinants of Residential Satisfaction: Ordered Logit vs. Regression

- Models. *Growth and Change* 30(Spring): 264-287.
- Marans, R. and K. Sprecklemeyer (1981). *Evaluating Built Environment: A Behavioural Approach*. Michigan: The University of Michigan, Ann Arbor.
- Marans, R. W. and W. Rodgers (1975). *Toward an understanding of community satisfaction. Metropolitan America in contemporary perspective*. A. H. Hawley and V. P. Rock. New York, Halsted Press: 299-352.
- McCray, J. W. and S. S. Day (1977). *Housing values, aspirations, and satisfactions as indicators of housing needs*. *Home Economics Research Journal* 5: 244-254.
- Michelson, W. (1977). *Environment Choice, Human Behaviour, and Residential Satisfaction*, Oxford University Press: UK.
- Morris, E. W. and M. Winter (1978). *Housing, Family and Society*, John Wiley and Sons (New York).
- Morrow-Jones, H., M. V. Wenning, et al. (2005). *Differences in neighbourhood satisfaction between African American and White homeowners*. *Association of Collegiate Schools of Planning (ACSP46)*. Kansas City, MO.
- Okun, M. A. (1993). *Predictors of volunteer status in a retirement community*. *International Journal of Aging and Human Development* 36(1): 57-74.
- Onibokun, A. G. (1974). *Evaluating Consumers' Satisfaction with Housing: An Application of a System Approach*. *Journal of American Institute of Planners* 40(3): 189-200.
- Ozo, A. O. (1986). *Public housing policies and the urban poor in the third world. A case study from Nigeria*. *Third world planning Review* 8(1).
- Ramdane and A. A. Abdullah (2000). *Satisfaction Level with Neighbourhood's in Low-Income Public Housing in Yemen*. *Property Management* 18(4): 230.
- Rossi, P. H. and E. W. Weber (1996). *The social benefits of homeownership: empirical evidence from national surveys*. *Housing Policy Debate* 7: 1-35.
- Sirgy, M. J. and T. Cornwell (2002). *How neighbourhood features affect quality of life*. *Social Indicators Research* 59(1): 79-114.
- Talen, E. and S. Shah (2007). *Neighbourhood evaluation using GIS: An exploratory study*. *Environment and Behavior* 39(5): 583-615.
- Thomsen, J. (2008). *Student housing-student homes? Aspects of student housing satisfaction*, Doctoral Thesis, Norwegian University of Science and Technology, NTNU, 182.
- Ukoha, O. M. and J. O. Beamish (1997). *Assessment of residents' satisfaction with public housing in Abuja, Nigeria*. *Habitat international* 21(4): 445-460.
- Varady, D. (1983). *Determinates of residential mobility decisions*. *Journal of the American Planning Association* 49: 184-99.
- Vrbka, S. J. and E. R. Combs (1991). *Predictors of Neighbourhood and Community Satisfaction*. *Referred papers of the American Association of Housing Educators Annual Conference*. Durham, NH.
- Westaway, M. S. (2007). *Life and neighbourhood satisfaction of black and white residents in a middle-class suburb of Johannesburg*. *Psychological Reports* 100(2): 489-494.
- Zehner, R. (1977). *Indicators of the quality of life in new communities*. Cambridge, Ballinger.

LABOUR INTENSIVE CONSTRUCTION, ORTHOPHOTOS AND THE CREATION OF SECURITY AND EMPLOYMENT IN INFORMAL SETTLEMENTS

James Croswell
PrEng, Specialist Consultant GOBA (PTY) LTD
Johannesburg, South Africa
jamesc@goba.co.za

Abstract

The paper will deal with aspects of service provision for housing and in particular in informal settlements. In addition a proposal is made for identifying, registering and securing properties within informal settlements using aerial photography and Geographical Information Systems. The use of labour-intensive construction methods, which lend themselves to application in the areas where servitudes and rights-of-way are irregular and nonlinear, is proposed both from the practical point of view of actually being able to install services and roads as well as from the point of view of creating employment for the local residents. Labour-intensive construction, where human labour is substituted to the greatest extent possible for mechanical methods, is well tested and the legal and practical framework for applying these methods is well established in South Africa. The government-sponsored Expanded Public Works Program was created to encourage employment, particularly associated with the installation of essential services, but application of the methods suggested in the Guidelines have not enjoyed widespread application associated with housing or human settlement. It will be shown that the use of LIC is completely appropriate and is, in many instances, the only reasonable solution for the provision of services in informal settlements where the removal of existing structures is to be avoided. Examples of the application of appropriate design methodology, utilised both to resolve the issue of access occasioned by apparently random positioning of structures, and to facilitate labour-intensive construction, and thereby employment creation, will be demonstrated. The objective of combining the technology available and a labour intensive approach to construction is explored with the hope that individual serviced and registrable land can be defined and transferred to beneficiaries with a view to wealth creation.

Keywords: Sustainable Human Settlements; Housing; Labour Intensive Construction

INTRODUCTION

The use of aerial photography (orthophotos) to identify areas which could be associated with particular structures, and therefore family units, could lead to the ability of registering properties, and thereby securing the major asset of the occupiers of informal structures, has been investigated and will be demonstrated. The fact that current legislation within South Africa does not favour, or does not permit, registration using the methods proposed needs to be addressed and a suggestion in this regard will be made. Reference is made to the work of Hernando de Soto who emphasises the importance of securing dwellings, and the underlying dominion, no matter how modest, as the basis of a structure for the creation of wealth.

The symbiosis of utilising advanced technology in the design of essential services is coupled

with the ability to accurately identify properties is suggested as an appropriate approach for the upgrading of informal settlements.

The creation of employment has been emphasised as South African Government policy and there are many initiatives aimed at achieving a greater use of labour, and in particular local labour, in the provision of infrastructure. Mechanisms have been put in place and there is much talk about labour-intensive construction (LIC) which aims at substituting as much labour as is practically possible for machines normally used in construction, and in particular infrastructure delivery. These initiatives have enjoyed some success, but everything can obviously be improved upon. The Expanded Public Works Programme, currently in its second Phase in South Africa, is an example of a large scale Government initiative.

At the same time, and perhaps more important in South Africa, which is a capitalist country, is the creation of capital, particularly in the hands of those who have, through circumstances, been excluded from the normal capital creation process. Many people have assets, however modest, which should be made to work for them as capital. Informal settlements consist of assets which are seen as having value in the eyes of their occupiers/owners and in the eyes of their peers. What is missing is the ability to utilise these assets as collateral in a parallel, commercial sense. The thoughts of Hernando de Soto Polar (de Soto) deal with that aspect at length and will be explored in greater detail below.

The symbiosis of upgrading informal settlements, without relocation (i.e. *insitu*), using LIC methods which create employment opportunities for local residents, while at the same time creating fungible assets on the very site of the upgrading, for the very people who are doing the upgrade, is an achievable objective. Various obstacles have been raised to the method which will be proposed below, but, with a sense of optimism these ideas are presented again in the hope that, since they were first presented-by the author in 1987, there has been a substantial re-alignment of thinking and a greater understanding of the need for the empowerment of those previously marginalized.

This paper, while strongly advocating the use of LIC, rather focuses on the specific use of LIC in informal settlements. It will be shown that the methods suggested are probably the only practical way of creating the upgrading, and therefore, in a way, formalising what is otherwise dismissed as informal. There is the added proviso that the properties so serviced should also be formalised so that they may be used as collateral to assist the creation of capital for their owners.

In a paper presented at the PACE Conference (Progress in Architecture and Construction Engineering) the author attempted to combine the concept of a "registered orthophoto" which would provide an opportunity for property registration, with the concept of labour-intensive installation of services within the "public spaces" created when properties were identified. The use of computer aided technologies which allow both the accurate determination of boundaries from photography as well as the coordination and alignment of the various stages of property identification and registration was emphasized. These thoughts are no less relevant today. It therefore can be argued that the computer, or rather computer programs, helps to facilitate the overall objective.

SURVEY ASPECTS

The inherent accuracy within any computer system lends itself to an application in cadastral survey. The X and Y coordinates of a point on the surface of the Earth need to be determined within an accuracy of a few parts per million. Professional Land Surveyors use computers for computation and for the preparation of general plans (the cadastral plan that is approved by the Surveyor General) used by the Registrar of Deeds to identify for registration. Typically the points identified on the General Plan represent the position of an actual peg or beacon which has previously been placed in the ground. This pegging is a relatively expensive operation and has to be carried out to accuracies which have been laid down by an Act of Parliament. The whole system is so arranged that should any one, or a group of, beacons be disturbed they may, by reference to the lodged General Plan, be replaced at any stage. Usually once an area, particularly a residential area, has been fully developed, so many beacons have been disturbed during the building operation that the established boundary wall or fence line becomes the common-law boundary. Very rarely is reference made to the cadastral beacons except when a dispute arises. Sole reliance on cadastral information resulting from formal survey methods is not particularly relevant in the practical situation and alternative methods should be permitted.

In the Southern African context, where urbanisation has been planned or has simply happened, several alternative possibilities with regard to identification of the properties arise:

1. The formal system to township design, survey and registration is carried out. Cadastral beacons are placed and housing development following within the defined boundaries.
2. Formal planning is carried out, but the transfer of the cadastral information onto the ground is not completed for whatever reason. Housing develops and it may be necessary later to identify the cadastral boundaries (e.g. the original Soweto)
3. Informal housing develops without any planning and without any cadastral constraint. This is known as "squatting" and, as the squatter settlement matures, the extent of each property is defined by consent, persuasion or use of force to establish what could be called "a common-law boundary". These boundaries are relatively easy to identify, either on the ground or from aerial photography, but problems do arise with any attempt to formalise, as a record for registration purposes, because of the restrictions imposed by the Registrar of Deeds.

It is suggested that modern technology offers a way in which the developments under 3 above can be formalised to the particular benefit of the residents. In the Author's opinion there is no purpose in attempting to achieve conventional standards by forcing new methods to comply with old norms. It is far better that acceptable standards are adopted to capitalise on the method which are available and to achieve the overall purpose of identification of properties without the financial burdens imposed by regulations.

Conventional survey

The place of conventional survey is well known and is appropriate and applicable where the costs can be absorbed. While calculations may well been done by computers the placing of

the individual pegs/beacons to the required accuracy remains an expensive operation to be undertaken by the Registered Land Surveyor.

Partial Conventional Survey

There are many variations which are less complete than the survey mentioned above. Some time ago these methods were widely applied due to financial considerations and the lack of capacity on the part of Registered Land Surveyors.

Typically survey calculations are done and general plans are prepared, but all property beacons are not placed. Sometimes block corners are placed with further boundaries been determined by taping, a less accurate means, as housing develops. Boundaries between individual properties are either created *ab initio* or develop over time bearing in mind the survey framework. Registration of individual title is not carried out. At some later time, when registration is required along the formal established lines, then property beacons can be placed so that individual properties can be identified. In addition, when the installation of essential services is attempted one has to relate these services to the cadastral boundaries which are more or less accurate, but which, over an extended period of time, may have been superseded by common-law boundary. The cadastral boundary, in the worst case, is ignored.

Without the possibility of demolition, the installation of services on a particular boundary may not be possible. The use of aerial photography to create an accurate orthophoto is indicated, and it is, thereafter, possible to superimpose the cadastral information and to rapidly identify those areas where problems may arise. When registration is the object, it is possible, using a combination of conventional survey techniques and planning on the orthophoto, to establish new boundaries to reflect the *status quo*.

Non-Conventional Survey

It is in the identification of individual properties in "squatter areas" that the strength of computer applications becomes most evident. Squatting, by its very definition, is unplanned although not totally unorganised. Even in the highest density areas a semiformal access pattern is established and each dwelling unit is surrounded by defensible space which usually includes identifiable boundaries. Using controlled aerial photography to produce accurate orthophotos provides a plan on which every structure can be identified and on which the ground associated with that structure is more or less clearly defined. Since the orthophoto is dimensionally accurate the coordinate of any point on it can be determined. In practical terms the identification of fence lines, planted trees or cleared ground identifies individual spaces. The corner points of the spaces can be digitised and effectively create a cadastral plan. As individual properties and spaces are identified a plan, which bears a strong resemblance to a conventional town planning plan, begins to emerge. This can be checked on the ground and anomalies or inconsistencies resolve before the plan is formalized. It is proposed that this plan, which reflects the common-law boundaries accepted by the community, becomes a registrable diagram of the affected properties. Because the drawing can be coordinated, individual beacons can, if required, be placed at any time. To achieve this certain changes to the relevant Land Survey Act would be necessary.

Having established boundaries of properties several strategies can be employed. Firstly the properties can be clearly identified and, in the author's opinion, be registered for the purposes of collateral. This falls in line the de Soto thinking that all properties, however humble, must assist in the formation of capital and must operate with a dual function.

The second objective could be to identify those spaces which are commonly accepted as being "public" and it is within the spaces that any essential services can and should be installed. Further use of orthophotos on which, what could effectively be called rights-of-way, are established which can become public from the point of view of access and installation of essential services. It will be seen that these spaces may not be regular, but because they are public these are the spaces which need to be utilised for installation of public services. Appropriate design will provide drawings and subsequently contract documentation which allows for the installation of services. The important point is that, to be effective, it is necessary to adapt to the shape of the public spaces when installing services and to achieve this the most cost-effective way is to use labour intensive construction, to the exclusion of machines which require more rectilinear work spaces.

PROPERTY REGISTRATION IN SOUTH AFRICA

The property registration system in South Africa is recognised as being one of the most thorough and secure in the world. It is on a par with the most sophisticated information and registration systems and deals with all aspects of property in the greater sense. To the extent that it is now widely accepted, and that it provides permanence and reproducibility of records relating to property, is a fact which has only evolved as a result of transference of accepted methods, particularly from Europe. Historically, before settlement in Southern Africa, the right of occupation and use of land was established and maintained through traditions which were often perpetuated by the use of force. Areas of the country were identified by visual markers and rights were passed on through a spoken tradition. When neighbouring tribes were at peace boundaries were recognised and honoured. Disputes or claims were often settled through battle.

Over this matrix, which recognised the sovereignty of kings or chiefs, settlers imposed in different matrix which defined their assumed ownership of tracts of land, identified by beacons placed either unilaterally, or by consensus, and which served as "markers" to the boundary of portions of land which were called farms. The majority of these farms and names given to them are maintained to this day and form the basis of property registration. It must be noted that it was some time after the first marking of farm boundaries that a system of survey was introduced and then spread, generally from the Western Cape, across what was to become South Africa. Title or ownership was registered with government authorities and this formed the basis of the Deeds Registry we recognise today. Examination of historic titles from the late 18th century and the early 19th century of land or property claims give one the idea of the extent of the individual properties and a clue to how these properties were defined.

As land surveying spread markers or beacons were surveyed and given coordinates which could be recorded in numerical form and entered into a database which survives to this day. Progressive subdivisions of individual farms followed a very similar route, sometimes influenced by the "pegging" of claims related to minerals, which has led to a comprehensive record of the boundary of all properties which were created through the formal system. This is an admirable and jealously guarded record of property maintained by registered land surveyors long empowered by law to define individual properties and prepare cadastral records for registration. The maintenance of the cadastre is entrusted to various Surveyor Generals acting through Deeds Registries.

As mentioned above there have been less formal methods employed either for the sake of convenience, necessity or because of informal “squatting”. To create the certainty of description deemed as necessary, particularly by financial institutions, it has been necessary to return to the site of such development and in terms of the Land Survey Act (Number 8 of 1997), to place beacons in accordance with calculated coordinates. This is a job reserved to Registered Land Surveyors and attempts to introduce any alternate system have been strongly resisted. To quote de Soto “The professionals who maintain the cadastre -that is, lawyers and surveyors are the culprits who keep property titling inaccessible and expensive so that the capital in the properties of the poor remain locked up” (as quoted in Jackson, J and Musonda, E “The role of documents in supporting land rights” Position IT January/February 2012).

THE USE OF PROPERTY TO CREATE WEALTH

Because only property which is registered in terms of current legislation is accepted as security or collateral for funding or financially related transactions, those properties which can be identified, and which are very often recognised by the occupiers and their peers, are of little value for the creation of wealth. Hernando de Soto, working originally in Peru, brought about administrative reform which has given title to more than 1.2 million families which previously had no security. Administrative changes which relate to business and the creation of businesses will not be dealt with here although this is also an issue of some concern in South Africa. Issues relating to property/land title only will be dealt with specifically. In an article in Business Day of 2 February 2012, Pierre Heistein, quotes de Soto as estimating, in 2001, that the “worldwide value of the property of the poor was about US\$ 93 trillion (about R723 trillion). The main characteristic of this property is that those who live on it, or anyone else for that matter, has claim to title deeds of ownership of this land”. It is this “Claim” that has to be converted into a right so that the dormant capital can be utilised in the formal market.

de Soto's policies have been used in several countries, both in South America and in Africa, and he has given advice to the Government of South Africa on these matters. The author has been unable to find how his influence has changed attitudes in South Africa, if at all. In Wikipedia we find the following quote “The ILD’s (Institute for Liberty and Democracy) influence and ideas have also inspired reforms in countries where it has yet to work (Author’s emphasis), such as China, Russia, South Africa, Thailand, and India, which includes two of the world's fastest-growing emerging economies”.

AN ALTERNATE APPROACH TO THE RECOGNITION OF PROPERTY

Fortunately South Africa has a system which records ownership of land and other economic (“property”) information. What it has not always been able to facilitate is the rapid recognition and registration of properties which have not followed procedures in the Land Survey Act.

This is unfortunate because with the advent of computers, and computer aided systems of drafting, the facility to identify and record the position of recognised boundaries and points of definition has advanced immeasurably. In 1987 the author proposed a system of “registered orthophotos” (Dimensionally accurate photographs) which were to be used to identify and define, on the photographs, boundaries between adjoining properties, which were either self

evident or were agreed to by the neighbouring parties. It is possible, particularly using computer programs as they have evolved, to provide coordinates at any change of direction of boundaries to within accuracy of centimeters, simply by examination of aerial photographs. It is proposed that once boundaries have been defined and agreed to by the involved property owners these should become adequate records, for registration purposes, of the properties concerned. It is not necessary to place beacons as they would simply serve to reinforce what has been accepted by consensus. The ability to place beacons, should this be required as a condition or in settlement of disputes, is readily available using the data recorded from the aerial photography. An example of this approach is included below.

This process can be very rapid and identification of properties by a skilled computer operator, and not necessarily registered land surveyors, at the rate of between 50 and 100 properties per day is possible. The tedious process of actually placing beacons is eliminated and this is particularly relevant in informal settlement areas where, unless demolition of structures is contemplated, inter-visibility between points can create extreme difficulty. Trained community workers with a moderate level of skill are able to explain the procedure to occupiers and to gain consensus between adjoining property owners on the boundaries identified by them from aerial photography.

If a system such as this was put into place in South Africa there would be no need for the demolition of informal settlements for the purposes of identification of individual properties and the objective, recognised by de Soto, of creating title to property, and therefore access to wealth creation, would be rapidly achieved. What needs to be done is that the various Registrars of Deeds need to be convinced that what could be termed “registered orthophoto”, taken together with a schedule of coordinates of identified points, forms sufficient basis for the registration of property. One of the main constraints for the advancement of the poor by utilising land and the improvements thereon, however humble, as the basis for entering the formal economy will have been lifted and the advancement of those currently in the “informal sector” , as envisaged by de Soto and, as experienced elsewhere, will have been achieved.

One of the criticisms leveled at the “de Soto approach” to land title is that it still favours those who are wealthier. This need not be the case as there is a well established process in South Africa where a system already exists for land to be transferred to qualifying individuals at no cost to themselves. Modifications to the current regulations relating to the housing subsidy may be necessary to focus the subsidy on the land component only. This is a small and entirely acceptable adjustment. Recent Ministerial statements indicate that there is an intention to move towards subsidizing land ownership rather than “RDP” housing (“New Windows Opening in Housing Market” quoting Minister Trevor Manuel in Business Day 14 March 2012, Thabang Mokoanele).

An Added Value of Identifying Property

The symbiosis which was mentioned earlier is that should properties be identified, as defined and described above, we will simultaneously identify those areas which can be called “common property ” and these spaces can be used for the purposes of access and installation of essential services without material interfering with the properties which are now recognised as ”Private”. Because these pieces of common property, or public space, are unlikely to be regular or rectilinear the challenge of installation of services, which have

traditionally followed rectilinear paths, requires a new approach. This is where the other part of the equation, which is the main theme of this paper, becomes relevant. The use of labour-intensive construction methods is not constrained by non-rectilinear alignment and, fortuitously, the use of hand labour lends itself ideally to excavation of service trenches following routes which might otherwise be regarded as torturous.

The objective, which I believe is an honourable one, should be to create title to property and then to use a labour-intensive construction approach to the installation of services which will serve this property and bring it into line with accepted norms. The fact that the beneficiaries of the title to property might also become the Labour, and thereby benefit directly from the necessary expenditure on the installation of essential services, is an added advantage.

With a perceived new emphasis on the housing delivery model; and a move away from the RDP paradigm to one where a variety of affordable homes will become an objective, the need to create title to property already occupied appears to be of paramount importance. (Minister Trevor Manuel as recorded by Thabang Mokopane in Business Day of 14 March 2012). Rather than relying on the system of substituting informal settlements for more formal RDP settlements, where the size and standard of houses has often been criticised, a new approach to use property (land) ownership as the foundation for wealth creation appears to be a relevant and entirely appropriate way forward. Title to the property enables qualifying individuals access to funding on the path to the creation of wealth.

ANOTHER THOUGHT

The government has set targets for the creation of employment opportunities within the context of a number of five-year programmes. We are currently in the second five-year programme, but to have any chance in achieving the objectives in the current programme (5 million job “opportunities”), and presumably in future programs, every part of government expenditure which lends itself to labour-intensive construction should be targeted for such purposes. Provision of serviced land and housing is but one part of the overall initiative of advancement of the disadvantaged. Where the intended beneficiaries become part of the delivery stream and benefit financially directly from the provision of the asset which of they are going to take ownership there is a symbiosis which is almost utopian. Whereas the use of the EPWP to create opportunities is now firmly entrenched and well documented it does have one shortcoming, when seen on a global basis, and that is that it applies only to public sector financed projects. This means that money spent in the private sector on creating the same type of assets does not qualify as “Special Public Works” and is therefore excluded from the operation and benefits of the EPWP. In an article in the Sunday Times of 18 March 2012 the Free-market Foundation strongly advocates policies which encourage job creation in all sectors and makes a plea for the lifting of constraints, largely imposed by organised labour, which have the effect of limiting job creation. The argument that the work is not “decent” is specifically commented on by Herman Mashaba, Chairman of the Free Market Foundation, where he states “many of us have, in the past, worked for wages that would not have been considered “decent”. We did it because something is better than nothing, being active is better than being idle, and you do not learn skills by sitting at home.”

CONCLUSION

There are, seemingly, many indicators that a labour intensive approach to the provision of essential services and assets is an essential path to achieving the multiple targets of Government. If by the use of technology, freely available, further opportunities are created for LIC then it is surely a path worth pursuing. If, in the process of creating these opportunities a further benefit, title to property, is enabled, then this objective must lend impetus to the necessary changes that are demanded.

Annexure 1

THE REGISTERED ORTHOPHOTO

The concept of a registered orthophoto is dealt with in the main text and in the context of registration of property title.

Through the ages towns and cities have developed on very much the same basis as the informal settlements which are currently evident in South Africa. It is very rare to find very old rural towns and cities which were developed on the basis of a pre-planned layout. In many places, particularly in Europe, well-established cities do, in places, still display the informal basis of the original property identification. Excellent examples have been identified in towns and cities fringing the Mediterranean and aerial photography shows the random nature of streets and access ways which have been perpetuated, without thought of demolition and reconstruction, for the purposes of identification property boundaries.

If one examines a typical informal settlement in South Africa the same randomness of boundaries is very much in evidence and a typical informal area has been selected as an example. The informal settlement of Wintervelt was, at the time of photography, approximately 18 m² square kilometres in extent with an estimated population of 250,000. In the areas near access routes and any facility the density has been shown to be as high as 80 structures per hectare. Sometimes these structures are in family or other groupings. There are identifiable boundaries between dwelling units however random and informal the piece of land might be.

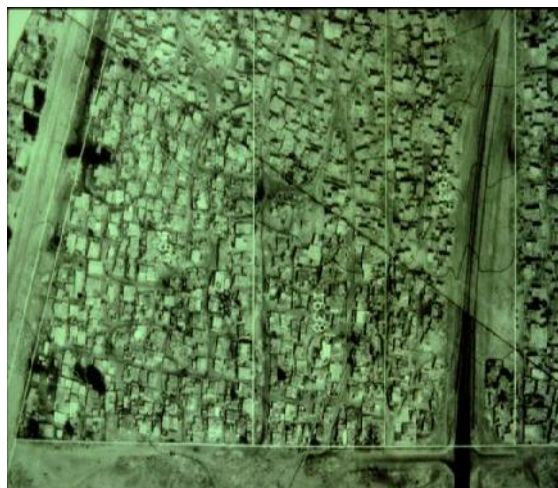


Figure 1: shows the detail of a portion of Wintervelt



Figure 2: shows a first attempt at identifying boundaries between individual “properties”. Preliminary mark up with a felt tipped pen.



Figure 3: Shows a preliminary attempt at identifying points of intersection of straights which define the boundaries between properties marked on the orthophoto using a Cad system.

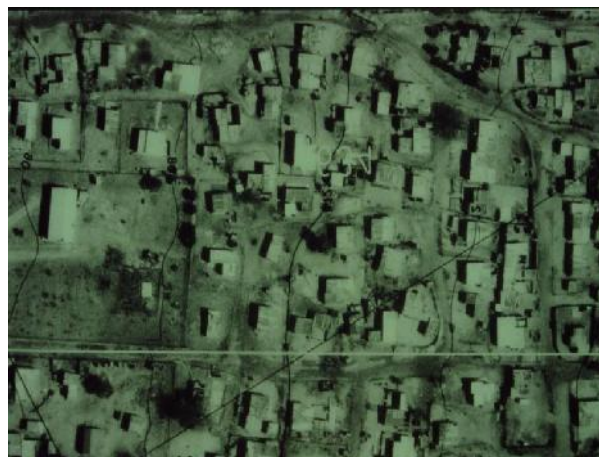


Figure 4: Shows and numbering of the identified points (latent beacon positions) for which coordinates can be obtained directly from the aerial photography. Also shown is a numbering of the individual properties so created. The space not included within individual properties is common or public space. This space can be used for access and for the installation of essential services without impinging upon the sovereignty of individual properties.

The contention is that, given an orthophoto upon which boundaries are marked and points of intersection identified and coordinated, we have a plan which bears a remarkable

resemblance to a conventional “General Plan” which forms the basis of registration of title for the majority of properties in South Africa. To facilitate the above approach very little change to the Survey Act needs to take place, but it does require an attitude, on the part of those to whom these tasks will previously reserved, to accommodate a new way of thinking.

REFERENCES

- Croswell J.A., “Guidelines for the Implementation of Labour – Intensive Infrastructure Projects under the Expanded Public Works Programme” (EPWP) and subsequent revisions, South Africa National Department of Public Works
- Croswell J.A., “Computers and the Housing Backlog”, International Congress on Progress in Architecture, Construction and Engineering PACE '87. Sandton Johannesburg 21-23 July 1987, Volumes 15, Paper 32, 26 pp
- Croswell J.A, R.T McCutcheon., "An approach to the preparation for and submission of tenders for competitive labour-based construction contracts", Seventh Regional Seminar for Labour-based practitioners, Lusaka, Zambia, 3-7 May 1999
- Croswell J.A, R.T McCutcheon., "The use of improved management and testing procedures in labour-based construction", ILO 8th Regional Seminar for Labour Based Practitioners, Cairo, Egypt, 15-19 October 2000
- Hernando de Soto, “The Mystery of Capital – Why capitalism triumphs in the West and fails everywhere else”, Basic Books, New York, 2000
- McCutcheon R.T, F.L.M Taylor Parkins., (editors), “Conference Proceedings of WORK2001: The First International Conference on Employment Creation in Development”, University of the Witwatersrand, Johannesburg, South Africa, 2-5 April 2001, 654pp
- Croswell J.A, R.T McCutcheon., “Small contractor development and employment – a brief survey of Sub-Saharan experience in relation to civil construction”, WORK2001: First International Conference on Employment Creation in Development, Johannesburg, 2- 5 April 2001, pp. 641-654
- Croswell JA, Robert McCutcheon., “Small Contractor Development and Employment-A Brief Survey of Sub-Saharan Experience in Relation to Civil Construction”, Urban Forum, Special Issue: WORK 2001, First International Conference on Employment Creation in Development, Volume 12, Number 3-4, 2001, 365-379
- McCutcheon R.T, F.L.M. Taylor Parkins., (editors) Employment and High Standard Infrastructure, Johannesburg University of the Witwatersrand, Research Centre for Employment Creation in Construction, 2003), pp424
- Croswell J.A, R.T. McCutcheon., “Employment- Intensive Construction Methods and the use of Contractors”, Chapter 14 in McCutcheon and Taylor Parkins (eds), (2003:295-335)
- Croswell J.A, R.T. McCutcheon., “How to Activate the Power Inherent within the Contract”, Chapter 15 in McCutcheon and Taylor Parkins (eds), (2003:337-385)
- Croswell J.A, R.T. McCutcheon., “Group Tasks and Group Balancing”, Chapter 16 in McCutcheon and Taylor Parkins (eds), (2003:387-413)
- McCutcheon R.T, A. Fitchett., (Convenors and Editors) “Proceedings WORK 2005 Second International Conference on Employment Creation in Development”: Skills, Training and Education for Employment and Development, University of the Witwatersrand. 2005
- McCutcheon R.T, J.A. Croswell, F. L. M. Taylor Parkins and A. Fitchett, “The South African National Public Works Programme and Expanded Public Works Programme with particular reference to their Infrastructure component”, 2005, 73pp. Ibid

- McCutcheon R.T, Fitchett A, J.A. Croswell, and F.L.M. Taylor Parkins., “Skills and Employment Generation at Mohlaletse, Sekhukhune, Limpopo Province, South Africa: A case study with implications for employment creation and skills development in general and the South African Expanded Public Works Programme in particular.” 2005, 24pp, Ibid
- Croswell J.A, R.T. McCutcheon, “The Case for Employment Creation – in Construction and Maintenance: Programmes, Training and Contract Documentation.” GAMA, Bogomoyo, Tanzania April 2006: 20pp
- Croswell J.A., and McCutcheon, R.T. “Housing and the Expanded Public Works Programme: The Opportunity and Potential” SA Housing Federation Annual Convention, Cape Town, September 2011, 18pp

BUTTERFLY HOUSE: AN OPEN ENDED HOUSING PRODUCT

Frederik Groos – Robert Kats

Butterfly Housing BV

(Joint venture of Groos & Co architects and Blok, Kats van Veen architects in cooperation with Hardeman BV) Netherlands

frederik@groosco.com

Abstract

This paper presents an approach to affordable housing that aims at integrating innovative construction technology with the complexity of human habitation. Butterfly House stands for a house that treads the earth lightly and easily adapts to changing demands. Whereas traditionally the building and planning industry focuses on a fixed and finished product, Butterfly House is essentially an open ended housing product. Though the product as such is very much part of the formal economy, it allows for adjustments and extensions made within the informal domain of human settlement. It offers a (modular) growth scenario towards housing based on modular coordination of structural parts. The parts are produced industrially but assembled on site without the need of specialized skills. Butterfly House is an effective model of production and delivery which combines high end formal methods with informal means of production that are controlled by its users. Though affordable and sustainable housing is one of the outspoken spearheads of government policy, the implementation of low cost housing is still, largely, a numbers game and approached as a purely technical issue. Rather than challenging that reality, Butterfly House aims at creating a reliable technical framework which allows for a phased development and thus changes the system of delivery from within.

Keywords: Design and delivery. Housing as a product. Control and freedom

INTRODUCTION

Butterfly House is a design and delivery approach to housing in emerging economies. Its aim is cost effective implementation of sustainable housing through a modular building system. It ensures client orientation by offering a diversity of floor plans and a range of growth scenarios. It uses state of the art knowledge in the field of building physics to ensure climate control with a minimum of added energy. The development of Butterfly House is supported by research from TNO in the Netherlands and international consultants in the field of building physics and technology. The research on which Butterfly house is based, focuses on balancing conflicting interests between design and user freedom, between specific interests and generic processes and between the constraints of the economy and the needs of the community.

The essence of our proposal is the conviction that the issue of inadequate housing should be approached within the possibilities that are offered by existing economical and political realities. This includes the reality of the informal economy, but does not exclude the formal models of implementation in existence and the formal market economy. Slum dwellers have

found ways of coping with which shacks are built and RDP houses extended. The government program either offers sites and services or grossly inadequate constructions (that are called houses). But that doesn't mean that the program itself is wrong. Butterfly House proposes an approach that is partly formal and partly informal, partly controlled and partly up to the users to decide.



Figure 1: Possible view of backyard elevation with outside covered kitchen. (image by the authors)

Design versus Use (*architecture versus human habitat*)

Present day house design, more than any other design field, confronts us with a paradox. The (technical) design of an artifact, be it a building, a car, or a hammer, is a set of specific rules to generate the actual product. These *instructions* are therefore called specifications, usually a combination of drawings and a written *recipe*. Designing is directed to the formulation of new information that must instruct action (Habraken, 1988) Formal production models depend very much on very precise specifications (a contract between parties) and these are governed largely by the production process and the practicalities of delivery (including bureaucracies). As Kevin Kelly states (Kelly, 2009), the domain of technology has its own autonomy, framed by a collective logic.

The *house* (approached as human habitat, the complex extension of the human organism that it essentially is (Dawkins, 1997) however, is a fluid realm that is more virtual than real and in some respects more mind than matter. In other words: the *house* on the one hand transcends its mere material envelope, because like clothing, it entails issues like identity, status, belonging and (social) tradition that are difficult to pinpoint technically; on the other hand, the material *house* is conditioned by very real issues like shelter, safety, functional and programmatic considerations, that are easier to define in technical terms. Together, these preconditions of habitat form a complex and interdependent pattern of forces that is in a continuous state of flux (or evolution if you will), linked inseparably to the identity and needs of its users. This pattern has a life of its own and cannot be designed. But it can be anticipated by the design and thus incorporated in the design instructions. Christopher Alexander

described this process of growth and repair aptly in the Oregon Experiment (Alexander, 1975) as *piecemeal growth*.

The paradox now is that this pattern does *depend* on our designs, since design is a necessary ingredient of this complex interaction. This paradox is expressed most dramatically in environments where (technical) design and the needs of human habitat are most at odds. (Post) apartheid South Africa is sprinkled with examples of such environments. One of the explanations for this reality could be that technical instructions (the bridge between design and production) are driven by the logic and *momentum* of implementing methods. Because we don't know the form we want, we want the form that we know. In the case of South Africa the patterns of exclusion embedded in these forms, are so strong that they are perpetuated even when we know that we don't want them anymore.

There are many writers that have addressed the above paradox and they have all said important things (Jacobs, 1961, Rudovsky, 1964, Rapoport, 1969, Turner, 1972, Alexander 1977, 1995, Hamdi, 1995, Davidson and Payne 2000, Todeschini and Dewar, 2004, Osman and Sebake, 2010). For the purpose of this paper I will single out three of them: John Habraken, Nabeel Hamdi and Amos Rapoport. All three are critical of the architectural profession and modes of production associated with it, most notably the last one, who argues for a **science** of Housing as a professional discipline in its own right. We are obviously much indebted to the work of these "prophets". Throughout this paper we will use the mental tools that they developed to discuss the issues at hand, most often without citing them explicitly.

Another guiding spirit for this paper is Kevin Kelly. His book: *What Technology Wants* (Kelly 2010) opens entirely new perspectives in understanding the role of technology. Our own approach of defining (building) technology as an extension of the human organism fits well with his approach of technology as part of the natural world. Likewise we do not see a clear distinction between formal and informal housing construction. In real life the distinction is blurred and it serves only as an instrumental category.



Figure 2: Formal RDP (back) and informal housing (front) in Masakhane, (photograph Frederik Groos).

IMPLEMENTATION: MODES OF PRODUCTION AND DELIVERY

The existing modes of producing houses are based on an evolved system of cooperation between unequal agents (Habraken, 2000). Its syntax is based on the logistics of building

and makes use of traditional building skills that are acquired by doing and imitation, much like the acquisition of language. Building initiatives that involve more than one house, moreover, involve collective decisions that are driven by politics and /or commercial ventures. They need to be planned far ahead of execution, involve great amounts of money and have an enormous impact on the environment (and vested interests). They are in other words sensitive to the volatility of the market and depend on government decisions: delivering houses is risky business. Implementation of housing therefore depends very much on evolved models of cooperation that warrant in advance a certain measure of success. Innovation adds to the risks and therefore is admitted very slowly into the process (Dubois, and Gadde, 2010); the process of building houses lags behind the technical and design possibilities of its time because of its complex, composite nature. Building is technically backward because of its organizational and financial challenges.

Modes of production are not changed by changing the design alone. Rather, under normal circumstances, the final design is adapted by the conventional modes of production that are in use in a certain region or the methods developed by certain large building contractors. Organizing unequal and conflicting skills into an economically feasible time path is what drives decision making in the building industry (Dubois and Gadde, 2010). The typology of a design nowadays is driven by short term market considerations and thus by “what worked in the past”. During periods of restructuring (after war or crisis) more politically inspired considerations come to the fore and collective housing projects are being developed that are subsidized by the state and its typology largely decided by the urbanism which underlies it. In that sense one could say: Housing is Urbanism.

The reality of mass housing in the RSA (mostly RDP) is symptomatic for this truth. The physical house is based on a model from 1951, which was designed for one male households of migrant workers (Matlock, 2007) and has been modified (pumped up mostly) very slowly through the years. Because of the sensitivity to vested interests, it is rolled out where nobody bothers in a pattern that makes sense only from the perspective of easy production (Dewar and Todeschini, 2004). Most housing schemes therefore perpetuate patterns of segregation and just create new slums. In fact it continues the most large scale urban planning experiment the planet has known, namely Apartheid (Haarhoff, 2010).

We do not claim to be able to change the above described mechanisms. Reality will not be changed overnight. On the contrary: we believe one should study reality and adjust possible solution according to the options the real world offers. With Butterfly House we aspire to bend the rules a bit and offer an acceptable and affordable solution within the formal economy that opens up new perspectives for the informal economy and create links where they are deemed impossible.

Open Building and the Butterfly Principle: designing houses in 4 dimensions.

Butterfly House is based on the principles of Open Building (see CIB W104). We don't want to dwell too much on these, as most readers will be familiar with them. To put it in one sentence: *Open Building* is about balancing stability and change in planning the built environment (Kendall and Jonathan Teicher, 2000). The aim of Open Building is to find principles of ordering and combining sub-systems to give optimal freedom for design layout and installation (Osman and Königk, 2009). One of the prerogatives for a succesful implementing process is communication between *agents*, put forward by John Habraken as

Understanding (Habraken, 1988, 2000). With this term he indicates the importance of easy communication between the different levels of control based on a shared *language*.

Butterfly House is an approach to housing for low to middle-income groups that aims at existing implementing models such as GAP housing. It explicitly targets the next generation that aspires to better living conditions through education and participation. Because butterfly House can be constructed in several phases and configurations, it could be plugged into a core house (RDP-like) program. In other words it takes for granted (without being uncritical) existing modes of production and for the purpose of this presentation it takes as a starting point the *one house one plot* model that is still most current as a developing strategy. We believe that by plugging into the current practice, in other words using the existing modes of organisation and communication that have proven to work, we can point at new modes of production that could involve higher density and different typologies and would thus change the system from within.

Focusing on the technical performance of the *base building* or *support level*, (Habraken, 1972) it intends to stimulate a market and industry of *fit-out* for those parts of the house that are less dependent on professional skills. For that purpose we distinguish three domains of house design and construction that use the (human) body as a metaphor for its syntax. This metaphor is inspired by the idea of the house as an extension of the body, the *extended phenotype* (Dawkins, 1989) In terms of production these domains correspond to a professional (and formal) level of control and to a level that can be controlled by the end user.

The skeleton or shell: load bearing structure and roof: shelter and protection

The organs: taking care of the metabolism: breathing, energy and waste disposal

The skin: enveloping construction, including doors and windows: communication

The load bearing structure, including the roof, make up the shell or skeleton of a building. This is technically difficult and requires the effort of professional planners and builders. Though it is a different domain from the floor plan, it is not independent of it. The shell decides what options there are for making separations and how the envelope is attached to it. It provides the building's structural integrity and to a large extent decides the buildings longevity and ability to stand the wear of time. The shell of Butterfly House is made of steel, a durable material. In terms of investment this domain is the main entry, together with the site and the proximity to economic activity.

The skin of the house separates the inside from the outside. This is less dependent on professional skills, though it can of course be applied badly. However, if it is clearly independent of the load bearing construction (which is most often not the case with traditional building) it is easily demolished and done again, perhaps to new needs or wishes of the users / owners. In the case of Butterfly House separations belong to this domain as well. They can be easily altered to custom because they do not pertain to the load bearing construction. Suitable and sustainable materials for the skin are CEB's (compressed earth blocks) or wood- and sheet metal cladding, preferably with an insulating agent. A lot of the techniques that are used in informal building are suitable to wrap the building up, but if there is more money available, aluminium sliding doors or metal or wood trellis can also be used.

The organs take care of the metabolism of the household. This is the plumbing, electrical wiring and cooling and heating mechanisms used in the house. Sometimes these are

integrated with the skin or enveloping structure, like the cooling mechanisms in our own skins, but they are also expressed as specific distinguishable organs like a stove to cook on or an air conditioner. They deal with the production of energy and the disposal of waste and surplus heat. They are really extensions of our bodily organs and assist them in their functioning. Modern technical infrastructure also depends on industrially produced and professionally applied products, especially when we talk about electrical equipment. They do not depend though on the shell and can therefore be added or altered in a different stage of habitation. In the case of Butterfly House, climate control is integrated in the shell through the design of the butterfly roof. This roof form could also be used to collect rain water which can be used (after filtering) as drinking water or for irrigation of the food garden.

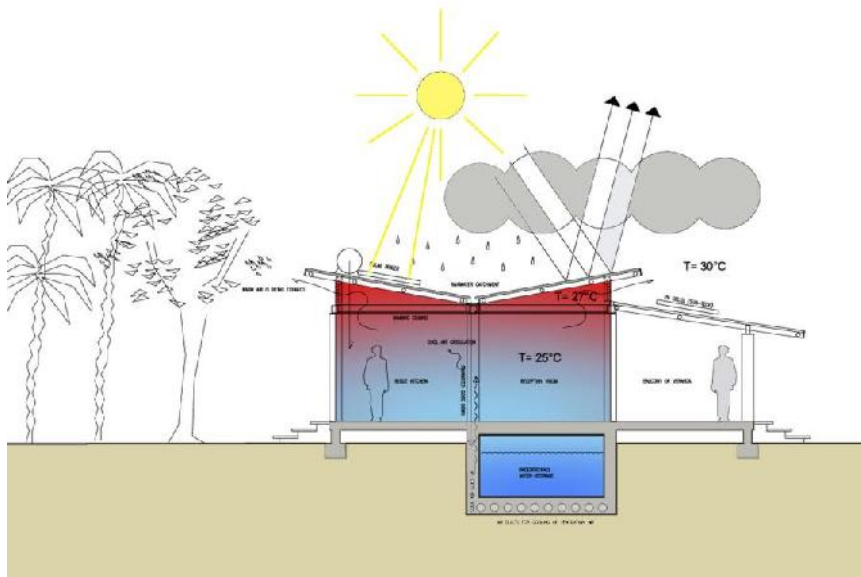


Figure 3: *Metabolism of the House* (picture by the authors).

Butterfly House is, in the first place, a product for the shell (or skeleton) level. Its design is not an autonomous entity, but anticipates several plausible house designs that are embedded in the structural design. By distinguishing sharply between the three levels and by applying, as we believe, a universally valid module for house design and building (see below), we present a model for delivering a wide range of possible spatial configurations and an ever wider range of skins or coats. Its users/owners are co-designers of Butterfly House. Their experience and our technical evaluation of this experience should, in turn, lead to adaptations of the shell design and further sophistication of the technology of ventilation, skin design and integration of the level of *metabolism*. With Kevin Kelly (Kevin, 2010) we believe that technology is not essentially different from nature, but rather part of our extended nature. The house, as an extension of ourselves, body and soul, is an organism that we live with in symbiosis. *Butterfly House*, to take the metaphor a bit further, is a house that treads the earth lightly and manifests itself in many forms and colours.

Good practice analysed: examples, generic and specific solutions

In South Africa there are a few well publicized examples of good practice in low income housing that we like to discuss and evaluate from the perspective of its ability to generate or inspire new implementing models for mass housing. A much publicized example from Chile (Elemental) serves as an example for implementing strategies where the government (or

government related institutions) are involved. The relevance for Butterfly House lies in the lessons that we learnt from their replicating value and the importance of strong financial back-up for large scale developments. The examples do not directly relate to the strategy and structure of the Butterfly House proposal but serve as a reference and a means to highlight its relevance.

Pelip Housing, New Brighton, Port Elizabeth
Sakhasonke Village, Walmer estate, Port Elizabeth
10 x 10 sand bag project, Mitchell's Plain, Capetown
Mbkweni Stone House, Paarl municipality

The Pelip Housing, designed by Heinrich Wolff (Noero Wolff, delivery 2003) is one of the first housing projects that takes into consideration the possibility of a different habitation from the expected one family pattern. The plan anticipates a growth pattern inside and at the back of the house which much resembles the pattern of extension seen in informal settlements, but which is controlled by the span width of the brick construction. This project is a prime example of a possible high density development which incorporates time as a factor in its development, but it depended much on financial support by a Swedish government agency (called Sida, sic) This project could lead to a generic practice but so far has not been picked up as a paradigm or format for other projects.

The relevance to Butterfly House lies in its user oriented approach. This approach could in principle, be a model for further evolution and adaptation to a more industrial production mode.

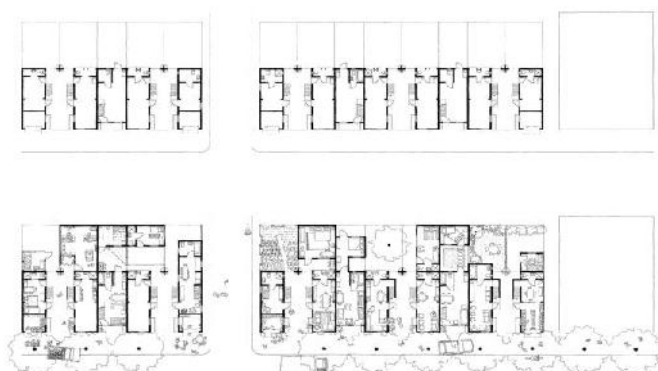


Figure 4: *Pelip Housing: a growth (website of the architect)*

Sakhasonke Village, also in Port Elizabeth, is a fine example of user participation. The Southern African Housing Foundation judged Sakhasonke to be the country's top low income housing project of 2006 (Roger Matlock, 2007) From the start the beneficiaries were involved in the design process and this scheme (of 337 houses) stands out for its social consciousness, for which it was awarded an Impumelelo Platinum Award. The urban plan, designed by Metroplan, includes several social development services like a day care centre, vegetable gardens and training in home ownership for the previous shack dwellers. This is a medium density housing estate (with semi-detached houses consisting of 2 floors) in a gardenlike setting, near to the centre of economic activity. It was initiated by the GM South Africa Foundation and implemented under the auspices of the PHP (People's Housing Program)

This scheme is exemplary in the innovative urban design and typology and in accommodating social services into the urban scheme, but the houses do not allow alterations and additions as a result of changing needs. It is in effect a *gated community* and a fixed and finished housing estate. As a format it follows the model of the gated community. In that sense it follows a much practiced model which in the end tends to be ethnically exclusive .

Its relevance to the Butterfly House research lies in its role as a reference. The fact that has been presented in SA (...) as a rare example of good implementation of the government program (in this case PHP) It is in fact well designed and executed and the beneficiaries have been involved in the lay-out but it does not easily allow for future growth without loss of quality. The medium density, semi-detached lay-out though is certainly a feature to be replicated countrywide and would be picked up by Butterfly House.



Figure 5: Sakhasonke Village: community based development (picture from presentation by Ndaba Nzombane-Metroplan, with kind permission).

The 10 x 10 award winning sand bag housing by Luyanda Mpahlwa, is the result of a competition by the Design Ndaba and is an inspiring project in many ways. It is innovative technically in that it works with a low tech but at the same time very smart and sophisticated building method which combines sand bags and wooden lattice beams as reinforcement (eco-beam-www.ecobeam.co.za) and its design gives opportunity to individual additions in the in between space that is covered by a terrace. It is an eco-friendly and well designed and optimistic small scale project in an existing township. The project does not challenge the urban scheme and to our knowledge has not been replicated in any way. It's a daring once off project, driven by design but obviously not enough by politics and or planning policy.



Figure 6: The duplex and single houses with in between space can be used according to individual needs (picture from presentation by Luyanda Mpahlwa, with kind permission)

The relevance to the Butterfly House research is the innovative building technology of eco-beam and the modularity which is connected to that technology. The use of sand bags as a

relatively low-tech and low cost solution for the enveloping structure (the skin) is an interesting flexible alternative to bricks and mortar and deserves further research. The design by Luyanda Mpahlwa may not itself be very flexible, but could be further developed into a more systematic and generic modular system. Its publication and our discussion with the architect have been an inspiration to the development of Butterfly Housing.

The Mbkwani Stone House is another example of imaginative architecture for the low income group that somehow hasn't found its way into the mainstream housing development. It is based on recycling building materials that are found on site and designed or assisted by Vernon Collis who has done some very imaginative private houses in Cape Town, using the same method. It was initiated by Pauline Houniet, who was then working for the Western Cape Department of Housing. With the project she aspired to achieve a more active involvement of the beneficiaries in the implementing process and the project was meant to spark an implementing model that could be adopted worldwide (Blake Robinson, 2009) This approach is probably too energy and time consuming (in terms of design and organizing energy) to be replicated on any meaningful scale and it also presupposes the dedicated involvement of the participants for whom this is most probably too far removed from their expectations.

The relevance to our research lies in the mismatch between the ideas of the initiators (e.g. the well intentioned recycling of available material and user participation) and a generic (replicative) model for mass housing. In theory a model which uses locally sourced and recycled material together with pro-active user participation is a feasible model for implementation. In reality though, this approach involves too many unknown variables and therefore cannot be embedded into a method of production that is understood by all the actors. It is based on an idea of *slow architecture* that is in fact too slow (and sophisticated) for the demand at hand. Studying this inspired example of searching for a generic solution to one of our greatest (as yet unaddressed) challenges, contributed to focusing our own approach towards a more industrial solution.

What we have learnt from studying these examples in the context of the South African reality is the fact that they are all relatively "once off". They do not fit into a general paradigm of housing practice which is broadly supported and they do not seem to have contributed to the development of a generic implementing model. They are brave attempts to change the system of delivery, but they haven't been able to change the paradigm. Our ambition with *Butterfly House* is a modest attempt to create a model which fits into the existing modes of delivery in South Africa and by so doing could create a market of its own, evolving with demand.

Elemental Chile: The example of Elemental Chile is relevant for our approach in that it isn't only a interesting design approach, but also supported financially and politically. It is supported by *COPEC*, the Chilean oil company and by the *Universidad Catolica de Santiago*, both of them full partners in *Elemental*. The principal architect, behind *Elemental*, Alejandro Aravena has involved other architects and professionals in what is called, appropriately, a **Do-tank** to change the structure and the perception of social housing. Elemental was founded in 2000 at Harvard and further developed in Chile with the support of the Catholic University of Santiago de Chile. 2 projects stand out to illustrate their approach. Quinta Monroy (Iquique-Chile 2001-2003) and Monterrey (Mexico delivered 2010). Within the philosophy of Elemental the city is approached as a *field of equality* and planning as a means of adding value. They proudly present themselves as a *for profit* organization (Alejandrto Aravena.com.). Their network is extensive and their activities include public

transport and consultation. The housing projects are based on a simple recipe of repetitive comb structure of ½ dwellings (that are state funded). The other half can be easily filled in afterwards with demand and when private funds allow for. That way the initial (social) investment is augmented with customization and thus inspires individual investment, ownership and initiative. Perhaps one of the key factors to the project's success is the fact that they are presented besides extremely sophisticated high end architectural productions. There is no separation between social housing and commercial architecture for private clients. It's in other words hip and easy to identify with. Elemental is not helping poor people but jump starting development. We'd like to quote Alejandro Aravena on this issue: Our point was to generate technical conditions that can guarantee an effective process of gaining value over time. Without changing the rules of existing policies and conditions of the market Elemental develops and constructs strategic urban projects through the application of specific design criteria. (www.AlejandroAravena.com)

What is interesting about their housing projects is that they are **replicated**, every time slightly altered according to circumstance, that they are politically and socially supported and that they are part of a broader approach towards social and spatial equity. Though *proudly Chilean* the original initiative was taken at Harvard University and it is still supported by a changing and international team of trainees and consultants. In other words, this is a generic approach to housing in its broader context and at the same time generates specific solutions for every individual project. As a paradigm of *Design and Delivery* this should of course be tuned to the South African conditions of politics and social dimensions. It inspires us to present our approach as a stepping stone towards broader interdisciplinary professional cooperation. What is interesting is its close resemblance to the Pelip Housing project in PE described above, as was also noted by Iain Low in an article in *Architecture SA* (Iain Low, 2011). In this article he also argues not to take the lessons from Chile literally. Rather take the broad societal and interdisciplinary approach for refiguring the traditional models of implementation. *South Africa, through its ministry of Human Settlement, could engage new forms of agency through collaborative work with those who already have capacity for research-lead implementation* (Iain Low, 2011)

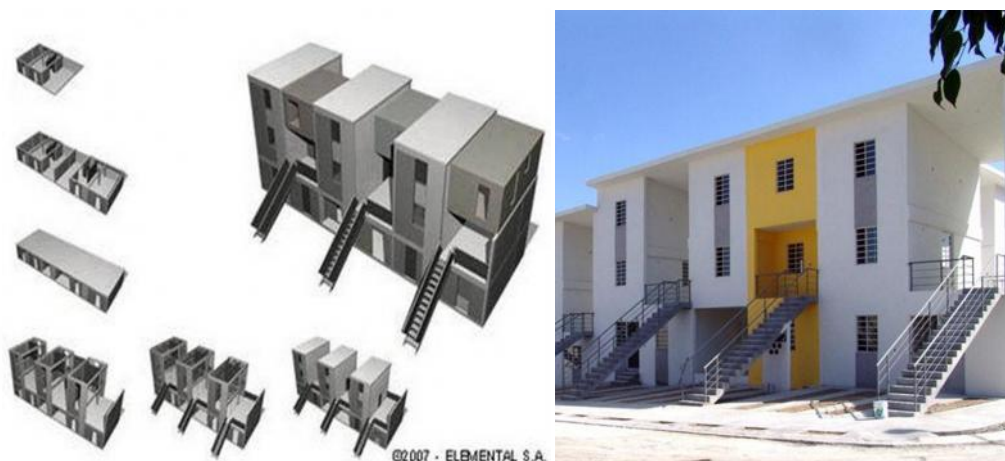


Figure 6 and 7: Elemental Chile: Left, Housing scheme for Quinta Monroy, with possible additions in between the original comb structure (drawings and photograph from the website of Elemental, with kind permission)

Modular Building

Modularity as a principle does not in itself lead to maximum flexibility. It is questionable whether maximum flexibility is the most desired goal in house design. Modular coordination, in designing buildings, first and foremost, serves the communication between design and building industry. It helps control dimensioning and therefore controlling the cost factor. Designing and building with (well thought out) modules facilitates industrial production and eases the fit-out afterwards. Moreover a well designed modular grid is based on the *quantum leaps* that occur in the design of floor plans. The functionality of a floor plan depends on optimum dimensions that are connected to our own (body) dimensions. To a much lesser degree also on the social pattern of its users. Using different (larger) spans or room dimensions increases the functionality in sudden leaps and not gradually, which is suggested when maximum flexibility is desired. Modularity therefore serves as a means to balance flexibility (freedom) and stability (order). We are convinced that optimum flexibility is attained by ordering space according to a repetitive dimensioning, in our case a modular grid. An interesting article on this issue was published in OHI: *The future direction of sustainable building in Japan*. (vol36, no 4, 2011) Apart from its focus on the Japanese context, it dwells on some of the most universally valid principles of adaptability versus production and freedom versus control (Saigo, Sawada and Utida, 2011).

The modular grid of Butterfly House is based on a functionally generated pattern of 3.6 x 3.6 m in plan and 3 m in height. This is not necessarily the only possible dimensioning but it corresponds to several functional minimum space requirements and to an economical span width (in steel). It is based on many years of research and design experience in (social) house design. Adding a module means adding a room, a stoop or functional entity of just above 11 m² net surface area. The core shell of Butterfly House consists of 4 to 6 modules. A typical *starter* home would consist of 4 modules for the actual house and an additional 2 for the covered stoop, possibly added later. Of course it is possible to make other configurations for more specific households or to create workshops. An obvious variant which can be fitted into the system is a semi-detached bungalow or even row houses. When the parcels (erven) are dimensioned according to the same grid, the street could grow into a street of row houses and relatively high densities can be attained.

The system structurally allows for one floor to be added later or immediately during the initial assembly process. It goes without saying that building a 2 storey house will need more sophisticated construction equipment.

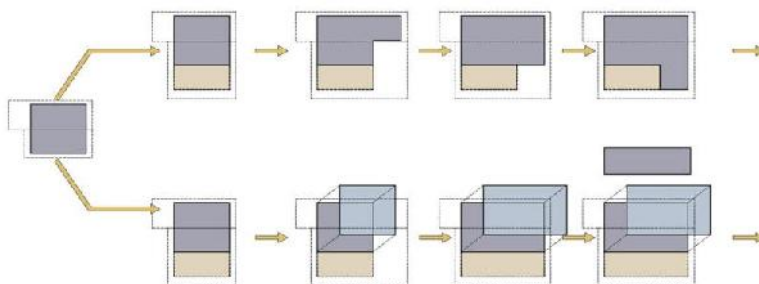


Figure 8: Vertical and horizontal growth patterns would ensure social growth and sustainability for the neighbourhood.

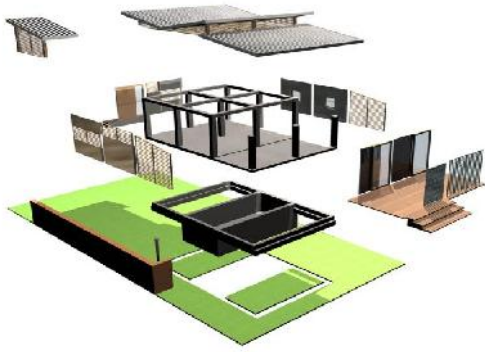


Figure 9: Butterfly House is organized on a modular basis (above) and can be assembled in very different configurations, enabling different lifestyles (below).



Figure 10: Butterfly House as a core house equipped with simple cladding (drawing by the authors)

INTRODUCING BUTTERFLY HOUSE

Butterfly House is an incremental housing concept based on the Open Building philosophy. It combines state of the art international building technology and climate control with several possible spatial organizations based on African social life. Its modular character ensures great adaptability to individual needs and budget. It combines low production cost and minimum construction time with maximum sustainability and living comfort. Over time the house can grow, keeping pace with the growing needs and wealth of the family.

Butterfly House is a product. A housing product that is fully engineered and available on the global market. As a product it targets the need for mass housing in emerging economies. In that sense it claims to be highly generic. In order to reserve enough space (and time) for the specific needs of the target user group and for adaptation to local circumstances it distinguishes between 3 major domains or groups of building activities, as stated above under the *Butterfly principles*.

The core product is the *Butterfly Shell*. The shell will be produced industrially and not necessarily locally. It comes in easy to handle parts and it will be assembled on site, if need be assisted by professionals from the Butterfly organisation. Its assembly is easy, according to a manual that comes with the parts, and can be done with a very limited set of tools (3 in total). Its assembly is based on the extensive experience of our associate partner, the steel manufacturer Hardeman BV. Included in the price is a (limited) design assistance with the parcellation or urban planning and the site specific engineering of the foundation. With larger schemes (50+) our team would be instrumental in integrating the housing into the urban context (urban plan). Though the shell is the most fixed element in the trinity that we here present, it will, in the process most probably evolve with changing insights and the state of technology.

The skin will be produced locally but can be assisted by the *Butterfly House* staff. Butterfly House could provide modular prefabricated elements but depending on the extent and the budget of the commission customised elements could also be (pre)fabricated on site by the local partner using the technical manual provided by the Butterfly House company. In the Design and Delivery concept the skin is separate from the shell and could be provided by other firms or by the end users themselves. In the case of the skin being provided by the users the Shells can be considered as a kind of three-dimensional sites and services, a structurally adequate roof on stilts that can be enclosed and partitioned entirely to custom. Thus the available budget, local availability of materials and aspirations of the users could generate entirely different “looks” within the same system or principle of creating the shell.

The technical infrastructure or *organs* of the house will be provided by Butterfly House in accordance to local regulations and in close cooperation with our local building partner according to demand. Basic electrical equipment will be provided with the shell. As stated above, the climate control is already taken into account by the shell through the butterfly roof. The rainwater collection and piping for solar collectors on the roof will be provided with the shell as well. The collectors themselves and the rainwater tank are additional options. Dual septic tanks, based on the *Sulabh* principle can also be delivered additionally, depending again on the extent of the commission and local bylaws. We have consulting (South African) partners in our team to assist with planning and delivering biogas installation if the numbers allow for the cost and the necessary mass of affluent.

THE IMPLEMENTING MODEL

The implementing model of Butterfly House is based on international partnership. The core product is the shell. In the first stage the shell will be produced by our Dutch construction partner and shipped to SA in containers. The shell houses will be purchased and assembled on site into core houses by our South African construction partner, if need be with the assistance of the BH technical team. In the second stage the parts of the steel framework will be produced in a South African construction factory with the technical assistance from our construction team. This factory should preferably, but not necessarily be near to the area of greatest demand. Transport of parts is possible with common road transportation. The assembly is done with light equipment.

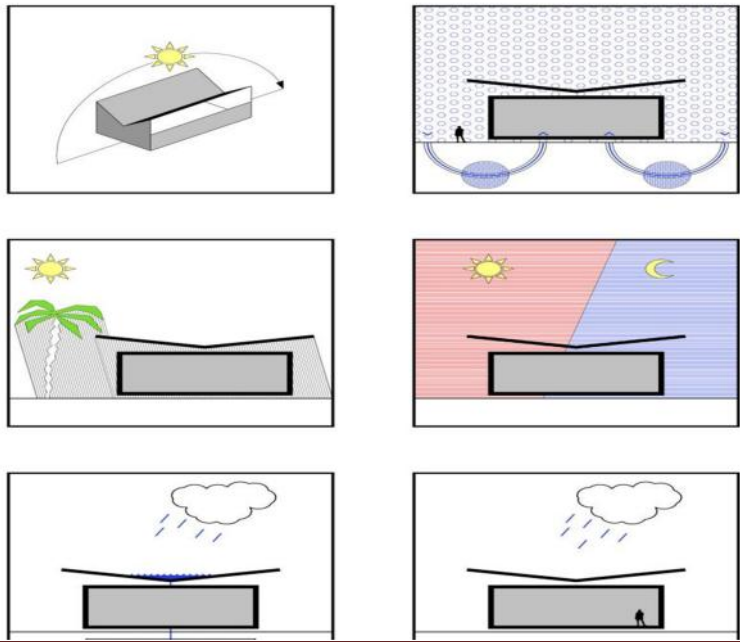
In addition to the technical production there is the need to team up with a local implementing agent or real estate developer. Our South African implementing agent is well connected to social housing- and central government housing agencies as well as local governments and well aware of the current housing policies and governance. Our first target, marketwise, is the so called GAP housing market (low to middle income). We believe that our product is very well suited to serve the need of the upcoming middle classes that are currently unable to find decent housing for lack of adequate financing tools and the (mass) production of budget houses. Butterfly House could be produced in large quantities and easily customized to demand and budget, delivered as a building kit and further customized with time by the owners/users. The implementing agent should be able to provide the necessary financing instruments, either with the backup of government agencies or as a public private partnership.



Figure 11: Street view some time after “completion” (pictures by the authors). The bus symbolizes the importance of public transport.



Figure 12: Different envelope, different expression (picture by the authors).



As stated above: Housing is Urbanism. We would like to add: Urbanism depends on Good Governance and on a long term vision of social and spatial development. With this paper we would like to contribute to a meaningful debate on Sustainable Human Habitat. With Butterfly House we expect to contribute to a diverging market for housing and housing products. Butterfly House is a house for the emerging class of people that decide for themselves. A growth scenario. We expect to find partners in social organizations, real estate developers, government agencies and financing institutions that share our passion for designing and building *the ordinary* in the best conceivable way; partners that care for themselves as they care for their clients. Butterfly Housing is a practical approach to a complex problem. We do not underestimate the complexity of the issues at stake, as we do not underestimate the resourcefulness of the people that we address.

REFERENCES

- Alexander, C., et al. 1975, *The Oregon experiment*, Oxford U.P., New York.
- Alexander, C., et al. 1977, *A pattern language; Towns. Buildings. Construction*, Oxford University Press, New York.
- Aravena, A. 2007, *Progettare e costruire; Documenti di architettura*, Mondadori Electa, Milano.
- Aravena, A., *Elemental* [online]. Available: <http://alejandraravena.com/obras/vivienda-housing/elemental/>, [accessed November, 2011].
- Breimer, T. 2011, *Open building as an approach for more effective core-housing implementation? An exploration*, Master's programme in urban management and development, IHS, Rotterdam.
- Davis, M. 2006, *Planet of slums*, Verso, London.
- Dawkins, R. & Dennet D. 1999, *The extended phenotype; The long reach of the gene*, 2nd revised edition, Oxford University Press, Oxford.
- Dewar, D. & Todeschini, F. 2004, *Rethinking modern transport after modernism, Lessons from South Africa*, Ashgate, U.K..
- Dewar, D. 2009, 'The potential role of housing policy as a broader development instrument in SA', *Architecture; Journal of the South African Institute of Architects*, March/April, pp. 8-14.
- Dubois, A. & Gadde, L.E. 2002, 'The construction industry as a loosely coupled system: implications for productivity and innovation' *Construction, management and economics*, Vol. 20 (7), pp. 621-631 [online]. Available: <http://www.tandfonline.com/doi/abs/10.1080/01446190210163543>, [accessed June 29, 2012].
- Eguchi, T., et al. 2011, 'The cultivation of adaptability in Japan', *Open House International*, Vol. 36 (1), pp. 73-85.
- Fromonot, F. 1997, *Glenn Murcutt, Works and projects*, Thames and Hudson, London.
- Groos, J.F. 2011, 'The Stanford Housing Initiative: a study into affordable housing for a village in the Overberg, Western Cape, South Africa', lecture delivered on the 'Stanford Housing Conference' held on 10th October 2009 in Stanford, South Africa. Available: http://architectuurfonds.nl/content/pro/i_747/Stanford_Housing_In_verkleind.pdf [accessed December 20, 2011]
- Haarhoff, E.J. 2011, *Appropriating modernism: Apartheid and the*

- South African township, School of Architecture and Planning University of Auckland, New Zealand, available: <http://www.az.itu.edu.tr/azv8no1web/16-haarroff-08-01.pdf>, [accessed May, 2012]
- Habraken, J.N. 1988, *The Appearance of the form*, 2nd edition, Awater Press, Cambridge Massachusetts.
- Habraken, J.N. 1999, *Supports: an alternative to Mass Housing*, Urban International Press, Gateshead, (U.K.).
- Habraken, J.N. 2000, *The structure of the ordinary; Form and control in the built environment*, The MIT Press, Cambridge Massachusetts.
- Hamdi, N. 1995, *Houses without houses, Participation, flexibility, enablement*, IT, Intermediate Technology, London.
- Hamdi, N. 2004, *Small change, About the art of practice and the limits of planning in the cities*, Earthscan, London.
- Kelly, K. 2011, *What technology wants*, Penguin Books, London.
- Matlock, R. 2007, 'Aiming high: corporate social action', lecture delivered on the 'Making CSI Matter Conference' held on 20th November 2007. Available: http://www.gmsouthafricafoundation.com/Uploads/Aiminghigh_corp_social_action.pdf [accessed Febuari 8, 2012].
- Neuwirth, R. 2005, *Shadow cities; A billion squatters, a new world*, Routledge, New York, London.
- Open Building, CIB W104, *Open Building booklet* [online]. Available: http://open-building.org/archives/booklet2_small.pdf, [accessed May, 2012].
- Osman, A. & König, R. 2009, 'Educating for flexibility; explorations into housing and urban environments in SA.' , *Architecture; Journal of the South African Institute of Architects*, March/April, pp. 54-59.
- Rapoport, A. 1969, *House, form and culture*, Prentice Hall, New Jersey, USA.
- Robinson, B. 2009, *Resolving urban poverty and ecological sustainability have nothing to do with one another, a critique*, submitted in partial fulfilment of the Sustainable Cities Module for Prof. M. Swilling, Stellenbosch.
- Saigo, T., Sawada, S., and Utida, Y. 2011, 'Future direction of sustainable buildings in Japan' *Open House International*, Vol.36 (4), pp. 5-19.
- Simon, H.A. 1999, *The science of the artificial*, 3rd edition, The MIT Press, London.
- Tissington, K. 2011, *A resource guide to housing in South Africa 1994-2010; Legislation, policy, programmes and practice*, SERI, Socio-economic Rights Institute of South Africa, Johannesburg.
- Tonkin, A. 2008, *Sustainable medium-density housing; A resource book*, Development Action Group, Cape Town.
- Turner, J.F.C. 1972, *Freedom to Build, Dweller Control of the Housing Process*, Macmillan New York.

CONNECTING THE DOTS BETWEEN SETTLEMENT FUNCTIONALITY, INTEGRATED AND INCREMENTAL UPGRADING AND THE NEED FOR A CAPACITATED NETWORK OF INTERMEDIARY ORGANISATIONS

Tristan Görgens and Mirjam van Donk
Isandla Institute, Kenilworth, South Africa
tristan@isandla.org.za

Abstract

This paper explores the implications of the ‘settlement functionality’ argument for processes of informal settlement upgrading. It argues that this approach enables the building of communities of practice between state officials, professionals, civil society organisations and community members in order to understand the opportunities and limitations created by the interaction between the functionality of the settlement within the city system and in the lives of local residents, the physical and technical constraints offered by the site, the levels of organisation within the local community and the skills and resources available for the process. It suggests that this only be successfully pursued by a network of individuals and organisations able to play a range of ‘intermediary functions’ between the state and communities. Concludes by arguing that the NGO sector is an important partner in building and sustaining such networks and that the current weaknesses in the sector in South Africa require a coherent response from all stakeholders.

Keywords: informal settlement upgrading, settlement functionality, NGO sector, South Africa

INTRODUCTION

The design and execution of housing policy in South Africa has been a complex and fraught process since the advent of democracy. At the end of apartheid the shape and functioning of South African cities were the ultimate example of the state’s attempt at social engineering. The urgent priority for policymakers and politicians alike was to convert them from symbols of elite privilege and middle-class dominance to integrated spaces that would enable ordinary South Africans to reclaim a sense of citizenship and to discover one another’s humanity and value (ANC, 1994). While the mainstream housing programme pursued by the state has had some success at achieving delivery targets, overwhelming evidence has amassed indicating that it has largely failed at achieving the key objectives that underpinned its originating rationale: demand continues to grow irrespective of delivery, the state can no longer afford the cost, it has deepened spatial inequality, forced violent showdowns between the state and its citizens over access to land, and has perpetuated the low-densities of South African cities and settlements (with a myriad of social, budgetary and environmental consequences) (Charlton and Kihato, 2006; Harrison et al., 2008; Pithouse, 2009; Misselhorn, 2010; NPC, 2011). Indeed, the shortcomings were acknowledged and formed the basis for a review of housing policy that became Breaking New Ground (BNG) in 2004. This policy acknowledges that despite the “well-intentioned measures” of the original policy, “the inequalities and inefficiencies of the apartheid space economy, has [sic] lingered on”, suggesting it signalled a “shift towards a reinvigorated contract with the people and partner organizations for the

achievement of sustainable human settlements”, placing a particular emphasis on “a phased in situ upgrading approach” (DoH, 2004: 5-6). This shift, however, was slow to emerge in practice for a myriad of reasons that, due to limited space, cannot be covered here (see Harrison et al., 2008; Görgens, 2010; Hutchzermeyer, 2011).

Over the past three years there has been increased evidence of a concerted attempt being made to shift the practice of the state towards embracing such a model of informal settlement upgrading. These include the creation and funding of the National Upgrading Support Programme (NUSP), the prominent inclusion of upgrading targets in Outcome 8, the Urban Settlement Development Grant (USDG), the prominent place of human settlements in the coming Cities Support Grant (CSP) and their explicit inclusion in the National Planning Commission's National Development Plan. The challenge for officials, actors in the housing field, civil society organisations and communities is to ensure that the partnership, incrementalist and in situ aspects of upgrading are constantly reasserted and systematised in practice to ensure that such interventions result in qualitatively improved and more sustainable less-formal settlements.

This paper will advance two lines of thought to support the emergence of such practice. First, it will explore the implications of the ‘settlement functionality’ argument for building an incrementalist and partnership-based approach to informal settlement upgrading. This approach enables the blending of technical and social knowledges and the systematic creation of a ‘community of practice’ between officials, civil society organisations and residents throughout the planning and implementation phases of upgrading projects. Second, it will argue that the current conceptualisations of state-community partnerships in policy sideline vital role of intermediaries in building and maintaining such partnerships. A functional definition and description of such ‘intermediary functions’ will be proposed. The paper concludes by arguing that the current lack of capacity in civil society represents a serious threat to the progressive implementation of the opportunities currently being created by the state but that a shift in funding patterns and strategic collaboration within a network of practice offer potential solutions.

INFORMAL SETTLEMENT FUNCTIONALITY

The notion of informality as a political judgement with suggestive, negative connotations has been well-established elsewhere (for a comprehensive overview see Hutchzermeyer, 2011). As Gilbert (2007: 700) argues, “[i]f a slum is a relative concept, viewed differently according to social class, culture and ideology, it cannot be defined safely in any universally acceptable way. Nor is the concept stable across time because what we consider to be a ‘slum’ changes.” Therefore, in the face of the dangerous implications of the negative implications of informality (i.e. control or even ‘elimination’), progressive approaches to informal settlement upgrading have long emphasised the adaptive and positive role that such settlements play in satisfying the needs of the urban poor.

Any slum improvement intervention must be sober about what may be beneficial enough to some people to make them want to continue their livelihoods in the context of an informal settlement and not formal housing or a more formalised environment. As slums are currently, they are teeming with life, social networks and economic linkages. It is often impossible to recreate these livelihood options and possibilities outside of highly fluid and malleable physical conditions that are best offered by informal areas. It is important to shed light on these aspects of slum life, without romanticising them, because policymakers are often baffled

by the resistance that come from some slum dwellers to upgrade proposals. Furthermore, upgrading initiatives must, of course, work with an intimate understanding of the existing livelihood strategies of those affected, as the vast literature on livelihoods and assets-based poverty reminds us (Pieterse, 2008: 57).

While it is difficult to be definitive, Misselhorn (2008: 5) suggest that the functional elements of most informal settlements are usually their ability to offer poor urban residents some combination of:

- Access to employment and other economic / livelihood opportunities (which are often modest or survivalist in nature);
- Access to social facilities (eg: education and health care);
- Access to the political system (access to ward councillors and the space to vote and lobby);
- Access to the legal system (or improved access to it);
- Potential access to housing and infrastructure (e.g. through waiting lists for housing projects or through rudimentary / illegal services and connections available).

The informality of these spaces offer this access at (relatively) low financial cost, the barriers to access are low, and they offer a wider array of possible livelihood strategies. Research into such informal settlements in South Africa has shown that all of these factors are more likely to be mediated and/or facilitated by social relations and networks (as opposed to financial resources) than conventional, formal environments (Isandla Institute and Urban LandMark, 2008).

The choice about which informal settlement to move is made by households trying to optimise a number of different factors including housing cost, levels of safety, tenure security, quality of shelter, and proximity to work or public transport facilities (Turner and Fichter, 1972). Indeed, beginning in the 1970s driven by the work of John Turner and William Mangin in Lima, Peru, researchers have investigated the links between the key characteristics of the residents and the functionality of informal settlements. In his original work Turner (1986) argues that the priority for new arrivals/migrants in cities is employment and so this group is more likely to live in rental accommodation in difficult conditions to be closer to the city centre (and therefore work opportunities). These are the ‘bridgeheaders’. As these individuals become more established, their priorities shift towards investing in the future and securing their place in the city. This is most easily done by moving to land on the margins of the city where acquiring land and building a house is more affordable (and this group was therefore called ‘consolidators’). The investment of these families in the improvement of their housing, along with communal activity to access government services, creates consolidated and upgraded settlements that become attractive to more middle-class residents or ‘status seekers’. The shift in priorities is graphically illustrated in Figure 1: the bridgeheader is focused on securing employment and is willing to ignore questions of ownership or the quality of the dwelling; the consolidator prioritises ownership or security of tenure over the other two; and then as the family becomes increasingly middle-class their attention switches to maximising access to amenities and quality-of-life.

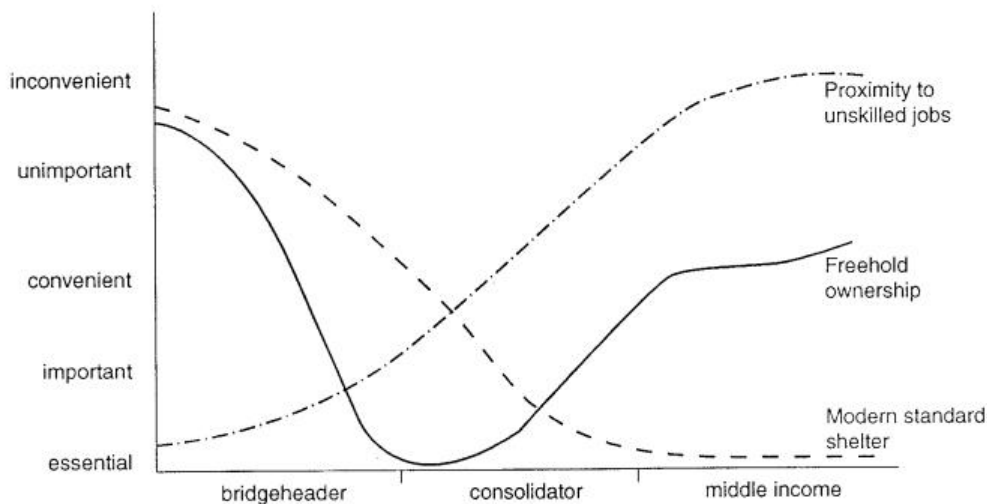


Figure 1: *Income and Residential Priorities for Migrants Entering Informal Settlements* (Gilbert and Crankshaw, 1999: 2383; adapted from Turner, 1986).

As already indicated, this shift is accompanied by a shift in position within the city as illustrated in Figure 2.

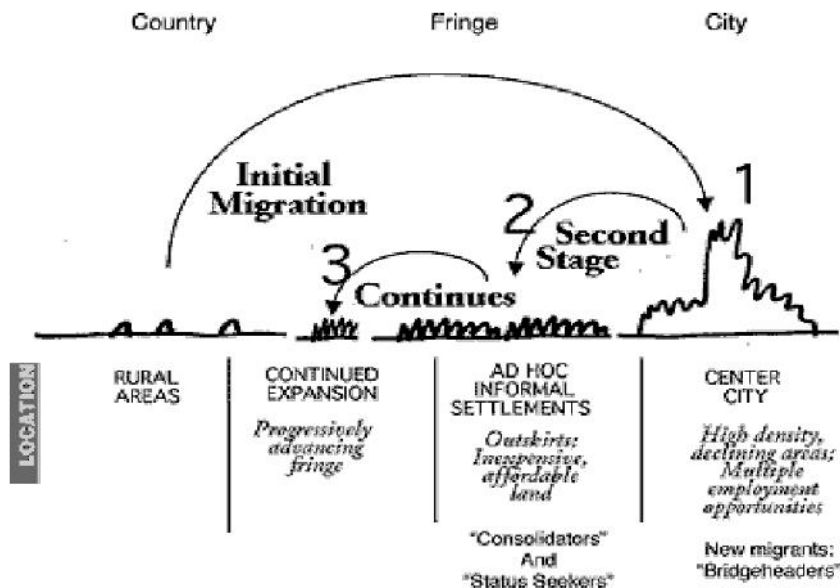


Figure 2: *Generalised Trajectory of Migration* (MIT, 2001; adapted from Turner, 1986).

While the self-help elements of Turner's analysis has received criticism, largely from Marxist scholars (for an overview see Mukhija, 2001: 214), this general sketching of the value of informal settlements and the relationship between their location within cities and their general function in the lives of urban residents has largely been supported and supplemented by subsequent ethnographic research across the world (for an overview see Klaufus, 2012: 151).

These links between settlement location and functionality have been explored in South Africa. Gilbert and Crankshaw (1999) explored the distorting effect of the structural barriers created by Apartheid for black African families on in migration and self-help housing in urban areas and argued that the advent of democracy would see the emergence of a city form similar to those in Latin America. Indeed, more contemporary research conducted by Catherine

Cross and her colleagues at the HSRC has indicated that there are marked differences between ‘core zone shacks’ and ‘peripheral zone shacks’ in urban centres. Drawing from a randomised survey of informal settlements in Gauteng, Mpumalanga and Sekhukhune in 2008, Cross (2008) traces the difference between ‘core zone shacks’ and ‘peripheral zone shacks’ in urban centres. She argues that ‘core zone shacks’ are likely to be male headed households with a lower unemployment rate than shack settlements on the periphery. However, they also cover a far smaller area of the sample size and therefore have a higher average household size. Crucially, when questioned about why they had moved to the area, residents in the ‘core zone’ indicated that access to jobs was their primary motivation, while those in peripheral settlements indicated a clear priority about access to housing.

The key implication of this link between location and functionality is the accompanying recognition that upgrading initiatives, almost irrespective of their character, will fundamentally impact the physical characteristics and social systems of informal settlements. The resultant shift in the functionality of these settlements for existing residents is unpredictable and, if not carefully anticipated and communally negotiated, could lead to serious deleterious outcomes. For example, the upgrading or formalisation of inner city informal areas potentially disrupts their functionality (most likely because the area becomes increasingly attractive to higher-earning groups (‘down-raiding’)). No form of more formal housing can offer the advantages to young jobseekers or migrants that well-positioned informal settlements do: ease of access and transaction, low rental/upkeep costs and proximity to transport and jobs. The “most popular areas for households able to sustain permanent housing are the urban peripheries – these are the informal suburbs” (Cross, 2010a: 20). Cross (2010b) points out, therefore, that the priority intervention for these areas is to focus on transport delivery and subsidies – travel costs for these families to access the city centre are often crippling – and the provision of social services that will make these sustainable ‘suburbs’. She concludes:

New planning approaches to preserve temporary access by the poor to the shacks option may prove to be critical. Migration on its own finds well-located land when formal planning cannot. If so, human settlements delivery might need to develop a new framework for spatial planning that engages the shacks. Matching upgrading to the different constituencies shacks attract (Cross, 2010b: 24).

The key question for practitioners from these valuable insights is what would the components of such a new approach to planning be?

THINKING THROUGH THE IMPLICATIONS OF SHIFTING FUNCTIONALITY FOR PROCESSES OF UPGRADING

There are a number of useful guides that have been prepared to aid in the classification of informal settlements and the identification of those most suited to upgrading projects (see de Aristizabal, Lewin, Mendez, and Ziss, 1989; Imperato and Ruster, 1999; and in South Africa PPT, 2010). These guidelines typically focus on the physical characteristics of the site (and therefore its potential to become a formal settlement over time), the presence of key regulatory constraints (such as the ownership of the land), the socio-economic characteristics of the settlement (particularly its heterogeneity and level of need) and the possibility for favourable institutional alignments (such as capacitated local government and active community organisations). In general, however, they skirt around the questions raised by the functionality argument. Processes of human settlements formation and functionality are inherently non-linear and therefore cannot be planned using conventional Modernist approaches. As Patsy Healey

(2007: viii) has argued about recent shifts in planning:

It is widely recognised that the development of urban areas, understood in socio- economic and environmental terms, cannot be 'planned' by government action in a linear way, from intention to plan, to action, to outcome as planned. Even where a government agency controls many of the resources for physical development and acts in an integrated and coordinated way, socio-economic and environmental activities make use of the physical fabric of urban areas in all kinds of ways that are often difficult to imagine in advance, let alone predict... Instead, those involved in spatial strategy-making are struggling to grasp the dynamic diversity of the complex co- location of multiple webs of relations that transect and intersect across an urban area, each with their own driving dynamics, history and geography, and each with diverse concerns about, and attachments to, the places and connectivities of an urban area.

Our approach to planning for and implementing upgrading projects, therefore, needs to pre-configure the flexibility and need for evolving partnerships that such an analysis implies. We would suggest that there are two key features of such a partnership (or collaborative) approach to planning (which we have described in more detail elsewhere as 'networked spaces' (Görgens and van Donk, 2011):

First, inherent in any process of upgrading is the negotiation of trade-offs and priorities. Being explicit about which groups are claiming what kind of rights (and potentially at which other groups expense) is an important part of agonistic planning. The differences between deliberative planning and agonistic planning have been thoroughly explored elsewhere. Paraphrasing Mouffe's argument against consensus seeking models which tend to mute disagreement (largely in the deliberative school), Bäcklund and Mäntysalo (2010: 343) explain that "embracing agonism would require active search for such vehicles of expressing opinions that would allow one to present passionate views without being construed as an enemy... This view of democracy paves the way to a culture of planning more tolerant to the coexistence of and conflicts between different meaning systems. In agonistic planning the stakeholders may agree on certain issues, and respectfully agree to disagree on others. Even if the conflicts were to be found as irresolvable, the actors may still come to mutual agreement on the procedure – how the differences in opinion are to be dealt with." This brings us to our second component.

Second, such an approach has at its heart a conscious effort to build 'communities of practice' to tackle the different aspects of the upgrading process. These processes need to focus on collaborative ways to recognise and share different forms of knowledge, and use these processes to build trust between different stakeholders. For example, forming an appropriate response to an issue such as tenure security requires state planners (who understand the bureaucracy and technicalities of different options), lawyers or planners hired by the project manager or intermediary organisation (to advocate for the interests of the community) and community members who must weigh the potential and implications of the different options. Furthermore, continually returning to the question of functionality enables such partnerships between professionals and community groups to remain grounded in the lived experiences of residents and constantly in reference to the potential implications of specific choices.

We will return to, and unpack in more detail, the need for intermediaries to advance such a partnership-based approach to planning in the final section. The substance of the priorities and trade-offs that should be identified and negotiated by the community of practice can be identified as five interacting 'fields of potential' that are a part of any upgrading project: (1) its functionality within the wider city-system, (2) its functionality for current residents, (3) the underpinning physical and environmental characteristics of the site, (4) the level and nature

of organisation within the local community, and (5) the availability of skills and resources. Between them these five fields of potential represent the functional limits of the decisions that can be made about the future upgrading of a particular neighbourhood. The implications of each for processes of upgrading will be briefly outlined here.

While the functionality argument has largely focused on the settlement's functionality in the lives of residents, it is also important to recognise that the (capitalist) city-system benefits (and incurs costs) in particular ways from the location of informal settlements. For example, the presence of migrants eagerly looking for work within the city 'core' reduces the amount of public funds spent on transportation and increases the supply of available labour (thereby lowering costs for employers etc). As Turner (1986) pointed out in his original work, the functionality of settlements is largely determined by the phase of development that the city-system is currently in (he describes these as transitional, midtransitional and late transitional). The shifting city system will place different pressures and offer different opportunities to informal settlements depending on their positioning in relation to future development. Therefore, in line with the suggestion of authors such as Aristizabal, Lewin, Mendez, and Ziss (1989) and Mukhija (2001), a vital step in 'surfacing' the priorities and trade-offs that will characterise the upgrading process is the collation and discussion of the place of the settlement within the existing city-system and the medium to long-term planning of the city.

Furthermore it creates a concrete opportunity for different fields of knowledge and stakeholders with expertise to come together to exchange information, debate priorities and trade-offs and build the relationships that will underpin the community of practice that is so vital for successful implementation. As Patsy Healey (2007: vii-viii) puts it,

this means that planners from the planning tradition, with a focus on place qualities, have to encounter analysis and policy makers concerned with other fields organised around other foci of attention... In these encounters, clashes between conceptual frameworks and legitimising rationale are commonplace. Nevertheless, in this reaching out to, and joining up with, those working in many policy fields, efforts in spatial strategy-making are drawn into a widespread endeavour... [of] searching for new ways to do government, driven in part by concerns for greater effectiveness in delivering policy and programmes, but also for greater relevance and connection to those concerns and demands of citizens and organised stakeholders.

Such a space/process of citizen-engaged spatial strategy-making are envisaged in various pieces of legislation and policy (Integrated Development Plans and Spatial Development Frameworks, Housing Development Plans, and the newly introduced Built Environment Performance Plan to mention a few) but have constantly been found to have limited efficacy at determining patterns of actual development, effectively integrate the interests of different government departments and stakeholders groups in society and, crucially for our purposes, have only passing references to plans for existing informal settlements (Cross, 2008; Harrison et al, 2008; Görgens, 2010; Huchzermeyer, 2011). Such a planning process therefore enables the existing plans (largely the product of the technocracy with some political input) to be tested and reworked in reference to detailed debates about the needs and appropriate responses to specific neighbourhoods, thereby improving city-scale planning occurring as well as inspiring more nuanced responses to individual settlements. This aspect of the upgrading process will involve a number of different steps where the project management team systematically assembles the stakeholders (including representatives from the community itself) and data needed and initiates a series of conversations about the norms and expectations about the process, more detailed process planning (for the rest of the planning as well as the implementation stages) and begins to establish increasingly regularised (/formalised) working

relationships between key stakeholder groups (such as key officials, political authorities, professionals, civil society organisations, community leaders and residents).

As has been indicated strongly in the previous section, the next scale is to build a detailed picture of the function that a settlement plays in the life of its residents. A multitude of tools have been created for such processes – typically within the stable of ‘community-based’ or ‘participatory planning’. The focus of such methodologies is typically the mobilisation of community-based knowledge (through processes such as participatory enumerations, community registers and community mapping) to serve as a base from which communities are able to identify their own sets of needs and priorities and organise themselves (Satterthwaite, 2001; Mitlin, 2008). The ‘social technologies’ that characterise such approaches have been most extensively explored by Slums/Shack Dwellers International (SDI) and their local affiliates in South Africa, particularly the Informal Settlements Network (ISN).

For the state to be systematically involved, however, these fields of knowledge need to be systematically blended with the technical knowledge and data needed by the state to initiate and pursue such projects (geotechnical, environmental and civil engineering assessments etc). These technical knowledges present all stakeholders with important information about the current and future limits of the development of the site and are therefore a vital aspect of the planning and decision-making process. It is also vital to acknowledge the suspicion with which such claims are now being treated by many communities across South Africa as they are perceived as a convenient excuse to ignore the claims of particular communities to development (Tissington, 2011; Huchzermeyer, 2011). The open flow of both sets of information, and a concerted programme by all parties to disseminate and digest their implications, therefore, is an essential aspect of the success of such processes (Antonio, 2011). This data provides the opportunity for open debate about different possibilities, priorities and trade-offs and, ultimately, forms the basis for the detailed planning needed for the re-blocking of the settlement, provision of services, provision of administrative tenure security etc. As we have sketched in more detail elsewhere (Görgens and van Donk, 2011), this requires the creation of a series of “networked spaces” throughout the project planning and implementation phases that enable the emergence of a ‘community of practice’. The most explicit opportunity for such collaboration is the possibility, created in the Upgrading of Informal Settlements Programme (UISP), of the negotiation of the standards of engineering services in a particular project based on a range of “appropriate and sustainable trade-offs” (see DoHS, 2009: 37).

Another key aspect often invoked in processes of settlement/project identification (de Aristizabal, Lewin, Mendez, and Ziss, 1989; Imparato and Ruster, 1999) is the existing levels of community organisation. It is generally held that fractured (or factious) communities are to be avoided because of the levels of cooperation and productive debate that are required to initiate and sustain processes of informal settlement upgrading. Furthermore, the timing of such interventions, the depth and breadth of the organised groups, the presence of active and accountable leaders and the possibility of an open an incremental process of engagement are all considered key indicators of success for collaborative planning (Fisher, 2001). The three previous aspects of upgrading identified above (city-level functionality, local functionality, and the blending of different knowledges) indicate, there are a range of possible opportunities to encourage and support the organisation of communities during the upgrading process. However, they also support the assertion that a core level of commitment and organisation must be required for the community to be able to be productively involved in planning and decision-making processes. As we point out below, this requires the careful support and positioning of organisations willing to play an intermediary/mediation function between local community groups and leaders and the state so as to capacitate and facilitate productive collaboration.

The final aspect that represents a limit to the possibilities of a particular project is the availability and mobilisation of skills and resources. The source of project funding is a key determinant in the final form that a project will take because of the explicit or implicit limitations created by interests and requirements of the funding agency. Likewise, the availability and recruitment of experienced officials, professionals and practitioners, civil society organisations or community groups into particular projects can make a strong difference to the final outcomes. Examining the experience of the Integrated Serviced Land Project's use of a participatory methodology to deliver 32,000 houses to 30 distinct communities in Cape Town between 1991 and 2005, Adlard (2011) argues that a key aspect of its success was the commitment, positioning and resourcing of progressive consultants willing to recruit, coerce, maintain the peace, and inspire collaboration between political authorities, different state officials and a variety of community groups. However, these level of resources and skills being made available to ensure the process is effectively facilitated remains an anomaly in South Africa. For example, the UISP places an absolute limit of 3% of the total project costs on community participation and 8% of project costs on project management. These levels of funding represent a key challenge to the efficacy and sustainability of the involvement of civil society organisations or small private sector organisations (Misselhorn, 2008; Isandla Institute, 2012) and definitely militate against the kind of collaborative approach sketched in the previous four elements. Organisations seeking to facilitate participatory approaches are therefore forced to source additional funding (with their own set of requirements and limitations). The emergence of a collaborative approach to informal settlement upgrading, particularly if it follows international examples that have a vibrant sector providing socio-technical support (Imparato and Ruster, 2003; Wakely and Riley, 2010), requires urgent and systematic attention to the funding being provided for organisations seeking to play 'intermediary functions' in informal settlement upgrading.

'INTERMEDIARY FUNCTIONS' IN INFORMAL SETTLEMENT UPGRADING AND THE ROLE OF THE NGO SECTOR

As has been noted in the introduction, Breaking New Ground was largely greeted as a progressive attempt to reorientate of the approach of the state to informal settlements. However, as Charlton and Kihato (2006) and Tissington (2011b) have noted, while it explicitly moves away from the previous supply-centred model to a model driven by the needs of those on the ground (i.e. demand driven approach), it places the responsibility on municipalities to determine the location and nature of the housing that is developed in their areas of jurisdiction. Furthermore, the UISP places municipalities (depending on whether they are accredited and capacitated) and/or provincial government in the role of developers (DHS, 2009: 16). While they can source external support (within the financial constraints indicated above), they are ultimately responsible for the initiation, planning and formulation of applications for projects under the UISP. Where communities want to exert control, the UISP suggests that this participation "should be undertaken through Ward Committees with ongoing effort in promoting and ensuring the inclusion of key stakeholders and vulnerable groups in the process" (DHS, 2009: 15).

Unfortunately this most frequently results in local government officials that are highly dependent on consultants to complete the statutory requirements created by legislation, and communities that experience a deep sense of alienation from any sense of control or understanding of upgrading processes. For example, drawing on the experience of the struggle for the upgrading of Slovo Park in Johannesburg, Tissington (2011a) concludes that "the reliance on consultants in a context of complex technical policies and processes, non-integrated planning

and overzealousness of politicians, is a recipe for failure. Particularly as consultants are often ill-equipped to deal adequately with the myriad problems that arise. Furthermore, from the community perspective,

there seems to be a lack of understanding and clarity... around the roles and responsibilities, legislative imperatives, obstacles and time-frames implicit in these land use planning processes, particularly in relation to the establishment of a new township. Indeed, this is no fault of communities, as these processes as they exist are alienating and inaccessible, as well as being time-consuming and unstreamlined.

A successful partnership-based or collaborative approach to incremental upgrading, therefore, requires a great deal of intermediation between the different stakeholders' sets of interests, priorities and modes of engagement, and combination of different forms of technical and social knowledge to plan and implement co-productive solutions to problems. In our work, Isandla Institute has suggested that this is achieved by individuals and organisations playing particular 'intermediary functions' which, in different ways: support and promote an incremental approach to upgrading; capacitate key actors to play important roles in the upgrading process; and enable the right alignment of institutions and processes to achieve concrete (and mutually agreed upon) outcomes. We intend 'intermediary functions' here to refer to those processes that facilitate (but remain relatively distinct) from the technocratic and physical processes of upgrading (eg assembling the grants, installing standpipes etc) that are typically the responsibility of the state as well as those processes of claiming and asserting rights that are associated with beneficiaries of upgrading processes. These intermediary functions, therefore, would include:

- community mobilisation and support, which is focused on building a community's ability to identify and advocate for their own needs, and interact confidently with state officials and other professionals;
- participatory planning, in which appropriate participatory methodologies are employed to enable community members to be active participants in the design and development of their communities;
- capacity building and training (in communities), which may involve the design and implementation of training or capacity building opportunities for community members to enable them to be full participants in all the aspects of informal settlement upgrading (and so may focus on a variety or combination of technical, project management or community organising skills);
- capacity building and training (with the state or with other stakeholders): the intermediary organisation initiates/hosts training or capacity building opportunities for state officials or other professionals to build their capacity to understand and execute an incremental, participatory approach to upgrading;
- project coordination and management: the intermediary organisation either initiates and manages all the aspects of the upgrading process, or plays a key part in coordinating the actions of stakeholders to achieve desired outcomes;
- research, knowledge management and advocacy: research and learning are grouped with advocacy to stress the importance in all these activities of producing evidence-based policy recommendations that are communicated in a meaningful way to targeted stakeholder groups;
- litigation can either compel shifts in policy, the allocation of state resources to particular programs or the defence of rights of particular communities.

It is important to stress, however, that it is impossible to predetermine the appropriate individuals, organisations or institutions that should play these intermediary functions. While civil society often plays these roles in upgrading around the world and in South Africa, they

may well be played as effectively and progressively by individuals or organisations within the private sector, the community or the state – depending on the particular context in which the upgrading process is occurring.

Given the diversity of intermediary roles and the complexity of the upgrading process outlined above, it seems likely that these intermediary functions will be played by a spectrum of organisations (engaging in different ways and to different degrees with stakeholders) rather than all of the intermediary functions in located within an individual organisation. In line with international experience (e.g. Imperato and Ruster, 2003), we believe the NGO sector has a vital role to play in building and maintaining such networks of individuals and organisations that are committed to advancing an incremental and partnership-based approach to informal settlement upgrading. In a review of the priorities for the promotion of an incremental approach to housing provision, Wakely and Riley (2010: 48) conclude that:

Capacity building of community-based organisations and local NGOs to support incremental housing processes is next in importance to that of formal local government in the league of priorities for capacity building in support of incremental housing processes. The emerging role of neighbourhood and community groups, as a new tier of local governance that comes between individual households and municipal authorities, is almost without precedent. Although urban community organisations are rightly taking on many of the traditional management functions of municipal authorities, it is important that they remain ‘non-governmental’ so that they can maintain an independent watchdog role over municipal authorities, holding them to account and guarding the demands and interests of their constituents.

So what is the current state of the South African NGO sector, particularly with regards to its ability to play this complex balancing act between managerial functions and a watchdog protecting the interests of communities? The formal NGO sector in South Africa has a long history of playing such a role, especially with regards to community-based housing initiatives, and new forms of ‘social movements’ and ‘organisations of the urban poor’ have increasingly become involved. Unfortunately the sector is limited in its ability to be active role players in all of the intermediary functions outlined above. A recently completed piece of research, commissioned by Isandla Institute, conducted across the NGO sector working on housing or related issues (and with other stakeholders) about the current level of interest and state of capacity of organisations in the sector to play intermediary functions within the upgrading process has concluded that “the NGO sector is weak and lacks coordination; there is a severe lack of funding in the sector; NGOs are specialised in specific areas; NGOs are poorly positioned with regards to the state; [and] there are differing views about what the priorities in informal settlement upgrading are” (Isandla Institute, 2012: 12; see Misselhorn, 2008: 26 for a similar diagnosis of the sector).

As is outlined in the introduction, there are a range of important opportunities being created within the state to shift its practice towards the progressive upgrading of informal settlements. However, given the target of 400 000 households by 2014 that was set in Outcome 8 signed by the Minister of Human Settlements, there are no guarantees that this focus will embrace or be able to sustain an incremental or partnership-based approach to upgrading processes. This requires the capacitation and proactive positioning of a network of progressive individuals and organisations seeking to play the ‘intermediary functions’ between the state and communities. The current weaknesses in capacity and positioning than the NGO sector is experiencing are strongly influenced by the lack of resources available for these organisations to sustain a programmatic (as opposed to project-driven) approach to informal settlement upgrading (with the resultant weakening of capacity as experienced staff move into other sectors) and lack

of collaboration and systematic learning between organisations. While these represent significant warning signs for the progressive implementation of an incremental and partnership-based approach to informal settlement upgrading, they do not represent insurmountable hurdles. Isandla Institute is currently in the middle of a two-year process that brings together organisations seeking to play such intermediary functions to strengthen collaboration and encourage mutual processes of learning (in close collaboration with NUSP). However, it is also imperative that other key partners, such as the state and local and international funders, begin to formulate a systematic response to the weaknesses created in the sector by current approaches to funding. Finally, it is important that as the new approach to informal settlements is institutionalised across different state structures, the need to build partnerships that satisfy the different ‘intermediary functions’ in upgrading projects is stressed.

CONCLUSION

This paper has traced the implications of the ‘settlement functionality’ argument for processes of informal settlement upgrading. It has argued that this requires the building of communities of practice between state officials, professionals, civil society organisations and community members in order to understand the opportunities and limitations created by the interaction between the functionality of the settlement within the city system and in the lives of local residents, the physical and technical constraints offered by the site, the levels of local organisation and the skills and resources available for the process. This can only be successfully pursued by a network of individuals and organisations able to play a range of intermediary functions between the state and communities. Finally, it suggests that the NGO sector is an important partner in building and sustaining such networks and that the current weaknesses in the sector in South Africa require a coherent response from all stakeholders.

REFERENCES

- Adlard, G. (2011). Challenges in applying community participation theory at scale in the increasingly contested space of an African city. Paper Presented to the South African City Studies Conference, Cape Town, 7-9 September 2011.
- African National Congress (ANC). (1994). *The Reconstruction and Development Programme*. Johannesburg: Umanyano Publications.
- Antonio, D. (2011). Social Tenure Domain Model: Towards Addressing the Information Requirements of Informal Settlements. FIG Working Week 2011: Bridging the Gap between Cultures. Marrakech, Morocco, 18-22 May 2011.
- de Aristizabal, G., Lewin, C., Mendez, O., and Ziss, R. (1989). *The Policy and Management of Squatter Upgrading: Some Reflections of the Latin American Experience*. SUM Consult, Working Paper prepared for GTZ. Eschborn, March 1989.
- Bäcklund, P. and Mäntysalo, R. (2010). Agonism and Institutional ambiguity: Ideas on democracy and the role of participation in the development of planning theory and practice — the case of Finland. *Planning Theory* 9 (4): 333–350.
- Charlton, S. and Kihato, C., (2006). Reaching the poor? An analysis of the influences on the evolution of South Africa’s housing programme. In Pillay, U., Tomlinson, R and du Toit, J. (eds.), *Democracy and Delivery: Urban Policy in South Africa* (p. 252-282). HSRC Press, Cape Town.
- Cross, C. (2008). “Developing Communities” - Housing delivery as anti-poverty: is South Africa on the right track? The Southern African Housing Foundation, International Conference & Exhibition, Cape Town, South Africa, 12-15 October 2008.

- Cross, C. (2010a). Formal & Informal: Lessons Towards Successful Upgrading? Presentation to DHS Research Conference, November 25, 2010.
- Cross, C. (2010b). Reaching Further Toward Sustainable Development. Presentation to DBSA Spatial Planning Conference, 20 October 2010.
- Department of Housing. (2004). 'Breaking New Ground': A Comprehensive Plan for the Development of Settlements Human Settlements. Pretoria: Department of Housing.
- Department of Human Settlements (2009). Incremental Interventions: Upgrading Informal Settlements - Part 3 Vol. 4. The National Housing Code. Pretoria: Department of Human Settlements.
- Fisher, F. (2001). Building Bridges through Participatory Planning: Part One. Somalia: UN-Habitat.
- Gilbert, A. (2007). The Return of the Slum: Does Language Matter? *International Journal of Urban and Regional Research*, 31: 697–713.
- Gilbert, A. and Crankshaw, O. (1999). Comparing South African and Latin American experience: migration and housing mobility in Soweto. *Urban Studies* 36 (13): 2375 - 2400.
- Görgens, T. (2010). Making Urban Land and Space Matter: A Critique of the South African Approach to Urban Transformation. A Position Paper. Cape Town: Isandla Institute.
- Görgens, T. and van Donk, M. (2011). Exploring the potential for 'networked spaces' to foster communities of practice during the participatory upgrading of informal settlements. Paper presented at the National Department of Human Settlements Seminar: 'From beneficiaries to citizens: meaningful communication with, and participation of, the poor in human settlement development'. Held on the 17 November 2011, Emperors Palace, Johannesburg.
- Harrison, P., Todes, A., and Watson, V. (2008). Planning and Transformation: Learning from the Post-Apartheid Experience. London and New York: Routledge.
- Healey, P. (2006). Spatial Complexity and Territorial Governance: towards a Relational Planning for Our Times. London: Routledge.
- Huchzermeyer, M., (2011). Cities with 'Slums': From Informal Settlement Eradication to a Right To The City In Africa. Cape Town: University of Cape Town Press.
- Imparato, I. and Ruster, J. (1999). The Promueba-Caracas Sub-Project Selection Criteria. In Participation in Upgrading and Services for the Urban Poor: Lessons for Latin America. Washington D.C.: World Bank.
- Imparato, I. and Ruster, J. (2003). Slum Upgrading and Participation: Lessons from Latin America. World Bank Directions in Development Series.
- Isandla Institute and Urban LandMark (2008). Do Informal Land Markets Work for Poor People? An Assessment of Three Metropolitan Cities in South Africa. Synthesis Report. Prepared for Urban Landmark by Isandla Institute and Stephen Berrisford Consulting, Pretoria.
- Isandla Institute (2012). Assessment of the current state of practice, capacity and potential of civil society organisations to act as intermediaries in informal settlement upgrading. Working draft, 13 August 2012. Report prepared by Impact Consulting.
- Klaufus, C. (2012). Moving and improving: poverty, globalisation and neighbourhood transformation in Cuenca, Ecuador. *International Development Planning Review*, 34 (2): 147-166.
- Misselhorn, M. (2008). Position Paper on Informal Settlement Upgrading. Part of a Strategy for the Second Economy for the Office of the South African Presidency. Compiled for Urban Landmark, Pretoria.
- Misselhorn, M. (2010). A New Response to Informal Settlements. *The Transformer* (December/ January 2010): 16-20.
- MIT (2001). Upgrading Urban Communities: A Guide for Practitioners. Prepared by Special

- Interest Group in Urban Settlement, School of Architecture and Planning, MIT for the Thematic Group for Services to the Urban Poor, The World Bank. Available at <http://web.mit.edu/urbanupgrading/upgrading/whatis/index.html>
- Mukhija, V. (2001). Upgrading Housing Settlements in Developing Countries: The Impact of Existing Physical Conditions. *Cities* 18 (4): 213-222.
- National Planning Commission (NPC). (2011). National Development Plan: Vision 2030. Johannesburg: The Presidency of South Africa.
- Pieterse, E. (2008). *City Futures: Confronting the Crisis of Urban Development*. London & New York: Zed Books.
- Pithouse, R. (2009). A Progressive Policy without Progressive Politics: Lessons from the failure to implement 'Breaking New Ground'. *Town Planning Journal* 54: 1-14.
- Project Preparation Trust (PPT) (2010). *Informal Settlement Toolkits*. Project Preparation Trust (PPT), KwaZulu Natal.
- Satterthwaite, D. (2001). From Professionally Driven to People-Driven Poverty Reduction: Reflections of the Role of the Shack/Slum Dwellers International. *Environment & Urbanization*, 13 (2): 135-138.
- Tissington, K. (2011a). *Towards a Synthesis of the Political, Social and Technical in Informal Settlement Upgrading in South Africa: A Case Study of Slovo Park Informal Settlement, Johannesburg*. SERI Working Paper No. 1. Johannesburg: The Socio-Economic Rights Institute of South Africa.
- Tissington K. (2011). *A Resource Guide to Housing in South Africa, 1994-2010: Legislation, Policy, Programmes and Practice*. Johannesburg: Socio-Economic Rights Institute.
- Turner, J. (1968). Housing Priorities, Settlement Patterns and Urban Development in Modernizing Counties. *Journal of the American Institute of Planners*, 34: 354-63. Turner, J and R. Fichter (eds.) (1972): *Freedom to Build: Dweller Control of the Housing Process*. New York: Macmillan.
- Wakely, P. and Riley, E. (2010). The Case for Incremental Housing. CIVIS Special Issue. *World Urban Forum* 5. Cities Alliance.

A REVIEW OF BENEFICIARY PARTICIPATION IN THE DELIVERY OF LOW-INCOME HOUSING IN SOUTH AFRICA

N. T. Ramovha

*Department of Construction Management and Quantity Surveying
University of Johannesburg, Doornfontein Campus, Johannesburg, 2028, South Africa
Thomas.Ramovha@dhs.gov.za*

Prof Wellington D. Thwala

*Department of Construction Management and Quantity Surveying
University of Johannesburg, Doornfontein Campus,
Johannesburg, 2028, South Africa
didibhukut@uj.ac.za*

Abstract

Adequate housing is recognised as part of the right to an adequate standard of living and that it must meet the following minimum conditions: security of tenure; availability of services, materials, facilities and infrastructure; affordability; habitability; accessibility; location; and cultural adequacy. Many Governments around the world in their attempt to deliver adequate housing and related infrastructure overlook the importance of the contribution of beneficiaries in the delivery process. This study is mainly a literature review of existing published and unpublished research on the role and participation of beneficiaries in the delivery of low-income housing in South Africa. The study also examines published case studies of three of self-help housing projects implemented in South Africa, to deduce lessons from the studies. Preliminary findings suggest that where communities are in control, their homes are better and cheaper than those built through government programmes and large corporations. The participation of beneficiaries could enhance the delivery of adequate housing by government and thereby reduce the dependency of beneficiaries on the state. To enhance their participation, beneficiaries require certain capacities and therefore governments should facilitate the creation of these capacities.

Keywords: Adequate housing, beneficiary, participation, low-income

INTRODUCTION

Adequate housing is recognized as part of the right to an adequate standard of living, and that it must meet the following minimum conditions: security of tenure; availability of services, materials, facilities and infrastructure; affordability; habitability; accessibility; location; and cultural adequacy. One of the common misconceptions about the right to adequate housing is that some believe that: the right to adequate housing requires the State to build housing for the entire population (United Nations High Commissioner on Human Rights (UNHCHR) (2009). This right can be implemented through an enabling approach to shelter where the Government, rather than playing the role of housing provider, becomes the facilitator of the actions of all participants in the production and improvement of shelter. The state will only in specific cases, provide direct assistance, including housing or housing allowances, notably to people affected by disasters (natural or man-made) and to the most vulnerable groups in society. According to Evans (2007) a rights-based approach to development rejects the notion that people living in poverty can only meet their basic needs as passive recipients of charity. People should be the active subjects of their own development, as they seek to realise their rights. The role of development actors, including the state, should inter-alia seek to build

people's capabilities to realise their rights.

According to a report on the "economic impact of the South African government housing programmes, the government of South Africa in its endeavour to ensure the progressive realisation of the right to adequate, spent approximately R99 billion at 2010 values between 1994 and 2010 to deliver approximately 2.37 million houses and 687 500 stands (Department of Human Settlements, 2011). In spite of the 2.37 million houses reported, after paying a surprised visit to one of the oldest informal settlements in the South of Johannesburg, President Jacob Zuma commented that, it is deplorable that 16 years into democracy, South Africans still live in squalor (SABC News, May 17 2010, 6:15:00). The Minister of Human Settlements, Mr Tokyo Sexwale has acknowledged that the demand for housing in South Africa remains very high, and that the government will need to speed up its plans to address a backlog estimated at over two-million, and that more than 12-million South Africans are in dire need of proper homes (South Africa.info, 2010). In spite of this housing delivery record, South Africa witnessed a number of service delivery protests by citizens who demanded houses and other services. The majority of complaints received by the Presidency revolved around housing, water and electricity. Housing complaints ranged from unfinished houses, poor quality houses and the slow pace of housing delivery (GROWTH Magazine, 2009). State subsidized housing for low-income earners has received criticism from politicians, housing practitioners and the general public for being a contractor-driven exercise with poor quality housing units being built on the periphery of South African cities (Dag, 2009). According to Deputy Minister of Human Settlements, Fredericks-Kota (2010), although to date, the plight of large numbers of the poorest of the poor have been addressed through the provision of the abovementioned homes, it is the conviction of the government of South Africa that "together we can do more", and as a result, government continues to call for a collective effort with all citizens committed to working with government in order to create sustainable human settlements. This call was made as early as 1998 when the government first approved the Peoples' Housing Process programme, as a housing programme to assist qualifying beneficiaries of the government's Housing Subsidy scheme, who choose to make a sweat equity contribution to their subsidy by building or being involved in the building of their own homes (Department of Housing, 2005). Another clear call for the mobilization of communities to partner with government in the delivery of housing was made through the South African government's "Breaking New Ground (BNG) policy (Department of Human Settlements, 2009).

This study is based on the review of literature on community participation, and the analysis of case studies of three self-help/PHP housing projects undertaken in Cape Town-South Africa in 2009 by the Development Action Group (DAG). The case studies are: a case study of the Marconi Beam Affordable Housing project; a Case Study of the Freedom Park Informal Settlement Upgrade; and a Case study of the Netreg housing Project. The literature review and the analysis of the three case studies enhanced the understanding of the benefits of community participation in low cost housing development.

COMMUNITY PARTICIPATION

Community participation is generally understood as the process where the citizenry is directly involved in the planning, governance and the overall development programmes at local level (Mafukidze and Hoosen, 2009) In the context of housing projects community participation is a notion where members of the communities and beneficiaries are in control of the whole process from planning the house designs and public spaces thereof, to taking decisions on all aspects of the project implementation such as decisions regarding who to partner with where necessary, and who to do the actual construction of the houses (DAG, 2011). The participation of citizen should therefore not be limited to being consulted in order for them to accept decisions taken by housing specialists. They must be involved in all housing development processes, such as, discussing, deciding, and evaluating results in a participative exercise (De la Vega Pena, 2006). This is contrary to the conventional housing projects implementation particularly housing projects targeting the poor or low-income earners, where communities have very little to say on the implementation of the projects as professionals always take all decisions. Community participation is dependent on a number of aspects such as the capacity of the community in terms of competencies, numbers and availability. Although in principle community participation entails the involvement of beneficiaries in all steps of the housing development process, in practice the participation at times tends to be confined to specific activities in the delivery value chain (Mafukidze and Hoosen, 2009). It goes without saying that for maximum and effective community participation particularly in the whole housing delivery value chain, beneficiaries have to have the necessary skills, knowledge and attitudes. The role of professionals should include that of ensuring maximum participation of the families in any technical decision taken during the housing development process. Below is how professionals in Cuba operated during community participative processes as narrated by De la Vega Pena (2006:7):

“All members of the program use a participative design approach. This method is taught to all architects and others specialists working for the program. Families who wish to use the services go the local office for advice. An architect then visits the home when all the family members should be present, and identifies through a series of interactive games not only the needs but also the wishes and expectations of the family, in terms of their house for the future. Detailed measurements of the property are also carried out and at least four design alternatives are drawn and discussed with the family before a final design is developed. The family decides which one they want”.

In Cuba, the Cuban government responded to the housing crisis by formally institutionalizing self-help programmes such as the micro-brigades and the social micro-brigades, after realizing that it was unrealistic to expect all houses needed to be provided by the state alone (Nussbaum, 2007).

The Microbrigades concept was introduced to the public by Fidel Castro in 1970, and was subsequently implemented in 1971. Through the Microbrigades, workers within an office, a factory or any other productive unit were provided an opportunity to build houses for themselves and for their colleagues. For this end some of the workers were released from their normal work duties and integrated into building brigades, while their colleagues, who stayed behind guaranteed to maintain the previous level of productivity in the workplaces (Mathey, 1989). The idea behind Microbrigades was the collective advantage of pooling skills, labour and physical sites, for preference was given to multi-family units (Nussbaum,

2007). Members of a Microbrigade continued to receive their regular salary from their permanent employer. 90% of houses completed by a Microbrigade team were distributed amongst all workers in the original work-place according to the need, and the remaining 10% was offered to the local authorities for distribution to members of the community who need a house but did not participate in any microbrigade due to various acceptable reasons (Nussbaum, 2007; De la Vega Pena, 2006).

To widen the Microbrigade concept, at the end of 1987, the government introduced the Social Microbrigades. Unlike the aforementioned Microbrigades, workers participating in the Social microbrigades do not have to necessarily belong to the same productive unit or workplace, but their unifying characteristic is that they all lived in the same neighbourhood where the Microbrigade was operating. This type of Microbrigade focused mainly on the repair or renovation of the existing housing stock and urban infrastructure and not on new buildings. Besides workers, social microbrigades had as members, unemployed people, youths and young adults, housewives, and the elderly from within the neighbourhood, and these were offered a paid job. This offered unemployed youth an opportunity to learn a building trade as a part of the job while they were receiving a regular income as untrained workers.

Old-age pensioners who had worked in the building trade before retirement, operated as teachers to the young and receive their pre-retirement salaries. Apart from the paid members, the Social Microbrigades also incorporated voluntary workers who were either neighbours joining the unit in their free time or individuals given paid leave by their regular work centres. According to the World Bank (2002), reinforcing the involvement of local residents, associations, and non-governmental organizations in the identification, construction, and maintenance of urban infrastructure is important for the sustainability of the investments. The lesson learned is that the local population can participate in the identification of projects, partial financing, physical contribution and participation in maintenance programs provided the following exist:

- specific know-how at the ground level in order to launch and manage the participatory process (social intermediation team);
- adequate contract management for small investments co-financed by the population in order to avoid administrative delays;
- suitable procedures for the programming and financing of the investments made.
- The rules of participation have to be clear and transparent in order to strengthen the
- willingness of the communities to make a financial contribution.

In Cuba, the active participation of citizens in the construction of quality housing for themselves was enhanced by the implementation of a programme named the “Architect in the Community Programme (PAC)” by the government. The programme was meant to ensure that each community had architects, engineers and other technicians to provide construction technical and professional services to them (De la Vega Pena, 2006). The following are amongst others benefits derived from community participation:

(a) Community empowerment and Self-reliance

Beneficiary participation is essential for project effectiveness as well as for capacity and empowerment of people for community self-reliance and sustainability as participation also increases people's control over resources and development efforts. It also enables beneficiaries to plan and implement and also to participate in development efforts beyond one

project and also at levels beyond their community. Community self-reliance eliminates the culture of over-dependency on government as it enhances awareness, build confidence and self-initiative (Narayan, 1995, Van Heck, 2003).

(b) Sense of ownership

Where beneficiaries are required to personally participate in the actual building of their homes, their sense of ownership is increased and opportunities for skills acquisition and employment creation are opened up (Fredericks-Kota, 2010). According to a recent report on the “Economic impact of government housing programmes”, a recent study in Welkom-South Africa, showed that “ free subsidy home owners were prepared to sell their homes for R3500, while self-build home owners were only willing to sell for as much as R25 000. Recipients of free houses were willing to dispose of the houses at a slightest offer from buyers than owners of self-help housing. There is therefore greater sense of ownership in self-help housing than with free housing or contractor driven housing programmes (Department of Human Settlements, 2011).

(c) Quality of services and cost-effectiveness

There are compelling arguments in literature suggesting that where communities are in control, their homes are of better quality and more cost effective per square metre than those built through government programs and large corporations, and that left to their own devices the poor are capable of housing themselves in an effective and cost effective manner (Yeboah, 2005). Evans (2007) argues that delivery to passive recipients produces results that are sub-optimal at best and counter-productive in many cases. What the poor require to house themselves is assisted self-help, where the state assists by creating an environment in which people could build for themselves through programmes such as the People’s housing process (Marais, Ntema & Venter, 2008).

According to Olusanya & Adelere (2011) home ownership initiatives such as the CLUB Housing Cooperative whereby a group of people by coming together to develop housing jointly obtain much higher value out of all proportions to what could be obtained individually. CLUB in this case is the acronym for Come Let Us Build...practicalising the principles of Genesis 11.

(d) Contribution to economic growth

According to Evans (2007) human capabilities are central to economic growth and are the primary motor of economic growth. The expansion of human capabilities is therefore the most powerful form of investment in economic growth. Shortages of skilled labour are a “binding constraint” and therefore “skills development and education” are important to defeating unemployment and poverty. Skills and capacities acquired through the participation of communities during self-help projects can be used to uplift the economic condition of the poor. Chronically poor have been defined as communities or individuals who experience significant capability deprivations for a period of five years and more (Hickey, 2006).

(e) Enhances the effectiveness of government

According to Ramjee and Van Donk (2011:15) public participation is about giving ordinary people a meaningful opportunity to exercise voice in processes that shape the outcome of development that has a direct bearing on their daily lives. Participation is also necessary because it deepens the process of democracy as well and makes government more effective.

THE PEOPLE'S HOUSING PROCESS HOUSING PROGRAMME

In 1998, the government of South Africa in an attempt to encourage and enable housing beneficiaries to actively contribute and participate in the housing development process, added a programme called the People's Housing Process (PHP), to its many housing development instruments targeting low-income earners. The People's Housing Process (PHP) is a process whereby beneficiaries are actively involved in the decision making over the housing process and product and, must make a contribution towards the building of their own homes (Department of Human Settlements, 2009).

According to Deputy Minister of Human Settlements, Fredericks-Kota, to date the plight of large numbers of the poorest of the poor have been addressed through the provision of more than 2, 7 million homes. Government continues to call for a collective effort with all citizens committed to working with government in order to create sustainable human settlements, through the PHP programme (Department of Human Settlements, 2010). Bailey (2011) suggests that support for local people's housing initiatives has existed in the housing policy since 1994, however, very little was actually done on the ground, as the government concentrated efforts on the large-scale rollout of new, state-subsidized, contractor-built housing developments.

The PHP programme enables and encourages communities to actively contribute and participate in the housing development process so that communities take ownership of the process and not just act as passive recipients of housing. It acknowledges that the community is the initiator and driver of the process. The programme is intended to build on existing livelihood strategies so that social capital that has been built up in a community is capitalised on. This programme therefore, builds on the positive steps that communities have taken to organise and house themselves rather than diminish the contribution that communities have made. Over and above the housing subsidy accessed from government, through this programme, communities also receive technical and administrative support from Community Resources Organizations (CRO) (Department of Human Settlements, 2009).

The Deputy Minister for Human Settlements, Fredericks-Kota, underscored the need for Community Resource Organisations (CRO) and PHP Sector Support agencies that are prepared and willing to contribute constructively so that government can get value for money in its endeavor to ensure the development of adequate housing (Department of Human Settlements, 2010). Community based organizations are an essential complementary source of information about the effectiveness of investments, as well as central organizational tools in the co-production of key services (Evans, 2007).

Community participation has the benefit of (1) a saving in labour costs; (2) avoiding payment of a profit element to developers; and (3) optimizing control and decisions regarding the housing products to be delivered, (Department of Human Settlements, 2009), and this contributes to better houses in terms of size and quality since the whole subsidy and savings monies are used on the purchase of materials only and not payment of contractors. A report on the "Economic impact of Government housing programmes" suggests that People's Housing Process (PHP) projects are "regarded as highly successful in that larger-sized houses are delivered because of the contribution from community, and because of the community resource organization (CRO), which represents the community during construction" (Department of Human Settlements, 2011:145).

The following three case studies by the Development Action Group (DAG) are typical People's Housing Process (PHP) projects in some of South Africa's poorest communities. These projects will shed light regarding the benefits and challenges of beneficiary participation.

NETREG CASE STUDY

Netreg was a poor, overcrowded settlement in Cape Town who organized themselves and forged partnerships with relevant organizations to redesign and reconstruct their living environment through the self-help housing programme.

Partnerships

The community of Netreg partnered with government and non-governmental agencies such as the Development Action Group (DAG), the Niall Mellon Townships Initiative (NMTI), and the City of Cape Town redesigned and reconstructed their settlement through the government's self-help housing programme, the People's housing process (PHP) (Torkelson, 2009). DAG acting as the Support organization as per the requirement of the PHP policy provided support to the community of Netreg, from acquiring well-located land to the implementation of the project. According to Torkelson, DAG's developmental approach to community support, put emphasis on achieving active citizenship than it does on attaining housing.

Economic consideration

Netreg residents rebuilt their settlement around their vernacular economy, the scrap-collection industry as this micro-economy supported many residents, and in so doing, increased economic empowerment and financial stability within their settlement, without additional capital outlay. The Netreg community, thus, not only embarked on a project concerning the physical changes they wanted to see in their neighbourhood, but also the social and economic changes they wanted to see in themselves and their livelihoods" (Torkelson, 2009).

Building an active citizenry

It is reported that after the completion of the project, community members use the skills such as building technical skills, organizing skills and other community development skills acquired during the housing project to initiate or participate in other community projects. Members of this community become active citizens as they begin to take charge of their development. Active citizenship includes but not limited to political activism, individual action with social consequences, which may include participation in faith groups or neighbourhood associations, social entrepreneurship activities and a panoply of social organizations that extend beyond the purely personal or familial benefit (Green, 2008).

Capacity development

The support organization (DAG) facilitated the development or acquiring of skills by the community through (1) facilitating access to information to enhance community skills and capacity; (2) training workshops; and (3) providing "on the job" experience. DAG also facilitated the development of technical construction skills through training courses.

Choice of housing typology and acceptability of density to low-income people in South Africa

Contrary to popular belief that Medium- and high-density housing typologies are unacceptable to South Africans because of preconceived ideas about housing and negative stereotypes about the by-products of dormitory or hostel-style neighbourhoods, the Netreg case demonstrates that participatory design workshops which explore the relationship between housing typology and costs can influence the acceptability of medium-densities (Torkelson, 2009). According to Torkelson, (2009:22) “given the limited available funds, the house design and neighbourhood layout were heavily influenced by financial viability. DAG’s professional support team, in consultation with the Netreg beneficiaries, developed a medium-density housing layout of semi-detached units and row houses with slightly reduced plot sizes for 191 families”.

FREEDOM PARK CASE STUDY

Freedom Park started as an informal settlement after a number of residents from Tafelsig in Mitchell’s Plain, who lived in backyards or overcrowded formal houses, occupied a vacant piece of land nearby on the 27 April 1998 on Freedom Day, hence the name Freedom Park.

Partnerships

Like the Netreg community above, the Freedom park residents partnered with government, the City of Cape Town and non-governmental agencies such as the Development Action Group (DAG), the Legal Resource Centre (LRC) and the Mellon Housing Institute (MHI) to address their settlement problems. The Freedom Park chose to use the government’s People’s housing process (PHP) approach and that the project would be implemented in a genuine partnership with shared decision-making, and that DAG would be their support organisation. DAG facilitated meetings between the Freedom Park Development Agency and MHI which resulted in an agreement that MHI would construct the houses in Freedom Park provided that MHI would contribute additional funds for the construction of a community centre and for tiled roofs, geysers and solar water heaters for each house. In addition, MHI would provide additional funds for each household to receive a house of at least 42m² (DAG, 2009). The partnership with MHI was meant for the beneficiaries to secure these advantages but did not anticipate that this would lead to MHI “robbing” them of the ownership of the process. In South Africa, in an attempt to enhance the delivery of housing, three distinct delivery mechanisms emerged as the implementation of the housing policy evolved, namely the contractor-driven development, self-help housing (PHP), and managed-self-help housing (managed PHP) which is a hybrid of the contractor driven and the self-help housing. This project qualified to be called a managed PHP project. Before the development of the new PHP policy, the Enhanced PHP, the implementation of the PHP programme varies substantially by area, Some houses were built by owners themselves with assistance from municipalities and provinces in finding and acquiring land and materials and others were built by local contractors trained for the community under the PHP and then hired by the owner to build the required house (Landman & Napier, 2009).

Economic consideration

Freedom Park residents engaged proactively with several NGOs and initiated a range of development interventions, which created jobs and improved food security, life skills and employment skills. Access to education and training was also a priority.

Building an active citizenry

It is reported that after the completion of the project, the FPDA became involved in a broad range of interventions to address a variety of needs within the community and assist residents to cope with life in the settlement.

Capacity development

The Housing Support Centre (HSC) was set up and funded through the Establishment Grant provided by government. The grant is designed to enable the beneficiaries in self-help projects to administer the project, co-ordinate construction and monitor the quality of contractors' work. The Housing Support Centre Staff were trained by DAG and supported by DAG staff, including two Cuban Technical Advisors (an engineer and architect) seconded by the Department of Housing.

The HSC's Construction controller monitored the construction process to ensure quality houses and also received complaints from community members regarding quality issues. This was done with the support from DAG staff and two Cuban Technical Advisors (an Engineer and an Architect). However, due to the high construction pace, the controller could not keep pace and this resulted in poor workmanship in process. After the project the HSC ceased to be in place as their reason for existence was over, as some of the staff in the HSC were leaders seconded from the Freedom Park Development Agency (FPDA), a Community based organization registered in 2005.

Like in the Netreg project above, DAG facilitated the development or acquiring of skills by the community through facilitating access to information to enhance community skills and capacity and through workshops; and "on the job" experience. Over and above this, about eighty four (84) Freedom Park community members and members from surrounding areas attended a nine-week construction skills training course to prepare them for employment during the implementation of the settlement's upgrading process. About eight (8) residents of Freedom Park also underwent training in administrative and computer skills. The FPDA members attended DAG's Leadership programme to ensure there is capacity in the organization. Though job creation was limited due to the use of heavy duty machinery by MHI in their quest to speed-up the construction of houses, after the project, members used the skills acquired during the project in a number of ways: the FPDA was awarded a tender by the City of Cape Town to undertake training in solid waste management; some members secured employment in crèches, work in family-focus programmes, as members of the neighbourhood watch unit, and in a number of welfare organizations, amongst other areas.

Construction of houses

MHI sets for itself a goal to complete all 327 housing units in one year and as a result MHI's primary focus was on the construction process as opposed to supporting the community to build their own homes. To accelerate delivery MHI used heavy duty machinery which consequently limited job creation. The Housing Support Centre staff consequently failed to keep pace with the rate of construction, resulting in many quality problems that were not resolved. The poor quality of work was reported as attributed to (1) unskilled labour employed by MHI and (2) the lack of adequate supervision and inadequate monitoring of quality during construction, by the City of Cape Town.

Satisfaction and ownership of the final product

After taking ownership of their houses, beneficiaries displayed a low level of ownership, failing to take responsibility for looking after them. This could have been addressed through

workshops on consumer maintenance and home ownership. The City of Cape Town and MHI agree that the new home-owners needed to learn how to take full responsibility for maintenance of their homes after construction is concluded. The lack of responsibility seems to have resulted from MHI's approach to beneficiaries: with MHI previously encouraging residents and the committee to step back, it was found now to be difficult to encourage people to embrace their responsibilities. Some members felt that they "sold their souls for the top-up" fund promised MHI, referring to their unwittingly handing over the control of the project to MHI.

Challenges experienced

One of the critical stakeholders' key performance indicators was contrary to the spirit of People's Housing Process projects. Community members were discouraged from participating fully, and as a result there were quality problems in the final product, as well as lack of ownership.

MARCONI BEAM PROJECT CASE STUDY

The Marconi Beam settlement in Milnerton was an informal settlement started by immigrants and people who worked as grooms for the Milnerton Race Course, but later attracted many other migrants.

Organised communities

According to Haysom (2009) in spite of the fact that the residents of Marconi Beam were not a cohesive or homogenous community, they organised themselves to protect, represent and pursue their interests and their position in Milnerton. This resulted in the establishment of a community Trust to drive the housing project and administer the revenue raised from the sale of the community's commercial land. The importance of an organized community cannot be overemphasized.

Partnerships

The Marconi Beam project involved both local and provincial governments, property developers, construction companies, the community and its Trust and an NGO. This partnership which also involved both local and international development actors supplemented the government's housing subsidy which was inadequate to address the needs of the Marconi Beam residents in terms of the cost of constructing the houses, the infrastructure and land required. These multi-stakeholder partners agreed and packaged the project finances to involve both mixed-income and mixed-use developments. The development catered for houses for the subsidized housing market and the lower-end of the non-subsidised housing market, as well as sites for commercial and industrial developments.

Economic consideration

Stakeholders recognised the need to stimulate economic development within Joe Slovo Park through local economic initiatives. Selected residents were trained on the Nu Way Building System, an alternative building that was labour intensive and affordable. Two construction teams mastered the use of the technology, although a greater number of people were trained, and though less than five percent of the houses were constructed using this technology, the two building teams went on to construct houses in the neighbouring Du Noon and Philippi settlements, after the Marconi Beam development. Marconi Beam illustrates that economic development plans need to take the skill level of intended beneficiaries into consideration.

Building an active citizenry

It is reported that after the completion of the project, the Development Trust was dissolved. In spite of the dissolution of the trust, residents were left with skills to undertake other community development initiatives where necessary without having to depend on government.

Capacity development

To enhance effective participation DAG supported the community in establishing the Trust, provided ongoing training to enhance the capacity of Trustees and supported the Trust in its operations.

Satisfaction and ownership of the final product

As indicated above, residents of Marconi Beam participated fully in both negotiations, and the design and construction of their development and thereby ensured their maximum satisfaction with the new housing. Residents were therefore part of every step of the decision making and implementation of the project. The Marconi Beam settlement was designed such that it is located within close to transport, employment and urban economic opportunities and had the necessary social amenities in close proximity, to meet the minimum requirement of adequate housing or sustainable settlements.

Challenges experienced

Managing multi-stakeholder partners and their respective interests was not an easy task.

KEY LESSONS

The following lessons were learnt from the three case studies above:

Partnerships:

There are a number of potential partners from government side, as well as partners from the private sector and non-governmental organizations (NGOs) who are keen to support community development.

- Partners are willing to contribute resources to support community development, and thereby supplement limited resources available to communities.
- It is critical for communities who opt for self-help housing projects to agree with partners on the key performance indicators for their projects, to avoid a situation where partners pursue agendas parallel to the needs of communities.
- Community resource organizations, NGOs, and other Community based organizations and government have a role to build the capacity of communities to undertake the necessary negotiations activities.
- Stakeholder management is important particularly where communities partnered with multi-stakeholders, to manage stakeholder interests.

Building an active citizenry:

Communities who organized themselves to participate in self-help housing projects, use the skills acquired to initiate or participate in other community development projects. Unlike beneficiaries of free housing, these communities seek for opportunities to enhance their communities both socially and economically instead of waiting for government to

provide everything for them.

Capacity development:

For housing beneficiaries to be effective in the implementation of self-help projects, they need the following skills and capacity amongst others: organizing skills, community engagement skills, technical skills (brick-laying, carpentry etc), capacity to access relevant information, negotiation skills, leadership skills, monitoring and evaluation skills, project management skills, financial management and conflict resolutions skills. Most of skills required by community members to enhance the success of self-help projects can be learned during the running of the projects, through transferring of skills by partners (groups of professionals), through on-the-job training and also through formal workshops and training facilitated by partners. Capacity development must be clearly stated as one of the critical key performance indicators when communities sign agreements with partners, for it to happen, and budgets allocated toward this

Choice of housing typologies:

Contrary to popular belief that Medium- and high-density housing typologies are unacceptable to South Africans because of preconceived ideas about housing and negative stereotypes about the by-products of dormitory or hostel-style neighbourhoods, where beneficiaries full participate in design of housing projects, they willingly accept medium-densities when they consider costs and other critical aspects of community life.

Economic consideration:

Some communities like Netreg residents designed and constructed their settlement around the scrap-collection industry, their vernacular economy, and thereby increased economic empowerment and financial stability within their settlement, without additional capital outlay. Some communities implemented development projects after the housing project using the skills acquired during the housing projects. This is not normally the norm in most of the projects where beneficiaries are handed free housing.

Satisfaction and ownership of the final product:

After taking ownership of their houses, beneficiaries displayed a low level of ownership and fail to take responsibility for looking after their new homes where beneficiaries couldn't participate fully during the construction stage of the project either due to (1) lack of relevant skills or (2) a partner rushing through a project neglecting the capacity development component of the project.

CONCLUSION

It is evident from the literature and the case studies reviewed that fruitful participation of beneficiaries requires civic education, technical skills access to information, time, resources and appropriate platforms for local level engagement to support community involvement in planning and implementation, and that NGOs (with professionals) are critical in enhancing the capacity of communities. Partnerships are very important as they provide resources and technical expertise (professionals) to supplement resources and skills available to communities and thereby amplify the end product. The Self-help housing sector requires professionals who are driven by developmental approach/philosophies whose responsibilities would include ensuring maximum participation of beneficiaries in any technical decision taken during the housing development process thereby enhancing ownership of the process and product by beneficiaries, and avoid disempowering of beneficiaries. It is also critical to also

ensure that where there are multiple stakeholders, roles and project objectives must be made clear and shared by all, to ensure the achievement of intended project outputs.

Beneficiary participation in Self-help projects through the PHP projects results in better quality and holistic product due to (1) a saving in labour costs; (2) avoiding payment of a profit element to developers; (3) optimizing control and decisions regarding the housing products to be delivered; and (4) by supplementing available resources through partnerships. It was evident from the literature reviewed, that communities who participated in Community-Driven housing projects “report that they are happier with the house design, house size and the layout of the neighbourhood because they had a say in the process.

Lastly, the participation of beneficiaries in the delivery of low-income housing, particularly PHP/self-help projects, would address the challenges faced by the government of South Africa in translating monies spent in contractor driven free housing, into economic benefits for beneficiaries beside the house received, as reported in the recent report on the “economic impact of government housing programmes”, which suggested the following as the areas of focus to “maximize the multiplier impact of the National housing delivery programmes”:

- Maximize local job creation and ensure that the benefits are also felt within the smaller economies by using local communities, companies, and suppliers.
- Enhance skills transfer and ensure maximum skills development covering both job related and other training.
- Improve consumer education focusing on aspects such as maintenance, asset value, etc.

REFERENCES

- Bailey, D. (2011). Towards sustainable human settlements: Public participation in housing development with a specific focus on the People’s Housing Process. Built Environment Support Group. Good governance learning network. BESG. Pietermaritzburg. South Africa.
- De La Vega Pena, G.S.M. (2006). Building and designing for social housing architects in the community programme. Cuba World habitat Award 2001 winner: A paper presented at the Conference on: “Social Housing in the Caribbean” Organized by the National Housing Trust (NHT) Jamaica Conference Centre, June 19-20.
- Department of Housing (2005). Policy Framework and Implementation Guidelines for the People’s Housing Process (PHP) Delivery Mechanism. Pretoria.
- Department of Human Settlements (2009). National Housing Code. Incremental Interventions. Enhanced People’s Housing process. Department of Human Settlements. Pretoria.
- Department of Human Settlements (2010). Report on the People’s Housing Process (PHP) National workshop held on the 25th and the 26th August 2010, Kievits Kroon, Pretoria.
- Department of Human Settlements (2011). Economic Impact of Government Housing Programmes (1994 – 2010). Department of Human Settlements, Pretoria.
- Development Action Group (2011). Urban land matters: Community-Driven Housing: A Development Action group publication. Cape Town. South Africa.
- Development Action Group (2009). A Place to Be Free: A Case Study of the Freedom Park Informal Settlement Upgrade. Development Action Group, August 2009. Cape Town. South Africa.
- Evans, P. (2007). Expanding human capabilities for economic transformation. A 21st Century

- agenda for the developmental state. Umrabulo No. 30. November 2007.
- GROWTH Magazine (2009). Housing complaints dominates President Zuma's hotline.
- Green, D. (2009). From Poverty to Power. How active citizens and effective states can change the world. Jakana Media and Oxfam International. Sunnyside. South Africa.
- Haysom, S (2009). Unprecedented Innovation: A case study of the Marconi Beam Affordable Housing Project. Development Action Group, August 2009. Cape Town. South Africa.
- Hickey, S. (2006). The politics of what works in reducing chronic poverty: A synthesis report for the Ministry of Foreign Affairs, The Netherlands. Manchester. United Kingdom.
- Landman, K, & Napier, M. (2009). Waiting for a house or building your own? Reconsidering state provision, aided and unaided self-help in South Africa. Habitat International (2009), doi:10.1016/j.habitatint.2009.11.015
- Mafukidze J, K. & Hoosen, F. (2009). Housing Shortages in South Africa: A discussion of the after-effects of community participation in housing provision in Diepkloof. Springer. Pretoria. South Africa. Published online: 12 September 2009.
- Marais, L. Ntema, J. & Venter, A. (2008). State control in self-help housing. Evidence from South Africa. (Paper presented at the European Housing Network Research Conference, Ireland, 6-9 July).
- Mathey, K. (1989). Microbrigadas in Cuba: A Collective form of Self-help housing. Neth. Journal of Housing and Environmental Res., Vol. 4 (1989) No. 1.
- Narayan, D. (1995). The Contribution of People's Participation: Evidence from 121 Rural Water Supply Projects. The International Bank for Reconstruction and Development. THE WORLD BANK. Washington, D.C. 20433, U.S.A.
- Nussbaum, L. (2007) Housing in Havana: A Social paradox. <http://lanic.utexas.edu/project/etext/llilas/ilassa/2007/nussbaum.pdf>
- Olusanya, O. and Adelere, C. (2011). New Concepts for Sustainable housing delivery. Department of Architecture, University of Lagos. Downloaded in 2011.
- Ramjee, M. and Van Donk, M. (2011). Recognising Community voice and dissatisfaction: A Civil Society Perspective on Local Governance in South Africa. Good Governance Learning Network (GGLN). Isandla Institute. Cape Town.
- SABC (2010). South Africans still leaving in squalor. SABC News, May 17 2010, 6:15:00. Tokyo Sexwale (2011) Media statement released on the 18th of January 2011, by the National department of human settlements. Pretoria.
- Torkelson, E (2009). Netreg housing Project: Remaking city and vernacular economy according to communal needs and desires. Development Action Group, August 2009. Cape Town. South Africa.
- United Nations High Commissioner on Human Rights (UNHCHR) (2009). The right to adequate housing-Factsheet No. 21 (Rev.1) United Nations, Geneva.
- Van Heck, B. (2003). Participatory Development: Guidelines on Beneficiary Participation in Agricultural and Rural Development. Rural Institutions and Participation Service, Rural Development Division. Food and Agriculture Organization of the United Nations. Rome Italy.
- World Bank (2002). Upgrading of low income settlements: Country assessment report: Burkina Faso. World Bank AFTU 1 & 2. January 2002.
- Yeboah, I.E.A. (2005). Housing the urban poor in twenty-first century Sub-Saharan Africa: Policy mismatch and a way forward for Ghana. Department of Geography, Miami University, 216 Shideler Hall, Oxford.

THE CHALLENGE FACING SOCIAL HOUSING INSTITUTIONS IN SOUTH AFRICA: A CASE STUDY OF JOHANNESBURG

George Onatu

Department of Town and Regional Planning

University of Johannesburg, Doornfontein Campus, Johannesburg, 2028, South Africa

gonatu@uj.ac.za

Abstract

The rapid growth in housing demand represents a mammoth task for both the present and future housing policy in South Africa. Local Government in an effort to address this challenge has placed a high premium to inner-city regeneration. An important part of this regeneration is the development of social housing. Since inception the social housing institutions have been struggling to meet their mandate due to end-user default in rental payment and these calls for investigation. The problem of default in rental payment by residents of social housing institutions has reached a crisis point in addressing housing challenge facing the country. Some of the social housing institutions have reached a point that this tendency might force them to close down. Hence, this investigation intends to find out the underlying reasons behind the inability of the end-users in meeting the set obligation in relation to rental payment. This investigation will be based on a literature review. This finding will be contextualise in Johannesburg as a case study because this happen to be one of the municipalities with both a high rate of migration and attendant housing shortage. Affordability, confusion in understanding the terms and conditions of the rent/lease and culture of entitlement and lack of proper check on the prospective end-user were found to be one off the reasons why most default in payment. Added to this is shift in labour practice from permanent to contract appointment as a result of global economic meltdown and the pandemic of HIV/Aids. This investigation also finds out that the social housing sector is to some extent bringing a new lease of life to inner-city regeneration. For rental housing to be sustainable it is basically meant for people who have regular income and who can afford to pay as they are based on cost recovery. There is need for training and proper end-user awareness of the rent/lease terms and conditions so as to create understanding and avoid default in payment.

Keywords: Social Housing institutions, Rental payment, inner-city regeneration and Johannesburg.

INTRODUCTION

The housing backlog in South Africa is currently estimated at about 2.7 million households. In Johannesburg the backlog is gradually increasing. State of Cities Report, 2011). To address the housing backlog and to meet up with the increase in demand for housing the then National Department of Housing (DoH) released its white paper on housing (DoH, 1994), which set out a new national housing vision, policy, and strategies. The white paper introduced four different types of subsidies, namely; Project-linked subsidies, Individual subsidies, consolidated subsidies and Institutional subsidies. These subsidies with the exception of Institutional subsidies are argued to have led to peripheral location of settlement where the land is cheap as compared to location around area of viable economic activities. The implication of this is that most households have to travel long distances to and from work as well as spending large portion of their salaries on transportation (Boaden and Karam, 2000; Huchzemeyer, 2003). This has impacted negatively on both the productivity and cost of labour. The absence of well-located housing for both the low-income earners and medium income earners has created

fertile new market for the owners of inner-city housing stock and vacant commercial buildings (SACN, 2004). The World Bank while returning to South Africa after the political independence in 1994 argued that South African cities are among the most inefficient in the World and called restructuring to achieve higher densities and more compact urban development (Mabin and Smit, 1997). Most households who could not afford to be spending huge amount of money on transportation from the location where most of these subsidies houses were located resorted to find a living space within the inner city. Initially, the housing policy placed too much emphasis on ownership, but it has been recognized that the lack of co-ordinated rental housing policy is a shortcoming.

One of the available housing typology that is readily available to low and medium income earners working in or around the city is Social housing units as they are affordable, high standard and well managed. No sooner had these desperate and stranded urban dwellers settles down do they start to defaulting in rental payment. This investigation will uncover the reasons leading to tenants' defaults on the payment of their rent and provide meaningful solution and policy options that will improve the system and ensure sustainability of the social housing institutions in view of increase in urban population resulting from immigration.

REVIEW OF LITERATURE

Various studies have been conducted on the rental market in South Africa in the past (Social Housing Foundation, 2007; Vusani, 2003; DOH, 1999; NHFC, 2002; NHFC, 2003; SSA, 2007). These studies points out that about 1.8 million South African households in the middle-to- lower-income groups live in rented accommodation as opposed to about 5.2 million households that own property. The continued increase in the number of household seeking accommodation in rental unit has resulted in shortage of rental accommodation and low vacancy rate especially in the inner-cities. This places enormous pressure on the environment and socio-economic sustainability of the cities as they attempt to provide goods and services as well as needed infrastructure (SACN, 2004:10). The problem that causes most concern to majority of urban dwellers in both developed and developing countries is the problem of finding an appropriate place to live (Gulger, 1996:122). The popular feeling that prices of shelter of all kinds have been rising excessively would indicate that housing investment has not been keeping pace with increase in housing demand (ibid: 122). South African cities are faced with this challenge but in a unique form linked to the legacy of Apartheid, delayed urbanization and Political transformation (SACN, 2004:13).

South African cities inherited a dysfunctional urban environment with skewed settlement pattern that are functional inefficient and costly, and huge service infrastructural backlog in historically underdeveloped areas. Approximately 58% of South Africans population lives in urban areas (ibid). It is argued that the rapid rate of urbanization means that housing delivery as it currently stands, at a pace of about 190,000 houses a year, is insufficient to respond to the demand for housing in the country (Engineering News, 2004:16). According to the South African Development Monitor (1997) the new African National Congress led government that emerged in 1994 was faced with a housing shortage that was estimated at 1.6 million units. Presently the housing backlog is estimated to be about 2.4 million households (Engineering News, 2004:16). This has resulted in a concerted effort to address this acute shortage of urban residential accommodation through the establishment of social housing units. At the launch of Social housing project in Pietemaitzburg, the then Minister of Local Government, Housing and Traditional Affairs in KwaZulu Natal expressed these view about social housing “ Today marks another positive milestone in our concerted effort to implement Breaking New Ground in

housing delivery and to provide shelter to all our people” (Mabuyakhulu, 2005:1). The establishment of social housing institutions is one among many programmes of our government intended to offer housing choices to communities and to ensure access to decent housing, which restores their dignity. Social Housing according to the Toolkit developed by the Social Housing Foundation, is “a particular approach to affordable housing whose core intention is to provide low to moderate income households with an affordable housing option”(SHF, 2002). The institution also engages with the provision of community development services and promotes a lifestyle that is conducive for community living (Moss, 2003; 3).

In analyzing types of Social Housing Institutions, Alison (2004:1) noted that there are three types of Social Housing Institutions: namely;

- Tier 1 Umbrella Institutions that primarily provide property management services, for a fee, to other, smaller institutions. Their mission tends to be the servicing of collective tenant organization.
- Tier 2 Social Housing Institutions that develop, own and manage their own rental stock without any intermediary association, they deal directly with their tenants.
- Tier 3 Social Housing Institutions that have been established by tenant groups as a mechanism for acquiring and managing their own housing.

The Tier 2 is very common in South Africa and in analyzing this group pointed out that one of the most critical challenges that Social Housing Institutions face is high default rate which can be attributed to loss of employment, HIV/Aids and lack of understanding of the type of tenure. In furthering this argument Moss (2003) in analyzing National Housing Finance Corporation tenant survey in 5 Provinces comprising: Gauteng, Eastern Cape, Western Cape, Free State and KwaZulu Natal noted that the major reason for default are affordability and lack of end user information.

SHF (2005) in its annual reports noted that there seems to be an ever increasing list of reasons but each is isolated: loss of employment/HIV aids/affordability, lack of information and now attitude towards eviction as some of the reasons for high rate of rental defaults. According to their findings “payment defaults are a statistical data for large investors but a financial disaster for small savers” (SHF, 2005: 41). The general perception is that the legal institutions and processes do not effectively address the issue of default in most social housing institutions. Hence, the Justice system has come under great attack and criticisms. None of these studies and investigation has taken cognizance of the prevailing global melt down, high inflationary rate and increase in job losses, bank reluctance in lending and approving mortgage loans and HIV/Aids.

METHODOLOGY

This investigation will be based on literature review, review of policy documents and archival records. These findings will be contextualise in Johannesburg as a case study because this happens to be one of the municipalities with high rate of migration and attendant housing shortage. The reason for using case study is because the phenomenon under discussion is a real life context and will shed light to the need for appropriate mechanism and policy solution to the rental default in other parts of the country.

BACKGROUND TO SOUTH AFRICAN HOUSING POLICY

South Africa's housing policy is based on seven key strategies:

1. Stabilizing the housing environment in order to ensure maximum benefit of state housing expenditure and facilitate the mobilization of private sector investment.
2. Mobilizing housing credit and private savings (whether by individuals or collectively) at scale, on a sustainable basis and simultaneously ensuring adequate protection for consumers.
3. Providing subsidy assistance to disadvantaged households to assist them to gain access to housing.
4. Supporting the peoples housing process entailing a support programme to assist people who wish to build or organize the building of their homes themselves.
5. Rationalizing institutional capacities in the housing sector within a sustainable long term institutional framework.
6. Facilitating speedy release and service of land.
7. Co-ordinating and integrating public sector investment and intervention on a multi-functional basis (Department of Housing, 2000:17)

The cornerstone of the post -1994 housing policy was a new Housing Subsidy Scheme with a once-off capital subsidy target at the 'poorest of the poor' (Tomlinson, 2006: 88). The housing subsidy scheme is divided into different categories, namely, project-linked subsidies, individual subsidies, consolidated subsidies, institutional subsidies, rural subsidies and people's housing subsidy.

BREAKING NEW GROUND

This is a comprehensive housing plan for the development of integrated sustainable human settlement introduced by the government in September 2004 in view of oversight by the government in promoting the residential property market. It is an approved government housing programme in the next five years that includes the development of low-cost housing, medium-density accommodation and rental housing as well as stronger partnership with the private sector; social infrastructure and amenities. The plan is also aimed at changing the spatial settlement pattern by building multicultural communities in a non-racial society. Key strategic priorities are:

1. Restoring and furthering human dignity and citizenship
2. Improve the quality of housing products and environment to ensure asset creation
3. Ensure a single, efficient formal housing market
4. Restructure and integrate human settlements.

While the above comprehensive housing programme notes the continued relevance of the state housing programme introduced in 1994, it flags the need to redirect and enhance various aspects of policy, and commits the Department of Housing to meeting a range of specific objectives which is basically the creation of sustainable human settlement (DoH, 2005: 4). The Government has acknowledged that the development of acceptable and sustainable medium density rental housing can only be realized through sustainable social housing institutions and adequate private sector involvement.

GUIDING PRINCIPLE OF SOCIAL HOUSING POLICY

The social housing policy was approved in June 2005 and adheres to the general principles laid down in the Housing Act, 1997 (Act 107 of 1997) Part 1 section 2 (DoH, 2005). It will also comply with relevant section of Rental Act, 1999 (Act 50 of 1999) and must be read in conjunction with White paper on housing (1994), the Urban Development Framework (1997), Social Housing Act, 2008 and National Housing Code. The National Department of Housing Comprehensive Plan for the Development of Sustainable Human Settlements' (2004) provides direction (DoH, 2005: 10). According to the guidelines the social housing must among other things:

1. Promote urban restructuring through the social, physical, and economic integration of housing development into existing areas, likely to be urban or Inner-city areas.
2. Promote the establishment of well-managed, quality rental housing options for the poor.
3. Respond to local housing demand
4. Deliver housing for a range of income groups (including, inter alia, middle income, emerging middle class, working class and the poor in such a way as to allow social integration and financial cross subdivision.
5. Support the economic development of low income communities in various ways.
6. Foster the creation of quality living environment for low-income persons.
7. Encourage the involvement of the private sector where possible.
8. Promote the use of public funds in such a manner that stimulates and facilitate private sector investment and participation in the social housing sector (Source: Department of Housing, 2005:10)

The social housing policy document also provides room for both the regulatory and capacity building functions and emphasizes that both are critically necessary for the growth and development of the sector. Mention is made of 'Social Housing Regulatory' Authority (SHRA), a 'Social Housing Corporation' (SHC), and a 'Social Housing Accreditation Corporation' (SHAC). The social housing policy has come under spotlight in introducing a unique approach by mixing regulation and sector grant-making (both capacity building and capital grant) (SHF, 2005:6). This makes the regulatory arrangement on the one hand quite powerful and influential in directing the sector delivery and growth, but on the other hand introduces a range of conflicts into the system which will need to be managed (SHF, 2005:7).

SOCIAL HOUSING FINANCING

Funds for the social housing programme and for financing the implementation of the social housing programme and any relevant provisional housing programme consistent with national housing policy must be made available from money earmarked for the purpose from the Department annual budget and money allocated to a province for that purpose in terms of the annual Division of Revenue Act (Social Housing Bill, 2007:14). The Department of Housing established the National Housing Finance Corporation (NHFC) as a development finance institution in 1996, to ensure that every low-and moderate income household gains access to housing finance. The NHFC's revenue is derived from interests and service charges for its wholesale lending and financial services. The NHFC's mandate has been expanded to enable it to directly lend to low-and medium-income end users. A new business model for the corporation has been developed and approved for implementation. By mid-2007, the process to

operationalise all the components of the model was under way and had been piloted as from May 2007 through Postbank, with a view to full rollout towards the end of 2007/08. The pilots were taking place in Johannesburg, Soweto and Pretoria. By September 2006, the NHFC had achieved R24 million in revenue against a target of R33million, with a profit of R22 million (Ibid). A number of observations have been raised of the capacity of this institution in supporting social housing institutions as most of the projects are struggling due to poor finances. The projects are also funded through Support Programme for Social Housing (SPSH), a European Commission funded programme that is being run by National Department of Housing (Social Housing Foundation, 2005:1).

SOCIAL HOUSING AND INNER-CITY REGENERATION

One of the areas that social housing has made significant contribution in the provision of low to medium density rental accommodation is in the inner-city of Johannesburg. This has given most residents the opportunity to live and work in the city. These projects were pioneered by Johannesburg Social Housing Company (JOSHCO), TUHF, AFHCO and other stakeholders which have resulted in the transformation of most abandoned building in the inner-city and Newtown into medium density accommodation providing housing access to over 10000 inner city residents. One of these projects this is called 'Tribunal Gardens' is based on the Presidential Job Summit Housing Programme and was declared open by President Thabo Mbeki on 31st May 2002 (JHC, 2002). It comprises of 174 family accommodations in one, two and three-bedroom units. Facilities in the buiding include 24-hour security access control, play areas and parking facilities. The Johannesburg Housing Company since 1985 have invested R250 million and developed 2 700 homes in 21 buildings, adding a further 8% to the residential stock of Johannesburg inner city. This project has provided access to housing to 8000 men, women and children most of whom now call Johannesburg Housing Company building their 'Home'. Other projects includes: the refurbishing of former derelict Chelsea hotel and has 80 communal units with rent ranging from R675 to R982 per month. The Casa Mia in Berea with rent ranging from R750 to R3,540; the Raschers located in Loveday street with rent from R613. The success of the projects has been acclaimed by United Nations Habitat which led to an Award in 2006 for innovative and sustainable housing solution (The Star, 2006:11). This award made up of a trophy and prize of R144,500 was presented to the organization at the annual United Nations celebration of World Habitat Day in Naples, Italy in 2006. This is the first time that this type of award has been awarded to South African housing institution and shows that the institution is playing a significant role in inner-city regeneration. Not only is Johannesburg Housing Company one of the largest residential landlords in the inner city, but its contribution to the city's coffers for rates and utilities stands out not only for its size, but because what were once non-paying, derelict properties are now productive contributors to the city's revenues.

According to latest South African Property Owners Association figures show the vacancy rate in Johannesburg's inner city had dropped to 10% - its lowest ever since 1990s (Sunday Times, 2008). This is also due to Urban Renewal Tax Incentives announced in 2003 and implemented in Johannesburg and Cape Town in 2004. Many big businesses are now expanding their presence in the inner city and most of the previously abandoned and empty office blocks are being converted to middle class homes (Ibid, 2008). Johannesburg has enjoyed the biggest investment in its inner-city centre totaling R5-billion sine October 2004. According to the CEO of Joshco Rory Gallocher "The inner-city space must be controlled and managed. Order and liveability can replace chaos and discomfort through basic manangement. We are not trying to revive the past, but trying to manage the present and invent the future (Housing in South Africa,

2012:1).

In spite of this success story one of the key challenges that these institutions encounter is the problem of default in payment by residents and the long process it takes to obtain court injunction to evict or compel them to pay. This is one of the problems that contributed to the collapse of Cope Housing Association an NGO that develops and manages low-income housing cooperatives. This social housing institution was owed R1.4 million in arrears for three years (Mail & Guardian, 2003:13). These institutions are in business and the viability depends on its ability to recover costs through rental repayment, which ranges from R1, 500 – R3, 500 for one and two bedroom apartment.

CONCLUSION AND RECOMMENDATIONS

This research has shown the important role that social housing institutions can play in inner-city regeneration and revitalization. This can only be sustainable with appropriate finance and the ability of the social housing institutions to manage its projects through strengthened capacity and by building strong stakeholders' engagement. Social housing has shown that it can be able to address concerns around urban regeneration and improve housing densities. It clearly contributes to sustainable development, especially when location, integration, viability and sustainability are carefully considered. One of the peculiar problems the Social Housing Institutions faces is the uncertainty in the policy environment and constant changes in priorities. The institution suffers from risk in procuring land and building at reasonable prices for long term benefit of low income earner. It is recommended for increase in capacity in the management of Social housing stock and the incorporation of corporate governance policy which must address seriously risk management and risk strategy to avert the increasing problem of default. There is also the need for proper communication and thorough explanation of the content of the lease agreement to residents and strict enforcement for adherence. Social housing institutions must at all times function in compliance within the provisions of social housing programme and guidelines and always inform residents on consumer rights and obligations. There is need for municipalities to facilitate social housing delivery in its area of jurisdiction and to be able to mediate in cases of conflict whenever it is required

REFERENCES

- Boaden, B and Karam, A (2000) *The Housing Market in Cape Town's Low-income Settlements*. Housing and Community Development Unit, University of Cape Town.
- Berry, J; McGreal, S and Deddis, B (1993) *Urban Regeneration: Property Investment and Development*. E & FN Spon Publishers
- Department of Housing (1994), White Paper: A new Housing Policy and Strategy for South Africa, Government Gazette 354 (16178), 23 December.
- Department of Housing (2000) National Housing Code. Department of Housing March.
- Department of Housing (2005) Social Housing Policy for South Africa: Towards an enabling environment for social housing development: Approved in MINMEC.
- Department of Housing (2007) Social Housing Bill (As introduced in the National Assembly (proposed section 76); explanatory summary of Bill published in Government Gazette No. 30022 of 6 July 2007). National Department of Housing.
- Engineering News (2004), 'Beating the backlog', July 9 – 15
- Gulger, J (1996) *The urban transformation of the developing World*. Oxford University Press.
- Housing in South Africa (2012) July, Crown Publications cc

- Huchzermeyer, M (2003) 'Low-income housing and commodified urban segregation in South Africa'. In Ossenbruegge, J and Haferburg, C (eds), *Ambiguous restructuring of Post – Apartheid Cape Town-The spatial Form of Socio-political Change*. LIT Verlag, Muenster, Hamburg and London (pp 115-136).
- Johannesburg Housing Company (2002) *On Track: Your home in the city*. Vol. 3 No. 2 June/July 2002. Published by Johannesburg Housing Company.
- Jones, G.A, and Datta, K (2000), 'Enabling Market to Work? Housing Policy in the 'New' South Africa'. *International Planning Studies* 5 (3), PP 393-416
- Mabin, A (1993) *Conflict, Continuity and Change: Locating the "properly planned native township" in the frontiers*. In proceedings of the symposium on South African planning History, planning study Group.
- Mabin, A and Smit, D (1997) *Reconstructing South Africa's cities? The making of urban planning 1900-2000, Planning perspectives*, 12 (193-223)
- Mail and Guardian (2003) *At war with the neighbors*, November 28th – December 4
- Okpara, D.C.I (1994) *Financing Housing in Developing Countries: A review of the pitfalls and potentials in the Development of Formal Housing Finance Systems*. *Urban Studies*, Vol.31, No. 9 (1571-1586)
- Rakodi, C (1995) *Housing Finance for Lower Income Urban Households in Zimbabwe*. *Housing Studies*, Vol. 10, No. 2
- Renaud, B (1987) *Another look at housing finance in developing countries*, *Cities*, 4, (28-33).
- Renaud, B (1999) *The Financing of Social Housing in Integrating Financial Market: A view from Developing Countries*. *Urban Studies*, Vol. 36, No. 755-773
- South African Cities Network (2004): *State of the Cities Report*. Sunday Times (2008) *New lease of life for city centres*, July 27th
- Tomlinson, M (2006) 'From' quantity to 'quality': *Restructuring South Africa's housing policy ten years after*. *International Development Planning Review*, Vol.28, No.1, Liverpool University Press
- The Star (2006) *Joburg's social housing projects are world-beaters*, September 27th UNCHS (Habitat) (2001) *The State of the World Cities*
- Yin, R.K. (1994), *Case Study Research: design and methods*. Applied Social Research Methods Series. Vol.5. Sage Publications.

ADAPTING CITIES TO CLIMATE VARIABILITY AND CHANGE: BALANCE BETWEEN COMMUNITY ENGAGEMENT AND SUPPORTING FACILITATION ROLES OF THE LOCAL GOVERNMENT TO REDUCE THE IMPACT OF CLIMATE CHANGE

*Bob Eko Kurniawan
Mercy Corps
bobby69_lund@yahoo.com*

Abstract

The purpose of this abstract is to give clear understanding of community approach in climate change adaptation and utilizing the government support. Current phenomenon in climate change has given great impacts towards urban communities all over the world. Climate variability increase and manifest itself in forms of unpredictable rainfalls pattern, raising temperature, rising sea levels, and flooding. Efforts initiated and implemented to reduce the green house effects and mitigate future rise in temperature, but still we are witnessing relatively less attention from the authority. The urban poor are among the most vulnerable group that in the face of climate changes, as they are incapable to adapt the consequences of the impacts. Those who lived in Asian cities such as Jakarta (Indonesia) are especially susceptible to unpredictable environmental changes, particularly because these cities expected to be responsible for more than 60% of global population growth in the next 30 years. The rapid growths of urban population in these cities are in contradiction with the availability of resource and infrastructures in order to cope with compounding challenges of urbanization, poverty and environmental degradation. Much of the problems in these cities such as Jakarta are on the incapability of managing the risk on the preventive side in terms of planning, budgeting and implementation from the local authorities as well as the communities. Limited or inadequate knowledge in environment preservation and climate change adaptation or risk mitigation added by uncoordinated interdepartmental relationship, hampered the capability of the city to overcome the climate change challenges. Other possibility to address this is from private sector as Urban Climate Change Resilience Building (UCCRB) suggest. Unfortunately, the role of private sector in this case is still limited and incidental since their involvement usually based on event and business interest. A proper technical assistance is in need to improve the capacity and capability of the local authority and its communities in adapting with the climate change. To address the imbalance of knowledge in climate adaptation between local government and communities needs. Current tendency in top-down planning must also address bottom-up in order to capture the real need of the local community in their particular habitat. Therefore, a comprehensive action plan needs to introduce to the community living in urban poor settlement within disaster prone areas.

Keywords: climate change, community empowerment, climate resilience cities, flood management, community action plan

BACKGROUND

This paper intended to elaborate the outcome of balanced collaboration between community engagements and supportive, facilitation roles of the local government towards preparedness to the volatile climate change effects and its impact towards the city's development with a focus to three pilot villages/sub districts located in the Northern part of the city.

INTRODUCTION

Impacts of the change in climate are spreads evenly and heavily affected people all around the globe nowadays. The urban poor are among the most vulnerable group that in the face of climate changes, as they are incapable to adapt the consequences of the impacts. Those who lived in Asian cities such as Jakarta (Indonesia) are especially susceptible to unpredictable environmental changes, particularly because these cities expected to be responsible for more than 60% of global population growth in the next 30 years. The rapid growths of urban population in these cities are in contradiction with the availability of resource and infrastructures in order to cope with compounding challenges of urbanization, poverty and environmental degradation.

Jakarta as the political and economic center of Indonesia with the current population estimate is roughly about 9 million, has the largest Gross Domestic Regional Product among all provinces in Indonesia, representing 17% of total GDP and a quarter of the nation's non-oil GDP (Chauduri & Armas, 2010). With growth and development concentrated in the Jakarta area however, the city has not been able to appropriately manage the city spatially nor provide appropriate public service. In turn, the two most notable outcomes are reflected in the inability to escape major inflictions that have come to characterize the city namely banjir (floods). Increased risks of disaster are in large part an outcome of overall urbanization conditions that have developed without the proper facilities and management to protect communities. Unplanned spatial development has resulted in many direct and residual impacts that Jakarta struggles with, including: floods, access to clean water, solid waste management, wastewater management, fires, etc. For example, while on one spectrum Jakarta only has 1.8% piped sewerage treatment coverage, another shocking statistic from the city government stated that Jakarta experiences an average of 800 fires per year, more than two occurrences per day. The DKI Jakarta Provincial Government has introduced programming to address complex spatial development and local management issues to reduce risks to disaster. However, the programs require comprehensive planning, improved targeting, and better coordination that reach to the communities. At the Kelurahan (village/sub district level Governments) especially, an improved role of government management and oversight is necessary to better target resources to address problems as they arise. Developing a continuous flow in governance processes through inter-relationships among Government at the Regional and Local levels, and reaching out to communities to increase civic participation provides a tremendous opportunity for initiating the momentum towards developing sustainable practices. Currently Jakarta has the strongest momentum to date, as several initiatives are underway. The Jakarta Urgent Flood Mitigation Project (JUFMP) is under preparation and is an important public sector investment project that will have significant benefits for reducing flood risks. This Project shows the commitment of the Central and Provincial Governments. In addition, Jakarta is also part of the Cities Alliance, which further proves the Governor's commitment to invest in programming to reduce the impacts of climate change.

The description above presents opportunities to improve the current conditions: (i) at a policy level with the DKI Provincial level Government, helping to identify systemic and institutional challenges; and (ii) facilitation of community engagement programs by targeting a set of carefully chosen Kelurahan has associated with JUFMP as pilot locations. This initiative comes at a unique juncture of overall developments occurring in Jakarta and has strong support by the Local Government. The initiative situated in the three Kelurahan/Sub Districts located in the most vulnerable area in the Northern part of Jakarta. These sub districts are Pademangan Barat, Pluit and Kapuk Muara.

A VULNERABLE CITY

Jakarta is the capital city of Indonesia; it administered as a special capital province with 5 cities and 1 district with 42-sub district and 265 villages. Jakarta in 2010 has 9,588,198 registered residences (BAPPENAS, 2008) in about 661, 51 Sq, making Jakarta become the most densely populated place in Indonesia (14,494 people per Sq. Km), and not to mentioned the commuters that are coming from its surrounding cities every day.



Figure 1 Jakarta located in northern lowland coast of Java

Located in the northern lowland coastal of Java, it was a swamp area when the Dutch first develop Batavia, back in 1619 during the colonial era. Later in 1654, Jakarta hit by a flood as the forest in Puncak (highland area) cleared for tea plantation development. Ever since there have been record of flood event in Jakarta. Three major rivers (Sunter River, Ciliwung / Liwung River, and Angke-Pesanggrahan rivers) flows through the administrative area of Jakarta, watershed of those three rivers started from Puncak Area from Gunung Gede, Gunung Pangrango and Gunung Salak mounts, thus any exceeding water flowing through any of this river may ended up causing flood in Jakarta. The administrative area of Jakarta itself as part of the watershed plays a big role for water management. It allows water from upstream of the three rivers to freely flow the Jakarta bay and need to manage the water that fall in Jakarta province, unfortunately this is not an easy task as the capacity of Jakarta to absorb water is only around 10 – 15% as of 2004, generating 85 – 90% of the rainfall to become surface water. Not only the development, the behavior of Jakarta citizens (and the people at the upstream of those three rivers) also contributed to the success or failure of water to reach Jakarta bay on time. There are

still portion of the total garbage produced in Jakarta ended up in any of the rivers causing sedimentation and clogging of the waterway. As Martin Hardiono reported in his report on topographic survey on Jakarta (Hardiono, 2011): climate change has affected Jakarta in two



Figure 2 Garbage clogging the river

different faces but unfortunately ended at the same issue, flooding. The first face of the climate change in Jakarta appears as more hi intensity rain come in shorter period of time and sea level rise as the ice at both poles melt down (around 3.10 to 9.27 Mm / per year) (Susandi, 2011). This situation is worsened by the fact that land subsidence is also happening in Jakarta, especially in the northern Jakarta creating wider area that are prone to flood and inundation as it elevation lowered, causing some part of North Jakarta even lower than the sea level. Pluit village for example has certain points that are about 1.5-meter bellow average sea level. The below picture shows that the three Kelurahan/Sub Districts are located in the most vulnerabile area in North Jakarta with high tendency of sea level rise flood and the occurrences of land subsidence. Illustration below also explained that this area would be lower than sea level in 2050.

The provincial government of Jakarta has been trying to overcome this challenge aver these years with significant effort but mostly in hardware aspects, as the following paragraph explains. At national level, authorities such as Ministry of Public Works are responsible for greater infrastructure; like build floodways that cross provincial boundaries, it subordinate; the Public Works Department of Jakarta is responsible for drains and retention basins within its boundaries.



Figure 2 the 3 pilot location are expected to be submerge by 2050

The city's floodways and drains are designed to offer a level of protection for 25 years; that is Jakarta is suppose to have an average flood once every 25 years if its flood control system would function as designed. The actual capacity of flood control is significantly lower than the original design; it is mainly due to the population pressures, insufficient maintenance and improper operation of the flood control systems, limited coverage of solid waste collection services and lack of coordination between responsible authorities. If this issue is not address soon, then the loss can become higher.



Figure 3 Local hired worker cleaning sewerage

Kamal Muara is a fishing village in the northwest part of Jakarta. It is a neighborhood within the *kelurahan* of Penjaringan and has an area of about 10.53 square kilometers, housing 1,614 families with a total population of about 5,992 people. Many people in the community here are fishermen who migrated from Sulawesi, who live and dock their boats close to where their homes are on the Jakarta coast. While the tidal flooding and the washing up of garbage along the coast have gotten worse, they are dedicated to adapting to where they live because their livelihoods and their way of life are inextricably tied to the sea. Most of the adaptations in this neighborhood revolve around the increased flooding and sporadic changes in tidal patterns. The RT of the neighborhood revealed that many of the residents were voluntarily and independently raising their houses to accommodate the daily swells from the sea, often in the 'Bugis' style of South Sulawesi, where they raise their homes on stilts. He said the most notable change over the past few years was the amount of garbage that had been washing out to sea from upstream, then getting deposited in the neighborhood as the tide recedes. Because of the close-knit nature of the community, people are able to help one another if violent tidal flooding damages boats or nets. Fishermen in the neighborhood organize themselves to make small repairs to the government-constructed sea wall. Being from fishing villages elsewhere in Indonesia, this community is both highly attuned to the changes in tides, and economically dependent on understanding them and adapting accordingly.



In Jakarta, the people and their behavior have direct and lasting influence on the overall vulnerability of the city to climate-related impacts.

Box 1 Kamal Muara

Bappenas estimated the financial losses from the 2007 flood at US\$900 million dollars; the economic costs are significantly higher, which includes loss of human life, health costs, labor and schools days lost (BAPPENAS, 2008). The recent 2008 floods caused 30 deaths and shut down Jakarta's international airport for three days. Earlier studies by World Bank suggest Jakarta's urban poor although highly adaptive to the environmental disaster is remain vulnerable. With these challenges and its limitation, the city will need a more comprehensive solution very soon. The government through its local development budget has significant funds but lack of knowledge and expertise. The next section will explain the foundation of the main approach in this paper.

JUFMP AND ITS CHALLENGE

Concerning the current urgency in disaster risk reduction of flood danger, the government of Indonesia has work together with The World Bank in a project called Jakarta Urgent Flood Mitigation Project (JUFMP). The project originally set to go on in 2009 but due to some constraints, it is on pending until 2011. The project intended to reduce the economic and social cost of flooding by partially restoring the capacity of the city's flood control system to its original design level. It is expected that the project will benefit the poorer segments of the population who lived in flood-prone areas and are the most vulnerable to the immediate impacts of flooding including loss of income, medical costs, as well as the costs of infrastructure, business and home repairs.



Figure 4 Location of JUFMP in West and Northern part of Jakarta

As explained in the previous section, although the project shows the commitment of the Central and Provincial Governments, the project also faced similar problems that the government has been battling for over these years. Interdepartmental collaborative work still needs some resolutions not to mention other obstacles at operational level. On the other hand, mixed group of squatters occupied the riverbank of which the dredging project takes place. The issue of human right, particularly massive involuntary resettlement is a delicate and has a risk that the government of Jakarta will surely do not want to have. These problems forced the local government to postpone the project until all necessary essential matters addressed.

KELURAHAN EMPOWERMENT IN CLIMATE CHANGE RESILIENCE

As implied in Government Laws no. 24/2007 about disaster risk management, the regulation that supposes to back up the policy is still does not accommodates climate change adaptation and mitigation, rigid bureaucracy structure is one of the matter causing the appointed authority hesitates to embrace the project. Lack of knowledge, awareness of the issue are strongly showed at operational and since it related to infrastructure building, makes the newly established anti corruption agency also pay close attention towards their actions.

The community surrounding the project area as the main beneficiary of the project is also facing the same issue but with more extra concern in knowing that, the disaster could attack any time. These people are commonly poor people and in some extreme cases are illegal settlers. The local authority has very little engagement towards the issue; this reflected in the fact that there is no clear appointed office/institution in local context. The current government bodies in charge of such issue is only limited to vague 'environmental' terms that only translated into garbage collection and collective cleaning works (Mulyana, 2011).

In 2009, the government beginning to address this issue, as the smallest government representation in the structure, a chunk of responsibilities needs to shifted to Kelurahan or Sub District level in order to enforce its capability in managing its own area. A term of Urban Manager for the Lurah (head of Kelurahan) introduced. This also meant to improve the responsibility and capability of the Lurah to be more aware on current urban issue, increase their skills, improve networks, and enhance the capacity of its office to overcome new challenges.

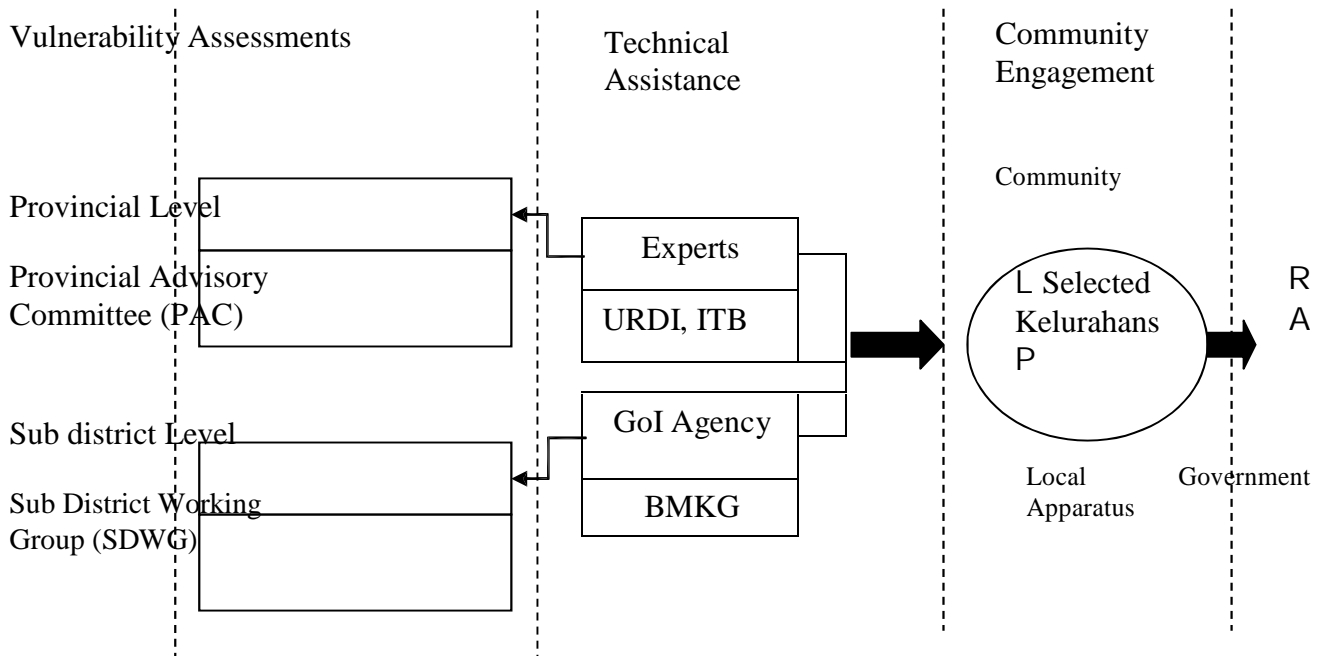
The provincial government of DKI Jakarta intended to strengthen the role of Kelurahan in development process. It is supported by the issuance of Governorial Decree No. 147 year of 2009 on Organisation and Working Mechanism of Kelurahan. The decree stipulated that Kelurahan has authority to implement some tasks delegated by Municipality such as: community health, local safe and order and environmental cleansing. Furthermore, the Government will support the role of Lurah as Urban Manager in providing better public services to the citizen. The implementation will be taken gradually in line with transfer of authority and capacity building of Kelurahan apparatus. However, there are some flaws in the implementation; the lack of skilled and properly educated personnel in the Provincial downward to the Kelurahan level makes them incapable to absorb and interpret the new provincial decree towards autonomous as explained above. This showed by the fact that there is no authorized legal body that is in charge on climate change although at national level, there is a government bodies called BNPB (The National Board of Disaster Mitigation). Furthermore, there is also indication that the Kelurahan officials had doubts if they have the resource and expect to get help to find potential financial support out of Kelurahan (Kurniawan & Amin, 2011). Small fire department unit within the Kelurahan that has very limited knowledge on the issue tackles current disaster mitigation effort. This condition makes the situation of disaster preparedness in the field involving the communities quite difficult and sometimes neglected.

The community in this case, sometimes had to take the matter into their own hands. In most severe areas, they have to seek assistance from local NGOs and if they are in luck an international NGO come into their aid in form of seasonal programs. Without the aid from these NGOs or other form of community association, the community can only take very simple preventive action such as 'self-help cleaning the area' effort without proper guidance and funding from the Kelurahan. All these facts leads to an assistance on how to bridge the gap between community and the government particularly at Kelurahan level in matching their capacity towards climate change adaptation. The government has taken a step towards the issue by commencing the JUFMP program, however the fact that it still need work in the execution level is presenting a challenge on how to disseminating the plan throughout the Provincial to Kelurahan administration. On the other hand, the community also needs a proper guidance and trainings on how to be able to plan, action and monitor their neighborhood in terms of climate related risk mitigation and reduction.

CREATING BALANCE BETWEEN COMMUNITY AND THE SUPPORTIVE ROLE OF LOCAL GOVERNMENT

The three Kelurahan (Kapuk Muara, Pademangan Barat & Pluit) selected as pilots here all representing the challenge above not to mention they are located in northern part of Jakarta that is the most disaster prone area related to climate change. The main idea of the approach

is to facilitate the local government in developing the appropriate balance between community engagement and introducing the necessary supporting and facilitation roles of the local government from Provincial to Kelurahan level.



Source: Bob Eko Kurniawan – CRC KEI 2010

Figure 5 Kelurahan Empowerment Initiatives Approach

The diagram above explains the steps taken in empowering the Kelurahan level government and the community. To improve the capacity of the local government, the approach is looked at two angles: One will focus at a policy level with DKI Jakarta, the other at target Kelurahans in North Jakarta with the overarching goal of linking proactive climate adaptation frameworks with grassroots development of complementary and pragmatic climate resilience plans.

Looking at more comprehensive angle: the improvement of Provincial level government, there is already a movement initiated by Mercy Corps (an international NGO focusing on climate change adaptation) called Provincial Advisory Committee (PAC) a multi-stakeholder consisting of DKI government, related government agencies, civil society, and universities, the private sector. This PAC will be the key mechanism for building broader government capacity in the long-term. Utilizing this situation the main idea of the project in bridging the gap between community and local government can be done by mobilizing the community informal leader through a social group called Sub District Working Group (SDWG) and linking it with PAC to establish community-level information collection and dissemination, priority setting, and planning.

Table 1 Community Characteristic in 3 Pilot Sub Districts

Characteristic	Pluit	Pademangan Barat	Kapuk Muara
Width	771, 19 Hectare	353,35	1.005,5
Population (persons)	46.347	68.892	22,610
Number of RW/RT	20/242	16/213	9/89

Source: Mercy Corps Interim Report – Kelurahan Empowerment Initiatives, 2011

The community from the three Kelurahan (Sub Districts) being living in most of their life in vulnerable areas of Jakarta has the capacity to contribute to the effort in form of labor, knowledge of their area, limited funding, and cooperation. A SDWG is a great vehicle for the targeted communities to brainstorm, discussion, and contributing ideas and labor to address the issue at hand. After the SDWG established through a set of continuous communication and sensitization, they will be able to work with PAC to conduct a joint vulnerability and capacity assessments using downscaled climate and hazard data. The process of creating a vulnerability and capacity assessment will empower the PAC and SDWGs to prioritize threats, mainstream information, and advocate for disaster and climate change adaptation planning, and advocate for related budget allocations in Government Mid-term Development Plans, Spatial Plans, Sectoral Master Plans, and other appropriate tools. Using the established and practiced annual development plan called Musrenbang a form of community based budget development plan, the community is able to insert their own local pan particularly the one related to disaster risk reduction or in this case will be called Local Resilient Action Plan (LRAP).

The formulation of annual development plan at province/municipality level began with the implementation of annual development meeting starting from neighborhood unit, kelurahan, subdistrict, municality, province and national. The process was designed to accomodate the community needs and aspirations regarding with the development of their areas (Mulyana, 2011). By integrating the local resilient action plan into the annual development plan, the community has bigger chance to have their plan taken seriously by the government and other stakeholder in forms of fund and support. The result of this intervention is that the community will be able to plan, execute and monitor their local resilience action plan with the proper guidance and support from the local government.



Figure 6 PAC meeting involving SDWG

As explained before PAC is an advisory committee at provincial level consists of broad range of government bodies related to environmental aspect such as Provincial Disaster Management Agency to sub-district representatives. The PAC will act as steering committees for the program, implement provincial-level activities, promote program replication, and play a key role in advocacy. PAC members will help advocate climate change and disaster response and resiliency measures into plans, policies, and budget allocations.

The SDWG at community level consist combination of representatives from sub-district government, the District Disaster Management Agency, marginalized groups including women, youth group, local civil society and community leaders. They tasked to implement sub-district level activities, inform the PAC of community-level issues, and input into PAC advocacy. The PAC and the SDWGs have continuous communication, facilitated primarily by the SDWG heads, who are key PAC members. The PAC and SDWGs together create a space for information dissemination, discussion, and the planning and implementation of projects.

The project began by socialization and sensitization of the issue of climate change impacts to the people in targeted sub districts. The activity is always involving Kelurahan/sub district officials in hope that they too can hear and learn about climate change impact to their areas and what community has to say to the subject. In this phase, experts in climate change have the chance to conduct study on the area. The information gathered from the community varied from community profiles, local economic situation, hazard area, access to water, and stakeholder analysis. These data will then analyzed by the experts to have better picture of the targeted areas and provide an accurate climate model analysis for the future to have a good mitigation plan.

During this phase, the targeted community then also has the opportunity to get the explanation of technical issues during preparatory project implementation in their areas. This accomplished through sensitization and participatory training for local community representatives such as youth leaders, women group, respected leaders, religious leaders through the processes of FGDs, workshops, data collection and disaster risk mapping. The process has never been easy in its application. The main challenge is to communicate climate change terminology to 'locally' understood by participants as most literature provided complex scientific basis explanation. Response from the three Kelurahan is different one from other as they affect by the flood with different level and for some who are less affected tend to accept the condition as they are and feel that there is no serious problem. To overcome this series of campaign also took place several times in order to ensure the community awareness on the issue is established and delivered.



Figure 7 Sensitization process in targeted Kelurahan

The aim of this intervention in the end is; that the community would have the capacity to develop a local resilience action plan. The plan will provide a framework to establish a pragmatic and comprehensive action plan for the community to manage DRR in the short term, and climate change adaptation in the long term. Local Resilience Action Plan (LRAP) framework is intended to assist anyone who use it for developing local own action plan (NAVCA, 2009). The framework supports to assess the local impacts of the subject addressed on the third sector and examine the capacity for preventative development work. Once LRAP developed, the community will be able to use it with the Local Strategic Partnership as the basis for negotiating additional support for priority third sector organizations/government. The LRAP will help community's local third sector representatives argue the case for support for the local third sector.



Figure 8 LRAP training involving SDWG

LRAP is a planning tool, provided to help developing of action plan for climate context. It consists of logical systematic flow to come to idea for activity. LRAP reflects actual condition, vulnerability and capacity through a deep analysis to get a rational choice of actions. Source of funding might range from self-financing by community, Kelurahan budget or to some extent to technical government department. LRAP ideally integrated to existing formal development planning process. Hence, the implementation of actions becomes possible. For initiation of this LRAP in three Kelurahan, the project attempt to find possibility for some activities that can be considered under Kelurahan official budget item and for some beyond Kelurahan authority will channeling through municipal and provincial level both technical and sector. SDWG conducted the LRAP training, which consisted representative from the communities and the sub district officials.

A series of training workshops and focus discussion groups (FGD) have been undergone in order to enlighten all the related stakeholders both in provincial and community level about the issue of climate change adaptation. The workshops at provincial level scheduled to include PAC and SDWG in order to have the discussion and supervising function in the same time. As for the FGDs, scheduled in weekly period to ensure the stakeholder in SDWG can always have the update of the process. The method used in the dissemination process is through training for trainers (ToT). This method use not only because of the short time of the project given, but also to ensure efficient and effective way is used since the population of one Kelurahan can reach up to 30,000 individuals.

Finally, the process of community approach in climate change adaptation culminates in matching the LRAP with the government annual budget plan. As the community in the targeted areas can only contribute in form of labor and very limited self-help funding, it is government duty to take over and absorb community plead in form of commitment to support infrastructure building and others. As explained before the reason of limited funding by the local government is their lack of understanding of how to adapt to the situation and how to interpret the newly establish policy on climate change adaptation. The pilot project helps to eliminate this tendency. A series of workshops and training for both parties conducted; the government of North Jakarta has given their full cooperation and at the end is willing to accommodate the LRAP into their annual regional budget plan. Although the completion of this project were after the 2011 annual Musrenbang process, the understanding and coordination between key actors in initiatives for developing climate resilience and adaptation between provincial and Kelurahan levels of government is achieved. The establishment of a community depicts this –climate-working group comprised of community members and the Kelurahan officials, who have adequate capacity on climate change and facilitation on participatory planning processes. Furthermore, the linkage between LRAP with climate policy framework at Provincial level created and the three Kelurahan are committed to implement LRAPs, and are mainstreaming the issue of climate change in their annual plans. For replication purposes, secured documented commitment from the Government Technical Agencies to support communities in implementing their LRAP proposals collected and archived. The three Kelurahan are using the tools developed in this project to develop their LRAPs.

CONCLUSION

The community approach in climate change adaptation through Kelurahan Empowerment Initiatives project conducted in just four months, a very short ambitious project in an effort of achieving a balance between community empowerment and the local government supportive role in the issue.

The method in dissemination of climate change Information to target group particularly in use of some technical terminology considered as difficult to understand. Usually, presentation of the information includes scientific terms that are non-avoidable in explaining climate. For target groups who consist of less educated people, the information is difficult and confusing. The current formal planning forum (Musrenbang) considered not effective. There are many inefficiencies and possibility of fraud in the way, therefore the community skeptical since most of their proposal has not accommodated. The LRAP intended to help community to develop their plan to response to the flood. This condition causing the community has similar perception on the effort, even if the project apply different approach in term of process of planning formulation that is encourage community participation, some community perceive it as only similar planning forum as Musrenbang. Besides, the project does not offer direct support to implement the project but helping with facilitating the proposal to relevant parties. On the other hand, regarding the method of LRAP formulation, community considers the method is much better than Musrenbang from perspective that it taught the community on variation and level of actions. The variation may range from ones that community could practiced and supported themselves in family and neighborhood level to ones that should propose to get support from other sources. Community knowledge based on vulnerability is a session carried out in the beginning of LRAP workshop. They participate using some analysis tools including map, seasonal calendar and history of disaster. The session is interested as it

reminds them to climate disaster events and identify gap to their current response to the disasters.

Community participation and enthusiasm to involve in developing LRAP sometimes depend on the level of flood severity. Sensitivity to the issue possessed by those who suffer worst impact rather than those who suffer only minimum impact of the flood. The group of community who felt that they are not under serious threat is fewer enthusiasts to involve even if they informed that scale of the impact may get worse by the day.

The project proved that approach to government should follow structural line. The approach should carry out from higher level. To involve Kelurahan, facilitation from Kecamatan is useful to be able to get Lurah participation. The rule applied for community participation. Kelurahan should facilitate the invitation. However, since flood is the greatest impact of climate change in the pilot Kelurahan, the LRAP helps to mainstream climate issue in Kelurahan planning. It is offer a systematic approach required to develop a rational plan that based to analysis to vulnerabilities. LRAP also encourages community to prepare self-support actions to response to the flood. The government, particularly Kelurahan acceptance and support to the project is good as it synchronized with government effort to prepare community to response the flood.

The establishment of PAC aims to become a one-stop coordination system in DKI Jakarta for climate related actions. The PAC comprises of related government technical agencies including planning agency, NGOs, and universities. Activities of PAC lead under coordination with BPLHD. The challenge is that initiative to activate the committee still has triggered by Mercy Corps. One of the reasons is because the committee has not formally legitimated yet. The process to get endorsement from the governor still enrolls. The governor expected to release a decree for assignment of the PAC. Then a clear work mechanism developed.

Finally, LRAP formulation enables the people to get informed on how climate changes, correlation between flood disaster with climate change and why should people prepare to response the flood. There are some events in project stages where the community learns together about climate change. From some discussions, the people mentioned that the project provide them with new knowledge and grow awareness. The awareness manifested in their personal commitment to reduce carbon release through energy saving at home. Formulation of actions directed to actions that will create resilience to the people. In last session of LRAP workshop, people provided a matrix to put their prioritized actions and complement the four criteria of resilience (redundancy & back-up system, flexibility & robustness, reorganize & learning capacity) to ensure that the actions will bring a resilient condition. The criteria are quite difficult to bring into local context with actions that community proposed. There is also some different perception to the criteria. However, the step to create resilience is helping people to lend their mind to think about a plan that will create resilience, even if the perception is different among the people.

REFERENCES

- BAPPENAS. (2008). Laporan Tahunan. Jakarta, Indonesia: Bappenas.
Chauduri, S., & Armas, E. B. (2010). Indonesia Economic Quarterly. The World Bank.

- Hardiono, M. (2011). GIS and Mapping Support for Climate Adaptation in Jakarta. Jakarta: Martin Hardiono.
- Kurniawan, B. E., & Amin, S. (2011). Interim Report-Kelurahan Empowerment Initiatives, Climate Change Adaptation. Jakarta: Mercy Corps.
- Mulyana, W. (2011). Stakeholder Analysis Report - Kelurahan Empowerment Initiative. Jakarta: URDI.
- NAVCA. (2009). Local Resilient Action Plan. London: NAVCA (National Association for Voluntary and Community Action).
- Susandi, A. (2011). Projection of Climate Variability and vulnerability in Village of Kapuk Muara, Pluit, and West Pademangan . Bandung: ITB.

TRANSPARENT AND OPEN GOVERNANCE: WEB CONTENT ANALYSIS OF METROPOLITAN INFRASTRUCTURE DEVELOPMENT AND INVESTMENTS INFORMATION AT LOCAL LEVEL – A COMPARATIVE STUDY OF FOUR METROPOLITAN CITIES OF SOUTH AFRICA AND INDIA

Aurobindo Ogra

*Department of Town and Regional Planning, Faculty of Engineering and the Built Environment,
University of Johannesburg, Johannesburg, South Africa
aogra@uj.ac.za*

Prof Wellington Didibhuku Thwala

*Department of Construction Management and Quantity Surveying, Faculty of Engineering and the
Built Environment,
University of Johannesburg, Johannesburg, South Africa
didibhukut@uj.ac.za*

Abstract

The efficient municipal service delivery, expectations and perceptions of citizens are one of the important issues which are central to any municipality across various parts of the world. Among these issues, the transparency and accountability, management of funds for local development attracts special interest among citizens, organization, NGOs, and other stakeholders involved in the development process. The vicious cycle of financial constraints and poor service delivery often results into diversion of funds from earmarked development areas to the areas demanding priority attention. These issues still remain unaddressed and hidden in the absence of appropriate transparent and open government accessibility at internal as well as external levels within the municipal context. The paper highlights key findings from selected metropolitan cities of South Africa and India by doing exploratory comparative analysis about to what extent are the municipal websites addressing the issues of transparent and open governance. The assessment of municipal websites is focused on the issues of access to information on development funds and projects at local level to citizens and other stakeholders. The web content analysis on selected cities provide a background for discussion on the areas of concern to address the key gaps and initiatives for enabling transparent and open governance through municipal websites.

KeyWords: Transparent and Open Governance, Municipal Investments, Development Projects, e-Governance, Web Analysis, e-Readiness & Preparedness

INTRODUCTION

The efficient municipal service delivery, expectations and perceptions of citizens are one of the important issues which are central to any municipality across various parts of the world. Among these issues, the transparency and accountability, management of funds for local development attracts special interest among citizens, organization, NGOs, and other stakeholders involved in the development process. The vicious cycle of financial constraints and poor service delivery often results into diversion of funds from earmarked development areas to the areas demanding priority attention. Such diversion of funds may not necessarily address the actual priority needs of the citizens in terms of various basic issues like: housing needs, civic services, health, security, social benefits etc. The vested interests of political and administrative nature often give rise to further diversion of funds to non-priority and non

equitable system of planning and governance at local level. Such issues still remain unaddressed and hidden in the absence of appropriate transparent and open government accessibility at internal as well as external level.

E-Governance is often seen as one of the mechanisms which address the needs of local governments in terms of bringing transparent and open government to citizens. There are numbers of successful attempts across municipality's world over which reflect the initiatives of municipalities in terms of bringing reforms in the areas of information, technology, accessibility, transparent and accountable government. Some of these initiatives have resulted in partial benefit to the government if discussed in terms of value add to focus the issues of bringing transparent and accountable government. The access to appropriate information related to disbursement of funds for equitable development purposes at local level still remains as one of the gaps to address the access of information to citizens and other stakeholders through municipal websites. The concept of transparent and open government is one of the areas which are much in debate in bringing the municipal reforms. E-Governance, application of ICT and other municipal structural reforms are one of measures which are perceived to achieve transparent and open government.

OBJECTIVES OF THE PAPER

One of the important objectives of municipal web system is to facilitate the necessary information to the citizens and provide associated services. The access to information is one of the keys of facilitating the transparent and open governance system. The objective of the paper is to highlight the existing levels of extent of transparency and open governance systems at local level, by doing an exploratory research on key indicators of information available to the citizens through municipal websites in areas of infrastructure development, and investments.

REVIEW OF LITERATURE

Dimensions of Good Governance

The dimensions of good governance at the municipal level are manifold. Good governance has eight major characteristics: participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law (UNESCAP 2010). From another perspective, UNDP lists nine characteristics of Good Governance namely participation, rule of law, transparency, responsiveness, consensus/ orientation, equity, effectiveness and efficiency, accountability and strategic vision (Kettani et al 2006). UN-HABITAT recognizes that good urban governance is characterized by the interdependent principles of sustainability, equity, efficiency, transparency and accountability, security, civic engagement and citizenship. The agency's Global Campaign on Good Urban Governance aims to increase the capacity of local governments and other stakeholders to practice good urban governance, promote transparency, and fight crime and corruption (UN-HABITAT 2010).

The performance dimensions of municipal management much researched upon include: planning, finance and service provision. The municipalities are managing the provision of services either through an in-house arrangement or by subletting some of the services for enhanced and improved governance system. Some of the services which are seen delivered

and managed by outsourcing system particularly include: solid waste management system, complaint redressal system, etc. However, looking at the performance of the municipalities, many of the services lack in terms of performance benchmarks. This means that often the service level benchmarks are not met and the services are not provided at the appropriate time or within the stipulated timeframes. There are many reasons attributed to the poor municipal service delivery, performance management or weak urban governance. Some of these issues include: financial constraints, technical resource constraints and lack of appropriate technological adoption and skill sets.

Transition from ICT to e-Governance

Information Technology (IT) has become one of the core elements of managerial reform, and electronic government may figure predominantly in future governance. IT has opened up many possibilities for improving internal managerial efficiency and the quality of public service delivery to citizens (Moon 2002). Electronic government (e-Government) refers to the rapidly emerging global phenomena of the use of Information and Communication Technology (ICT) as the new way forward in public administration. E-Government development very often aims to improve public service delivery capability, as well as public administration, governance, transparency, and accountability through the development of e- Government service delivery capability (Chatfield and Alhujran 2009). The approaches used for conceptualizing e-Government as the basis for framework of good governance include: E-organization- internal government efficiency and effectiveness; E-services - external efficiency and effectiveness in providing services; E-partnering: external efficiency and effectiveness in working with public and private organizations; E-democracy: citizen participation in government decision-making (Carrizales 2008).

Approaches to Good Urban Governance & Service Delivery

The e-Governance programmes in municipalities have traditionally evolved from an urge to make municipalities perform better for delivery of services to citizens and achieving overall performance in its functions. Some of the e-Governance programmes to address the various dimensions of municipal management include: property enhancement applications, complaint redressal system, registration and issue of trade licenses, birth and death registrations, provision of information to citizens through kiosks, websites etc. Many a times these approaches are not integrated with other modules within the system resulting in the isolated approaches being adopted at the municipal level. Besides the introduction of e-Governance tools, the municipalities have adopted programmes addressing specific components of the municipal governance in the areas of finance, planning, and infrastructure development. Some of the known programmes for enhancing improved municipal governance are Municipal Development Programmes (MDP) of the World Bank in across various countries. The other type of interventions include National Urban Renewal Mission (NURM) programme like in case of India, City Development Strategies (Cities Alliance, World Bank, Asian Development Bank), Integrated Development Plan (IDP), etc.

As evident from municipal cases, the existing approaches to achieve good urban governance are primarily focused on introduction of e-Governance system at municipal level. The approach adopted is a step wise process because of e-Governance readiness level of the municipalities. The municipalities have different e-Governance maturity level due to the organizational complexities, technical and financial resource availability. Due to these complexities, the adoption of such initiatives is limited at isolated levels by either targeting the revenue enhancement, or service provision through the application or adoption of new improved system using ICTs. The benefits of such improved adopted system results in the

isolated efforts and governance at the municipal level, without bringing much tangible results. However, this may bring specific improved governance within a particular system like revenue enhancements, service delivery provisions or planning at an isolated level. On the other hand, the management, planning and development programmes focus more on the capacity enhancement for achieving improved urban governance. Such programmes often have longer gestation periods and achieving good urban governance is based on specific reform areas.

INTERRELATIONS OF GOVERNANCE, GOOD GOVERNANCE, E- GOVERNMENT AND E-GOVERNANCE

The concept of e-Governance hasn't come suddenly, and has come from the concepts of 'Governance and Good Governance'. The Good Urban Governance came into existence as a result of crisis in municipal governance particularly in developing countries. As discussed in earlier section, the term 'governance' encompasses areas of economic, political and administrative authorities to manage multitude of affairs at various levels. The term Governance was used by World Bank in 1989, which came from their document 'Sub- Saharan Africa' in the context of identification of four parameters which related to governance: public sector management, accountability, legal framework for development, and information & transparency (Bhattacharya 2006). In 1992, the World Bank expanded the scope of governance and replaced it with the term 'Good Governance' in its document entitled 'Governance and Development'. The term 'Good Governance' covered the aspects related to: the form of a political regime (parliamentary or presidential, military or civilian, authoritarian or democratic; the process by which authority is exercised in the management of a country's economic and social resources; and the capacity of government to design, formulate and implement policies and in general, to discharge governmental functions (Mishra 2003).

The term e-Government was used for the first time in 1975 by novelist John Berto in his science fiction novel with the same title 'e-Government'. The novel subject dealt about computer network for a comprehensive government that governs and control people. A literature on IT in government goes back to early 1970s, much of the concepts revolved around computing in government organizations, but the concept of e-Government was born out of internet revolution. The evolution of e-Government started in mid 1990s when the World Wide Web (WWW) became widely available by WWW Consortium, after the finalization of its standards in 1996 (Kraemer, et al, 1978, Danziger and Anderson, 2002, Gore 1993; Salem 2003). At a global level, the real use of e-Government is traced back to 1995, by Central Post Office in the State of Florida for implementing the concepts on its administration.

By 2000, US administration launched several initiatives for e-Government as Red Tape Cut, for the start of new phase of life of the American people. During the same time, European Union adopted the decision of putting all available programs of e-Government available to all Europe on the internet. In terms of legislation, France was the first European country for the regulation of e-Government work in 2000. By late 2001, global level e-Government domain indicators as well as the effectiveness of e-Government for economic growth were prepared by United Nations in Association with American Society for Public Administration (Heeks 2002). Much of the earlier literature concerns the use of IT within the government, office automation etc while the recent e-Government literature focuses / discusses the concerns

related to external environment / services to citizens, and includes the larger spheres of government like organizational change and the role of government (Ho 2002). The concepts of e-Government & e-Governance have evolved from the use of ICT by government agencies to electronically deliver services to internal and external relationships of government.

There were several views and perspectives of institutions, experts and researchers on concept of electronic government, as the concept of e-Government or e-Governance is relatively new in the field of ICT knowledge, being discussed since last one decade. The different perspectives on e-government and e-governance are reflective of the numerous functions and possibilities as adopted by institutions and cities worldwide. Both the concepts of e- government and e-governance refers to 'government' as a superstructure that deals with decisions, rules, implementation and outputs of its policies; whereas 'governance' refers to functioning based on processes, goals, performance, coordination and outcomes. The governance is seen as the larger facet of government. E-government is the most frequently cited term in comparison to e-governance, online government, one-stop government and digital government. Riley et. al. (2003) refers to 'government' as a superstructure that deals with decisions, rules, implementation and outputs of its policies; whereas 'governance' refers to functioning based on processes, goals, performance, coordination and outcomes. The distinction between e-governance and e-government is based on processes: e-governance encompasses: electronic consultation, electronic controllership, electronic engagement and networked societal guidance, where as e-government encompasses: electronic service delivery, electronic workflow, electronic voting and electronic productivity (Sheridan and Riley 2006). The e-government is perceived to be a sub-set of e-governance, where e- governance refers to the 'outcomes' as a result of 'efforts produced by public administration, and e-government refers to the 'outputs' as a result of 'efforts expended', in terms of public administration domain (Saxena 2005).

The e-government studies fall under various distinct categories depending on the types of internal and external relationships of government. Most e-government studies fall under five categories, which explore the e-government in areas of: a) managerial practices, b) individual and organizational characteristics, c) IT characteristics, d) measurement of e-government, e) government subcultures; on e-government adoption (Titah and Barki 2006). Information Technology (IT) has become one of the core elements of managerial reform, and electronic government may figure predominantly in future governance. The concept of e-government and e-governance is evolutionary in nature and the research done so far by various researchers touch upon various facets of municipal government and governance systems. The definitions by leading institutions and researchers highlight the key strategic areas of municipal government and governance system which are the key pillars of successful drivers towards improved municipal systems. The dimensions of these spheres touch up various issues which span across the indicators of social, economic, political, technical, financial domains at local level, which act in internal and external context of these institutions of governance. The limited empirical research highlights the need for further research in areas of multitude of municipal spheres of governance, which are largely related to governance at internal level, external level in a networked context of service delivery. There is need to have detailed empirical research which focuses on the aspects which could improve the service delivery in terms of effective and efficient service delivery levels. One of the areas related to governance is about transparent and open government system, the concept of which has evolved recently, yet very limited empirical & exploratory research studies are available on this theme.

Table 1: Spheres of e-Government and e-Governance

Period	Knowledge Body	Spheres of e-Government
2001 - 2009	International / Institutional Agencies	Internet, World Wide Web (WWW), citizen services, public information, transformation of government, technology, administrative processes, better government, businesses, citizen empowerment, revenue growth, government operations, transparency, cost reductions.
1996 – 2010	Experts / Researchers	Government operations, citizen engagement, government services, digital information, delivery of government services, intergovernmental agencies, customers, transactions, digital government, e-Service, e- Management, e-Democracy, e-Commerce, ICT innovations, internet applications, web-based services, business partners and employees, process of reform, equitable participation, accountable government, efficient and effective government, transparency and accountability, quality services.
Period	Knowledge Body	Spheres of e-Governance
2001 - 2009	Experts / Researchers	Good governance, delivery of government services, citizens, businesses, citizen empowerment, efficient government management, increased transparency, lesser corruption, networking and digital connections (internal and external), electronic service delivery, interaction between citizen and government, public administration, re-invention, re-engineering, self regulation, decision making process, information flow, transparency, civil society strengthening, ICT channels of change, knowledge based government, knowledge based economy and society, electronic technologies, public management, digitalization of services.

TRANSPARENT AND OPEN GOVERNMENT

The concept of Transparent and Open Government can be traced to internet developments for providing services to citizens in participative, transparent and collaborative environments. The principles of promoting accountability, participation for information benefit, and effectiveness of government were some of the cornerstone seen for an open government (U.S Government 2010). Building transparent and open government has remained one of the most challenges at various levels of governance to be seen at national, sub-national and local level. With the development of ICT, many countries focused on initializing the information systems in more convenient ways to open the administrative procedures in a transparent and open ways. The need for moving to transparent and open ways can also be traced to rampant corruptions in various processes and functionaries at various levels within organizations involved in public service delivery. The other facet of transparent and open government

system was seen in terms of facilitating transparency in administration and reducing delays (Seongchoel & Keunhee, 2006).

The transparent government also became widely used with the concept of e-Government being used during late 1990s. The policy strategies focused on improving service delivery in government structures through the use of ICTs (Guerrini & Aibar, 2007). Worldwide the e-Government was seen to modernize public administration focused on achieving economic growth, improving everyday life etc. (Anthoponlons et. al, 2006). The development of e-Government promised new area of administration and convenience to citizens in terms of access to basic services (Nikolaos et.al, n.d). The governance through e-Governance measures brought improved government decision making process and citizen's satisfaction in government. This improved system and citizen's trust in government enhanced government accountability and transparency. The delivery of government services and information through e-Governance led various ways to improve efficiency, effectiveness and transformation (Larsen & Milakovich 2005). The improved efficiency, effectiveness and transformation through websites on the internet also led to service delivery processes and shaped the environment in which the government operates. The e-Governance characterized the application of electronic means in the interaction between government and citizens to simplify and improve policy making and service delivery processes (Pathak et.al, 2007). In- spite of various measures through e-Governance, the transparency and openness of governments differed in web capacity and openness. Not all e-Governance initiatives across various parts of the world realized the concept of transparent and open government (Rose, 2009).

The transparency and openness through e-Governance was largely seen to ensure public trust and establishing a system of transparent, participative and collaborative government (Presidential Documents, 2009). The transparency and openness enabled and important break away of the old model of citizen-public administration lengthy process and interaction of bureaucratic red tape system. The transparent and open government system through e- Governance became a potent tool for citizen empowerment in terms of electronic administration (Willonghby, Gomez, Lozano, 2010). The limitations in satisfying the accessibility and the right content through e-Government websites has become one of the crucial factors for online services to citizens (Fogli, 2009). In making government more accountable, transparent and effective, it is assumed the role of web will play a key role in transforming relations between citizens and various stakeholders in the governance process (Kolsaker & Kelly, 2007). The governments can transform governance though information and technology systems for bringing public sector reforms (Carrizales, 2008). "Increased openness is also intended to increase the incentive for public institutions and public servants to perform to the highest standards, while also allowing citizens to contribute more to the achievement of public goals" (Jojnston, n.d). The emergence of widespread use of e- Governance technologies providing electronic information and services to citizens and businesses facilitated governmental units in reinventing their functions and processes of providing efficient and transparent government services (Shan, et.al, 2011).

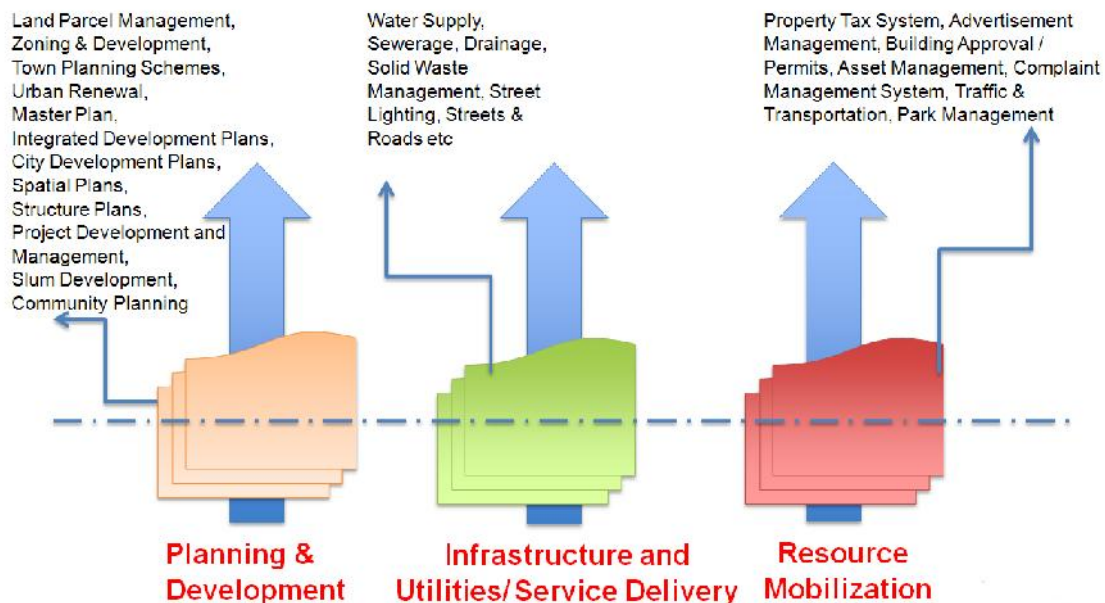


Figure 1: Dimensions of Transparent & Open Government

NEED FOR TRANSPARENT AND OPEN GOVERNANCE

Urban governance deals with complex issues and the municipalities find it extremely difficult to provide efficient delivery of basic services to its citizens. This is largely driven by the prioritization of various multitudes of services, and which in turn neglects the areas of attention in terms of service provisions, project funding investments and organizational management. The municipalities recognizing this vicious cycle have taken number of initiatives to integrate the concepts of Good Urban Governance. The e-Government and Open Government objectives are directed towards bringing more transparency, the later being dependent on the outcomes of the e-Government. The e-Government is seen to produce transparency where are open government is seen to bring in more like participation and collaborative mechanisms between various stakeholders. The reliability of e-Government and the Open Government both depend on the web-enabled technology, which are largely driven by preparedness of various governments in terms of e-readiness and political will (Gustetic, n.d). The ICT applications to transform the government have been in use to drive down the public service delivery costs, and extending citizen-government relationships. The e- Government was seen as bringing technological and new entrepreneurial culture in the areas of administration (Banister & Connolly, 2011).

The research on the transparency models in government bodies focus on improving communication at various levels in terms of participation, substantial information, accountability, secrecy, communication practices, organizational support and adequate resources. Information and Communication Technology (ICT) has become of the core elements of managerial reform, and electronic government may figure predominantly in future governance. The use of IT has facilitated and opened various opportunities for improving the internal managerial efficiency and provision of quality of public service delivery to citizens. The e-Government is rapidly emerging global phenomena of the use of ICT as new way forward in public administration and bringing transparent and open government reforms at local level. The application of e-Government systems and its adoption

of web-based technologies for citizen centric services has become a global trend in the public administration and way of reforming municipalities in efficient delivery of services. The objective perceived of such adoptions is to improve the conventional governance system. Another aspect of its adoption is seen to increase the extent of public accountability through e-Governance measures to increase the interaction between the government and citizens (Wong & Welch, 2004). “While e-government represents a vehicle for improved service delivery that can be seen as the most recent step in a more evolutionary process of public sector reforms and (ideally) improvements designed to improve service delivery capacities and ultimately, overall performance, the pressures for government-wide action and responses are also partially a reversal from the flavour of previous reforms in the public sector dating back to the 1980s, particularly those associated with the movement known as new public management (NPM)” (United Nations, 2008).

The transparent and open government forms part of the good urban governance reforms. Good urban governance refers to ‘integrated governance’ thus with the inclusion and representation of all groups in the urban society with focus on transparency, accountability and integrity. The common thread across the definitions of good governance and good urban governance relates to management, accountability, delivery and key stakeholders. The good urban governance concerns with functions being performed within internal as well as external environments, the management techniques or adoption of particular systems and technologies for achieving effective governance, and the involvement of the wider community. The dimensions of the good urban governance are manifold, with differences between organizations regarding to these dimensions. The core dimensions as identified by number of organizations include the dimensions of: Equity (includes sustainability, gender equality and intergenerational equity), Effectiveness (includes efficiency, subsidiarity and strategic vision), Accountability (includes transparency, rule of law and responsiveness), Participation (includes citizenship, consensus orientation and civic engagement), and Security (includes conflict resolution, human security and environmental safety).

Table 2: Governance dimensions from leading international institutions.

Governance Dimensions	International Institutions			
	UNESCAP	UNDP	UN-HABITAT	Global Campaign on Urban Governance
Participatory	X	X	X	X
Consensus oriented	X	X		X
Accountable	X	X	X	X
Transparent	X	X	X	X
Responsive	X	X		X
Effective and Efficient	X	X	X	X
Equitable and inclusive	X	X	X	X
Follows the Rule of Law	X	X		X
Strategic Vision		X		X
Principles of Sustainability			X	X
Security			X	X
Citizenship			X	X

BEST PRACTICES ON TRANSPARENT AND OPEN GOVERNMENT

There is very little research on city or municipal level transparency. The expectations of citizens for transparent local government cuts across the dimensions of budgets, contracts, records / document systems, and governance. The best practices of transparent and open government could be best seen in form of various e-Governance applications at municipal level. These applications primarily run across in various municipal dimensions of providing / facilitation good urban governance in the areas of planning, governance and infrastructure. These applications cover the issues like transparency, openness and promote the concepts of good urban governance / smart governance. World over, the key technical staff at municipal / city entity level are under greatest pressure to provide relevant information to the public. The pressure is mainly from internal as well as external relations of the city entities and in the absence of relevant planning tools, the situation becomes much critical due to the pressures from citizens, elected officials, and other city departments.

The city departments / entities are finding it increasingly important to have a strong web presence to meet the desired objectives of transparent and open government. However not much initiatives have been done in this regard, some of the other initiatives aligned towards municipal tools in terms of best practices from United States include: City of Seattle provides e-government tools for citizens which facilitates: permit status check, online inspection request, online permit applications, and mapping tools for land use permitting activities, searchable parcel database, etc; The City of College Station, Texas, Planning and Development Services provides details of all planning and engineering projects list with descriptions of all the development projects from 2005 forward, the city also provides details about the development projects that have been submitted to the city. The tools for information sharing include: websites, listservs and notification systems, video capture and distribution, mapping, scenario planning and calculators, and children activities. Besides these information sharing tools, the city planning departments are using tools for interaction like: online discussions, social networking sites, document collaboration, online polls, surveys and crowdsourcing, internet petitions, e-commerce permits and more. “Web tools are a great way to get unfiltered information out to citizens, so they can read the information that the city is trying to get out. You can get straight information that is pertinent out to citizens in a way that isn’t through a newspaper” (Evans-Cowley and Kitchen 2011).

EVALUATION MODELS

The evolutionary studies on e-government refer to ‘stages of growth’ models for fully functional e-government. The e-government research is dominated by model-based paradigm in theoretical framework, and provides a useful tool to evaluate the development of e- government in a given context. The e-government models depict that there are number of distinct phases in the development of e-government. The first phase of development of e- government involves one way of interface between citizens and the government. During the second stage, dynamic and enhanced online information is made available to citizens. The third phase provides the range of government services which is based on need and function, and provides more interactive interfaces between all stakeholders. The fourth stage includes more customized and secure services. The widely known e-government model sees e- government as evolutionary phenomenon, from which e-government initiatives should be derived ad implemented. It assumes four stages of growth model for e-government:

cataloguing, transaction, vertical integration and horizontal integration (Layne and Lee, 2001). The model is based on customer centric approach rather than technological capability.

According to Lenk and Traummuller (2000), the e-government should be viewed from four perspectives: the citizen perspective, the process (reorganization) perspective, the cooperation perspective, and the knowledge perspective. There are number of contributing areas in terms of philosophy of technology which should be considered to contribute to the area of e-government. These broadly include: development of e-services from citizens perspective, contribution of citizens in the development process, common strategy for the development of local e-government and e-services, current perspectives and consideration of citizens (Stolterman, 2001). There are number of e-Governance models which have been discussed by researchers. The models represent various levels of stages of e-Governance being adopted or are functional depending upon various factors like technology, preparedness level, capacities of the implementing institutions / organizations like municipalities, sub-national governments etc. These models depict a generic overview of the organization in terms of e- Governance preparedness or level of e-Governance reached. Each of these models can be further described in terms of various maturity stages. The maturity stages may vary depending upon the context of application which could depend on the aspect for addressing the internal or external functionalities. There has not been much in-depth research done on the municipal sector in terms of various application dimensions. The previous researches focus on select broader indicators which does not exactly depict the picture at local level in terms of maturity levels reached by the municipalities.

The following table provides key e-Governance maturity level models which have been cited by various researchers based on varied maturity stages. These models have been used to analyze the business to business (B2B), business to government (B2G), government to government (G2G), government to business (G2B) or government to citizens (G2C) interface.

Table 3: e-Governance maturity models and key stages (Baum and Maio 2000; KašubienB and Vanagas 2007; Spencer et.al. 2007; Zhao 2007; United Nations 2008; Esteves and Joseph 2008; Al-Khatib 2009; Butkevicius 2010)

Year	e-Governance Maturity Models	Model Stages	Key Maturity Stages	Functionality / Key Aspects
2000	Gartner Group	Four stage	web presence, interaction, transaction and transformation	Citizen centric
2000	Daral West	Four stage	billboard, partial service delivery, fully integrated service delivery, interactive democracy with public outreach and accountability	Citizen centric integrated approach with focus on portal system
2001	United Nations	Five stage	emerging web presence, enhanced web presence, interactive web presence, transactional web presence, seamless networked web presence	Focused on web based public service delivery
2001	Hiller and Belanger's	Five stage	information dissemination, two way communication, service and financial transaction, vertical and horizontal integration, political participation	Citizen centric with political participation
2001	Deloitte and Touche's	Six stage	information publishing, two way transaction, multipurpose portal, portal personalization, clustering of common services, full integration and enterprise transaction	Citizen centric with focus on seamless services to citizens
2001	Howards	Three stage	publishing, interacting, transacting	Citizen centric

2001	Layne and Lees	Four stage	Cataloging, transactional, vertical integration, horizontal integration	Citizen centric focused on : technical, organizational and managerial feasibility
2002	Moons	Five stage	One way communication, two way communication, transformation, vertical and horizontal integration, political participation	Citizen centric with political participation
2002	Chandler and Emanuel's	Four stage	information, interaction, transaction, integration	Citizen centric with focus on service centers
2003	World Bank	Three stage	Publishing, interactivity, completing transactions	Citizen centric with focus on functionality

CASE STUDY FINDINGS: SOUTH AFRICA & INDIA

Approach & Methodology Adopted

The case analysis discussed in the following sections is based on selected metropolitan cities of South Africa and India. In South Africa there are nine provinces which represent eight metropolitan cities. Of these eight metropolitan cities, three metropolitan cities are located within the Gauteng province, namely: Johannesburg, Ekurhuleni and Tshwane (Pretoria). India has 35 metro cities, of these 35 metro cities; four metro cities are represented by state of Gujarat, namely: Ahmedabad, Surat, Vadodra and Rajkot. These cities are administered by municipal corporations and other urban entities like development authorities. For the web content analysis, two metropolitan cities from South Africa and India have been selected based on their representation from the same sub-national / provincial area with almost similar population and administrative contexts. The metropolitan cities from South Africa include: City of Johannesburg and Ekurhuleni Metropolitan Municipality, where as the metropolitan cities (municipal corporations) selected from India include: Ahmedabad Municipal Corporation (AMC) and Surat Municipal Corporation (SMC).

There are number of levels and stages in e-Governance maturity models, and provision of information is one of the essential components of the stage 1/ level 1 in the e-Governance maturity models. The web content analysis done is limited to gauging the extent of information provision related to the research subject. The relevance of information provisioning is very important, and the case study analysis intends to highlight the existing scenario in the case municipalities in terms of the basic levels of e-Government model.

The e-Governance comparative analysis of metropolitan cities of South Africa namely: Johannesburg and Ekurhuleni and metropolitan cities of India namely: Ahmedabad and Surat on UN five stage maturity model provides an interesting insight from the web assessment on the municipal services. The metropolitan municipalities within the same region have reached various maturity levels irrespective of nature of similar services being provided to the citizens (Ogra and Thwala 2011).

Table 4: e-Governance Maturity Level (Selected Metropolitan Cities from South Africa and India based on United Nations: Five Stage Maturity Model)

Sr. No.	Selected Metropolitan Cities	Province / State	Population (2001 census)	e-Governance Maturity Levels (UN Five Stage Model)				
				Level 1	Level 2	Level 3	Level 4	Level 5
	South Africa							
1	Johannesburg	Gauteng	3479723					X
2	Ekurhuleni	Gauteng	2123275				X	

	India			Level 1	Level 2	Level 3	Level 4	Level 5
3	Ahmedabad	Gujarat	3520085			X		
4	Surat	Gujarat	2876374			X		

The above table provides an overview of e-Governance maturity level based on the UN five stage model. The analysis provides a generic view of metropolitan cities is at various levels of maturity stages. These levels depict the overall service delivery which does not provide the actual assessment in terms of planning, governance and service delivery. The metropolitan cities comprise of various divisions responsible for various service delivery engagements. Overall, the transparency and openness of the municipal system through the information provision and accessibility by its web enabled system is relatively adequate as the levels are in the range of level 3 to level 5. However, these levels would largely differ if subject to specific set of transparency and openness indicators.

KEY FINDINGS: WEB CONTENT ANALYSIS METROPOLITAN INFRASTRUCTURE/ PROJECT DEVELOPMENT & INVESTMENTS

The case study analysis for measuring transparent and open government discussed further is based on web analysis on the select indicators of: Project Development and Project Investment. A simple matrix structure has been used to populate and reflect the indicators of transparent and open government to represent the analysis in terms of three scales: detailed, partial and no provision of information. The project development details primarily include details about the projects being pursued (ongoing projects), projects in pipeline / proposed projects. The project investment details include: project investments in various sectors like: planning/ development, governance and infrastructure. The assessment is further detailed / analyzed in terms of information provision / access to information in form of detailed, partial or no provision of information.

SOUTH AFRICA (CITY OF JOHANNESBURG, AND CITY OF EKURHULENI) City of

Johannesburg:

Table 5: Extent of information available at regional / ward level, infrastructure / project development details

Regions / Wards	Regional Profile Details (General)			Infrastructure/Project Development Details			Project Investment Details		
	Detailed	Partial	Not Provided	Detailed	Partial	Not Provided	Detailed	Partial	Not Provided
Region A									
Region B									
Region C									
Region D									
Region E									
Region F									
Region G									
Ward level/ Suburb details									

The above table provides an overview that metropolitan municipality provides transparency in terms of provision of detailed regional profile for its areas under jurisdiction. The project development details for some of the regions are limited and are partially provided, and some of the regions do not cover any details about the ongoing or the proposed projects in pipeline.

These limitations have reflections on the transparency and openness of the municipality in terms of providing relevant details related to the investments in specific regions. The ward level details for project development and investments are very limited and are provided in partial form (City of Johannesburg, 2011).

Ekurhuleni Metropolitan Municipality:

Table 6: Extent of information available at regional / ward level, infrastructure / project development details

Regions / Wards	Regional Profile Details (General)			Infrastructure / Project Development Details			Project Investment Details		
	Detailed	Partial	Not Provided	Detailed	Partial	Not Provided	Detailed	Partial	Not Provided
Regions (21 municipal areas)									
Ward level/ Suburb details									

The Ekurhuleni Metropolitan Municipality website provides partial details of its regions in terms of municipal areas. Unlike City of Johannesburg, the details are not provided in form of regions. The regional profile is limited and region specific details are provided partially. The project development details and project investment details are not provided and the citizens cannot see the ongoing projects and the investments at the region or the ward level (City of Ekurhuleni, 2011)

INDIA (AHMEDABAD MUNICIPAL CORPORATION, AND SURAT MUNICIPAL CORPORATION)

Ahmedabad Municipal Corporation:

Table 7: Extent of information available at regional / ward level, infrastructure / project development details

Regions / Wards	Regional Profile Details (General)			Infrastructure / Project Development Details			Project Investment Details		
	Detailed	Partial	Not Provided	Detailed	Partial	Not Provided	Detailed	Partial	Not Provided
Central Zone									
North Zone									
South Zone									
East Zone									
West Zone									
New West Zone									
Ward level details									

The web analysis of Ahmedabad Municipal Corporation also reveals similar picture in terms of transparency and openness. The details of the regional profiles are provided adequately on the website but lacks in terms of ward level information. The context of project development details and the investments thereof are not provided and raises questions in terms of how transparent and open is the municipal corporation in terms of provision of details with regard to developmental projects and investments at city and ward levels (Ahmedabad Municipal

Corporation, 2011).

Surat Municipal Corporation:

Table 8: Extent of information available at regional / ward level, infrastructure / project development details

Regions / Wards	Regional Profile Details (General)			Infrastructure / Project Development Details			Project Investment Details		
	Detailed	Partial	Not Provided	Detailed	Partial	Not Provided	Detailed	Partial	Not Provided
West Zone									
Central Zone									
North Zone									
East Zone									
South Zone									
South West Zone									
South East Zone									
Ward level details									

Of the case study municipalities, the Surat Municipal Corporation is relatively on the higher rank as seen from the table. The municipality appears to be more transparent and open as it has facilitated the necessary information accessible to citizens. Besides the detailed regional and ward level profiles, the details about project development like ongoing and projects in pipeline are provided even at the ward level. The only mission context is the investments for various development projects at ward level (Surat Municipal Corporation, 2011).

COMPARATIVE FINDINGS: EXTENT OF TRANSPARENT AND OPEN GOVERNMENT

The web analysis on the select indicators of transparent and open government reveals the initiatives by respective municipalities and the extent of how much transparent and open are the municipalities. The municipalities have taken adequate measures in provision of information related to critical areas and provide a fairly good picture about its transparent and open government systems. To mention some of these measures which are commonly appearing include: detailed annual and financial reports, development projects in terms of town planning schemes, development plans, growth strategies, etc. These documents / information are available in broader context of city level. The gaps associated common to all municipalities is the area of being transparent and open by provision of such broader context of information at micro level, i.e. up to the ward level in terms of development projects and associated investments and expenditures.

Table 9: Web Content Information Level: Transparent and Open Government (Infrastructure / Project Development & Investments Information)

Sr. No.	Selected Metropolitan Cities	Regional Profile Details			Infrastructure / Project Development Details			Project Investment Details		
		D	P	N/P	D	P	N/P	D	P	N/P
South Africa										
1	Johannesburg									
	Regional									
	Wards									
2	Ekurhuleni									

	Regional								
	Wards								
India									
3	Ahmedabad								
	Regional								
	Wards								
4	Surat								
	Regional								
	Wards								

D= Detailed; P= Partial; N/P= No information provided on the website.

FURTHER RESEARCH

The present research on is based on web analysis on the dimensions of development projects and investment indicators. The research presents the limited outlook of transparent and open government much focused on information provisions accessible to citizens and other stakeholders through the medium of municipal website. In order to establish the need for transparent and open government and its reflections from municipal sector, the area of further research may include detailed analysis from various divisions of the municipal functions in areas of planning, governance and infrastructure. There are number of e-Governance / ICT initiatives being adopted by municipalities in bringing reforms at local level. The subject of to what extent has these reforms in decentralized functionaries of the municipal system been successful would add value to the ongoing research being contributed by various researchers.

CONCLUSIONS

The transparent and open government through e-Governance measures is a way towards effective municipal reforms. The municipal websites are still at early stages of e-Governance and haven't brought the expected results as evident from the case studies discussed above. The context of transparent and open governance begins with the extent of information available in one of the core areas of financial and development aspects at decentralized levels like at ward level. The municipal websites have the potential to transform the perception of citizens towards being perceived as transparent and open governance systems. The interdependence of information cuts across various departments at municipal level and involves various multi-level roles from city manager, administrator, and information managers. The role of key technical staff is to enable the provision of sufficient information being looked as the vehicle of participatory form of governance bringing value add in form of transparent and open government. The micro level information from the wards in terms of development projects would enable a bottom up approach in decision making process. The role of city manager entails in provision and recognition of various stakeholders / departments in development process and make accountable for providing and facilitating the bottom up planning and development approach. The accountability should focus on development highlights being accessible to general public / citizens with complete details like what is being developed, planned, or in pipeline.

Within the context of bringing more transparency and openness through the municipal website, the information provided / accessible to the citizens should be readily available for comments, further discussions and must include the documentations in form of financial, technical and other aspects of transaction natures. The key characteristics of transparent and open government begins with e-preparedness of municipalities on various dimensions of good urban

governance, followed by adoption of adequate technology and information sharing from city, region to ward level. The citizen's trust and the perception of transparent and open government would largely be achieved by provisions and various actions which promote accessibility of information for any developmental projects, investments, expenditure, reporting mechanisms at local level gained over the period of years. The improved citizen centric interface on development aspects and associated information would further enhance the trust of citizens in the governance being facilitated as transparent and open governance system.

REFERENCES

- Ahmedabad Municipal Corporation. Retrieved from <http://www.egovamc.com> (Accessed on 15 May 2011)
- Al-Khatib, H. (2009). A Citizen Oriented E-Government Maturity Model. Brunel University
- Anthoponlons L., Siozos P., Nanopoulos A., Tsoukalas I.A (2006). The bottom Up Design of e-Government: A Development Methodology based on a Collaboration Environment. *e-Service Journal*, Vol.4, No.3, 3-24
- Bannister F., & Connolly R. (2011). Trust and Transformational Government: A Proposed Framework for Research, *Government Information Quarterly*, 28 (2011): 137-147
- Baum, C. and Maio, D. (2000). Gartner's Four phases of e-government model, Gartner's group.
- Bhattacharya M. (2006). Social Theory, Development Administration, and Development Ethics, New Delhi, Jawahar Publishers and Distributors.
- Butkevicius, A. (2010). Enhancing e-Government maturity through web service based business to government process integration. 6th International scientific conference, May 13-14. Online, available at: http://leidykla.vgtu.lt/conferences/BUS_AND_MANA_2010/Information_and_Communication/0808-0814_Butkevicius.pdf (Accessed on 15 June 2012)
- Carrizales T. (2008). Functions of E-Government: A Study of Municipal Practices, State and Local Government Review, Vol. 40, No. 1, pp 12-26.
- Chatfield AT. and Alhujran, O. (2009), "A Cross-Country Comparative Analysis of E-Government Service Delivery among Arab Countries", *Information Technology for Development*, Vol. 15, No.3, pp 151-170
- City of Ekurhuleni. Retrieved from <http://www.ekurhuleni.gov.za> (Accessed on 15 May 2011)
- City of Johannesburg. Retrieved from <http://www.joburg.org.za> (Accessed on 15 May 2011)
- Danziger, J. N. and K. V. Andersen (2002). "The Impacts of Information Technology in Public Administration: An Analysis of Empirical Research from the "Golden Age" of Transformation." *International Journal of Public Administration* (25)5, pp.591-627
- Esteves, J. and Joseph, R.C. (2008). A comprehensive framework for the assessment of eGovernment projects. *Government Information Quarterly* 25 (2008) 118-132
- Evans-Cowly J, and Kitchen J. (2011). E-Government, American Planning Association.
- Fogli D. (2009). End –User Development for E-Government Website Content Creation. In Pipel V. et all (Ed.), *IS-EUD 2009*, 5435, (pp 126-145)
- Gore, Albert (1993). *Reengineering Through Information Technology*. Accompanying Report of the National Performance Review. Washington: Office of the Vice President.
- Guerrini A.W & Aibar E. (2007). Towards a Networked Government? A Critical Analysis of Current Assessment Methods for E-Government. In Wimmer M.A (Eds), *EGOV 2007*, LNCS 4656, pp 330-441

- Gustetic J. (n.d). E-Gov Versus Open Government : The Evolution of E-Democracy, Phase One Consulting Group.
- Heeks R. (2002), “e-Government in Africa, Promise and Practice”, *Information Polity*, Vol.7, Issue 2,3, pp 97-114
- Ho, A. T.-K. (2002). “Reinventing Local Government and the E-Government Initiative” *Public Administration Review*, (62)4, 434-444.
- Johnston P. (n.d). *Open and Transparent Government: Lessons from America*.
- KašubienB, L. and Vanagas, P. (2007). Assumptions of e-Government Services Quality Evaluation, *Inzinierine Ekonomika – Engineering Economics*. 5 (55): 68–74.
- Kettani D., Maulin B., Elmahdi A.(2006), An approach to the assessment of applied information systems with particular application to community based system. In *On the move to meaningful internet systems*, Edited by R. Meersman, Z. Tari, P. Herrero et al. (Eds.): OTM Workshops 2006, LNCS 4277, pp. 301 – 310
- Kolsaker A. & Kelley L.L. (2007). Mind the Gap II: E-Government and E-Governance. In Wimmer M.A, Scholl H.J, & Gronlund A.(Eds.), *EGOV 2007*, LNCS 4656, (pp 35-43)
- Kraemer, KL et al. (1978), ‘Local Government and Information Technology in the United States, Paris: OECD Informatics Studies # 12, pp. 186-237.
- Larsen B. & Milakovich M. (2005). Citizen Relationship Management and E-Government. In Wimmer M.A et al (Eds.), *EGOV 2005*, LNCS 3591 (pp. 57-68)
- Layne, K. and Lee J. (2001). Developing fully functional E-government: A four stage model. *Government Information Quarterly*, 18(2): p. 122-136.
- Lenk, K. and Traunmüller, R. (2000). “A Framework for Electronic Government”, in *Proceedings of DEXA 2000*, pp.340-345.
- Moon M.J. (2002), The evolution of e-Government among municipalites : Rhetoric or Reality ?, *Public Administration Review*, Vol.62, No.4, pp. 424-433, 2002
- Nikolaos A., Panyotou, Stavros T, Ponis and Sotiris P Gayialis (n.d). *Transforming the Government Value Chain : Emerging Business Models and Enabling Technologies*. Ogra A., and Thwala W.D (2011). Extent of e-Governance Service Delivery System of Metropolitan Cities of South Africa. (pp 936-948) in “Reinventing Public Management and Development in Emerging Economies”, Edited by: P. Sigamani & N.U Khan, ISBN: 978-0230-33273-7.
- Pathak R.D, Singh G., Belwal R., Smith R.F.I (2007). E-Governance and Corruption-Development and Issues in Ethiopia, *Public Organiz Rev*, (7), 195-208.
- Presidential Documents (2009). Transparency and Open Government, *Federal Register*, Vol. 74, No.15
- Riley, Thomas B. and Riley, Cathia Gilbert (2003), “E-governance to Edemocracy – Examining the Evolution”. *International Tracking Survey Report*, 2003. Number Five. Commonwealth Centre for E-Governance, Canada: Riley Information Services.
- Rose R. (2009). A Global Diffusion Model of e-Governance, *Journal of Public Policy*, Vol.25, No.1, pp 5-27
- Salem, J.A. (2003). “Public and Private Sector Interests in e-Government: A Look at the DOE’s PubSCIENCE” *Government Information Quarterly*,(20), 13-27.
- Saxena, K. B. C. (2005). Towards excellence in e-governance. *International Journal of Public Sector Management*, 18(6), 498-513.
- Seongchoel K., & Keunhee C. (2006). Achieving Administrative Transparency through Information Systems: A Case Study in the Seol Metropolitan Government. In Wimmer M.A et al (Eds.), *EGOV*, LNCS 2006, 3591 (pp 113-123)
- Shan S., Wang L., Wang J., Hao Y., Hua F. (2011). Research on e-Government Evaluation Model based on the Principal Component Analysis, *Inf Technol Manag*.
- Spencer, P. et al. (2007) . *Connected Government: Creating a Springboard for Transformation and Innovation*. Cisco Internet Business Solutions Group (IBSG).

- Stolterman, E. (2001). "IT artifacts in Design Work – How Technology Reveals Practice", in Sweeney D.P.A., "Electronic Government-Citizen Relationships: Exploring Citizen Perspectives", *Journal of Information Technology & Politics*, Vol. 4(2) 2007, pp 101-116
- Surat Municipal Corporation. Retrieved from <http://www.suratmunicipal.org> (Accessed on 15 May 2011)
- Titah, R. & Barki, H. (2006). E-government adoption and acceptance: A literature review. *International Journal of Electronic Government Research*, 2(3), 23-57.
- U.S Government White Paper (2010). Gov 2.0: Promoting Inclusive, Open and Transparent Government through Technology, A Microsoft and Hisoftware.
- UNESCAP (2010), <http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp> (Accessed 20 June 2010)
- UN-HABITAT (2010), <http://www.unhabitat.org/content.asp?cid=2796&catid=260&typeid=24&subMenuId=0> (Accessed 20 June 2010)
- United Nations (2008). *From e-Government to Connected Governance*, Economic and Social Affairs, New York.
- Willoughby M., Gomez H.G, Lozano M.A.F. (2010). Making e-Government Attractive, *Ser Bus*, 4: 49-62
- Wong W. & Welch E. (2004). Does E-Government Promote Accountability? A Comparative Analysis of Website Openness and Government Accountability, *Governance : An International Journal of Policy, Administration and Institutions*, Vol. 17, No.2, 2004, pp 275-295
- Zhao, Q. (2007). E-Government evaluation of delivering public services to citizens among cities in the Yangtze River Delta, *The International Information & Library Review* 42:208-211

TOWARDS 'PROGRESSIVE' HOUSING DELIVERY IN THE WESTERN CAPE: UNPACKING AND ASSESSING THE UNDERLYING META-NARRATIVES

Liza Rose Cirolia

*Sustainable Human Settlements CityLab African Centre for Cities
Shell Environmental & Geographical Science Building Upper Campus
University of Cape Town
lizacirolia@gmail.com*

Abstract

While it is generally agreed that the current practice of housing delivery in South Africa is not building sustainable cities and empowered citizenry, there remains much debate as to the practical process which is necessary to address this dysfunction and the ideological underpinnings which should guide changes in policy and practice. This paper looks at the current housing delivery landscape in the Western Cape exploring two of the core underlying metanarratives which have shaped the formation of both policy and practice to date and continue to influence and impact on the delivery process. Using a variety of research methods including included the mapping of housing related institutions and NGOs, in-depth interviews and engagements with housing and planning officials, the findings from the “Upscaling the Provision of Serviced Sites in the Provision of State Subsidized Housing” workshop, and a review of the existing ‘grey’ literature and policy documents we argue that there are distinct areas where more concerted theoretical and practical attention are needed. The first two areas are the ‘housing markets’ and ‘political nature of housing delivery’. The contingent relationships between these two processes are poorly understood and ineffectively framed in the Western Cape. These ineffectual framings have hindered the ability of policy shifts to have deeper impact and improved outcomes. Lastly, there are a variety of more technical issues relating to the current housing agenda in the Western Cape which require more specific and engaged research. The intention of this article is to articulate the current gaps in knowledge in these three areas and suggest a necessary research program.

Keywords: Housing delivery, South Africa, Western Cape Province, Housing Market

INTRODUCTION

Access to land, housing and basic services in many of South Africa’s urban areas have remained skewed by both historic apartheid governance and post-apartheid deficiencies in capacity, visionary will, and planning (Gorden et al. 2007; Project Preparation Trust 2012). The post-apartheid urban landscape is characterized by, among other things, continued social and spatial inequality, dysfunctional markets for land and housing, highly politicized state-led housing delivery, and extreme inefficiencies (Khan 2003, Landman 2006, South African Cities Network 2006, 2011; Project Preparation Trust 2012). Since 1994, intervention to reconfigure apartheid cities through state led housing delivery has been presented as a crucial component in the combatting of historic injustice (Charlton and Kihato 2006). While the accumulated housing policies offer many programs and tools, the most common and utilized is the ‘project linked subsidy’, known more popularly as the RDP (Reconstruction and Development Programme) or BNG (Breaking New Ground) house which is a one house per plot, free hold title model.

Unfortunately, both the design and implementation of the South African housing programs, and particularly the project linked subsidy, have proved unable to address the compounding and shifting needs of the urban poor or the segregation and inefficiency of South African cities; the Social and Economic Rights Institute states that “there is growing evidence that it will be impossible for South Africa’s current settlement policy and practice to fully address the United Nations (UN) Millennium Development Goals (MDGs) target of slum-free cities, and the South African government’s own target of “eradicating informal settlements by 2014” (2011:8). Many urban practitioners, NGOs, and organs of state have agreed that the existing housing delivery system is not sustainable in terms of financial, social, political, and ecological longevity. It infrequently enables the types of urban landscapes which reflect a ‘transformed’ city and citizenry and there are resounding calls for new types of intervention to address the housing need (Financial and Fiscal Commission 2011; Goebel 2007)i. At both National and Provincial level, the housing departments have made clear a desire to shift away from ‘free’ housing delivery and towards the expedited roll out of basic services as part of National Outcome 8 and Provincial Strategic Objective 6. This is a very important shift as it begins to acknowledge the need to decouple the delivery of services from top structure housing provision and the problematic nature of supply side delivery. In the Western Cape, the need for such shift has been the current incarnation of this intention is a policy shift towards both insitu and relocationary ‘site and service models’ with various incremental housing additions.

Using the current moment in the housing debates in the Western Cape as a reference point, we argue that in both housing policy and practice the ‘housing market’ and the ‘political nature of housing delivery’ are poorly understood and ineffectively framed. In addition, a number of more technical issues relating to design and implementation of expedited service delivery and incremental housing models also need additional research to understand opportunities, constraints, and necessary preconditions for changing the housing delivery models in South African cities and towns, and where, how, by whom, and under what conditions, these models are most appropriate. Finally, we modestly set forth a potential research agenda which we feel addresses these gaps. This article is based on preliminary research conducted for the African Centre for Cities’ ‘Sustainable Human Settlements CityLab’, a research space that was created with the intention of exploring housing policy transformation in the Western Cape. This research included the mapping of housing institutions and institutional perspectives on housing transformation in South Africa, in-depth interviews and engagements with housing and planning officials, the findings from the “Upscaling the Provision of Serviced Sites in the Provision of State Subsidized Housing” workshop, and a review of the existing ‘grey’ literature and policy documents.

URBANISATION AND HOUSING MARKETS: IS THERE A SUPPLY CRISIS?

In the Western Cape, the relationship between housing submarkets and urban infrastructure provision is complex, yet vital to understanding the tensions faced by housing and planning practitioners and policy makers. Excluding the City of Cape Town, the Western Cape has just over 130 urban settlements, some of which are growing (and thus requiring high levels of public infrastructure investment), while others are in decline and experience underutilization (Stellenbosch University and Council for Scientific and Industrial Research 2010). While the migration and housing demand of the wealthy is often in search of untapped property markets and quaint rural lifestyle (known as ‘new ruralism’), for the poor, in-migration into towns is in search of employment, improved living conditions, and access to facilities. Larger urban

areas, such as Cape Town, Stellenbosch and Knysna, while experiencing higher growth are also characterized by high levels of social need, larger informal settlements and back yard populations, and high levels of competition for urban land between the rich and the poor (Stellenbosch University and Council for Scientific and Industrial Research 2010). Burgeoning urban centers are experiencing land use competition between industry, farm land, high income real estate, low cost housing and other demands on the physical space. Many municipalities struggle to balance the resource imperatives of social development with those of economic growth and tourist attraction often leading to problematic investments in housing and infrastructure and perpetually unmet basic needs.

In the Western Cape and across South Africa, the ‘housing crisis’ is addressed as a basic crisis of housing supply (i.e. there are too few adequate houses for poor people). The policy response has been large-scale, supply side driven state intervention in the form of land and housing delivery. The incredible ambition of the state to provide ‘free’ housing and free hold title as a uniform product to the majority of the poor, despite a ridged planning and procurement framework, has led to slow and fragmented delivery and an underdeveloped citizenship base. While many houses have been delivered, according to the Social and Economic Rights Institute, “South Africa still has a housing crisis after 16 years of democracy, with over 2.1 million households lacking adequate housing (and millions more lacking access to basic services)” (2011: 8). Although in the Western Cape, nearly one fourth of the current housing stock is some form of state granted housing, it is estimated that it would take nearly 30 years to supply formal housing to address the calculated backlog at the current rate of delivery using the current approach (Housing Development Agency 2012; Seekings et al. 2010).

Furthermore, the impact of RDP housing, and other interventions, on the broader housing market is poorly understood. A variety of studies suggest that the so called ‘gap’ in the housing market has been created in part because of the ‘high standards’ offered in RDP/BNG housing; these standards push the private housing providers upmarket and out of affordability range (Rust 2009; South African Cities Network 2011). This is not to suggest that subsidizing housing is wrong, but that more information on the impact of different subsidy regimes and tools on other housing submarkets is necessary. What has been continually noted as particularly problematic is the lack of nuance in the existing subsidy regime; the RDP model

– perpetuated by political discourses - has chopped the urban demographic into three ‘demand markets’: the poor who earn R0-3500 per household per month, the gap market who earn from R3, 501 to 10,000 or 15,000, and ‘middle class to wealthy’ adequately served by the formal market (Affordable Housing Finance Centre 2012, Department of Human Settlements 2012).

While these crudely chopped income intervals function as the units for most of the housing analysis and intervention, the urban reality does not conform. What can be afforded and is, in essence, being demanded, in terms of housing and basic services, by different income groups and demographics varies drastically such that a family with no income has a vastly different capacity than a household making R 3,400 per month. Likewise, different households have varied demands; some may prioritize security of tenure, location, service provision level, or formality of structure. While many households live in inadequate conditions, the reality of their different demands is overlooked in the current practice of housing delivery that ignores the complexity and interplay of the housing submarkets. These realities suggest that the type of subsidization (what the state offers to the poor) may be both misplaced to achieve necessary developmental progress and the goals of the city and fails to address the real demands and needs of urban dwellers (Fiscal and Financial Commission 2011).

The human response to misplaced state intervention has been the growth of informal housing sub-markets in towns and cities across South Africa. In doing so, the urban poor, and increasingly the lower middle class, demonstrate an 'effective housing demand' and challenge our current narratives on urbanization and markets. In the Western Cape, twelve per cent of households in medium size towns find shelter through informal housing sub-markets and the settlements with the highest level of growth potential are characterized by nearly twenty-five percent of households living in informal dwellings (Stellenbosch University and Council for Scientific and Industrial Research 2010). Examples of these submarkets include the supply and demand of backyards, informal settlement 'shacks', formal and informal RDP/BNG house transactions, over crowded room rental and spots in transit camps or temporary relocation areas (Marx 2007). In Cape Town, the city estimated that nearly twenty two percent of households in the city lived in informal settlements in 2009 – an increasing percentage from surveys done in the years prior (South African Cities Network 2011: 50).

Seeking to better understand how the urban poor access housing in the city, despite the lack of formal stock, requires a deep engagement with the process of urbanization and market making. When people migrate to urban areas in the Western Cape, they inevitably enter both formal and informal markets for housing, labor, food, and other basic needs. The terms and conditions of these markets have been constructed through complex policy action (such as the injected supply of RDP housing), and inaction (such as lack of adherence to plans and visions) whereby the spaces and resources of the city are made into commodities to buy and sell. While these markets have not (and arguably never) actually distribute goods and services in an equitable manner, they are tasked with ensuring the survival of urban people through complex and evolving divisions of labor and political structures (Chang 2003). In the market for housing, more than simply supply and demand, there exists 'actual activities by a range of actors', including, include shack dwellers, local prefabricated shack businesses, tenants, structure owners, local councilors, municipal officials and others, who use, develop and exchange different types of rights to spaces and structures (Marx and Oldfield 2006: 1). These actors forge the political and infrastructural landscape which informs issues of land and housing access.

In unpacking the complexity of urbanization dynamics in the Western Cape, at both the scale of the province and the towns, it becomes clearer that, while supply of adequate housing is the major issue, the complexity of actors and demands require more engaged and diverse approaches. While there are many options for intervention in the current policy, they are often underused or redirected towards the delivery of the classic 'project linked subsidy' housing units for the poor. Other forms of intervention which more creatively explore issues of land, planning regulations, tenure typologies, top structure finance tools, and capacity may allow for us to more creatively think about how the existing stock, land uses, and landscapes can come being more accommodating or adequate without assuming that the supply of greenfield sites is the only answer. In seeking to address the constrained access to housing faced by many poor urban residents, there is a need to better understand how these markets relate to the social and material infrastructures of the city in order to make visible the constraints and opportunities for redefining our intervention techniques at various scales.

THE POLITICAL NATURE OF HOUSING DELIVERY

While understanding markets is essential, the political configurations and decision making logics of housing delivery processes are often overlooked in economistic narratives of supply and demand. These models often assume that if we design the right finance or delivery tool than the housing crisis can essentially be fixed. While having the right tools is vital to the capacitation of implementers, the tools alone cannot address the intensely political nature of the housing delivery. Using a mechanistic metaphor, the current housing delivery system ‘gears’ the housing delivery ‘machine’ to ‘output’ the unsustainable human settlements discussed above despite policies, plans, and tools that intended otherwise. Understanding how this machine, and the powers and politics which are reproduced through it, functions is essential to understanding the constraints, both within and beyond the housing domain, of shifting or changing the delivery outcomes.

In South Africa and the Western Cape, housing is a highly political and emotive issue and housing delivery is one of the most complex and contested urban processes and programs (Khan 2003; HSRC 2010). As housing determines not only where, but also how people live, the built form and physical environment onto which housing and housing markets are constructed articulates the progress achieved, or not, towards social justice in urban areas (Pillay et al. 2006). While being correctly identified as an issue of politics (and not just one of supply and demand mismatch), the political nature of housing has been drastically simplified in the policy and practice discourses to the point of detriment. In the Western Cape, delivery failures have often been attributed to party agendas and principles. Despite the Province’s alignment with national policy agendas, in the Western Cape shifts in delivery paradigms has often interpreted as petty party politics between African National Congress (ANC) at the National and (some) municipal spheres, and the Democratic Alliance (DA) operating primarily at the Provincial sphere (Uwizeyimana 2009). The majority of local politicians (i.e. ward councilors etc.) describe policy approaches as either ‘ANC’ or ‘DA’ (despite blatant similarities) and use such language to rally for political support from constituencies.

Intervention to address the dysfunction of the housing delivery system has often taken the form harshly triangulating responsibility between the state, civil society, and the private sector actors (Pillay et al. 2006; Huchzermeyer and Karam 2006). There is often a focus on functional capacity of these sectors. One often hears such statements as ‘the private sector should do more’ or ‘the state does not have the capacity’. Constricting change to simply increasing or decreasing the responsibilities of the state, civil society or the private sector limits the ability to radically reconstruct and reconfigure the housing trajectory beyond the existing stakeholder relationships. Moreover, by pinning policy to political parties and playing ‘capacity blame games’, the more pertinent problems are ignored or cast as managerial and technocratic, rather than political issues (Tomlinson 2011). The assumption that the ‘better party’ and more capacitated official can better deliver housing assumes that that decision makers are acting in a vacuum in which decisions are not constrained by social, political, or legal forces which are not party or individual specific. In reality, the choices made and actions taken by decision makers, the capacity that they are awarded, the flows of funding and money through the housing delivery system, and attempts to change the delivery trajectory are highly constrained by embedded power which function at various scales and through complex processes. At this point, we are not fully aware of the underlying logics which shape housing delivery outcomes and have yet to propose interventions which reconfigure the trajectory in a meaningful manner.

SERVICED SITES IN THE WESTERN CAPE: IS THIS THE WAY FORWARD?

Due to both the poor design and problematic practice of subsidized housing delivery, efforts to reinterpret the right to housing and the role of the state in housing delivery, as something other than the RDP ‘project linked subsidy’ begun nearly from the inception of the program (Huchzermeyer 2001; Jenkins 1999). Currently, housing and human rights NGOs and the state have expressed the need to reinterpret the Reconstruction and Development Programme’s vision for housing delivery and reengineer the housing delivery system to reflect improved social justice and urban management outcomes (Project Preparation Trust 2012)v. While a vision for a more incremental, people centered, flexible, pro-poor, and demand driven approach to the ‘progressive realization of the right to housing’ and the use of housing subsidies characterizes the philosophies of many housing stakeholders, disagreement regarding both the reform process and the types of policy and practice changes which are necessary continues to spark intense debate (South Africa Human Rights Centre 2004).

The desire to ‘institutionalize’ a new and ‘progressive’ housing provision model has been expressed by the National Department of Human Settlements, whose ‘do more with less’ budget speech has been rapidly galvanized by the Western Cape Provincial Department (National Department of Human Settlements 2012). The need to move away from state-led ‘free housing’ for the poor has been interpreted by the Province as the need to shift towards the expedited rollout of basic services in both the form of serviced sites and onsite upgrading (Provincial Department of Human Settlements (no date)). While currently people can continue to be eligible for other top structure housing subsidies, they are expected to eventually take the private responsibility of housing construction. People are thus expected to build the housing unit over time, investing more than they would under conditions of tenure insecurityvi. Notwithstanding the need for additional support systems, the Province expects that, over time, people will become more active citizens and that the state will be enabled to help far more people within the same budget limitations.

The shift in policy approach towards the servicing of informal settlements is extremely important as it both acknowledges the more direct needs of the poor and enables informal settlements to play an important role in the development of the city. However, if we use an informal settlement upgrading model which continues to conform to the RDP housing logic, we will be faced with similar dilemmas. The current implementation of the Upgrading Informal Settlements Programme has often achieved low density housing with high levels of relocation. While a marked improvement in terms of integrating the city, our continued dedication to the one house per plot model, despite the local markets demonstrating distinctly non-conformist dynamics, speaks to a need for both policy and, perhaps more importantly, practices to be addressed.

Moreover, the prominent findings from past site and service projects for the urban poor (most notably the South African Housing Trust and Independent Development Trust’s sites implemented in the 1980’s and 1990’s) suggest that granting a titled site with the requisite basic services alone will not lead to the creation of livable communities (Huchzermeyer 2001; Goodlad 1996; Smit 1998). Studies show that the success and failures of site and service projects in the past have been linked to a variety of issues including typology of tenure, social and spatial integration of the plot in the city, the household income level, the households’ access to credit from lenders or banks, access to transport for building materials, and community cohesion (Smit and Mbona 1996; Smit 1998). Moreover, this delivery models raises a variety of broader planning concerns. All of these issues require additional attention.

In terms of social and spatial integration, state owned land is often in poor locations, litigation savvy middle class rates payers often protect well-located land, and housing delivery often passively follows bulk capacity. Higher density housing development may also be difficult to achieve given the assumptions that sectional title is not appropriate for the urban poor and the low quality of informal building materials; horizontal density may be achieved if plot sizes are squeezed to uncomfortable and unlivable minimums. Service delivery constraints are also vital to consider in planning for the escalated delivery of serviced sites. In many areas infrastructure is at capacity potentially slowing accelerated delivery targets. In other areas, it may not be possible to expedite service delivery if bunk infrastructure must first be upgraded. There are therefore a number of issues which must be further unpacked if this agenda support the broader development goals of the cities and towns.

In locating this shift within the broader housing debates and meta-narratives, we suggest that, notwithstanding the need to shift towards incremental or progressive delivery model, careful attention must be paid to how both politics and markets are framed and engaged. Delivering what is perceived as a 'sub-standard product' within the existing delivery trajectory is likely to continue to be both slow and problematic and will fail to address the deeper issues of problematic power and political relationships. Likewise, the policy should take care when assuming that the supply of titled land is what is in highest demand by all urban residents. Applying the same blanket approach to the urban poor and the low income housing market, which characterizes the current dominant model, is not a substantial shift in delivery models. Further iterations of this policy should consider the many ways in which expedited service delivery can be achieved and not limit the approach to classical serviced site delivery which continues to be both slow, land intensive (i.e. sprawling), and insufficient in addressing the diverse and dynamic needs of the urban poor. Moreover, softer interventions which sit outside of the direct domain of housing delivery will be necessary if incremental housing delivery is to a functional reality. The following research agenda sets forth a place of departure for both reframing and diving deeper into these issues.

FORGING A HOUSING RESEARCH AGENDA

Substantial and important research and engagement has been put towards the formation of a new vision for housing policy and practice in South Africa. Needless to say, implementing the types of changes deemed fit requires deep understandings of the conflicts, constraints, and contestation which currently limit and constrict progress towards a more sustainable human settlements trajectory in the Western Cape. We suggested that there is a need for both policy and practice to reframe the current 'housing markets' and 'housing politics' problems as a starting place. In terms of the market, there is a continued need for both policy and practice to more rigorously work to understand the real dynamics of the housing market—in terms of its formal and informal submarkets—to better determine what exactly is in demand and the potential impacts of intervention (Rust 2009). It is further important that we link these demands to infrastructure planning and provision in order to appropriately invest the limited resources of the state more efficiently and towards more collective and sustainable goals.

In addition to understanding and responding to the real market dynamics, the need for a clearer understanding of the current and highly political configuration of the housing delivery system is necessary. Noting that politics itself are not a problem (as agendas and resource

division strategies are naturally part of any and all societies) new opportunities for intervention and reconfiguration can only be achieved if we forgo party politics and focus on the resource flows and decision making processes. Rather than focusing on the ‘capacity gaps’ of individual people and departments, the research should seek to understand where the major sites of dysfunction and friction are forming on the delivery trajectory and the roles that power plays in housing processes.

Lastly, in seriously considering the potential of relying on incremental and progressive models for housing delivery, careful institutional and project design to address affordable building techniques and training, innovative finance tools, land access and tenure security, plot level incremental designs, democratic participation processes, urban integration, alternative building standards, and incremental service delivery models is necessary. Understanding these complex issues and systems cannot be the task of academics or practices alone. The need for deeply engaged research which integrates empirical, institutional and academic knowledge is essential for addressing the complexity of the housing delivery crisis.

REFERENCES

- Affordable Housing Finance Centre. (2012) How will South Africa’s new FLISP subsidy work? Available: <http://www.housingfinanceafrica.org/blog/how-will-south-africas-new-flisp-subsidy-work/>
- Chang, H. (2003) *Rethinking Development Economics*. London: Anthem Press.
- Charlton, S. and Kihato, C. (2006) “Reaching the Poor, an analysis of the influences on the evolution of South African housing programme” in U. Pillay, R Tomlinson, and J. Du Toit (eds) *Democracy and Delivery: Urban Policy in South Africa*. Cape Town: HSRC Press
- Department of Human Settlements. (2010) For Outcome 8 Delivery Agreements: Sustainable Human Settlements and Improved Quality of Household Life. [Draft] Available: <http://www.info.gov.za/view/DownloadFileAction?id=135746>
- Department of Human Settlements. (2012) Subsidies Home Page. Available:<http://www.dhs.gov.za/Content/Subsidy%20Information/Subsidies%20Home.htm>
- Fekade, W. (2000) Deficits of formal urban land management and informal responses under rapid urban growth, an international perspective. *Habitat International*. 24(2), 127-150.
- Financial and Fiscal Commission (FFC). (2011) *Building an Inclusionary Housing Market: Shifting the Paradigm for Housing Delivery in South Africa*. Public Hearings Housing finance October 13 and 14 2011.
- Goebel, A. (2007) Sustainable urban development? Low-cost housing challenges in South Africa. *Habitat International*, 31(3-4) 291-302
- Goodlad, R. (1996) The Housing Challenge in South Africa. *Urban Studies* 33, 162- 1645
- Gordon, R, Nell, M. and Bertoldi, A. (2007) *Overview of Urban Land as a Commodity in South Africa: Research findings and recommendations*. Prepared by Urban Landmark. Available: http://www.urbanlandmark.org/downloads/Commodity_Final_Report.pdf
- Housing Development Agency (HDA). (2012) *Western Cape: Informal settlements status*. Available: http://www.thehda.co.za/images/uploads/HDA_Informal_settlements_status_Western_Cape.pdf
- Huchzermeyer, M. (2001) Housing for the poor? Negotiated housing policy in South Africa. *Habitat International* 25, 303-331

- Huchzermeyer, M. and Karam, A. (eds.) 2006. *Informal Settlements a Perpetual Challenge*. Cape Town: UCT Press.
- Human Sciences Research Council (HSRC) (2010) *The politics of housing*. Review 8 (2). Available: http://www.hsrc.ac.za/HSRC_Review_Article-201.phtml
- Jenkins, P. (1999) Difficulties encountered in Community Involvement in Delivery Under the New South African Housing Policy *Habitat International* 23(4), 431-446
- Khan, F. Thring, P. (eds) (2003). *Housing policy and practice in post-apartheid South Africa*. South Africa: Heinemann
- Landman, K. (2006) Privatising public space in post-apartheid South African cities through neighbourhood enclosures, *GeoJournal* 66, 133-146
- Marx, C. and Oldfield, S. (2006) Conceptualising 'the economy 'to make urban land markets work for the poor. Available: http://www.urbanlandmark.org.za/downloads/Oldfield_on_Marx.pdf. [2011, June 25].
- Marx, C. (2007) Do informal land markets work for poor people? An assessment of three metropolitan cities in South Africa - Literature review. Available: http://www.urbanlandmark.org.za/downloads/Operation_of_the_land_market_Literature_Review.pdf
- National Department of Human Settlements. (2012) Address by the Minister of Human Settlements, Tokyo Sexwale, on the Occasion of the Human Settlements Budget Vote, National Assembly Cape Town, 09 May 2012. Available: <http://www.dhs.gov.za/live/>
- Pillay, U. Tomlinson, R., and du Toit, J. (eds). (2006) *Democracy and Delivery: Urban Policy in South Africa*. Cape Town: HSRC Press
- Project Preparation Trust. (2012) *Inception Report: Rethinking the housing programme: finding a sustainable and responsive solution to the need for adequate shelter*. [Draft] [Unpublished]
- Provincial Government of the Western Cape. (No date) *Developing Integrated and Sustainable Human Settlements*. Available: http://www.westerncape.gov.za/Text/2010/8/human_settlements_objective_six.pdf
- Rust, K. (2009) *Framing a Finance Strategy for the Human Settlements Department: executive summary*. Prepared by Finmark Trust for the national Department of Human Settlements
- Seeking, J., Jooste, T. Muyebe, S., Coqui, S., and Russell, M. (2010) Does the mechanism for selecting beneficiaries for low-income housing projects affect the quality of the ensuing 'community' and the likelihood of violent conflict? Available: <http://www.cssr.uct.ac.za/sites/cssr.uct.ac.za/files/pubs/SocialConsequences.pdf>
- Smit, W and Mbona, D. (1996) *Low-Income Housing Consolidation Processes in Metropolitan Durban. Supporting People's Habitat Initiatives Series No. 1*. Durban: Built Environment Support Group.
- Smit, W. (1998) *Assisted Mutual Help Housing Delivery in South Africa*. Johannesburg: Urban Sector Network.
- Social and Economic Rights Institute (SERI). (2011) *A Resource Guide to Housing in South Africa 1994-2010: legislation, policy, programmes, and practice*. Available: http://www.escri-net.org/usr_doc/SERI_A_Resource_Guide_to_Housing_in_South_Africa_Feb11.pdf
- South African Cities Network. (2006) *State of South African cities report*. Available: <http://www.sacities.net/what/656-reporting>
- South African Cities Network. (2011) *State of South African cities report*. Available: <http://www.sacities.net/what/607-towards-resilient-cities>

- South African Human Rights Commission (SAHRC). (2004) The Right of Access to Adequate Housing 5th Economic and Social Rights Report Series 2002/2003. Available: http://www.sahrc.org.za/home/21/files/Reports/5th_esr_housing.pdf.
- Stellenbosch University and Council for Scientific and Industrial Research. (2010) A revision of the 2004 Growth Potential of Towns in the Western Cape study. For Department of Environmental Affairs and Development Planning of the Western Cape Provincial Government. [Unpublished]
- Tomlinson, M. (2011) Managing the risk in housing delivery: Local government in South Africa, *Habitat International* 35, 419-425.
- Uwizeyimana, D. (2009) The effects of party-political interests on policy implementation effectiveness: low-cost housing allocation in the Cape Town UniCity, 1994–2008. Thesis, Department of Public Governance, University of Johannesburg.

ENDNOTES

ⁱ These findings are based on accumulated interviews with academics, practitioners, and officials undertaken between January and June 2012 and public/press statements made by housing officials. Some of the interviewed people included David Savage (FCC), Basil Davidson (Stellenbosch Municipality), Robert McGaffin (UCT), Philip van Ryneveld and others.

ⁱⁱ This workshop was hosted by the African Centre for Cities, Urban Landmark and the Provincial Department of Human Settlements hosted a workshop

ⁱⁱⁱ It is important to note that other housing delivery programs do exist which would allow for more nuanced responses such as through *insitu* upgrading and the BNG housing program. However, they are often used to replicate the classic RDP style housing.

^{iv} This finding is based on interviews with local and provincial officials and the research conducted for the [forth coming] State of the Nation Volume, Chapter on Local Government in South Africa which included analysis of voting records, literature, policy and press review on housing and service delivery statistics and perceptions.

^v See the webpages and publications of the Development Action Group, Afesis Corplan, Urban Land Mark, the BKIA - Border Kei Institute of Architects, the Financial and Fiscal Commission, and the Affordable Housing Finance Centre.