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# SCOPING REPORT OF TENANT ENGAGEMENT PRACTICES IN GREENING OF SOCIAL HOUSING

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# PART ONE: THE ROLE OF TENANT ENGAGEMENT IN THE GREENING OF SOCIAL HOUSING

## 1. INTRODUCTION

The Greening of Social Housing project's Tenant Engagement Research Team has commissioned this scoping report in order to create a baseline measure of tenant engagement practices related to promoting greening interventions in social housing.

Part One of the report consists of an overview of the Greening of Social Housing Project, an outline of the report's objectives, and a review of the existing literature that covers both local and international best practice in tenant engagement.

Part Two consists of a review of research on South African social housing institutions (SHIs), which set out to investigate how tenant engagement practices have been employed in the implementation of greening practices in both new and existing buildings. The findings of this report will be used to inform the implementation of the Greening of Social Housing project.

## 2. THE GREENING OF SOCIAL HOUSING PROJECT RATIONALE

A process of engagement between the National Social Housing Association (NASHO) and the Social Housing Regulatory Authority identified the need to explore the potential for implementing greening interventions in social housing, either by retrofitting existing buildings or by using green technology in new builds. It was felt that green interventions would not only reduce resource consumption and utility costs, but also bring down management and maintenance costs for SHIs. The interventions would also benefit tenants by reducing the cost of utilities, especially as rising electricity tariffs are impacting severely on limited household budgets. This is particularly relevant as SHIs cite rising utility costs as one of the main reasons for tenants exiting the social housing system (NASHO Green Guide, 2013).

NASHO therefore approached the World Wide Fund for Nature South Africa (WWF-SA), Nedbank/Green Trust for assistance in investigating the feasibility of greening social housing. A project was conceived that allowed for the retrofitting of an existing block of housing units as well as an investigation into the feasibility of introducing green technologies in new builds. The project is being planned and implemented by three teams, the Capital Products Research Team, which is tasked with investigating the types and design of green technology that might be feasible; the Finance Research Team, which is tasked with investigating sustainable financing models; and a Tenant Engagement Research Team, is tasked with engaging tenants with the aim of establishing a baseline of consumption patterns; fostering a dynamic in which tenants feel valued, consulted and heard; managing expectations as to what the process entails; extracting data about consumption patterns which could inform the technical retrofit interventions, and maintaining an open channel of communication between tenants.

SHIs own significant housing stock throughout South Africa and the development of a successful model will inform how similar projects can be rolled out across the country.

As the literature review will reveal, there is little quantitative data documenting the success of green building interventions, and this project will therefore generate valuable empirical data to support green building interventions in social housing. The focus on tenant engagement and its role in facilitating the successful transfer of green building technology is also rarely documented, and this project will again offer valuable qualitative data related to the role of tenant engagement in greening interventions.

### 3. RESEARCH OBJECTIVES

**This report has two main objectives:**

1. To explore existing tenant engagement practices relating to how and which green technologies and sustainable interventions are introduced and managed by SHIs, both in South Africa and in other countries.
2. To provide baseline data indicating:
  - the extent of greening in South African social housing; and
  - the types of tenant engagement practices that have been employed in greening interventions.

### 4. RESEARCH METHODOLOGY

Part one will consist of secondary information gathered through a literature review of academic journals, grey literature, institutional reports and documents dealing with the SHI sector. It focuses on literature in both an international context and a South African context.

Part Two presents a review of quantitative and qualitative data collected through scoping questionnaires and structured interviews with 18 South African SHIs. The research on which this is based was designed to ascertain whether they had implemented any greening interventions and, if so, what the role of tenant engagement had been in the process. Eleven out of 18 SHIs completed the scoping questionnaire which was sent out. From this, four SHI case studies were selected for a closer review using by way of a structured interview.

### 5. CONCEPTUAL CLARIFICATION

In the interests of brevity, several terms are used throughout this report, including ‘greening’, ‘green building’, ‘sustainability’, ‘retrofitting’, ‘development’, ‘social housing’, ‘tenant engagement’ and ‘community engagement’.

The term ‘**greening**’ encompasses a broad spectrum of concepts and technical applications. For the purposes of this study, the terms ‘**greening**’, ‘**green building**’ and ‘**retrofitting**’ refer to the implementation of building and behavioural practices that result in a reduction of resource consumption, as well as a reduction impact of the building on its environment. This report acknowledges that there are philosophical contentions attached to the use of the term ‘green’ in that it can refer to a range of different concepts, right from the reduction of environmental impact through to the more holistic concept of contributing to a better environment from an integrated social, economic and ecological point of view.

The terms ‘**sustainable**’ and ‘**sustainability**’ refer to processes and principles that enable current generations to meet their development needs in ways that will not compromise the ability of future generations to do so. This is the definition set out in the Brundtland Report (United Nations World Commission on Environment and Development, 1987). The authors recognises that ‘**development**’ is a fraught term but, in this report, it refers to equitable access to and management of resources in order to improve the quality of human life.

‘**Social Housing**’ is a statutory term, defined in South Africa’s social housing policy as:

*“a rental or co-operative housing option for low-income persons at a level of scale and built form which requires institutionalised management and which is provided by accredited social housing institutions or in accredited social housing projects in designated restructuring zones.” (Tonkin, 2008:121)*

The policy further defines low-income persons as “those whose household income is below R7 500 per month”. It also stipulates that “income mix prescriptions for individual projects will specify desired percentages for different income categories within this broad band (in order to) ensure a good spread across the range (of) R1 500 to R7 500 (per month)” (Tonkin, 2008:121).

The issue of accessibility and affordability in greening technologies creates a divide between those sectors of the population that have access to appropriate information and can afford such luxury technologies and those who do not. In general, social housing aims to address structural, economic, social and spatial dysfunctions, but the social housing policy makes no direct mention of environmental issues.

This is reflected in the wording of the Social Housing Act (14:1c): “... Social housing institutions must \_...promote the creation of quality living environments for low income residents”. Social requirements therefore often take precedence over environmental concerns. This report will examine how environmental dimensions and the social benefits they create can be incorporated into the definition and goals of social housing. In order to ensure that social objectives are not compromised in the process of achieving environmental targets, the Greening of Social Housing project acknowledges that there needs to be a strong emphasis on social needs, social justice and equity contained within the concept of greening.

The term ‘**community development**’ may be defined as “a process designed to create conditions of economic and social progress for the whole community with its active participation and fullest possible reliance upon the community’s initiative” (UN, 1948). Community development in social housing “involves the engagement of the tenants, their families and people from the surrounding neighbourhoods in collective actions that help to enhance the quality of their lives” (NASHO Community Development, 2012, p.4).

For the purposes of this report, ‘**tenant engagement**’ refers to the active involvement of tenants in community development initiatives and affairs (Gilbert & Ward, 1984). An important potential outcome of tenant engagement is that of enhanced or increased ‘social capital’, which enables the outcomes of community development to be more sustainable.

The term ‘**social capital**’ refers to the social relationships and structures “across diverse groups that may increase... economic or political well-being, resulting in improvements in (the) social environment, health behaviours, and other determinants of health” (Fothergill et al., 2010). It is important to be aware that engagement does not assume that tenants will have executive authority, nor that their opinions will necessarily result in action.

## 6. RESEARCH OBJECTIVES

Fundamental to the approach of the Greening of Social Housing project is the concept that the positive impacts of greening technologies rely on comprehensive engagement with communities and tenants. This view is widely accepted in socio-economic development practices but, more often than not, insufficient time and resources are allocated for the comprehensive engagement that is necessary to ensure the success of greening and sustainability initiatives.

The process of engagement is nevertheless very important, and can be used to elicit support for projects, improve social capital, provide information about consumption and manage on-going consumption behaviour in order to avoid the rebound effect and that desired outcomes are met.

As this report will show, there is a dearth of literature on the role of tenant and community engagement in greening projects, both locally and internationally. The literature review that follows therefore includes literature relating to community engagement in housing as a whole in order to get a clearer idea of which engagement styles are effective and which are not.

## 6.1. THE ROLE OF BEHAVIOUR CHANGE IN GREENING OF SOCIAL HOUSING

A Dutch case study conducted in 2012 found that energy efficiency in social housing was effective in reducing energy poverty and improving health (Hoppe, 2012:793). In South Africa, electrified low-income urban households use electricity mostly to heat water (43%) and for space heating (23%), followed by cooking and lighting (UNEP, 2013). The UNEP report suggests that retrofitting existing buildings will help to increase their energy efficiency by 30% by 2015.

Energy-reduction strategies highlighted in the UNEP report include solar water heating, geyser blankets, more efficient space heating and energy-efficient lighting. However, long-term reduction of energy consumption also requires behavioural change, and an understanding of people's attitudes, preferences, living habits and decisions when it comes to energy-related behaviour. Once there is an understanding of these factors, the next step is to create a conceptual model of household energy consumption, and to use this in the practical context of building and retrofitting in order to support behavioural change and increase energy efficiency (Davies and Durbach, 2010).

This two-phased approach is, however, not always followed or even necessary. In the United Kingdom (UK), SHIs have historically favoured solar panels as a means of reaching minimum energy efficiency standards, as this is an uncomplicated technology that immediately saves tenants money, reduces energy poverty and does not require a change in behaviour (Clark and Hay, 2012). If energy efficiency can be achieved without any change to the rates paid for electricity by the tenants, this is an effective method. There is, however, the possibility of a rebound effect, with tenants increasing consumption in response to lower utility bills, and this could distort assumptions about usage.

A research study on energy use in low-income households in Southern Australia found that there are important social and cultural factors, which are both internal and external, which can act as barriers to reducing energy consumption. Internal factors include cultural norms related to bathing and the high use of radiant heat sources that are associated with health and comfort, such as the preparation of large meals for guests on weekends (Moreland Energy Foundation, 2010). External factors include poor housing design, inadequate insulation and inefficient appliances. Cost was also identified as a major barrier to reducing energy use. High energy use is often due to a lack of knowledge about energy efficiency, including about how to use appliances and how to benefit from scaled electricity tariffs (Moreland Energy Foundation, 2010). The research in this case was carried out via through community workshops, which set out to identify the barriers to reducing electricity usage and the policies that would facilitate better management of energy resources (Moreland Energy Foundation, 2010). The most popular policies, as voted for by the tenants, were: rebates for energy-efficient products, uniform standards for rental housing, energy standards for new homes and appliances, bills that separate costs and information provided in different languages (Moreland Energy Foundation, 2010).

Targeting energy-related behaviours, particularly at household level, can reduce the daily impact that households have on the environment (Abrahamse et al., 2007). At this level, both individual choice and broader socio-cultural practices impact on tenants' actions and their attitudes towards greening practices. Human choices and actions are shaped by both collective action towards the management of a particular resource and the individual decision to participate in achieving both collective and individual goals.

Individual choices and behaviours take place within a broader social context, which obviously influences them (Clever, 2007:262). As the everyday practices and habits of individuals are usually reflexive, it is important to change social attitudes in general in order to encourage a conscious change in individual actions. In other words, individuals need to be actively encouraged to change routine behaviours into purposeful actions which, in turn, can become new routines.

Collective action and involvement can be used to create a new awareness of issues such as energy usage, which can then influence the individual to make sustainable changes (Clever, 2007). According to Abrahamse et al (2007), tailored information on the reduction of energy usage, goal setting and obtaining feedback on the reduction of energy usage have been the most successful methods used to encourage a reduction in household energy consumption.

Much of the research on behavioural change has been conducted within the context of social psychology, and this indicates that it usually only occurs if it has been enabled or if it is as a result of a direct intervention. Jackson (2005) explains that, once a given behaviour is repeated, intention becomes less important and new habits are formed. Behaviour becomes a product of routine rather than of conscious thought, which is why habitual behaviours can be the most difficult to change.

As Winefield (2005) explains, many human behaviours that negatively impact on the environment are habitual behaviours that have been learnt over a period of time. Behavioural change programmes are therefore necessary to understand, focus and influence individual intentions so that they can then be turned into habits. External conditions, such as affordability, availability and desirability, also play an important role in making it easier for individuals to make sustainable choices (Winefield, 2005). Without these three conditions, sustainable choices might be out of reach for certain sectors of the population.

Incentives can also be used to persuade and motivate (Winefield, 2005). Monetary rewards have been found to work well during the early stages of an intervention, but can have the reverse effect of acting as a disincentive once they cease.

Research has shown that internal motivators, which develop out of the individual's own desire, are the most effective and long-lasting in promoting change. It is therefore important to the success of any change process to understand what it is that intrinsically motivates the individual.

Winefield (2005) suggests that benefits to health, family life and community relationships can be just as important as financial benefits, and that behavioural change programmes that offer multiple benefits are more effective than programmes that offer only one. Another important component is the focus on moving towards more sustainable actions and attitudes; one that empowers people while also providing incentives that will engage them in a deep and permanent way in order to facilitate long-term change. When communities take ownership of an issue, new social norms are created and individuals are more likely to become involved in collective initiatives (Winefield, 2005).

In 2005, Davis and Durbach measured energy consumption in South Africa's Western Cape Province, and examined how households responded to energy-reducing interventions. In a managed intervention, regular light bulbs were replaced with more efficient compact fluorescent light bulbs. After identifying a control group of households with different preferences, a number of testable hypotheses were developed to investigate attitudes in individual households. Survey data and an operational research model were then used to assess each household's response to the intervention. The findings of the study suggest that an ideal energy balance occurs when the increase in energy consumption necessary to achieve greater comfort is balanced with the desire to save money and to cause less environmental damage. There are nevertheless challenges when it comes to introducing new technology into households, as people are used to technologies that they have used over a long period of time. Some individuals may therefore be apprehensive about new technologies and may decide not to use them or revert back to the old technologies. In order to understand energy consumption patterns and behaviours, there therefore needs to be a strong focus on the attitudes underlying energy-related behaviour, rather than just on the behaviour itself.

## 6.2. TENANT ENGAGEMENT STRUCTURES AND GOVERNANCE SYSTEMS

Tenant engagement is carried out in a number of different ways. In South Africa, community development work is often carried out by organisations working in partnership with SHIs, although these often have the same board members (NASHO Community Development, 2012). Tenants are not represented on these boards, as SHIs are run like social companies which, although they are not geared towards making a profit, operate off a balance sheet and offer a service to tenants.

In contrast, the history of social housing in the UK reveals that even if tenants are represented at board and executive level, this does not necessarily equate to sovereignty or mean that their needs are either represented or met (Bradley, 2008). Bradley's paper examines the history of SHI governance in the UK, and examines how various forces, such as demunicipalisation<sup>1</sup>, ownership transfer and tenant-led governance, have impacted the governance landscape of social housing.

Efforts by the Conservative Party government to address representation and governance resulted in the development of a law referred to as 'Tenant's Choice'. This law represented a strategy aimed at creating free market competition in social housing by enabling tenants to switch allegiances to private sector or housing association landlords.

The strategy backfired when tenant presence on the boards became politically fraught with issues resulting either from tenants failing to engage in strategic governance or from resistance to the presence of tenants on the board by managers and directors of the housing projects (Bradley, 2008). These factors hindered the community incorporation and development processes that the law had attempted to facilitate. The Conservative Party later repealed the law due to the financial implications of tenant control in areas with high investment needs.

The repeal of 'Tenant's Choice' meant that social housing could no longer be run by tenants (Bradley, 2008:882). Both Conservative and New Labour governments supported restructuring strategies that did not interfere with the business management model of housing governance, and tenant co-option onto decision-making council committees was stopped by the Conservative government in 1990 (Bradley, 2008:882).

Other models saw tenants being elected to boards by tenant constituents in order to create the impression of democracy. However, tensions arose when tenant board members used the board to bring up estate-level issues such as complaints about maintenance that had not been resolved. The executive management members asserted that tenant board members should act strategically and not as lobbyists, and there are cases on record of tenant board members being forbidden to take complaints from tenants (Bradley, 2008:884).

These examples from UK social housing governance show how the involvement of tenants on housing estate decision-making boards often highlights the disparity between the needs and desires of the tenants, who live on the estates as consumers, and the executive board members, who see the business of the board as a commercial undertaking and the management of housing stock as a business. The involvement of tenants at management level therefore does not necessarily mean that their needs will be represented and met. In fact, in some cases, their involvement entrenches their inability to achieve self-determination, as their position on boards gives legitimacy to boards that do not represent tenants' interests.

In contrast to participation in high-level governance, tenant interest groups can be much more effective. Networks and support structures are often formed through community gardens, which have been cited as a good way of bringing people together in order to discuss broader issues (Wakefield et al., 2007). Community gardens could therefore be a possible vehicle for mobilising broader discussions on energy and waste management.

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<sup>1</sup> British term for privatising previously municipal owned stock

There are varying views as to what type of engagement and/or co-creative approach would result in the adoption of green technologies by tenants. Some housing associations make unilateral decisions about whether or not to invest in energy efficiency (Hoppe, 2009; Hoppe and Lulofs, 2008). This approach differs from the argument put forward by Rohrer and Ornetzeder (2006), who argue that if green technologies are to be adopted in a sustainable way, it should be the tenants and/or users of that technology who should be involved in the design and implementation of solutions in order for them to be successful.

Tenant engagement can also take the form of education and training. In the Sinclair Meadows social housing scheme in Tyneside (UK), the SHI provides tenants with pre-occupation training that enables them to benefit from their zero-carbon accommodation, and offers further training and support for a further 12 months after occupation (Tanney, 2012). A dedicated community development worker is available to provide technical support and to encourage “community ownership and the development of skills to maximise the benefits of living in a carbon-negative community” (Tanney, 2012:1).

Technologies such as monitoring systems assist tenants to keep track of usage and reduce energy consumption (Tanney, 2012). Consumption is also monitored remotely by SHIs, allowing them to assess whether tenants need more engagement. This demonstrates how effective direct tenant engagement and support can be in reducing energy consumption (Tanney, 2012). According to the Four Housing Group SHI, the acceptance and understanding of green technologies by the Sinclair Meadows tenants is contributing to the development of a culture of sustainable communities, highlighting how important tenant education and ownership are to the successful implementation of green technologies.

### 6.3. TENANT ENGAGEMENT WITHIN A SOUTH AFRICAN CONTEXT

Historically, many low-income South Africans have experienced little, inadequate and unjust engagement over development issues that concern them (Tonkin, 2008:190). Apartheid was extremely restrictive and prohibitive with regards to community engagement, but even post-1994, government engagement with communities is still inadequate. While individuals from low-income groups do participate in voting and community forums, their input and feedback is not necessarily heeded.

The Integrated Development Plans (IDPs), which make up the local planning framework, specify public participation as a priority but, in reality, it is the voices of more powerful groups and individuals in both government and business that make the final decisions (Tonkin, 2008). This is indicative of a widely practiced style of engagement in South Africa, whereby institutions that operated during Apartheid still practice engagement in this manner. This could be an important insight into the style of engagement of SHIs that were operating in the Apartheid era and that are still operating today.

In her study of eight South African social housing projects and three international projects, Tonkin found that those which best catered to the needs of the residents in terms of such issues as service delivery, sustainable environments and community capacity-building, also displayed higher levels of tenant participation (Tonkin, 2008:190). Successful outcomes came about after longer, more intensive participation processes that involved capacity building amongst community committee members and beneficiaries. Critical success factors included access to information and the leadership skills necessary to facilitate informed and collective participation in policy formation, as well as dedicated initiatives to develop strong leaders.

Case studies also demonstrated the positive impact that strong leadership, engaged citizenship and resident participation have on the sustainability of community or housing projects. Outcomes are inevitably affected by a community's ability to organise itself and to participate actively in the relevant housing project. In most cases, NGOs partner with communities but, as resources are limited, there is an argument to be made for government investing in leadership development within communities.

Collective leadership is a process by which communities are consulted and included in the decision-making process so that they can take ownership of the relevant project. Tonkin (2008: 191) asserts that projects will only have legitimacy if there is continuous consultation and participation throughout the entire process. If this approach is used, communities are more likely to trust change agents, and there is more likely to be a development of social capital.

The concept of social capital is important because it is through the creation of social capital that there can be a shift in concept from the provision of housing to the development of sustainable human settlements. Social capital is defined by Gomulia as the capacity of networks to mobilise resources in order to obtain beneficial outcomes for individuals (Tonkin, 2008:99). For Gomulia, trust is the most important feature of social capital, and that this is usually created if individuals or groups of individuals share a common commitment to such values as reciprocity, solidarity, honesty and mutual support, and if they have frequent communication with one another (Gomulia in Tonkin, 2008:99).

The Provincial Government of the Western Cape's (PGWC) Social Capital Formation Strategy aims to build trust through participatory engagement with communities in order to create sustainable human settlements. The strategy recognises the assets of poor communities rather than viewing poor communities as problematic or as having a social deficit (PGWC, 2005).

Community development programmes within the social housing sector are typically funded, and provide job opportunities for tenants, as well as opportunities for them to volunteer. This enables tenants to have more ownership over a programme, and creates employment and skills training opportunities both within and outside the SHI (NASHO Community Development, 2012). Some community development projects generate a profit, and that profit is then re-invested into community development programmes. Communicare in Cape Town, for example, re-invests a portion of its earnings from rentals into community projects. Community development can therefore be an important means of fostering commitment to programmes that require behavioural change.

The Moshoeshoe Eco Village in Galeshwe Township has been one of the few social housing projects in South Africa to include environmental interventions, and this has resulted in substantial savings on electricity bills. The project was developed as a pilot by the Sol Plaatjie municipality in Kimberley and interventions included:

- solar water heaters and photovoltaic panels with back-up instantaneous gas water heaters;
- gas stoves;
- energy-efficient light bulbs and appliances;
- innovative urine-diversion toilets to promote water conservation;
- an alternative dry-sanitation system to recycle grey and black wastewater; and
- a sand-filtered grey wastewater system, which diverts water into collection ponds to re-use for irrigation (Tonkin, 2008:150).

A critical success factor in this case was open and frank discussion with residents regarding the environmental aspects of the project, especially the sanitation systems. The municipality found that communicating the benefits of these technologies, especially the financial savings, enabled the community to accept the interventions (Tonkin, 2008:150).

Tonkin indicates that social housing developments will only be truly sustainable if all players, including developers, architects, builders, tenants, planners and owners are involved in the planning and implementation process. Long-term sustainability objectives can only be achieved if the whole lifecycle of the building is considered right from design through to construction, long-term use, disposal and recycling (Tonkin, 2008:151).

The best practices incorporated into the Kuyasa Project's retrofitting programme in Khayelitsha Cape Town made a significant impact on the socio-economic well-being of the community.

Kuyasa set out to retrofit a number of government-subsidised houses developed under the ANC government's early Reconstruction and Development Program (RDP). The RDP was first implemented in 1994 to address low-income housing shortages (ESMAP, 2012). Kuyasa, in turn, was an initiative of the City of Cape Town which, working in collaboration with the community and an NGO partner - South South North (SSN) - improved the living conditions of low-income residents living in RDP homes by reducing fossil fuel-based energy, costs, and emissions. This was achieved by improving the thermal performance of low-income housing units, providing energy-efficient lighting and improving water heating efficiency through the use of solar water heaters.

The results from the retrofitting programme were as follows:

**Local Job Creation:** The project created 87 job opportunities locally and offered entrepreneurial opportunities for trained residents at a regional level (ESMAP, 2012). Residents were trained to become plumbers, electricians and builders, and learned to install and maintain renewable technologies (ESMAP, 2012). Results showed that almost half of the residents that benefitted from skills training secured full-time jobs and/or business opportunities (ESMAP, 2012). The study did not mention how sustainable these job opportunities were beyond the duration of the project.

**Increase in Household Income:** All residents involved in the programme reported cost savings and a resulting increase in disposable income as a result of the reduction in energy consumption (ESMAP, 2012). Residents reported an average saving of R150 per month per household during the winter months due to reduced paraffin and electricity usage (ESMAP, 2012).

**Community Upliftment:** A UNDP report stated that the reason one of the residents had for volunteering to become a community facilitator on the project was that he had noticed how the community was depressed and "down", and that he saw the project "as an opportunity to change that, although [he] didn't know at the time it would take that long to change"(UNDP, 2010).

## 7. CHALLENGES TO THE GREENING OF SOCIAL HOUSING

The transition to increased sustainability in SHI housing projects presents challenges such as:

- added costs for housing institutions;
- potential costs for tenants;
- a lack of investment and/or financing for retrofitting and other greening interventions;
- an unevenly distributed greening benefit;
- the difficulty of obtaining tenant buy-in; and
- the potential rebound effect.

There is a higher cost associated with the initial instalment of green technologies, which comes at a premium (Bradshaw et al., 2005). The social housing sector therefore faces the significant challenge of obtaining funding or financing for retrofitting programmes intended to protect clients from energy poverty and rising energy costs. Similarly, SHIs themselves also need protection from rising energy costs (Clark and Hay, 2012).

### 7.1. WHO FOOTS THE GREENING BILL?

Some analysts advise SHIs to use energy efficient building designs and materials in order to increase the 'green value' of social housing projects (Milin, Rakhimova, Zugravu and Bullier, 2011). With increasing regulations and a dependency on public funding, there is certainly an incentive for SHIs to invest in green building technologies in an effort to avoid the extra expense of future refurbishments to meet new regulatory standards (Milin et al., 2011).

South Africa has introduced a new set of green building regulations, which specify a number of green requirements on all new builds (SANS 10400). However, research conducted in the UK has found that tenants do not necessarily want to help pay for the costs of greening (Bradshaw et al., 2005). Although they see potential benefits, they express reluctance to accept the responsibility for paying for improvements, mainly for two main reasons. Firstly, their interest in the property is typically short-term, and they see long-term advantages accruing to the landlord rather than to themselves. Secondly, despite possible protection under the terms of the lease, tenants are concerned that improvements will lead to rental increases that will offset revenue savings (Bradshaw et al., 2005). Any environmental improvements are therefore regarded as problematic. The research found that the benefits of greening were found to be unevenly distributed amongst tenants and building owners, with most long-term benefits accruing to the owners (Bradshaw et al., 2005).

The Kuyasa CDM Project was developed to fund various green interventions on the South African Government's so-called Reconstruction and Development Plan (RDP) houses. RDP homes were developed to address the enormous backlog in housing for the poor in post-apartheid South Africa in 1994. RDP homes differ from social housing in South Africa as they are handed over to South African owners who are on a waiting list. Still, the model does indicate a potential approach to financing the retrofit of existing housing. RDP homes are often built with little insulation – like ceilings – and do not have hot water geysers. The Kuyasa project retrofitted these homes with ceilings and floor insulation along with solar water heaters. It was funded by both government and non-government organisations rather than by private business. Despite securing loans for capital costs, Kuyasa nevertheless took a loan from the South African Export Development Fund (SAEDF) as the project was not intended to generate income. Sufficient revenue was subsequently raised to cover the loan repayment of approximately R21.8 million. The developers used carbon credits to assist in financing the project. In addition, a modest contribution of R30 per month from homeowners was negotiated for a period of three years to supplement the project budget. This established commitment and buy-in from the homeowners, who actively supported and engaged in the project. The fact that the residents involved were homeowners rather than tenants probably led to them being more deeply invested in improving their energy efficiency.

Obtaining financing for greening projects in social housing developments is difficult as the initial premium costs need to be borne by the developer, while many of the benefits in terms of savings accrue to the tenants (Bradshaw et al., 2005). In order to benefit from these savings, the developer needs to retain a long-term ownership interest. However, if tenants were to be expected to contribute towards the cost of greening, this might be considered counter-intuitive to the objective of providing affordable housing because of the higher nett costs for the tenants. Some commentators nevertheless see this dual-financing model as striking a balance between tenant needs and the parallel need to implement sustainable and cost-saving initiatives that will benefit tenants, the environment and the social housing sector in the long run. (Bradshaw et al., 2005).

In an extensive study of retrofitting in social housing institutions across the European Union, Milin et al (2011) recommend that tenants should not have to pay more for the increase in energy efficiency in social housing developments. Even though tenants may benefit from lower energy costs, they argue, they are not interested in investing in retrofitting because they do not own their units. The study's authors further argue that retrofitting adds 'green value' to the building and that the owner should therefore meet the cost of investing in green technology.

## 7.2. REBOUND EFFECT

The rebound effect is a phenomenon that occurs when increased efficiency and the resulting reduction in the cost of a consumer service leads to an increase in consumption (The Institute for Sustainability, 2013). The rebound effect can be direct, such as when occupants heat their homes for longer because they cost less to heat; or indirect, such as when occupants spend their energy savings on more energy-intensive items such as travel or car ownership (The Institute for Sustainability, 2013).

Economy-wide rebound effects happen when there is increased consumption due to the economic growth resulting from the introduction of new, more energy-efficient technology (Davis & Durbach, 2011). The rebound effect is a key risk in any energy-efficiency programme, and highlights why tenant engagement and education is an important aspect of every greening project.

## 8. CONCLUSION

The role of tenant engagement is critical for the acceptance and uptake of greening interventions. The governance structure of SHIs can significantly influence tenant engagement because this determines exactly how much power tenants have in executive decision-making and to what degree their needs are recognised and met. These structures determine who drives the decision to implement greening interventions in a social housing project which, in turn, can impact on the level of acceptance of these interventions by tenants.

The efficacy of a project can be positively influenced by using engagement to gain support for the project, as well as to improve social capital, provide information about consumption and usage patterns and manage consumption behaviour post-intervention. Engaging tenants on the issue of consumption is necessary if a meaningful reduction is to be achieved.

However, the goal of reducing resource consumption is often in conflict with other goals, especially in cases in which the objective of greening is primarily to address energy poverty rather than to reduce energy consumption. Nevertheless, greening does offer benefits to both tenants and the management of social housing projects apart from the potential to reduce consumption. These benefits include resource efficiency, improved health and environmental quality, an enhanced sense of community, job creation and skills development (Bradshaw et al., 2005). Even though a cost saving or a reduction in the use of resources might not be realised, other socio-economic and environmental benefits can result from greening, and these can serve as drivers of acceptance for greening initiatives. These drivers can be used to engage tenants on the issue of greening. Tenants can, for instance, be engaged to keep resource consumption down in order to achieve these outcomes.

Deciding who bears the cost of greening nevertheless continues to present complex financing challenges, and the question remains one of whether the cost should fall to tenants or to SHIs - or both. In some cases, non-profit companies have partnered with the public sector in order to finance greening projects in an attempt to mitigate the initial high premium associated with retrofitting or green building, but this has proven to be an unsustainable model.

In some countries, difficulties have arisen due to contractors being reluctant to embrace new greening methods or building regulations specifying new building materials.

'Gateway' community development programmes like gardening can be an effective way of rallying support for interventions, and can also establish a precedent for positive engagement with tenants on other greening interventions. In most cases with successful outcomes, continual engagement through communication programmes and training needs to happen prior to, during and after greening interventions in order to realise the goals of these programmes.

# PART TWO: CASE STUDY

A review of research conducted into South African social housing institutions to determine how tenant engagement practices have been employed in the implementation of greening initiatives.

## 1. INTRODUCTION

Primary research was conducted during the months of September to November 2013 to ascertain the extent of greening in SHIs that are members of the National Association of Social Housing Organisations (NASHO). It also set out to determine what types of tenant engagement practices had been employed in these greening interventions.

The results of this baseline research will be used to inform the WWF-SA/NASHO Greening of Social Housing project, which will be implemented in partnership with member SHIs in 2015. They will also be used to provide the social housing sector with a platform for future research on greening interventions within the Southern African context.

## 2. METHODOLOGY

The research methodology involved a baseline study of tenant engagement and current green social housing interventions in the South African SHI sector. It was conducted by the Greening of Social Housing project in collaboration with NASHO, which aims to build capacity within the sector.

The sample size consisted of 18 member organisations that were recruited via email and follow up telephone calls. All of the Chief Executive Officers (CEOs) and their respective personal assistants in these institutions were contacted using a standardised email, which included a description of the project, an outline of its aims, a questionnaire and a confidentiality agreement.

The questionnaire consisted of four questions focused on determining what greening interventions the SHIs had implemented or were currently implementing in their housing projects. It also set out to canvass the contact details of the best person in the organisation to speak to about these interventions and the associated tenant engagement. The SHIs had two weeks to complete and return the questionnaire, and reminders were sent out prior to the completion deadline. Of the 18 questionnaires sent out, seven were completed and returned.

The completed questionnaires were collated into a single document and the preliminary findings were presented to the Greening of Social Housing Reference Group. All seven respondents were then contacted a second time for a follow-up interview, either over the phone, via email or in person, depending on the proximity of the researcher to the SHI and the availability of the relevant SHI personnel. Structured interviews were chosen as the method for the follow-up baseline data collection because there were two researchers collecting the information and the structured interview format ensured that the same questions would be asked in the same sequence in each interview. This made it possible to aggregate the results with confidence and to make accurate comparisons. A combination of open-ended and closed-ended questions was included in both the questionnaire and interview structures to allow for both qualitative and quantitative analysis.

The structured interviews took approximately forty-five minutes to complete, and were conducted with SHI staff members such as the CEO, operations manager and/or community development specialist. Out of the seven requests sent out by email, which were followed up telephonically, four interviews were conducted within the allocated timeframe of three weeks. All responses were then collated into one central document for analysis.

Possible reasons for the poor response to both the questionnaire and the interview requests could include lack of capacity with the relevant organisations. Of those individuals who did respond, a number indicated that their organisations had not done any greening. This could also account for the lack of response from the other SHIs, which may also not have implemented any greening initiatives. It would nevertheless have been helpful to gain a better understanding of the barriers to greening interventions experienced by the various SHIs that did not respond.

This indicates that further research into the barriers that SHIs might be facing is required.

### 3. GREENING OF SOCIAL HOUSING INSTITUTION STOCK IN SOUTH AFRICA

#### 3.1. TYPES OF GREENING INTERVENTIONS EMPLOYED IN SOCIAL HOUSING PROJECTS

The greening interventions implemented by the seven respondents to the baseline questionnaire are summarised as follows:

**Table 1. Summary of current SHI greening interventions**

Green Intervention	Social Housing Institution
Low-electricity fittings	SOHCO
Water-saving fixtures	SOHCO
Planting of indigenous plants	SOHCO
Recycling of plastics, paper and glass	SOHCO, JHC
Urban gardens	JHC, Communicare
Solar water heaters	SOHCO, Communicare, JOSHCO
Water, electricity and heat meters	Communicare
Heat pumps	Msunduzi, Madulammoho, OHA, JOSHCO, JHC
Rooftop gardens	JHC
Rainwater collection	Msunduzi, OHA, JOSHCO

As is evident from this analysis, the most popular interventions are heat pumps, solar water heaters and rainwater collection systems. The least implemented interventions are rooftop gardens, low-electricity fittings, water-saving fixtures and the planting of indigenous plants.

A potential reason for certain solutions being used more than others could be the cost of implementation. Rainwater barrels, for instance, are relatively cheap and easy to install. In comparison, meters and heat pumps are expensive and usually need to be installed by an external company, increasing the overall cost of the intervention. The WWF-SA/NASHO Capital Costs Report nevertheless indicates that heat pumps seem to be the most used intervention, and are expected to yield the greatest long-term savings in both economic and environmental terms. Another potential reason could be the degree of knowledge the respective SHIs have about the various greening interventions available.

Food gardens are another low-cost strategy to alleviate financial burdens on tenants and their families. According to Lindi Malinga, Managing Director of Makhulong A Matala, a community development programme within the Johannesburg Housing Company, food gardening allows tenants to provide for themselves, to learn entrepreneurial skills by selling surplus fruit and vegetables, and to support the sustainability of the project through garden maintenance, composting and the saving of seeds.

One of the difficulties related to food gardens cited by the respondents is, however, the fact that appropriate arable land is not always available. Another issue highlighted is the availability of water to sustain the garden, which is particularly important if there are no rainwater storage facilities, if there is a limited supply of water or if the cost of piped water is high. In cases such as these, the cost of providing water for the gardens has to be absorbed by SHIs.

In addition to the issues of lack of space and the costs associated with food gardening, Lindi Malinga has also found that issues related to sharing the food produced sometimes arise, and that there can be disputes amongst tenants about who has put more effort into the garden. These disputes are often dealt with by tenants employed by the SHI to manage the garden, who are therefore in a position of authority.

### 3.2. SOCIAL HOUSING INSTITUTION TENANT ENGAGEMENT STRATEGIES

All four SHIs that participated in the structured interviews engage with their tenants through monthly newsletters that are distributed to the tenants' homes. These newsletters often contain practical information on energy-saving techniques and recycling, as well as updates on any greening interventions that may be taking place within the development. The SHIs also partner with other organisations, both commercial and non-profit, to provide education and skills training programmes for tenants with the purpose of developing a stronger understanding of energy-saving strategies and greening interventions.

Three out of the four respondents had organised workshops for tenants with the parastatal electricity provider — Eskom. These included role playing exercises, especially with the youth, as well as education about electricity. A potential limitation of these two approaches is that it leaves out certain sub-sections of the tenant population such as illiterate and non-English-speaking individuals, as well as people from certain age groups – i.e. those of a working age and who are employed.

According to the director of SOHCO - Heather Maxwell - hand-outs, newsletters and other literature are an ineffective way communicating with tenants, as they cannot or do not read them. In her experience, direct and hands-on education related to energy-saving interventions and metering, for example, is a more effective means of engagement.

Further methods of engagement involve recruiting interested tenants to create urban food gardens on rooftops or on land surrounding their buildings. The Johannesburg Housing Company partners with non-profit organisation, Food and Trees for Africa, to establish such food gardens. Food and Trees for Africa offers a free programme on how to start and develop a garden, as well as practical training in garden maintenance. The organisation remains involved on a long-term basis, and provides support if and when needed.

CommuniCare assists in the development of urban gardens by providing workshops and information sessions that enable tenants to understand the benefits of growing their own food. Food gardens are an important means to address food insecurity and energy poverty as tenants are often unable to afford enough fresh food, and are unable to prepare it if the cost of electricity is too high. In this case, the motivation for buy-in is that tenants benefit directly from the activity.

Other tenant engagement processes focus on recycling. These programmes are run by tenants and community volunteers, who hope to gain experience in the field and obtain employment. They take on the responsibility of managing the recycling process in their buildings, which enables them to keep the buildings clean and to earn money from returning recyclables. Topics such as recycling, responsible energy usage and waste control have been raised at monthly tenant meetings which have proved to be a good platform for raising topics such as these.

## 4. WHAT IS THE REALITY OF THE CHALLENGES TO GREENING INTERVENTIONS?

The challenges to greening interventions in social housing in South Africa are not only related to economic constraints, but also to social and political challenges. Without more compulsory government-led energy efficiency regulation standards, tax-breaks and compliance standards, there is little incentive for SHIs to implement green interventions. In addition to the near-absence of greening regulations (interviews prior to instatement of SANS 10400), SOCHO, JHC, and Mombela state that there is little information on greening strategies and technologies available to SHIs.

According to Carel de Wit, operations manager at JHC, “there isn’t information that you can trust here in South Africa [and that] gives you a breakdown of what you need to do in an intervention. Everything is still new so you don’t have reliable, comprehensive information available. The technology is there but the experience and calculations are not, so it’s still very theoretical”.

Concern has also been expressed about the efficacy of available technologies and about how long they will be effective. The greening sector in South Africa is fairly new, and developers are sceptical as to how long these technologies will last before they need to be replaced. Certain technologies, such as solar water heaters, have also received bad publicity due to faulty installation in RDP housing projects.

In addition to the lack of information about greening, survey participants also expressed concern about the cost constraints of greening interventions. As described in the literature review, there is a high up-front cost to institutions when implementing greening interventions but, if done correctly, these can deliver long-term savings for both SHIs and tenants. All four participating SHIs highlighted that the upfront capital costs of greening interventions are a major constraint to engaging in further initiatives. As stated by Communicare, “The upfront capital costs are difficult. The benefits are amazing, but the challenge is still for us to juggle it cost-wise ... we hope we will reach the stage where it’s easier, or at least have the tenants start paying a portion of the intervention for the cost recoupment”.

This sentiment reflects the feelings and concerns of all participants. If upfront costs were to be more affordable, SHIs would be more likely to be able to obtain financing and to implement further greening interventions.

The research questionnaire focussed solely on extracting information from SHIs, and tenants were not interviewed to ascertain how they would feel about sharing the cost of greening interventions. Based on existing literature, the general opinion expressed by tenants is that they would not be prepared to foot the bill, even though they would ultimately benefit from the resulting cost savings. This comes down to pressure on their budgets and the fact that many have no private stake in their homes. Tenants are also opposed greening interventions if the cost will result in an increase in rental.

## 5. WHAT ARE THE REAL BENEFITS OF GREENING INTERVENTIONS TO TENANTS AND SHIS?

Participating SHIs all said that the overall feedback from tenants about greening interventions has been positive. This is partly due to the fact that they help tenants to save money by reducing the overall cost of electricity, by providing alternative water sources for laundry and gardening, by offering a financial benefit through recycling programmes, and by making the living environment cleaner and more pleasant.

Tenants also benefit by receiving information and education to assist them in managing energy and water consumption, in saving money on the cost of utilities, and in gaining skills through interventions such as urban food gardens. All of these benefits help tenants to acquire new skills, build social capital and be more resilient to the threat of poverty. Through the various engagement processes, tenants also have the opportunity to participate in workshops and become involved in community events that further enable them to build social capital.

The primary focus of social housing is to provide low-income tenants with a safe, affordable and comfortable place in which to live. If the savings resulting from greening interventions are substantial, this promotes tenant acquisition and retention, while also offering tenants significant cost savings. The intention of greening interventions is therefore not to improve the bottom line, but rather to facilitate an understanding that human actions have a direct impact on the environment and to establish that it is important to put a greater value on the finite resources upon which we all depend. An even greater goal is to improve the lives of people living in social housing developments and to promote the development of a cleaner and healthier environment.

## 6. CONCLUSION

The results of the research study show that greening is still a very novel concept. The 38.8% response rate indicated that there is a lack of operational capacity to deal with greening issues within SHIs, as well as poor comprehension about what these interventions involve. It also indicated that there is a low level of uptake of greening technologies in social housing.

The most popular greening interventions were heat pumps and solar water heaters. The least-implemented interventions being rooftop gardens, low-electricity fittings, water-saving fixtures and the planting of indigenous plants. The reasons cited for the implementation of the popular interventions were cost and benefit.

SHIs also reported that metering and heat pumps yield the greatest savings in terms of long term economic and environmental costs. Roof gardens, on the other hand, offer socio-economic benefits to tenants, such as food and income security, as well as supportive community structures. They do, however, sometimes result in difficulties in social dynamics as a result of disputes over ownership, an equitable share of the labour and the beneficiaries of the yield. Systems set up to deal with these social disputes yielded further value to the gardening intervention by promoting an ability to deal with and manage conflict in tenant community groups. Recycling programmes have a similar approach, and result in benefits such as the creation of income, the establishment of a base for further education relating to resource consumption, and opportunities for life skills development.

SHIs reported various strategies to address greening interventions and resource consumption. Most reported sharing information about the planning and roll-out of greening interventions and about their tenant engagement processes. Some reported working with external stakeholders like Eskom and Food and Trees for Africa in order to conduct information sessions and provide skills training related to the interventions. Initiatives like these can, however, be problematic, as they exclude residents who are illiterate, not English speaking, of certain age groups and who work during the day. One SHI director cited that direct, hands-on education was the most effective engagement technique, and that their institution had found literature the least effective, as tenants did not read it.

Challenges to the greening of social housing include the lack of push and pull strategies such as regulations, compliance monitoring, established standards and financial incentives such as tax breaks. The most important of these is the high upfront capital costs associated with greening, coupled with limited cost recovery through payment for services. This is further complicated by the lack of information and of well-established, trustworthy technology.

In terms of who foots the bill for greening interventions, SHIs indicate that tenants could contribute towards the implementation cost. Although this research project did not include interviews with tenants, the literature reveals that tenants are often resistant to sharing the cost of greening interventions as they do not reap the benefits associated with ownership and have significant budget constraints. Tenants are also resistant to greening interventions if the cost of the intervention is recovered through increases in rentals.

The feedback from SHIs indicated that greening interventions definitely yield measurable benefits, including lower utilities costs, community solidarity, income, opportunities to benefit from training, and a cleaner and healthier living environment. Education related to utility consumption, cost-saving behaviours and skills development all increase the social capital that accrues from these interventions, and results in both individuals and communities being more resilient to external shocks that affect the poor.

In summary, this research indicates that there are substantial social, economic and environmental benefits to greening interventions, provided that financing models can be found to reduce the high upfront costs of introducing the technology and to minimise the strain on tenants' already constrained budgets. Hands-on engagement is the most effective strategy in facilitating uptake amongst tenants and for ensuring that the benefits of the intervention are maximised by a more economic consumption of resources. A powerful co-benefit lies in increasing social capital and creating a buffer to external shocks that impact on tenants' welfare and livelihoods.

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