

# INVESTMENT APPRAISAL TOOLS AND SUSTAINABILITY EVALUATION IN SOCIAL HOUSING

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Conventional decision making in all aspects of the asset management sector has largely been based around the key concepts of risk reduction and maximisation of returns. Yet the RICS (2009) has called for surveying professionals to significantly modify their current practice to ensure it aligns with the government policy which has sought to encourage sustainable development through sustainable construction and property management. For organisations operating in the social housing sector this has meant reinvesting, through regeneration and improvement programmes in their existing socially excluded neighbourhoods in order to deliver 'sustainable communities.' The work reported in this paper focuses on a quantitative study executed to assess the extent to which current practice in the social housing sector has been modified to consider sustainable aspects of property investment, and specifically to identify the tools and techniques used. Using a questionnaire survey data was gathered from 250 social housing providers in the United Kingdom achieving a response rate of 15%. The interim findings suggest whilst social housing property directors understand the importance of considering sustainability they have not yet achieved the paradigm shift in terms of its implementation called for in the literature.

Keywords: asset management, investment appraisal, social housing sustainability.

## INTRODUCTION

Over the last two decades the nature of the social housing association has changed from being social housing providers into financially freestanding commercial organisations (Flier and Gruis 2002). Mullins (2010) opines this change is likely to have significant implications for the future evaluation of the social housing sector. Yet in the short term, these changes are forcing social housing to function as commercial businesses, in a difficult, fast changing and dynamic trading environment. As a result these organisations face the significant challenge of balancing their social objectives with the harder commercial appraisals required to sustain the business. To continue to do this successfully it is imperative housing associations adapt to the changing demand and aspirations of their customers. A goal which, if it is to be attained, requires them to place sustainable communities at the heart of their activities so as to ensure lasting solutions to housing problems are generated.

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The research reported in this paper identifies and appraises the extent to which the dimensions of sustainability influence the asset investment processes. The work builds on the authors' initial exploratory research (Higham and Fortune 2011) which suggested that there was a lack of suitable toolkits for the appraisal of sustainability in the social housing sector and that this had prevented any meaningful evaluation of the socio-economic benefits of potential investment. The paper concludes by proposing further research to identify the key socio-economic criteria which are likely to influence the final investment decision.

## **THE LITERATURE**

### **Investment Appraisal in Social Housing**

Over the last six decades, a number of researchers (Needleman 1965; Lean 1971; Bell 1981; Boon and Robertson 1990) have developed various tools, in an attempt to provide a suitable model for housing investment decision making. Prior to 1980, these models largely adopted a pure economic approach to the appraisal of property investment decisions. The first, proposed in the seminal work of Needleman (1965) provided a purely economic tool, which facilitated the evaluation of possible investment levels. The Needleman model restricted itself to the consideration of a project's demolition and rebuilding or various levels of refurbishment based on their capital cost. The model aimed to devise the most appropriate approach but it failed to factor in any allowance for social costs, such as disturbance, which may be involved in the execution of the project (Nutt *et al.* 1976: 17). Whilst this work presented the first model, several modifications were proposed, these included Sigsworth and Wilkinson's (1967) amendment to include inflationary cost increases and Schaaf's (1969) suggestion that depreciation should be included within the formulation. The next step change in such investment models, emanated from the work of Lean (1971). This work advocated the need to base decisions on the perceived value of a proposed building. Although grounded firmly in economics, Lean's proposals did consider accommodation standards and to some extent the environment, however, both these variables were allocated a capital value.

Increasingly in the social housing sector, there has been a growing recognition that housing associations cannot invest in housing alone, it is now imperative that such organisations recognise the importance of generating a social as well as a financial return whilst also having a successful and sustained impact in their communities to create successful neighbourhoods (Mullins 2010: 3). This shift in focus within the sector has led one major body, the National Housing Federation (Treanor and Walker 2004), to advise member housing associations that the retention and maintenance of existing stock and the investment in new developments cannot be completed in isolation from the wider community. If this vision is to be achieved it is asserted that the sector will require refined option appraisal tools which align the financial decision with the wider socio-economic benefits such investment will trigger within the wider community.

This assertion is however not a recent one, as early as 1981 academics were identifying the limitations of the finance led approach to option appraisal. The seminal work of Bell (1981) called for a paradigm shift in emphasis towards option appraisal models which consider wider benefits of investment. Bell was critical of the earlier work indicated above and argued that decision making should be reflective of the social and environmental importance of a proposed housing development and not just the economics of the decision. To reflect this change in focus, Bell proposed a more

holistic model. The model was devised through the medium of case study research with Bolton Metropolitan Borough Council. Bell postulated that investment decisions in the housing arena should be based on a full appraisal of both the project's financial decision attributes together with the anticipated environmental and social benefits. It was argued that such an approach would allow the professional to reach an informed decision based not only on the anticipated financial resources required, but to also map to the outturn social and environmental benefits against the various spend profiles. However, Bell's work did not provide sufficient detail of the decision evaluation process. This omission limited the model's practical applicability. In their later work undertaken on behalf of the National Housing Federation Treanor and Walker (2004) attempted to advance Bell's seminal work. Through the analysis of five case study organisations the work identified eighty five possible socio-economic indicators which could be integrated into the evaluation process for neighbourhood level investment appraisals. To facilitate this wider project appraisal the authors proposed a simple analytical framework in which each of the variables could be evaluated and quantified. Although advancing Bell's earlier research the work failed to provide clear guidance in relation to the identification of socio-economic variables which would be critical to the final decision or the process by which the housing association should evaluate and select potential variables. Such omissions left the user with the difficult task of deciding which social, economic and environmental aspects were the most relevant and which should be incorporated or be rejected.

#### **Sustainability in the social housing sector.**

Sustainability has become a key component of new social housing development over the last decade, with the Homes and Communities Agency (HCA) and its predecessor the Housing Corporation issuing a myriad of best practice and policy guidance to housing associations, registered social landlords and others involved in the delivery of social housing. The resulting effect of this increased focus towards the attainment of sustainable development within the sector triggered a significant growth in the number of toolkits developed. Since 1998 the social housing sector has been inundated with frameworks, toolkits and models aiming to provide practitioners with guidance on how sustainability should be implemented in practice (Carter and Fortune 2007).

Yet when these toolkits are examined in detail, the deficiencies in their applicability are revealed. As part of their EPSRC funded research Edum-Fotwe and Price (2009) evaluated 625 potential sustainability assessment toolkits available to assist built environment stakeholders adopt and implement sustainability. The researchers concluded that none of toolkits adequately evaluated the full sphere of sustainability. This view was further advocated by Brandon and Lombardi (2011: 25) who opined that most of the toolkits available were "either incomplete or totally unstructured" in either case they asserted that their application was impossible.

Some of these toolkits, including 'the sustainability policy wizard' (Talbot 2002); 'A toolkit of indicators of sustainable communities' (Long and Hutchins 2003) and 'the six steps to sustainable development for the social housing sector' (Beyond Green 2004) are so comprehensive that attempts to implement them at either individual project or even strategic portfolio level would be almost futile. Closer examination of the guidance reveals they provide the practitioner with advice on every possible manner of incorporating sustainability. Yet the range of possibilities is so immense that incorporating all the guidance into one scheme would be unattainable. This would leave the housing association with the difficult decision as to which aspects of the

guidance are most relevant and which should be incorporated or rejected. In addition to these, other more commercially focused toolkits' have been developed such as the BREEAM toolkit developed by the Building Research Establishment (BRE), and the housing focused toolkits such as the Code for Sustainable Homes and Ecohomes XB. The code for Sustainable Homes is a version of BREEAM specifically designed for the evaluation of housing. This assessment tool aims to balance environmental performance with quality of life indicators. The strands of sustainability assessed are grouped into seven categories: energy; water; pollution; materials; transport, ecology and land use; health and wellbeing. The standard has been well received and provides a clear grading system for potential schemes to be compared. The apparent suitability of the tool, led the Housing Corporation to commission a modified version of the assessment model for maintenance and refurbishment interventions to existing buildings (Yates 2006). Yet the tool's heavy environmental focus, the use of a total aggregate score or rating and concerns about the robustness of the methodology (see Rees 2009) has raised concerns that the tool maybe masking some unsustainable aspects of developments and may even led to unsustainable solutions being erroneously deemed sustainable (Rees 2009).

Surveys of industry practice by Carter and Fortune (2007) and later by Cooper and Jones (2009) have reaffirmed the social housing sectors willingness to engage with sustainability, whilst also raising important questions about how this willingness is translated into actual practice. The latest large scale survey compiled by Cooper and Jones (2008) as part of a major research study into social housing maintenance practice funded by the Engineering and Physical Research Council suggests that the majority of respondents feel sustainability was an integral aspect of the maintenance decision process. When the same respondents were asked to rate the suitability of existing sustainability toolkits ranging from conventional two-dimensional models such as the stock condition survey, through to the comprehensive frameworks including Housing Quality Indicators and Ecohomes XB. Then the majority of respondents evidenced a clear bias towards conventional toolkits. Such respondents indicate that practitioners continue to favour tools which fail to adequately consider sustainability. However, the survey's limited focus prevents the findings being accepted as a full mapping of the state of the art in terms of sustainable decision practice in the social housing sector. Nonetheless, the work of Cooper and Jones (2008) adds weight to Brandon and Lombardi's (2011: 24) assertion that existing sustainability toolkits are insufficiently developed to be applicable in practice.

The literature reviewed above reveals that the increased importance the adoption of sustainable development principles into built environment practice will have if practitioners are to grapple with the conflicts between the business decision-making process and delivery of the Triple bottom-line of sustainable development practice. This conflict is emphasised by the RICS (2009:11) in their report which identifies that "in no area is this a greater challenge than in asset management, where conventional decision making is based on the concepts of risk reduction and maximisation of returns". Yet as the literature review reveals there are no adequate techniques available to assist the built environment professional in the implementation of this paradigm shift in practice.

## **RESEARCH APPROACH**

The research aimed to evaluate how housing and built environment professionals, at the delivery level, both interpret the policy documents pertaining to sustainable

communities and explore how their interpretations are reflected in the early stage evaluation of both projects and programmes of asset management. The results of the survey are anticipated to assist in the eventual development of a framework to aid practitioners make sustainable asset investment appraisal. The research reported in this paper aimed to evaluate the current state of the art relating to the theory of strategic investment appraisal together with the perceived importance of sustainability in the social housing sector. This called for a quantitative research design that made use of a measuring instrument that allowed data to be collected from a large number of practitioners in the field. Creswell (2003) indicated that the most appropriate data collection tool to use for this study was a questionnaire survey. The design and use of such an instrument enabled the study to ascertain the extent to which organisations had started to recognise the importance of sustainability to the asset management process. In addition the study also identified whether this recognition had been translated into practice, through the investment appraisal process and more specifically the nature and type of toolkits selected to facilitate this process.

Following the piloting of the questionnaire, it was resolved to develop a random sample of 250 property directors drawn from a commercially available database of all the 2,000 social housing providers operating across England and Wales. The electronic survey distributed via email and administered in a single phase achieved a 15% response rate (n=35). The results obtained cannot necessarily be deemed representative of the social housing sector as a whole as a result of limitations in both the size of the sample frame and the response rate achieved. Rather a further phase of data collection is required to increase the response rate to a level where the results become statistical significant and therefore allow more meaningful conclusions to be drawn.

## **KEY FINDINGS FROM THE SURVEY**

The results have been analysed using descriptive statistical techniques in order to determine: (i) current priorities for investment in the social housing stock; (ii) the level of importance attached to sustainability within the organisation; (iii) the extent to which asset management practitioners consider sustainability to be important to their decision making process and finally (iv) appraise how this translates into the practice of investment decision making, using toolkit selection as a proxy indicator.

### **Focus of Investment Expenditure**

The first section of the questionnaire asked social housing practitioners how stock investment was distributed. The analysis of the data shown in figure 1 revealed a drive towards the delivery of capital projects in terms of the construction of new homes, for either sale or rental. This work accounted for approximately 30% of RSL investment expenditure and 15% of traditional housing association expenditure. Yet neither type of organisation demonstrated a major commitment to the refurbishment of their existing stock as the data revealed that investment in this area only accounted for between 6% and 7% of total investment expenditure.

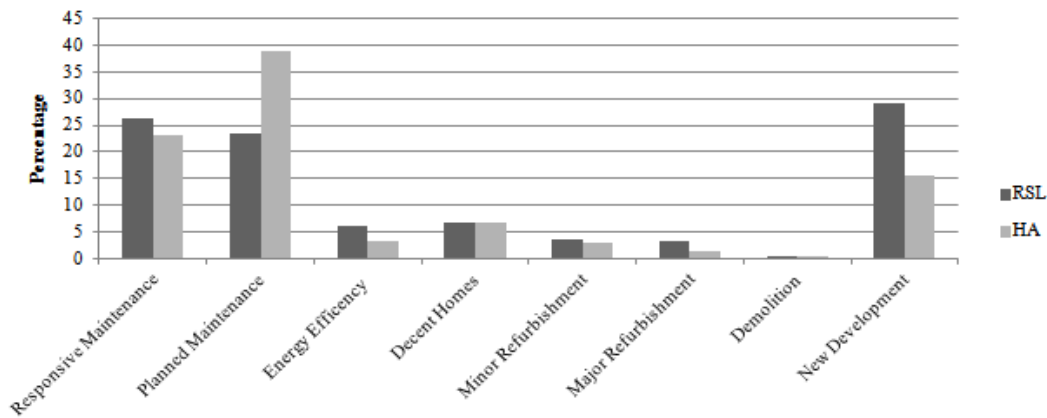


Figure 1: Focus of Investment in Social Housing Providers

### Importance of Sustainability

The second section of the questionnaire asked asset managers questions which aimed to appraise their commitment to delivering sustainable asset management investment. The first questions sought to appraise how sustainability had been integrated into the business at an organisational level, primarily through the implementation of a sustainable development plan. The results revealed that only 49% of the organisations surveyed had a sustainable development policy in place. Although a further 21% of respondents highlighted that they were in the process of developing such a policy.

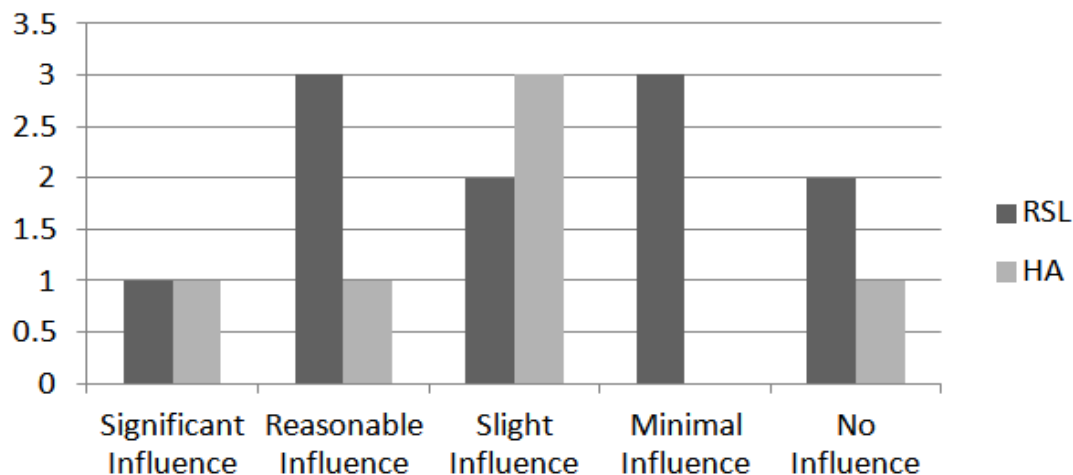


Figure 2: Influence of Sustainable development Policy on Investment Decision Making

Those respondents who indicated they had or were developing a sustainable development strategy were then asked to appraise how they felt the policy had influenced their organisations investment decision making. Figure 2 shows the breakdown of how respondents from both RSL's and HA's felt that their sustainable development policy influenced their approach to investment decisions. This question used a five point likert scale, with the middle range response being "slight Influence". Of the 17 respondents indicating their organisation had or were developing a sustainable development strategy some 35% (6) felt the sustainable development policy had not influenced the investment decision process. A further 35% (6) of respondents felt the policy had impacted on the approaches taken to their decision making. The final 30% (5) of respondents opted for the neutral response, suggesting that the policy had only had a slight influence on their practice. However, the largest

percentage of respondents appeared to suggest the introduction of an organisational policy relating to sustainability would influence their decision making environment.

The final question in this section of the questionnaire sought to appraise the levels of importance individual property directors attached to various features of sustainability that they would consider to be important to stock investment decisions. Each respondent was asked to rank several features of sustainability that were drawn from the literature, together with the more traditional physical indicators used by social housing organisations within the decision making process. The mean ranking of the three dimensions of sustainability together with the conventional decision criteria shown in Table 1 suggest physical and social features of the housing stock are likely to be the more dominating factors the investment decision rather than environmental and economic dimensions.

*Table 1: Importance of Headline Sustainability Indicators*

1 = Critical; 5 = Not Relevant	Critical	Relevant	Slightly Relevant	Minimal Relevance	Not Relevant
Physical Criteria	6.29	3.29	5.14	9.14	4.86
Environmental Sustainability	5.33	4.00	1.00	7.67	7.00
Economic Sustainability	3.86	4.43	4.86	8.14	5.57
Social Sustainability	7.75	2.50	0.75	6.00	8.75

### **Toolkits used to appraise Investment Decisions**

Section three of the questionnaire sought to evaluate the extent to which key features of sustainability translated into current practice. To allow this to be evaluated, the respondents were asked to rank several toolkits which could be used for the appraisal of potential investment projects. These models can be loosely classified into (i) conventional tools and (ii) varying types of sustainability toolkits identified from the literature.

The results, in Table 2 reveal that despite practitioners recognising the importance of sustainability to the investment decision this commitment has yet to be translated into practice. The results of the survey show that conventional finance based toolkits continue to dominate decision making practice.

*Table 2: Investment tools used in the Social Housing Sector (1= always used 5 = never used)*

	Always	Occasionally	Hardly Ever	Never	Rating Average	Response Count
Capital Cost	16	6	2	2	1.62	26
Life Cycle Cost Analysis	14	9	2	1	1.62	26
Own In-House system	15	4	1	4	1.75	24
Discounted Cash Flow (using NPV)	15	4	4	3	1.81	26
Cost Benefit Analysis	5	11	5	4	2.32	25
Social Return on Investment	6	7	7	5	2.44	25
Proprietary System	10	0	2	9	2.48	21
Social Impact Assessment	3	4	6	11	3.04	24
National Housing Federation Framework	0	7	4	13	3.25	24
Eco Homes XB	0	5	6	14	3.36	25
Social Capital Studies	0	3	8	13	3.42	24
P.R.I.S.M	0	0	5	19	3.79	24

## DISCUSSION OF RESULTS

The provisional findings from the questionnaire survey reveal a significant disparity between property directors of RSLs and HAs understanding and perception of the importance of sustainability and how these perceptions translate into practice. The majority of property directors surveyed demonstrated a clear commitment to sustainable development, with the majority suggesting all three aspects of sustainability were important to the investment decision. Although as expected, the social dimension of sustainability dominates their decision making.

Unfortunately however, this personal commitment to sustainability does not appear to translate into either organisational policy or individual practice. Of the thirty three property directors responding to the survey only forty nine per cent of the organisations in which they are based actively promoted sustainability within their policy framework. This finding was very similar to that observed by Cooper and Jones' (2008: 28) who discovered that only 50% of surveyed organisations had a sustainable development policy in place. This appears to suggest that no significant progress towards the development of sustainable development policies has been recorded in the sector over the last four years. This apparent stagnation in progress appears to validate Carter and Fortune's (2007) suggestion that sustainable development plans were implemented as a result of regulatory pressure. However, as this pressure dissipates then it can be seen that the publication of additional policy within social housing organisations has also abated as suggested by Mullins (2010). However, this reduction in policy may in its self reduce the sectors commitment to sustainability. The research also exhibits the positive impact such policies can have on the organisation. With the majority of property directors indicating that the requirement to comply with the organisations sustainable development policy has prompted them to consider the sustainable benefits associated with potential investment thus making a start toward the improvement of practice.



However, this personal and organisational commitment to the inclusion of sustainable development principles into an organisation's investment evaluation practices has yet to translate into reality with the majority of RSLs and HAs continuing to favour the use of the more conventional economic models for their project investment appraisals. This reluctance to implement sustainability focused toolkits into practice appears to be common place across the built environment professions. With recent research recording similar levels reluctance to fully engage with sustainable project evaluation. For instance Fortune and Cox (2005) observed quantity surveyors rarely appraise sustainability during the economic evaluation of projects. This finding was supported by Dixon *et al.*'s (2008) comprehensive survey of the Royal Institution of Chartered Surveyors membership which revealed only a limited number of members had activity engaged with sustainability and sustainable development. Finally Cooper and Jones (2008: 17) survey of social housing maintenance managers provided further evidence that this reluctance to appraise the full range of sustainable benefits with asset managers instead favouring the use of conventional toolkits or at best those toolkits which focused on the energy usage of the stock.

## **CONCLUSIONS**

The findings from this research raise questions about the social housing sector's continued reluctance to engage with sustainability and sustainable development. The research findings suggest that the virtuous circle of blame observed over a decade ago has yet to be broken. The work also raises important questions about the usefulness of the toolkits correctly available to built environment professionals. As the literature evidenced, no single toolkit yet adequately evaluates the full sphere of sustainability and this has led to a situation where despite a growing understanding of the importance of sustainable development there is a problem in translating this desire into practice. Weaknesses in existing toolkits appear to present a major barrier to the successful implementation of sustainable project evaluation.

In an attempt to advance knowledge in this area, further work, with a regional housing association is proposed. The research will attempt to refine the framework initially proposed by Treanor and Walker (2004) so as to allow the social housing sector to implement a paradigm shift in practice towards sustainable benefit evaluation of public sector housing investment programmes. Such a move in practice was initially proposed by Bell over thirty years ago. The first stage in this process will be to confirm, through a grounded theory-like approach, the socio-economic variables which could influence the investment decision.

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