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# Is the social agenda driving sustainable property development in Melbourne, Australia?

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## Abstract

**Purpose** – Sustainable property development has increased in market share over the past two to three years globally and locally. This research aims to analyze the drivers and barriers to sustainable property development in Melbourne using the triple bottom line (TBL) theoretical framework. The TBL posits that sustainability has social, economic and environmental aspects to fulfil.

**Design/methodology/approach** – A questionnaire was sent out to 190 developers in Melbourne who promoted sustainable property development to ascertain their views about the drivers and barriers.

**Findings** – This research indicates that in the 2007 Melbourne market the drivers were social rather than economic. The data reveal that social reasons are considered more than economic arguments for incorporating sustainability into developments. The business case, or the economic drivers for sustainability alone do not convince developers.

**Research limitations/implications** – The questionnaire survey informed us about developers' views but not why they have these views. The sample was limited to Melbourne.

**Practical implications** – More developments are required for developers to become convinced of the benefits. The relatively low price of energy undermines the business case for sustainability in property here and needs to be fully costed.

**Originality/value** – This paper illustrates that whilst the theoretical framework cites three key areas for sustainability, the reality is that developers are currently driven by social and environmental factors primarily and the business case is not accepted by the majority of developers.

## Introduction

Buildings represent a large capital investment financially and environmentally (Cole, 2000). In buildings, humankind consumes 32 per cent of the world's resources, 12 per cent of the world's fresh water and up to 40 per cent of energy. Buildings produce approximately 40 per cent of waste to landfills and 40 per cent of greenhouse gas emissions. Australian commercial buildings produce 8.8 per cent of national greenhouse gas emissions (UNEP,

2007). Environmental costs are rising, Victoria's ecological footprint is excessive, requiring "four planets to sustain" each Victorian (DSE, 2006).

Brundtland (1987) defined sustainable development (SD) as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs", shifting an environment-centred concept to embrace social and economic aspects (IISD, 2007). Brundtland's definition is easily understood and adapts to different circumstances, though Keiner (2006) argued it was an oversimplification having "little specificity" and losing integrity as a concept. There are different views to SD. Bartlett (2006) saw it as an oxymoron, where sustainability drives to conserve resource consumption while development pushes in the opposing direction. Alternatively, sustainability is defined where growth is embraced with caution along with pre-cautionary and inter-generational principles, though references to "needs" and "future generations" are difficult to grasp and hard to quantify (Newman and Kinnel, 2003).

SD has changed since it first emerged in the early 1960s with Carson's research, linking agricultural pesticides with damage to animals and humans (IISD, 2002). This environmentalism was the precursor to modern sustainability (Edwards, 2005) which no longer concentrates on environmental protection excluding social and economic development. SD acknowledges that economic growth is desirable and necessary; limits to growth are relative and not absolute; and science and technology can enable indefinite economic growth by circumventing any short-term scarcities (Lee, 2000). Sustainability evolved to the concept of the triple bottom line (TBL) where social, economic and environmental aspects are each viewed as equally important. The so-called social aspects of sustainable property development are those which relate specifically to society, the community and/or individual people. An example of a social aspect is the hypothesis that sustainable buildings are healthier for people because of the use of materials that do not contain chemicals which can be detrimental to health. An example of the economic aspects of sustainable property development would be the belief that sustainable buildings result in fewer people taking sick leave and higher productivity thereby increasing the overall profitability of the business occupier. Given these two examples above it is apparent that there can be a close relationship between the three components of the TBL. Thirdly, an example of the environmental aspects of sustainable property development is where a property has an efficient heating ventilation air conditioning (HVAC) system which lowers energy consumption and reduces the greenhouse gas emissions which contribute to global warming and climate change. Alternate versions of the TBL were developed following disagreement on the equality of each area; the "Russian Doll Model" for example, views economic and social issues as subsets of environmental protection. Another view, cited in Wilkinson and Reed (2007), is that environmental protection is driven by economic, followed by social aspects.

### **Research aims and rationale**

This research seeks to examine drivers and barriers to the adoption of sustainability by property developers in Melbourne. In property development, the product is highly complex and is realised from the convergence of "every other sector and practically every industry" (Bon and Hutchinson, 2000) creating a long supply chain with numerous players including

land owners, investors, financiers, managers, consultants, builders, valuers, insurers and suppliers (Green Building Council of Australia – GBCA, 2006). Of the stakeholders, this research focuses on the decision makers in the property development industry.

All research has limitations and though SD has many facets within the built environment, this research was limited to pre-construction stages where the influence on the outcome is greatest. The author acknowledges that SD can be viewed as a process; Harding (2005) notes that SD is “the path or framework to achieve” sustainability. However, in this research sustainable property development is seen as an end-result, and not a process; thus aspects such as waste management were excluded. Finally, SD has many definitions particularly relating to the advancement of developing countries, where it takes on a different meaning, encompassing the eradication of poverty, provision of basic sanitation and education (UN General Assembly, 1992). Whilst these are critical issues for developing nations, the focus of this research is sustainable property development in the built environment in the broader sense and in particular to sustainable property development in the City of Melbourne, Australia.

### **Economic drivers**

Property developers are businesses where profit-making is a core goal (Commonwealth of Australia, 2006). Recently, there have been a number of studies in Australia which have highlighted the economic advantages in building “green” to persuade property developers of these perceived economic benefits (Kats, 2003; Davis Langdon, 2007). In Australia, the sustainable property movement is relatively new with only 26 buildings certified under the environmental rating scheme Green Star (GBCA, 2007). The Green Star scheme operates on a basis similar to the Building Research Establishment Environmental Assessment Method certification schemes in the UK, leadership in environmental design scheme in the USA and building environmental assessment method in Hong Kong. However, membership and projects registered for Green Star certification have experienced rapid growth in the last two years exceeding 200 per cent – indicating growing market acceptance of this benchmark of sustainability in property in Australia (GBCA, 2007).

The market perceives that capital and construction costs for ecologically sustainable development (ESD) buildings increase significantly, others are convinced otherwise (Rocky Mountain Institute, 1998; US GSA, 2004; GBCA, 2006). Goddard and Knott (2007) estimate the premium for ESD between 3 and 5 per cent, and this is corroborated by the GBCA (2006) report. Kats (2003), Matthiessen and Morris (2004) and Lucuik *et al.* (2005) all refer to a premium ranging between 2 and 3 per cent.

One issue is the fragmentation of the delivery process and inefficient communication (Fenn and Gameson, 1992); with the resulting time delays incurring avoidable costs. Commercial property can be developed either for owner occupation, for leasing to tenants or for sale; with each option offering the developer different perspectives in terms of value. For example, an owner occupier typically takes a longer term perspective seeking to minimise operating costs of the property and incorporating building features that should provide capital growth in the property market. An ESD building, properly managed, reduces operating and maintenance costs (Bordass, 2000). Goddard and Knott (2007) claimed that

the operation, maintenance and alteration of an office building over 25 years could be five to ten times the capital costs, while Kats (2003) stated “upfront costs of about 2% ... would result in life cycle savings of 20% of total costs – more than ten times the initial investment”. Though the amount of financial gains varied, all these sources reported positive outcomes.

Another concern is increasing resource prices, particularly energy and it is perceived to be a major motivator driving SD as properties with high-operating costs are likely to depreciate at a faster rate than those with low-running costs. Enhanced marketability is another driver. Davis Langdon (2006) found strong associations between green objectives and clients' perception of quality and concluded that demand was driven by well-informed clients. Developers can differentiate themselves and capture a share in a growing market (Winters, 2006; Davis Langdon, 2007). There is a view that the enhanced quality of ESD buildings delivers higher rental rates, higher occupancy, increased tenant retention, reduced risk of obsolescence and greater future capital value of development (Heerwagen, 2000; Winters, 2006).

Other drivers include increased productivity. Estimates attribute losses to Australian businesses from poor internal environmental quality at \$12 billion annually (GBCA, 2006). Healthy working environments are appreciated, and tenants in green buildings report productivity increases. ING Bank Amsterdam reported increased productivity and 15 per cent less absenteeism (GBCA, 2006). With improved internal environments, sick building syndrome and building-related illnesses symptoms are reduced (Heerwagen, 2000) and insurance costs and risk of litigation are lessened (Cole, 2002).

### **Social and environmental drivers**

The social and environmental drivers for sustainable property development include increased job satisfaction (Heerwagen, 2000; Cole, 2002; Kats, 2003). Corporate social responsibility (CSR) is being adopted by developers taking a proactive role based on a sense of community responsibility (Heerwagen, 2000). The social and environmental drivers for CSR in property developers is improving public profile and community relations, through reducing environmental impact, while enhancing community satisfaction and liveability. The public view of ESD buildings as “modern, dynamic and altruistic” reflects well on occupants, increasing morale, reducing staff turnover, demonstrating developer commitment to ESD and achieving a better public image (Lucuik *et al.*, 2005).

### **Barriers to ecologically sustainable development**

If the benefits of ESD property are so convincing, why do not we see more sustainable property development? Lucuik *et al.* (2005) saw the “youth” of sustainable property development as a reason, the challenge being to replace conventional thinking and practices.

“All buildings are subject to the litmus test of economic feasibility and any deviation from cost norms must be justified” (Cole, 2000). Developers and the public believe that ESD developments cost more with uncertain value added; this is a state that is compounded by inconsistent estimates of cost premiums and a lack of Australian-based cost data. Lucuik *et*

*al.* (2005) noted a wide range of projects where “green” costs ranged from 0-30 per cent but concluded most studies found increased costs of less than 8 per cent and many noted 2 per cent or less. The inability to establish a firm case on reduced costs increases uncertainty and risk in ESD buildings (Wilkinson and Reed, 2007), and this is worsened by the conservatism and risk aversion of the groups funding developments (Rocky Mountain Institute, 1998).

Another barrier is that to achieve the optimum performance of an ESD building, the design time increases (RMIT, 2006), designs are subjected to lengthy approvals increasing project duration, and discouraging innovation (Sustainable Building Leaders' Project, 2006). Lack of data affects appropriate and successful decision-making and patchy data about operating cost savings, enhanced value-added and increased productivity leads to poor understanding (Lucuik *et al.*, 2005). Furthermore, the credibility of data has to contend with false claims of “green” products, buildings or companies (Lucuik *et al.*, 2005).

Another barrier is the disparate interests of stakeholders and incentives to achieve ESD. Many benefits are not immediate, because they are spread throughout the building lifecycle; and often the party improving performance does not accrue the rewards (Bordass, 2000). For instance, commercial tenants pay the operating costs, not the developer or owner. Also the percentage-based fee structure of professionals is a barrier, where, for example, if engineers downsize an HVAC system through the application of energy efficient design and thereby reduce operating costs, the engineers are, in effect, volunteering a reduced fee for their services (Papamichael, 2000).

Another barrier is the “plethora of rating tools and confusion” (GBCA, 2006). The maze of alternative approaches involve complex methodologies which constantly evolve to higher standards (Lynch, 2006); currently Australia has six rating tools of which Green Star is one. The market price for a development depends on its valuation, and currently the view is that valuers and tenants do not price the benefits of ESD buildings (GBCA, 2006). This lack of understanding is reflected in the selling and rental prices where conventional valuation methods do not recognise them (GBCA, 2006) and this was highlighted by the City of Melbourne (2006) in presenting a business case for sustainable design.

Social barriers include a lack of awareness and understanding by people of the relationship between sustainability and property. While awareness is rising, Goddard and Knott (2007), suggested it is minimal among the public. Few people understand the term SD (RMIT, 2006) and this is due to the broad subject area and the complexity of the issue (Wilkinson and Reed, 2007). Tenant demand for SD could increase with targeted education (Lucuik *et al.*, 2005). Another view (RMIT, 2006) is that a possible reason tenants and investors rarely demand ESD is due to their lack of knowledge of the benefits.

Property professionals are best positioned to understand the benefits of ESD building but are confused by contradicting information (Lucuik *et al.*, 2005). There is limited knowledge and experience sharing either due to reluctance or lack of resources to disseminate the lessons learnt (GBCA, 2006). Industry lacks the experience to handle the complexity an ESD development entails (Goddard and Knott, 2007) and the valuation sector was singled out as not being sufficiently experienced at the current time to incorporate sustainability into their valuations (GBCA, 2006). Regulation is the tool government uses to drive the market and it

is gearing it towards higher building and environmental performance. However, with the emergence of numerous state-based schemes, rating tools, and standards, inconsistency is growing – creating confusion and uncertainty (Goddard and Knott, 2007).

Whilst it is undeniable that climate change is occurring, threatening our way of life, there remains a disconnect between information and action. Marshall (2005) saw this as a behavioural problem akin to mass social denial of human rights abuses. Denial is natural when confronted with situations challenging our sense of personal and moral responsibility and our identity as moral beings (Guggenheim, 2006). The “bystander effect” or “diffusion of responsibility” contributes to a lack of action while denial also stemmed from the “complex and diffuse causality, and more complex and uncertain impacts” of climate change (Marshall, 2005). According to Marshall (2005), a combination of uncertainty and invisible and inter-generational impacts hinder action on sustainability, and that this could be remedied with a known deadline. Since the Stern (2006) report on the economics of climate change was published in the UK in 2006, and the “Australian Garnaut Climate Change Review Report” was published in 2008 (Garnaut, 2008), there have been attempts to indicate the timeframes in which action is required to mitigate the impacts of climate change globally.

### **Research methodology**

Qualitative research is “subjective” in nature, emphasising meanings, experience, often verbally described and which can be exploratory or attitudinal (Naoum, 2003). Exploratory approaches are used when researchers have limited knowledge about the subject and the raw data are what people have said or a description of what they have seen. Attitudinal approaches are used to subjectively evaluate the opinion, views or perceptions towards a particular object and this approach was appropriate for this study which sought to ascertain the views and perceptions of Melbourne property developers with regards to sustainability in new property developments. This research also seeks to determine how developers perceive the different social, economic and environmental drivers and barriers to sustainable property development and in this way a deeper understanding of sustainable property development in Melbourne could be achieved.

According to Naoum (2003) the research approach depends on the type of investigation and the data that are needed and obtainable. In this project, two approaches to data collection were adopted, fieldwork (primary data collection) and a desk-top study (secondary data collection). The desk top study formed the basis of the literature review and informed the questions selected for the fieldwork study. Following collection, the primary data were triangulated to the secondary data. Primary data can be collected through interviews, case studies, postal, online, telephone and face-to-face surveys. The method had to allow for the limitations of this research, namely time and cost.

After consideration of each method, a postal survey was selected (Gillham, 2000). Postal surveys are low cost, less time-consuming, provide an easy, quick way to collect data from numerous respondents, allow participants to complete the questionnaire at their convenience, provide straightforward analysis of responses to closed questions, create less pressure for instant responses, assure anonymity, remove interviewer bias and allow

standardisation of questions. The survey was a quantitative method of collection due to the ease of analysis of quantitative data, however; this limited the information collected (Naoum, 2003). A mix of open and closed questions was used, with the open questions allowing respondents to expand on their views. The survey was designed in three sections; starting with the respondents' background, followed by their opinions of ESD and, finally a section where respondents were asked for reasons for and against the adoption of ESD in their projects.

The sample population were decision-makers in the property development industry and the research population comprised all property developers in metropolitan Melbourne. The industry has a few large organisations but has numerous small businesses. The larger companies were targeted with offices in metropolitan Melbourne because these groups were either advertising expertise in ESD developments or had adopted CSR in their corporate governance. Surveys were posted in December 2006 and March 2007. In total, 28 responses were received out of 190 survey questionnaires sent out with a response rate of 15 per cent. This was a low-response rate and provides an insufficient basis to derive inferences of statistical significance; nevertheless the results offer some useful insights into the views and perceptions of the research population into the drivers and barriers to sustainable property development in Melbourne.

### **Data analysis**

Respondents were mostly project managers (seven), engineers (four) and development managers (three). There was a diverse cross-section of professions representing 12 different occupations, though five were job titles not professions. They grouped into two categories – “design and technical” and “fiscal and managerial” backgrounds. Seven were from the design and technical background. It was considered that the 20 fiscal and managerial respondents would place higher importance on the costs and economic aspects of property development. Respondents were “experienced” with 89 per cent stating experience of more than six years and of that group 61 per cent had more than 11 years experience. About 71 per cent worked for companies employing over 30 people. Each company specialised in several different types of development, mostly in commercial development, followed by institutional, industrial, residential, and retail and though all types were covered there may be slight bias to commercial and institutional sectors.

Twenty respondents were involved in an ESD project, with 80 per cent working on new projects. Most had experience of fewer than six projects; the low numbers were attributed to the youth of ESD property development. Seven respondents had never been involved in an ESD project, while six had experience on more than six projects.

Those involved in ESD projects were asked for the reasons behind the decision to become involved, with the top five stated reasons being CSR, stakeholder pressure, regulation, personal beliefs and company image gain. Contrary to the literature citing the economic benefits of ESD, here economy and incentives were the lowest rated reasons (Figure 1). This is evidence that the agenda for sustainable property development in Melbourne is not being driven by economic incentives and benefits. In this instance, CSR and pressure from stakeholders is identified more commonly and this suggests that the marketing and public



relations aspects, which can be attributed as containing social aspects, are driving sustainable property development in Melbourne.

However, 42 per cent of respondents believed that sustainability benefited the environment foremost, followed by the economy (39 per cent), with social benefits lowest (19 per cent). The results showed a discrepancy between the reasons for adoption, the real benefits and the perceived benefits of ESD. Despite the business case for ESD, only 3 per cent stated “economy” and 6 per cent stated “incentives” and “benefits” as main drivers. A comparison was undertaken between the economic reasons for ESD and the decision to pursue a green development should profit decrease as a direct result of implementing ESD in order to explore the relationship between economic drivers and commitment to ESD development even if profit margins were adversely affected. Table I shows that three respondents would unconditionally supported ESD without economic considerations, while 13 would reconsider supporting ESD if profit margins dropped as a result. One respondent who stated ESD would be adopted for economic reasons, also said they would still adopt ESD if profit margins decreased which appears to be a somewhat contradictory perspective.

Respondents placed low importance on economic factors and this may be due to industry fragmentation, and the disparate interests of the benefactor and the beneficiary (Bordass, 2000; GBCA, 2006). Developers have little incentive to deliver economic benefits from which they might not accrue benefit and this was supported by 21 respondents who stated owner-occupier developments were the most likely to implement ESD. Speculative projects were least likely to incorporate ESD principles and investment developments were neutral.

The second highest reason for ESD was pressure from stakeholders indicating that there is increasing market demand and awareness for ESD. However, 57 per cent of respondents also felt awareness of ESD was “lacking”. About 14 respondents felt awareness was lacking or severely lacking and six felt it was sufficient or highly sufficient.

Cross-tabulation of the market direction of ESD development provided interesting results: while most thought awareness was lacking, most thought the market was inclined towards ESD buildings. About 78 per cent agreed the market was moving towards ESD developments, 17 per cent were neutral and 3 per cent disagreed. One view is that it is public policy that is driving the industry towards adoption of sustainability in Melbourne, and this view can be supported to some degree. For example, it is the case that the Victorian State and Melbourne City governments have a policy of occupying only buildings with certain levels of either Green Star or Australian Building Greenhouse Ratings. In addition to this policy, the Australian Building Regulations adopted sustainability as one of its objectives in 2003 and, in 2006, Australia the Building Regulations have increased the amount of energy efficiency required in commercial buildings (Ashe, 2003; Dong and Wilkinson, 2007).

Whatever the driver, the inference in these results is that industry is gearing towards ESD buildings but with a lack of awareness. When questioned on risk, 40 per cent of respondents disagreed that ESD was riskier than conventional projects, 36 per cent were neutral, 4 per cent strongly disagreed and 20 per cent did not respond.

Only respondents with experience of ESD developments provided answers on the barriers to the adoption of sustainable property development. Respondents were asked to state the barriers to sustainable practices (Figure 2) from a predetermined list derived from the literature review. The possible responses were as follows: availability of technology and resources, lack of incentives and benefits, pressure from stakeholders, company image loss, personal beliefs, regulations, economy and CSR. The responses were less clustered than previously, with only five categories cited as barriers. These were as follows: economy, lack of incentives and benefits, pressure from stakeholders, availability of technology, resources and regulations. The first two were the inverse of the drivers as would be expected. A comparison of the drivers and the barriers showed a shift from social reasons for adoption to economic reasons impeding adoption (Figure 2).

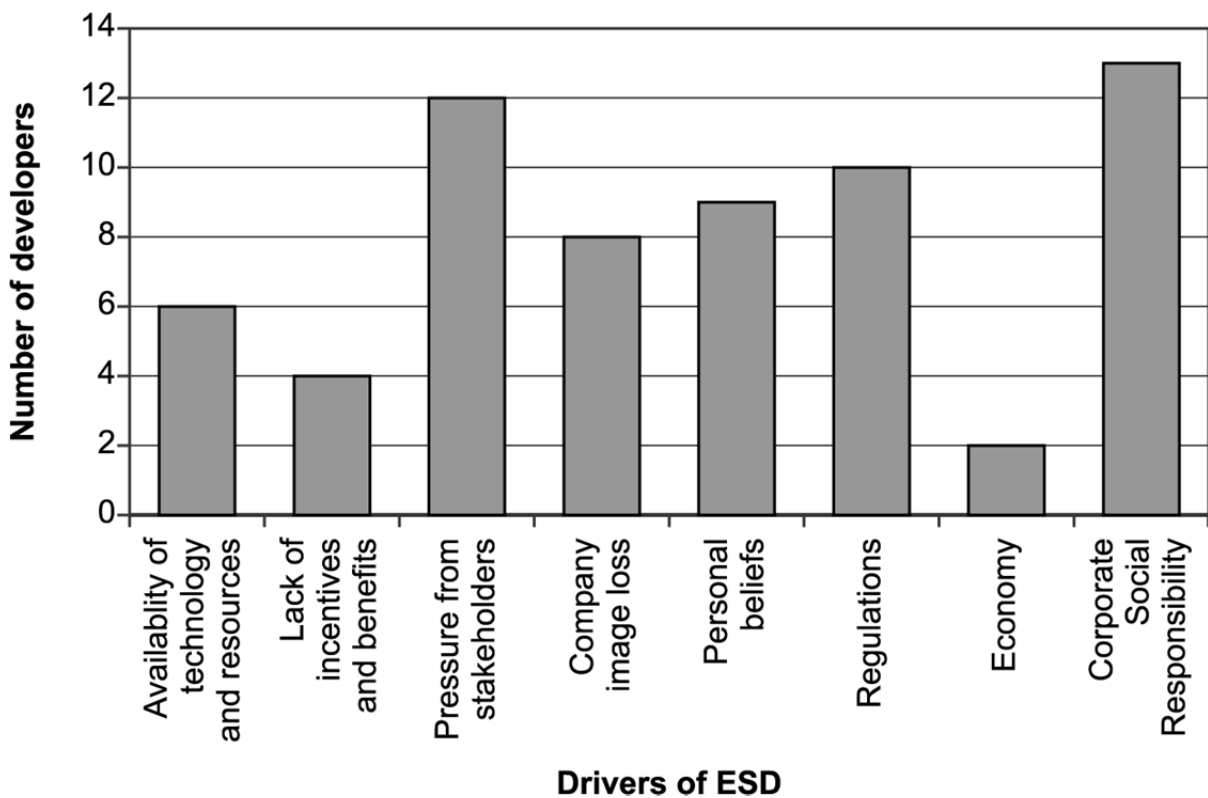
The responses indicated that ESD practices were viewed as uneconomical. The distribution of responses for added value was fairly even except that none strongly disagreed that ESD will always add value to a property development. There was a net positive attitude towards the economic benefit of ESD (nine out of 16). Therefore, while the economy was a major barrier to adoption, the respondents still believed that ESD added value to a project. This was further evidence of confused thinking within the industry. There was a wider range of opinions on the effect an ESD development has on company competitiveness. One respondent was neutral; while 8 – disagreed and 7 – agreed or strongly agreed, so a slight majority did not believe that ESD will always improve competitiveness, which complemented their view that ESD buildings were uneconomical. When asked whether ESD lowered project profitability, the respondents were more cautious, with the least responses recorded for “strong” opinions (only one each stating strong agree/disagree). Most chose the middle options and were equally divided for and against. Overall, these responses revealed scepticism towards the business case of employing sustainable practices in new developments.

Respondents were overwhelmingly concerned with the economic disadvantages of adopting ESD practices, 84 per cent felt the economic case was a downside, with 16 per cent seeing the social argument as a downside. The barriers to the adoption of ESD were mainly and consistently economic, unlike the drivers.

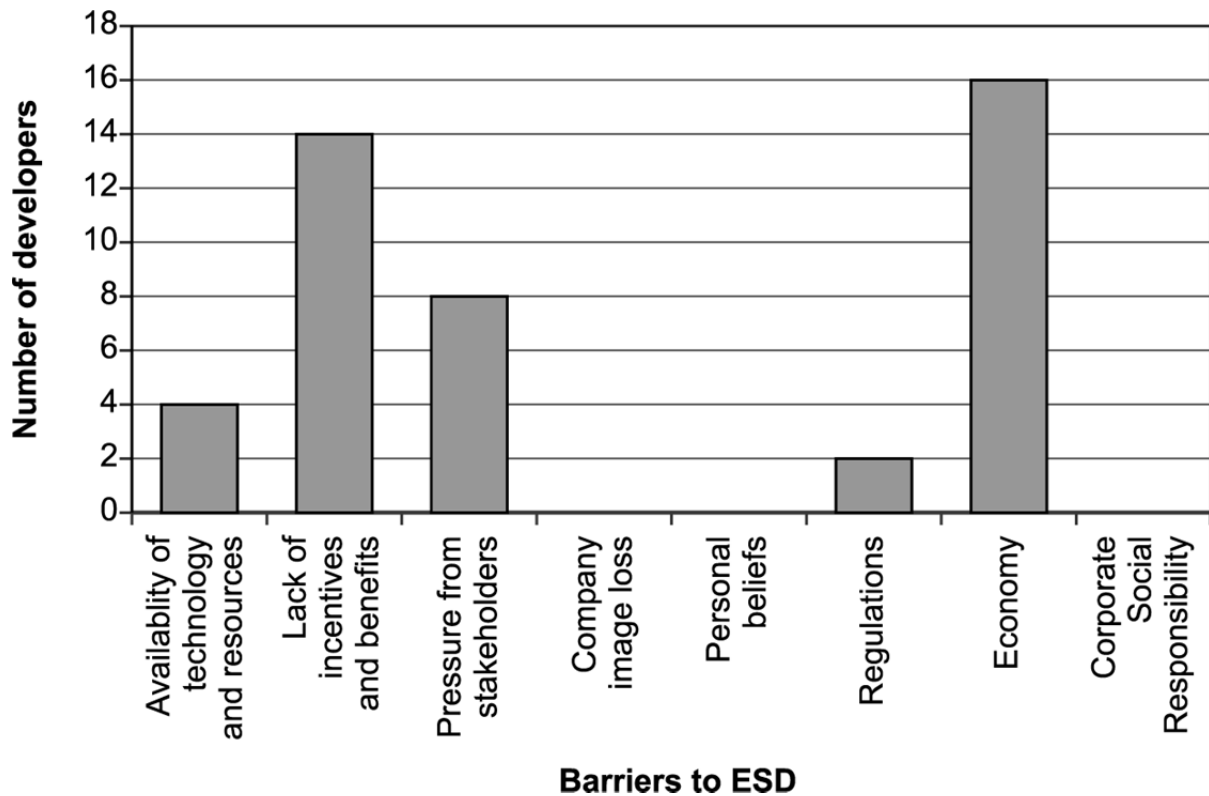
There were high responses for regulatory barriers supporting the view that there is inconsistency in regulations and codes preventing adoption of ESD. Another major concern was the availability of technology and resources to develop ESD buildings. Social reasons were the highest concern for 62 per cent of respondents, with complaints from unclear and inconsistent regulatory guidelines, lack of government leadership, and the low level of market awareness and acceptance. The second area of concern was economic factors (37.5 per cent), where respondents remained sceptical of the cost effectiveness and bemoaned the lack of fiscal incentives, subsidies and rebates. Respondents wanted economic improvements stating that government should provide favourable taxation for ESD projects and increased incentives and rebates. Respondents believed the public should be educated in the benefits, and that regulations and standards should be increased to encourage improved building performance.

## **Conclusions**

The underlying obstacle in making the shift to ESD property development is the relative “youth” of ESD in property. It is a major challenge to encourage an industry with entrenched conventions to embrace new principles without concrete information. Certain benefits are less tangible and quantifiable than others and there remains a dearth of authoritative data, particularly local studies which leads to uncertainty in this market. This uncertainty stems not from denial or indifference, but from confusion about ESD development. There is some evidence that the business or economic case is not yet widely accepted and that sustainable property development in Melbourne is currently driven in part by the social aspects of sustainability. The outcomes of the research indicate that further work is required to continue the process of informing practitioners of the social, economic and environmental benefits of sustainable property development through real world examples. Particularly, valuation surveyors need to become better informed of the risks and benefits associated with ESD property and to factor these variables into their valuations. The authors believe that ESD in property has gathered some momentum in the commercial Melbourne property market in the last year and that supplementary research into the drivers and barriers will highlight further changes in developers views.



**Figure 1** Reasons for adopting ESD practices



**Figure 2** Factors impeding adoption of ESD practices in a property development

	If profit from the development decreases as a result of increase expenditure in sustainable practices, would you still adopt it?			Total
	Yes	No	Depends	
<i>Economy</i>				
Yes	1	0	1	2
No	3	2	13	18
Total	4	2	14	20

**Table I.** Relationship between economic reasons for adopting ESD and profitability

**Notes:** Unconditional support for ESD without economic consideration. Contradictory statement. Respondent still adopts ESD if profit decreases but adopts ESD for economic benefit. Respondents would not sacrifice profit to implement ESD but economy might not be the primary reason for adopting ESD. Economy is not the primary reason for adopting ESD and they would decide based on the level of decrease in profit and stakeholder pressure

**Table I** Relationship between economic reasons for adopting ESD and profitability

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