MAKING SENSE OF SOCIAL-CULTURAL ISSUES AND SUSTAINABILITY IN OUTER URBAN HOUSING DEVELOPMENTS

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Abstract

EcoHome is a three-year research project being run by the Centre for Design at RMIT. It will investigate the sustainability outcomes that are possible in outer suburban housing estates using current building and design technologies, and work with the industry to achieve more sustainable housing outcomes.

A central concern is the social character of the outer suburban housing market and how the underlying drivers of market behaviour, economic growth, and social equity issues affect sustainability outcomes. This has been shown to be a critical success factor in determining the uptake of sustainable housing initiatives as in the case of the ACF Greenhome (Okraglik 1995). This paper provides a brief summary of some of these issues as they relate to the following areas:

1. Significant features of the housing industry
2. The relationship between home ownership and social wellbeing
3. Consumer drivers and preferences
4. Owner-occupant behaviour

This paper provides an overview of these issues with the view that they will be explored in more detail as the research project progresses.

Keywords: sustainable housing, socio-cultural issues, EcoHome, social research

Introduction

A recent survey of the building industry by BIS Shrapnel (2001-02) found that while most builders are ‘sympathetic’ to the concept of the ‘green home’, the perception of higher construction costs was a major deterrent. This finding perhaps underlines a common perception by industry observers that the sustainability performance gap between ‘case study’ architect designed environmental housing and the mass-housing developments of Australia’s suburban fringes is widening.

The release of Melbourne 2030: Planning for Sustainable Growth (State of Victoria 2002) and the planned implementation of 5 Star Energy Standard for residential buildings in Victoria (Building Commission 2003) pose a medium term challenge to the residential property development and home-building industries to develop and deliver more sustainable housing systems and products. Already the URLC’s 9000 home Aurora development in Melbourne’s outer north is being planned as a showcase project in sustainable community development and home design (URLC 2003). This

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can be attributed in a large part to the above-mentioned Victorian Government initiatives. Builders working on houses in the Aurora development will be required to incorporate sustainability-promoting features in the areas of energy, waste, water and environmental health.

EcoHome is a three-year research project being run by the Centre for Design at RMIT. It will investigate the sustainability outcomes that are possible in outer suburban housing estates using current building and design technologies, and work with the industry, to help it achieve more sustainable housing outcomes. EcoHome has sponsorship from the following organisations: The Urban and Regional Land Corporation, Metricon Homes, Hassell, SEAV, Building Commission, Origin Energy, City West Water and Melbourne Water. Outcomes of the project will assist the URLC and homebuilders realise achievable sustainability outcomes at Aurora and other future developments. EcoHome project objectives are being pursued through an integrated research effort combining engineering, design and social science streams. The objectives of the social research stream are to assist project stakeholders achieve improved social sustainability outcomes through targeted research, and support the design and engineering streams by supporting the synthesis of knowledge of key social aspects of housing into the ultimate design, monitoring and planning solutions.

A graphic demonstration of the dangers of not fully accounting for the social issues is the near complete failure of the ACF Greenhome, completed in 1993, to influence the housing market. This was due to a large extent, to lack of consideration of the market drivers, preferences and demographics in the project-planning phase. The Greenhome was a technical fix that ultimately had limited social or market currency (Okraglik 1995).

A key source of data for all research streams of the EcoHome project is an ‘eco-house’ currently being constructed in Cairnlea, on Melbourne’s western fringe. The eco-house will be available to the researchers for 12 months as a display home and for two years once occupied. Social research for the project will involve surveys and focus groups with prospective homebuyers, in-depth semi-structured interviews with the home’s eventual occupants, and a review of available data and literature. A central concern is the social character of the outer suburban housing market, how that impacts the take-up of environmental design and technologies, the underlying drivers of market behaviour, and economic growth and social equity issues.

The purpose of this paper is not to provide an in-depth or comprehensive assessment of the social issues that will affect the industries move to sustainability, rather, it provides an overview of these issues with the view that they will be explored in more detail as the research progresses.

1. Significant features of the housing industry

The major long-term drivers of growth in the industry are population growth followed by an overall thinning in household sizes related to the increase in the number of single parent families and ‘empty nesters’ (Tennent 2002). The industry currently builds an estimated 140,000 brand new homes every year (HIA 2002) to accommodate this growing and thinning process.

A common view expressed by industry observers is that the dominance of small businesses in the sector, its strength and flexibility when assessing industry competition outcomes (HIA 2002), is also an industry weakness: small firms lack the
overall economies of scale to invest in research and development. Also, as sustainability requires the adoption of new value systems (Tibbs 2000:201) and organisational processes (Pears 2000), the fragmented nature of the industry may also act as a barrier to sustainability promoting cultural change and knowledge diffusion. This view can however underestimate heterogeneity in innovation behaviour and investment between different clusters of the building industry as a whole. For example, significant research and development occurs in materials development, both locally and offshore (Marceau 2000). Following the restructuring of the property development and construction industries in Victoria from the 1980’s onward, a much more diverse product range is now being offered to the market. This includes improved overall housing affordability in outer-suburban estates with higher levels of amenity, and the emergence of a more sophisticated multi-unit building sector (Burke and Hayward 2000).

In summary, while the fragmented and small-firm characteristics of the homebuilding industry of the housing industry may act as a barrier to the widespread and consistent diffusion of sustainability promoting practices and technologies, it is important not to underestimate the industry’s ability to deal with product innovation and respond to new opportunities and competitive pressures.

2. Home ownership and social wellbeing

A growing body of research both in Australia and internationally has demonstrated an intimate connection between home-ownership and social and economic wellbeing at both the household and community levels. Despite this, the supply of low-cost housing has only partially met the increasing rate of demand in rental markets (see Berry 2001 and Yates 2002a for summary of the literature). In inner urban Melbourne, housing affordability is worse than at any time in its post-war history (Burke and Hayward 2000).

The opportunity to buy a home is largely driven by household income and the availability of external economic support. Once achieved, home ownership provides a primary mode for equity accumulation over a lifetime that provides further economic opportunity and an asset to enhance economic security and welfare in retirement (Yates 2002a). It is acknowledged even in official treasury documents that home ownership contributes to keeping many age pensioners above the poverty line (Commonwealth of Australia 2001). Children of homeowners perform better at school and go on to earn more and become more likely to be homeowners themselves. Home ownership therefore has a hereditary nature that reinforces economic and social advantage over time (Green and White 1997).

Home-ownership and wellbeing also has an interactive at the community level, impacting community stability, participation, perceptions of safety, and investment into local area improvement (Yates 2002b). Whiteland, Morton and Carr (1999) for example showed that ‘home improvement’ has a contagious dimension. This further reinforces spatial polarisation in community liveability and the accumulation of housing equity. Importantly for a discussion on sustainability, home-ownership increases length of stay thereby increasing the incentive for householders to invest in home-improvement and the likelihood that they will respond positively to ‘payback’ offerings of environmental technologies and design improvements.
While Australia has always been an urban society, over the last century this pattern has intensified resulting in a small national population crystallising urban settlements that are large even by world standards. Every year we build 140,000 new homes, 82% of these in the east coast states (HIA, 2002) and most of these on the fringes of capital cities (ABS, 1996). Patterns of home building and ownership are changing, however in many ways these changes are neither socially desirable nor sustainable. Yates’ (2002) study of the 2001 Census, for instance, indicates; 1- an aging of the population, 2- an increase in the age at which couples are having children, 3- an across the board decrease in household size 4- an overall decrease in household income especially among the young 5- a decrease in the ratio of households owning their home, 6- a tendency toward the polarisation of income and rates of home ownership between urban and non-urban areas and between urban sub-regions. Essentially this means that home-ownership and related indicators of social wellbeing are slowly being concentrated in smaller areas, particularly in metropolitan regions. Homeowners are becoming richer and renters are becoming poorer. More metropolitan sub regions are becoming unaffordable to an ever-larger proportion of the population (Yates 2002b).

3. Consumer drivers and preferences

In the words in Baum and Wulff (2001) ‘it is clear that owning a home is important for more than just simply the provision of shelter. It acts as an important source of stored wealth and represents a large range of meanings related to social status and social mobility’. In many ways home ownership has become a central motif in Australia’s cultural identity and central to the sense of fulfilment for many individuals and families. Despite the clear long-term economic benefits of home ownership, most people’s reason for buying a home lay in the non-financial category. In particular, security of ownership, privacy and pride all rank higher than the most common financial reasons (see Table 2).

In terms of the houses being built, single detached dwellings account for over 70% of the nation’s housing stock as represented in. According to the HIA, this proportion has again increased since 1999 (2002:28). Importantly, prospective homeowners, it seems, want to get as much home as they can possibly afford. This has led to larger houses, further from the city, increasingly two-story, and increasingly on smaller lots (Tennent, 2002). Simultaneously household debt as a proportion of income surged from 56 per cent to 125 per cent in the 10 years to 2002, with borrowing for homes accounting for over 83% (Wade 2003). These facts in combination, illustrate that consumers in Australia still place a very high value on home-ownership, its expression in built form reflecting a heightened desire for comfortable private space adapted to newly emerging lifestyles and priorities.
Thus far the focus for most research into sustainable housing has been on the supply side; as Blair et al (2003:i) describe; ‘there is a growing desire to provide housing which offers a comfortable standard of living, reduces environmental impacts and which simultaneously achieves a degree of affordability’. At the same time consumers are expected to passively absorb the aesthetic and lifestyle implications of sustainable living. What has been to a large extent missing from the body of research is a developed understanding of real market dynamics, consumer preferences and expectations and the way in which they will impact on the uptake of future environmental housing offerings. If the customers are not fully understood, or engaged in the ‘greening’ of their housing decisions and desires, there will be an underlying incentive for builders to meet only minimum regulatory requirements as is currently the case. There is a general acceptance by building companies working on the outer-suburban housing estates such as Cairnlea that sustainability is increasingly going to be a driver in the industry. However, how builders are going to meet these challenges and what sense consumers in the outer-suburban housing market will make of these transformations are questions that are largely yet to be answered.

It is clear that current housing outcomes are far from ecologically sustainable (see for example Blair et al 2003) and that regulated minimum standards are likely to move slowly because of the sensitivity of the industry ‘up-front’ affordability issues. The affordability of houses is central to both gross consumer investments in the sector and from an equity and access point of view. Essentially, at the point of purchase, first or second homebuyers mostly have limited economic resources, and an investment in sustainability outcomes, where they do require additional costs, may force trade-offs or be at the expense of other features, such as house size, that have value to the consumer.

The failure of the ACF Greenhome to achieve a change in the industry illustrates the significance of this issue. The sustainability price premium that came with the Greenhome (around 22%) was too much for the market to accept. It was assumed that consumer would quickly see the benefits in terms of comfort, piece of mind and lifecycle cost savings etc. This not being the case, the project organisers withdrew from active marketing of the home, and its role as a demonstration home was greatly undermined (Okraglik 1995). Ironically, the heavy focus on achieving environmental sustainability led to a kind of eco-reductionism at the expense of the social and

<table>
<thead>
<tr>
<th>MOST IMPORTANT REASONS FOR PURCHASING A HOME(a), 1991</th>
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<tr>
<td>Most important reason</td>
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<tr>
<td>Non-financial</td>
</tr>
<tr>
<td>Security of ownership</td>
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<tr>
<td>Freedom to do your own thing</td>
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<tr>
<td>Pride in your achievement of home ownership</td>
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<tr>
<td>Having your privacy</td>
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<tr>
<td>Feeling physically safe</td>
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<tr>
<td>Having no intrusion by landlord or agent</td>
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<tr>
<td>Financial</td>
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<tr>
<td>Cheaper than renting in the long term</td>
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<td>Having an asset in old age</td>
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<td>Having an investment for your children</td>
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<td>Expecting investment returns</td>
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<td>Having a hedge against inflation</td>
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<td>Total(b)</td>
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(a) Refers only to separate houses.
(b) excludes other category and reasons not stated.
economic context of the housing market. This ultimately undermined the environmental objectives of the project as they related to industry take-up.

On visiting display villages such as Cairnlea in Melbourne’s outer west, it is astounding to see the sheer volume of home you can get for your money and the disjunction of design preferences between one house and the next. Cairnlea is a traditional regulatory subdivision in that lots are sold individually without additional controls on building design (Blair et al 2003). In Cairnlea, the diversity of design modes from one house to the next is beyond the historical featurism attacked by architectural critics in past decades (see Greig 1995). It is actually much better described as a 20th century architectural theme-park, with each house authentically acting out a theme or period (see Figure 2), without a unifying principle for the street or community. This outcome illustrates the degree of consumer autonomy and the diversity of aesthetic preferences exercised in this type of subdivision. It also reinforces the need to better understand the relationship between consumer identity, design preference and the sustainability of the built form.

Further research is required to locate the underlying cultural drivers of the diversity of built form and consumer demands as they relate to building design and configuration. Certainly marketers in the industry would have workable theories, but these are unlikely to connect preference to broader sociological models of choice and action and change, and particularly, sustainability. Qualitative research on the EcoHome project with consumers and the development sales personnel will be able to shed light on what the home in this market has come to mean, and in turn, what that means for achieving better sustainability and consumer-friendly outcomes.
4. Owner-occupant behaviour

Discussions with project stakeholders have led to the identification of numerous questions related to owner-occupant behavior at the Cairnlea EcoHome. For example: do design ratings tools such as FirstRate provide a good picture of the performance of the home once occupied? Would the eventual occupants of the eco-house use the proposed worm farm? Would they undertake required maintenance of the proposed storm water system, and would they maintain the vegetable garden? How do they perceive and use water and energy once they begin to harvest sunlight and rain? Would the benefits be seen as good enough to catch on to others in the neighborhood? Would other aspects of lifestyle change, such as car usage or shopping habits?

Clearly the relationship between design and use, the physical and behavioral is complex and dynamic. As shown above, houses and communities evolve in tandem with the social histories and the well being of residence. We have identified that for example that a simple factor such as home ownership can have substantial and cumulative impacts on the built form (e.g. through home improvement). The reverse is also true; that design contextualises and shapes behavior both in term of the physical capabilities it offer us and the way it structures opportunities, thoughts and action. The process by which this happens however is not yet well understood.

In Jelsma’s account (1997) we still require a way of accounting for the conditions under which design can steer behavior in more sustainable directions. From a design/technology perspective the tendency is to endow the technology with properties that either realise or inhibit the transformation of intention into action. The key work here is convenience: how easy is the technology? What is its utility value? (See Warde et al 1997 for discussion on convenience and sustainability). The actor is reduced to a motivation-action stream filtered by the built form through multi-linear cost-benefit equations. The ultimate outcome of this is largely determined by the physical configuration of the technology itself. This approach might be partially useful in determining whether energy efficient light bulbs for example get left on over night, or whether the worm farm is maintained.

From the social science perspective on the other hand, the tendency is to embody the individual with predispositions and a life history (Jelsma 1997). This provides a moral, social, and psychological context for decisions that may vary greatly between individuals or within the one individual from one moment to the next. Taking this approach may help uncover technology-use/occupant-behavior issues that deny quick technology fixes. This might be aided by consumer typologies that connect consumer behavior to occupant behavior, thereby allowing designers to maximise potential sustainability outcomes through the customisation of the design and technology package for the specific social and psychological characteristics of the individual and family. For the EcoHome project this is going to be a particularly fascinating and challenging issue that will need to be addressed in order to answer the above questions.

Conclusion

The decision by project sponsors to include a social researcher in the EcoHome project reflects recognition that the barriers to sustainability in the sector are as much social as they are technological, and, that performance on the environmental front is
unsustainable when it is at the expense of social and economic outcomes. There is no
evidence to suggest that improvements in these areas are by necessity mutually
exclusive. From the review of literature and interviews carried out thus far, the
following conclusions can be made:

- The character of the industry, particularly as it relates to fragmentation and
  small-firm size will provide a challenge to the universal adoption of
  sustainability promoting practices and technologies.
- Home ownership is closely related to social and economic wellbeing and
  owner-occupation affects the degree of investment in sustainability promoting
  design elements and technologies. This requires that in the planning of new
  communities, attention needs to be paid to affordability issues, as well as
  promoting the diversity of the social make-up within areas so as to avoid the
  accumulation of advantage or disadvantage in any given neighbourhood.
- A better understanding of the role of current trends and patterns in consumer
  preferences, and their relationship to views and propensities that impact
  environmental outcomes is required to more fully engage consumers in the
  greening of their built environment. Such engagement may facilitate a shift
  from consumers acting as barriers in some parts of the market, to their active
  promotion of sustainability promoting design outcomes.
- As behaviour and the design of the built environment are dynamic and co-
  evolve, it is important to develop better models for accounting for human-
  design interaction as the household and community levels.

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