

YOUR HOME – AUSTRALIA’S NEW SUSTAINABLE HOME DESIGN GUIDE

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Background

Australian housing has a significant detrimental impact on the natural environment. The construction, operation and demolition of housing is responsible for impacts such as the production of greenhouse gas emissions, reduction of air quality, stormwater runoff, degradation of groundwater systems and the depletion of scarce natural resources. Research has found that the share of greenhouse gas emissions from the building sector represents some 25 percent of the total Australian energy related emissions and is increasing at a rate faster than the total energy related emissions (AGO, 1999).

Many market failures exist leading to a scenario whereby the full environmental cost of resources is rarely transferred to the end user. Governments have traditionally sought to address these market failures through the education of stakeholders and the development of best practice guidelines for each specific environmental issue. This approach has seen the proliferation of single issue guide materials in various formats pitched at various technical levels, championed by numerous government agencies, building industry organizations and community groups. Most publications dealt with the supply of technically superior buildings assuming a market would naturally occur.

The inconsistency of publication types, varying formats, differing technical levels, and range of environmental issues covered without a well developed market, meant that the majority of residential building designers and builders were reluctant to seek education in the area and reticent to use the readily available guide materials.

In the past five years Australia has also witnessed a growing number of highly popular books and other media stories describing how particular houses were built or renovated to be more environmentally sustainable. Growing awareness of the need to address environmental issues outlined in these stories has started a groundswell of interest in environmental sustainability for housing, although it remained a small market niche with few large-scale developers seeking to address the environmental impact of their products. A study of house plans submitted for approval found that less than 3% of all houses could be described as having the features of passive solar design (AGO, 2000).

In 1997, the Prime Minister, Mr John Howard in his statement “Safeguarding the Future” committed the Australian Government to a program of action to address global climate issues. An important part of Australia’s commitment was the formation of the Australian Greenhouse Office as the lead Commonwealth agency on greenhouse matters.

Following extensive consultation with the building and construction industry, the Australian Government agreed on a dual approach of mandatory energy performance requirements complemented by voluntary best practice initiatives. Minimum energy performance standards for all new and refurbished buildings are to be introduced into the Building Code of Australia from 2003, and the Australian Greenhouse Office is providing funding support for industry designed and delivered best practice initiatives. The forthcoming regulatory change has magnified practitioner interest in technical materials on energy efficiency and low greenhouse emission building design.

In 1998 and 1999 the Australian Greenhouse Office received numerous funding requests for greenhouse specific guides from many different stakeholder groups and the extension of existing guides to include greenhouse gas emission reduction sections. Requests came from community groups, industry representative organisations and other government agencies.

Late in 1999 the Australian Greenhouse Office received an approach from the National Office of Local Government to fund the greenhouse addition to "Australia's guide to good residential design" a popular semi technical guidebook for city planners. During negotiations for funding support, several Commonwealth Government agencies agreed to work together to develop a more comprehensive guide covering a greater variety of environmental issues. The Australian Greenhouse Office agreed to lead the project and immediately sought to gather stakeholder support, corporate sponsorship and suitable technical expertise.

Tenders were called to develop materials for the Good Residential Design Guide project, later to be branded "Your Home", with the explicit goal of creating a single guide to reducing the environmental impact of Australia's housing stock. The guide was to go beyond the single issue focus of previous materials and be designed to communicate a range of practical solutions to a broad audience group with varying levels of technical understanding in the field.

An early commitment by all partner organisations to utilize the materials to update and educate their members became a significant part of the strategy to disseminate the materials.

Following the contracting of the Institute for Sustainable Futures (ISF) as the primary consultants, a peer group of technical experts was contracted to support the steering and stakeholder representative committees and provide systematic assessment and improvement of all technical materials.

The ISF approach to the project was strongly influenced by "Innovation Diffusion Theory", a tried and proven social change tool (Rogers, 1962 & 1971). The following extract from Alan AtKisson's (1999) describes Innovation Diffusion Theory as it applies to the field of sustainability and, in doing so, encapsulates the theoretical underpinnings of Your Home ⁵.

"I call the early adopters Transformers, for two reasons: They are the real doorkeepers to the transformation of a culture, and they often work like an electrical transformer, stepping down the voltage of the innovation and easing it into the mainstream gradually, at a speed the system can safely absorb.

Transformers are leaders among mainstream people (in the group, the company, or the society at large), who are open to new ideas but cautious about which ones they promote, because they want to maintain their status.

If the Transformers embrace an idea, the Mainstreamers (the majority of the culture in question, who watch the Transformers for cues on what new ideas to adopt) are almost sure to follow (perhaps at a safe distance).

To make sure that the Mainstreamers do follow their lead, the Transformers may alter the idea by toning it down, reducing its radicalness, using it in a way the Innovator never intended, or using only part of it".

AtKisson's "transformers" are beginning to establish a presence in the Australian housing market aided by government and industry sponsored schemes that recognise, reward and promote excellence in sustainable innovation. They are consumers, designers and builders who embrace the ideals of sustainability, cleverly selecting and adapting innovations to fit within the real constraints of budget, climate and availability. As AtKisson observes, this rarely meets the expectations of the "innovators" but is an essential step towards achieving "mainstreaming".

Your Home is a "transformer" by AtKisson's definition. It is intended to break down the complexity of sustainable theory and ease it into mainstream home building practices allowing industry to absorb it at an achievable pace. Whilst Your Home identifies and recommends best practice in every case, it also encourages partial implementation of all principles at every opportunity and encourages participation over perfection.

Methodology

An initial literature review revealed an abundance of literature and technical information on innovation to improve the sustainable performance of Australian housing stock. This literature has been widely available since the early 70s. Two key research questions quickly emerged:

- Why was the innovation transformation process stalled?
- How could the materials best act as a catalyst for "innovation diffusion" or "mainstreaming"?

Analysis of the existing literature lead to the conclusion that it had not been "designed" to effectively communicate with a mainstream audience. It was designed for an audience of innovators and was likely to remain the exclusive domain of that group until it was transformed into the language of AtKisson's mainstreamers.

Communications Research

A leading research consultant, Professor Robyn Penman was engaged by ISF to investigate the audience information needs and develop a communications strategy for the project.

Audience analysis

The research team analysed the various factions within the potential audience and mapped the complex interactions required between them to "mainstream" the subject material. For the scope of this paper, the range of factions has been summarised as: consumers, designers, builders, regulators, marketers, manufacturers, and researchers/innovators.

Several key observations were drawn from this analysis:

- The information needs of each group were quite diverse. It was unlikely that a single document or media form would meet the information needs of all groups effectively.
- Many consumers had little knowledge of environmental sustainability or why it was important to the local or global community. Others had substantial awareness but believed that sustainable features were too expensive or unavailable to them.
- Those consumers who did attempt to include sustainable features in their homes experienced difficulty accessing designers and builders with adequate skills to implement their ideas.
- Whilst designers were generally more aware of the basic principles, they lacked the specific skills and information to implement them.

- In the absence of demand from consumers or direction from designers, builders saw little incentive to make their products more sustainable
- Marketers (eg. real estate agents, project home companies and developers) largely generated their own perceptions based on close observation and prediction of consumer behaviour. Whilst very influential in the market, their actions are largely driven by majority consumer preference.
- The information needs of regulators, manufacturers and innovators were adequately met by the existing "technical" literature". Regulators were driving reform as rapidly as market acceptance would allow. Innovators were restricted by the lack of market uptake and manufacturers were developing new products in line with market demand.

A clear picture had emerged of the importance and mutual influence of three groups: consumers, designers and builders. Each had a distinct but essential role in "mainstreaming" sustainable features in Australian housing and, equally importantly, the roles were interdependent. The research found that the range of information available to the three groups was inadequate, being either too technical, lacking in practical application or too diverse with the vast range of imperatives found to be confusing to most of the audience. In consultation with all stakeholders, it was decided that a focus on these three audience groups would best fulfil the objectives of the project in terms of mainstreaming sustainable housing.

Audience research

Exploratory research using in-depth conversations with small numbers of people was used to expose a range of differences and perspectives within the audience groups. The research focused on exploring information needs, priorities, and concerns in the context of everyday lives using informal, open-ended, face-to-face discussions with a loosely structured protocol.

Participants were selected to ensure that a range of demographic characteristics within each of the specified target groups was covered. The sample was not intended to be a representative sample of each of the target populations but representative of the diversity of user needs. Choosing on this basis maximises the usefulness of data derived from small samples. The interview protocols for designers, builders and their clients had a common structure:

- Understandings: exploring what people understood a sustainable building to be and how much information they had about it.
- Information sources: explored the range and usefulness of information sources that the participants had used themselves.
- Evaluating specific sources: asked participants to evaluate information sources.
- Future possibilities: This section explored potentially useful solutions to information provision from within the participant's framework and everyday context of use.

The research yielded a clear understanding of the information needs (subject matter, language set and preferred media sources) of the audience. This provided the basis for design, content selection, writing style, media selection and presentation of the final product.

Content and Media Selection

Research indicated the need for different media to be used to communicate to different sub groups of each target audience. By developing communication formats that were similar to the audiences existing communication forms, the Your Home materials could replace or supplement those in use. The primary media form chosen for each audience were: (a) for consumers, a magazine style full colour glossy printed guide; (b) for builder and designers, a printed ring bound folder of individual factsheets; and (c) for students, web and CD based electronic forms. Additional printed promotional materials were developed for achieving widespread promotion while reducing cost and waste.

Most consumer pre-purchase research is via glossy magazines, consumer fairs and display villages. The Your Home consumer guide was developed as a glossy magazine to be distributed at a range of outlets where consumers undertake pre-purchase research. To achieve adequate market penetration, a format suitable for high volume, low cost was chosen. When their awareness of the issues and benefits is raised, consumers often require the more detailed information, often sourced as required throughout the course of the project. To meet this need, the entire Your Home Technical Manual is included on CD ROM in the back of the magazine. This has the added advantage of keeping the two distinct levels of information separate, avoiding information overload in the first instance.

It was observed that designers and builders were reluctant to access internet or other electronic sources in their work practice, with their preferred media form being the printed manual. The Your Home Technical Manual factsheet format was designed to meet the audience need for readily available small parcels of information. The Manual consists of an oversized loose leaf folder designed to allow practitioners to leave it open on the workspace, remove pages for photocopying, and to file additional information they collect to supplement the materials.

Varying levels of expertise and understanding within each audience group dictated that the information should be presented to each group in varying levels of technical detail. It was decided that two main levels of information would be developed - each with a dual purpose:

- The Consumer Guide introduces concepts of good design to potential home buyers and renovators in terms of comfort, lifestyle, health, economy and safety. The environmental sustainability messages are inconspicuous and incorporated into the simple good design practice messages, giving a sense that environmental sustainability is normal practice.
- The Technical Manual comprises some 70 fact sheets, written in an easy to understand non-technical language, explaining the concept and possible solutions to the full range of environmental impacts. Where possible practical demonstrations of existing solutions are presented to reinforce the message that environmentally sustainable solutions are normal practice. A number of case studies of existing houses in different climate zones were provided as examples of excellence.

The Technical Manual was also designed to satisfy motivated designers with sound working knowledge in specific fields. For this audience each issue specific factsheet lists additional reference materials and supporting organisations.

The computer literate audience was identified as quickly growing and becoming influential so all consumer and technical materials were reproduced on the world wide web in html format with printable factsheets in pdf format, and all available free of charge.

Promotion and Application

By far the most critical pre-requisite for success in terms of mainstreaming is the distribution and promotion of Your Home guide materials. Perceived ownership of the materials by the various industry, government and community agencies involved in their development has aided enormously in this regard.

The distribution strategy was divided into three key goals:

- To provide the next generation of builders and designers with the knowledge and tools to incorporate environmentally sensitive actions as a matter of normal design practice;
- To update all existing builders and designers with the knowledge and the tools to incorporate environmentally sensitive actions as a matter of normal design practice;
- To help increase the market for environmentally sustainable homes by providing consumer materials to those interested in building or renovating a home, at a location and at a time when design choices and material selection is taking place.

To satisfy these goals a sophisticated communication action plan has been established. The following is a list of key elements from the communication action plan:

- The CD form of the materials has been provided to tertiary educational institutions at no cost, with the majority of university and technical education institutions adopting Your Home materials as a required reference in design and building related courses.
- National professional development training programs based on Your Home materials are being delivered to members of most industry representative organisations covering builders and building designers.
- Consumer guide materials are provided to builders and designers for use during consultations with their clients.
- City Councils and Local Governments provide Your Home brochures at the counter and distributing it to consumers, designers and builders inquiring about building approval.
- The Your Home materials are promoted and distributed at display home villages, home shows, trade shows, community fairs and conferences in addition to many other outlets where design choices and material selection is taking place.
- The Your Home materials are distributed in conjunction with related government promotional activities and subsidy programs.
- The Technical Manual is available for retail at many building industry bookshops.
- Special events such as high profile public lectures and home tours are held to promote the materials.
- Regionally relevant case studies from the Your Home Technical Manual are promoted in popular newspaper and magazine media.
- The Your Home website is hot-linked to numerous industry, corporate and community sites related to house design and construction.

Conclusion

Whilst Your Home has not been in the market for a sufficient period of time to warrant a full evaluation, feedback from stakeholders and practitioners already using it is overwhelmingly positive. It is anticipated that Your Home will play a major role in mainstreaming more sustainable residential design and construction practices throughout Australia in coming years.

A full evaluation will be conducted at the end of the first year of operation and further developments made where required. The materials are subject to periodical improvements firstly through the electronic media forms and later through reprints. Negotiations are currently under way to create an industry body to take greater responsibility for ownership of Your Home from the Australian Government to further develop, promote and distribute the resource.

References

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AGO Logo and ISF Logo equal prominence

SB02 Presentation No 342

Your Home

Consumer Magazine (cover image)

Your Future

Your Lifestyle

Design for

Technical Manual (cover image)

Lifestyle and

The Future

A holistic guide to sustainable residential design and construction in Australia

Developed for designers, builders, students and consumers

Written in the language of the audience

Based on extensive audience research

Developed collaboratively by government, industry and researchers

Two information levels: Consumer and Technical

An exercise in Innovation Diffusion

Meeting the "how to" information needs of the building industry

Providing practical solutions to a range of sustainable building challenges:

- Passive Design
- Water Use
- Wastewater treatment
- Energy Use
- Renewable energy systems
- Waste minimisation and recycling
- Biodiversity loss
- Soil loss and sedimentation
- Sustainable Landscapes
- Transport
- Noise control
- Sustainable communities
- Adaptable housing
- Includes practical case studies

Used by: architects, building designers, builders, regulators, home owners and buyers, tertiary students and researchers.

Available in several formats:

Free Consumer Magazine

Printed Technical Manual

CDROM or internet.

Ask for a free CD ROM or visit www.yourhome.gov.au