LOW CARBON LIVING CRC

# RP3016: EnergyFit Homes Initiative

Working paper 4 - Housing Specialist and Real Estate Industry Survey

Australian Government
**Department of Industry,
Innovation and Science**

Business
Cooperative Research
Centres Programme

LOW CARBON LIVING
CRC

Acknowledgements

Copyright and Disclaimer

Contents

Executive Summary

This report is a milestone deliverable from CSIRO for Project RP3016: 'Enhancing the market for energy efficient homes at point of sale and lease', funded by the Cooperative Research Centre for Low Carbon Living and other project parties, including the NSW Office of Environment and Heritage, CSR, AGL Energy, Australian Windows Association, Clean Energy Council, Energy Efficiency Council, Stockland, Fletcher Insulation, Knauf Insulation, the Centre for Liveability Real Estate, and the Energy Efficiency Certificate Creators Association.

Two online surveys were conducted in February 2015 to examine the gaps in information and skills held by housing industry representatives to support increased sales and rentals of low carbon ('energy efficient') homes. The aim of the housing construction specialist survey was to identify the demand and knowledge held by the housing sector in energy efficient features, perspectives held by specialists regarding energy efficiency standards and rating systems, preferred information sources and gaps of information regarding housing energy efficiency, and related industry knowledge and training. Respondents' demographic and socio-economic data were also collected. The online survey of real estate agents and property managers explored which features were perceived as important overall and which contributed to energy efficiency, whether – and how- the energy efficiency-related features were actively promoted during engagement with potential buyers and tenants, how information could be presented to maximise uptake, the perceived barriers to marketing energy efficiency housing features, the interest in 'leading' promotion of energy efficient housing, the existing knowledge of home energy rating tools and information systems, gaps in training to build familiarity with energy efficient housing.

The survey of housing construction specialists received 492 responses, from across Australia - with the most responses from Victoria, New South Wales and Queensland. The respondents represented architects, non-builder trades, builders and designers, plus a smaller representation of a range of related specialisations. The survey of real estate agents and property managers received 140 responses. The respondents were based in all Australian states, with the majority from New South Wales and Queensland. One-third of respondents had been trained as 'Liveability' specialists through the Centre for Liveability Real Estate.

The housing construction specialists and real estate industry representatives were asked to list the features that they perceived to provide the greatest residential energy efficiency gains. As those features and products that contribute the greatest energy efficiency are not necessarily perceived in the same priority order, this needs to be clarified in any such promotion. A next step could be to emphasise the energy efficiency features of products and features to both construction specialists and real estate agents, as well the potential home owners and tenants. Products that contribute high energy efficiency and have a high profile as energy efficient include ceiling and wall insulation, solar hot water systems, energy efficient windows, and high-rated Energy Rating Label air conditioners or heaters.

The housing construction representatives considered that clients were likely to install energy efficient products to reduce energy costs in the longer-term, increase the comfort of their home, and reduce energy consumption. Similarly, real estate representatives framed residential energy efficient to potential clients in terms of home comfort, reduced energy bills, and the value added to the property. Liveability-trained agents provided higher ratings regarding the importance of providing specific energy efficiency information to buyers or renters than non-Liveability specialists, and those with Liveability training stated greater confidence in communicating an energy rating than those without such training. Real estate respondents indicated that potential buyers and renters enquired about the energy efficient features of a property either sometimes or rarely, and half of the respondents have not experienced clients enquiring about a home's energy costs at the point of sale or lease.

The housing construction specialists considered that the main current barriers to recommending energy efficient products to clients were the higher cost to install, a lack of interest from clients and client scepticism about why a product is being recommended. Similarly, real estate representatives considered that marketing of energy efficient home features was limited by conflicting information about what is delivered by the features, and clients either not asking for this information or being disinterested. The housing specialists recommended counteracting these barriers by demonstrating cost benefits of products, providing information on product costs savings, and better communication of the benefits of energy efficient products, including potential energy savings.

There was a strong willingness and confidence expressed to explore new products in order to be an industry leader, such as those offering energy efficiency benefits. A next step could be to support the entrepreneurialism of specialists to take a leadership role in their industry on energy efficient designs and products.

In terms of home energy ratings, housing construction specialists supported the provision of such information about the energy efficiency at the time of sale or lease, as it provided consumers with an indication of the on-going costs and comfort of the home, the potential for improvements to the home, and allowed greater transparency and comparison of properties. Real estate industry representatives considered that a specific home energy rating was moderately important to the sale of the home. In response, the provision of an accredited home energy rating at point of sale or lease could be encouraged, and its inclusion in marketing and communications materials could be supported.

The level of familiarity of housing construction specialists with current home energy rating tools or information systems was low to moderate familiarity, and low for real estate representatives. This led to a lower confidence in real estate representatives to communicate a home's energy rating.

For housing construction specialists, influential information sources were Australian Standards, the Building Code of Australia, product catalogues and manuals, and industry handbooks. They stay informed about new products and supplies through internet search engines, and emails and magazines from industry associations or professional associations. Real estate agents and property managers sourced information through real estate training courses and emails from industry or professional associations. To enhance knowledge and skills in residential energy efficiency, closer linkages could be established between researchers and government with industry and professional associations to ensure energy efficient homes are featured. Collaboration with product manufacturers and suppliers could promote the energy efficiency potential of their products. Furthermore, knowledge and the ability to communicate energy efficiency could be enhanced by researchers and government to ensure training in communicating features of energy efficient homes.

In addition to these surveys, a parallel telephone survey of consumers was conducted in early 2015. These results will be published in a companion report.

Introduction

This report is a milestone deliverable from CSIRO for Project RP3016: 'Enhancing the market for energy efficient homes at point of sale and lease'. It is funded by the CRC for Low Carbon Living and other project parties. This project is publicly referred to as the 'EnergyFit Homes Initiative: Empowering consumers to recognise and value homes with better health, comfort and sustainability benefits and lower running costs'. The EnergyFit Homes Initiative aims to explore the key information and behavioural factors as well as the market structures that influence the purchase and leasing of new and existing energy efficient homes.

This report presents results to respond to Milestone 4b: to report the results from an online survey of housing industry representatives on the gaps in information and skills to support increased sales and rentals of low carbon ('energy efficient') homes.

This survey is based on two previous project deliverables of the EnergyFit Homes Initiative, namely a literature gap analysis and focus group analysis. The gap analysis included a review of the literature on publicly available information, research reports and papers about the factors that influence the purchase and leasing of new and existing low-carbon homes (Romanach et al., 2014). The focus groups followed on from the gap analysis and were conducted with the aim of establishing a baseline understanding of home buyers' and renters' perspectives on energy efficiency and home energy rating tools and to explore these stakeholders' key information needs. Focus groups were conducted in four east coast cities and regions in September 2014. In the focus groups, views were sought from owner occupiers, investors and tenants. In total, focus groups involved 107 participants, including 26 participants in Canberra, 25 in Sydney, 27 in Brisbane, and 29 on the NSW Central Coast (see Hall et al., 2014).

In this report, the method of data collection through two online surveys is described, followed by a description of the analytical methods applied. The results are presented in the following section. Finally, a discussion and associated conclusions from the data is provided.

In addition to these surveys, a parallel telephone survey of consumers was also conducted in February 2015. These results will be published in a companion report that also corresponds to Milestone 4b.

Method

To gain a better understanding of the housing construction and real estate industries' perspectives on energy efficiency, two online surveys were conducted with tradespeople and professionals working in these sectors. One survey targeted specialist professions working within the housing industry, while the second survey was targeted towards real estate agents and property managers.

Survey design and measures

An online survey method was selected as it can allow the research to target for large samples without associated cost (Taylor, 2000). This was particularly important in this study, as unlike the consumer survey, which was delivered through telephone interviews, the researchers did not have access to a database of specialists to invite the target audience to participate in the research. Instead, existing networks and contacts were approached to disseminate the survey link, and email addresses were also collated through information publicly available on the internet. This combined approach enabled the sample size to be increased through the simple process of forwarding the survey invitation to additional potential respondents. A further reason for selecting this method was that online surveys are less likely to be influenced by social desirability effects (answering based upon social norms) and are also less restrictive with respect to the types of questions and information that can be included in the survey instrument when compared to telephone interviews (Stephenson and Crete, 2010).

The online survey questions were developed based on the previous project deliverables of a literature gap analysis and focus group analysis (see Romanach et al., 2014; Hall et al., 2014). In addition, extensive discussions were conducted with the EnergyFit Homes Initiative Steering Committee, particularly LJ Hooker, to ensure the measures used were appropriate from an industry perspective. Furthermore, Swinburne University of Technology advised on final question structure. These documents and discussions identified that the aim of the surveys was to identify the demand and knowledge held by the housing sector in energy efficient features, perspectives held by housing specialists regarding energy efficiency standards and rating systems, preferred information sources and gaps of information regarding housing energy efficiency, and related industry knowledge and training. Respondents' demographic and socio-economic data were also collected.

The building of the online survey and the data collection process were carried out by Swinburne University using the Qualtrics survey platform. The survey took approximately 20 minutes to complete. Copies of the two surveys are provided in Appendix A .

Survey recruitment

Housing construction specialist survey

The survey for the housing construction industry targeted a range of different trades and professions, including architects, builders, plumbers, electricians, designers, glaziers, insulation installers and solar panel installers. Recruitment and data collection were conducted over a four week period from January 21st to February 18th. As mentioned, due to the lack of a publicly available dataset for specialists' recruitment, electronic methods were used for recruitment purposes. More specifically, information publicly available on the internet through industry association and peak body websites and databases provided email addresses of individuals and businesses working within the targeted professions were utilised. An e-mail list was collated and individual e-mails were sent to those specialists to invite them to participate in this study, although it is noted that the availability of such information was sporadic across different professions, and across states and territories. The email invitation contained a link to the online survey. Dissemination of the survey also occurred through the Steering Committee, who sent emails to their member databases, with interests in windows, insulation, energy efficiency and renewable energy. Reminders about the survey were also sent within a fortnight to increase participation rates. In addition, to specifically recruit electricians, notification of the survey was included in an online newsletter (eNews) issued by Master Electricians Australia on January 21st.

Participants were required to meet certain criteria to qualify to complete the survey. The housing construction specialist survey was aimed at those responsible for making decisions. Therefore, those not yet fully qualified and still completing their apprenticeships were screened out at the start of the survey.

Real estate agent and property manager survey

The real estate survey was aimed towards responses from both real estate agents and property managers in Australia. Recruitment and data collection was conducted from January 21st to February 18th. As with the housing specialists' survey, electronic recruitment methods were used to disseminate the survey to this audience. Several of the state branches of the Real Estate Industry Association (REIA) had publicly available databases of contact information for their members on the internet. Email addresses from these lists were randomly selected and received an email invitation from CSIRO to answer the survey, with the survey link included. A reminder was sent to this group in the weeks following the initial email. The national branch of the REIA also posted about the survey on their social media accounts with Twitter

and Facebook. In addition, LJ Hooker was engaged to contact their associated real estate agents and property managers.

Data analysis and sample characteristics

The resulting samples for both the housing specialist and real estate surveys are provided in the respective Results sections.

The analysis presented in this report consists of frequencies and summary statistics reported for the full sample and, where appropriate, summarised across relevant subsamples. Paired sample t-tests were conducted to determine whether there were significant differences in the mean values of two subsamples.

Results

This section presents results from two separate online surveys. Firstly, the results from the survey of housing construction specialists are presented. Secondly, the results from the survey of real estate agents and property managers are presented. The combined results are integrated in the Discussion section. It is important to note that both survey samples included in this study are not representative. This study did not seek a representative sample of respondents by profession or within each profession due to the limitations of the recruitment methods available.

Housing construction specialist survey

The housing construction specialist survey aimed to explore the perceptions and experience of specialists, such as builders, architects, designers and tradespeople about the residential energy efficient market. These stakeholders are often viewed as sources of innovation; propelled by their own interest or identification of a market, they can be drivers and researchers of energy efficient options (Crabtree and Hes, 2009). For example, the main perceived benefit for adopting energy efficient design and construction processes by small residential building firms in Queensland was improving the industry's reputation (Thorpe and Ryan, 2007).

In addition, due to homeowners low knowledge about energy efficiency retrofits, tradespeople involved in housing renovation and new construction could potentially be an important mediator in the supply chain, identifying the most suitable low-carbon products for specific renovations (Risholt and Berker, 2013).

However, these construction specialist stakeholders may also pose a barrier. This is because the practices of the industry are also driven by their perceptions of consumer demand, and the cost and/or risk of a particular action (McGee et al., 2008; Miller and Buys, 2012). Industry has been documented as perceiving low demand from consumers for energy efficient housing (Miller and Buys, 2013). In addition, research by McGee et al. (2008) found that decisions around low-carbon housing were driven by profit and advantage over competitors and the industry was found to relate sustainability negatively to both drivers. Research by Risholt and Berker (2013) also identified poor advice from tradespeople as a barrier to homeowners implementing energy efficiency technology.

Additional barriers to the promotion and implementation of energy efficient housing that have been identified for these stakeholders groups in previous research include a lack of legislation to drive low-carbon features and designs in housing retrofits (Osmani and Davies, 2013) and industry preferences to supply to the minimum standards and guidelines (Miller and Buys, 2013). Other research reported the frustrations of some householders who had dealt with architects or builders who refused to 'go beyond' the minimum construction guidelines (Berry et al., 2014). Thorpe and Ryan (2007) argued that the main drivers for smaller residential firms to engage in energy efficient building practices were the notion that 'it was good practice' and responds to legislative standards. From an environmental perspective, previous research found construction contractors as being apathetic to reduce carbon emissions (Wong et al., 2013).

An earlier study by Thorpe and Ryan (2007) investigated how smaller residential building firms in Queensland engaged in environmentally energy efficient design and construction practices found that industry associations, training events, suppliers, journals, magazines and advertisements were the main sources of knowledge for small residential building firms. In addition, the study found that employees, designers and subcontractors were also important sources of information. The study also identified the need for greater integration of sustainability practices during the design stage. The builders involved in the research cited a number of reasons for not incorporating energy efficient practices into their activities, including a lack of testing of some sustainability practices, a lack of tradespersons with the necessary expertise, and higher cost and increased liability as a result of increased project complexity and competition (Thorpe and Ryan, 2007).

Given this background, the online survey of specialists involved in housing construction explored which information sources were consulted for information regarding their profession and relevant new products, how energy efficient housing and associated features were perceived and valued by both the specialist and their customers, whether home energy ratings and standards were sought or were influential, familiarity with existing home energy rating tools and information systems, and gaps in training and uptake of new knowledge on energy efficiency in housing. The results are reported under relevant sub-headings in the following section.

Sample characteristics

A diverse sample of 492 respondents was recruited to answer the online survey. Survey respondents worked Australia wide (Figure 1), with 29% (n=143) of sample respondents working in Victoria, 25% (n=121) in New South Wales, and 22% (n=109) in Queensland. Most survey respondents were males (82%; n=405). Of the total sample, 24% (n=119) of survey respondents were aged between 18 and 40 years old, 30% (n=148) of respondents were aged between 40 and 49 years old, and 23% (n=112) of respondents were aged between 50 and 59 years old. Further details are shown in Table 2 to Table 5 in Appendix B.
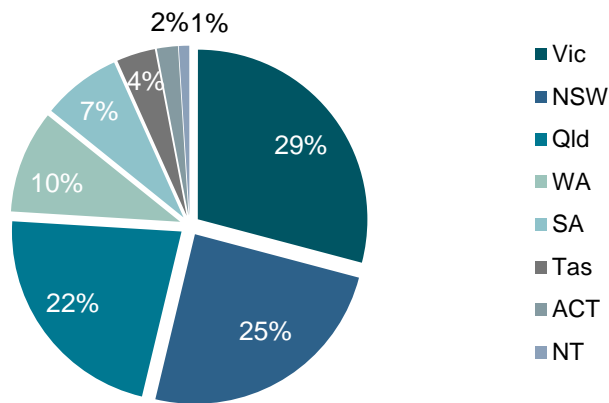
Figure 1 State of residence of participants (N=491; %)

Four main professions, plus a fifth category of 'other', were represented in the sample and are displayed in Figure 2. Of the total, 25% (n=126) were architects, 24% (n=116) were non-builder tradespeople, 21% (n=101) were builders, and 13% (n=64) were designers. The non-builder tradespeople included window and door installers, plumbers, electricians, insulation and other installers. The 'other' category included suppliers, consultants, engineers, energy assessors, surveyors and certifiers. Females (14%; n=67) represented 30% of designers, 21% of architect respondents, 7% of tradespeople and 4% of builders. Further details for all items are provided in Table 2 and Table 3 in Appendix B. Survey respondents work in several aspects of the building and property market, including single home development (n=382), home renovations and retrofits (n=380), and large-scale development (n=272), as shown in Table 6 in Appendix B.
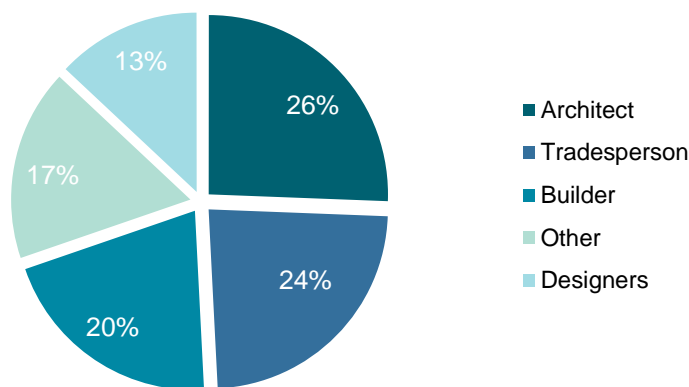
Figure 2 Professions of participants (N=492; totals provided)

The survey sought respondents who were fully qualified and currently working within their profession, and therefore apprentices were screened out at the start of the survey. As a result, survey respondents were very experienced in their field, with 38% (n=185) having worked in their profession for over 10 years, as shown in Table 7 in Appendix B. Most survey respondents also reported having a supervisory or management role (71%; n=350; see Table 8) and being responsible for the purchase of work supplies and products (78.5%; n=386; see Table 9). Survey respondents also represented a range of company sizes. As shown in Table 10 in Appendix B, 18% (n=89) of respondents work by themselves, and 58% (n=279) work in companies with 2 to 19 employees.

Finally, to understand the type of technology adopters survey respondents identify with, specialists were asked to select a statement which best described their approach when trying new energy efficiency products. Overall, respondents were enthusiastic about trying new products with a similar number of respondents selecting "I will probably be one of the first in my industry to try" (36%; n=176) and "I will tend to wait for others to try it first, but soon after I will try it for myself" (35%; n=174). However, some respondents prefer not to be the first to adopt the technology. Details are provided in Table 45 in Appendix B.

Information sources

Survey questions were posed to respondents to explore which information respondents consult on a daily basis. In their general day-to-day work, a high number of respondents indicated that they refer to the Australian Standards (n=418), the Building Code of Australia (n=401), product catalogues (n=386), product manuals (n=372) and industry handbooks (n=278). Some respondents also listed additional sources or documents from the survey list provided, including the internet, home energy rating tools, state legislation, and association newsletters. These are displayed in Figure 3, with details in Table 11 in Appendix B.
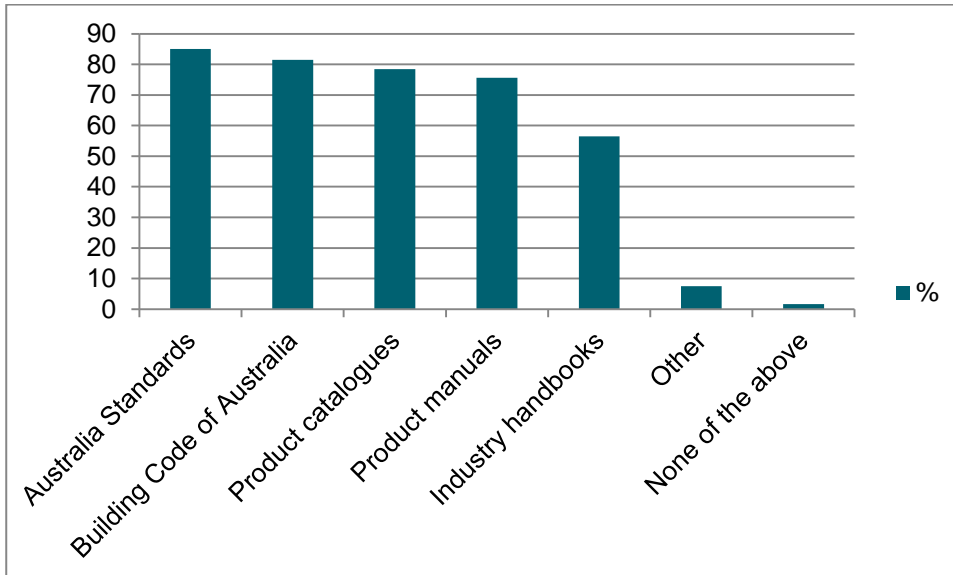
Figure 3 Documents referred to in daily work (N=482; number of responses)

Respondents were asked to indicate how frequently they referred to a set list range of information sources to stay informed about new products and supplies, using a scale from 1 (never) to 5 (frequently). The responses varied widely across the listed sources, but were relatively consistent across the professional categories, as displayed in Figure 4. Overall, the sources referred to with moderate frequency included internet search engines (M=3.91, SD=1.09), emails from industry associations or professional associations (M=3.41, SD=1.1), magazines published by industry associations or professional associations (M=3.39, SD=1.16), industry association websites (M=3.34, SD=1.14). Further details are provided in Table 12 and Table 13 in Appendix B.
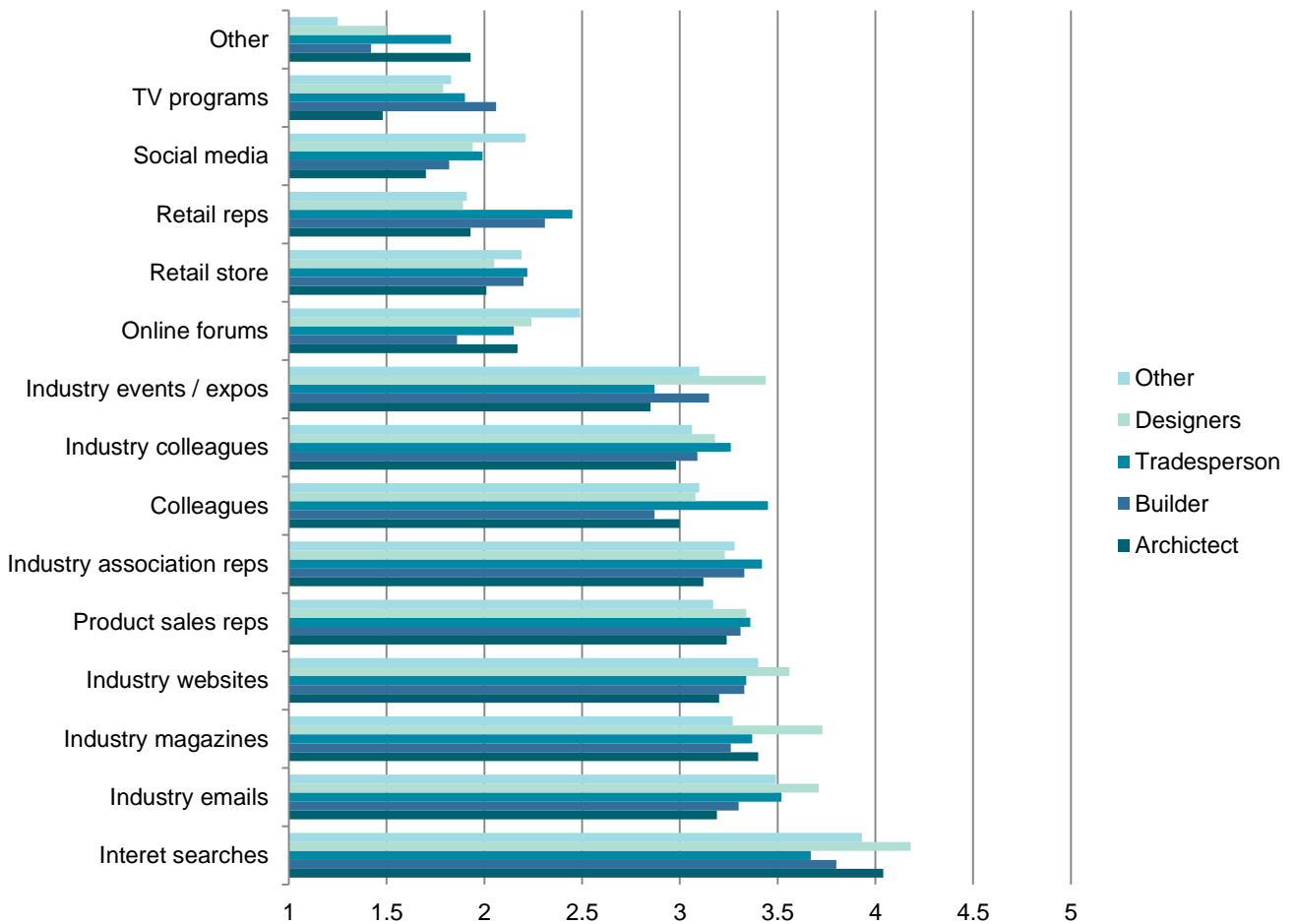
Scale of frequency of use: 1 (never) to 5 (frequently)

Figure 4 Mean sources of information of new products and supplies (N=492)

Energy efficiency features

When asked, a large majority of survey respondents (95%; n=467) stated that they do recommend or install energy efficient products (for details, see Table 24 in Appendix B). Most survey respondents (73%; n=360) also indicated that they frequently recommend a product because it is an energy efficient product (48.4% indicate it 'most of the time' and 24.8% indicate it 'all the time' (see Table 25 in Appendix B for details).

Survey respondents were also asked what products they currently recommend, install and/or sell to clients from a set list of products related to a home's energy efficiency. The products were selected to gather which energy efficient products those professionals currently work with and are not meant to be a comprehensive or representative list of products installed by the professional categories. Results show that a wide range of products are recommended by the survey respondents, with the most commonly listed features recommended, installed or sold by the respondents being windows (n=342), floor insulation (n=319), ceiling insulation (n=312), pool heaters (n=276), hot water systems (n=259) and lighting (n=257). The range of features asked in the survey is displayed in Figure 5 and Table 14 in Appendix B. Due to the nature of the work of different professionals, it can be seen that the range of products recommended by architects is much broader than those recommended by tradespeople. In addition, this list was not exhaustive and respondents listed a wide range of additional products. These included products relating to solar energy (n=11), cladding (n=7), glazing (n=7), plasterboard (n=6), ventilation products (n=6), roofing materials (n=4), design (n=3), draught-proofing products (n=3), skylights (n=3), security screens (n=3), and water storage/septic systems (n=3).

LOW CARBON LIVING
CRC
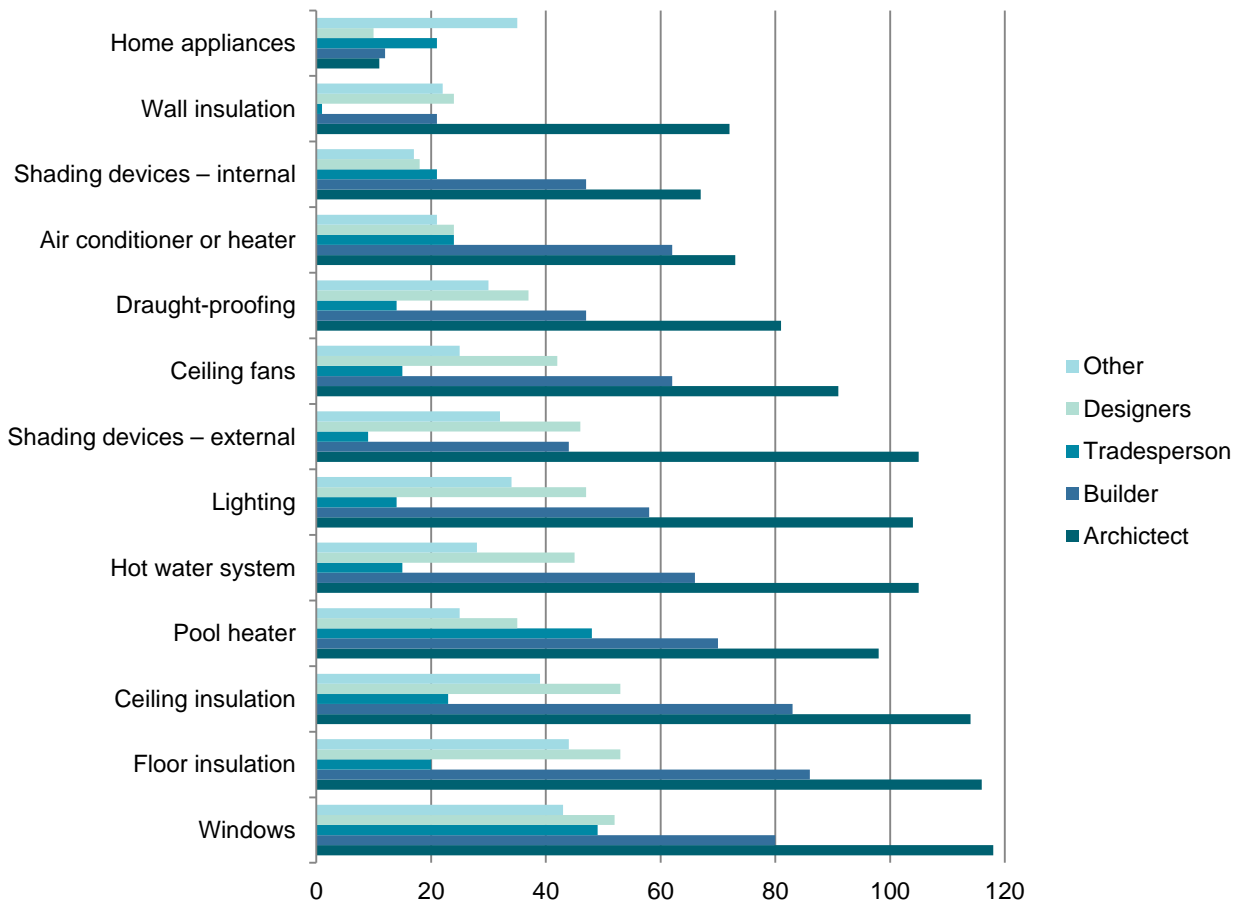
Figure 5 Products that respondents currently recommend, install and/or sell (N=492)

When asked, respondents stated that the most common reason selected by respondents for installing the above energy efficient products was for an entirely new installation within the home (M=3.75; SD=1.08), as opposed to replacing a current system or feature within the home (M=2.85; SD=1.14).

Furthermore, survey respondents considered that their company's recommendation drives demand (M=3.72; SD=0.93) more often than client demand for a product (M=3.08; SD=1.00). This finding supports previous research which highlights the essential role played by construction specialists in identifying suitable products for specific renovations (Risholt and Berker, 2013) and the fact that industry perceives low demand from consumers for energy efficient housing (Miller and Buys, 2013). Detailed results are presented in Table 15, Table 16 and Table 17 in Appendix B.

To explore housing specialists' views about the energy efficiency of a range of products, survey respondents were asked to what extent they considered that specific energy efficient products contributed to reducing energy use in the home. A set list of 15 products was presented to respondents. In order, survey respondents considered that the products and features that make the greatest contribution to energy efficiency were: were ceiling insulation (M=4.60; SD=0.73), wall insulation (M=4.49; SD=0.77), and energy efficient windows (M=4.36; SD=0.86). These are displayed in Figure 6, and details are provided in Table 18 in Appendix B.
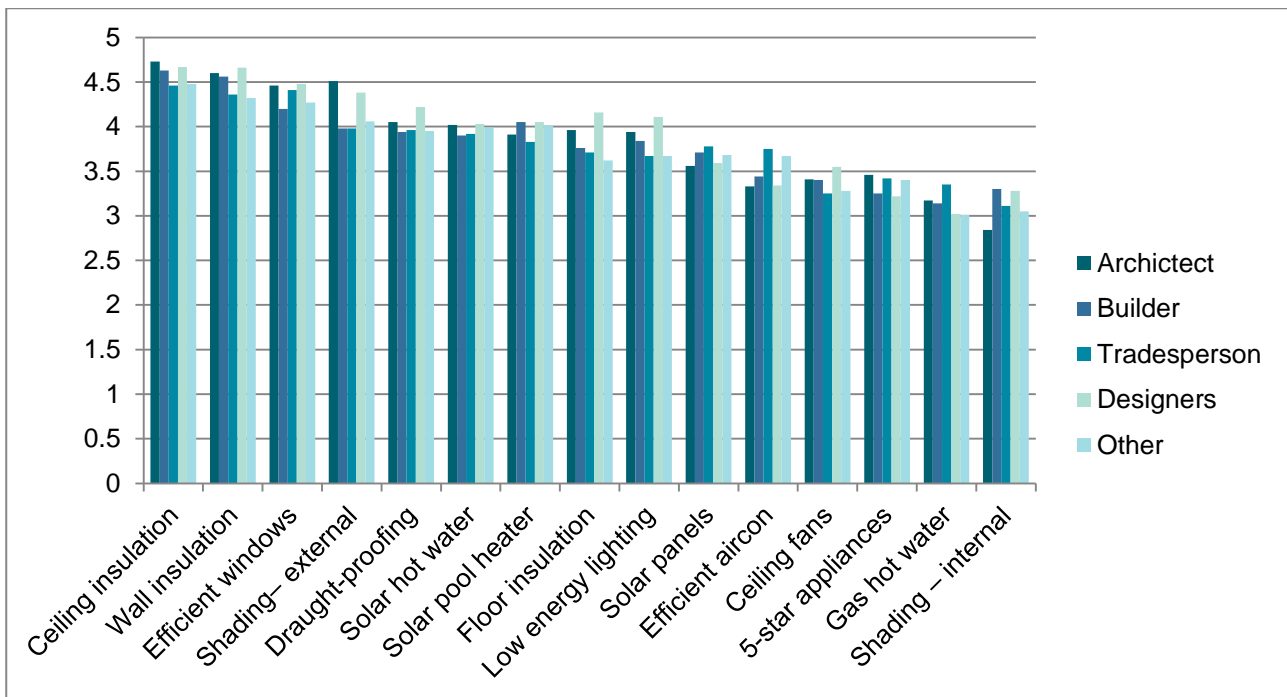
Scale of contribution of product to energy use reduction: 1- not at all to 5- substantial

Figure 6 Perspectives on contribution of products to energy use reduction (N=491; mean)

Previous studies suggest that the practices of the housing specialists are partly driven by their perceptions of the cost and/or risk of particular actions (McGee et al., 2008; Miller and Buys, 2012). To further explore what drives housing specialists to recommend an energy efficiency product, the survey asked respondents to rate from 1 (not at all) to 5 (very much so), how a range of issues influence their decisions to recommend or supply a product. As shown in Figure 7, all aspects asked in the survey were generally considered to be moderately influential. These were product quality (M=4.35; SD=0.86), their knowledge about the products (M=4.03; SD=0.94), cost (M=4.03; SD=1.00), availability of products (M=3.59; SD=1.09), client demand (M=3.35; SD=1.07), ease of installation (M= 3.35; SD=1.10), and relationship with suppliers (M=2.98; M=1.22). Further details on these results provided in Table 20 and Table 21 in Appendix B.
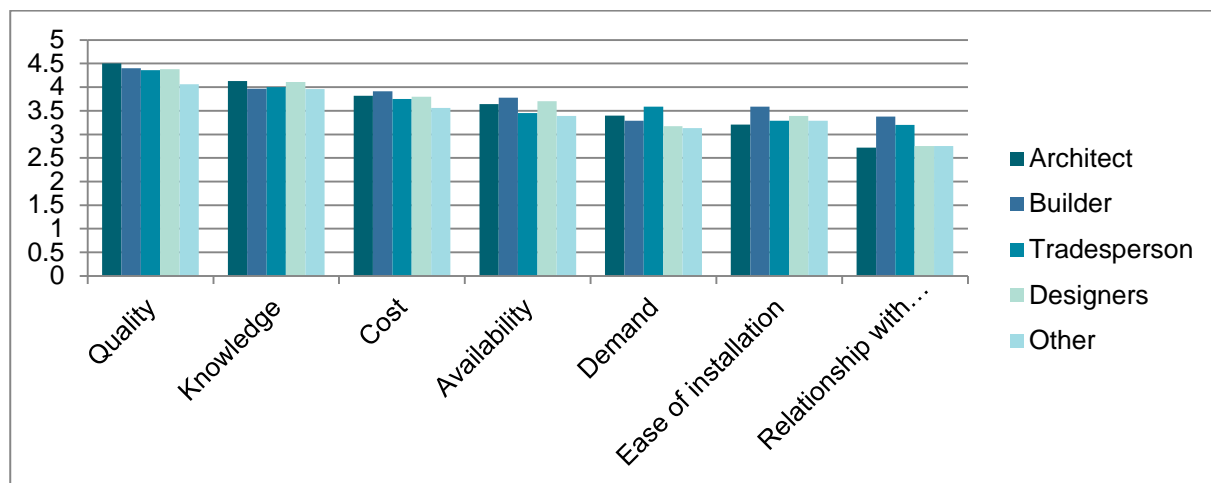
Scale of influence: 1-not at all to 5- very much

Figure 7 Influences on housing specialists recommending/supplying products and services (N=492; mean)

In addition, the survey asked respondents how often they consider a range of potential benefits to householders when recommending a housing product. The different specialists had very similar responses. Overall, and as shown in Figure 8, the quality of the product was the aspect considered most often (M=4.37; SD=0.77), followed by how the product would improve the level of comfort in the home (M=4.19; SD=0.94). Other aspects that are often considered are the amount of energy the client would save (M=3.9; SD=1.07) as well as energy bills savings (M=3.76; SD=1.11). Specialists also often considered ease of use, cost of installation, environmental impacts, while the least considered factor by housing specialists was how much value it would add to the property. Further details are provided in Table 22 and Table 23 in Appendix B.

LOW CARBON LIVING CRC
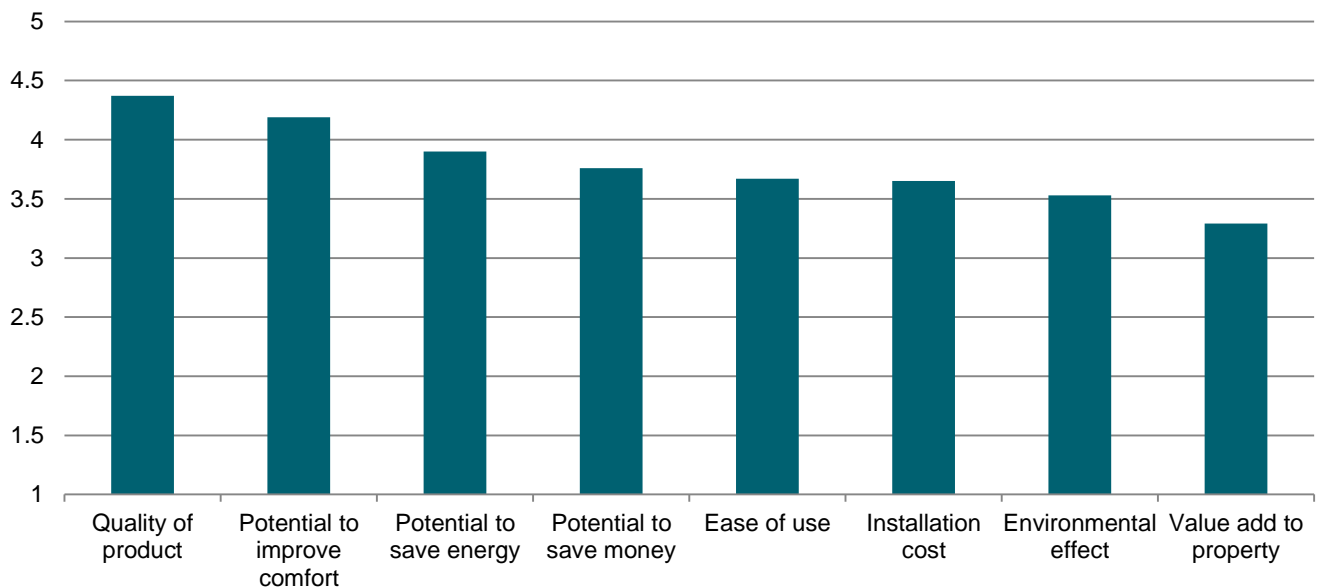
Scale of frequency to consider aspects: 1-never to 5- all the time

Figure 8: Mean frequency of factors considered when recommending products (N=490)

As housing construction specialists are key drivers of energy efficiency, it is important to explore what are the main barriers faced by these professionals when recommending energy efficient products. Therefore, from a set list, respondents were asked to select the three main barriers that they perceive or experience when recommending energy efficient products to clients. Responses were similar across the group of specialists, which responded the survey. The barrier most frequently selected by respondents was that the products are more expensive to install (70%; n=344). Other barriers were not as dominant, but included a lack of interest from clients (47%; n=232) and client scepticism about why a product is being recommended (47%; n=230). These results are provided in Figure 10, with the full list of barriers is provided in Table 26 in Appendix B.

To explore the specialists' views towards what needs to be improved so they can recommend, or continue to recommend, energy efficient products to their clients, survey respondents were asked how much improvement is needed in regard to set list of issues. There was moderate to high agreement with each of the issues questioned across the different specialities, as displayed in **Error! Reference source not found.**. From the specialists perspective, the issues that need most improvement were: demonstration of product cost benefits (M=4.01; SD=0.99), information on product costs savings (M=3.99; SD=0.98), communication of the benefits of energy efficient products (M=3.98; SD=1.00), and information on product energy savings (M=3.94; SD=0.99), training and education to professionals (M=3.81; SD=1.03) and demonstration of product environmental benefits (M=3.80; SD=1.01). Further details are provided in Table 31 and Table 32 in Appendix B. In addition to the issues listed in the survey, a minority of respondents contributed additional issues or aspects that they thought needed to be addressed. In total, 37 responses were coded for common themes. The main issues described were information and education about energy efficient products (n=7) and government incentives and legislation (n=6). Other issues that were less frequently described included affordability of products, enhancement of the products' availability and the design of the products.
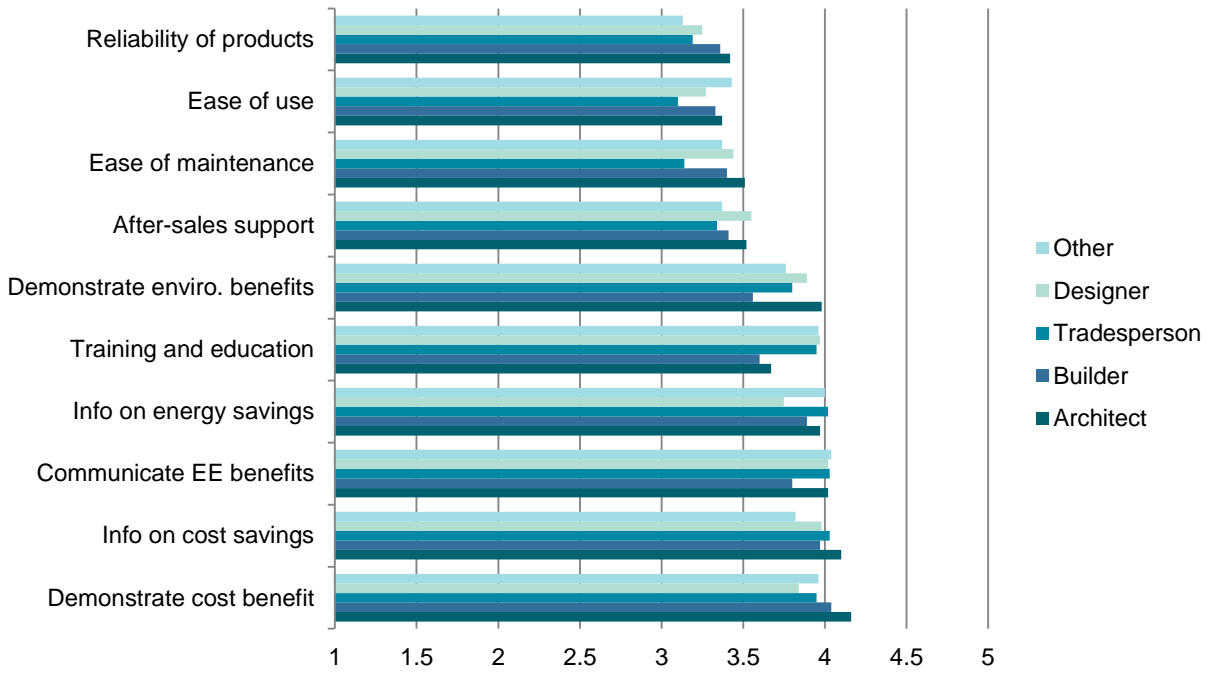
Scale of improvement: 1- no improvement needed to 5- a lot of improvement needed. Note 'EE' = energy efficient.

Figure 9 Mean improvement needed to address issues of energy efficient products
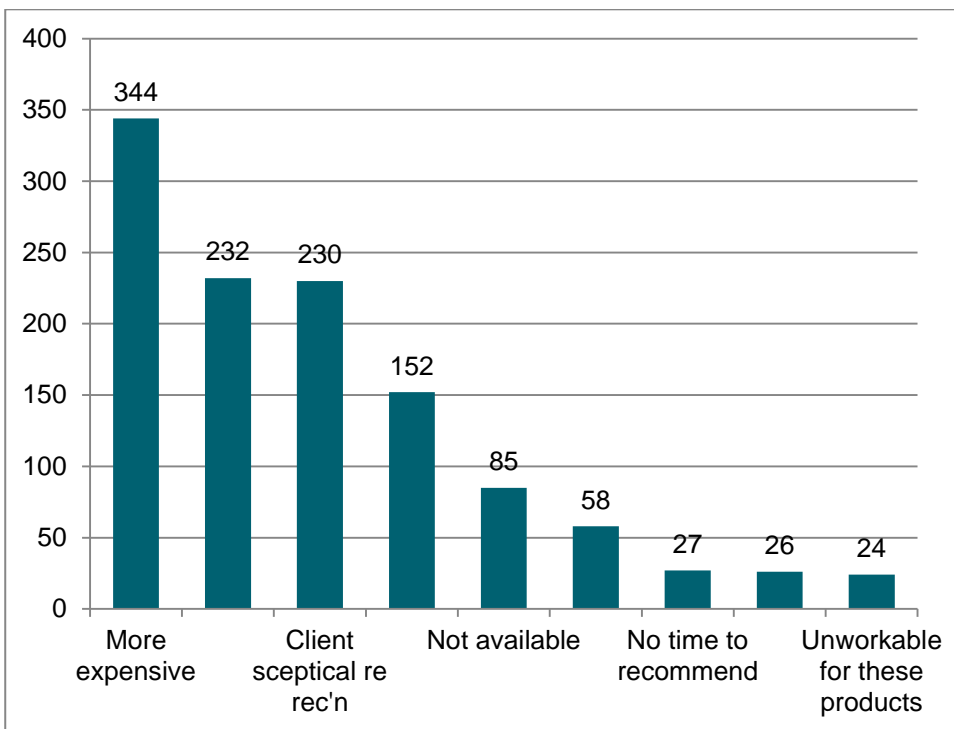
Figure 10 Barriers to recommending energy efficient products (N=492)

The survey also aimed to explore what specialists think are the drivers of uptake of energy efficient products by clients, Therefore, respondents were asked to indicate how important a set list of drivers were in motivating clients to install energy efficient products. Overall, the factors considered by specialists to be the most important in driving client's installation of energy efficient products were saving money on energy bills over time (M=4.18, SD=0.94), making the home more comfortable (M=4.0, SD=0.97), and saving energy (M=3.94, SD=1.0). As shown in Figure 11, most of the aspects were considered to be of moderate importance as drivers of installation, and there were only slight differences between the specialists' perspectives. Table 27 and Table 28 in Appendix B display the detailed results. Respondents also described additional aspects beyond the set list that they believed were driving clients to install energy efficient

LOW CARBON LIVING
CRC

products. The most frequently additional aspect cited was increased durability of the home (n=5) and recommendations from the vendor/tradesperson (n=4).
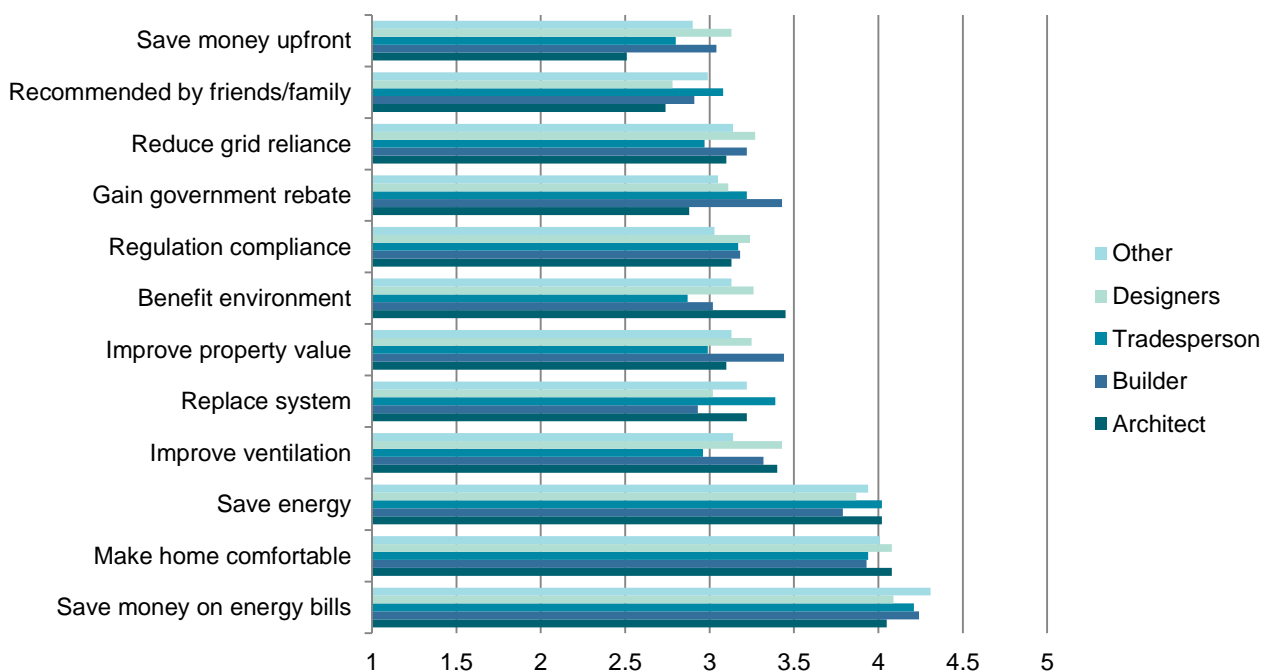
Scale of importance: 1- not at all important to 5- very important

Figure 11 Mean perceived drivers to install energy efficient products (N=479)

Survey respondents showed very high levels of support towards energy efficiency, with nearly every survey respondent (98%; n=483) agreeing that consumer uptake of energy efficient products should be encouraged, as shown in Table 29 in Appendix B. A follow-up question asked respondents to provide reasons for their support or lack of support towards energy efficient products, and these were coded according to common themes. Multiple reasons provided within individual responses were coded separately. The majority felt that uptake of energy efficient products should occur because of the environmental benefits, with reference to reduced emissions and increased sustainability for future generations (48%; n=236). Many respondents also described the long-term financial savings that can be achieved with the installation of energy efficient products (33%; n=164). Other reasons included by at least 5% of respondents included comfort in the home (15%; n=74), reduced energy use (11%; n=56), reduced use of fossil fuels or finite energy resources (10%, n=49), and reduced pressure on the energy grid (7%; n=32). Further details provided in Table 30 in Appendix B.

Energy efficiency standards

Previous research has pointed a lack of legislation to drive low-carbon features and designs in housing retrofits (Osmani and Davies, 2013) and industry preferences to supply to the minimum standards and guidelines (Miller and Buys, 2013) as additional barriers to the promotion and implementation of energy efficient housing. Therefore, the survey included several questions to gain an understanding of specialists' perceptions regarding homes' energy efficiency standards. First, respondents were asked to rate the importance they placed on increasing the energy efficiency of new and existing homes. Almost three-quarters of respondents (72%; n=353) believed this was very important, with a further 19% (n=95) selecting the next highest rating of importance. Details are provided in Table 33 in Appendix B.

Following this, respondents were asked to indicate what they thought the potential benefits were from increasing the standard of energy efficiency for new and existing homes. Respondents could select multiple benefits from a set list provided. Three main benefits selected across the different professions were: lower energy costs (91%; n=447), greater thermal efficiency (90%; n=442), and lower emissions (83%; n=407). Respondents could also describe additional benefits in their own words, listed as 'other' in the results. These were coded according to common themes, namely 'reduced demand on the electricity grid' (n=4), 'increased consumer awareness of energy efficiency' (n=2), and 'improved sustainability' (n=2). Only a very small selection of respondents (2%; n=8) considered there were no benefits to increasing the energy efficiency standard. The results are provided in Figure 12, and further detailed in Table 34 in Appendix B.
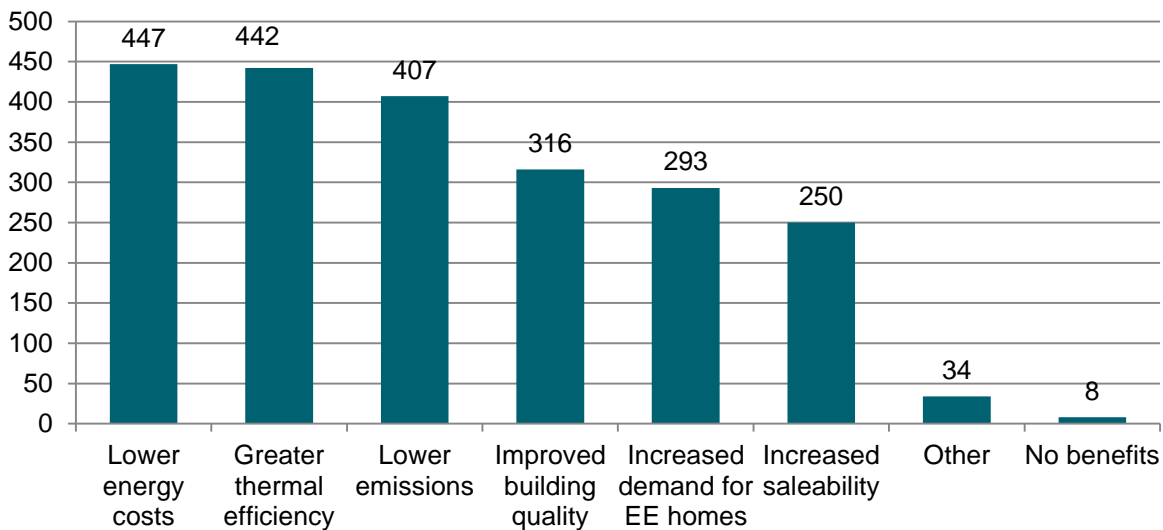
Figure 12: Perceived benefits from increasing the standard of EE in homes (N=492)

While the majority of respondents highlighted multiple benefits to increasing the energy efficiency standard for new and existing homes, many also indicated potential concerns regarding the issue. From the set list of potential concerns provided, the majority selected increased building costs as the main concern (78%; n=383). Other issues of concern were increased housing prices (52%; n=258), skill and technical ability of workforce (51%; n=249), and consumers' lack of understanding regarding how to use the appliance/feature/technology (49%; n=243). As with previous questions, respondents could also describe further concerns not already listed. Coding revealed additional concerns, including the enforcement of the scheme (n=7), such as whether assessments would be stringent enough and if the process would be adequately transparent. Others described concerns about difficulties in achieving compliance (n=5), such as with older building stock and heritage buildings. Several respondents considered that increasing the level of regulation in the industry (n=3) was a concern, while others thought industry resistance to an increase could be a potential problem (n=3). The results are provided in Table 35 in Appendix B.
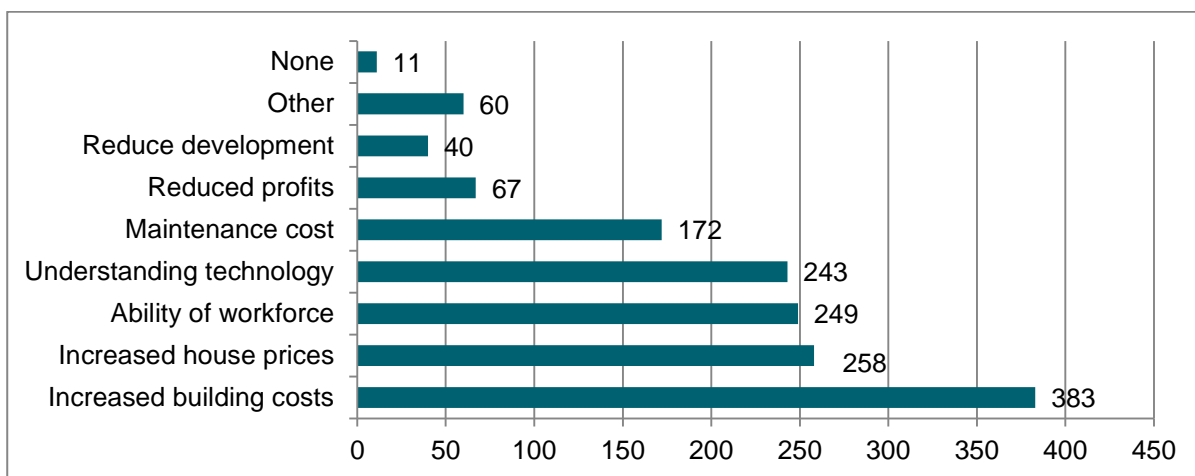
Figure 13: Concerns held on increasing the standard of EE in homes (N=492)

Energy ratings

In addition to energy efficiency standards, there is a number of energy rating schemes that provide energy 'star ratings' for existing buildings. Energy ratings are given according to the building energy efficiency performance, with more stars (higher energy ratings) requiring less energy than buildings with poor ratings (for example, see the Nationwide House Energy Rating Scheme (NatHERS); http://www.nathers.gov.au).

A number of survey questions aimed to explore the housing construction specialists' familiarity with energy ratings and perceptions about the provision of energy rating information to consumers. Overall, respondents' level of familiarity with a list of home energy rating tools or information systems was low to moderate. As shown in Figure 14, respondents were most familiar with the Green Star certification system (M=2.99, SD=1.37), followed by BASIX (M=2.84, SD=1.55), FirstRate 5 (M=2.7, SD=1.5), NABERS (M=2.64, SD=1.48), My Energy Star Rating (available in Victoria only; M=2.54,

SD=1.46), AccuRate (M=2.49, SD=1.39), BERS Pro (M=2.44, SD=1.43), Energy Rating App (M=2.14, SD=1.36), Energy Rating App (M=2.14, SD=1.36), and EnviroDevelopment (M=1.63, SD=0.98).

Due to the nature of their specialties, different professionals showed different levels of familiarity with particular energy rating tools. For example, suppliers, consultants, engineers, energy assessors, surveyors and certifiers (category 'Other professionals'), were often the more familiar with the energy rating tools, closely followed by architects. Respondents were also given the opportunity to list other home energy rating tools/systems they were familiar with. These included ABSA, Archicad Eco-Designer, Carrier's Hourly Analysis Program (HAP), DesignBuilder, Ecotect, eTool (Lifecycle Assessment software), Leadership in Energy and Environmental Design (LEED), LFIA Living Building Challenge, Passivhaus (Passive House Planning Package), and Windows energy rating scheme (WERS). Results are detailed in Table 36 and Table 37.
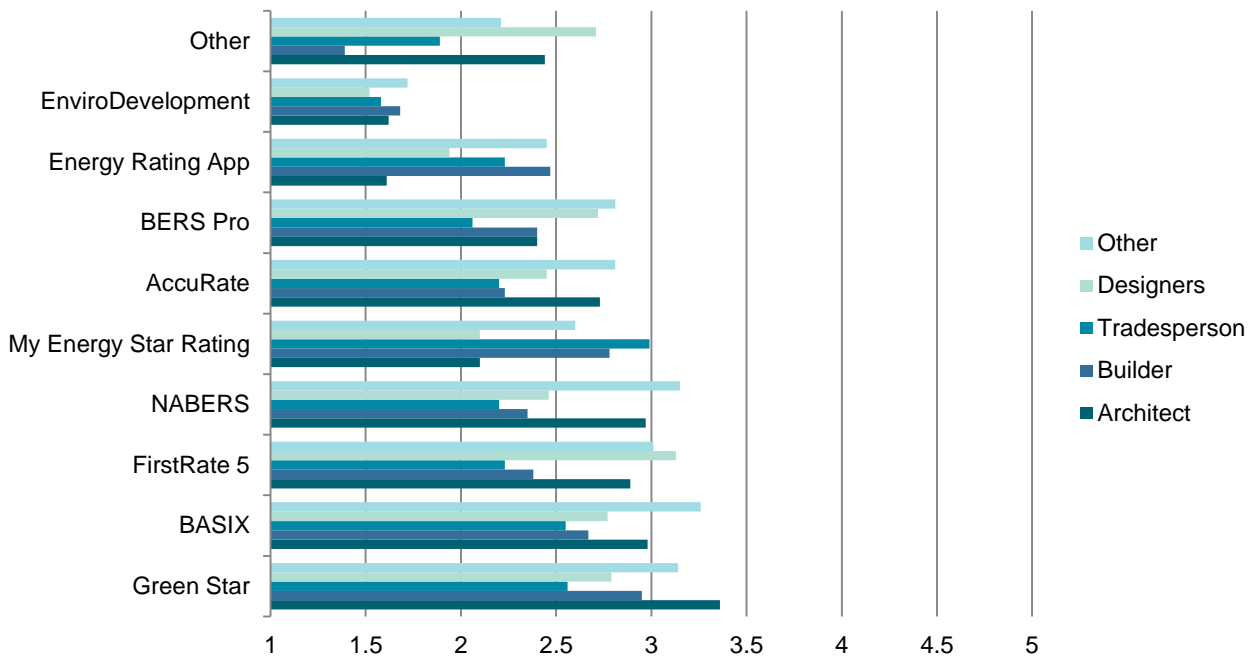
Scale of familiarity: 1- not at all familiar to 5- very familiar.

Figure 14 Familiarity with home energy rating tools (N=492)

One issue of interest of those working in the energy efficiency market is whether information about a home's energy efficiency should be mandatory at the time of sale or lease. In Australia, the Australian Capital Territory *Civil Law (Sale of Residential Property) Act 2003* determines that an energy efficiency rating (EER) must be declared when residential homes are advertised or offered for sale. To understand housing construction specialists' views about this issue, the survey asked respondents whether energy efficiency of a home should be provided at the time of sale or lease. Responses showed great level of support, with the majority of respondents agreeing that 'information about the energy efficiency of a home should be provided at the time of sale or lease' (90%; n=445). This high level of agreement was reflected across all of the profession categories, as detailed in Table 38 in Appendix B. Further to this question, respondents were asked to provide a reason for their response. While a response was not provided by all survey participants, reasons described by those who agreed that information should be provided at time of sale or lease were coded separately from those who did not believe this information should be provided at time of lease or sale. Responses were often assigned multiple codes to reflect the range of themes described. The theme most prevalent amongst respondents who agreed with the provision of energy efficiency information at the time of sale or lease was that this information provided consumers with an indication of the on-going costs and comfort of the home, and the potential for improvements to the home (31%; n=152). Many respondents also thought this information would assist consumers make an informed purchasing decision as it allows for greater transparency and comparison of properties (25%, n=121). Occurring somewhat less frequently were responses regarding the increased awareness of energy efficiency that this information could promote (15%; n=74). Others felt the provision of such information would encourage uptake of energy efficient products and features (8%; n=39) and potential increase the value of energy efficient homes (5%; n=25). It was also suggested that energy efficiency could be an additional selling or leasing point to attract potential buyers and renters (4%; n=20).

As most survey respondents agreed that energy efficiency information should be provided at time of sale and lease, much lower frequencies were provided regarding reasons against the provision of energy efficiency information at the time of sale or lease. The most frequent reason was that energy rating schemes were inadequate or inaccurate (n=10). Some respondents felt that this information should not be provided because older housing stock and heritage properties would be significantly disadvantaged due to the potential difficulties in improving their energy efficiency (n=8). A small

LOW CARBON LIVING CRC

number of respondents disagreed as they felt the provision of this information added additional costs on the consumer (n=4). Other reasons included that it was not an important priority for consumers (n=3) and that demand for such information should be market driven (n=3). Lastly, one respondent felt that the industry was not yet equipped for this change. These reasons are displayed in Figure 15, with further details provided in Table 39 in Appendix B.
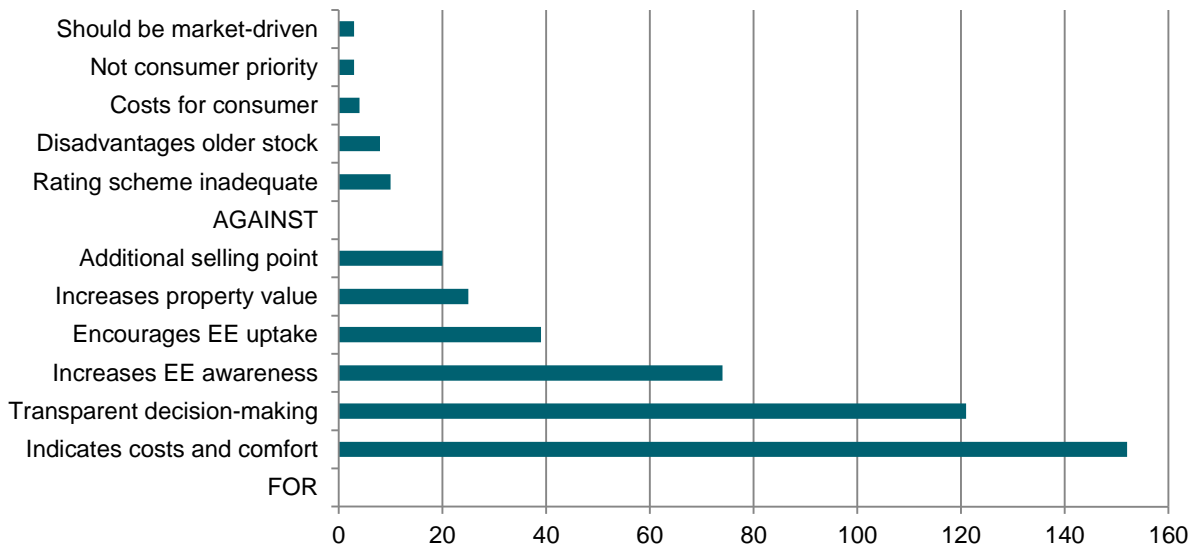
Note: EE= energy efficient

Figure 15 Reasons for and against providing energy efficiency information at point of sale or lease

Respondents were asked who they thought would be best person or organisation to provide energy rating information to residential clients. This was an open-text question, and responses were coded separately and according to the prevalent themes. The theme most prevalent amongst respondents were energy efficiency consultants and accredited energy assessors (n=96), followed by Federal or state bodies (n=78), then architects and building designers (n=55). Further sources of ratings are displayed in Figure 16.
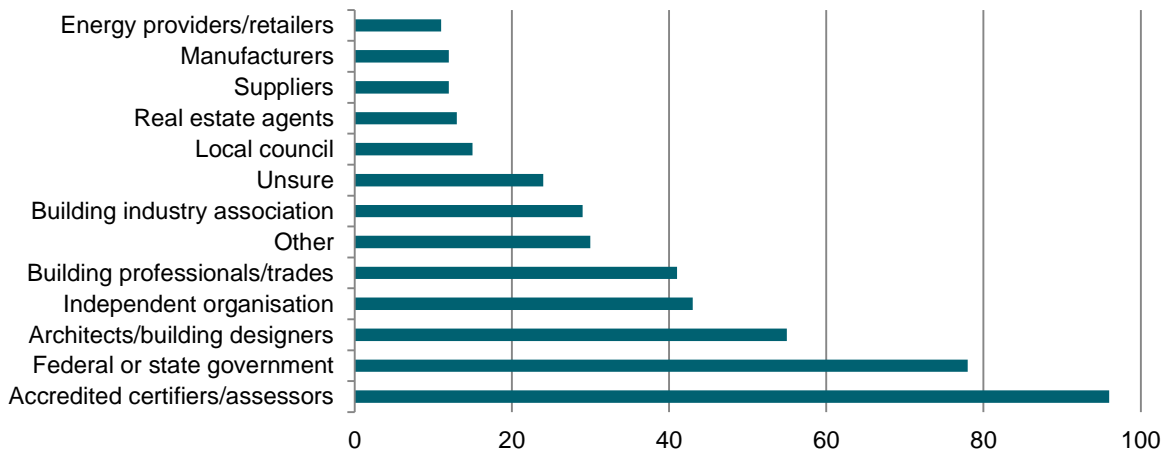
Figure 16 Recommended provider of energy efficiency ratings information to consumers

Previous research cited lack of tradespersons with the necessary expertise (Thorpe and Ryan, 2007) as a key barrier in improving energy efficiency in the housing sector. To further explore the levels of accreditation amongst respondents and specialists' training preferences, a series of questions were asked in the survey about accreditation and training.

When asked whether they were accredited to any energy rating schemes, less than one quarter of respondents (22%; n=109) indicated they had accreditation in such schemes. Across the different professions, accreditation was most prevalent amongst designers (38%; n=24) and the 'other' profession category (34%; n=29), which included energy assessors. Details are provided in Table 40 in Appendix B. The respondents with accreditation were asked to specify to which energy rating scheme they were accredited. Within this group, 18 respondents were accredited to more than one scheme. The schemes with the highest number of accreditations were NatHERS (n=23) and WERS (n=23), followed by Green Star (n=20) and FirstRate 5 (n=17) as displayed in Figure 17.
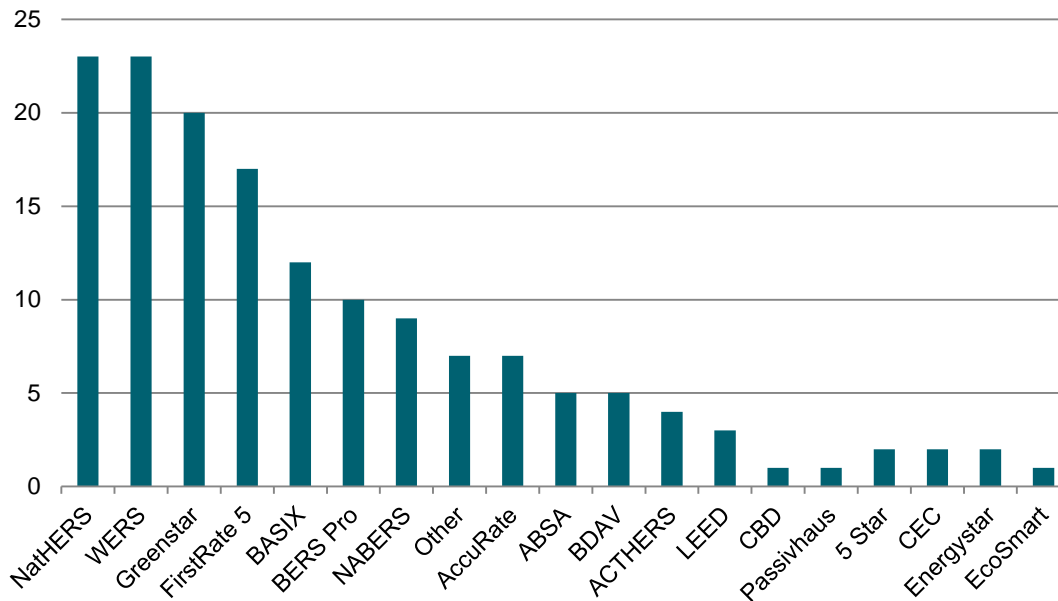
Figure 17 Energy home rating accreditation (N=109)

Further to this, respondents were asked if they held any energy-related accreditations *beyond* those required by their profession or trade. Additional accreditations were held by 18% (n=89) of respondents, as detailed in Table 41 in Appendix B. This group of respondents were also asked to list what the accreditation was for. The majority of responses (n=27) listed energy rating schemes as described in the results above. Other energy-related accreditations described by respondents included: academic qualifications (n=10), such as post-graduate studies; solar energy accreditations (n=6); sustainable building design (n=3); specialised energy source installation (n=2); thermal performance accreditation (n=2), GreenPlumber (n=2); and ACP (ESS Program) (n=1).

To understand what specialists' value about additional accreditation/qualification, the survey used a set list of options to gather respondents' views. Respondents could select multiple responses from the set list of options and/or describe further aspects in their own words. The majority of these respondents valued recognition of special skills (72%; n=64) and training in new technologies (61%; n=54), while approximately one third valued the accreditation due to an increased client base (30%; n=27). The results are detailed in Table 42 in Appendix B. Other reasons for valuing the accreditation described by respondents, included the broader knowledge base it provided (n=5), the ability to accurately inform consumers (n=4), and the enhancement of design processes and/or decisions (n=2). Others stated that the additional accreditation was required by government clients (n=2).

Respondents who had indicated that they did not hold additional energy-related accreditations were asked to select their reasons for not doing so. The reason most frequently selected was that there is not enough demand for additional accreditation (38%; n=188), followed by being too busy already (24%; n=118), training perceived as too expensive (20%; n=98) or too time intensive (18%; n=90). These results are detailed in Figure 18 and Table 43. Over one quarter of respondents described other reasons in their own words, and coding of these responses revealed a wide range of themes. Some respondents indicated that having an additional accreditation was not relevant or required in their line of work (n=27). Others felt that it was more appropriate to outsource energy ratings and related tasks (n=25) for reasons such as cost-effectiveness and greater expertise. Some respondents indicated that they lacked awareness of other accreditations that were available (n=10).
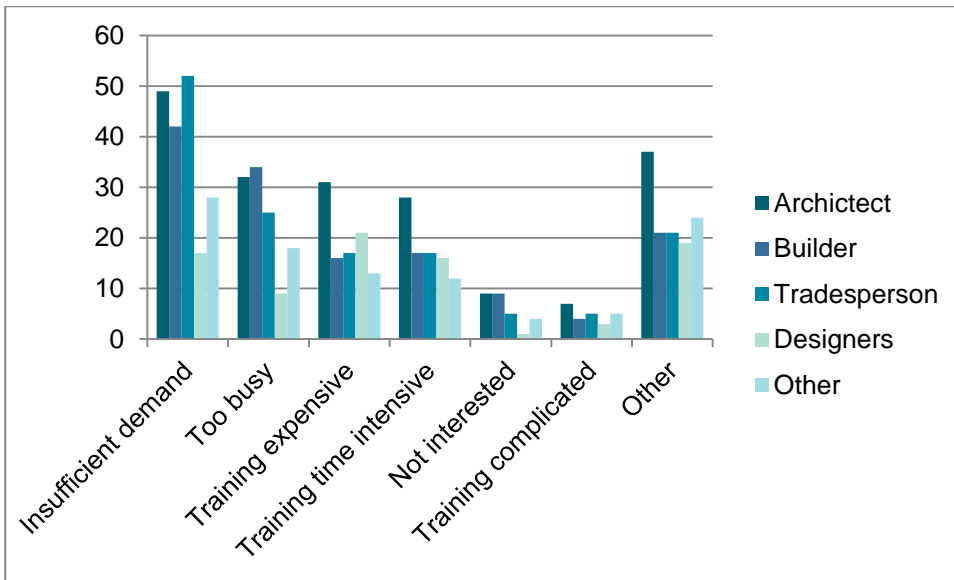
Figure 18 Barriers to gaining energy-related accreditation (N=392)

In addressing training preferences, respondents were asked what sources they would consider using to improve skills in energy efficiency within their industry. Overall, the sources considered by the greatest number of participants were free courses provided by a product manufacturer (61%; n=300), free courses by the Government (61%; n=299), free training courses (offsite or onsite) (60%; n=294), and online courses (52%; n=256). These details are provided in Table 44 in Appendix B. Of the additional sources described by respondents, several were able to be coded and included independent, competent sources; personally initiated research and professional development; published case studies; and networking.

Real estate and property manager survey

The online survey with real estate agents and property managers sought to explore the perceptions and experience of those engaged at the direct interface when purchasing or leasing a home. As property managers and marketers, these specialists have the potential to significantly influence decisions around the uptake of low-carbon housing and refurbishments.

Previous research by Gabriel and Watson (2012) concluded that the role of real estate agents in supporting energy efficient property upgrades was under-developed, with great potential to be influential. That study reported investors seeking real estate agents to play a greater role in disseminating information about energy efficient energy and water options, raising awareness among landlords about the state of their property in terms of energy and water performance, providing incoming tenants with green rental guides, assisting and coordinating landlords and tenants to undertake energy and water efficiency improvements, and assisting with the management and servicing of major works such as solar hot water systems, solar panels and space heating and cooling systems (Gabriel and Watson, 2012).

A recent development in the Australian real estate sector for raising the profile and potential of energy efficient homes has been the Liveability Real Estate training, developed by real estate organisation, LJ Hooker. Liveability specialist training builds the knowledge of property managers and real estate agents to 17 aspects of a home that can lead to reduced running costs and increased comfort. Many of these aspects are associated with energy efficiency, including insulation, passive design principles such as good orientation, cross-ventilation, shading or glazing, efficient hot water systems, LED lighting, efficient heating and cooling devices. The trainees are taught to identify, appraise and promote and market these features where present. They are then mentored following this training to implement this new knowledge (LJ Hooker, 2014).

Given this context, the online survey of real estate agents and property managers explored which features were perceived as important overall and which contributed to energy efficiency, whether – and how- the energy efficiency-related features were actively promoted during engagement with potential buyers and tenants, how information could be presented to maximise uptake, the perceived barriers to marketing energy efficiency housing features, the interest in 'leading' promotion of energy efficient housing, the existing knowledge of home energy rating tools and information systems, gaps in training to build familiarity with energy efficient housing. The results are reported under relevant sub-headings in the following section.

Sample characterisitcs

The real estate and property manager survey was completed by 140 respondents. Respondents were split relatively evenly by gender, with 44% (n=62) female and 50% (n=70) male respondents, and a small number of participants who did not provide their gender (6%; n=8). Respondents represented a wide variety of age groups. The majority were split across fairly evenly, from 25 to 64 years old. Details are provided in Table 46 and Table 47 in Appendix C.

The final sample of respondents included representation across all Australian states and territories, although recruitment was not geographically representative. Respondents from Queensland (31%; n=44) and New South Wales (29%; n=40) made up the majority, as displayed in Figure 19, and further details are provided in Table 48 in Appendix C.
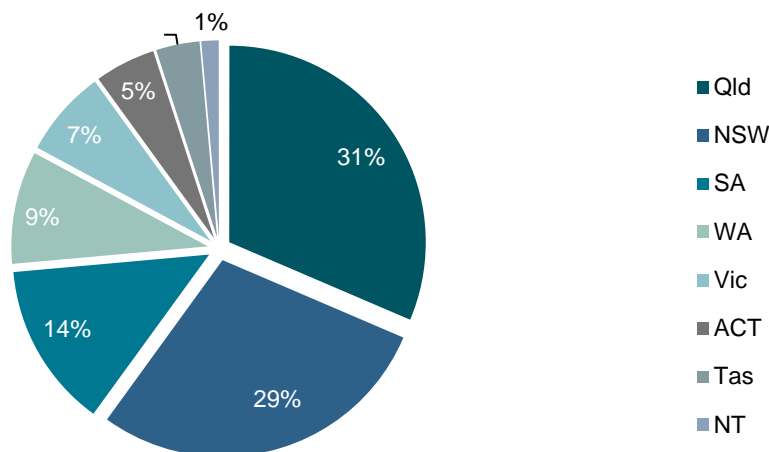
Figure 19 Geographic spread of participants (N=140)

Over half of the respondents to this survey were real estate agents (59%; n=82), 22% (n=31) were property managers, while a further 19% (n=27) undertook both roles. Details are provided in Table 49 in Appendix C.

Respondents varied greatly in the number of years they had been working in the industry. Respondents with 1-5 years' experience were the most common (28%; n=39), followed by those with more than 20 years (25%; n=35) and 11-20 years (23%; n=32). Details are provided in Table 50 in Appendix C.

The agencies to which respondents belonged ranged widely in size. Most respondents were part of medium to large-scale agencies, with 6 to 19 people (63%; n=88), followed by agencies with 20 to 199 people (22%; n=31). The large majority of respondents were part of a franchise network (91%; n=127). Further details are provided in Table 51 and Table 52 in Appendix C.

Almost one third of respondents (30%; n=42) had been trained as Liveability Real Estate Specialists through the LJ Hooker Centre for Liveability Real Estate, as detailed in Table 53 in Appendix C. Some of the results to this survey have been analysed by dividing the sample by those who have received this training and those who have not, in order to investigate whether the Liveability training has changed the level of knowledge, confidence and experience of the agents.

To explore whether real estate agents and property managers are early adopters of new practices or if they prefer to wait until the market is established before adopting new practices, survey respondents were asked which approach they would follow in regard to a hypothetical new market that promotes properties with energy efficiency features. The majority of survey respondents (65%; n=90) indicated that they would probably be one of the first in the industry to try. The proportion of these respondents was higher amongst Liveability-trained agents, potentially reflecting their personal leadership or entrepreneurial approach (Pearson chi-square=18.75; df=5; p<0.01). These results are presented below in Figure 20, and details are provided in Table 63 in Appendix C.
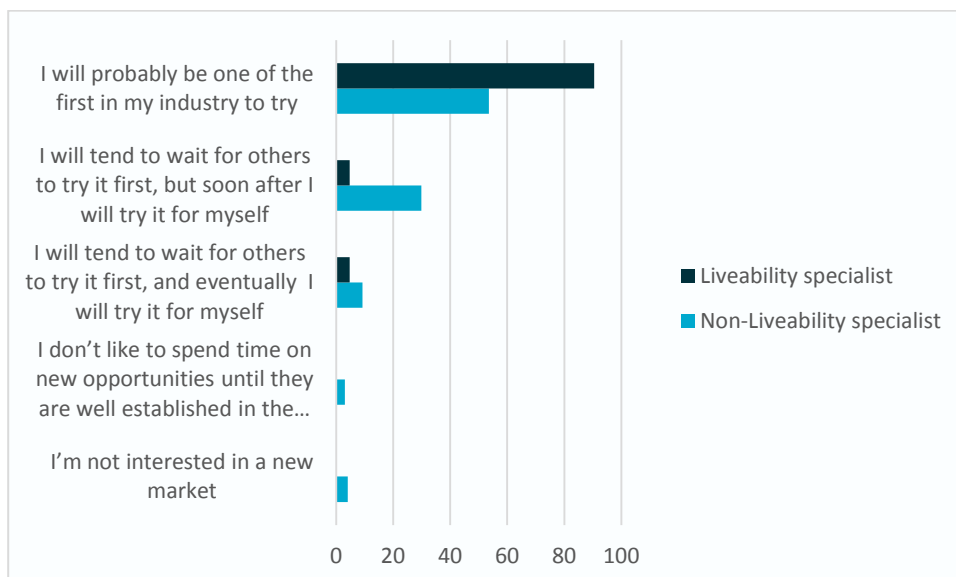
Figure 20: Respondents' approach to trying new energy efficiency products

Marketing energy efficient PROPERTY FEATURES

A series of questions in the survey focused upon respondents' perceptions of, and experiences in, marketing homes with energy efficient features. Respondents were firstly asked to rate the importance of a range of features in the marketing of a property. All of the features contributed to energy efficiency, but were not necessarily described as such. Based on the mean ratings, the features considered to be most important were ceiling insulation (M=3.86, SD=1.24), high-rated Energy Rating Label) air conditioner or heater (M=3.57, SD=1.31), and solar panels (M=3.58, SD=1.26). The majority of features were considered to be of moderate importance. As shown in Figure 21, liveability- trained agents placed greater importance on most EE features listed in the survey when marketing a property when compared to non-Liveability specialists. As displayed in Table 54 in Appendix C, most specifically, Liveability specialists placed greater importance in: ceiling insulation; solar panels, wall insulation; gas hot water system; solar hot water system; low energy lighting; high-rated Energy Rating Label appliances; energy efficient windows (i.e. double-glazed or tinted); floor insulation.
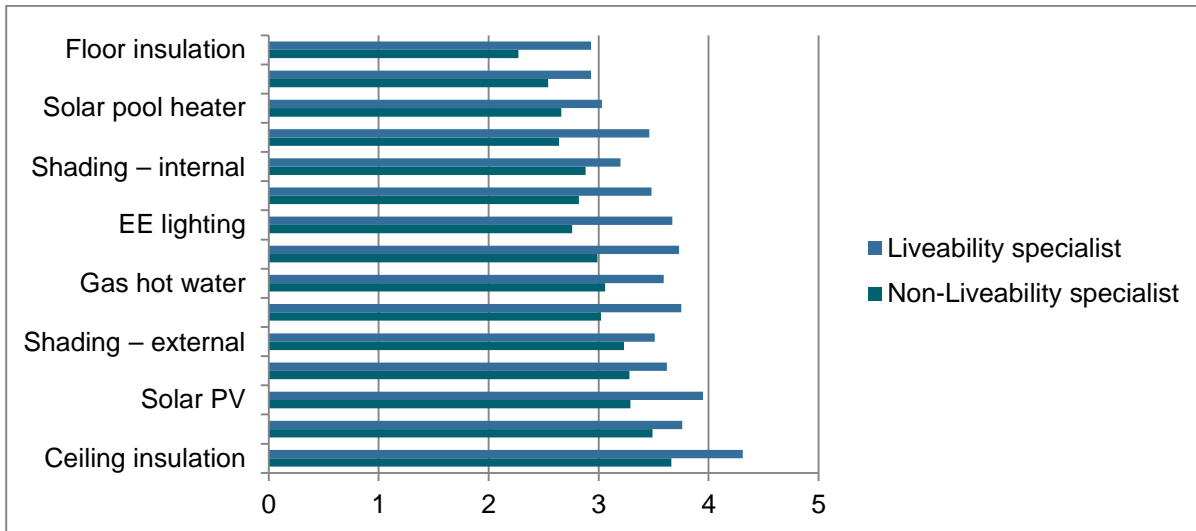
Scale of importance: 1- not important to 5- very important.

Figure 21 Mean importance of features in marketing a property (N=140)

Respondents were then asked to rate the same features according to the extent each contributed to reducing energy use in the home. On average, respondents believed ceiling insulation made the greatest contribution to reducing energy use (M=4.61, SD=0.79). As shown in Figure 22, other features rated highly included solar photovoltaic panels (M=4.43, SD=1.0), solar hot water system (M=4.29, SD=1.01), wall insulation (M=4.27, SD=1.05) and high-rated Energy Rating Label air conditioner or heater (M=4.26, SD=0.93). Liveability-trained agents' ratings were only higher when compared to non-Liveability specialists in three features: low energy lighting; gas hot water system and ceiling fans. These findings are displayed in Figure 22, with further details in Table 55 in Appendix C.

It is important to note that, while solar panels do not affect a home's energy efficiency (i.e. it does not contribute to a reduction of energy consumption such as ceiling insulation for example), solar panels contribute to the reduction of residential carbon emissions as it is generated by a low-emission, renewable source of energy. Therefore, many low-carbon (energy efficient) homes do have electricity generated by alternative sources such as solar energy.
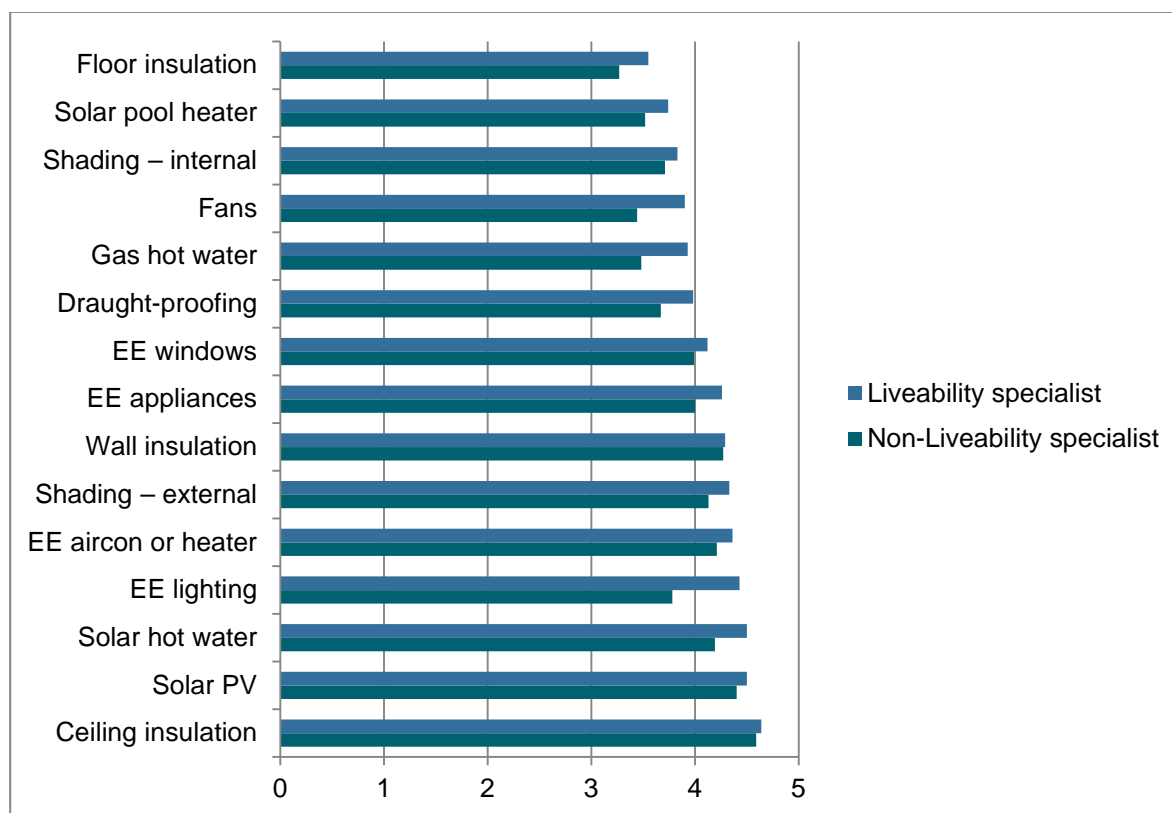
Scale of contribution to energy consumption reduction: 1- not at all to 5- substantial.

Figure 22 Mean perceived contribution to home energy reduction

As property managers and marketers, real estate agents have the potential to significantly influence decisions around the uptake of low-carbon housing and refurbishments. Therefore, several questions in the survey explored the interactions between real estate agents/property managers and buyers/renters with regards to the energy efficient features of a property.

Respondents were asked to indicate the frequency in which they identify energy efficient features of a property to buyers or renters. Respondents most commonly indicated that they identify energy efficient features most of the time (38%; n=53), followed by sometimes (29%; n=41), and all of the time (19%; n=26). While it appears that Liveability specialists identified these features to clients at higher rates than those who were not trained, as displayed in Figure 23, this difference is not statistically different (Pearson chi-square=5.89; df=4; n.s.). Further details are provided in Table 56 in Appendix C.
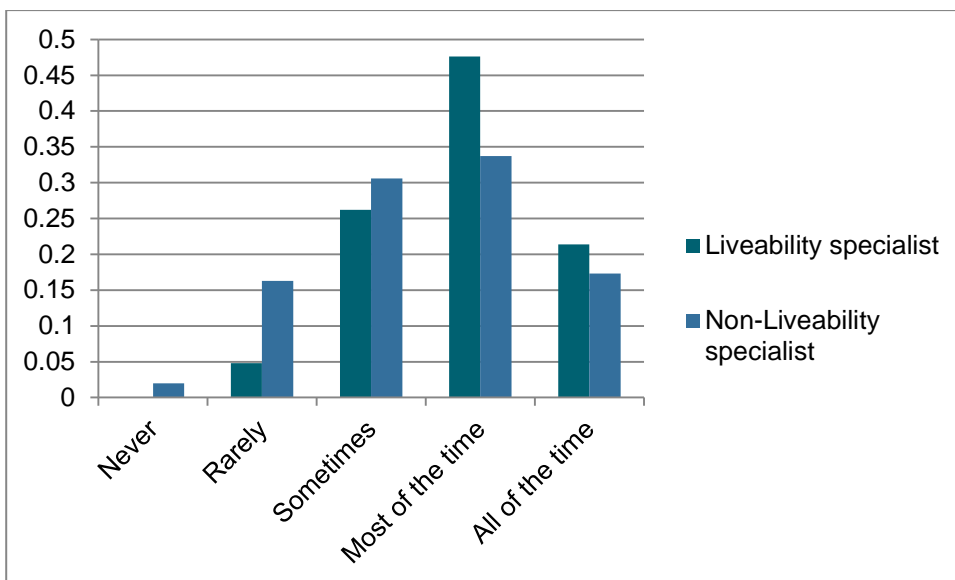
Figure 23 Frequency of identification of energy efficient features in properties (N=140)

Furthermore, respondents were asked about what are the aspects of home energy efficiency that they talk about to buyers and rents (from a set list). As shown in Figure 23, the majority of survey respondents talk about the benefits of energy efficient to home comfort (71%; n=99), savings to energy bills (69%; n=97), and the value added to the property (54%; n=76). A minority of survey respondents talk about cost to install energy efficiency measures or about its environmental impact. Non-Liveability specialists tend to talk more about saving money on bills than comfort/property value whereas the Liveability specialist emphasise a lot more on comfort, which may be a reflection of focus of the training materials. The results for Liveability-trained and non-Liveability specialists are further detailed in Table 57 in Appendix C.
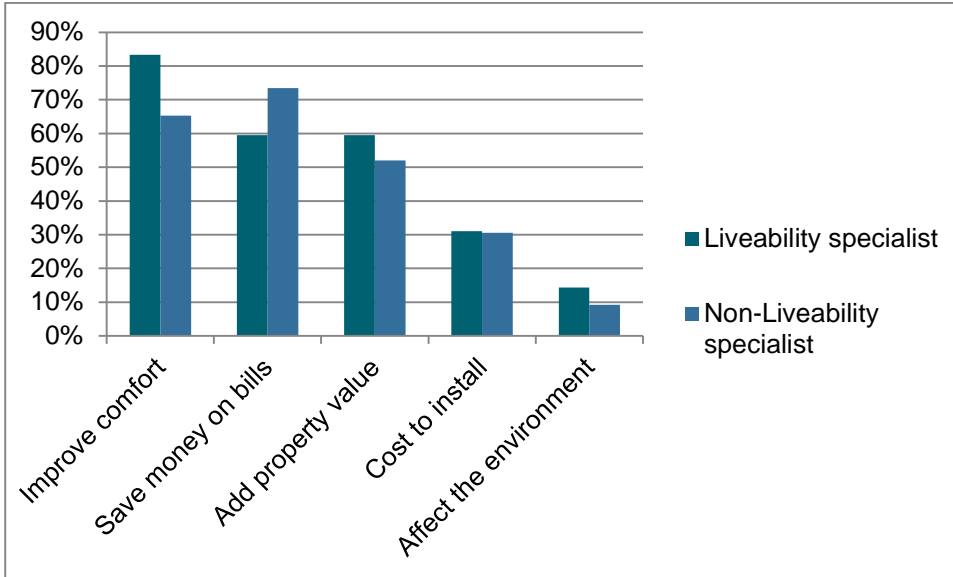
Figure 24: Describing energy efficient features (N=140)

Respondents were also asked how often potential buyers and renters enquired about the energy efficient features of a property. The majority of respondents indicated that this occurred either sometimes (44%; n=61) or rarely (41%; n=58). There were no statistically differences in responses between liveability-trained and non-Liveability specialists (Pearson chi-square= 5.38; df=3; n.s.). Similarly, half of survey respondents indicated they have not experienced clients enquiring about a home's energy costs at the point of sale or lease (n=71; 51%). Further details are provided in Table 58 and Table 59 in Appendix C.

When asked about the main reason why buyers and renters may be interested in properties with energy efficient features, the large majority of respondents believed saving money on bills was the main reason (76%; n=107), as shown in Figure 25, with further details in Table 60 in Appendix C.
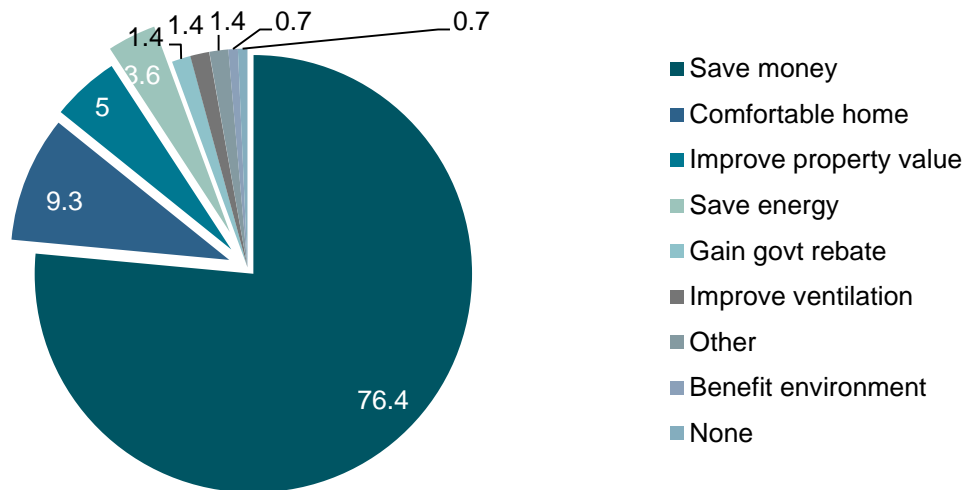
Figure 25: Main reasons perceived for buyers/renters seeking energy efficient property features (N=140)

In order to understand what information real estate agents and property managers think is relevant to consumers, survey respondents were asked to rate the importance of providing specific information (from a set list) to buyers or renters. A list of energy efficient features already present in the home (M=3.67; SD=1.12) was considered the most important information to be provided. Other topics listed considered to be of less importance were: the likely impact on energy costs if specific energy efficiency features are added to the home (M=2.98; SD=1.31), the home's estimated annual energy costs (M=2.79; SD=1.33), a list of energy efficient features that can be made to the house (M=2.76; SD=1.31) and the home's estimated indoor temperature for each season (M=2.22; SD=1.10). Liveability-trained agents provided higher ratings than non-Liveability specialists. Further details are shown in Figure 26, and in Table 61 in Appendix C.
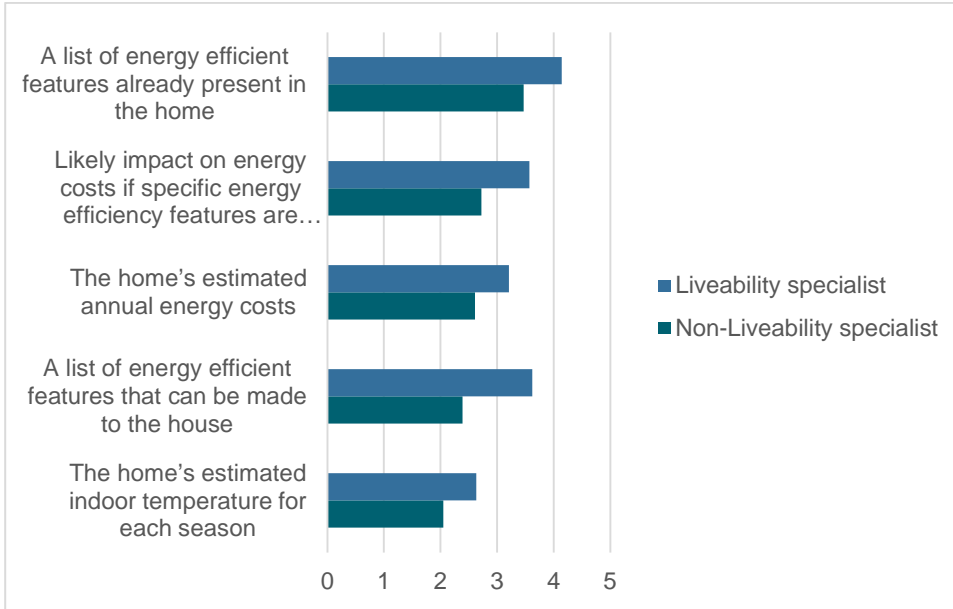
Figure 26: Mean level of responses regarding likely importance of information to buyers or renters

The survey also aimed to understand the barriers currently faced by real estate agents and property managers when marketing energy efficient features of a property. Survey respondents were therefore asked to select one main barrier that they face in marketing energy efficiency features to buyers and renters from a set list provided. From the combined sample, the two most commonly selected barriers were conflicting information about what is delivered by the features (20%; n=28), and buyers/renters not asking for this information (20%; n=28), followed by a lack of interest from buyers/renters (16%; n=22). Further details are provided in Table 62 in Appendix C.
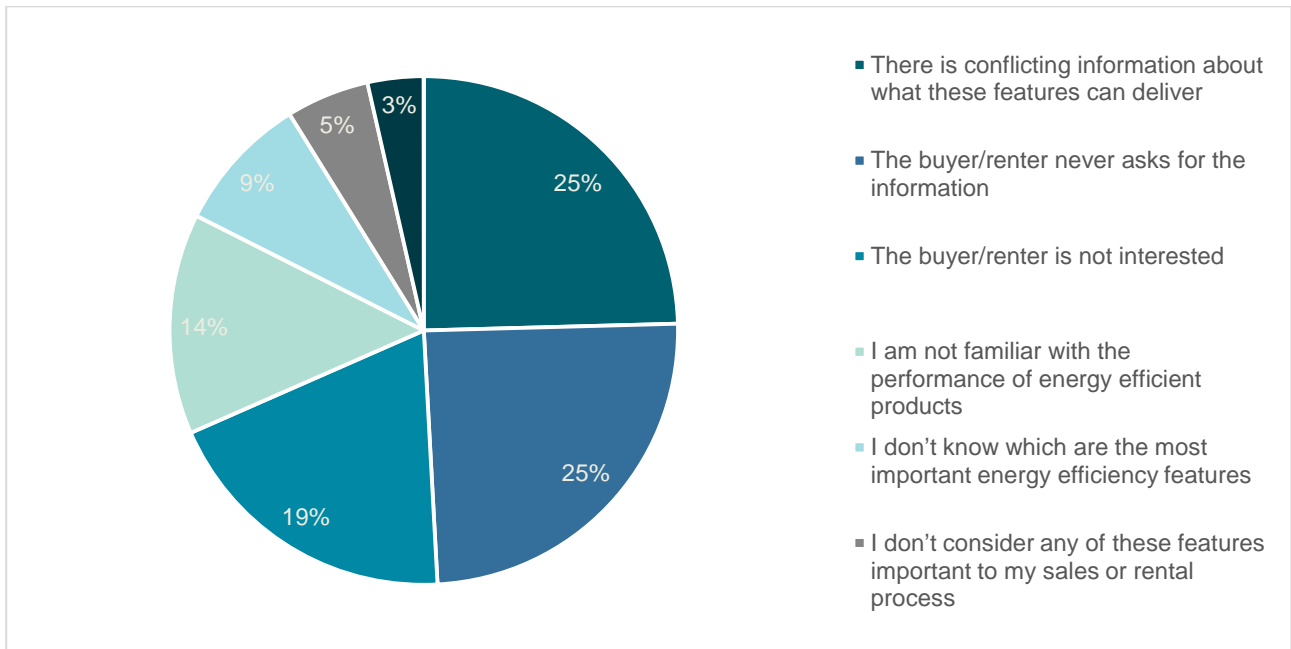
Figure 27: Barriers to marketing energy efficient property features

Respondents could also describe additional barriers to those included in the list. There were four main barriers that emerged out of these 13 responses, including claims of misrepresentation, in which respondents implied they were concerned about being accused of providing misleading information about the benefits of energy efficient features. Similarly, others explained they would need proof of any benefits before providing this information. Some felt they were not qualified to be providing their opinion on such features, while others stated that they did not sell or rent many properties with energy efficient features.

Information and training

Real estate agents have the potential to play a key role in disseminating information about energy efficient energy and providing incoming tenants with green rental guides (Gabriel and Watson, 2012). Therefore, the survey sought to explore the sources of information and training that real estate agents and property managers currently rely on, in order to identify key ways to improve the channels for communicating energy efficiency information for the real estate sector.

To explore preferences regarding preferred information sources, respondents were asked to select the three main sources from a set list that they used to keep informed about trends in real estate. The most frequently selected information source was real estate training courses (73%; n=102), followed by emails from industry or professional associations (64%; n=89). People within the respondents' organisation (39%; n=54), browsing the internet (39%; n=54), and magazines by industry or professional organisations (30%; n=42) were also common sources of information amongst the respondents. Results are presented in Figure 28, and further information is detailed in Table 64 in Appendix C. Respondents could also suggest additional sources to those listed. These included direct contact with clients and the general public, professional forums and communities of practice, and social media.
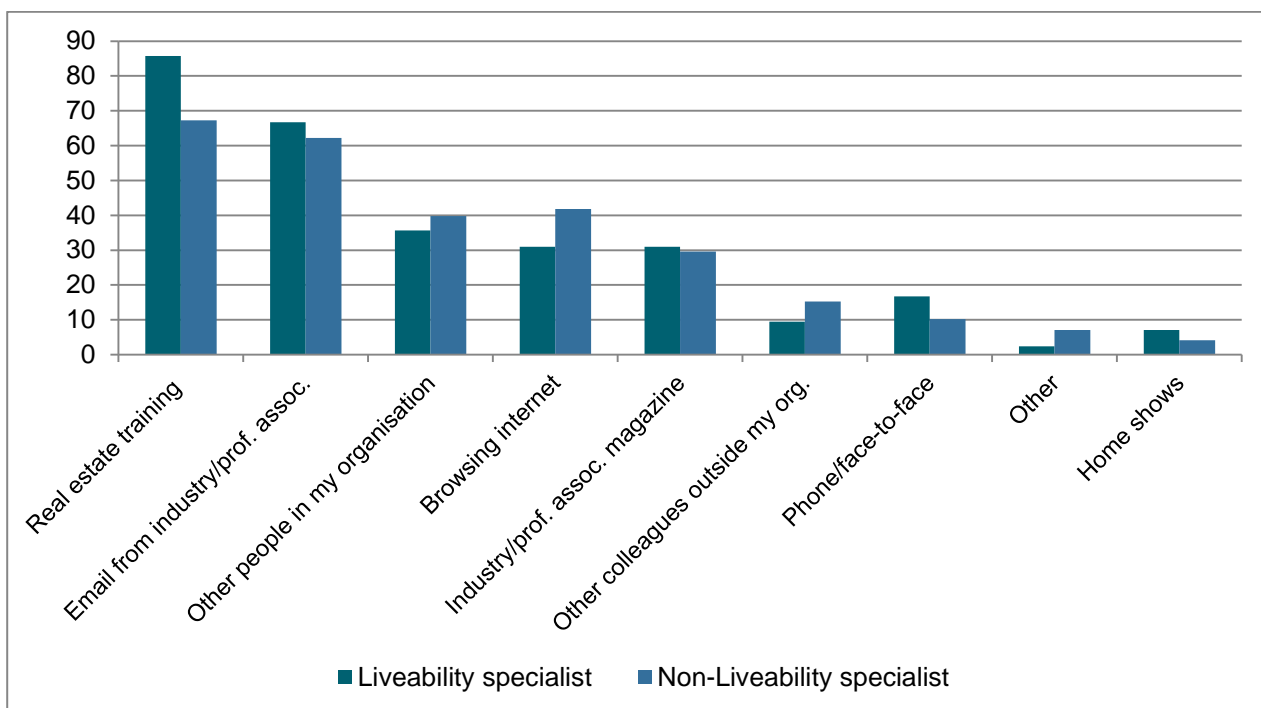
Figure 28: Preferred sources of information for industry trends (N=140)

With regards to training, respondents were asked to indicate which channels they would consider using to improve their skills in new approaches and practices in their industry. Five of the listed channels were selected by over one half of the respondents, including free training courses (offsite or onsite) (64%; n=89), free training course by the Government (55%; n=77), other people within their organisation (54%; n=76), an email from an industry or professional association (53%; n=74), and online courses (52%; n=73). The full list of training channels is provided in Table 65 in Appendix C.

Energy efficiency ratings

Similarly to the housing construction specialists' survey, the real estate survey aimed to explore the familiarity of real estate agents and property managers with energy ratings and gather their perceptions about the provision of energy rating information to consumers. Therefore, several questions in the survey focussed upon respondents' understanding and communication of a home energy rating.

Self-rated understanding of home energy rating was high amongst respondents, with 86% (n=120) indicating they understood what this was. These responses are detailed in Table 66 in Appendix C. However, confidence was generally lacking in communication of a home's energy rating to prospective buyers or renters. As shown in Table 67 in Appendix C, respondents most frequently indicated none to moderate levels of confidence (64%; n=90) in communicating about a home's energy rating to consumers, while approximately one third (34%; n=48) of respondents indicated they had a reasonably high level of confidence (scale points 4 and 5). Survey respondents who had received Liveability training (M=3.69; SD=1.05) stated greater confidence (t=4.53; p<0.001) in communicating an energy rating than those without such training (M=2.78; SD=1.01). This was reflected in the responses provided with regards to explanations why

respondents felt confident or unconfident communicating this information, to which not all respondents provided an answer. From those who did provide a response, some participants (n=14) had gained confidence from the training they had received, with specific mention of the Liveability training. Higher confidence was also considered due to possessing some knowledge and understanding of the topic of residential energy efficiency (n=23). A small number of respondents noted they were confident due to their own personal experience with energy ratings from building and owning homes (n=5). Those who felt they were lacking in confidence provided a range of explanations. The most common theme was that respondents did not feel qualified to offer their opinion on a homes' energy rating, for reasons such as a lack of knowledge or training (n=29). Others felt they needed to know more about the details (n=8), or more practice/experience (n=3). A small number also explained they lacked confidence because buyers and renters were not interested (n=4), or there were difficulties in obtaining relevant information (n=3).

In addition, survey respondents were asked about their familiarity with specific home energy rating tools from a set list. As shown in Figure 29, respondents were relatively unfamiliar with all of the home energy rating tools that were listed. Details are provided in Table 68 in Appendix C.
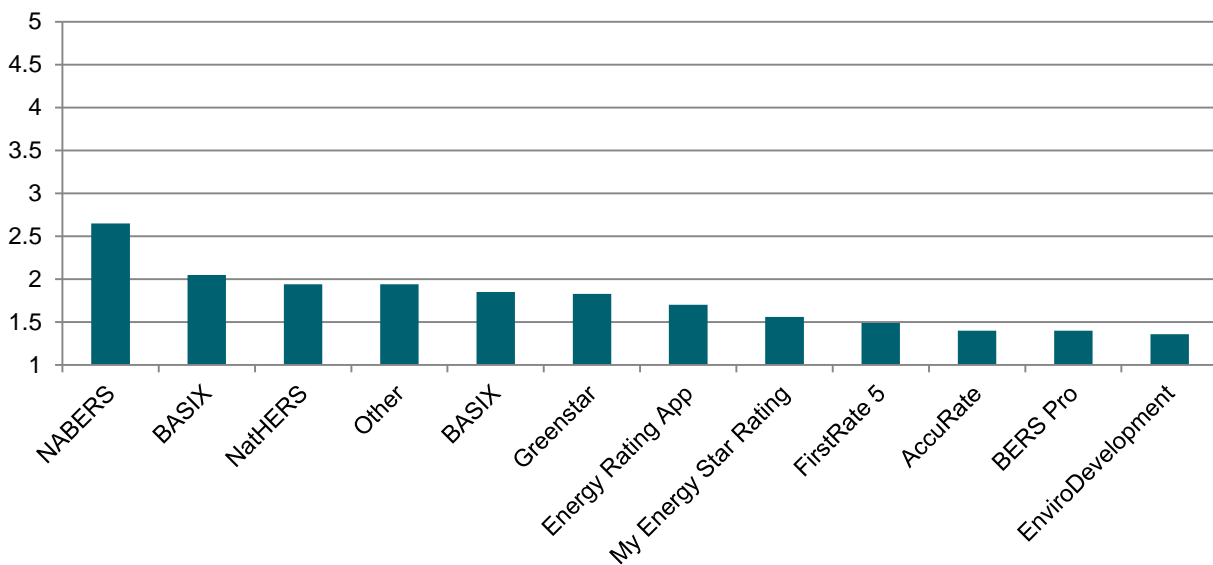
Scale of familiarity: 1- not at all familiar to 5- very familiar

Figure 29 Mean familiarity with home energy rating tools and information systems (N=140)

The survey also aimed to explore the frequency with which energy efficiency was part of real estate and property managers' communications and marketing with vendors, landlords, buyers and renters. On average, each of the scenarios listed occurred on an infrequent basis. In general, real estate agents and property managers have reported low frequency of communication about a home's energy efficiency with clients. The results also indicate that the communication is not usually driven by client demand. The promotion of a home's energy efficiency by real estate agents and property managers to buyers or renters was the most frequently occurring communication involving energy efficiency (M=2.87, SD=1.47; n=129) as stated by survey respondents. The findings are displayed below in Table 1.

Table 1 Mean level of responses for frequency of communications involving energy efficiency

	NON-LIVEABILITY SPECIALIST			LIVEABILITY SPECIALIST			TOTAL			T-TEST
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	
Do you promote the home's energy efficiency to buyers or renters while marketing the property?	89	2.48	1.34	40	3.73	1.38	129	2.87	1.47	t=4.82 (p<0.001)
Do you ask vendors or landlords whether they want to include the home's energy efficiency while marketing the property?	89	1.88	1.18	40	2.93	1.40	129	2.20	1.34	t= 4.41 (p<0.001)
Do you ask vendors or landlords whether their home has been rated for energy efficiency?	92	1.82	1.16	40	2.93	1.40	132	2.15	1.33	t= 4.74 (p<0.001)
Do vendors or landlords provide you with information about the home's energy efficiency?	89	1.99	1.11	40	2.38	1.08	129	2.11	1.11	n.s.
Do buyers or renters request information about a home's energy efficiency?	89	1.82	1.03	38	2.39	1.08	127	1.99	1.07	t= 2.84 (p<0.01)
Do vendors or landlords ask you to include the home's energy efficiency while marketing the property?	88	1.84	1.14	39	2.31	1.22	127	1.98	1.18	t= 2.08 (p<0.05)

Scale of frequency: 1- never to 5- frequently

While respondents do not frequently communicate to clients about a home energy efficiency, when asked about the importance of energy ratings and home energy rating tools, respondents thought a home's energy rating was moderately important to the sale of the home (M=2.97, SD=1.17; n=133). Similarly, respondents thought home energy rating tools were moderately important for identifying a home's energy efficiency (M=3.07, SD=1.19; n=132). Details are provided in Table 69.

Finally, respondents were asked to indicate how easy it is to communicate about home energy rating tools with buyers or renters, results show that 28% of respondents find such communication 'hard' or 'very hard'. In addition, this question was not answered by 23% of respondents (n=32) and 24% were 'neutral' scale (n=34). These findings are displayed in Figures 30. There were no statistically differences in the responses between Liveability specialists and non-Liveability specialists.
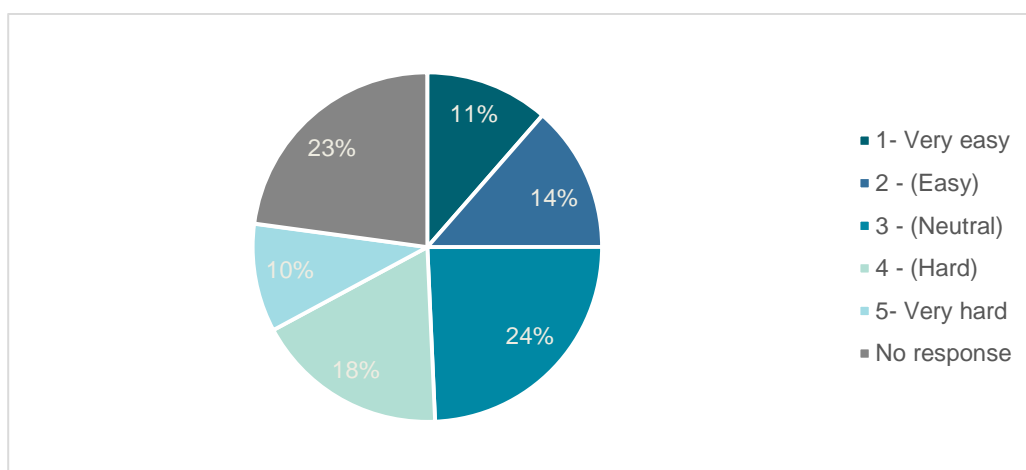
Figures 30: Ease in communicating about home energy rating tools

These two surveys presented the perceptions and experience of housing construction specialists and also real estate agents and property managers that are the direct interface with the residential energy efficient market. These specialists can be highly influential in decisions to buy, lease or renovate, and this presents several opportunities for achieving energy efficiency in that product supply chain. Indeed, Gabriel and Watson (2012) concluded that the role of real estate agents was under-developed in terms of supporting energy efficient property upgrades, but offered great potential to be influential.

The findings of these housing construction and real estate specialist surveys are combined and considered in this final section to identify the opportunities to build information and skills held by housing industry representatives to support increased sales and rentals of low carbon ('energy efficient') homes. The combined results are presented under the sub-headings of energy efficiency knowledge and features, energy ratings, and information sources and training.

Energy efficiency knowledge and features

Respondents that were engaged in the housing construction specialists' survey considered that the products and features that make the greatest contribution to residential energy efficiency are ceiling and wall insulation, energy efficient windows, external shading devices and draught-proofing for windows and doors. Similarly, respondents of the real estate industry survey considered ceiling insulation, solar panels, solar hot water system, wall insulation and high-rated Energy Rating Label air conditioner or heater. While both groups consider ceiling insulation contributes greatly to efficiency, the remainder of the features identified are different. This indicates a general theme in the housing specialist responses about features of the building shell and features that are less visible (such as draught-proofing and efficient windows), while the real estate respondents emphasise features that are more visible to the client.

The main influences stated by housing construction specialists affecting their recommendation or supply of products of services were product quality, knowledge about the product, and cost. These specialists then stated they recommended the same products onto homebuyers and tenants in terms quality and cost, but also contribution to comfort levels in the home and the potential energy savings offered by the product. The insight provided here is that the uptake of energy efficiency features could be tailored for the different audiences of construction specialists and consumers to maximise adoption.

A large majority of the housing construction representatives currently recommend or install products that provide energy efficiency, and nearly all believe that consumer uptake of energy efficient products and increased energy efficiency of new and existing homes is important and should be encouraged. This finding contrasts with research by Risholt and Berker (2013) that identified poor advice from tradespeople as a barrier to implementing energy efficiency. The reasons for the respondents' support were potential environmental benefits and long-term financial savings. They considered that clients were likely to install energy efficient products to reduce energy costs in the longer-term, increase the comfort of their home, and reduce energy consumption. Similarly, real estate representatives considered that financial savings were the main reasons for client interest in properties with energy efficient features. They stated that they frame residential energy efficiency to potential clients in terms of home comfort, reduced energy bills, and the value added to the property. The real estate representatives very regularly identified energy efficient features when marketing homes, especially those who had received Liveability training. However, their clients only 'sometimes' or 'rarely' enquired specifically about energy efficiency of a home, although half stated in the survey that they had been asked about the energy running costs.

The housing construction specialists considered that the main current barriers to recommending energy efficient products to clients were the higher cost to install, client scepticism about why a product is being recommended, and a lack of interest from clients. This perceived lack of interest or low client demand has also been documented Industry has been documented by Miller and Buys (2103). Real estate representatives considered that marketing of energy efficient home features was limited by conflicting information about what is delivered by the features, and clients either not asking for this information or being disinterested. The housing specialists recommended counter-acting these barriers by demonstrating product cost benefits, providing information on product costs savings, and better communicating of the benefits of energy efficient products, including potential energy savings.

There was a strong willingness and confidence expressed to explore new products, such as those offering energy efficiency benefits. Housing construction specialists' general approach was that of an 'early adopter' with most respondents stating that they either would "probably be one of the first in my industry to try" or that they would "wait for others to try it first, but soon after I will try it for themselves". The majority of real estate representatives also consider themselves an 'early adopter' with most stating that they would "probably be one of the first in my industry to try", with almost all of the Liveability-trained specialists selecting this approach.

In order to enhance the market for energy efficient homes, based on the above findings, the following approaches could be taken:

- Emphasise the energy efficiency features of products and features to both construction specialists and real estate agents, as well the potential home owners and tenants through training and communication. As those features and products that contribute the greatest energy efficiency are not necessarily perceived in the same priority order, this needs to be clarified in any such promotion. Products that contribute high energy efficiency and have a high profile as energy efficient include ceiling and wall insulation, solar hot water systems, energy efficient windows, external shading devices, draught-proofing for windows and doors, and high-rated Energy Rating Label air conditioners or heaters.

- Promote energy efficient products to housing construction specialists in terms of quality and cost, and enhance knowledge of the product during this process.

- Promote energy efficient products to clients in terms of quality, contribution to comfort levels in the home, and the potential energy savings. Promote energy efficient homes more broadly to clients in terms of increased comfort, lower long-term running costs, and potential increased property value.

- Increase common messaging and the cost benefits of energy efficiency in real estate marketing and promotion to increase client interest to overcome current barriers of client scepticism and conflicting information.

- Support the entrepreneurialism of housing construction and real estate specialists to take a leadership role in their industry on energy efficient designs and products.

Energy standards and ratings

The majority of housing construction specialists believed that it is important to increase energy efficiency standard for new and existing homes. Earlier research documented similar stakeholders' support for such standards to be driven by legislation (Osmani and Davies, 2013). The main benefits of energy efficiency standards identified by respondents were lower energy costs, greater thermal efficiency, and lower emissions. However, they held concerns about potential increase to building costs, increased housing prices, skill and technical ability of workforce, and consumers understanding the technology.

In terms of energy efficiency ratings, housing construction specialists supported the provision of such information about the energy efficiency at the time of sale or lease, as it provided consumers with an indication of the on-going costs and comfort of the home, the potential for improvements to the home, and allowed greater transparency and comparison of properties. When asked, housing construction specialists stated that the best person or organisation to provide such information would be energy efficiency consultants and accredited energy assessors, followed by federal or state government agencies. Real estate industry representatives considered that a specific home energy rating was moderately important to the sale of the home, although in practice they infrequently included this in their communications and marketing with vendors, landlords, buyers and renters.

The level of familiarity of housing construction specialists with current home energy rating tools or information systems was low to moderate. Of these, the most familiar were Green Star, followed by BASIX, FirstRate 5, NABERS, My Energy Star Rating, and AccuRate. Although a very high proportion of real estate representatives stated a high understanding of a home energy rating, they were relatively unfamiliar with specific tools and systems. Less than one quarter of housing construction respondents had accreditation in such tools or systems, as they considered the demand was too low, their work schedule was too busy, or the courses were too expensive. For real estate representatives, they had low confidence in communicating a home's energy rating to prospective buyers or renters. The confidence in communicating an energy rating of those with Liveability training was higher than those without such training, stated in part due to the due to training they had received, as well as possessing some existing knowledge and understanding. The greater engagement of Liveability-trained agents in residential energy efficiency may also influence the greater frequency with which real estate representatives communicate such tools and systems with the clients.

To further benefit from a building standard and ratings relevant to energy efficiency, the following approaches are drawn from the above findings:

- Explore and respond to the potential benefits and risks of increasing the energy efficiency standard for new and existing homes.

- Encourage provision of an accredited home energy rating at point of sale or lease, and support its inclusion in marketing and communications materials.

- Increase familiarity and accreditation with home energy rating tools and information systems through low-cost or free training.

- Continue to support the Centre for Liveability Real Estate and other real estate organisations to provide training regarding energy efficient homes.

Information sources and training

For housing construction specialists, influential information sources were Australian Standards, the Building Code of Australia, product catalogues and manuals, and industry handbooks. They stay informed about new products and supplies through internet search engines, and through emails and magazines from industry associations or professional

associations. An earlier study by Thorpe and Ryan (2007) identified that industry associations, training events, suppliers, journals, magazines and advertisements, as well as interpersonal contact with employees, designers and subcontractors were the main sources of knowledge for such specialists. For real estate agents and property managers, they source information through real estate training courses, and emails from industry or professional associations.

Earlier research identified a lack of tradespersons with the necessary expertise on energy efficiency. In this survey, housing construction specialists seeking to improve their skills preferred free courses provided by a product manufacturer or by the government - either offsite or onsite. The real estate representatives also preferred free training courses (offsite or onsite; potentially provided by government), and gaining knowledge from other people within their organisation. The Liveability Real Estate training was mentioned, which builds the knowledge of property managers and real estate agents to 17 aspects of a home- many of which are associated with energy efficiency- that can lead to reduced running costs and increased comfort (LJ Hooker, 2014).

These combined findings indicate that the following approaches could enhance knowledge and skills in residential energy efficiency:

- Ensure linkages between industry and professional associations to ensure energy efficient homes are featured in information relied upon by housing construction and real estate specialists.

- Support product manufacturers and suppliers to promote the energy efficiency of their products, including through training courses.

- Ensure training features energy efficient homes, and provide this training through free government courses on energy efficient homes, where possible.

References

Berry, S., Whaley, D., Davidson, K., Saman, W. (2014), 'Near zero energy homes – What do users think?', *Energy Policy* 73, 127-137.

Chang, L. and Krosnick, J. (2009), 'National Surveys via RDD Telephone Interviewing Versus The Internet: Comparing Sample Representativeness and Response Quality', *Public Opinion Quarterly* 73: 641-678.

Crabtree, L., Hes, D. (2009), 'Sustainability Uptake in Housing in Metropolitan Australia: An Institutional Problem, Not a Technological One', *Housing Studies* 24, 203-224.

Fricker, S., Galesic, M., Tourangeau, R. and Yan, T. (2005), 'An experimental comparson of web and telephone surveys', *Public Opinion Quarterly* 69: 370-392.

Gabriel, M., Watson, P. (2012), 'Supporting Sustainable Home Improvement in the Private Rental Sector: The View of Investors', *Urban Policy and Research* 30, 309-325.

Hall, N., Jeanneret T., and Romanach, L. (2014), *The EnergyFit Homes Initiative: Focus group results*, CSIRO, Brisbane.

LJ Hooker (2015), 'Liveability Real Estate Specialists', *LJ Hooker website* http://www.ljhooker.com.au/liveability/liveability-real-estate-specialists#gYPHbkGwL5AMyaeJ.99, (accessed 10/12/14).

McGee, C., Partridge, E., Carrard, N. and Milne, G. (2008), 'Mainstreaming sustainable housing: policies and programs that work', *World Sustainable Building Conference* (World SB08), Melbourne.

Miller, W., Buys, L. (2013), 'Factors influencing sustainability outcomes of housing in subtropical Australia', *Smart and Sustainable Built Environment* 2, 60-83.

Osmani, M. and Davies, P. (2013), 'An Assessment of Low Energy Design Practices in Housing Retrofit Projects', *Energy Procedia* 42, 193-200.

Risholt, B. and Berker, T., 2013. Success for energy efficient renovation of dwellings—Learning from private homeowners. Energy Policy 61, 1022-1030.

Romanach, L., Jeanneret, T., Hall, N. and Yip, E. (2014), *The EnergyFit Homes Project: Literature review and gap analysis*, CSIRO, Brisbane.

Stephenson, L. and Crete, J. (2010), 'Studying Political Behavior: A Comparison of Internet and Telephone Surveys', *International Journal of Public Opinion Research*, DOI: 10.1093/ijpor/edq025.

Taylor, H. (2000), 'Does Internet research work? Comparing online survey results with telephone survey,' *International Journal of Market Research*, 42 (1): 51-63.

Thorpe, D. and Ryan, N. (2007), 'Responding to global issues: sustainability and innovation in the Australian SME residential building construction sector', *ICCPM/ICCEM 2007 Proceedings*.

Wong, P., Owczarek, A., Murison, M., Kefalianos, Z., and Spinozzi, J. (2013), 'Driving construction contractors to adopt carbon reduction strategies – an Australian approach', *Journal of Environmental Planning and Management,* 1-19.

Xing, Y. and Handy, S. (2014), 'Online versus phone surveys: comparison of results for a bicycling survey', *Transportation Planning and Technology*, 37: 554-567.

Appendix A Surveys

A.1   Housing construction specialist survey

Q1. In which profession do you currently work?

1. Architect
2. Builder
3. Electrician
4. Plumber
5. Insulation installer
6. Solar panels installer
7. Window/door professional
8. Shade/louvre/awning installer
9. Designer
10. Other

Q2. What best describes your level of qualification in your trade?

1. Apprentice (Screen out – end of survey)
2. Fully qualified

Q3. In which state / territory do you currently live?

1. ACT
2. NSW
3. QLD
4. VIC
5. SA
6. WA
7. NT
8. TAS

COMPANY SIZE AND RESPONSIBILITIES

Q4. Are you currently:

1. Self employed
2. Employed by a business/company

Q5. Which of the following best describes the size of the company you are currently working for? Please consider the company overall, rather than the particular site that you are based at.

1. 1 person
2. 2-5 people
3. 6-19 people
4. 20-199 people
5. More than 200 people
6. Don't know

Q6. Do you manage or supervise staff?

1. Yes (Employer)
2. No (Employee)

Q7. Are you responsible for purchasing supplies and products for work?

LOW CARBON LIVING CRC

1. Yes
2. No

Q8. Which aspects of the building and property market does you work with? *Please tick all that apply*.

1. Home renovation or retrofit (existing homes)
2. Single home development (new homes)
3. Large-scale development (new homes)

ENERGY EFFICIENCY FEATURES

Q9. What products do you currently recommend, install and/or sell? *Please tick all that apply*.

1. Windows
2. Draught-proofing for windows and doors
3. Shading devices – internal
4. Shading devices – external
5. Air conditioner or heater
6. Ceiling fans
7. Ceiling insulation
8. Wall insulation
9. Floor insulation
10. Lighting
11. Hot water system
12. Pool heater
13. Home appliances
14. None of the above.
15. Other. Please specify.

Q10. On a scale from *1 – never* to *5 – all the time*, when recommending or installing a product, how often is the installation:

1. Replacing a current system or feature within a home
2. An entirely new installation within a home

Q11. On a scale from *1 – never* to *5 – all the time*, when recommending or installing a product, how often is the demand for the type of product [brand, model and/or features] driven by:

1. Client demand
2. Your/your company recommendation

Q12. On a scale from *1 – not at all* to *5 – very much*, how much do each of the following influence upon the products and services that you recommend or supply?

1. Client demand
2. Relationship with suppliers
3. Availability of products
4. Knowledge about products
5. Quality of the product
6. Cost of the product
7. Ease of installation

Q13. On a scale of *1- not at all* to *5 – substantial*, to what extent do you think the following products contribute to reducing energy use in the home?

1. Energy efficient windows (i.e. double-glazed or tinted)
2. Draught-proofing for windows and doors
3. Shading devices – internal
4. Shading devices – external
5. High star-rated air conditioner or heater
6. Ceiling fans
7. Ceiling insulation
8. Wall insulation

LOW CARBON LIVING
CRC

9. Floor insulation
10. Low energy lighting
11. Solar hot water system
12. Gas hot water system
13. Solar panels
14. Solar pool heater
15. High star-rated appliances

Q14. On a scale of *1 – never* to *5 – all the time*, how often do you consider the following when you recommend a product to the client:

1. How it would improve the level of comfort within the home
2. How much it would cost to install
3. How much energy the client would save
4. How much money the client would save in their energy bills
5. How it would affect the environment
6. How much value it would add to the property
7. The quality of the product
8. How easy it is to use

(Randomised)

Q15. Would you say that any of the products you recommend or install are energy efficient products?

1. No. Move to Question 17
2. Yes. Continue to Question 16

Q16. What energy efficient products do you currently recommend, install and/or sell? *Please specify.*

(Open text response)

Q17. How often do you recommend a product because the product is energy efficient?

1. Never
2. Rarely
3. Sometimes
4. Most of the time
5. All the time

Q18. What is the main barrier you face in recommending energy efficient products to your clients? *Please select three only.*

1. It is more expensive to install
2. No client demand
3. It is lower quality
4. It is not available
5. It is harder to install
6. Client is not interested
7. There is less choice available
8. I do not usually work with energy efficient products
9. Clients are skeptical about why the product is being recommended
10. I do not have time to make the recommendation

(Randomised)

Q19. On a scale from *1 – not at all important* to *5 – very important*, how important do you think are the following aspects in driving your clients to install energy efficient products?

1. To make the home more comfortable
2. To save money upfront
3. To save money on energy bills over time
4. To save energy
5. To benefit from government rebates

6. To replace a broken/old system
7. To improve property value
8. To benefit the environment
9. To improve the home's air ventilation
10. To comply with a government recommendation
11. Recommended by relatives, neighbours or friends
12. To reduce reliance on energy grid
13. Other. Please specify: [open text response]
14. Don't know

(Randomised)

Q20. Do you think consumer uptake of energy efficient products should be encouraged?

1. Yes. Why? Please specify [open text response]
2. No. Why not? Please specify [open text response]

Q21. On a scale of *1- no improvement needed* to *5 – a lot of improvement needed*, how much do you think the following issues need to be improved if you were to (or continue to) recommend energy efficient products to your clients?

1. Training and education to professionals
2. Communication of the benefits of energy efficient products
3. Information on product energy savings
4. Information on product cost savings
5. Ease of maintenance
6. Greater reliability of products
7. Demonstration of product environmental benefits
8. Demonstration of product cost benefits
9. Ease of use
10. Provide ongoing after-sales support
11. Other. Please specify.

ENERGY EFFICIENCY STANDARDS

Q22. On a scale of *1 – not at all important* to *5 – very important*, how important do you think is it to increase the energy efficiency of new and existing homes?

1. Not at all important
2.
3.
4.
5. Very important

Q23. What do you think it would be the benefits, if any, in increasing the standard of energy efficiency for new and existing homes? *Please tick all that apply*.

1. Lower energy costs
2. Lower emissions (environmental benefit)
3. Increased consumer demand for energy efficient homes
4. Improved standard of building quality
5. Greater thermal efficiency (more comfortable homes)
6. Increased saleability
7. No benefits
8. Other. Please specify [open text response]

Q24. What concerns, if any, do you have about the effect on increasing the standard of energy efficiency for new and existing homes? *Please tick all that apply*.

1. Increased building costs
2. Increased house prices
3. Reduced profits for tradespeople
4. Rates of development will reduce
5. Consumers understanding the technology
6. Maintenance issues and cost

7. Skill and technical ability of workforce
8. Other. Please specify [open text response]

<u>ENERGY RATINGS</u>

Q25. On a scale of *1-not at all familiar* to *5- very familiar*, how familiar are you with the following home energy rating tools or information systems?

1. AccuRate
2. BERS Pro
3. FirstRate 5
4. Greenstar
5. EnviroDevelopment
6. BASIX
7. Energy Rating App
8. NABERS
9. My Energy Star Rating
10. Other. Please specify [open text response]

(Randomised)

Q26. Do you think information about the energy efficiency of a home should be provided at the time of sale or lease?

1. Yes. Why? Please specify [open text response]
2. No. Why not? Please specify [open text response]

Q27. Are you accredited to any energy rating schemes?

1. No.
2. Yes. Please specify [open text response]

Q28. Who do you think would be the best person or organisation to provide energy rating to residential clients?

(Open text response)

<u>INFORMATION</u>

Q29. What documents do you refer to in your daily work? *Please tick all that apply*.

1. Building Code of Australia
2. Australia Standards
3. Industry handbooks
4. Product catalogues
5. Product manuals
6. None of the above
7. Other. Please specify

Q30. On a scale from *1- never* to *5 – frequently*, how often do you use the following to stay informed about new products and/or supplies?

1. Browsing at the retail store
2. Staff at the retail store
3. Other people within my organisation
4. Other people who are in my industry but not in my organisation
5. Internet search engines
6. Online forums
7. Industry events or expos
8. Industry association websites
9. Using social media such as YouTube, LinkedIn, Twitter or Facebook
10. Emails from Industry associations or Professional associations in your industry
11. Magazines published by Industry associations or Professional associations
12. Personal communication with representatives from an Industry association or Professional association
13. Television programs such as Channel 9 'Building Ideas' program

14. Sales representatives for the company that manufacturers the product
15. Other. Please specify [open text response]
16. None

(Randomised)

KNOWLEDGE AND TRAINING

Q32. Do you hold any energy-related accreditations beyond that which is needed for your trade?

1. Yes. Please specify: [open text response] (Continue to Q33 and skip Q34)
2. No (Continue to Q34)

Q33. What do you value about this qualification? *Please tick all that apply*.

1. Increased client base
2. Training in new technologies
3. Recognition of special skills
4. Other. Please specify.

Q34. Why do you NOT hold additional energy-related accreditations? *Please tick all that apply*.

1. Training is too expensive
2. Training is too time intensive
3. Training is too complicated
4. There is not enough demand for additional accreditation
5. Already have enough business/too busy
6. Not interested

Q35. Which of the following sources would you consider using to improve your skills in energy efficiency for your industry? Please tick all that apply.

1. Other people within my organisation
2. Other people who are in my industry but not in my organisation
3. Online courses
4. An email by an Industry association or Professional association in your industry
5. A magazine by an Industry association or Professional association in your industry
6. By phone or face to face from an Industry association or Professional association in your industry
7. TAFE/ Tertiary education
8. On-site training courses
9. Off-site training courses
10. Free seminar/training course by a product manufacturer
11. Free training courses (offsite or onsite)
12. Free training course by the Government
13. Free Seminar/ Training course by a trade store e.g. Bunnings or Mitre 10
14. Videos on YouTube or another free 'how to' internet site
15. Other. Please specify.
16. Don't know

Q36. What would best describe your approach when trying a NEW energy efficient product or approach? *Please selection one only*.

1. I will probably be one of the first in my industry to try
2. I will tend to wait for others to try it first, but soon after I will try it for myself
3. I will tend to wait for others to try it first, and eventually I will try it for myself
4. I don't like to try new products until they are well established in the market
5. I never try new products/approaches so will stick to what I know

DEMOGRAPHICS

Q37. Which of the following age groups do you fit into?

1. 18-24
2. 25-29

LOW CARBON LIVING CRC

3. 30-34
4. 35-39
5. 40-44
6. 45-49
7. 50-54
8. 55-59
9. 60-64
10. 65-69
11. 70-74
12. 75 or above
13. Prefer not to say

Q38. Gender

1. Male
2. Female
3. Prefer not to say

Q39. For how many years have you been qualified in your profession?

1. 1-5 years
2. 6-10 years
3. 11-20 years
4. More than 20 years
5. Prefer not to say

A.2   Real estate agent and property manager survey

COMPANY SIZE AND RESPONSIBILITIES

Q1. In what role do you currently work?

1.   Real estate agent (responsible for appraising listing and selling properties)
2.   Property manager (responsible for renting and managing properties)
3.   Both
4.   Neither (Screen out – end of survey)

Q2. Which state / territory are you currently live in?

1.   ACT
2.   NSW
3.   QLD
4.   VIC
5.   SA
6.   WA
7.   NT
8.   TAS

Q3. Which of the following best describes the size of the real estate office you are currently working for?
1.   1 person
2.   2-5 people
3.   6-19 people
4.   20-199 people
5.   More than 200 people
6.   Don't Know

Q4. Is your real estate office part of a franchise network?
1.   No
2.   Yes

Q5. Are you a trained Liveability Real Estate Specialist?
1.   No
2.   Yes

PROPERTY FEATURES

Q6. On a scale to *1- not important* to *5- very important*, how important are following features in the marketing of a property?
1.   Energy efficient windows (i.e. double-glazed or tinted)
2.   Draught-proofing for windows and doors
3.   Shading devices – internal
4.   Shading devices – external
5.   High starrated air conditioner or heater
6.   Ceiling fans
7.   Ceiling insulation
8.   Wall insulation
9.   Floor insulation
10. Low energy lighting
11. Solar hot water system
12. Gas hot water system
13. Solar panels
14. Solar pool heater
15. High star-rated appliances

Q7. On a scale of *1- not at all* to *5 – substantial*, to what extent do you think the following products contribute to reducing energy use in the home?
1.   Energy efficient windows (i.e. double-glazed or tinted)
2.   Draught-proofing for windows and doors
3.   Shading devices – internal

4. Shading devices – external
5. High star-rated air conditioner or heater
6. Ceiling fans
7. Ceiling insulation
8. Wall insulation
9. Floor insulation
10. Low energy lighting
11. Solar hot water system
12. Gas hot water system
13. Solar panels
14. Solar pool heater
15. High star-rated appliances

Q8. How often do you identify energy efficient features of a property to buyers or renters?
1. Never
2. Rarely
3. Sometimes
4. Most of the time
5. All of the time

Q9. Do you talk about any of the following with buyers and renters with regards to energy efficient features? *Please select all that apply.*
1. How it would improve the level of comfort within the home
2. How much it would cost to install
3. How much money the client would save in their energy bills
4. How it would affect the environment
5. How much value it would add to the property

Q10. How often do potential buyers or renters enquire about the energy efficient features of a property?

1. Never
2. Rarely
3. Sometimes
4. Most of the time
5. All of the time

Q11. Have you personally experienced buyers/renters enquiring about the home's energy costs (such as requesting past electricity consumption or bills) at the point of sale or rent?
1. No
2. Yes

Q12. What do you think is the main reason why your buyers or renters might be interested in properties with energy efficient features? *Please select one only.*

1. To have a comfortable home
2. To save money on energy bills over time
3. To save energy
4. To benefit from government rebates
5. To improve property value
6. To benefit the environment
7. To improve the home's air ventilation
8. Other. Please specify.
9. None

Q13. On a scale of *1 – not at all important* to *5 – very important*, how important do you think is to provide renters or buyers with:

1. The home's estimated annual energy costs?
2. The home's estimated indoor temperature for each season?
3. A list of energy efficiency features already present with the house
4. A list of energy efficiency features that can be made to the house
5. Likely impact on energy costs if specific energy efficiency features are added to the house

LOW CARBON LIVING
CRC

6. The home's energy rating (similar to an energy star rating for appliances)

(Randomised)

Q14. What is the main barrier you face in marketing energy efficient features in properties to your buyers and renters? *Please select <u>one</u> only*

1. I don't know how to identify these features
2. I don't know which are the most important energy efficiency features
3. There is conflicting information about what these features can deliver
4. The buyer/renter never asks for the information
5. I am not familiar with the performance of energy efficient products
6. I don't consider any of these features important to my sales or rental process
7. The buyer/renter is not interested
8. Other. Please specify:_____
9. None

Q15. What would best describe your approach to a new market that promotes properties with energy efficiency features? *Please select <u>one</u> only*

1. I will probably be one of the first in my industry to try
2. I will tend to wait for other to try it first, but soon after I will try it for myself
3. I will tend to wait for others to try it first, and eventually I will try it for myself
4. I don't like to spend time on new opportunities until they are well established in the market
5. I'm not interested in a new market

<u>INFORMATION</u>

Q16. How do you keep informed regarding trends in real estate? *Please select the <u>three</u> main sources that apply.*

1. Home Shows
2. Real estate training courses
3. Other people within my organisation
4. Other people who are in my industry but not in my organisation
5. Browsing the internet
6. An email by an Industry association or Professional association in your industry
7. A magazine by an Industry association or Professional association in your industry
8. By phone or face to face from an Industry association or Professional association in your industry
9. Other. Please specify:_____
10. None

(Randomised)

Q17. Which of the following channels would you consider using to improve your skills in new approaches and practices in your industry? *Please tick all that apply.*

1. Other people within my organisation
2. Other people who are in my industry but not in my organisation
3. Online courses
4. An email by an Industry association or Professional association in your industry
5. A magazine by an Industry association or Professional association in your industry
6. By phone or face to face from an Industry association or Professional association in your industry
7. TAFE/ Tertiary education
8. Training courses you have to pay for on-site
9. Training courses you have to pay for off-site
10. Free seminar/training course by a product manufacturer
11. Free training courses (offsite or onsite)
12. Free training course by the Government
13. Free Seminar/ Training course by a trade store e.g. Bunnings or Mitre 10
14. Videos on YouTube or another free 'how to' internet site
15. Other. Please specify:_____
16. None

ENERGY EFFICIENCY RATING TOOLS

Q18. Do you understand what a home 'energy rating' is?

1. No
2. Yes

Q19. On a scale from *1- not at all* to *5 – very much so*, how confident are you in communicating about home Energy Rating to prospective buyers or renters?

Q20. Why are you confident or unconfident about communicating about home Energy Rating to prospective buyers or renters?

(Open text response)

Q21. On a scale of *1-not at all familiar* to *5- very familiar*, how familiar are you with the home energy rating tools or information systems? (Randomised)

1. NatHERS
2. BASIX
3. AccuRate
4. BERS Pro
5. FirstRate 5
6. Greenstar
7. EnviroDevelopment
8. Energy Rating App
9. NABERS
10. My Energy Star Rating
11. Other. Please specify

Q22. On a scale from *1- never* to *5 – frequently*, how often:

1. Do you ask vendors or landlords whether their home has been rated for energy efficiency?
2. Do vendors or landlords provide you with information about the home's energy efficiency?
3. Do you ask vendors or landlords whether they want to include the home's energy efficiency while marketing the property?
4. Do vendors or landlords ask you to include the home's energy efficiency while marketing the property?
5. Do you promote the home's energy efficiency to buyers or renters while marketing the property?
6. Do buyers or renters request information about a home's energy efficiency?

Q23. On a scale of *1 – not at all important* to *5 – very important*, how important do you think:

1. A home 'energy rating' is to the sale of a home?
2. A home 'energy rating tool' is to identifying a home's energy efficiency?

Q24. On a scale of *1- very easy* to *5-very hard*, how easy is it to communicate about House home energy rating tools with your buyer/renters?

DEMOGRAPHICS

Q25. Which of the following age groups do you fit into?
1. 18-24
2. 25-29
3. 30-34
4. 35-39
5. 40-44
6. 45-49
7. 50-54
8. 55-59
9. 60-64
10. 65-69
11. 70-74
12. 75 or above

13. Prefer not to say

Q27. Gender
1. Male
2. Female
3. Prefer not to say

Q28. How many years have you been working in real estate or property management?
1. 1-5 years
2. 6-10 years
3. 11-20 years
4. More than 20 years
5. Prefer not to say

Appendix B Additional data details for specialist survey

Table 2 Frequency of responses for state of residence of participants (N=492)

STATE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Victoria	37	29.4	19	18.8	35	30.2	31	48.4	21	24.7	143	29.1
New South Wales	30	23.8	27	26.7	22	19	10	15.6	32	37.6	121	24.6
Queensland	22	17.5	30	29.7	28	24.1	14	21.9	15	17.6	109	22.2
Western Australia	15	11.9	9	8.9	14	12.1	2	3.1	8	9.4	48	9.8
South Australia	12	9.5	9	8.9	11	9.5	2	3.1	3	3.5	37	7.5
Tasmania	8	6.3	4	4	3	2.6	2	3.1	1	1.2	18	3.7
Australian Capital Territory	1	0.8	2	2	2	1.7	1	1.6	4	4.7	10	2.0
Northern Territory	1	0.8	1	1	1	0.9	1	1.6	1	1.2	5	1.0
Missing responses	0	0.0	0	0.0	0	0.0	1	1.6	0	0.0	1	0.2
Total	126	100.0	101	100.0	116	100.0	64	100.0	85	100.0	492	100.0

Table 3 Frequency of responses for participant professions

LOW CARBON LIVING CRC

PROFESSION	N	%
Architect	126	25.61
Builder	101	20.53
Designer	64	13.01
Tradesperson		
Window/door professional	46	9.35
Plumber	40	8.13
Electrician	16	3.25
Plasterer	6	1.22
Insulation installer	5	1.02
Other installer	3	0.61
Subtotal	116	23.58
Other professionals		
Supplier	20	4.07
Consultant	15	3.05
Energy assessor	11	2.24
Engineer	8	1.63
Surveyor/ Certifier	7	1.42
Other	24	4.88
Subtotal	85	17.28
Total	492	100

Table 4 Frequency of responses for gender by profession category

GENDER	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Male	96	76.2	94	93.1	99	85.3	42	65.6	74	87.1	405	82.3
Female	27	21.4	4	4.0	8	6.9	19	29.7	9	10.6	67	13.6
Prefer not to say	2	1.6	0	0.0	0	0.0	0	0.0	0	0.0	2	0.4
No response	1	0.8	3	3.0	9	7.8	3	4.7	2	2.4	18	3.7
Total	126	100	101	100	116	100	64	100	85	100	492	100

Table 5 Frequency of responses for age by profession category

AGE	ARCHITECT		BUILDER		TRADESMAN		DESIGNERS		OTHER		TOTAL		TOTAL BY AGE CATEGORY
	N	%	N	%	N	%	N	%	N	%	N	%	
18-24	0	0.0	0	0.0	1	0.9	1	1.6	0	0.0	2	0.4	
25-29	8	6.3	3	3.0	4	3.4	3	4.7	5	5.9	23	4.7	24.2
30-34	12	9.5	7	6.9	13	11.2	4	6.3	5	5.9	41	8.3	
35-39	17	13.5	10	9.9	16	13.8	5	7.8	5	5.9	53	10.8	
40-44	27	21.4	14	13.9	19	16.4	12	18.8	12	14.1	84	17.1	30.1
45-49	9	7.1	23	22.8	18	15.5	3	4.7	11	12.9	64	13.0	
50-54	11	8.7	11	10.9	11	9.5	14	21.9	9	10.6	56	11.4	22.8
55-59	17	13.5	11	10.9	8	6.9	7	10.9	13	15.3	56	11.4	
60-64	12	9.5	10	9.9	8	6.9	8	12.5	12	14.1	50	10.2	16.3
65-69	8	6.3	6	5.9	5	4.3	2	3.1	9	10.6	30	6.1	
70-74	2	1.6	1	1.0	2	1.7	0	0.0	1	1.2	6	1.2	2.0
75 or above	0	0.0	0	0.0	1	0.9	2	3.1	1	1.2	4	0.8	
Prefer not to say	1	0.8	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0.2
No response	2	1.6	5	5.0	10	8.6	3	4.7	2	2.4	22	4.5	4.5
Total	126	100.0	101	100.0	116	100.0	64	100.0	85	100.0	492	100.0	100.0

Table 6 Frequency of response for the aspects of the building and property market with which participants work

ASPECT OF PROPERTY MARKET	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Home renovation/retrofit	107	84.9	62	61.4	97	83.6	51	79.7	63	74.1	380	77.2
Single home development	113	89.7	69	68.3	83	71.6	56	87.5	61	71.8	382	77.6
Large-scale development	78	61.9	35	34.7	67	57.8	32	50.0	60	70.6	272	55.3
Total respondents by profession	126	100	101	100	116	100	64	100	85	100	492	100

Table 7 Frequency of responses for number of years qualified in profession

LOW CARBON LIVING CRC

STATE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
1-5 years	36	28.6	10	9.9	7	6	18	28.1	18	21.2	89	18.1
6-10 years	49	38.9	44	43.6	37	31.9	26	40.6	19	22.4	175	35.6
11-20 years	27	21.4	23	22.8	31	26.7	10	15.6	13	15.3	104	21.1
More than 20 years	11	8.7	18	17.8	26	22.4	6	9.4	20	23.5	81	16.5
Prefer not to say	2	1.6	6	5.9	15	12.9	4	6.3	15	17.6	42	8.5
No response	1	0.8	0	0	0	0	0	0	0	0	1	0.2
Total	126	100	101	100	116	100	64	100	85	100	492	100

Table 8 Number of participants in supervisory/management roles

MANAGEMENT/ SUPERVISORY ROLE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
No	54	42.9	11	10.9	18	15.5	29	45.3	30	35.3	142	28.9
Yes	72	57.1	90	89.1	98	84.5	35	54.7	55	64.7	350	71.1
Total	126	100	101	100	116	100	64	100	85	100	492	100

Table 9 Number of participants responsible for the purchase of work supplies and products

RESPONSIBILITY FOR PURCHASE OF PRODUCTS	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
No	36	28.6	5	5	15	12.9	22	34.4	28	32.9	106	21.5
Yes	90	71.4	96	95	101	87.1	42	65.6	57	67.1	386	78.5
Total	126	100	101	100	116	100	64	100	85	100	492	100

Table 10 Frequency of responses for the size of companies regarding number of employees

SIZE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
1 person	36	28.6	10	9.9	7	6	18	28.1	18	21.2	89	18.1
2 - 5 people	49	38.9	44	43.6	37	31.9	26	40.6	19	22.4	175	35.6
6 - 19 people	27	21.4	23	22.8	31	26.7	10	15.6	13	15.3	104	21.1
20 - 199 people	11	8.7	18	17.8	26	22.4	6	9.4	20	23.5	81	16.5
More than 200 people	2	1.6	6	5.9	15	12.9	4	6.3	15	17.6	42	8.5
Don't know	1	0.8	0	0	0	0	0	0	0	0	1	0.2
Total	126	100	101	100	116	100	64	100	85	100	492	100

Table 11 Frequency of response for documents referred to in daily work (N=482)

LOW CARBON LIVING CRC

DOCUMENT	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Australia Standards	122	96.8	80	79.2	97	83.6	55	85.9	64	75.3	418	85.0
Building Code of Australia	122	96.8	83	82.2	65	56.0	62	96.9	69	81.2	401	81.5
Product catalogues	112	88.9	77	76.2	82	70.7	51	79.7	64	75.3	386	78.5
Product manuals	98	77.8	74	73.3	84	72.4	53	82.8	63	74.1	372	75.6
Industry handbooks	72	57.1	59	58.4	56	48.3	40	62.5	51	60.0	278	56.5
Other	8	6.3	5	4.9	10	8.6	8	12.5	6	7.1	37	7.5
None of the above	0	0.0	3	3.0	2	1.7	0	0.0	3	3.5	8	1.6

Table 12: Frequency of responses for frequency of use of information sources

ENERGY RATING TOOL	NEVER	2	3	4	FREQUENTLY	TOTAL
Internet search engines	13	43	96	140	177	469
Magazines published by Industry associations or Professional associations	24	90	111	142	86	453
Emails from Industry associations or Professional associations in your industry	21	80	134	145	83	463
Industry association websites	28	83	125	140	77	453
Personal communication with representatives from an Industry association or Professional association	31	91	130	128	75	455
Other people within my organisation	65	70	118	112	67	432
Sales representatives for the company that manufacturers the product	23	102	126	147	66	464
Other people who are in my industry but not in my organisation	39	96	151	114	55	455
Industry events or expos	38	118	139	106	53	454
Using social media such as YouTube, LinkedIn, Twitter or Facebook	188	106	54	22	18	388
Online forums	146	128	66	49	17	406
Staff at the retail store	136	142	78	35	13	404
Browsing at the retail store	138	137	92	36	10	413
Television programs such as Channel 9 'Building Ideas' program	195	107	50	22	9	383
Other. Please specify [open text response]	58	3	5	4	5	75

Table 13: Sources of information of new products and supplies

INFORMATION SOURCE	ARCHITECT			BUILDER			TRADESPERSON			DESIGNERS			OTHER			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
Internet search engines	124	4.04	1.05	95	3.80	1.12	107	3.67	1.14	62	4.18	1.02	81	3.93	1.06	469	3.91	1.09
Emails from Industry associations or Professional associations in your industry	122	3.19	1.09	94	3.30	1.11	103	3.52	1.06	62	3.71	1.01	82	3.49	1.18	463	3.41	1.10
Magazines published by Industry associations or Professional associations	119	3.40	1.08	95	3.26	1.06	95	3.37	1.16	63	3.73	1.08	81	3.27	1.37	453	3.39	1.16
Industry association websites	116	3.20	1.13	94	3.33	1.08	102	3.34	1.21	61	3.56	1.13	80	3.40	1.15	453	3.34	1.14
Sales representatives for the company that manufacturers the product	122	3.24	1.04	95	3.31	1.08	105	3.36	1.08	61	3.34	1.21	81	3.17	1.20	464	3.28	1.11
Personal communication with representatives from an Industry association or Professional association	121	3.12	1.06	93	3.33	1.15	102	3.42	1.16	61	3.23	1.20	78	3.28	1.28	455	3.27	1.16
Other people within my organisation	108	3.00	1.28	89	2.87	1.27	99	3.45	1.15	59	3.08	1.29	77	3.10	1.37	432	3.11	1.28
Other people who are in my industry but not in my organisation	116	2.98	1.18	95	3.09	1.14	102	3.26	1.10	61	3.18	1.09	81	3.06	1.12	455	3.11	1.13
Industry events or expos	121	2.85	1.09	91	3.15	1.14	102	2.87	1.20	62	3.44	1.00	78	3.10	1.15	454	3.04	1.14
Online forums	103	2.17	1.18	85	1.86	1.03	85	2.15	1.24	59	2.24	0.97	74	2.49	1.28	406	2.17	1.16
Browsing at the retail store	101	2.01	1.02	88	2.20	1.02	88	2.22	1.12	59	2.05	0.97	77	2.19	1.11	413	2.14	1.05
Staff at the retail store	101	1.93	0.87	87	2.31	1.10	95	2.45	1.35	54	1.89	0.79	67	1.91	0.92	404	2.13	1.07
Using social media such as YouTube, LinkedIn, Twitter or Facebook	100	1.70	1.02	82	1.82	1.06	89	1.99	1.15	54	1.94	0.98	63	2.21	1.37	388	1.91	1.12
Television programs such as Channel 9 'Building Ideas' program	92	1.48	0.79	87	2.06	1.23	84	1.90	0.99	56	1.79	0.95	64	1.83	1.02	383	1.81	1.02
Other	14	1.93	1.59	19	1.42	1.02	18	1.83	1.34	12	1.50	1.24	12	1.25	0.87	75	1.60	1.23

Scale: 1 (never use) to 5 (frequently use)

LOW CARBON LIVING CRC

Table 14: Frequency of responses for products that respondents currently recommend, install and/or sell

PRODUCT	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Windows	118	93.7	80	79.2	49	42.2	52	81.3	43	50.6	342	69.5
Floor insulation	116	92.1	86	85.1	20	17.2	53	82.8	44	51.8	319	64.8
Ceiling insulation	114	90.5	83	82.2	23	19.8	53	82.8	39	45.9	312	63.4
Pool heater	98	77.8	70	69.3	48	41.4	35	54.7	25	29.4	276	56.1
Hot water system	105	83.3	66	65.3	15	12.9	45	70.3	28	32.9	259	52.6
Lighting	104	82.5	58	57.4	14	12.1	47	73.4	34	40.0	257	52.2
Shading devices – external	105	83.3	44	43.6	9	7.8	46	71.9	32	37.6	236	48.0
Ceiling fans	91	72.2	62	61.4	15	12.9	42	65.6	25	29.4	235	47.8
Draught-proofing for windows and doors	81	64.3	47	46.5	14	12.1	37	57.8	30	35.3	209	42.5
Air conditioner or heater	73	57.9	62	61.4	24	20.7	24	37.5	21	24.7	204	41.5
Shading devices – internal	67	53.2	47	46.5	21	18.1	18	28.1	17	20.0	170	34.6
Wall insulation	72	57.1	21	20.8	1	0.9	24	37.5	22	25.9	140	28.5
Home appliances	11	8.7	12	11.9	21	18.1	10	15.6	35	41.2	89	18.1
None of the above	29	23.0	11	10.9	12	10.3	6	9.4	6	7.1	64	13.0
Other	3	2.4	6	5.9	1	0.9	4	6.3	13	15.3	27	5.5
Total respondents by profession	126	100.0	101	100.0	116	100.0	64	100.0	85	100.0	492	100.0

LOW CARBON LIVING CRC

Table 15 Mean responses for frequency of reasons for installation and drivers of demand

	Architect			Builder			Tradesperson			Designers			Other			Total		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Drivers of demand																		
Your/your company recommendation	126	3.74	0.69	99	3.71	0.98	115	3.79	0.93	64	3.75	0.91	82	3.59	1.19	486	3.72	0.93
Client demand	126	2.94	0.86	99	3.11	0.98	115	3.39	1.00	63	2.97	0.93	83	2.89	1.19	486	3.08	1.00
Reason for installation																		
An entirely new installation within a home	125	3.81	0.90	100	3.91	1.17	115	3.47	1.12	64	3.97	0.85	82	3.68	1.26	486	3.75	1.08
Replacing a current system or feature within a home	125	2.78	0.96	98	2.61	1.28	114	3.20	1.08	63	2.70	1.04	81	2.88	1.29	481	2.85	1.14

Scale: Frequency from 1-never; 5- all the time

LOW CARBON LIVING
CRC

Table 16: Frequency of responses for reasons for product installation

REASON	NEVER	2	3	4	ALL THE TIME	TOTAL
Replacing a current system or feature within a home	60	132	151	95	43	481
An entirely new installation within a home	19	40	127	158	142	486

Table 17: Frequency of responses for what drives demand for a product

DEMAND DRIVEN BY	NEVER	2	3	4	ALL THE TIME	TOTAL
Client demand	22	121	180	124	39	486
Your/your company recommendation	10	34	136	208	98	486

Table 18 Mean response for contribution of products towards energy use reduction in the home

PRODUCT	ARCHITECT			BUILDER			TRADESPERSON			DESIGNERS			OTHER			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
Ceiling insulation	126	4.73	0.48	101	4.63	0.61	114	4.46	0.95	64	4.67	0.69	85	4.48	0.81	490	4.60	0.73
Wall insulation	126	4.60	0.62	101	4.56	0.68	114	4.36	0.95	64	4.66	0.62	85	4.32	0.83	490	4.49	0.77
Energy efficient windows (i.e. double-glazed or tinted)	126	4.46	0.78	101	4.20	0.89	113	4.41	0.83	64	4.48	0.85	85	4.27	0.94	489	4.36	0.86
Shading devices – external	126	4.51	0.69	101	3.98	1.06	113	3.98	1.03	64	4.38	0.90	85	4.06	0.98	489	4.18	0.96
Draught-proofing for windows and doors	126	4.05	0.95	101	3.94	1.06	114	3.96	0.98	64	4.22	0.97	85	3.95	1.06	490	4.01	1.00
Solar hot water system	126	4.02	0.95	101	3.90	1.20	116	3.92	1.12	64	4.03	0.99	84	3.99	0.96	491	3.97	1.05
Solar pool heater	126	3.91	1.00	101	4.05	1.10	114	3.83	1.20	64	4.05	1.00	82	4.01	1.05	487	3.96	1.08
Floor insulation	126	3.96	1.02	100	3.76	1.12	113	3.71	1.19	64	4.16	1.01	85	3.62	1.12	488	3.83	1.11
Low energy lighting	126	3.94	0.93	101	3.84	1.12	114	3.67	1.20	64	4.11	0.96	84	3.67	1.01	489	3.83	1.06
Solar panels	126	3.56	0.97	101	3.71	0.97	115	3.78	1.11	64	3.59	1.06	84	3.68	1.05	490	3.67	1.03
High-rated Energy Rating Label air conditioner or heater	125	3.33	1.03	100	3.44	1.19	115	3.75	1.17	64	3.34	1.17	84	3.67	1.21	488	3.51	1.16
Ceiling fans	126	3.41	0.92	100	3.40	1.12	114	3.25	1.20	64	3.55	1.14	85	3.28	1.06	489	3.37	1.08
High-rated Energy Rating Label appliances	125	3.46	1.22	99	3.25	1.30	114	3.42	1.25	64	3.22	1.24	82	3.40	1.28	484	3.37	1.26
Gas hot water system	126	3.17	0.94	100	3.14	1.17	116	3.35	1.13	64	3.02	1.00	83	3.01	1.10	489	3.16	1.07
Shading devices – internal	126	2.84	0.98	101	3.30	1.13	113	3.11	1.12	64	3.28	1.19	85	3.05	1.07	489	3.09	1.10

Scale: Contribution of product to energy use reduction from 1- not at all to 5- substantial

LOW CARBON LIVING
CRC

Table 19: Frequency of responses for contribution of products towards energy use reduction in the home

PRODUCT	NOT AT ALL	2	3	4	SUBSTAN-TIAL	TOTAL
Ceiling insulation	4	6	29	105	346	490
Wall insulation	3	9	38	133	307	490
Energy efficient windows (i.e. double-glazed or tinted)	3	16	57	137	276	489
Shading devices – external	11	18	68	166	226	489
Draught-proofing for windows and doors	4	41	95	155	195	490
Solar pool heater	15	34	100	146	192	487
Solar hot water system	12	38	93	159	189	491
Floor insulation	10	59	111	133	175	488
Low energy lighting	10	51	111	157	160	489
Solar panels	11	56	133	174	116	490
High-rated Energy Rating Label air conditioner or heater	29	64	137	145	113	488
High-rated Energy Rating Label appliances	47	81	108	144	104	484
Ceiling fans	23	80	161	144	81	489
Shading devices – internal	28	129	164	107	61	489
Gas hot water system	28	107	170	127	57	489

Table 20 Mean responses for level of influence of different aspects on recommended/supplied products and services

ASPECT	ARCHITECT			BUILDER			TRADESPERSON			DESIGNERS			OTHER			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
Quality of the product	126	4.50	0.63	101	4.40	0.63	116	4.36	0.92	64	4.38	0.81	85	4.06	1.23	492	4.35	0.86
Knowledge about products	126	4.13	0.76	101	3.97	0.83	116	4.00	1.04	64	4.11	0.93	85	3.96	1.16	492	4.03	0.94
Cost of the product	125	3.82	0.81	101	3.91	0.95	116	3.75	1.14	64	3.80	0.88	85	3.56	1.15	491	3.78	1.00
Availability of products	125	3.64	1.00	100	3.78	0.85	116	3.45	1.19	64	3.70	1.06	85	3.39	1.32	490	3.59	1.09
Client demand	126	3.40	0.96	100	3.29	0.99	116	3.59	1.12	63	3.17	0.99	85	3.13	1.23	490	3.35	1.07
Ease of installation	126	3.21	0.91	101	3.59	0.93	116	3.29	1.28	64	3.39	1.08	85	3.29	1.26	492	3.35	1.10
Relationship with suppliers	126	2.72	1.17	101	3.38	1.07	116	3.20	1.17	63	2.75	1.22	84	2.75	1.37	490	2.98	1.22

Scale: Level of influence from 1-not at all to 5- very much

LOW CARBON LIVING
CRC

Table 21: Frequency of responses for level of influence on recommended/supplied products and services

REASON	NOT AT ALL	2	3	4	VERY MUCH	TOTAL
Quality of the product	12	7	33	183	257	492
Knowledge about products	15	14	77	219	167	492
Cost of the product	15	26	143	177	130	491
Availability of products	27	47	132	179	105	490
Client demand	24	80	159	155	72	490
Ease of installation	36	63	158	165	70	492
Relationship with suppliers	74	98	132	137	49	490

LOW CARBON LIVING
CRC

Table 22 Mean responses for how often factors are considered when recommending a product (N=490)

FACTOR	ARCHITECT			BUILDER			TRADESPERSON			DESIGNERS			OTHER			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
The quality of the product	125	4.47	0.63	100	4.37	0.71	116	4.39	0.73	64	4.38	0.58	85	4.18	1.13	490	4.37	0.77
How it would improve the level of comfort within the home	125	4.45	0.67	100	3.99	0.89	115	4.11	1.00	64	4.39	0.77	84	4.00	1.23	488	4.19	0.94
How much energy the client would save	125	4.06	0.84	100	3.75	1.03	116	3.88	1.18	64	3.97	1.02	84	3.81	1.27	489	3.90	1.07
How much money the client would save in their energy bills	125	3.78	0.93	100	3.79	1.03	116	3.72	1.26	64	3.80	1.01	85	3.71	1.29	490	3.76	1.11
How easy it is to use	125	3.75	0.84	100	3.73	0.87	116	3.59	1.19	64	3.75	0.94	85	3.53	1.24	490	3.67	1.03
How much it would cost to install	125	3.82	0.91	100	3.77	0.99	116	3.48	1.18	64	3.66	0.84	84	3.46	1.11	489	3.65	1.03
How it would affect the environment	125	4.07	0.88	100	3.22	1.12	114	3.28	1.29	64	3.72	1.13	84	3.27	1.37	487	3.53	1.21
How much value it would add to the property	125	3.26	1.12	100	3.52	1.11	116	3.23	1.20	64	3.42	1.12	84	3.04	1.27	489	3.29	1.17

Scale: Frequency to consider aspects from 1-never to 5- all the time

LOW CARBON LIVING CRC

Table 23: Frequency of responses for how often factors are considered when recommending a product

FACTOR	NEVER	2	3	4	ALL THE TIME	TOTAL
The quality of the product	6	2	47	186	249	490
How it would improve the level of comfort within the home	11	12	75	165	225	488
How much energy the client would save	18	36	90	179	166	489
How much money the client would save in their energy bills	23	43	107	174	143	490
How it would affect the environment	32	68	127	131	129	487
How easy it is to use	18	39	139	184	110	490
How much it would cost to install	21	39	134	193	102	489
How much value it would add to the property	33	100	134	136	86	489

Table 24 Frequncy responses about whether the respondents recommend and/or install EE products

	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
RESPONSE	N	%	N	%	N	%	N	%	N	%	N	%
No	5	4.0	6	5.9	1	0.9	2	3.1	10	11.8	24	4.9
Yes	121	96.0	95	94.1	115	99.1	62	96.9	74	87.1	467	94.9
No response	0	0	0	0	0	0	0	0	1	1.2	1	0.2
Total	126	100	101	100	116	100	64	100	85	100	492	100

Table 25 Frequency of product recommendation because the product is energy efficient

	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
RESPONSE	N	%	N	%	N	%	N	%	N	%	N	%
Never	0	0.0	3	3.0	1	0.9	0	0.0	5	5.9	9	1.8
Rarely	1	0.8	8	7.9	1	0.9	1	1.6	4	4.7	15	3.0
Sometimes	26	20.6	29	28.7	26	22.4	12	18.8	12	14.1	105	21.3
Most of the Time	75	59.5	45	44.6	50	43.1	36	56.3	32	37.6	238	48.4
All the time	24	19.0	15	14.9	38	32.8	14	21.9	31	36.5	122	24.8
No response	0	0.0	1	1.0	0	0.0	1	1.6	1	1.2	3	0.6
Total	126	100.0	101	100.0	116	100.0	64	100.0	85	100.0	492	100.0

Table 26 Frequency of responses for the three main barriers faced in recommending energy efficient products (N=479)

BARRIER	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
It is more expensive to install	95	75.4	68	67.3	89	76.7	43	67.2	49	57.6	344	69.9
Client is not interested	57	45.2	49	48.5	53	45.7	37	57.8	36	42.4	232	47.2
Clients are sceptical about why the product is being recommended	48	38.1	60	59.4	53	45.7	35	54.7	34	40.0	230	46.7
There is less choice available	45	35.7	35	34.7	26	22.4	24	37.5	22	25.9	152	30.9
It is not available	26	20.6	8	7.9	15	12.9	16	25.0	20	23.5	85	17.3
It is harder to install	18	14.3	11	10.9	15	12.9	5	7.8	9	10.6	58	11.8
I do not have time to make the recommendation	10	7.9	8	7.9	3	2.6	3	4.7	3	3.5	27	5.5
It is lower quality	8	6.3	5	5.0	4	3.4	3	4.7	6	7.1	26	5.3
I do not usually work with energy efficient products	3	2.4	6	5.9	6	5.2	2	3.1	7	8.2	24	4.9

Table 27 Mean level of perceived importance of aspects driving clients to install energy efficient products

LOW CARBON LIVING CRC

ASPECT	ARCHITECT			BUILDER			TRADESPERSON			DESIGNERS			OTHER			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
To save money on energy bills over time	125	4.05	0.98	101	4.24	0.86	112	4.21	0.95	64	4.09	0.92	81	4.31	0.93	483	4.18	0.94
To make the home more comfortable	123	4.08	0.93	99	3.93	0.91	109	3.94	1.03	63	4.08	0.92	80	4.01	1.05	474	4.00	0.97
To save energy	124	4.02	0.84	100	3.79	1.03	112	4.02	1.07	62	3.87	1.14	83	3.94	0.99	481	3.94	1.00
To improve the home's air ventilation	120	3.40	1.10	91	3.32	1.13	104	2.96	1.22	61	3.43	1.12	78	3.14	1.19	454	3.24	1.16
To replace a broken/old system	116	3.22	1.07	92	2.93	1.24	110	3.39	1.18	61	3.02	1.12	74	3.22	1.05	453	3.17	1.14
To improve property value	120	3.10	1.13	95	3.44	1.15	108	2.99	1.23	61	3.25	1.06	78	3.13	1.20	462	3.17	1.16
To benefit the environment	124	3.45	1.03	98	3.02	1.07	110	2.87	1.26	61	3.26	1.12	83	3.13	1.17	476	3.15	1.15
To comply with a government recommendation	116	3.13	1.33	96	3.18	1.35	105	3.17	1.40	63	3.24	1.29	80	3.03	1.45	460	3.15	1.36
To benefit from government rebates	120	2.88	1.15	97	3.43	1.08	107	3.22	1.38	63	3.11	1.06	76	3.05	1.24	463	3.14	1.21
To reduce reliance on energy grid	121	3.10	1.14	94	3.22	1.21	103	2.97	1.22	63	3.27	1.22	80	3.14	1.23	461	3.13	1.20
Recommended by relatives, neighbours or friends	113	2.74	1.08	93	2.91	1.07	107	3.08	1.15	64	2.78	1.02	75	2.99	1.08	452	2.90	1.09
To save money upfront	109	2.51	1.26	95	3.04	1.29	108	2.80	1.46	61	3.13	1.28	72	2.90	1.38	445	2.84	1.35

Scale of importance: 1- not at all important to 5- very important

Table 28: Frequency of responses for importance of aspects in driving clients to install energy efficient products

LOW CARBON LIVING
CRC

ASPECT	NOT AT ALL IMPORTANT	2	3	4	VERY IMPORTANT	TOTAL
To save money on energy bills over time	9	16	74	166	218	483
To make the home more comfortable	9	28	82	188	167	474
To save energy	8	39	91	179	164	481
To comply with a government recommendation	65	100	101	91	103	460
To improve the home's air ventilation	33	92	135	120	74	454
To save money upfront	87	113	100	73	72	445
To benefit from government rebates	47	100	129	117	70	463
To improve property value	34	108	136	114	70	462
To benefit the environment	36	107	151	114	68	476
To reduce reliance on energy grid	49	95	129	125	63	461
To replace a broken/old system	39	85	148	120	61	453
Recommended by relatives, neighbours or friends	53	99	172	94	34	452

LOW CARBON LIVING
CRC

Table 29: Perspectives on whether energy efficient products should be encouraged

RESPONSE	N	
No	8	1.63
Yes	483	98.17
No response	1	0.2
Total	492	100

Table 30 Frequency of themes for reasons why uptake of energy efficient products should be encouraged

THEME	EXAMPLE RESPONSE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
		N	%	N	%	N	%	N	%	N	%	N	%
Environmental benefits (reduce emissions, sustainable for the future)	It is better for the long-term effect on the environment.	61	48.4	46	46	60	51.7	31	48.4	38	44.7	236	48.0
Long term financial savings	In the long run it benefits the clients as they are having cheaper house running costs	24	19.1	41	40.6	47	40.5	19	29.7	33	38.8	164	33.3
Comfort	It will make your home feel more comfortable all year round.	10	7.9	15	14.9	22	19.0	9	14.1	18	21.2	74	15.0
Reduce energy use	To reduce overall energy consumption.	19	15.1	9	8.9	13	11.2	6	9.4	9	10.6	56	11.4
Reduce use of fossil fuels, finite energy resources	Less reliance on fossil fuels.	16	12.7	13	12.9	7	6.0	6	9.4	7	8.2	49	10.0
Reduces pressure on the energy grid	Less stress on the grid	5	4.0	4	4.0	12	10.3	4	6.3	7	8.2	32	6.5

Table 31 Mean level of improvement needed to address issues relating to the future recommendation of energy efficient products

LOW CARBON LIVING CRC

ISSUE	ARCHITECT			BUILDER			TRADESPERSON			DESIGNERS			OTHER			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
Demonstration of product cost benefits	124	4.16	0.90	101	4.04	0.99	114	3.95	1.03	64	3.84	1.00	82	3.96	1.06	485	4.01	0.99
Information on product cost savings	125	4.10	0.85	101	3.97	1.01	113	4.03	0.96	64	3.98	1.00	84	3.82	1.11	487	3.99	0.98
Communication of the benefits of energy efficient products	124	4.02	0.95	101	3.80	1.03	114	4.03	0.99	64	4.02	0.86	84	4.04	1.11	487	3.98	1.00
Information on product energy savings	123	3.97	0.90	100	3.89	0.93	113	4.02	1.00	64	3.75	1.05	82	4.00	1.11	482	3.94	0.99
Training and education to professionals	123	3.67	0.96	101	3.60	1.04	114	3.95	1.02	64	3.97	0.99	83	3.96	1.12	485	3.81	1.03
Demonstration of product environmental benefits	124	3.98	0.89	101	3.56	1.00	112	3.80	1.07	64	3.89	0.96	82	3.76	1.11	483	3.80	1.01
Provide ongoing after-sales support	124	3.52	1.09	101	3.41	1.16	111	3.34	1.26	64	3.55	0.96	82	3.37	1.20	482	3.43	1.15
Ease of maintenance	121	3.51	1.12	99	3.40	1.03	111	3.14	1.19	64	3.44	1.18	82	3.37	1.25	477	3.37	1.15
Ease of use	123	3.37	1.08	99	3.33	1.05	110	3.10	1.29	64	3.27	1.10	79	3.43	1.15	475	3.30	1.14
Greater reliability of products	120	3.42	1.13	101	3.36	1.08	113	3.19	1.30	64	3.25	1.05	82	3.13	1.30	480	3.28	1.19

Scale of improvement: 1- no improvement needed to 5- a lot of improvement needed

Table 32: Frequency of responses for level of improvement needed to address issues relating to the future recommendation of energy efficient products

LOW CARBON LIVING CRC

ISSUES	NO IMPROVEMENT	2	3	4	A LOT OF IMPROVEMENT	TOTAL
Demonstration of product cost benefits	12	23	94	175	181	485
Communication of the benefits of energy efficient products	9	32	96	173	177	487
Information on product cost savings	10	23	105	172	177	487
Information on product energy savings	7	34	106	169	166	482
Training and education to professionals	13	37	123	167	145	485
Demonstration of product environmental benefits	16	30	118	188	131	483
Provide ongoing after-sales support	31	70	135	152	94	482
Greater reliability of products	34	95	144	116	91	480
Ease of maintenance	36	68	142	146	85	477
Ease of use	36	75	153	134	77	475

Table 33 Frequency of responses for importance of increasing energy efficiency in new and existing homes

BARRIER	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Not at all important	0	0.0	3	3.0	1	0.9	1	1.6	0	0.0	5	1.0
2	0	0.0	5	5.0	1	0.9	2	3.1	0	0.0	8	1.6
3	3	2.4	10	9.9	4	3.4	1	1.6	8	9.4	26	5.3
4	21	16.7	23	22.8	23	19.8	12	18.8	16	18.8	95	19.3
Very important	102	81.0	59	58.4	84	72.4	47	73.4	61	71.8	353	71.7
No response	0	0.0	1	1.0	3	2.6	1	1.6	0	0.0	5	1.0
Total	126	100.0	101	100.0	116	100.0	64	100.0	85	100.0	492	100.0

Scale of improvement: 1- not at all important to 5- a lot of improvement needed.

LOW CARBON LIVING CRC

Table 34 Frequency of responses for potential benefits of increasing the standard of energy efficiency for new and existing homes

POTENTIAL BENEFIT	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Lower energy costs	112	88.9	91	90.1	107	92.2	60	93.8	77	90.6	447	90.9
Greater thermal efficiency (more comfortable homes)	117	92.9	93	92.1	97	83.6	59	92.2	76	89.4	442	89.8
Lower emissions (environmental benefit)	112	88.9	79	78.2	95	81.9	49	76.6	72	84.7	407	82.7
Improved standard of building quality	87	69.0	55	54.5	70	60.3	43	67.2	61	71.8	316	64.2
Increased consumer demand for energy efficient homes	79	62.7	54	53.5	65	56.0	36	56.3	59	69.4	293	59.6
Increased saleability	60	47.6	48	47.5	61	52.6	29	45.3	52	61.2	250	50.8
Other	10	7.9	5	5.0	4	3.4	5	7.8	10	11.8	34	6.9
No benefits	0	0.0	4	4.0	1	0.9	2	3.1	1	1.2	8	1.6

Note: Respondents were able to select more than one response.

Table 35 Frequency of responses for potential concerns from increasing the standard of energy efficiency for new and existing homes

POTENTIAL CONCERNS	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Increased building costs	86	68.3	90	89.1	95	81.9	55	85.9	57	67.1	383	77.9
Increased house prices	45	35.7	59	58.4	73	62.9	41	64.1	40	47.1	258	52.4
Skill and technical ability of workforce	60	47.6	46	45.5	55	47.4	35	54.7	53	62.4	249	50.6
Consumers understanding the technology	60	47.6	46	45.5	50	43.1	36	56.3	51	60.0	243	49.4
Maintenance issues and cost	54	42.9	39	38.6	30	25.9	23	35.9	26	30.6	172	35.0
Reduced profits for tradespeople	5	4.0	25	24.8	28	24.1	1	1.6	8	9.4	67	13.6
Rates of development will reduce	4	3.2	12	11.9	13	11.2	7	10.9	4	4.7	40	8.1
Other	16	12.7	12	11.9	8	6.9	5	7.8	19	22.4	60	12.2
None of the above	5	4.0	1	1.0	2	1.7	1	1.6	2	2.4	11	2.24

Note: Respondents were able to select more than one response.

Table 36 Frequency of responses for level of familiarity with home energy rating tools or information systems

LOW CARBON LIVING
CRC

	ARCHITECT			BUILDER			TRADESPERSON			DESIGNERS			OTHER			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
Green Star	115	3.36	1.13	85	2.95	1.51	91	2.56	1.35	53	2.79	1.29	73	3.14	1.48	417	2.99	1.37
BASIX	104	2.98	1.51	84	2.67	1.65	86	2.55	1.52	56	2.77	1.50	73	3.26	1.46	403	2.84	1.55
FirstRate 5	100	2.89	1.46	78	2.38	1.46	84	2.23	1.34	60	3.13	1.55	67	3.01	1.55	389	2.70	1.50
NABERS	109	2.97	1.32	82	2.35	1.49	81	2.20	1.36	56	2.46	1.49	68	3.15	1.59	396	2.64	1.48
My Energy Star Rating	91	2.10	1.28	85	2.78	1.58	87	2.99	1.54	51	2.10	1.22	65	2.60	1.33	379	2.54	1.46
AccuRate	106	2.73	1.32	77	2.23	1.45	84	2.20	1.31	55	2.45	1.14	70	2.81	1.58	392	2.49	1.39
BERS Pro	99	2.40	1.31	86	2.40	1.42	82	2.06	1.24	54	2.72	1.58	68	2.81	1.60	389	2.44	1.43
Energy Rating App	84	1.61	0.93	79	2.47	1.51	82	2.23	1.43	49	1.94	1.23	69	2.45	1.43	363	2.14	1.36
EnviroDevelopment	81	1.62	0.99	71	1.68	1.03	71	1.58	0.89	48	1.52	0.82	60	1.72	1.15	331	1.63	0.98
Other	16	2.44	1.86	18	1.39	1.04	19	1.89	1.56	14	2.71	1.90	14	2.21	1.76	81	2.09	1.65

Scale of familiarity: 1- not at all familiar to 5- very familiar.

LOW CARBON LIVING CRC

Table 37: Frequency of responses for level of familiarity with home energy rating tools

ENERGY RATING TOOL	NOT AT ALL FAMILIAR	2	3	4	VERY FAMILIAR	TOTAL
BASIX	114	80	59	55	95	403
Green Star	76	86	101	74	80	417
FirstRate 5	118	80	67	47	77	389
NABERS	127	75	76	48	70	396
My Energy Star Rating	134	70	67	52	56	379
BERS Pro	142	83	68	41	55	389
AccuRate	127	93	74	47	51	392
Energy Rating App	169	80	45	32	37	363
Other	53	4	5	2	17	81
EnviroDevelopment	206	72	34	9	10	331

Table 38 Frequency of responses for agreement with the provision of energy efficiency information at the time of sale or lease

RESPONSE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
No	13	10.3	15	14.9	7	6.0	3	4.7	5	5.9	43	8.7
Yes	112	88.9	85	84.2	107	92.2	61	95.3	80	94.1	445	90.4
No response	1	0.8	1	1.0	2	1.7	0	0.0	0	0.0	4	0.8
Total	126	100	101	100	116	100	64	100	85	100	492	100

Table 39 Frequency of reasons for and again providing energy efficiency information at point of sale or lease

LOW CARBON LIVING CRC

THEME	EXAMPLE QUOTE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
		N	%	N	%	N	%	N	%	N	%	N	%
FOR													
Indication of on-going costs, home comfort, potential improvements	Gives a good indication to the person buying or leasing the property as to what demand there will be for electricity and the comfort of the property.	40	31.8	26	25.7	35	30.2	17	26.6	34	40.0	152	30.9
Assists consumer decision-making - transparency, comparison of properties, informed decision	Help inform purchasers so they can compare homes on an equal basis	24	19.1	22	21.8	37	31.9	19	29.7	19	22.4	121	24.6
Increased awareness of energy efficiency	it is best way to introduce the energy efficiency products and knowledge to clients	27	21.4	13	12.9	12	10.3	7	10.9	15	17.7	74	15.0
Encourages uptake of energy efficiency products and features	It creates a market incentive for sellers and lessors to improve the energy efficiency of buildings, so more buildings (especially established ones) will have their energy efficiencies attended to.	14	11.1	3	3.0	9	7.8	3	4.7	10	11.8	39	7.9
Rating suggestions	A star rating determined by a qualified/accredited assessor	7	5.6	6	5.9	4	3.5	7	10.9	5	5.9	29	5.9
Potential increase in value for energy efficiency homes	In order to increase value of the home	7	5.6	8	7.9	3	2.6	2	3.1	5	5.9	25	5.1
Additional selling/leasing point	Yes because that point could be the clincher in the leasing or selling of the property	4	3.2	5	5.0	3	2.6	5	7.8	3	3.5	20	4.1
AGAINST													
Rating scheme inaccurate or inadequate												10	
Disadvantages older housing stock												8	
Additional costs for consumer												4	
Not a priority for consumers												3	
Demand should be market-driven												3	
Industry not yet ready												1	

Table 40 Frequency of responses for accreditation with energy rating schemes

RESPONSE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
No	104	82.5	87	86.1	90	77.6	40	62.5	56	65.9	377	76.6
Yes	20	15.9	12	11.9	24	20.7	24	37.5	29	34.1	109	22.2
No response	2	1.6	2	2.0	2	1.7	0	0.0	0	0.0	6	1.2
Total	126	100	101	100	116	100	64	100	85	100	492	100

Table 41 Frequency of responses for accreditation with energy rating schemes beyond those required by profession

RESPONSE	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	22	17.5	16	15.8	18	15.5	14	21.9	19	22.4	89	18.1
No	103	81.7	83	82.2	92	79.3	49	76.6	65	76.5	392	79.7
No response	1	0.8	2	2.0	6	5.2	1	1.6	1	1.2	11	2.2
Total	126	100.0	101	100.0	116	100.0	64	100.0	85	100.0	492	100.0

Table 42 Frequency of responses for valued aspects of additional energy-related accreditations

	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Recognition of special skills	14	63.6	12	75.0	12	66.7	13	92.9	13	68.4	64	71.9
Training in new technologies	12	54.5	9	56.3	12	66.7	7	50.0	14	73.7	54	60.7
Increased client base	5	22.7	6	37.5	4	22.2	6	42.9	6	31.6	27	30.3
Other	3	13.6	3	18.8	5	27.8	4	28.6	3	15.8	18	20.2
Total respondents	22		16		18		14		19		89	

Table 43 Reasons for NOT holding energy-related accreditation

REASON	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
There is not enough demand for additional accreditation	49	38.9	42	41.6	52	44.8	17	26.6	28	32.9	188	38.2
Already have enough business/too busy	32	25.4	34	33.7	25	21.6	9	14.1	18	21.2	118	24.0
Training is too expensive	31	24.6	16	15.8	17	14.7	21	32.8	13	15.3	98	19.9
Training is too time intensive	28	22.2	17	16.8	17	14.7	16	25.0	12	14.1	90	18.3
Not interested	9	7.1	9	8.9	5	4.3	1	1.6	4	4.7	28	5.7
Training is too complicated	7	5.6	4	4.0	5	4.3	3	4.7	5	5.9	24	4.9
Other	37	29.4	21	20.8	21	18.1	19	29.7	24	28.2	122	24.8
Total respondents	126		101		116		64		85		492	

Table 44: Preferred training sources for energy efficiency skill-building

LOW CARBON LIVING CRC

TRAINING SOURCE	ARCHITECT		BUILDER		TRADES-PERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Free seminar/training course by a product manufacturer	78	61.9	61	60.4	66	56.9	44	68.8	51	60.0	300	61.0
Free training course by the Government	89	70.6	53	52.5	60	51.7	45	70.3	52	61.2	299	60.8
Free training courses (offsite or onsite)	81	64.3	63	62.4	68	58.6	35	54.7	47	55.3	294	59.8
Online courses	81	64.3	39	38.6	55	47.4	35	54.7	46	54.1	256	52.0
Other people who are in my industry but not in my organisation	69	54.8	36	35.6	44	37.9	35	54.7	43	50.6	227	46.1
An email by an Industry association or Professional association in your industry	53	42.1	45	44.6	54	46.6	39	60.9	34	40.0	225	45.7
A magazine by an Industry association or Professional association in your industry	52	41.3	49	48.5	44	37.9	34	53.1	37	43.5	216	43.9
Off-site training courses	58	46.0	39	38.6	50	43.1	26	40.6	28	32.9	201	40.9
Other people within my organisation	39	31.0	30	29.7	39	33.6	23	35.9	31	36.5	162	32.9
TAFE/ Tertiary education	39	31.0	21	20.8	41	35.3	24	37.5	29	34.1	154	31.3
On-site training courses	39	31.0	25	24.8	42	36.2	18	28.1	23	27.1	147	29.9
Videos on YouTube or another free 'how to' internet site	38	30.2	27	26.7	19	16.4	14	21.9	22	25.9	120	24.4
By phone or face to face from an Industry association or Professional association in your industry	31	24.6	26	25.7	20	17.2	15	23.4	27	31.8	119	24.2
Free Seminar/ Training course by a trade store e.g. Bunnings or Mitre 10	17	13.5	28	27.7	18	15.5	16	25.0	12	14.1	91	18.5
Other	4	3.2	2	2.0	4	3.4	4	6.3	7	8.2	21	4.3
Don't know	2	1.6	3	3.0	3	2.6	0	0.0	2	2.4	10	2.0

Table 45 Frequency of responses regarding approach to trying new energy efficiency products

APPROACH	ARCHITECT		BUILDER		TRADESPERSON		DESIGNERS		OTHER		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
I will probably be one of the first in my industry to try	36	28.57	35	34.65	40	34.48	24	37.5	41	48.24	176	35.77
I will tend to wait for others to try it first, but soon after I will try it for myself	58	46.03	32	31.68	42	36.21	22	34.38	20	23.53	174	35.37
I will tend to wait for others to try it first, and eventually I will try it for myself	19	15.08	13	12.87	12	10.34	6	9.38	11	12.94	61	12.4
I don't like to try new products until they are well established in the market	11	8.73	14	13.86	12	10.34	9	14.06	10	11.76	56	11.38
No response	2	1.59	7	6.93	10	8.62	3	4.69	3	3.53	25	5.08
Total respondents	126	100	101	100	116	100	64	100	85	100	492	100

Appendix C Additional data details for real estate survey

Table 46 Frequency of responses for participants' gender

	N	%
Female	62	44.3
Male	70	50.0
Prefer not to say	1	0.7
No response	7	5.0
Total	140	100.0

Table 47 Frequency of responses for participants' age

	N	%
18 - 24	9	6.4
25 - 29	13	9.3
30 - 34	18	12.9
35 - 39	12	8.6
40 - 44	13	9.3
45 - 49	15	10.7
50 - 54	16	11.4
55 - 59	15	10.7
60 - 64	12	8.6
65 - 69	6	4.3
70 - 74	3	2.1
75 or above	1	0.7
No response	7	5.0
Total	140	100.0

Table 48 Frequency of response for state/territory of residence

STATE/TERRITORY	N	
Queensland	44	31.43
New South Wales	40	28.57
South Australia	19	13.57
Western Australia	13	9.29
Victoria	10	7.14
Australia Capital Territory	7	5
Tasmania	5	3.57
Northern Territory	2	1.43
Total	140	100

Table 49 Frequency of responses for work role of participants

WORK ROLE	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	N	%	N
Real estate agent (responsible for appraising and selling properties)	48	49.0	34	81.0	82	58.6
Property manager (responsible for renting and managing properties)	25	25.5	6	14.3	31	22.1
Both	25	25.5	2	4.8	27	19.3
Total	98	100.0	42	100.0	140	100.0

Table 50: Years working in real estate and/or property management

	N	%
1 - 5 years	39	27.86
6 to 10 years	26	18.57
11 - 20 years	32	22.86
More than 20 years	35	25
Prefer not to say	1	0.71
No response	7	5
Total	140	100

Table 51 Frequency of responses for the size of agency to which participants belong

SIZE	N	%
1 Person	3	2.14
2-5 People	16	11.43
6-19 People	88	62.86
20-199 People	31	22.14
More than 200 People	2	1.43
Total	140	100

Table 52 Frequency of responses for whether participants are part of a franchise network

RESPONSE	N	%
No	13	9.29
Yes	127	90.71
Total	140	100

Table 53 Frequency of participants trained as Liveability Real Estate Specialists

RESPONSE	N	%
No	98	70
Yes	42	30
Total	140	100

Table 54 Mean level of responses for rating of importance of features in marketing a property

	NON-LIVEABILITY SPECIALIST			LIVEABILITY SPECIALIST			TOTAL			T-TEST
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	
Ceiling insulation	98	3.66	1.30	42	4.31	0.95	140	3.86	1.24	t=2.90 (p<0.01)
High-rated Energy Rating Label air conditioner or heater	98	3.49	1.34	42	3.76	1.25	140	3.57	1.31	n.s.
Solar panels	98	3.29	1.30	40	3.95	1.04	138	3.48	1.26	t=2.88 (p<0.01)
Ceiling fans	98	3.28	1.37	42	3.62	1.17	140	3.38	1.32	n.s.
Shading devices – external	98	3.23	1.25	41	3.51	1.12	139	3.32	1.22	n.s.
Wall insulation	98	3.02	1.35	40	3.75	1.26	138	3.23	1.36	t=2.94 (p<0.01)
Gas hot water system	98	3.06	1.23	41	3.59	1.16	139	3.22	1.23	t=2.32 (p<0.05)
Solar hot water system	98	2.99	1.38	41	3.73	1.20	139	3.21	1.37	t=2.99 (p<0.01)
Low energy lighting	98	2.76	1.46	42	3.67	1.14	140	3.03	1.43	t=3.60 (p<0.001)
High-rated Energy Rating Label appliances	98	2.82	1.41	42	3.48	1.33	140	3.01	1.41	t=2.58 (p<0.05)
Shading devices – internal	98	2.88	1.26	41	3.20	1.19	139	2.97	1.24	n.s.
Energy efficient windows (i.e. double-glazed or tinted)	98	2.64	1.25	41	3.46	1.31	139	2.88	1.31	t= 3.49 (p<0.001)
Solar pool heater	97	2.66	1.34	40	3.03	1.44	137	2.77	1.37	n.s.
Draught-proofing for windows and doors	98	2.54	1.39	41	2.93	1.23	139	2.65	1.35	n.s.
Floor insulation	96	2.27	1.25	40	2.93	1.54	136	2.46	1.37	t=2.59 (p<0.05)

Scale of importance: 1- not important to 5- very important.

Table 55 Mean level of responses for rating of extent of contribution to reduced energy use in the home

	NON-LIVEABILITY SPECIALIST			LIVEABILITY SPECIALIST			TOTAL			T-TEST
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	
Ceiling insulation	98	4.59	0.80	42	4.64	0.79	140	4.61	0.79	n.s
Solar panels	98	4.40	1.04	42	4.50	0.89	140	4.43	1.00	n.s
Solar hot water system	98	4.19	1.05	42	4.50	0.89	140	4.29	1.01	n.s
Wall insulation	98	4.27	1.01	42	4.29	1.15	140	4.27	1.05	n.s
High-rated Energy Rating Label air conditioner or heater	98	4.21	1.00	42	4.36	0.76	140	4.26	0.93	n.s
Shading devices – external	98	4.13	0.97	42	4.33	0.82	140	4.19	0.93	n.s
High-rated Energy Rating Label appliances	98	4.00	1.15	42	4.26	0.91	140	4.08	1.09	n.s
Energy efficient windows (i.e. double-glazed or tinted)	98	3.99	0.98	42	4.12	0.99	140	4.03	0.98	n.s
Low energy lighting	98	3.78	1.17	42	4.43	0.83	140	3.97	1.12	t= 3.27 (p<0.01)
Draught-proofing for windows and doors	98	3.67	1.20	42	3.98	1.07	140	3.76	1.17	n.s
Shading devices – internal	98	3.71	1.15	42	3.83	0.99	140	3.75	1.10	n.s
Gas hot water system	98	3.48	1.17	42	3.93	1.00	140	3.61	1.14	t= 2.17 (p<0.05)
Solar pool heater	98	3.52	1.54	42	3.74	1.36	140	3.59	1.49	n.s
Ceiling fans	98	3.44	1.29	42	3.90	1.10	140	3.58	1.25	t= 2.04 (p<0.05)
Floor insulation	98	3.27	1.37	42	3.55	1.52	140	3.35	1.41	n.s

Scale of contribution to energy consumption reduction: 1- not at all to 5- substantial.

Table 56 Frequency of responses for frequency of identification of energy efficient features in properties

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	%	N	%
Never	2	2	0	0	2	1.4
Rarely	16	16.3	2	4.8	18	12.9
Sometimes	30	30.6	11	26.2	41	29.3
Most of the time	33	33.7	20	47.6	53	37.9
All of the time	17	17.3	9	21.4	26	18.6
Total	98	100	42	100	140	100

Table 57 Frequency of responses for topics spoken about with regards to energy efficient features

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	%	N	%
How it would improve the level of comfort within the home	64	65.3	35	83.3	99	70.7
How much money the client would save in their energy bills	72	73.5	25	59.5	97	69.3
How much value it would add to the property	51	52.0	25	59.5	76	54.3
How much it would cost to install	30	30.6	13	31.0	43	30.7
How it would affect the environment	9	9.2	6	14.3	15	10.7
Total respondents	98		42		140	

Table 58 Frequency of responses for enquiry about energy efficient features from potential buyers or renters

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	%	N	%
Never	7	7.1	0	0	7	5
Rarely	42	42.9	16	38.1	58	41.4
Sometimes	38	38.8	23	54.8	61	43.6
Most of the time	11	11.2	3	7.1	14	10
Total	98	100	42	100	140	100

Table 59: Frequency of enquiry about energy efficient features from potential buyers/renters at point of sale/lease

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N		N	%
No	52	53.1	19	45.2	71	50.7
Yes	46	46.9	23	54.8	69	49.3
Total	98	100	42	100	140	100

Table 60 Reasons perceived for buyers/renters seeking energy efficient property features

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	%	N	%
To save money on energy bills over time	78	79.6	29	69	107	76.4
To have a comfortable home	5	5.1	8	19	13	9.3
To improve property value	4	4.1	3	7.1	7	5
To save energy	4	4.1	1	2.4	5	3.6
To benefit from government rebates	2	2	0	0	2	1.4
To improve the home's air ventilation	2	2	0	0	2	1.4
Other, please specify:	1	1	1	2.4	2	1.4
To benefit the environment	1	1	0	0	1	0.7
None	1	1	0	0	1	0.7
Total	98	100	42	100	140	100

Table 61 Mean level of responses about how important it is to provide the following information to buyers or renters

	NON-LIVEABILITY SPECIALIST			LIVEABILITY SPECIALIST			TOTAL			T-TEST
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	
A list of energy efficient features already present in the home	98	3.47	1.13	42	4.14	0.95	140	3.67	1.12	t= 3.37 (p<0.001)
Likely impact on energy costs if specific energy efficiency features are added to the home	98	2.72	1.31	42	3.57	1.11	140	2.98	1.31	t= 3.67 (p<0.001)
The home's estimated annual energy costs	97	2.61	1.28	42	3.21	1.35	139	2.79	1.33	t= 2.52 (p<0.05)
A list of energy efficient features that can be made to the house	98	2.39	1.20	42	3.62	1.15	140	2.76	1.31	t= 5.64 (p<0.001)
The home's estimated indoor temperature for each season	97	2.05	1.00	41	2.63	1.22	138	2.22	1.10	t= 2.92 (p<0.01)

Scale of importance: 1- not important to 5- very important.

Table 62 Barriers to marketing energy efficient property features

LOW CARBON LIVING CRC

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	%	N	%
There is conflicting information about what these features can deliver	19	19.4	9	21.4	28	20
The buyer/renter never asks for the information	20	20.4	8	19.0	28	20
The buyer/renter is not interested	13	13.3	9	21.4	22	15.7
I am not familiar with the performance of energy efficient products	13	13.3	3	7.1	16	11.4
Other, please specify:	7	7.1	6	14.3	13	9.3
None	8	8.2	5	11.9	13	9.3
I don't know which are the most important energy efficiency features	9	9.2	1	2.4	10	7.1
I don't consider any of these features important to my sales or rental process	5	5.1	1	2.4	6	4.3
I don't know how to identify these features	4	4.1	0	0	4	2.9
Total	98	100	42	100	140	100

Table 63 Approach to new marketing of properties with energy efficient features

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	%	N	%
I will probably be one of the first in my industry to try	52	53.6	38	90.5	90	64.7
I will tend to wait for others to try it first, but soon after I will try it for myself	29	29.9	2	4.8	31	22.3
I will tend to wait for others to try it first, and eventually I will try it for myself	9	9.3	2	4.8	11	7.9
I don't like to spend time on new opportunities until they are well established in the market	3	3.1	0	0	3	2.2
I'm not interested in a new market	4	4.1	0	0	4	2.9
Total	97	100	42	100	139	100

Table 64: Frequency of responses for main information sources

LOW CARBON LIVING CRC

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N		N	%
Real estate training courses	66	67.3	36	85.7	102	72.9
An email by an Industry association or Professional association in your industry	61	62.2	28	66.7	89	63.6
Other people within my organisation	39	39.8	15	35.7	54	38.6
Browsing the internet	41	41.8	13	31.0	54	38.6
A magazine by an Industry association or Professional association in your industry	29	29.6	13	31.0	42	30.0
Other people who are in my industry but not in my organisation	15	15.3	4	9.5	19	13.6
By phone or face to face from an Industry association or Professional association in your industry	10	10.2	7	16.7	17	12.1
Other	7	7.1	1	2.4	8	5.7
Home Shows	4	4.1	3	7.1	7	5.0

Table 65 Frequency of responses for channels considered for improving skills

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	%	N	%
Free training courses (offsite or onsite)	58	59.2	31	73.8	89	63.6
Free training course by the Government	56	57.1	21	50.0	77	55.0
Other people within my organisation	56	57.1	20	47.6	76	54.3
An email by an Industry association or Professional association in your industry	54	55.1	20	47.6	74	52.9
Online courses	50	51.0	23	54.8	73	52.1
Free seminar/training course by a product manufacturer	48	49.0	18	42.9	66	47.1
A magazine by an Industry association or Professional association in your industry	34	34.7	16	38.1	50	35.7
Other people who are in my industry but not in my organisation	34	34.7	14	33.3	48	34.3
Training courses you have to pay for off-site	30	30.6	17	40.5	47	33.6
Videos on YouTube or another free 'how to' internet site	32	32.7	15	35.7	47	33.6
Free Seminar/ Training course by a trade store e.g. Bunnings or Mitre 10	23	23.5	12	28.6	35	25.0
Training courses you have to pay for on-site	21	21.4	13	31.0	34	24.3
By phone or face to face from an Industry association or Professional association in your industry	21	21.4	8	19.0	29	20.7
TAFE/ Tertiary education	16	16.3	4	9.5	20	14.3
Other	3	3.1	0	0.0	3	2.1
None	2	2.0	0	0.0	2	1.4

Table 66: Do you understand what a home 'Energy Rating' is?

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N	%	N	%
No	18	18.6	1	2.4	19	13.7
Yes	79	81.4	41	97.6	120	86.3
Total	97	100	42	100	139	100

Table 67 Frequency of responses for level of confidence in communicating about a home's energy rating

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST	TOTAL	
	N	%	N	N	%
Not at all	9	9.18	1	2.4	10	7.14
2	34	34.69	5	11.9	39	27.86
3	31	31.63	10	23.81	41	29.29
4	13	13.27	16	38.1	29	20.71
Very much so	9	9.18	10	23.81	19	13.57
No response	2	2.04	0	0	2	1.43
Total	98	100	42	100	140	100

Scale of confidence: 1- not at all to 5- very much so.

Table 68 Mean level of familiarity with home energy rating tools

	NON-LIVEABILITY SPECIALIST			LIVEABILITY SPECIALIST			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
NABERS	85	2.39	1.37	34	3.29	1.45	119	2.65	1.45
BASIX	81	1.79	1.23	34	2.68	1.45	115	2.05	1.36
NatHERS	76	1.34	0.86	38	3.13	1.42	114	1.94	1.37
Other	76	1.34	0.86	38	3.13	1.42	114	1.94	1.37
BASIX	78	1.54	1.09	35	2.54	1.54	113	1.85	1.32
Green Star	81	1.68	1.13	31	2.23	1.43	112	1.83	1.24
Energy Rating App	76	1.46	1.09	31	2.29	1.44	107	1.70	1.25
My Energy Star Rating	30	1.23	0.68	9	2.67	2.00	39	1.56	1.25
FirstRate 5	78	1.24	0.65	30	2.13	1.46	108	1.49	1.02
AccuRate	77	1.22	0.58	29	1.86	1.16	106	1.40	0.82
BERS Pro	74	1.12	0.47	31	2.06	1.26	105	1.40	0.89
EnviroDevelopment	78	1.24	0.59	28	1.68	0.90	106	1.36	0.71

Scale of familiarity: 1- not at all familiar to 5- very familiar

Table 69: Mean importance of home energy rating for sales and identifying energy efficiency

	NON-LIVEABILITY SPECIALIST			LIVEABILITY SPECIALIST			TOTAL		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
A home 'energy rating' is to the sale of a home?	92	2.66	1.09	41	3.66	1.04	133	2.97	1.17
A home 'energy rating tool' is to identifying a home's energy efficiency?	91	2.77	1.14	41	3.73	1.05	132	3.07	1.19

Scale of importance: 1- not important to 5- very important.

Table 70 Frequency of responses for ease/difficulty in communicating about home energy rating tools

	NON-LIVEABILITY SPECIALIST		LIVEABILITY SPECIALIST		TOTAL	
	N	%	N		N	%
Very easy	9	9.2	7	16.7	16	11.4
2	16	16.3	3	7.1	19	13.6
3	20	20.4	14	33.3	34	24.3
4	14	14.3	11	26.2	25	17.9
Very hard	12	12.2	2	4.8	14	10.0
No response	27	27.6	5	11.9	32	22.9
Total	98	100.0	42	100.0	140	100.0

Scale of ease: 1- very easy to 5- very hard.

LOW CARBON LIVING CRC