

QUT Digital Repository:
<http://eprints.qut.edu.au/28463>



Eves, Chris and Kippes, Stephan (2009) *Public awareness of 'green' residential property – an empirical survey based on data from New Zealand and Germany*.
In: 16th European Real Estate Society Conference, JUNE 24-27 2009, Stockholm, Sweden. (Unpublished)

© Copyright 2009 [please consult the authors].

**SIXTEENTH ERES ANNUAL MEETING
JUNE 24-27 2009
STOCKHOLM, SWEDEN**

Public awareness of 'green' residential property – an empirical survey based on data from New Zealand and Germany

(Conference draft; please do not quote without the author's permission.)

Chris Eves

School of Urban Development
Faculty of Built Environment & Engineering
Queensland University of Technology
GPO Box 2434, Brisbane, Queensland, 4001, Australia
p: +61-7 3138 9112 f: +61 7 3138 1170 |
chris.eves@qut.edu.au

Stephan Kippes

Department of Real Estate
Nürtingen-Geislingen University
Parkstr. 4 D-73312 Geislingen/Steige, Germany
p: +49-7331/22-537 -560 f, Mobil +49-174-1854570
e-mail: stephan.kippes@hfwu.de
homepage: http://www.hfwu.de/profhp/kippes/sp_auto_9230.shtml

Keywords:

'green' residential property - green building - real estate companies - energy performance of buildings - customer demands - awareness of environmental questions - solar energy - ecology and real estate

Abstract:

Over the last few years more stringent environmental laws (e.g. the German "Energieeinsparverordnung ENEC" - Energy Performance of Buildings Directive) and soaring energy prices has increased the need for the real estate industry to react and participate in overall energy reduction through efficient house construction and design, as well as upgrading the existing housing stock to be more energy efficient. Therefore the Property Economics Group at Queensland University of Technology in Australia and Nuertingen-Geislingen University in Germany are carrying out research in relation to sustainable housing construction and public awareness of "green" residential property.

Part of this research is to gain an understanding of the level of knowledge and importance of these issues to the house buyer and to determine the importance of sustainable housing to the general public.

The paper compares data from two different empirical studies; one of studies analyzes the situation in New Zealand, the other is focused on Germany.

The authors would like to acknowledge the support of The German IVD Real Estate Association concerning the data for the German survey.

1. Starting point

Climate change and an increased awareness of environmental issues and questions have led to much tougher environmental laws in many countries all over the world. In accordance with the Kyoto treaty and/or own emission targets countries all over the world are working hard to fulfil their environmental obligations¹.

Over the last few years more stringent environmental laws² (e.g. the German "Energieeffizienzverordnung ENEC"³ - Energy Performance of Buildings Directive) and soaring energy prices⁴ have increased the need for the real estate industry to react and participate in respect to environmental awareness and energy efficiency in the housing sector not just the commercial property sector. Despite the fact that energy prices decreased due to the global recession and the high level of energy prices, it is expected that energy prices might pick up substantially as soon as the current economic conditions improve. When these economic conditions do return to pre-2009 levels saving energy will be high on the agenda of the real estate industry. While new buildings have to fulfil these much tougher regulations, older buildings will also have to be upgraded to live up to both current and any new standards.

During the past 2 decades, there has been a growing awareness and focus on energy efficiency in residential house design, construction materials and efficient heating and cooling. Much of this work commenced in the US in the mid 1980's with the introduction of Home Energy Rating Schemes (HERS) and Demand Side Management programs

There are generally two existing HERS categories and these are either based on a voluntary or mandatory basis. The mandatory schemes are generally based on the construction of new homes, with the voluntary HERS schemes being more focussed on existing houses (The Energy Efficiency and Conservation Authority of New Zealand, 2005).

Examples of voluntary HERS include:

¹ Cf. Tiefensee, W. (2007), Energieeffizientes Bauen – eine Chance für den Klimaschutz, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 9 ff., Piebalgs, A. (2007), Europäische Energiepolitik für den Gebäudesektor, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 17 ff., Troge, A. (2007), Energiesparen in Wohnungen und Häusern - ein wichtiger Baustein für den Klimaschutz , in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 25 ff. Thoben, C. (2007), Energieeffizienz-Offensive „NRW spart Energie“, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 21 ff.

² Cf. BSI Bundesvereinigung Spitzenverbände der Immobilienwirtschaft (2007a), Stellungnahme der Bundesvereinigung Spitzenverbände der Immobilienwirtschaft zum „Integrierten Energie- und Klimaprogramm der Bundesregierung“, BSI Bundesvereinigung Spitzenverbände der Immobilienwirtschaft (2007b), Klima- und Energieprogramm auf dem richtigen Weg – BSI begrüßt Wirtschaftlichkeitsgebot Nutzungspflicht bei erneuerbaren Energien muss korrigiert werden

³ Cf. Deutsche Energie-Agentur GmbH - dena (2008), Zusammenfassung Referentenentwurf zur Novellierung der Energieeffizienzverordnung (Entwurf zur EnEV 2009)

Cf. Matthes, C. (2007), Energiepreise in der Diskussion, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 55 ff.

- In Australia the Five Star Design rating Scheme (1984-1986); 1991 the Victorian Government introduced the Building regulations were amended to include mandatory thermal insulation requirements
- The US adopted a national Home energy rating system in 1999 and this is used extensively to assess energy efficiency for new homes, requirements to retro-fit older homes and as a basis for “energy efficient mortgages”. In 1993 only 17 States were offering HERS but this had increased to 47 States by 2000 (Plympton, 2000). However, participation rates in these schemes were very low at 0.2% achieved in 5 years (Farhar, 2000).
- In Canada the national HERS is the EnerGuide and this was introduced in 1998.
- The UK has two energy efficiency rating schemes in operation being the National Home Energy rating Scheme and the Standard Assessment Procedure (SAP 2005).
- The first scheme introduced in New Zealand commenced a trail in 2002 under the Warm Homes Energy Check(WHEC)

The Energy Efficiency and Conservation Authority of New Zealand study (2005) concluded that the participation rate in voluntary, user pays schemes were less than 1%.

On this basis, many Governments are now more focused on the introduction of mandatory schemes to improve energy and heating efficiencies in both existing and new housing stock

In Europe, under Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings, the Member States must apply minimum requirements as regards the energy performance of new and existing buildings, ensure the certification of their energy performance and require the regular inspection of boilers and air conditioning systems in buildings(European Union, 2007). The main points of this mandatory HERS scheme is:

- a common methodology for calculating the integrated energy performance of buildings;
- minimum standards on the energy performance of new buildings and existing buildings that are subject to major renovation;
- systems for the energy certification of new and existing buildings and, for public buildings, prominent display of this certification and other relevant information. Certificates must be less than five years old;
- regular inspection of boilers and central air-conditioning systems in buildings and in addition an assessment of heating installations in which the boilers are more than 15 years old.

In the UK the SAP energy rating system is virtually a mandatory scheme that covers both existing (when undergoing extensions greater than 10m²) and new homes

The SAP calculation is based on the energy balance of the residential property, taking into account a range of factors that contribute to energy efficiency:

- materials used for construction of the dwelling
- thermal insulation of the building fabric
- ventilation characteristics of the dwelling and ventilation equipment
- efficiency and control of the heating system(s)
- solar gains through openings of the dwelling
- the fuel used to provide space and water heating, ventilation and lighting

- renewable energy technologies. (Canterbury City Council, 2005)

Despite the growing awareness of environmental issues and the impact that household footprints have on carbon emissions and energy use, the introduction of voluntary and mandatory evaluation schemes for housing have to some extent been eroded by the current economic recessions facing those countries discussed above. Although public awareness of environmental issues has been steadily increasing, has this awareness entered into the purchase decision by buyers when considering the residential properties they are inspecting for possible purchase

In this paper, environmental issues concerning the housing markets in New Zealand and Germany will be analyzed. The attitudes of vendors and buyers concerning environmental questions are analyzed on the basis of two different surveys to determine if the drive to more energy efficient and low carbon emission housing is as prominent in the minds of the residential house buyer, as it is in Government and society in general. .

2. Methodology and research design

This paper is based on two surveys. The first survey is focused on the housing market in Christchurch New Zealand, where the main real estate offices in Christchurch were surveyed in relation to the type and preference of buyers in their specific operating locations.

The second survey tackles the situation in Germany. A survey of real estate companies who are members of the German IVD Real Estate Association drew a response of 581 persons from all over Germany. The German IVD Real Estate Association is an association of property companies similar to the Realtors in the USA or the Real Estate Institute in Australia and the real estate Institute of New Zealand.

These surveys have been targeted to real estate agents rather than actual home buyers, on the basis that real estate agents show a single property to a number of perspective purchasers and therefore gain a better understanding of the features of a house that are more attractive or worthwhile to that residential property market. On the basis of the discussions that real estate agents have with these buyers, they are in a position to provide a more insightful view of the attitude of multiple house buyers to specific house attributes, compared to those held by the house buyers once the sale has been completed.

The survey instrument was structured to enable the real estate agents to define:

- The area in which they worked,
- The main house buyers in that particular market (single/young couple, families, and older couple/retired),
- The average price of the properties sold (this allowed socio-economic analysis in the New Zealand study),
- Ranking of the factors that buyers considered most important in those specific markets,
- Ranking of environmental/energy efficiency factors that buyers considered most important in those specific markets,
- Details on the level of acceptance or rejection of “green” house factors.

In the New Zealand study, surveys were sent to the 82 real estate agents operating in the Christchurch City area were surveyed. 34 real estate offices returned completed surveys. This response represents 41% of all residential real estate agency offices in the city. The completed surveys also covered all areas of the city, giving a balanced view from a location, age group and socio-economic perspective.

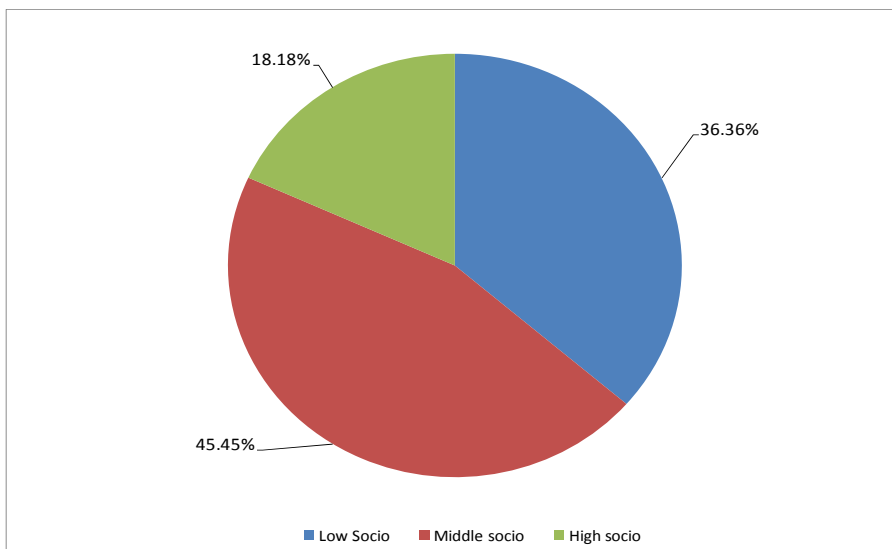
3. Results of this study

The results are initially shown on the basis of each country survey, with a comparative summary of the residential house buyer perspectives across the two countries in the paper conclusions.

3.1 New Zealand

Charts 1 and 2, show that the real estate agents surveyed were predominately working in the middle socio-economic areas (45.45%), lower socio-economic areas (36.36%) and higher socio-economic areas (18.318%). These figures are very representative of the demographic breakdown of the Christchurch population and can be considered to reflect the overall housing demographics of New Zealand

Chart 1: New Zealand Survey Responses: Socio-Economic Areas



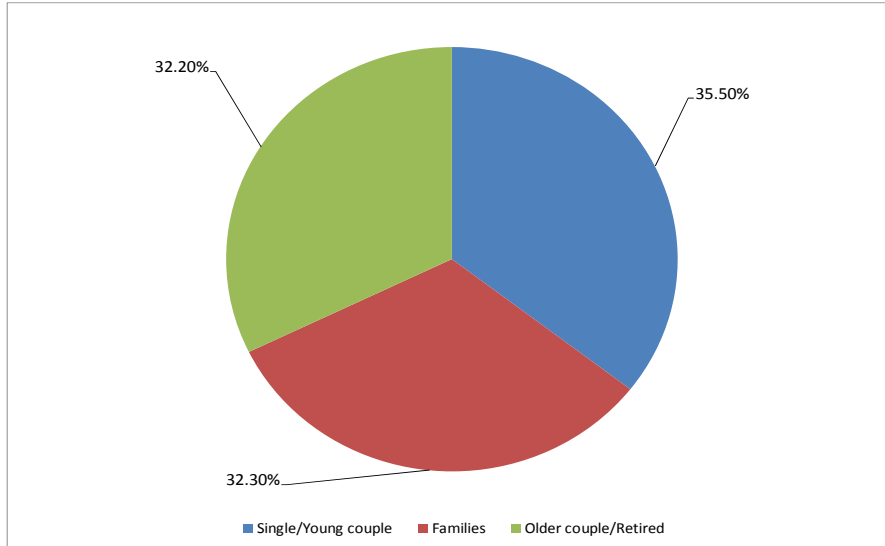
Across all the socio-economic areas, the agents' responses indicated that 35.5% of all buyers in the area were single buyers or young couples, 32 % of buyers for residential property in Christchurch were families and the remaining buyer being older couples (no children) or retired buyers. These demographics are important to isolate, as the later survey results allow attitudes of these groups in respect to environmental/energy efficiency housing attributes to be compared. Again the relative similar percentages of these groups in the survey responses provide a very representative view of the residential property buyers in the New Zealand market.

The following results for the New Zealand study are based on the three socio-economic groupings, with further discussion of the housing occupation differences being included at the end of this section of the results.

Chart 3 shows the general factors that buyers in each of the socio-economic groups considered to be the most important when assessing the area and house type that they were interested in purchasing (these factors were based on properties inspected by potential buyers, not just the purchased property). This chart shows that regardless

of income and wealth levels all purchasers considered that the most important considerations in their house purchase were location and the actual price of the house. There was a significantly lower rating of importance for the type of construction, suggesting that that newer more efficient building materials and design were not the most important consideration in the purchase decision or requirements stated to real estate agents.

Chart 2: House Buyer Demographics: New Zealand



The actual age of the house was of less importance to the higher income buyer compared to the lower and middle socio-economic groups. For the higher socio-economic house buyers, age of the house was of least importance, whereas the least important aspect for the middle and lower socio-economic groups were the environmental factors of the property.

Chart 3: General Housing Factors: Socio-Economic Groups

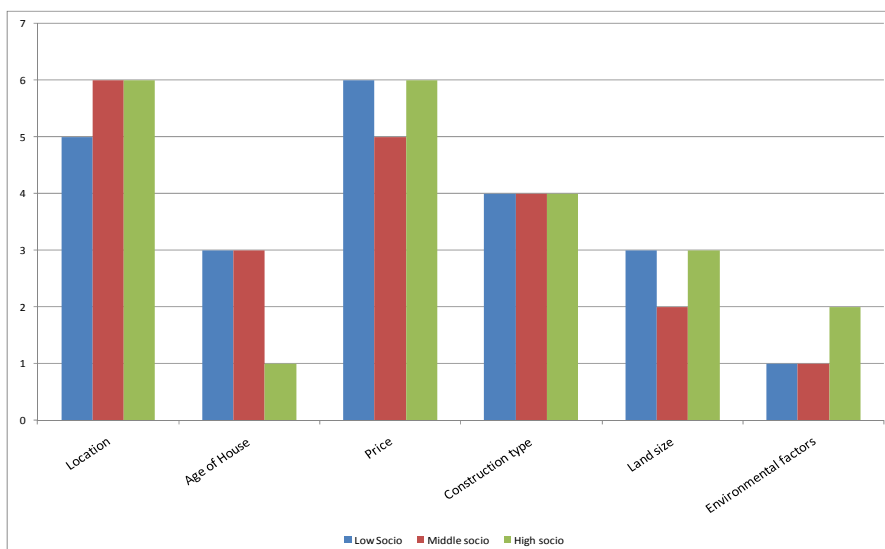
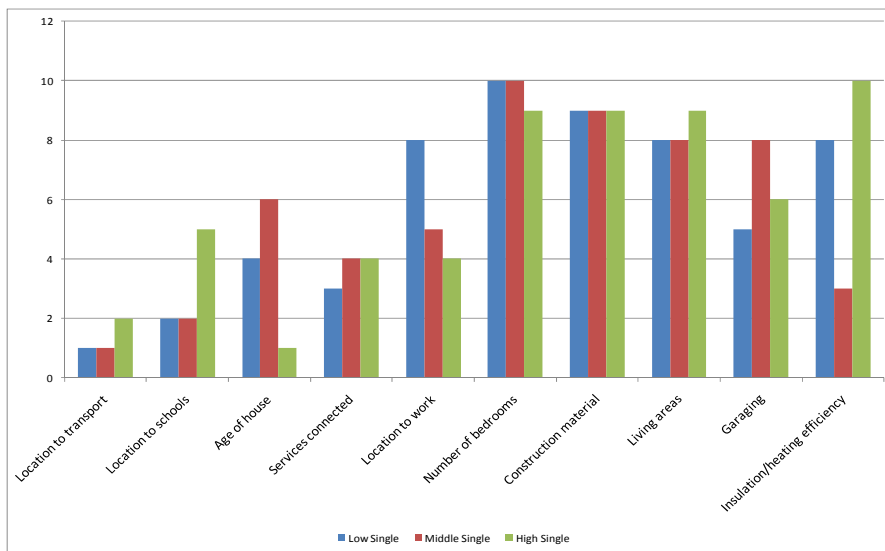


Chart 4 is a more detailed view of the specific factors that buyers in New Zealand consider when purchasing a house. These responses provide a more detailed view of the factors that the various buyers in the socio-economic groups consider to be the most important when they inspect a property that is being offered for sale.

Buyers in the lower and middle socio-economic locations considered that the most important attribute of the house was the number of bedrooms, this was slightly less important for buyers in the higher socio-economic areas. However, buyers in the higher income areas did consider the heating and insulation status of the house to be the most important factor in the purchase decision (slightly higher than the number of bedrooms).

All groups considered location to transport to be the least important factor for the property purchase, to some extent this can be contributed to the relatively small size of Christchurch city (385,000 population) the very flat terrain and the extensive public transport system.

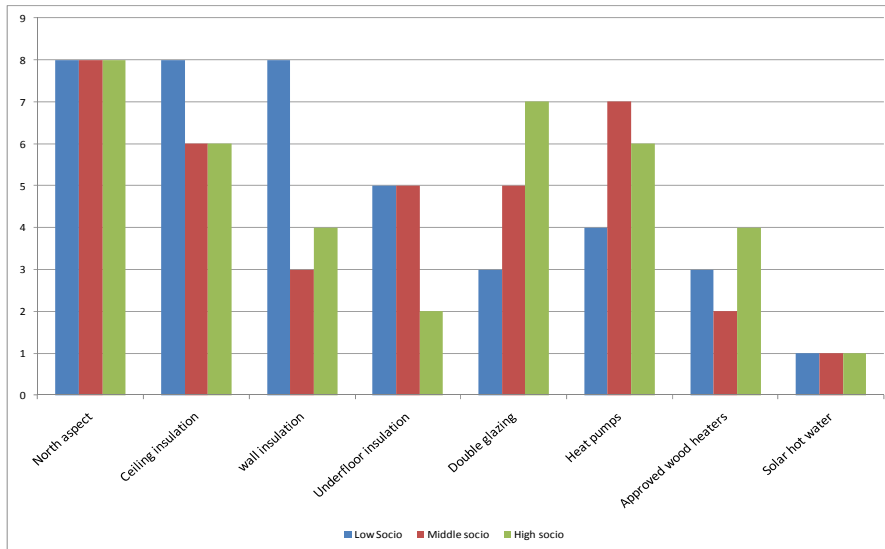
Chart 4: Specific Housing Factors: New Zealand Socio-Economic Groups



All groups placed a relatively high importance on the construction material of the house and the size and type of living areas. Buyers in the higher socio-economic areas were more concerned with the location of the house to schools, while lower socio-economic buyers considered location to work to be more important factor in the purchase decision than services, location to schools or garaging.

Middle income buyers tended to place more importance on the age of the house being purchased, the number of garages or car spaces than the other groups. The middle income group placed a lower level of importance on heating and insulation than both the lower and higher income groups.

Chart 5: Environmental/ Energy efficient Factors: New Zealand



The final component of the buyer sentiment survey involved the identification of the environmental/energy efficient factors that the house buyers considered in the purchase decision.

This chart shows that all socio-economic groups considered the most important factor to be a north aspect to take advantage of maximum sunlight and heat. The lower socio-economic buyers considered ceiling and wall insulation to be as important as a north facing aspect. These buyers place a much lower importance on solar hot water (this was the case with all buyers) and double glazing, both being very high initial cost items.

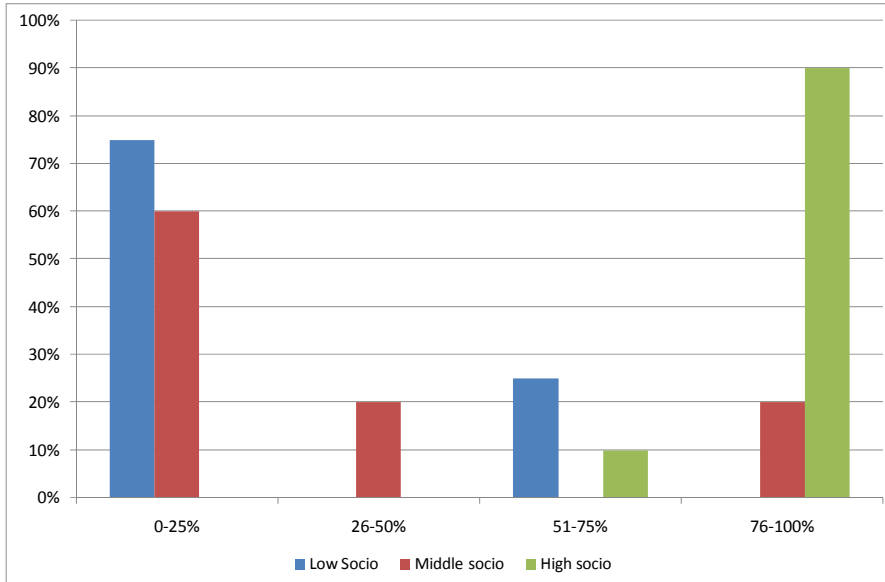
Buyers in the higher valued areas placed a greater importance on the property having good heat pumps (air-conditioners), ceiling insulation and window double glazing, with less importance on under floor insulation and approved wood burners.

The middle income group placed the most importance on aspect, heat pumps and ceiling insulation, with wall insulation and approved wood burners being of less importance.

A breakdown of the responses based on the buyer type showed that only single high income buyers considered the environmental aspects of the house being purchased to be the main deciding factor in the decision to buy a particular house. This subgroup were the only group likely to reject buying a house that did not meet environmental/ energy efficiency levels. Older retired middle and higher income groups were the next likely to reject purchasing a house that was not energy efficient.

Low income families were the least likely to reject buying a particular property because it was not energy efficient or environmentally sustainable

Chart 6: Buyer Concern/Awareness of Environmental Factors: New Zealand



Another question tackles the percentage of the buyers/potential buyers that have viewed properties, and asked or were concerned about environmental aspects of the property (thermal insulation, water and power efficiency etc).

Chart 6 shows that only the higher income buyers expressed awareness or concern about the environmental aspects of the houses they were inspecting for purchase, with the lower and middle income socio-economic groups showing less concern in relation to awareness of environmental factors. The Christchurch real estate agents reported that 60 to 75% of buyers had no or limited interest in these factors.

Chart 7: Decline to Purchase for Environmental Factors: New Zealand

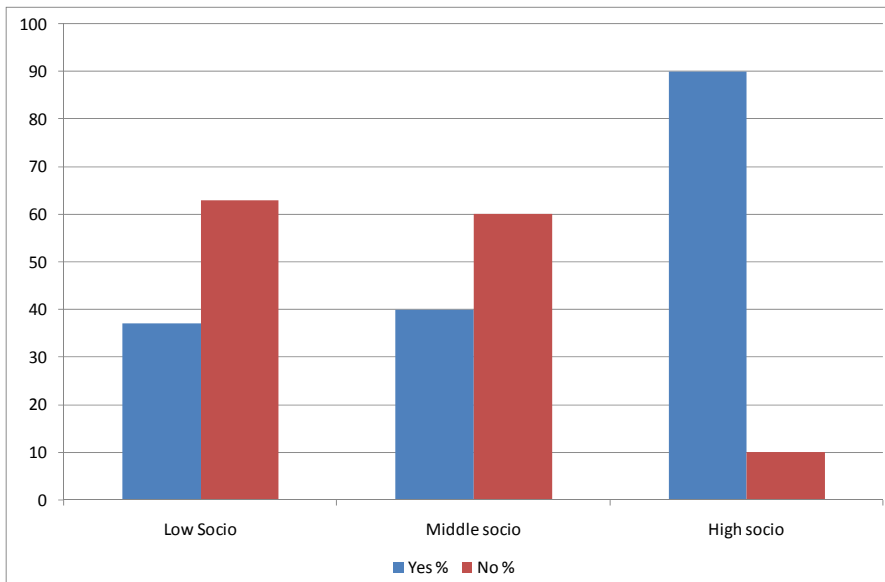
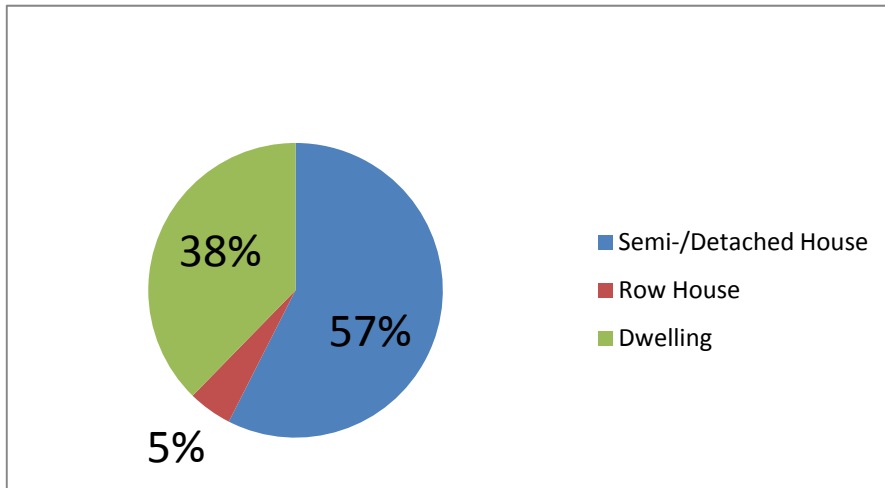


Chart 7 shows the percentage of buyers who would or would not purchase a residential property in New Zealand, if the environmental/energy efficiency aspects of the house were not present or deemed acceptable. This chart shows that higher socio-economic buyers would be the most likely to not purchase a less energy efficient house (90%) compared to only 35% of lower income buyers and 40% of middle socio-economic buyers.

3.2 Germany

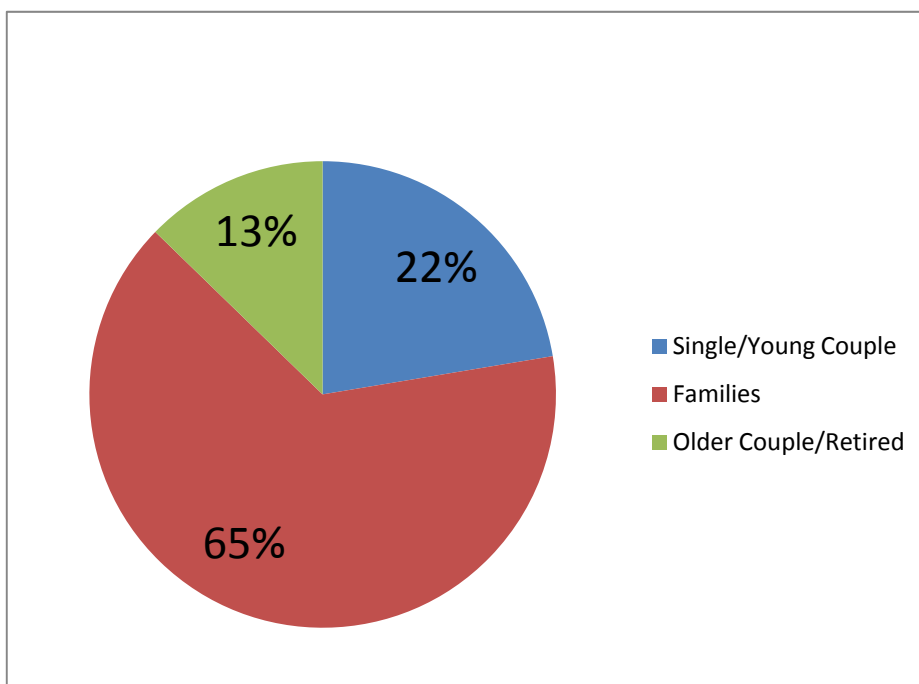
Charts 8 and 9 show demographic information concerning the real estate companies who took part in the German leg of this study.

Chart 8: The predominant type properties marketed by the respondents: Germany



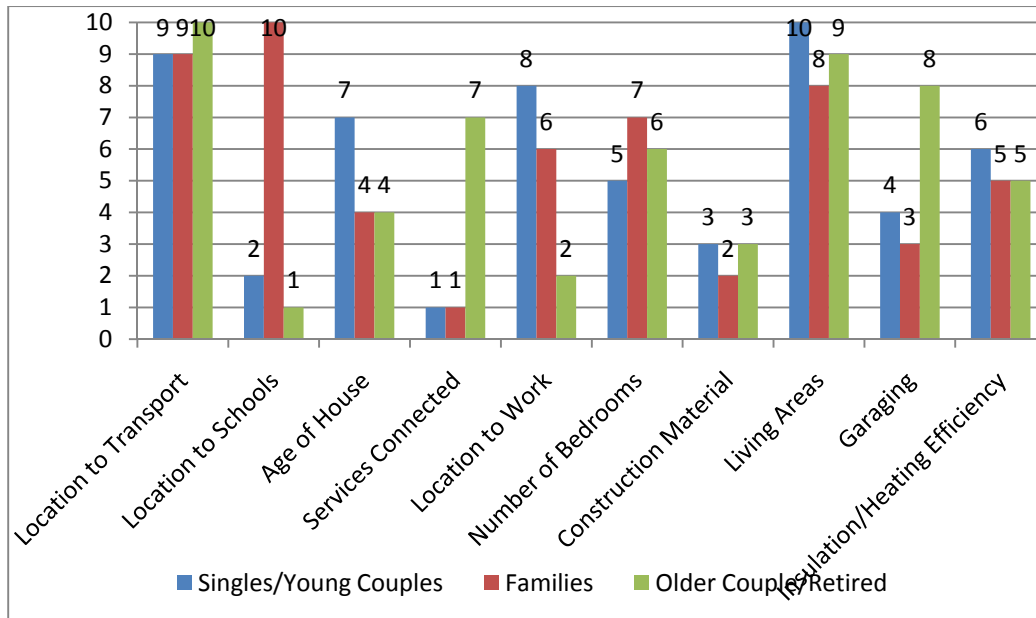
In the survey for Germany the predominant type properties marketed by the respondents were, as chart 8 shows, detached houses and semi detached houses (57.5%), terraced houses (4.8%), and flats (37.7%).

Chart 9: House Buyer Demographics: Germany



The predominant purchaser profile of the real estate companies taking part in this survey was as follows (chart 9): Single/young couples (22%), families (65%), and older couple/retired (13%).

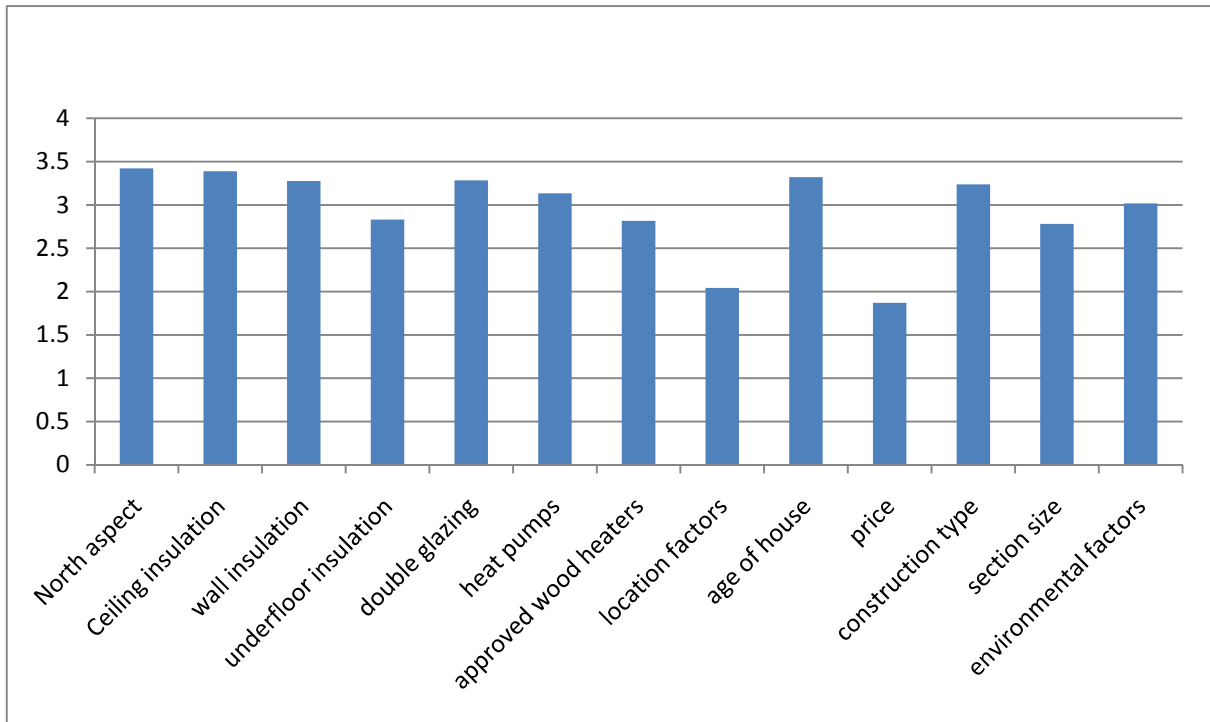
Chart 10: Specific Housing Factors: Germany House Buyer



For all three groups the location to transport was of very high importance. While singles/young couples and families rated this topic with 9, older couple/retired even with 10. For families location to schools was of overall importance and rated with 10. The living areas were the most important feature for singles, and younger couples.

In contrast to this environmental aspects ranked significantly lower in the opinion of all three groups. Insulation/heating efficiency scored only 5 (families, and older couples) or 6 (in the case of families/young couples)

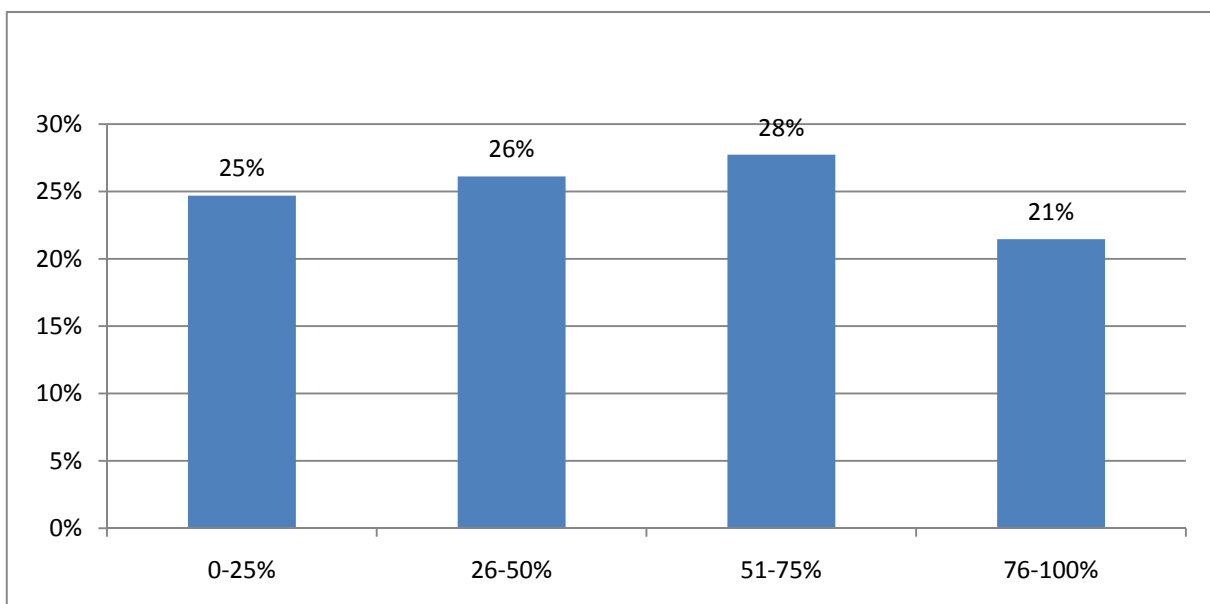
Chart 11: Environmental/ Energy efficient Factors: Germany



“What are, in relation to environmental or ‘green’ homes, the most important aspects that have influenced buyers in their house purchase decision?” was another question. The respondents were asked (Chart 11) to rate 1 for least important 5 for most important.

South aspect as well as ceiling insulation ranked first with 3.4, followed by wall insulation and glazing (3.3), construction type (3.2), and heat pumps (3.1).

Chart 12: Buyer Concern/Awareness of Environmental Factors: Germany

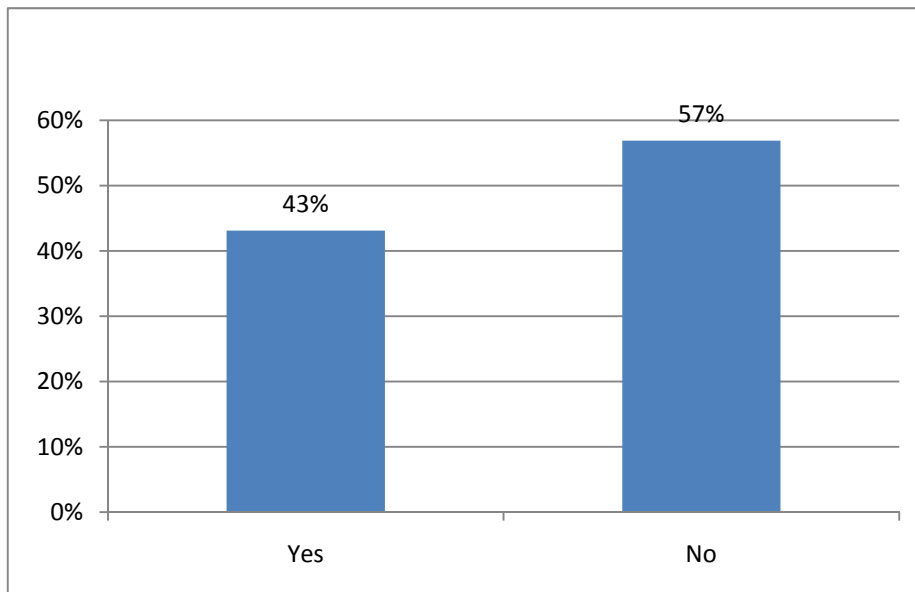


Another question (chart 12) tackles the percentage of the buyers/potential buyers that have viewed properties, and asked or were concerned about environmental aspects of the property (thermal insulation, water and power efficiency etc).

Only 21% of the real estate agents report that a very high degree (76% - 100%) of buyers had inquired concerning environmental aspects. On the other hand 25% reported only a few (0% - 25) such questions.

These results don't indicate a high environmental awareness of buyers or that the environmental aspects of the house are not the major focus of buyers when initialling choosing suitable properties for purchase.

Chart 13: Decline to Purchase for Environmental Factors: Germany



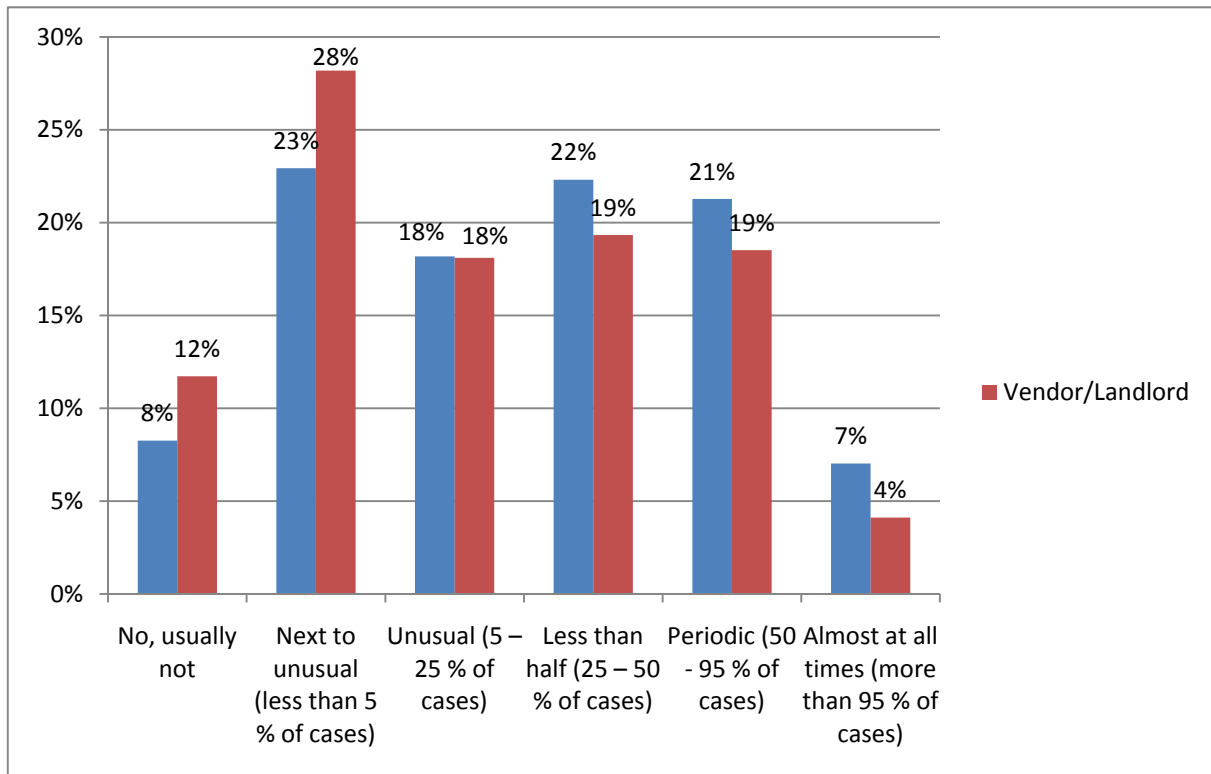
43% of the real estate companies had cases of potential buyers who viewed properties over the past 12 months, and stated that they would not purchase a particular property due to poor environmental factors (Chart 13).

In order to make the use of energy more transparent Germany introduced the "Energiepaß"⁵, Energy Performance Certificate for buildings. In a survey of the Northern German Association of Housing Companies tenants were interviewed on the Energy Performance Certificate for buildings. Despite the fact that the interviews took place in January and February 2008 and that there was huge press coverage on the Energy Performance Certificate for more than a year, 59% of the respondents didn't know

⁵ Cf. Kraus, F. (2006), Der qualitätsgesicherte Energieausweis als Kern einer Marktstrategie für Energieeffizienz, Brunata (Hrsg. 2008), Der Energieausweis für Gebäude, Wege, J. (2007), Aktion Energiewende für Klimaschutz und Wirtschaftlichkeit, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 41 ff.

this important document, and 13 % said they had heard about it but didn't know its meaning.⁶ This study yielded a similar picture.

Chart 14: Importance of the Energy Performance Certificate for landlords/vendors and for buyers: Germany



When asked (Chart 14) whether “vendors and landlords attach importance to the Energy Performance Certificate - how often do they ask for the Energy Performance Certificate?” 11.7 % of the respondents answered “no, usually not”, another 28.2 % had been asked only in less than 5 % of the cases, and 18.1 % had been questioned in 5 – 25 % of cases.

19.3 % of the respondents had been questioned in 25 – 50 % of the cases. In contrast to this only in only 18.5 % of the cases vendors inquired periodic (50 - 95 % of the cases) concerning the energy certificate for buildings. Only 4.1 % of the real estate agents had been asked almost at all times (more than 95 % of cases) about this important document. This emphasizes that at the moment the energy certificate for buildings is of low importance for landlords and vendors.

Compared to the attitude of landlords and vendors there is a higher interest in a Energy Performance Certificate than in the case of landlords and vendors. Asked “Which role does the Energy Performance Certificate play for the Buyer/Tenant - how often are you asked by prospective customers for the Energy Performance Certifi-

⁶ Cf. Kippes, S. (2008), The attitudes of tenants concerning environmental questions - An analysis based on different empirical studies, paper presented at the 15th European Real Estate Society (ERES) annual meeting in Krakow

cate?" 8.3 % of the respondents answered "No, usually not", 22.9 rated such questions as next to unusual (less than 5 % of cases), and 18.2 unusual (5 – 25 % of cases).

Another 22.3 % had been asked concerning the Energy Performance Certificate in less than half (25 – 50 % of cases). In contrast to this 21.3 had been questioned Periodic (50 - 95 % of cases), and only 7.0 % had been asked in more than 95 % of the cases.

These results again confirm the fact that buyers are not as aware or concerned about environmental issues as would be expected given the significant efforts both governments and interest groups have taken in these areas.

5. Conclusion

The comparison of the two residential property markets in Germany and New Zealand show some very interesting aspects of the importance of house attributes in the purchase decision of buyers in both countries.

Of most importance is the fact that in both countries environmental/energy efficiency factors are still not the most important factor that buyers consider when purchasing a house, despite the voluntary and mandatory measures that Governments have introduced and the growing awareness of these issues in the media.

In New Zealand price and number of bedrooms are still the main determinants of house purchase, while in Germany the location to transport and schools are the main consideration in the purchase of a house.

Both countries report a similar level of awareness and importance to the main environmental/energy efficiency measures in residential property, with buyers in both countries placing the highest importance on the correct aspect, ceiling insulation, heat pumps and double glazing.

At this point in the 'green housing' and "housing energy efficiency" development in residential property, for the majority of house buyers the importance of environmental factors appears to be an issue once the property is purchased rather than a consideration in the purchase decision. The study results show that the most environmentally aware house purchaser is the higher income single or young couple buyer and the older high income retired buyer. All other demographics were more focused on price, house size and bedrooms rather than the ongoing cost of heating/cooling the property and the carbon footprint of the house.

These results also confirm that adoption of energy efficient measures in existing housing stock on a voluntary basis will not necessarily be effective due to buyer priorities and a more regulated scheme may be required to achieve energy efficiency goals in residential housing sectors.

References

- Brunata (Hrsg. 2008), Der Energieausweis für Gebäude
- BSI Bundesvereinigung Spitzenverbände der Immobilienwirtschaft (2007a), Stellungnahme der Bundesvereinigung Spitzenverbände der Immobilienwirtschaft zum „Integrierten Energie- und Klima-programm der Bundesregierung“
- BSI Bundesvereinigung Spitzenverbände der Immobilienwirtschaft (2007b), Klima- und Energieprogramm auf dem richtigen Weg – BSI begrüßt Wirtschaftlichkeitsgebot Nutzungspflicht bei erneuerbaren Energien muss korrigiert werden
- Bundesministerium für Verkehr, Bau und Stadtentwicklung – BMVBS (2007), Internationaler Vergleich von Kosten und Dienstleistungseffizienz bei der Transaktion von Wohneigentum – Optionen für Deutschland
- Canterbury City Council, (2005) The Standard Assessment Procedure (SAP). <http://www.canterbury.gov.uk/buildpage.php?id=344>
- DEGI – Deutsche Gesellschaft für Immobilienfonds (2006), New Perspectives – Market Report Germany 2006
- DEGI – Deutsche Gesellschaft für Immobilienfonds (2007), New Perspectives – Market Report Germany 2007
- Deutsche Energie-Agentur GmbH - dena (2008), Zusammenfassung Referentenentwurf zur Novellierung der Energieeinsparverordnung (Entwurf zur EnEV 2009)
- Deutscher Mieterbund (2007), Aktuelle Streitfrage des Mieterbundes, in: www.mieterbund.de
- forsa - Gesellschaft für Sozialforschung und statistische Analysen mbH (2005), Erhebung des Energieverbrauchs der privaten Haushalte für das Jahr 2005, o.O. 2005
- European union (2007). Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings. <http://europa.eu/scadplus/leg/en/lvb/l27042.htm>
- Farhar, B (2000) Pilot State program; home Energy rating Schemes and energy efficiency mortgages. National Renewable Energy Laboratory, Colorado.
- Forschungsinstitut Analyse & Konzepte - Beratungsgesellschaft für Wohnen, Immobilien und Tourismus (2008), survey for the Northern German Association of Housing Companies (Verband norddeutscher Wohnungsunternehmen e.V. VNW)
- GfK Marktforschung (2007), Klimaschutz – survey by the GfK Marktforschung fort he vdW Bavaria (Verband Bayerischer Wohnungsunternehmen), Nürnberg 2007IMV GmbH (o.J.), Abkürzungsverzeichnis, Reichertshausen, o.J.
- IPD (Hrsg. 2008), IPD Environment Code - Measuring the Environmental Performance of Buildings, London 2008
- IWU - Institut Wohnen und Umwelt (2007), Querschnittsbericht Energieeffizienz im Wohngebäudebestand - Techniken, Potenziale, Kosten und Wirtschaftlichkeit, survey for the South West German Association of Housing Companies (Verband südwestdeutscher Wohnungsunternehmen e.V. VDW südwest)
- Jank, J. (o.J.), Energieeinsparung: Rolle des Energieverbrauchers - Informationen zu Energieverbrauchsdaten - Einfluss auf das Verbraucherverhalten
- Matthes, C. (2007), Energiepreise in der Diskussion, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 55
- Kippes, S. (2001), Professionelles Immobilienmarketing - Marketing-Handbuch für Makler, Bauträger/Projektentwickler und Immobilienverwalter, München 2001
- Kippes, S. (2003), in: Sailer, E., Kippes, S., Rehkugler, H. (Hrsg. 2003), Handbuch für Immobilienmakler und Immobilienberater, München 2003, 142, 485 – 500
- Kippes, S. (2008), The attitudes of tenants concerning environmental questions - An analysis based on different empirical studies, paper presented at the 15th European Real Estate Society (ERES) annual meeting in Krakow
- Kippes, S., Opferkuch, M. (2008), Special aspects of the German market for residential properties - Follow up of an empirical project, paper presented at the 24th American Real Estate Society (ARES) annual meeting in Captiva Island, Florida

- Kraus, F. (2006), Der qualitätsgesicherte Energieausweis als Kern einer Marktstrategie für Energieeffizienz
- Piebalgs, A. (2007), Europäische Energiepolitik für den Gebäudesektor, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 17 – 20
- Plympton, P (2000) National status report HERS and energy efficient mortgages. National Renewable Energy Laboratory
- Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, Berlin 2007
- Sailer, E., Kippes, S., Rehkugler, H. (Hrsg. 2003), Handbuch für Immobilienmakler und Immobilienberater, München 2003, 142, 485 – 500
- Sailer, E., Langemaack, H.-E. (Hrsg. 2004), Kompendium für Makler, Hausverwalter und Sachverständige, 10. Aufl., Stuttgart 2004
- The Energy Efficiency and Conservation Authority of New Zealand (2005) Final report: Home Energy Rating Scheme Consultancy. Energy consult, Victoria.
- Thoben, C. (2007), Energieeffizienz-Offensive „NRW spart Energie“, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 21 - 24
- Tiefensse, W. (2007), Energieeffizientes Bauen – eine Chance für den Klimaschutz, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 9 - 16
- Troge, A. (2007), Energiesparen in Wohnungen und Häusern - ein wichtiger Baustein für den Klimaschutz , in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 25 - 30
- Wege, J. (2007), Aktion Energiewende für Klimaschutz und Wirtschaftlichkeit, in: Pöschk, J. (Hrsg. 2007), Energieeffizienz in Gebäuden - Jahrbuch 2007, S. 41 - 46

Survey

“Green” Housing Awareness Survey

Dear....,

welcome to our survey: “Green” Housing Awareness Survey

1. Office Location

Postal Code:

2 Predominant housing market

Less than \$300,000 _____

\$300,000 to \$500,000 _____

Greater than \$500,000 _____

3. Predominant purchaser profile

Single/young couple _____

Families (school age children) _____

Older couple/retired _____

4. Buyer preferences

Based on the profile of the buyers you have dealt with over the past 12 months rank the following criteria according to the importance this typical house gives them to importance for this typical house buyer

(1 to 10, with 1 the most important, 10 the least important)

Single/young couple

Location to transport	___	
Location to schools		___
Age of house		___
Services connected		___
Location to work		___
Number of bedrooms	___	
Construction material	___	
Square meters		___
Garaging		___
Insulation/heating efficiency	___	

Families (school age children)

Location to transport	___	
Location to schools		___
Age of house		___
Services connected		___
Location to work		___
Number of bedrooms	___	
Construction material	___	
Square meters		___
Garaging		___
Insulation/heating efficiency	___	

Older couple/retired

Location to transport	___	
Location to schools		___
Age of house		___
Services connected		___
Location to work		___
Number of bedrooms	___	
Construction material	___	
Square meters		___
Garaging		___
Insulation/heating efficiency	___	

5. Sustainable "Green" houses

What percentage of the buyers that have viewed properties that you have listed over the past 12 months have asked or been concerned about the environmental aspects of the house (Aspect, thermal insulation, water and power efficiency etc)

- 0 – 25%
- 26 - 50%
- 51 – 75%
- 76 – 100%

have any potential buyers that have viewed properties that you have listed over the past 12 months stated that they would not purchase a particular property due to poor environmental factors.

Yes No

If yes what percentage %

What are, in relation to environmental or "green" homes, the most important aspects that have influenced buyers in their house purchase decision?

(please circle: rate 1 for least important 5 for most important

- North aspect
- Ceiling insulation
- Wall insulation
- Underfloor insulation
- Double glazing
- Heat pumps
- Approved wood heaters
- Solar hot water

Concluding from your experiences with potential buyers over the over the past 12 months please rank the importance of the following purchase decisions

(1 most important, 5 least important)

- Location factors
- Age of house
- Price
- Construction type
- Section size
- Environmental factors

6 – Importance of the Energy Performance Certificate

**Do vendors and landlords attach importance to the Energy Performance Certificate?
How often do they ask for the Energy Performance Certificate?**

- No, usually not
- Next to unusual (less than 5 % of cases)
- Unusual (5 – 25 % of cases)
- Less than half (25 – 50 % of cases)
- Periodic (50 - 95 % of cases)
- Almost at all times (more than 95 % of cases)

**Do you already campaign in your sales particulars with details about the Energy Performance Certificate?
(reference, as attachement)**

- No, usually not
- Next to unusual (less than 5 % of cases)
- Unusual (5 – 25 % of cases)
- Less than half (25 – 50 % of cases)
- Periodic (50 - 95 % of cases)
- Almost at all times (more than 95 % of cases)

**Which role does the Energy Performance Certificate play for the Buyer/Tenant?
How often are you asked by prospective customers for the Energy Performance Certificate?**

- No, usually not
- Next to unusual (less than 5 % of cases)
- Unusual (5 – 25 % of cases)
- Less than half (25 – 50 % of cases)
- Periodic (50 - 95 % of cases)
- Almost at all times (more than 95 % of cases)

Thank you for your assistance