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Public perception of sustainable interior design practices in residential settings

by

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A thesis submitted to the graduate faculty
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ABSTRACT

To better understand public perception of sustainable interior design practices in residential settings, two groups of seventy-five home improvement show attendees responded to a twenty question survey. The survey comprised of questions aimed at establishing attitudes about ecology, factors that influence sustainable design preferences and demographics. The ecology section utilized an abridged version of the New Ecological Paradigm Scale (Dunlap et al. Journal of Environmental Education, 9:10, 2000), which is a survey utilized to predict environmental world views. Items in the sustainable design section were chosen to reflect participants' opinions about sustainable design features in the home, along with factors that influence decisions to take action. The purpose of this study was to examine the relationship between public perception and the integration of residential sustainable interior design features and understand:

1. What role do environmental world views and attitudes play in the integration of sustainable interior design practices into the home?
2. What is the public's perception of sustainable interior design?
3. How does perception influence the integration of sustainable interior design into the home?

Key Words Interior design, sustainability, public perception, sustainability education, energy efficiency, sustainable interior design features

CHAPTER 1. INTRODUCTION

The goal of this study was to learn more about how the public perceives sustainable interior design as a precursor for taking action. Design metrics such as LEED for homes (USGBC, 2010), have been created to guide the implementation of this process, however little research has been done to determine which factors influence an individual's decision to integrate these features into a home.

The purpose of this study was to examine the relationship between public perception and the integration of residential sustainable interior design features. Two groups of home improvement show attendees were studied. Public perception was explored utilizing a survey based on factors that included environmental world views, perception of sustainable design features and the role that this perception played on respondents' behaviors. The following research questions were addressed in this study:

1. What role do environmental and world views and attitudes play in the integration of sustainable interior design practices into the home?
2. What is the public's perception of sustainable interior design?
3. How does knowledge and perception influence the integration of sustainable interior design features and practices into the home?

The examination of environmental world views utilizing the New Ecological Paradigm Scale (Dunlap et al. 2000), was important to this study because it was hoped that it would establish a relationship between perceptions about the environment and the actions people took to conserve it. The second part of this

study addressed opinions regarding the levels of importance that quality of life, earth friendly and energy efficient features play in creating a green/sustainable home.

Cost factors were also explored.

Most of the research done to date has dealt with the logistics of how “green buildings” impact on the business, health and education sectors. Judith Heerwagon’s report entitled *Green Buildings, Organizational Success and Occupant Productivity* (2000), includes a compilation of research studies done within the corporate sector. It is apparent that this growing body of evidence-based research is having a profound influence on the environment along with quality of life issues that exist within corporate settings. Guenther and Vittori (2007) discuss the specifics of healthcare design and the integration of sustainable principles. Case studies are utilized within their format, providing a comprehensive overview of evidence pointing towards the value of this integrated design approach. The National Research Council of the National Academies (2006) provides a well documented report, *Review and Assessment of the Health and Productivity Benefits of Green Schools*. Student performance is also addressed along with case studies and research supporting the enhancement of learning environments.

The above stated body of work informs readers about the benefits of sustainable interior design and the supporting research. The information was valuable in terms of informing the public about the value that sustainable interior design brings to the built environment, but it does not serve in the understanding of how these factors are perceived and integrated into residential settings.

This study is important as it will assist the body of professionals that influence homeowners in their design and building decisions. As interior designers and architects learn more about how homeowners perceive sustainability, perhaps they will be better equipped to educate and facilitate the design process in a more integrated manner.

CHAPTER 2. LITERATURE REVIEW

The focus of this study revolves around the role of how understanding and perception influences behavior as it relates to integrating sustainable interior design features into the home. No research was found on the above mentioned topic, so studies were reviewed that explored related areas: (1) The role that perception plays as it relates to behavior (2) Views and attitudes that structure human behavior as it relates to the environment. (3) Perception of sustainable interior design and how it impacts the environment and human quality of life.

Perception and Behavior

The concept that perception motivates behavior involves several schools of thought. According to Owens (2000) there may be a “general belief among policy makers and others that information is the key to public involvement and action: hence the conviction that, if only people knew and understood more about the connection between their own behavior and a range of environmental threats, they would do environmentally friendly things.”(p.1141).

Information deficit model

This concept of “the more you know, the more you do” is known as a rationalist or ‘information deficit model.’ (p. 1141) It was at the core of the United Kingdom’s energy conservation campaigns of the 1970s (p.1142) and a campaign known as “Are you doing your bit” which was promoted in the late 1990s as a

means of educating the public about sustainability and the role individuals could play.

According to Schultz (2002) a number of research studies have been performed for the purpose of exploring the value of knowledge based programs that are aimed at altering individual behavior. In the case of recycling behaviors, governmental officials have long believed that a lack of knowledge has been at the root of low rates of public participation. By distributing literature about how to recycle, the assumption was made that recycling behavior would increase. Procedural knowledge that included “where, when and how,” were addressed in the literature disseminated. “The overwhelming finding from the research is that knowledge is a strong and consistent predictor of recycling behavior. (DeYoung, 1989; Gampa & Oscamp, 1994; Lindsay & Strapman, 1997). Schultz also cited a meta-analysis of 17 studies that examined the correlation between “procedural knowledge” and recycling behaviors (Hornik et. al. 1995) “Among the variables analyzed in their review, knowledge was the strongest correlate of recycling.” It was also pointed out that despite these statistical findings, the distribution of information that increased knowledge did not necessarily result in long term behavioral changes. Schultz (1999) reported “The findings of an experiment that disseminated information about the specifics of a local curbside recycling program to community residents. Results showed only a small increase in recycling rates and the amount of material recycled, and no significant change relative to the control condition.”

According to Hobson (2002), programs such as the United Kingdom’s “Action at Home” campaign were designed to alter individual lifestyles and sustainability

practices through the dissemination of information. Woven into this “common sense” approach by government officials, is the integration of these ideals as government policy which can actively alienate citizens rather than motivate them to change behavior. Meyers and McNaughton (1998) also point out that the rhetoric embraced by governments and public agencies (typically crisis based), do little to “encourage participation and practical action.”

Social-psychological understanding of behavior

A second school of thought approaches the role of citizens participating in more sustainable lifestyles based on a social-psychological understanding of behavior. This ideal identifies ‘environmental’ activists in terms of their values, attitudes and demographic compositions . Based on the data from a research project conducted in Devon, southwest England, by Barr & Gilg (2006), the following issues were examined:

1. The way in which positive environmental behavior is integrated into everyday activities.
2. The existence of groups of individuals that exhibit alternative lifestyle behaviors as it relates to environmental practices, forming ‘lifestyle groups.’

By creating ‘cluster groups’ in analyzing survey results of 59% of the 1600 households approached, four categories of respondents or lifestyle groups surfaced:

1. *Committed Environmentalists:* Individuals that regularly engage in pro environmental behaviors that include purchasing decisions, habits and recycling. Purchasing decisions would include but not limited to buying foods that are fresh and locally produced, organic and fair trade with minimal packaging, purchasing recycled paper goods, avoiding aerosols and toxic detergents and utilizing energy efficient appliances and light bulbs. Their habits would include water conservation by turning the tap off when washing dishes, brushing teeth and soaping up in the shower, reducing toilet flushes and number of baths and showers, use sprinkler less in the garden. Energy is conserved through minimizing hot water and room temperatures and turning lights off in unused rooms. Recycling included glass, newspaper, cans and plastic bottles. Unused furniture and clothing is donated to charity. The most popular behaviors usually involved energy saving and waste management with water conservation being popular but not unanimous. The vast majority of this cluster stated that they almost always compost waste.

2. *Mainstream environmentalists:* A group that set itself apart from Committed Environmentalists in several ways. Sixty percent of these individuals never compost, with more individuals in this group “never or rarely” undertaking the range of activities mentioned that are associated with environmental action in and

around the home.

3. *Occasional Environmentalists*: Individuals that are significantly less likely to participate in environmental activities, especially when it comes to purchasing decisions and water conservation. A greater number of these people “never or rarely” recycle waste.
4. *Non-environmentalists* : In most cases, under twenty percent of individuals participate in pro-environmental behaviors. They are distinctly non-committed.

Behaviors included activities that incorporated energy saving, waste management and water conservation. Environmental attitudes were also closely linked with the behaviors exhibited by each group.

Kaiser, Wolfing and Fuhrer (1999), assert that “environmental attitude serves as a powerful predictor of ecological behavior.” Through the utilization of factor analysis; environmental knowledge, environmental values and ecological behavior intention, they determined that, “environmental knowledge and values explained 40% of the variance if ecological behavior extension which, in turn, predicted 75% of the variance of general ecological behavior.”

Normative factors dictated by social values can have a considerable influence in recycling behavior. (.....,2008). The researchers cite the work of Everett and Pierce (1992) and their findings that in neighborhoods (particularly of lower economic status) the establishment of “block leaders” can have an influential effect.

It was also pointed out that normative influences can have an adverse impact when attitudes are negative (Spaccarelli, Zolik & Jason, 1989).

Whitmarsh and O'Neill (2010) examined the role that pro-environmental self identity plays in the influence of pro-environmental behaviors. Self identity (the label used to describe oneself) is influenced by personal motivations (for self esteem, self enhancement and self understanding) as well as social interaction in the form of demands and expectations of others and the various roles we perform (p. 2). Their findings strongly reinforced the idea that people behave in a manner that is environmentally correct because they see themselves as individuals that care about the environment and want others to perceive them in the same manner.

Another important determinant of pro-environmental behavior or behavioral intent is perceived behavioral control, as outlined in the theory of planned behavior (Ajzen, 1991). If implementing a specific pro-environmental behavior is believed to be difficult, the behavior may not be attempted, even if there is motivation to do so. There is an implied perception that perceived ease of implementing pro-environmental behavior has a positive effect on that behavior (Loukopoulos, Jakobsson, Garling, Schneider and Fujii, 2004). Such an effect can furthermore be equated with the cost of implementation, which has been proposed to have a negative effect on behavior(Kaiser and Keller, 2001).

As of the writing of this article, there has been a limited amount of research done on the topic of sustainable interior design within residential settings, what the level of public understanding is and how it is perceived. Within the arena of public perception and the general topic of sustainability, is the work done by McNaughton

et al. (1995). The researchers conclude that once people understand concepts of sustainability, “they appear to identify positively with its values and priorities. Many sense a possible relationship between sustainability and a good quality of life.” It was also noted that people had the tendency to pay attention to information about the environment based on whether or not they had the capacity to “influence events associated with that information.”

Sustainable Interior Design

One of the major factors influencing the importance of sustainable interior design lies in the relationship between human beings and the environment. “For most of the last couple of hundred years the environment has been largely seen as external to humanity, mostly to be used and exploited.” (Hopwood, Mellor O’Brien, 2005). In the process of “conquering nature,” human beings have been living with the idea that there is no limit to the amount of natural resources available. As a result, capitalism, the industrial revolution and modern science have evolved. This argument is supported in the book, *An Inconvenient Truth* (Gore, 2006), where extensive data supports the notion that global destruction is resulting from human action. Global warming, species extinctions, loss of non-renewable resources, over-population, extreme climate shifts are some of the issues that threaten the environmental stability for our planet. The consumption of resources is also a factor that is contributing to imbalances in the environment. Over time, developed societies are placing heavy demands on the earth’s life cycles, with developing countries trying to keep up (McDonough and Braungart , 2002). As a result, in the

1990s, the average American wasted nearly 1 million pounds of resources per year. This included raw materials, energy and other resources, (Hawkins, Lovins & Lovins, 1992).

As a result of the widespread concern for the depletion of resources and human disregard for the environment, the concept of sustainable development has been created. One of the earliest references to this paradigm can be found in a report entitled, *Our Common Future* (Oxford: Oxford University Press, 1987 pg.43). The World Commission on Environment and Development (The Brundtland Commission) stated that: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The Brundtland Report expressed the basic idea that people must integrate their lives within the environment rather than trying to conquer it. Interdependence, rather than the domination of Nature is critical for human health and well being, on a global scale. "The report stresses that humanity, whether in an industrialized or a rural subsistence society, depends for security and basic existence on the environment." It also point out that this goes above and beyond the exploitation of resources. "ecology and economy are becoming even more interwoven – locally, regionally, nationally and globally." (Hopwood, pg.39). Sustainable development factors in socio-economic considerations that include eradicating poverty and meeting human needs that impact all people and giving them access to a fair share of available resources.

Within this idea of developing sustainably, the built environment plays an enormous role. According to the USGBC (United States Green Building Council),

the built environment is growing at a rate three times faster than global population. In the U.S. alone, although we only comprise 6% of the world's population, we consume 25% of the world's energy. The building industry, alone, is responsible for 36% of total energy use and 65% of electricity consumption (USGBC, 2007, Pg.1). Buildings in the United States also use 17% of the freshwater flows, 25 % of harvested wood; and generate 33 % of CO2 emissions; one of the leading contributors of climate change (World watch report #124).

The purpose of sustainable design within the built environment is to provide a more integrated or systems approach to building. It also implies an interest in design that protects people's health and well-being while protecting the global environment and the world's ecosystems for future generations (Green Design Education Initiative, 2003). "Sustainability does not require a loss in the quality of life, but does require a change in mind-set, a change in values toward less consumptive lifestyles. These changes must embrace global interdependence, environmental stewardship, social responsibility, and economic viability." (<http://www.nps.gov/dsc/dsgncnstr/gpsd/toc.html>).

In the United States, the Federal Government has played a significant role in promoting sustainable building design. According to the United States Government Services Administration (GSA), *"sustainable building design seeks to reduce negative impacts on the environment, and the health and comfort of building occupants, thereby improving building performance. The basic objectives of*

sustainability are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments.”

Sustainable design principles include the ability to:

- *optimize site potential;*
- *minimize non-renewable energy consumption;*
- *use environmentally preferable products;*
- *protect and conserve water;*
- *enhance indoor environmental quality; and*
- *optimize operational and maintenance practices.*

Utilizing a sustainable design philosophy encourages decisions at each phase of the design process that will reduce negative impacts on the environment and the health of the occupants, without compromising the bottom line. It is an integrated, holistic approach that encourages compromise and tradeoffs. Such an integrated approach positively impacts all phases of a building's life-cycle, including design, construction, operation and decommissioning.

The following outline gives an overview of the application of sustainable design principles into the building process:

1. Employ integrated Design principles

- a. Integrated Design – utilization of the *design charrette*; bring together all decision makers to collaborate and create realistic design ideas to address issues in a holistic manner
 - b. Commissioning – the inspection and testing of electrical, mechanical and plumbing systems during the design and construction phase of a building to insure that they are installed and operating as intended. Correction of errors during the process rather than after completion saves money and energy (Bonda, Pg.33).
2. Optimize energy performance
 - a. Energy Efficiency
 - b. Measurement and verification
3. Protect and Conserve water
 - a. Indoor water
 - b. Outdoor water
4. Enhance indoor Environment Quality
 - a. Ventilation and thermal Comfort
 - b. Moisture control
 - c. Day lighting
 - d. Low-emitting materials
 - e. Protect indoor Air Quality during construction
5. Reduce Environmental impact of materials
 - a. Recycled content

- b. Biobased content
- c. Construction waste
- d. Ozone depleting compound

Within the scope of sustainable design in the built environment lies the role of sustainable interior design. Energy efficiency, conserving indoor water, enhancing indoor environmental quality and reduced environmental impact all pertain to the interior of a building. Indoor environmental quality is directly affected by the materials used for construction, furnishings and decoration which impacts on indoor air quality and human comfort. Indoor air quality refers to the pollutants, temperature and relative humidity of a space. Individuals in the U.S. spend 90% of their time in indoor spaces, and indoor air quality can be two to five times worse than outdoor air quality since it contains bad air that is trapped inside a building and there are more concentrated pollutants. (Bonda, Pg. 151) It is crucial for the health, wellbeing and productivity of people living and working indoors. Other factors that influence indoor environmental quality include sound, lighting, thermal conditions and pollutants on surfaces (Bonda, Pg. 54).

As sustainable design becomes a topic of increasing importance within the interior design field, the role of interior designer as educator and influencer cannot be ignored. In "The Attitudes of Interior Design Towards Sustainability," (Ruff and Olson, 2002), interior design students were surveyed for the purpose of determining environmental attitudes as they reflect "perceptions related to the use of sustainable products and solutions in interior design scenarios." (p.67). The results of the survey

indicated that students leaned towards being pro-environmental with some question as to how much they actually knew about how to implement sustainable principles in the design process. Most students felt like they could successfully integrate sustainable features and materials into a residential or commercial project, however a good percentage of respondents were unsure as to whether or not sustainable practices should be optional.

The definition of interior design incorporates the creation of interior environments that improve quality of life, increasing productivity and protection of the public's health, safety and welfare. (National Council for Interior Design Qualification, 2003) .The term also describes "a group of related projects that are involved in making any interior space into an effective setting for whatever range of human activities are to take place there." (Pile, pg.19). When designing a residential interior space, research and analysis of a client's goals and requirements, presenting a space plan and program along with construction documents, selection of materials, color and finishes, furnishings and project management are incorporated into a project.(ASID website, pg.2). Functionality along with aesthetics are of equal importance.

Part of the process of becoming an interior designer includes education and experience, along with an attempt to integrate environmental sustainability into the equation. According to CIDA (Council of Interior Design Accreditation), accredited Interior Design education programs must now comply with certain standards of sustainability (Foster, Pg. 8). Environmental ethics, sustainable building methods and materials, sustainable design fundamentals and theory and protection of health

and welfare (through indoor air quality, noise reduction, lighting and other standards based in sustainable design fundamentals) must be incorporated into the curriculum design process.

Despite the fact that the Interior Design education format now incorporates sustainable design, there lies the issue of educating existing designers in the field. Consumers are learning more about “green design” and requesting the integration of these features. As of 2008, there was a heightened interest in sustainability within the residential construction sector due to heightened awareness of environmental issues and concerns over the growing price of energy. According to an overview of the National Association of Home Builders Green Building Conference in 2007, green building and remodeling of residential structures is experiencing “a level of demand that exceeds the current supply of qualified firms.” (Contractor Magazine.com, Pg.1-2).

CHAPTER 3. METHODS

Participants

Two groups of seventy-five home improvement show attendees responded to a nineteen question survey. The respondents included a convenience sample of seventy-five attendees of the Midwestern Regional Energy Fair (MRE) held in Central Wisconsin in June and seventy-five attendees of the Miami Beach Home Show held in September of 2009.

The MREA (Midwestern Regional Energy Association) is a non-profit organization located in Custer, Wisconsin. Founded in 1990, their mission is to “promote renewable energy, energy efficiency, and sustainable living through education and demonstration.” Each June the MREA hosts an energy fair. It is the oldest energy education event in the United States and offers program and exhibits from over 200 businesses and non-profit organizations. Powered by renewable energy systems, a large spectrum of energy and environmental services are showcased along with sustainable products for home construction and improvement. Approximately 200 workshops are offered each year at The Energy Fair and they are taught by experts and educators in the renewable energy and sustainable products field.

The Miami Home Design and Remodeling Show is held each Labor Day weekend at the Miami Beach Convention Center, in Miami Beach, Florida. Exhibitors include vendors demonstrating and selling home remodeling products and

services along with Interior Decorators showcasing design vignettes to give participants a sense of their design aesthetics and areas of expertise. According to the producers of the show, the Home Show Management Corporation, the show demographics of the show attendees are as follows:

- 92% Homeowners
- 93% 28 to 65 years old
- 54% Had Household income over \$100,000
- 55% Purchased at the show
- 42% Purchased after the show
- 34% Members of the Trade Industry

While attending the Miami show, I observed that the products and services displayed placed little emphasis on integrating sustainable design within the home. The exception to this were exhibitors offering energy efficient windows and appliances, home insulation products and services and water purification products. The cabinets and furniture displayed appeared to have high formaldehyde contents along with toxic finishes.

The reason I selected these two groups was to hopefully generate responses from two groups of individuals that had different orientations and perceptions about sustainable interior design. The MREA has historically attracted a highly educated demographic already familiar with and interested in learning more about sustainable living and green energy products. (<https://www.midwestrenew.org>). Since this group

was decidedly pro-environmental, I was interested to learn about their attitudes and how it influenced their actions as it related to sustainable interior design within the home. The Miami Home Show attendees were selected with the hopes of receiving a sampling of attitudes that reflected more neutral attitudes regarding sustainable design inside the home. Based on the advertisement of exhibitors prior to the show, there was little indication that much emphasis was being placed on products and services that featured a pro-environmental orientation.

Instrumentation

The purpose of the survey was to better understand the attitudes about ecology, determining factors that influence sustainable design preferences and demographics. It was self designed with the exception of a modified version of the New Ecological Paradigm Scale (NEPS). For the first section of the survey, respondents selected phrases that best described benefits of sustainable design. They also ranked factors that influence the design of home interiors, by levels of importance. The second section included eleven statements that were taken from a modified version of NEPS to establish environmental attitudes. The sustainability section consisted of 3 questions aimed at establishing levels of importance that quality of life, energy conservation and earth friendliness played in creating a green/sustainable home. Each of these questions was followed by a group of design features that were rated based on levels of importance. This section also included questions addressing factors that influenced the respondent's participation

in the integration of sustainable design features in their home. In the final section, demographics, respondents indicated age, gender, education level, income, marital status and home ownership status, size and type.

Throughout these research studies, various survey instruments and research tools were utilized as a means of measuring attitudes about the environment. The New Environmental Paradigm (NEP)(Dunlop et al, 2000), is considered to be one of the most recently developed tools for measuring attitudes about the environment. Originally released in 1978, the NEPS scale was revised in the year 2000. “The revised NEP scale possess a level of consistency that justifies treating it as a measure of a coherent belief system or world view.” (pg.435). For the purposes of this study, the researcher has used a modified version of the NEP scale as a means of determining environmental attitudes of the survey participants (see Appendix 1, Table 1).

Data collection procedures

Written instructions were included at the beginning of each printed survey form. The researcher distributed the forms which were completed manually, with responses entered and tabulated, utilizing “Survey Monkey” software. All answers were anonymous and used for research purposes only. The University Review Board for Human Subjects Research classified the study as exempt.

Data analysis procedures

The data was analyzed utilizing the Statistical Package for Social Sciences (SPSS) computer software program. In the sections of the survey that analyzed ecological attitudes and sustainable design preferences, percent distributions along with means and standard deviations were calculated. In the ecology section, the responses of the two respondent groups (MIA/MRE) were compared. In order to calculate the means and standard deviations in this section, responses were weighted based on 1 = true, 2 = undecided, 3 = false. The response results were grouped based on the positive and negative nature of the statements, with the indication of a more eco-friendly attitude with a higher mean in the pro-environmental attitude group and a lower mean in the contra-environmental groups. In the sustainable design section, responses were weighted based on 1 = very important, 2 = moderately important, 3 = somewhat important, 4 = not at all.

CHAPTER 4. RESULTS

Respondents participating in both venues had similar demographics with nearly half of respondents being equally male and female and approximately 53% of participants' ages ranging between 40 and 59. Over 70% of respondents in both groups have college and/or graduate/professional degrees. There was no statistical significance difference between the household incomes of the two groups however it is worth noting that the in the Miami respondent group, over 40% earned over \$81,000 and in the MRE venue 28% fell into this category.

Environmental attitudes

The percentage distributions, means, standard deviation and p values for the environmental attitude items are presented in Table 1. The results are broken out into pro-environmental and contra-environmental attitudes, with greater eco-friendliness being indicated by a higher mean in the first group and a lower mean in the second. Table 1 indicates that there are five out of eleven environmental statements (see Items 1,5, 8, 3 and 9) that indicate a statistically significant difference between the answers of the two groups ($P = >.05$). Among these items, the most significant differences between the groups ($P = .000$), concern pro-environmental statements regarding limitations of the Earth's resources. Another significant difference between groups ($P= .021$) falls into the contra- environmental category of humans not needing to adapt to the natural environment due to the fact that they can remake it to suit their own needs.

Mean scores indicate that MRE respondents answered more positively than the Miami respondents in every statement. An observation of the combined groups indicates a range of 50-90.9% of respondents answered true to the pro-environmental statements and 46-78.5% answered false to the contra-environmental statements. Overall, the mean attitudes are in the positive direction among the pro-environmental statements and on a 3-point scale, they fall between the undecided and true response. In the contra-environmental statements, the inverse result occurs, which also indicates a positive attitude. These responses fall between untrue and false.

Sustainability features

Table 2 displays the percentage distributions, means and p values for the sustainability features section of the survey. They include areas of Health/Quality of Life, Energy Conservation and Earth Friendliness. These responses fall between very important to not important at all within the categories of health/quality of life, energy conservation and earth friendliness. The results are shown as a combination of both survey groups since there is such a small range of variability. Passive solar energy design (P= .032) and low flow water faucets and showerheads (P= .016) were the only two features that showed a statistically significant difference.

Table 1 Adapted new ecological paradigm items – percentage distributions, means and standard deviations_(N =150)

Statement	T MIA/MRE	U MIA/MRE	F MIA/MRE	Mean MIA/MRE	SD MIA/MRE	P
<i>Pro-environmental</i>						
1. We are approaching the limit of the number of people the Earth can support.	30.9/69.7			2.03/1.39	.810/.653	.000*
2. The balance of nature is very delicate and easily upset.	71.4/81.7			1.40/1.28	.689/.637	.265
5. When humans interfere with nature it often produces disastrous results.	67.1/87.3			1.46/1.18	.716/.516	.016*
7. Humans must live in harmony with nature in order to survive.	87.5/94.4			1.21/ 1.08	.580/.368	.314
8. The earth is like a spaceship with only limited room and resources.	52.9/86.8			1.76/1.18	.883/.487	.000
10. There are limits to growth beyond which our industrialized society cannot expand.	54.5/73.5			1.61/1.32	.742/.584	.053
11. Mankind is severely abusing the environment.	78.6/92.			1.29/1.09	.593/.332	.052
<i>Contra-environmental</i>						
3. Humans have the right to modify the natural environment.			36.8/55.1	2.03/2.25	.846/.898	.047
4. Humankind was created to rule over the rest of nature.			64.3/78.9	2.43/2.66	.827/.696	.158
6. Plants and animals exist primarily to be used by humans.			67.6/80.6	2.48/2.67	.808/.712	.172
9. Humans need not adapt to the natural environment because they can remake it to suit their own needs.			68.7/88.2	2.54/2.82	.745/.517	.021*

T, true; U, undecided; F, false; D, don't know enough about; SD, standard deviation; P, P value.

Once again the mean attitudes fall in the positive direction with a very important and moderately important response on a 4-point scale. Within the 3 categories of sustainable features, the energy conservation section exhibited the highest percentage of positive responses with alternative energy sources (73.2%) and energy star appliances (73.7%). It is also worth noting that 83.8% of all responses indicated that fresh air access was the most important sustainable interior design feature to integrate into a home.

Table 2 Sustainability features - percentage distributions, means and P values (N=150)

Features	VI	MI	SI	N	Means	P
<i>Health/Quality of Life</i>						
1. Non-toxic finishes & paints	68.2	25.0	6.8	0.0	1.39	.397
2. Natural light	66.2	27.0	6.1	0.7	1.41	.134
3. Visually attractive	48.6	34.2	15.8	1.4	1.70	.974
4. Hard floor surfaces that are easy to clean and do not collect dirt, dust & allergens (wood, bamboo, cork, linoleum, etc.)	59.9	28.6	7.4	4.1	1.56	.308
5. Filters on showerheads	45.5	32.1	12.7	9.7	1.87	.750
6. Minimizing electric & magnetic fields	43.9	27.3	20.5	8.3	1.93	.298
7. Non-toxic furniture & fabrics	52.7	30.1	14.4	2.8	1.67	.247
8. Non-toxic cleaning products	66.9	21.6	10.1	1.4	1.46	.908
9. Fresh air access	83.8	11.5	3.4	1.4	1.22	.067
10. Non-toxic building materials	64.4	24.7	8.9	2.1	1.49	.373
<i>Energy conservation</i>						
1. Alternative energy sources (sun & wind power)	73.2	18.1	8.1	.7	1.36	.235
2. Passive solar energy design	69.6	23.2	7.2	0.0	1.38	.032*
3. Air tight home/quality insulation (saves on heating & cooling)	69.4	23.1	4.1	3.4	1.41	.797
4. Light sensors that turn off electric lights when not in use	48.3	35.0	9.1	7.7	1.76	.542
5. Low energy lighting fixtures	58.3	31.9	6.3	3.5	1.55	.233
6. Energy star appliances	73.7	20.3	3.8	2.3	1.35	.684
<i>Earth friendliness</i>						
1. Use furniture, fabrics, finishes with recycled material content	41.3	38.5	18.2	2.1	1.81	.114
2. Dual-flush toilets	39.8	38.2	13.8	8.1	1.90	.444
3. Hot water-on-demand systems	43.4	36.0	15.4	5.1	1.82	.371
4. Low impact building materials	53.6	34.3	9.3	2.9	1.61	.137
5. Low flow water faucets & shower heads	59.1	21.9	13.9	5.1	1.65	.016*

VI, very important; MI, moderately important; SI, somewhat important; N, not at all; P, P value

Determinants of action

Table 3 displays the percentage distributions of factors that contribute to the implementation of sustainable design into survey respondents' homes. 50.7% of MIA and 22.2% of MRE respondents indicate that the reason they have not done more is due to cost, while 24.3% of Miami and 43.3% of MRE respondents said they would be willing to spend 10% or more for sustainable products and design.

Table 3 Determinants of Action - percentage distributions (N = 150)

	MIA %	MRE %
1. The main reason I have not implemented more than the items mentioned above is:		
It costs too much money to implement	50.7*	22.2
Am currently doing some things and plan to do more	39.4	66.7*
Do not completely understand what to do or how to do it	9.9	11.1
2. If integrating green/sustainable products and design into the interior of my home is more expensive, I am willing to spend:		
5% more	25.7	17.9
10% more	40.0	37.3
More than 10%	24.3	43.3*
No more	1.0	1.5

%, percentage; MIA, miami home show respondents; MRE, Midwest regional energy show respondents

Almost half as many MIA respondents (39.4% MIA, 66.7% MRE) are currently integrating sustainable interior design features into their homes, while an average of 10% of respondents (9.9% MIA, 11.1% MRE) from both groups do not completely understand what to do or how to do it.

Table 4 Demographics of participants - percentage distribution (N=150)

	MIA	MRE
Sex:		
Male	50.0	43.7
Female	50.0	56.3
Age:		
18 - 39 years	33.3	41.4
40 - 59	50.0	55.7
Over 60	16.7	12.9
Education:		
High school or less	9.3	10.6
Some college	17.3	8.0
College degree	46.7	53.3
Grad/professional degree	25.3	24.1
N/A	1.4	4.0
Household income:		
\$40,000 and under/yr	25.8	36.3
\$41,000-\$80,000	33.8	34.9
Over \$81,000	40.4	28.8
Marital status:		
Single, separated, divorced	44.5	35.2
Married, partnership	55.5	64.8

MIA, Miami home show respondents; MRE, Midwest regional energy show respondents

Table 5 T-Test comparing factors that influence action – t-value, significance, mean difference

	T	S	MD
<i>Pro-environmental</i>			
1. We are approaching the limit of the number of people the Earth can support.	3.267	.001*	.456
2. The balance of nature is very delicate and easily upset.	.681	.497	.080
5. When humans interfere with nature it often industrialized society cannot expand	2.201	.030*	.292
11. Mankind is severely abusing the environment.	1.415	.159	.128
<i>Contra-environmental</i>			
3. Humans have the right to modify the natural environment.	-.951	.344	-.150
4. Humankind was created to rule over the rest of nature.	-3.227	.002*	-.439
6. Plants and animals exist primarily to be used by humans.	-3.104	.002*	-.413
9. Humans need not adapt to the natural environment because they can remake it to suit their needs.	-2.579	.011*	-.300
<i>Health/Quality of Life</i>			
1. Non-toxic finishes & paints	1.687	.094	.221
2. Natural light	1.576	.117	.176
3. Visually attractive	.173	.863	.025
4. Hard floor surfaces that are easy to clean and do not collect dirt, dust & allergens (wood, bamboo, cork, linoleum, etc.)	.517	.606	.073
5. Filters on showerheads	-.698	.487	-.162
6. Minimizing electric & magnetic fields	-.069	.945	-.016
7. Non-toxic furniture & fabrics	1.662	.099	.255
8. Non-toxic cleaning products	.862	.390	.120
9. Fresh air access	2.603	.010*	.257
10. Non-toxic building materials	1.807	.073	.286
<i>Energy Conservation</i>			
1. Alternative energy sources (sun & wind power)	-.633	.528	-.075
2. Passive solar energy design	-.332	.740	-.063
3. Air tight home/quality insulation (saves on heating and cooling)	-.288	.774	-.041
4. Light sensors that turn off electric lights when not in use	-.347	.729	-.068
5. Low energy lighting fixtures	-.747	.456	-.106
6. Energy star appliances	1.164	.246	.235
<i>Earth friendliness</i>			
1. Use furniture, fabrics, finishes with recycled material content	2.380	.019*	.351
2. Dual-flush toilets	.617	.538	.147
3. Hot water-on-demand systems	.393	.695	.078
4. Low impact building materials	.991	.324	.159
5. Low flow water faucets & shower heads	.092	.277	.225

T, t-value; S, significance; MD, mean difference

Factors that influence action

Table 5 displays the relationship between environmental attitudes and sustainable design features and the combined group of survey participants that took action. In Table 3, question 1, 39.4% of Miami respondents and 67.7% of MRE respondents were integrating sustainable design features and products into their home and planned to do more. The T-tests determined that there were only two

design features; *fresh air access* (.010) and *furniture, fabrics, finishes with recycled material content* (.019), that had any statistical significance.

There were 5 out of the 9 environmental attitude statements (items 1, 5, 4, 6, 9) that were significantly related to action.

CHAPTER 5. DISCUSSION AND CONCLUSIONS

Ecological and sustainable interior design attitude sections of the survey did not show great variability between groups. The respondents as a whole average more towards a pro-environmental/sustainable interior design side of the scale, with the MRE respondents answering more positively than the Miami participants in all matters relating to the environment. The responses also indicate that both groups consider sustainable interior design features to be important, with particular interest in energy conservation features. With only 10% of respondents expressing a lack of understanding and knowledge, both groups are familiar with sustainable design principles.

When it comes to taking action and integrating sustainable interior design features into the home, the MRE participants prevail, with over 50% of the MIA participants reporting that the reason they were not doing more is due to cost. Despite this cost factor, since 43.3% of MRE respondents report that they are willing to spend more than 10% on sustainable features and products, it appears as though their level of commitment is higher. Table 3 indicates that more than twice the number of the MRE attendees (66.7%) opposed to 39.4% of MRE participants are currently involved and plan on doing more.

The MRE attendants appear to have a more positive environmental attitude; their knowledge base of sustainable design features is very similar to the Miami respondents, yet only 22% are letting cost get in the way.

The researcher's conclusion is that in this particular study, environmental attitude is the factor that influences the integration of sustainable interior design features into residential settings. The independent variables of knowledge and attitudes about design features and products do not prove to be the catalysts for action.

Future research in this area could include comparing groups from similar parts of the United States, attending events of greater similarity. The Midwest Regional Energy Show is typically attended by individuals that have been deeply committed to environmental issues for many years and these attitudes may have skewed the results. Another interesting area of research could include the exploration of psycho-social influences as a determinant for pro-sustainable behavior.

REFERENCES

- ASID Website, <http://www.designwithgoodtaste.com>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. Retrieved from Science Direct.
- Barr, S., & Gilg, A. (2006). Sustainable I: Framing environmental action in and around the home lifestyles. *Geoforum*, 37, 906-920. Retrieved March 20, 2010, from www.sciencedirect.com
- Bonda, P., Sosnowchik, K. (2007). *Sustainable commercial interiors*. Jersey New: John Wiley & Sons
- Contractormag.com.(2008). Government, homeowners propel green: FMI. Retrieved September 25, 2009, from www.contractormag.com/green-contracting/government_homeowners
- De Young, R. (1989). Exploring the differences between recyclers and non-recyclers: The role of information. *Journal of Environmental Systems*, 18, 341-351. Retrieved from Sage Publications.
- Dunlap, R. E., & Van Liere, K. D. (1978). "The New Environmental Paradigm": A proposed measuring instrument and preliminary results. *Journal of Environmental Education*, 9, 10-19.
- Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the new ecological paradigm: A revised NEP scale. *Journal of Social Issues*, 56(3), 425-444.

Edgerton, E., McKechnie, J., & Dunleavy, K. (2008). Behavioral determinants of household participation in a home composting scheme. *Environment and Behavior, Environment and Behavior 2008 0: 0013916507311900*, 1-18. Retrieved March 20, 2010, from <http://eab.sagepub.com>

Foster, K., Stelmack, A., Hindman, D. (2007). *Sustainable residential interiors. New Jersey: John Wiley & Sons*

Gamba, R., & Oscamp, S. (1994). Factors influencing community residents' participation in curbside recycling programs. *Environment and Behavior, 26*, 587-612. Retrieved from Sage Publications.

Gore, A. (2006). *An Inconvenient Truth*. New York: Penguin Group

GSA (Government Services Administration) Website:

http://www.gsa.gov/graphics/pbs/Sustainability_Matters_508.pdf

Guenther, R., & Vittori, G. (2007). *Sustainable Healthcare Architecture*. New York: Wiley.

Hawken, P., Lovins, A., & Lovins, L.H. (1990). *Natural capitalism: creating the next industrial revolution*. New York: Little, Brown & Company

Heerwagon, J. H. (2000). Green Buildings, Organizational Success and Occupant Productivity. *Building Research and Information, 28*(5), special edition, 353-367.

Hobson, K. (2002). Competing discourses of sustainable consumption: Does the 'Rationalisation of Lifestyles' make sense? *Environmental Politics, 11*(2), summer, 95-120.

- Hopwood, B., Mellor, M., & O'Brien, G. (2005). Sustainable Development: Mapping Different Approaches. *Sustainable Development, 13*, 28-52.
- Hornik, J., Cherian, J., Madansky, M., & Narayana, C. (1995). Determinants of recycling behavior: A synthesis of research results. *Journal of Social Economics, 24*, 105-127. Retrieved from Sage Publications.
- Kaiser, F. G., Wolfing, S., & Fuhrer, U. (1999). Environmental Attitude and Ecological Behavior. *Journal of Environmental Psychology, 19*, 1-19.
- Kang, M., Guerin, D.A. (2009). The Characteristics of Interior Designers Who Practice Environmentally Sustainable Interior Design. *Environment and Behavior, 41*, 170 – 184.
- Knowledge, Information and Household Recycling. (2002). In P. W. Schultz (Author), *New tools for environmental protection: education, information, and voluntary measures* (pp. 67-82). Washington, DC: National Academy Press.
- Lindsay, J. J., & Strathman, A. (1997). Predictors of recycling behavior: An application of a modified health belief model. *Journal of Applied Social Psychology, 27*, 1799-1823. Retrieved from Sage Publications.
- McNaughton, P. (n.d.) , Grove-White, R., & Jacobs, M. (1995). Perceptions and Sustainability in Lancashire: Indicators, Institutions, Participation. *Perceptions and Sustainability in Lancashire: Indicators, Institutions, Participation*.
- Meyers, G., & Macnaghten, P. (1998). Rhetorics of environmental sustainability: commonplaces and places. *Environment and Planning A, 30*(2), 333-353.
- MREA (Midwest Renewal Energy Association) Website:
<https://www.midwestrenew.org>

- National Research Council (2006). Review and Assessment of the Health and Productivity Benefits of Green Schools (Rep.). Washington, DC: The National Academies Press.
- Owens, S. (2000). Engaging the Public: Information and Deliberation in Environmental Policy. *Environment and Planning A*, 32, 1141-1148. doi: 10.1068/a3330
- Pile, J.F. (2003). *Interior Design*. New Jersey: Prentice-Hall:
- Ruff, C. L., & Olson, M. A. (2009). The attitudes of interior design students towards sustainability. *International Journal of Technology and Design Education*, 19, 67-77. Retrieved from Springer Science and Business Media.
- Schultz W. (1999). Changing behavior with normative feedback interventions: A field experiment of curbside recycling. *Basic and Applied Social Psychology*, 21, 25-36.
- Stieg, C. (2006). The sustainability gap. *Journal of Interior Design*, 32(1), Vii-Xxi.
- USGBC:LEED for Homes. (n.d.). Retrieved May 05, 2010, from <http://www.usgbc.org>
- Whitmarsh, L., & O'Neill, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of Environmental Psychology*, 1-10. doi: 10.1016/j.jenvp.2010.01.0003

APPENDIX A. Additional Tables

Table 6. Variables, research questions and items on survey

<i>Variable Name</i>	<i>Research Question</i>	<i>Items on Survey</i>
Independent Variable #1: Environmental world views	What role do environmental attitudes and world views play in the integration of sustainable interior design into residential settings?	See Question 3: participants' relationship to the environment (revised NEPS survey) See Questions 4,5,6: health/quality of life, energy conservation, earth friendly features play in creating sustainable environments (levels of importance) See Question 8: Main reason for lack of implementation (do not understand how to)
Independent Variable #2: Knowledge of sustainable interior design	What is the public's understanding of sustainable interior design features?	See Question 9,10: monetary cost of implementation as a deterrent for action
Independent Variable #3: How knowledge impacts behavior	How does knowledge and perception influence behavior (the integration of sustainable interior design features into residential settings?)	See questions 4,5,6,8: Knowledge of importance, monetary cost to implement
Dependent Variable #1: The integration of sustainable interior design features into residential setting	What factors influence the integration of sustainable interior design features into residential settings?	

APPENDIX B. Survey Instrument

Survey Instrument

Dear Survey participant,

I am a design student from Iowa State University conducting a research study about **people's opinions about the integration of sustainable design features into their homes.** This survey has about 20 questions and should take 5-10 minutes to complete. Your survey answers will be confidential, with a number being the only thing identifying it. This will be whether or not the results are published.

Please feel free to skip any questions you do not want to answer.

Thanks for taking the time to participate.

Sincerely,

Stephanie Wingate

Survey

1. Sustainability and green design are concepts that involve being:

- Good for my health and quality of life.
- Good for the environment.
- Energy saving.
- All of the above.
- Not sure what it really is.

2. Factors that influence the design of my home interiors include: (please rank based on levels of importance)

- (1) Very important
- (2) Moderately important
- (3) Somewhat important
- (4) Not at all

- How it looks _____
- Practicality and function _____
- Cost _____
- Impact on health _____
- Impact on the environment _____
- Energy efficiency _____

**3. When I think about sustainability as it relates to the environment, I believe that:
(please circle appropriate answer)**

	True	Unsure	False	Don't know enough about
We are approaching the limit of the number of people the earth can support.	(1)	(2)	(3)	(4)
The balance of nature is very delicate and easily upset.	(1)	(2)	(3)	(4)
Humans have the right to modify the natural environment.	(1)	(2)	(3)	(4)
The balance of nature is very delicate and easily upset.	(1)	(2)	(3)	(4)
Humans have the right to modify the natural environment.	(1)	(2)	(3)	(4)
Humankind was created to rule over the rest of nature.	(1)	(2)	(3)	(4)
When humans interfere with nature it often produces disastrous results.	(1)	(2)	(3)	(4)
Plants and animals exist primarily to be used by humans.	(1)	(2)	(3)	(4)
Plants and animals exist primarily to be used by humans.	(1)	(2)	(3)	(4)
Humans must live in harmony with nature in order to survive.	(1)	(2)	(3)	(4)
The earth is like a spaceship with only limited room and resources.	(1)	(2)	(3)	(4)
Humans need not adapt to the environment because they can re-make it to suit their needs.	(1)	(2)	(3)	(4)
There are limits to growth beyond which our industrialized society cannot expand.	(1)	(2)	(3)	(4)
Mankind is severely abusing the environment	(1)	(2)	(3)	(4)

4. The level of importance that the following "Health & Quality of Life" features play in creating a green/sustainable home is:

	Very Important	Moderately Important	Somewhat Important	Not at all important	Not Familiar with
Non-toxic finishes & paints	(1)	(2)	(3)	(4)	(5)
Natural light	(1)	(2)	(3)	(4)	(5)
Visually attractive	(1)	(2)	(3)	(4)	(5)
Hard floor surfaces that are easy to clean and do not collect dirt, dust & allergens (wood, bamboo, cork, linoleum, etc.)	(1)	(2)	(3)	(4)	(5)
Filters on showerheads	(1)	(2)	(3)	(4)	(5)
Minimizing electric & magnetic fields.	(1)	(2)	(3)	(4)	(5)
Non-toxic furniture & fabrics.	(1)	(2)	(3)	(4)	(5)
Non-toxic cleaning products.	(1)	(2)	(3)	(4)	(5)
Fresh air access.	(1)	(2)	(3)	(4)	(5)
Non-toxic building materials	(1)	(2)	(3)	(4)	(5)

5. The level of importance that these "Energy Conservation" features play in creating a green/sustainable home is:

	Very Important	Moderately Important	Somewhat Important	Not at all important	Not Familiar with
Alternative energy sources (sun & wind power)	(1)	(2)	(3)	(4)	(5)
Passive Solar Energy design.	(1)	(2)	(3)	(4)	(5)
Air tight home/quality insulation (saves on heating & cooling).	(1)	(2)	(3)	(4)	(5)
Light sensors that turn off electric lights when not in use.	(1)	(2)	(3)	(4)	(5)
Low energy lighting fixtures.	(1)	(2)	(3)	(4)	(5)
Energy Star appliances.	(1)	(2)	(3)	(4)	(5)

6. The level of importance that "Earth Friendliness" play in creating a green/sustainable home is:

	Very Important	Moderately Important	Somewhat Important	Not at all important	Not Familiar with
Use furniture, fabrics, finishes with recycled material content.	(1)	(2)	(3)	(4)	(5)
Dual-flush toilets.	(1)	(2)	(3)	(4)	(5)
Hot water-on-demand systems.	(1)	(2)	(3)	(4)	(5)
Low impact building materials.	(1)	(2)	(3)	(4)	(5)
Low flow water faucets & shower heads.	(1)	(2)	(3)	(4)	(5)

7. Based on my understanding of sustainable practices, I am currently involved with or would consider the following design features and/or products for my home: (please write in)

8. The main reason I have not implemented more than the items mentioned above is:

- It costs too much money to implement.
 Am currently doing some things and plan to do more.
 Do not completely understand what to do or how to do it.

9. It is my understanding that when it comes to the costs involved in implementing green/sustainable features into the interior of my home: (Please check all that apply)

- It is more expensive than implementing "traditional" design features.
 The cost for the products involved are more expensive than "traditional" products.
 Since I am not sure what to do, the cost of hiring a designer or "green expert" is not an expense I am willing to incur.
 This expense would be justified since the interior of the home would be healthier and more pleasant to live in.
 If there are any higher initial costs, they would be justified since the products would be more durable and longer lasting, and would not have to be replaced as frequently.
 If I need to spend more for products that are environmentally friendly, I am willing to do so.

10. If integrating green/sustainable products and design into the interior of my home is more expensive, I am willing to spend:

- 5% more
 10% more
 More than 10%
 No more

11. President Obama has recently announced a Government Stimulus package that includes tax credits for homeowners

to integrate energy saving features into their homes: (please check all that apply)

- I am currently getting quotes to make upgrades in my home to take advantage of this.
- I'm not familiar with this and would be interested in learning more.
- I am satisfied with my home as it is and am not interested.
- I have heard about this and may use in upcoming years.

12. Are you Male or Female?

- Male
- Female

13. What is your age?

- 18-21
- 22-29
- 30-39
- 40-49
- 50-59
- Over 60

14. What is the highest level of education you have completed?

- Less than high school
- High School/GED
- Some college
- 2 year college degree (Associates)
- 4 year college degree (BA,BS)
- Master's Degree
- Doctoral Degree

15. What is your total household income?

- Less than \$20,000
- \$20,000 – 40,000
- \$41,000 – 60,000
- \$61,000 - 80,000
- \$81,000 - 100,000
- over \$100,000

16. What is your current marital status?

- Single, Never Married
- Married
- Partnership
- Separated
- Divorced

17. Do you rent or own your home?

- Rent
 Own

18. Type of home you reside in:

- Multi-dwelling (apartment, condominium, co-operative)
 Single dwelling (house)

Other _____

19. What is the approximate size?

- 300-600 square feet
 601-999 square feet
 1000-2499 square feet
 2500-4000 square feet
 over 4000 square feet
 Not sure