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IMPLEMENTING RESEARCH THROUGH
A HOLISTIC DESIGN PROCESS

by

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Implementing Research through a Holistic Design Process

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ABSTRACT

Most interior design students come from a creative background, with limited experience in writing and research. When faced with a challenge in the design process, valuable resources are not utilized. Students do not think to access them. This mind-set carries over as professionals. The research exists, but a lack of understanding prevents designers from using it. Designers must learn to use hard sources and develop their own research to legitimize the profession.

In the design profession, benefits of research are especially seen when using a holistic design process. As integrated approach, the holistic design process involves all parties related to a project. As the trend in the industry is moving toward sustainable buildings, research through a holistic design process becomes even more important. Incorporating research at this stage ensures that sustainable principles are held in a whole-building perspective.

Implementing research further produces change in the design industry. Research findings incorporated into healthcare facilities have promoted healing and efficiency. It also has transformed office settings into spaces which increase productivity and satisfaction among employees. Through applying research studies into practice, designers become a change agent in creating a better world.

INTRODUCTION

The majority of interior design students come from a creative background, with limited experience in writing and research. Interior design education is typically focused on the studio and design, and at a research university, many students do not understand that it is the faculty's job to produce research (Dickinson, 2007). When faced with a challenge in the design process, valuable resources are not utilized. This mind-set stems from the fact that good, scholarly-based research was historically limited in the design field. The Journal for Interior Design has been published three times a year since 1975 by the Interior Design Educators Council (Wiley-Blackwell, n.d.). This journal has been the main source of information to the design industry.

Though research quality has improved over the years, established educators and designers have a "widespread confusion, skepticism, and resistance to the value of" design research (Becker, 2007). David Wang, a professor at Washington State University Spokane, published an analysis of research papers from the architectural community. The majority of the research "amounted to speculative musings... without outcomes that could be documented or replicated. This sort of thing does not make for robust research" and creates confusion as to what design researchers actually do (2007).

Geboy and Keller define design research as "systematic inquiry that both creates knowledge and solves specific design problems" (2006). Research is not simply "gathering existing knowledge" but also creating knowledge through discovery (Dickinson, 2007). Wang further describes research as being "the generation of new knowledge which has application for a wide general domain, in a fashion as to be useful for multiple cases within that domain" (2007). This paper

will discuss the need for design research, the benefits of implementing research into a holistic

design process, and how designers can create change.

THE ROLE OF RESEARCH IN DESIGN

In this world of information, clients expect answers to be provided for each design decision.

Designers cannot simply "solve a problem based on trends or preference alone" (Oas, 2004).

This is where research plays a vital role in the design process. The research ability is developed

early on in a designer's education. In discussing how undergraduate interior design courses

exclude research, Kathleen Gibson, a design educator at Cornell University, states that "in

accepting prior solutions, students are not developing the critical thinking skills necessary to

analyze how their design decisions and the design decisions of others will actually influence the

world" (1994). Students are often asked to research, though the educator intends resources to be

from soft-sources, such as "trade magazines, product catalogs, [or] the Internet. ... Thus the

student – soon to be professional – comes to think of research in terms of these sources"

(Dickson, 1993). For faculty mentoring undergraduate interior design researchers, teachers must

be fully committed to the student and project. The topic must be chosen by the student, however,

to instill motivation and dedication in their research (Gibson, 1994).

Gibson recounts an encouraging experience of an undergraduate interior design researcher. After

conducting the research, the student found that she had a "new sense of pride" in interior design,

that it is not just about aesthetics. She also "redefined her prior concept of research," seeing the

work it takes and the variety of places it is found. Finally, she garnered a "new sense of

accomplishment ... causing her to consider further studies in graduate school" (1994). This is not

the standard experience for design students. Graduate studies are typically not pursued in interior design because it "is not valued by the profession... [and] is viewed... as a necessity only for university teaching." It is suggested that undergraduates should be introduced to research throughout their schooling to instill this appreciation for research into their graduate studies and profession (Dickinson, 2007). Gibson, however, argues that research should not be integrated into current design curricula as many students are not motivated or interested enough to pursue it. Small research assignments may be assigned, however, to develop knowledge on "how to define a problem, collect data, draw valid conclusions, and communicate the results" (Gibson, 1994). Regardless, these skills are necessary to be competitive in the design profession today.

Many professional designers are already familiar with qualitative research, which "typically uses observation, interviewing, and document review to collect data" (BJA, n.d.). Common examples of qualitative research in design are programming and post-occupancy evaluations (Geboy, 2006). Programming is completed at the beginning of the design process and involves "identifying and analyzing the needs and goals of the client...; evaluating existing documentation and conditions; assessing project resources and limitations; identifying life, safety and code requirements; and developing project schedules and budgets" (NCIDQ, n.d.). Once the project has been occupied, a post-occupancy evaluation is performed to "ascertain whether and how the building is meeting user's needs, with intent of improving the building" and future projects. In addition to these methods, designers rely on magazines or product information produced by the manufacturer to specify items for the job (Geboy, 2006). These methods are considered soft research and though valuable, more must be done to gather valid evidence.

Expanding the design process, designers must learn how to incorporate academic-based research.

As stated earlier, gathering information from soft sources is a valuable research technique, but

true research is extended to "careful inquiry or examination to discover new information... and

to expand and to verify existing knowledge." It must be noted that research "is one of the major

components distinguishing a profession... from a trade school vocation." Designers must take

their research further to legitimize their profession (Dickinson, 2007). This creation of new

knowledge through research "enhances your credibility as a reflective planner/designer" (Dohr,

n.d.). While built environment research is abundant, it is not always offered in a format

congruent to designers and their needs. Research is often distributed in journals and publications

meant for the researcher's specific industry. Designers either miss out on this research or it is full

of "complex and specific jargon" unfamiliar to practitioners (Oas, 2004).

Addressing this lack of understandable scholarly-based research in the design field is

InformDesign, a website which summarizes research for designers. The University of Minnesota

created the InformDesign website "to facilitate designers' use of current, research-based

information as a decision-making tool in the design process, thereby integrating research and

practice" (InformDesign, n.d., "Mission"). Taking research from all arenas which relate to the

built environment, they "attempt to bridge this gap in communication by enhancing and

deciphering key findings" (Oas, 2004). InformDesign has proven to be an invaluable resource for

design professionals.

RESEARCH THROUGH THE HOLISTC DESIGN APPROACH

In researching, designers learn how to interpret, combine, and apply what they find into their

every day practice. They develop "a mindset that acknowledges that more information... has

potential to generate plans and buildings that... work synergistically on multiple levels" (Becker, 2007). In the design profession, the benefits of research are especially seen when using a holistic design process. The holistic design process is an integrated approach, involving interior designers, architects, engineers, owners, and others. The objective is to allow each professional introduce a different perspective to the problem (Prowler, 2008). "Whole building design with the [integrated design approach] will only be successful with all aspects of the project considered" (Smith, 2008). Research is critical in this process to effectively create a synergistic building.

As the trend in the industry moves toward sustainable design, the holistic process is a very valuable approach. Sustainability was first described in 1987 by the World Commission on Environment and Development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (Kang, 2003). Buildings have been sustainable since they were first built. It was with new industrial technologies that architecture began drifting away from sustainable development. As the impacts are seen on humans and the environment, designers are moving back to ageless techniques, as well as incorporating new technologies (Stang, 2005). As the movement developed, many designers wanted to be involved and incorporated 'green' elements into their buildings, ignoring the effects on the entire building. This approach is "generally deeply flawed. ... The underlying causes of the existing environmental, health, and socio-economic problems are left intact for most cases," leaving little progress toward a sustainable society (Pereira, 2009). To reverse this lack of progress, implementing "a flexible and holistic approach that involves making careful, ecologically

conscious decisions at every point in the planning, design, and construction processes while keeping in mind that the ideal solution may not always be evident" (Stang, 2005).

Implementing research practices into the holistic design process, common research activities "include research-facilitated charettes, participatory design workshops, ... and interim assessments of project" (Geboy, 2006). Charettes can be held within an architectural firm or among the community. It is important to note that "charettes are not seminars with speakers and audiences, nor consulting activities with experts selling recommendations, but collaborative design activities relying on intensive participation, sub-group discussion, and whole-group vetting and evaluation of alternative solutions to problems" (CITS, n.d.). Participants research project components in "academic journals as well as project evaluations and best practice summaries" (Geboy, 2006). In a charette, the academic findings are brought to the table and discussed in "a focused and collaborative brainstorming session... [which] encourages an exchange of ideas and information and allows truly integrated design solutions to take form." Participants freely discuss ideas and problems involving all areas of practice. The client's interests are kept the center of the discussion, with each expert presenting the best way to meet the client's needs (Prowler, 2008).

The United States Green Building Council (USGBC) implemented LEED (Leadership in Energy and Environmental Design) as "a system to define and measure buildings." Built on a foundation of research, LEED is a "voluntary, consensus-based, market-driven building rating system based on existing proven technology." From a holistic view point, LEED measures performance over the building's entire life cycle (USGBC, 2006). Following this guide, designers are best able to

implement strategies across the board to create a sustainable building. It is no longer placing a solar panel on the roof and being done, "it is the collection and interdependence of a wide array of strategies both small and large that make the difference" (Flynn, 2004). The USGBC offers an accreditation program through the Green Building Certification Institute (GBCI) to "provide verification of individual expertise in the principles of green building design, construction, and operation" (GBCI, n.d.).

A sustainable building's "interrelationships and interdependencies with all building systems are understood, evaluated, appropriately applied, and coordinated concurrently from the planning and programming phase" (Prowler, 2008). By combining professional talents with interdisciplinary research, a building can produce many results which would have otherwise been missed. "Reducing construction costs, maintaining realistic budgets, facilitating constant communication with up-to-date information, and producing maximum efficiency are only some of the benefits" (Smith, 2008). Included in garnering these benefits are simple changes in the design to incorporating advanced technologies. A LEED Accredited Professional (LEED AP) is able to understand sustainable techniques and implement them appropriately. Simply having the LEED AP title isn't enough, however. It needs to "be [a designer's] point of departure and basic method of working." A sustainable designer must continue to increase his or her knowledge through research and become leaders in the movement for environmental change (Flynn, 2004).

RESEARCH AS A CATALYST FOR CHANGE

In taking on a design project, interior designers are often the ones carrying out a major change for the client. A structural renovation or move often involves a culture renovation as well (Duvall, 2008). Interior designers are involved in a "service- and care-oriented profession that

considers ethical choices" (Poldma, 2008). Designs are meant for the human user and care is taken to respect the human needs. When comparing architects and engineers to interior designers, Tiiu Poldma, of the University of Montreal, quotes Roberto Rengel from his *Shaping Interior Space* book as saying "the dominant trait of designers is their knowledge and ability to create designs that touch the human heart in ways that neither the engineer's design nor the builder's construction can" (2008). As research is implemented into the design practice, designer's roles shift "from an enhancer of form to an agent for social and environmental change... from an emphasis on the aesthetic to an integrative approach that includes human factors research" (Martinson, 1998). As designers seek to understand their client, they become an "initiator of issues to be researched, or they might act upon research findings that are already published" (Dohr, n.d.).

Using the healthcare industry as an example, research has been aptly included in design changes. Here, research is abundant from the intersection of science with human behaviors. Many subtle details in design can contribute to the health and welfare of individuals. These factors may not be addressed unless they are discovered through research. Findings have shown that positive health outcomes have been linked to patients with an exterior view of nature, as well as quieter surroundings. Neonatal patients and their families do best in private rooms. In other studies, generous square footage has been shown to create more satisfied patients and staff (Geboy, 2006). The facts continue. Franklin Becker of Cornell University shares that "doctors don't prescribe penicillin because they love the color pink or because no one else is doing it" (2007). Interior designers should take this to heart. Mistakes in medicine cost lives, as can poor design decisions. It is of upmost importance in the healthcare industry to reduce the risk of "infection,

falls, medication errors, and poor communication and interaction patterns" through design. Researching throughout all phases of design will create a place where healing happens faster and medical staff are more efficient (Becker, 2007).

As another example of how research has contributed to beneficial change, office design has evolved greatly over the past decade. Through "scientific research on the influence of the physical environment on human motivation, performance and job satisfaction" office plans have evolved from traditional, private offices to an open office plan. Their studies have shown that an office plan dictates culture. The placement of management, workers, and others imply importance and prestige. Studies have shown that transitioning to an open office plan increases productivity. Providing the opportunity to control one's own work area also increases moral and the perception of control. Access to daylight and exterior views, as well as task lighting and climate control through the use of raised access flooring all contribute to worker satisfaction. Research has seen that the advantages of an open office plan include "a shared organizational learning environment, social facilitation of performance, enhanced acquisition of the corporate culture, an increased opportunity for social interaction, ease of supervision and monitoring" (Brand, 2005). Through research, a positive change was implemented in the office world.

Information is abundant in all fields, and taking the time to find it will provide an opportunity to change current understanding for the better. Designers become a change agent for society. By implementing "basic change management… [designers] not only provide a value-added service, but also ensure that their interior design solutions are embraced by the occupants and considered

successful." Change management employs a plan which will "support the driving initiative" and create a smooth cultural transition (Duvall, 2008).

CONCLUSION

The interior design profession is changing. As this world continues to become interconnected through information, designers must stay informed to ensure credibility. "Firms that want to position themselves as knowledgeable practitioners... are going to have to commit significant time and resources to that effort" (Becker, 2007). The production of evidence-based design research will further legitimize the profession. Researching skills must be developed in the designers undergraduate education. Learning skills early on will instill a confidence in research that will continue on into the profession. Incorporating research into the practice is best seen in a holistic design approach, especially for sustainable designers. To implement change, designers must embrace research and become an advocate for design research.

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BIOGRAPHY

Megan Pearce, from Lindon, Utah, graduated in 2005 from Pleasant Grove High School. There she was a member of the drill team and secretary of Family, Career, and Community Leaders of America (FCCLA). She won the FCCLA regional and state competitions for an oral presentation on interior design. After graduating, she entered Utah State University as an interior design major and quickly fell in love with the program. Able to travel with the Interior Design Department to England, Scotland, Paris, and New York, Megan implemented the inspiration into her projects.

Throughout her studies, Megan applied a focus of sustainability to her projects. In December 2008, she passed the U.S. Green Building Council's LEED (Leadership in Energy an Environmental Design) exam and became a LEED Accredited Professional. Two degrees are offered through the interior design department. Megan was accepted into the studio program and will be graduating with a Bachelor of Interior Design. She pursued the second degree as well and will also receive a Bachelor of Science in Interior Design Sales and Marketing.