An Analysis on Topics of Sustainability during the Past Three Years: Reviewing Trends from Recent Conference Proceedings

JI YOUNG CHO / SO-YEON YOON / KYUNG-SOOK NAM
University of Missouri, Columbia / Hanyang University

ABSTRACT

The decade following the inception of U.S. Green Building Council (USGBC)’s the Leadership in Energy and Environmental Design (LEED) Green Building Certification System saw a substantial increase in interest in sustainable design among design practitioners, educators, and researchers. With this growing attention, we believe that it is time to review the past years’ research topics in sustainable design in order to know the current status and the seminal issues of sustainability research. Reporting on what is actually being done will speak to the main interests and focus for researchers.

Thus, the three primary purposes of this study are: (a) to review the trends of the past three years of research focusing on sustainability issues; (b) to map out the specific research areas under sustainability; and (c) to understand the background of the research trends that possibly inform us about the future direction of sustainability research.

A total 117 papers and posters, presented in Interior Design Educators Council (IDEC) annual conferences as well as Environmental Design Research Association (EDRA) annual conferences between 2007 and 2009, were assessed critically with the two perspectives- (a) the topic of the study and (b) the discipline of the study. The assessment resulted in a tabulation of all the papers and posters into total 20 topic categories, such as History, Housing, Workplace, Teaching/curriculum, etc, and four fields of study, ranging from interior design to urban development.

As a result, we found that among the 20 categories, six areas prominent in the number of presentations. The six areas are: (a) Housing, (b) Public awareness, (c) Theory, (d) Teaching/curriculum, (e) Practice, and (f) Youth education. Among the six areas, three are strongly related to education of sustainability issues: Public awareness (education of sustainability to public), Teaching/curriculum (education of sustainability for interior design or architecture major students), and Youth education (education of sustainability for youth groups).

Thus, this paper concludes that ‘Education’ and ‘Housing’ have been two seminal areas of study for the past three years in the field of interior design. One unique tendency found in this study is the lack of Public awareness and Youth education related to research in the interior design field, compared to architecture and landscape architecture. Findings and implications will result in a better understanding of the seminal issues of sustainability in the field of environmental design, and will help clarify the sustainability research realm.
NARRATIVE

INTRODUCTION
This study is an overview of a larger quest investigating the recent trends and tendencies in sustainability research. Since the inception of the U.S. Green Building Council (USGBC)'s Leadership in Energy and Environmental Design (LEED) Green Building Certification System in 1993, interest in sustainability development among design practitioners, educators, and researchers has increased. According to UN Brundtland Report, sustainable development is defined as the capacity to meet “the needs of the present without compromising the ability of future generations to meet their own needs”.

In recent years, sustainability has become a frequently discussed term in the environmental design related fields, such as interior design, architecture, landscape architecture, and urban development. We believe that it is time to examine where we stand in terms of our efforts toward sustainable design. With this study, we reviewed past studies on sustainable design in order to address the research trends in sustainability and to better understand where the research is headed.

PURPOSE
Thus, the three primary purposes of this study are: (a) to review the trends of the past three years of research focusing on sustainability issues; (b) to map out the specific research areas under sustainability; and (c) to understand the background of the trends that could possibly inform us about the future direction of sustainability research.

The findings of this study will provide a better understanding of the potentials and contributions of researchers interested in sustainable design.

METHOD
A total 1210 papers and posters were presented at the Interior Design Educators Council’s (IDEC) annual conferences as well as Environmental Design Research Association’s (EDRA) annual conferences between 2007 and 2009. Among them, 117 paper/poster presentations were related to sustainability. They were critically assessed from two perspectives – (a) the topic of the study, and (b) discipline area of the study (i.e., interior design, architecture, etc).

Table 1 shows the distribution of sustainability studies from each discipline area. The relevance of the research on sustainability was determined based upon the following three sources: (1) title of the study; (2) key words provided by the authors; and (3) the usage of such words as “sustainable, sustainability, green, energy efficiency, recycle” in the study. However, although a certain study contains “sustainability” in its key words or title, if the content does not actually deal with the sustainability issue, the study was excluded from our analysis. In addition, invited lectures and pre-conference workshops hosted by the organizations were not included in our study because such efforts were not considered voluntary. From the IDEC proceedings, paper narratives and posters were considered for analysis; from the EDRA proceedings, full papers and abstracts were considered.

In the first phase, a proportion of all the sustainability studies were examined. In the second phase, using only the sustainability studies, four distinct discipline areas and 20 categories of study topics were identified.

The four discipline areas were interior design; architecture, landscape architecture, and urban development. The 20 topic categories include History, Housing, Workplace, Teaching/curriculum, etc. Each study was categorized after carefully reviewing its abstract, purpose, and methods section. In the last phase, the unique tendency between interior design and other disciplines was examined. Table 1 demonstrates the distribution of the studies within each category.

FINDINGS AND IMPLICATIONS
Sustainability Research Proportion Out of the Entire Proceedings

The first finding recorded the percent of sustainability studies among all the presentations. During the six conferences, the overall percentage was between 4.5-13.5%, and the average was 9.7%. EDRA 2007 had the highest percentage (13.5%), which may be because the theme of the conference was “building sustainable community”. In contrast, IDEC 2008 showed the lowest percentage (4.5%).

Using the reviews of sustainability studies, we identified research themes in the following 20 categories: Teaching/curriculum, Youth education, Public awareness, Policy, Assessment, Air quality, Ethics, History, Housing,
Workplace, Corporate, Commercial, Healthcare, Lab/education facility, Method, Practice, Theory, Cost, Community, and Food.

Occurrences of 20 Categories of Research Topics

The analysis shows that there has been a broad range of sustainability research; and at the same time, it shows an inclination to certain research topics.

As seen in the table 2, among the 20 categories ranging all four disciplines, we found that six areas were prominent in the number of presentations. The six areas are: (a) Housing, (b) Public awareness, (c) Theory, (d) Teaching/curriculum, (e) Practice, and (f) Youth education. Housing, which accounts for 17.1 percent, was found to be the most frequently studied topic area. Public awareness (10.3%) and Theory (10.3%) were next, followed by Teaching/curriculum education (9.4%), Practice (8.5%), and Youth education (8.1%).

Interestingly, among the six areas, three are strongly related to education of sustainability issues. They are Public awareness (education of sustainability to public); Teaching/curriculum (education of sustainability for interior design or architecture major students); and Youth education (education of sustainability for youth groups). This education related topics occupy over 27.3% of all sustainability studies. Thus, based on this analysis, we can suggest that ‘Education (27.3%)’ and ‘Housing (17.1%)’ are currently the seminal areas of research regarding sustainability.

To illustrate, studies under the ‘Housing’ category are such as the perception and the behavior of home residents toward recycling, residents’ value to a home’s sustainability, the sustainable housing pattern, etc. ‘Public awareness’ contains research aimed at enhancing the public’s understanding of sustainability (adult level). The research includes classroom assignments covering public awareness, the use of buildings or interiors as means of developing sustainability education, and students’ intervention for sustainable behavior at the university level. ‘Youth education’ is another level of public awareness that was intended for children groups in elementary schools. A good deal of research in Youth education encouraged the awareness of sustainability through school or school grounds design. Research under ‘Teaching/curriculum’ category includes sustainability related courses and curriculum suggestions for majoring interior or architecture major students. Research under ‘Practice’ category includes research such as the case studies of sustainability applied design, usually presented by a group of practitioners and educators.

Environmentalist David Orr (1994) pointed out that current education is too focused on competitiveness for a global economy. He argues that our education system needs to include environmental education so students become more concerned about and make better efforts in developing a habitable society through responsible citizenship. When we credit Orr’s arguments, the efforts done for youth and public education carried in architecture and landscape architecture are significant, indicating that interior design researchers may need to consider them.

**DISCUSSION AND CONCLUSION**

This study identified that when it comes to sustainable issues, ‘Education’ and ‘Housing’ have been two seminal areas of study for the past three years in the field of interior design. Among many studies that addressed sustainability education, the target audience has been limited to college level interior design students.

The importance of sustainability is addressed in guidelines of the Council for Interior Design Accreditation (CIDA) and the National Council for Interior Design Qualification (NCIDQ) (http://www.accredit-id.org/Prof_Standards2009.pdf, p. II-12). As an effort to comply with what appeared to be a more specifically emphasized topic area in interior design, researchers and educators have been focusing on incorporating sustainability into
However, compared to other related disciplines, interior design tends to focus only on interior design curriculum without reaching out to education for the community or children. Since interiors are the closest environments to people and more people can immediately relate to sustainable issues concerning interiors compared to architectural or urban settings, interior design educators and researchers may hold a unique position to effectively communicate with public when disseminating their knowledge and findings for public awareness. Our analysis also demonstrated that target environments for research have been mainly within housing. No study on health care, commercial, or corporate environments has been reported. More practitioners now have experience in various types of LEED certified interior projects. Case studies on green interior design from both designers’ and clients’ perspectives can certainly contribute to broadening knowledge on sustainability applicable to the field.

Further analysis on the research approach, findings, and recommendations of previous studies over a longer period of time should provide more information useful for researchers interested in sustainable design.