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Emily Smith

University of Nebraska at Kearney

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Sustainability in Interior Design: Incorporating Economy, Equity, and Ecology into the Built Environment

Emily Smith

In today's culture sustainability has become a buzzword, especially in the design community. In the context of design, sustainability proposes to meet the needs of the current population without taking away from future generations (DiDomenica, 2010). This concept can extend further than the design world, because interior designers greatly impact the world by determining what kinds of buildings are being designed and whether or not they are truly sustainable. Sustainability has three parts that are all interconnected: ecology, economy, and equity. Ecology seeks to protect the environment and preserve it for future generations. Economy seeks to do the same thing as ecology but with consideration to money by managing resources so that the ability to support future generations is not diminished. Equity, the least understood of the triad, aims to give each person the chance to meet all of their basic human needs including finding fulfilling work, meeting personal goals, and seeking different styles of livelihood or living.

The purpose is to analyze the degree to which the three part triad of sustainability is addressed by interior designers in a two edition special volume of the *Journal of Interior Design* on sustainable design, and to propose ways in which interior designers could better address all three of the sustainability factors in design solutions. The method of analysis includes a review of articles in the *Journal of Interior Design*, Volume 37, numbers 1 and 2 on sustainable design followed by the review of three case studies to better understand how designers address design problems relative to the three factors of sustainability in design practice.

In 2012, the *Journal of Interior Design* produced two sequential special-edition volumes focused on issues of sustainability in interior design. A review of these volumes reveal that only one article out of seven in the two editions encompasses the three-fold definition of sustainability by addressing issues relative to economy, equity, and environment. In the article, *Net Zero Housing: The Architect's Small Service Bureau and Contemporary Sustainable Single-Family House Design Methods for the United States* author Lisa Tucker (2012) strives to bring sustainability to life in the interior design context. She analyzes a net-zero housing project started in 1919 by the Architects' Small Housing Service Bureau (ASHSB) that incorporates the three-fold definition of sustainability and relates it to current housing issues in the United States. The aim of the 1919 project was to increase the number of small, low-budget homes designed for Americans. The goals of architects in ASHSB included educating homeowners on how to keep their building costs low and how to select homes based on their taste and budget. (Tucker 2012)

The three-legged stool of sustainability often invoked today – economy, equity, and environment – provided the foundation for the designs produced by architect members. They felt it was their duty as trained professionals to provide a well-designed and soundly constructed affordable house for all. (Tucker 2012, 4)

The primary objective of ASHSB was to reduce the square footage of the homes so they were more affordable to build and to address issues of social equity during that time by allowing more opportunity for home ownership. Some ways that the architects decreased the square footage of the homes was by minimizing the interior circulation and maximizing the use of built-ins and closets, placing them back to back. They also customized each design to the site to take full advantage of ventilation and solar design. Out of the many homes that ASHSB designed, the bestselling home was popular because of its practicality and because it was an “economical home to build, heat, and maintain” (Tucker, 2012). The living room received light from all four sides of the room, making it a home that would cost less to light. The masonry content was reduced because of the centrally located fireplace, and the plumbing was stacked to successfully use space and materials for economical purposes. All three qualities of the homes made them less expensive to build and maintain (Tucker, 2012).

Three contributions that made ASHSB’s approach to design unique were that they forged relationships and sought partnerships with organizations, manufacturers and builders, they focused on good public relations by having a publicity campaign, and they were committed to offering the public service of good design for all. “What could be better for the U.S. housing market today than smaller well-designed and well-constructed, energy efficient homes” (Tucker, 2012). Although this project happened so many years ago and these homes are no longer being manufactured, we could learn something from the way they viewed building homes to be sustainable. This project proved that net-zero homes can be made for people even if they are not very wealthy. Designers need to be able to build to accommodate all people and be able to meet people where they are, regardless of income level.

This article was a great one, but it was the only one in the *Journal in Interior Design* special edition on sustainable design that defined sustainability with ecology, economy, and equity. Furthermore, the article was one that describes a design project that happened many years ago and is not something that is going on today which shows that the idea of sustainability having three parts to it is not new, it has just been forgotten. The other articles in the special edition only addressed ecology or economy, none of them addressed equity, a vital part of sustainability.

To continue the analysis, three case studies were examined to see ecology, economy, and equity in action in design solutions. The researcher analyzed three case studies to see how designers were taking the idea of sustainability and using it in their thinking and design process, and whether the outcomes met all three parts of the sustainability equation. The first case study examines a project called Studio H which was started by architect Emily Pilloton. Project H started in Bertie County, North Carolina, at a public high school. Bertie County is a poor county and was in need of many community buildings that would meet their needs. Studio H started as a yearlong course offered at the local high school that accepted thirteen students into the studio the first year. The purpose of Studio H is to improve the way design problem solving is approached. There are six guidelines that Studio H was built around and maintains: (1) design

through action; (2) design with, not for; (3) design systems, not stuff; (4) document, share, and measure; (5) start locally, and scale globally; and (6) build (Pilloton, 2010). These goals are brought to life through what the students accomplish in the studio.

The studio is a yearlong course. It engages high school students for three hours during the school day in a setting where they learn to design and build projects that will change their community. They start out in the fall designing, then move to engaging with the community in the spring, and then in the summer they build the prototype that they spent the past year designing. The first project that they completed was a farmer's market, which thirteen high school students designed and built on their own. Through this project the students learned what designing should look like and they successfully gave their community something that started businesses and gave people jobs, all the while giving the students a sense of pride and accomplishment (Pilloton, 2010).

The reason this project was successful, in terms of sustainable design, was because the two people who were running it really understood what the county needed and how to bring it to them without forcing something on them. The people of the community built something that they saw they needed with the guidance of mentors who could teach them the importance of good design and how to think like a designer. Studio H was meaningful because they were "designing with," not designing for, and they were "designing systems," not just stuff (Pilloton, 2010).

The second case study analyzed was Rural Studio that was started by Samuel Mockbee in 1994 in Hale County, Alabama, to give architecture students from Auburn University a more hands-on educational experience and to assist the underserved population in Hale County. The philosophy of Rural Studio is that "everyone, rich or poor, deserves the benefit of good design" (Programs) and they do this by working with the community to find a problem and then come up with a solution. Then, the next step is to fundraise, design, and then, finally, build their project. In the buildings the students design and construct, they recycle, reuse, and remake to help keep materials out of landfills and to save money by not having to purchase new materials (Programs).

The students in Rural Studio focused on what *should* be built while coming up with their projects rather than what *can* be built. The students find what should be built by assessing the community and finding needs they can meet through their design and construction. Before they actually build the projects, the students create a mock-up of the space using 1-1 scale so they know how the spaces will actually feel. They also make several different models for one project with different architectural options, such as different roof lines, so they can correctly choose which one to build based on the aesthetic appeal. The projects are not only large projects; the students also do small projects around the county like building wheelchair ramps for houses in the community.

One of the projects that the students came up with was a park with work-out equipment along the path which did not require the use of any weights and could stand up to all weather conditions. Another interesting project that the studio completed was a glass chapel that used salvaged car windows from a Chicago scrap yard. There have been countless projects that were

successful by serving the community in a way the community needed, being economically smart to build, and helping the environment by reusing, recycling, and remaking (Programs). In Rural Studio, the students are achieving sustainable design because they are designing for the real needs of the community with conservative budgets and materials that are environmentally friendly.

The third case study is a story about Chavez Ravine. Chavez Ravine was home to many Mexican Americans in Los Angeles during the mid-twentieth century. In 1951 the entire neighborhood was assigned to be a part of the National Housing Act of 1949 and all the people living there were asked to move out with the promise that they would receive the first pick of the new homes that were going to be built. The people in the ravine did not have a lot of possessions and were not part of the larger community of Los Angeles, but they were happy. They lived a different lifestyle than the rest of the city, and the housing developers did not appear to understand that, although they were poor and lived simply, they were happy with their community (Mechner, 2004).

The housing development was not actually built. What sits in the Chavez Ravine today is the Dodger's Stadium. Even if the housing development had been built, as was promised, the project was not handled with the three factors of sustainability in view. The people living in these homes did not find the idea of moving into bigger, better homes appealing in any way and wanted to keep their old homes. The people of the Chavez Ravine wanted to keep their homes because they valued the richness of the community life that they shared with their neighbors and that meant much more to them than having new homes. The project seemed like it would be helping these people, but if someone listened to the people of the Chavez Ravine, they would find out that it would not help them at all. This project was leaving out the third part of sustainability: ecology. If the designers approached the people of Chavez Ravine to find out what they really wanted out of their housing, the project would have been successful because it would be something that the community needed.

After the small community was told to move out and promised a new home, many of them still did not want to leave. They were then forced out by the Los Angeles Sheriff department. Even though this housing project looked to serve those with lower budgets, it did not actually consider those people at all. It was assumed that the people would be excited for new homes so, based on that assumption, researching the people's needs was not a consideration at all. Many people lost their homes because of this ordeal and, even if they gained enough money to pay for a new house, nothing could compare to the old Chavez Ravine and the community that they had there (Mechner, 2004).

After analyzing these three case studies, some similarities and differences became evident between them. One similarity is how Studio H and Rural Studio taught their students how to approach a design problem. For example, the first project in Studio H was the farmers market. This project was not assigned by the teacher, but rather the students assessed the community needs and determined what would benefit the community the most and, consequently, they started designing the farmers market. In Rural Studio, one successful project was a work-out

area along a popular walking trail in Hale County. They built this because the people loved the walking trail and they saw an opportunity to enhance it by giving walkers more work-out options without taking away from the walking trail. In both of these examples, the students sought out what the community could benefit from the most. Once they figured out what that was, they continued to create a design that would be economically smart to build so the community would not crumble under the cost of the project.

Another similarity between Studio H and Rural Studio was the students striving to use materials that gave back to the environment in all their projects. In a project done by students in Rural Studio, they designed a glass chapel that was used for a transportation stop, a community gathering space, a chapel for the local choir group, and a place to distribute children's summer school meals. For the glass part of the chapel, the students used salvaged car windows from a Chicago scrap yard. By doing this they saved money on glass and took away scrap from a scrap yard that was taking up room and might have just ended up in a landfill. One of the projects completed by students in Project H was a classroom that was made out of shipping containers. By doing this, they accomplished the same thing that the architecture students achieved with the glass chapel. They helped the environment by using a material that might have ended up in a landfill and saved money by choosing a more cost friendly material for their classroom.

The major difference between the two studios and the Chavez Ravine story is the way that the designers approached the problem and interacted with the final users of the space. In Studio H and Rural Studio, the students created a relationship with the users early on because they wanted to design a space that would work with the users and a space that they would be able to really appreciate. In Chavez Ravine, the designers of the homes wanted to create homes that would benefit the group of people living in the ravine and other low-budget families. They had the same initial goals that the students in Studio H and Rural Studio had, but they executed the project differently in that they did not create a relationship with the users at all. Since they did not try to understand the people that they were designing for or what they really needed, their final result ended up being a design that the people did not really want. If they had been designing with the people rather than for them, they would not have had the major problem of evicting the residents.

The outcomes of the three different case studies were very different because of the different ways they approached the design problems. For Studio H and Rural Studio, the projects were not always glamorous but they always met the needs of the community, they were possible to build because of their low cost, and they used materials that benefitted the environment. The Chavez Ravine design did not successfully meet the needs of the community or environment, although it was a low cost project. As seen from these three case studies, to successfully have a sustainable design, all three parts of the triad, ecology, economy, and equity, need to be addressed and included in the design process, not just one or two of them. Incorporating all three parts of the sustainable equation is possible if designers consider their approach to problem solving with all three factors in view.

What was found in this research was that no article in the *Journal of Interior Design* included all three aspects of the sustainability equation, except for Tucker's article on ASHB housing in the early 1900's (2012). Of the three case studies that were analyzed, Studio H and Rural Studio were very successful in teaching students how to design a space that included all three parts of sustainability: ecology, economy, and equity. The third case study did not include all three parts and therefore was not successful for the people that lived in Chavez Ravine. Interior designers need to remember that sustainability has three parts: ecology, economy, and equity, not just ecology.

It is evident from the lack of mention of the triad of sustainability in the special edition of the *Journal of Interior Design* that designers may need to reevaluate their definition of "sustainability." If interior designers do not understand the full definition of sustainability, yet label their projects as sustainable, they are doing the term an injustice as well as the consumers who blindly accept that they are sustainable. Interior designers need to look to projects such as Studio H and Rural Studio as examples that successfully consider ecology, economy, and equity throughout the design process. The results of doing this are evident through the spaces that are designed which meet a relevant community need without taking away resources from future generations of the community. If ecology, economy, and equity are all seriously considered at the very beginning of a project and carried throughout the process, then the design project has the potential to become truly sustainable.

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