

***COASTAL CAROLINA UNIVERSITY'S HABITAT FOR HUMANITY  
SUSTAINABLE BUILDING AND LIVING PROJECT: AN HONOR'S PROGRAM  
SERVICE LEARNING COURSE***

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**ABSTRACT:** In 2006, the CCU campus and Community Sustainability Initiative partnered with Habitat for Humanity in Georgetown County, SC to build the county's first high performance green house. As part of that partnership, the CCU Honors Program offered Hon 325 (Sustainable Communities), a service learning course for Honors students. Students enrolled in this course learned principles of sustainability and how our lifestyles contribute to the planetary environmental crisis. These students also developed and taught a comprehensive sustainability educational program for current and future residents of Habitat for Humanity housing. The program focused on reduction, reuse, and recycling of materials; energy and water conservation; and nutrition and fitness (due to the high chronic disease burden in the community). The students also volunteered to help build the green house. Students and their faculty advisors will discuss the course, specifically: sustainable features of the house, an overview of the curriculum, what we learned during the course and from working with Habitat residents, and what we would do differently next time the course is offered.

**Keywords:** Habitat for Humanity, service learning, sustainable living

## **Introduction**

“Because institutions of higher education should be leaders in this important movement, The Coastal Carolina University Center for Campus and Community Sustainability will do its part to ensure that every student that crosses the threshold of our institution, regardless of major, knows his/her place in the world, understands the concept of sustainability, and understands his/her responsibility to practice it,” Dan Abel, Director of the CCU Center for Campus and Community Sustainability speaking at the Center's opening ceremony. As a step towards this objective, the Coastal Carolina University (CCU) Honors Program offered HON 325 Sustainable Communities as a service learning course for Honors students in Fall 2006. This was the first sustainability course to be offered and only one of just a handful of courses at CCU that incorporates service learning within its pedagogy. Through participation in a cooperative program between Habitat for Humanity and CCU, students learned first-hand the importance of sustainable building and living, put theory to practice, and through service and reflection recognized their role as proactive citizens and stewards of the environment.

### ***Coastal Carolina University's Commitment to Sustainability***

Sustainability can be generally stated as the intersection of three interdependent philosophies: environmental protection, social development and economic justice (National Strategies for Sustainable Development, 2004). Environmental sustainability, however, requires that human activity only use natural resources at a rate which the resources can be replenished naturally. To ensure environmental sustainability, water, energy and material conservation associated with ecological design and other practices that conserve biodiversity and lessens human impact on the environment should be practiced. Therefore, green building, also known as high performance or sustainable development, is a concept that employs the ideas of environmental sustainability by designing and building structures that minimize the negative impact on the environment with choice of construction materials and moderation of their use, enhancing energy and water efficiency and creating an ecological and aesthetic balance within the developmental space (National Association of Home Builders, 2007). Green building also has the potential of addressing social development and economic justice. For example, effective green building can lead to 1) reduced operating costs by using less energy and water (economic viability), 2) improve occupant

health due to improved indoor air quality (social desirability), and 3) reduce environmental impacts (ecological sustainability). In the end, green building provides a healthier environment in which to learn, work, and live and may be integral to achieving social and economic justice through sound environmental practices.

In 2005, Coastal Carolina University established the Campus and Community Sustainability Initiative to transform CCU into an environmentally sustainable university through the practice (campus operations), education (student curriculum) and promotion (community outreach) of healthy conservation and ecological concepts. The CCU Campus and Community Sustainability Initiative ensures low environmental impact by using best management, eco-friendly practices in all areas of campus operation including but not limited to institutional planning, purchasing, maintenance, landscaping, transportation, dining, waste management, construction and renovation (Coastal Carolina University, 2007). The initiative also endorses curricular and extracurricular activities for the purposes of educating CCU students to the ideals of conservation and empowering them as stewards of the environment by incorporating sustainability into course curriculum across the disciplines and engaging students in both on and off-campus service learning opportunities (Coastal Carolina University, 2007). Lastly, the initiative reaches into surrounding communities to promote healthy environmental practices through partnerships, workshops and mentoring. Students along with CCU faculty and staff, serve as resources on sustainability to Horry and Georgetown counties in the coastal areas of South Carolina (Coastal Carolina University, 2007). Community engagement is a major emphasis of this initiative and community-campus partnerships are essential for reaching the initiative's goals.

### ***Community Outreach: Habitat for Humanity***

Recognizing the need for decent and affordable housing in Georgetown County, Coastal Carolina University's Campus and Community Sustainability Initiative sought partnership with the Georgetown County Habitat for Humanity to initiate a groundbreaking and innovative new program, the Green Building Project. Georgetown County is a rural coastal community with a population of approximately 61,000 residents (US Census Bureau, 2007) of which many live in overcrowded conditions in substandard housing. Approximately one third of all housing in Georgetown County is considered substandard with unsafe foundations, inadequate or no plumbing, heat or electricity, as well as leaking roofs (Habitat for Humanity, 2007). Fifteen percent of the population lives in poverty and lack of education limits them to low-paying jobs (US Census Bureau, 2007). Decent and affordable housing is unavailable. Therefore, Habitat for Humanity provides low income working families with the opportunity for homeownership to break their cycle of poverty so that self-sufficiency and productive citizenry is achieved.

The goal of the Green Building Project was to build a prototype low-cost, state-of-the-art, green house for a qualifying Habitat for Humanity family. Successful features of the green home would then be incorporated into subsequent local Habitat for Humanity homes. Parameters of the project included the use of building materials that could replace standard materials, were locally available and affordable, and possessed a track record of high performance. Energy efficiency, water management and indoor air quality were also considerations in the home construction. Indoor air quality was a major factor for the new homeowners because a young family member suffered from asthma. The chemicals that emanate from carpet, paint, cabinets, furniture in addition to cleaning products used throughout the house can negatively impact air quality. In fact, some chemicals that are released are extremely dangerous including formaldehyde, a carcinogen (cancer causing agent). Therefore, health should be a consideration and a positive outcome of green building because a home's construction can greatly impact the quality of life for the occupants. Ultimately, the design, construction, and operation of this affordable green home will serve as a positive example of sustainability. Its construction not only represents environmental sustainability, but also encourages social and economic justice for a family who previously suffered health, social and economic disparity.

## **The Learning Experience**

### ***Beyond the Classroom: A Service Learning Course***

HON 325 Sustainable Communities was a service learning course offered to Coastal Carolina University Honors Program students in 2006. It served as an example of curriculum designed for two purposes: 1) to educate

its enrollees to the principles of sustainable building and sustainable living and 2) provide hands-on learning through community outreach to an at-risk neighboring community.

Service learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection. The service is designed to enrich the learning experience, teach civic responsibility, and strengthen communities (National Service Learning Clearinghouse, 2007). At its core, service learning is very different from volunteerism which is service strictly intended to benefit others. The core concept of service learning combines service objectives with learning objectives so that both the recipient AND the provider of the service (learner) experience positive change as a result of the activity (National Service Learning Clearinghouse, 2007). This is achieved by applying what is learned in the classroom to community problems and reflecting on the external experience so that real objectives are achieved for the community and deeper understanding and skills are found for the learner. Service learning projects serve as curricular and extracurricular opportunities for students to engage in community outreach to develop cognitively, emotionally and socially.

The CCU/Habitat for Humanity Green Building Project provided a learning laboratory for the students. The HON 325 course in conjunction with the campus-community partnership facilitated student learning and empowerment through a cycle of instruction, meaningful service and iterative reflection by having the students a) study green concepts in and out of the classroom, b) put theory into action with their participation in the construction of a green home and their mentorship of Habitat community members on environmental responsibility and conservation, and c) provide oral and written reflection of their experiences and personal development towards their own environmental and community stewardship.

The HON 325 Sustainable Communities course presented students with learning objectives and service objectives. The course content and instruction focused primarily on the principles of sustainable design and living (learning objectives). Identifying the need and application of sustainability to a local community were the service objectives. Reflection provided students the opportunity for simultaneous learning about the community in which they live and their place in it as a responsible citizen as well as better understanding of how social and economic justice is achieved through healthy living and environmental practices. The intended community change included a healthy sustainable home for a needy family and learned skills for community residents to save personal resources (economic justice), protect the environment (environmental sustainability), and engage in healthy behaviors (social development).

### ***Students as Teachers***

To accomplish the service objectives, students participated in cooperative experiences that promoted teamwork with fellow students and community members for the purpose of achieving long-term benefits for the community: a prototype affordable and sustainable home for a needy family. Service also included collaborating with the Georgetown Habitat for Humanity Director and others to design and implement a comprehensive sustainability program for residents of the Habitat for Humanity housing. The goal was to improve the lives of the Habitat residents and make their lifestyles more sustainable. The program focused on reduction, reuse and recycling of materials; energy and water conservation; and nutrition and fitness. Other topics for program consideration were how to shop wisely, healthily and locally; reduction of household chemical use; and organic gardening.

While each student was responsible for creating a lesson on a specified topic to present to the Habitat residents, each lesson lasted approximately one half hour in duration and was structured similarly: a brief definition of the topic, its importance to protecting the environment, and tips for engaging in the specific green behavior. One lesson focused entirely on nutrition and fitness; however, healthy concepts were incorporated throughout the other lessons. Each participant attending the sustainability programs received a green freebie to encourage behavior change. Based on their specific topic, the Honors students decided what the giveaways would be. Among them were compact fluorescent lightbulbs, cloth shopping bags, homemade household cleaners, low-flow shower heads and low-flow aerators for sink faucets. The nutrition/fitness program provided footballs, Frisbees, jumprobes and other toys promoting outdoor activity.

Overall, the first-time teaching experience for these students was positive. However, these first-time teachers had their issues and lessons were learned from their experiences. Deeper understanding of the community and its residents was discovered and skills for handling uncertainty and disparities were developed. To begin, students wanted more time with the habitat residents. A half hour presentation was not enough time to engage the participants. Each student agreed that a follow-up meeting in the participants' home would be beneficial so that

individual demonstrations might be provided and to address specific questions the families may have regarding their personal homes. Secondly, more structure for completing the project was also desired. The course instructor placed relatively few conditions and restrictions on the students as to their program presentations. Therefore, lack of project guidelines proved challenging for those students who were accustomed to having grading matrices by which to accomplish class projects. This was a quick reminder that real-life experiences do not come with an instruction manual and critical thinking skills were honed as a result. Additionally, communication with an unfamiliar and dissimilar audience was demanding but rewarding. The challenge became how to create lessons for those with limited environmental literacy and low education. All agreed that it is possible to communicate with people on any level. To teach others who may have a different view on the world is significant. The experience also introduced the students to the world of non-profit organizations, their operational practices, and reliance on volunteers and community support. Specifically, they learned that families must qualify for Habitat for Humanity homes and that Habitat is a “hand-up not a hand-out.” Lastly, the students learned from each other. Presentations on topics different from their own introduced new ideas for their own environmental stewardship. Most importantly, students realized through this experience, it only takes small behavioral changes in your everyday life to have an impact on the health of the environment, on the health of an individual.

### **Sustainable Living - the Connection to Health**

Lack of physical activity, poor nutrition and tobacco smoke are the leading risk factors for most of the top ten causes of death and disability in the United States. To protect the environment is to protect one’s health. Many behaviors that conserve, reduce, recycle, and reuse can be health protecting behaviors as well, particularly as they relate to physical activity, nutrition and cigarettes. Therefore, health and sustainability are inextricably linked. A few examples of sustainable living and health promotion follow.

To conserve energy, it is important to reduce the use of electronic appliances and equipment. Turning off the television and computer not only saves energy but discourages sedentary behaviors and poor nutritional habits. Gardening and composting is a way to promote a healthy and aesthetic environment but also the activity provides healthy physical benefits achieved through physical activity. By eating organic and locally grown foods, fossil fuels associated with transportation are reduced, packaging associated with processed foods is also reduced, and overall nutrition improves. Similarly, with the elimination of sodas and fast foods from one’s diet, packaging waste is reduced, sugars and fats leading to obesity are eliminated, and the potential for drinking water, a needed nutrient, is increased. Overall, by eating healthier, weight and the potential for obesity are reduced and waste from unnecessary packaging is eliminated. Consider fast food containers. Additionally, proper portion sizes not only assist with waistline management, but also, waste management. Regarding air quality, the chemicals used in paints, furniture, carpeting, draperies, cleaners, etc can be released into the air and produce odors which compromise indoor air quality. Unclean air filters are inefficient and can circulate poor air quality leading to poor health conditions. With the addition of smoking, deadly carcinogens are circulated to all who are breathing the air. Therefore, smoking cigarettes is unhealthy for the individual who smokes, those breathing the environmental tobacco smoke and for the environment due to cigarette litter.

Compared to the rest of South Carolina, Georgetown County has a higher minority population and a higher elderly population than the state’s population for these groups (US Census Bureau, 2007). These are populations that are typically more “at-risk” than others regarding health, economic and social concerns. It is fair to say that many of Georgetown County residents suffer from health disparities. And similar to the rest of the country, in 2004, the ten leading causes of death in Georgetown County were cancer, heart disease, stroke, chronic lower respiratory issues, accidents (including fires), Alzheimer’s disease, diabetes, chronic liver disease and cirrhosis, nephritis, hypertension (SC Department of Health and Environmental Control, 2006). Most are considered life-style diseases with sedentary behaviors, poor nutrition and cigarette smoke as the primary risk factors for these conditions. Therefore, to ensure all sustainable living concepts were covered in the Green Building Education Program and to begin reducing the health disparity chasm, it was collaboratively decided that one lesson to the Habitat community must be health focused due to the high burden of chronic lifestyle diseases found in Georgetown County and among those qualifying for Habitat assistance. A lesson on nutrition and fitness was chosen and implemented. Poor health particularly among the already disadvantaged widens the economic injustices and social disparities this population may already be experiencing. Therefore, endorsing sustainability is to promote economic, social and health justice.

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