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GREEN STUDENT CENTERS' INFLUENCE ON THE CAMPUS ENVIRONMENT

by

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Approved by:

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ABSTRACT

GREEN STUDENT CENTERS' INFLUENCE ON THE CAMPUS

ENVIRONMENT

Krista L. Harrell
Old Dominion University, 2012
Director: Dr. Dana Burnett

Green building and design is an emerging trend in institutions of higher education. It is important to consider the practices and expectations of the users of green buildings. The attitudes of faculty, staff, and students play a key role in the overall successful performance of green buildings. This study offers direction for the intentional design and use of green student centers as influential facets of the total environment on college campuses. The research presents cases of how green student center design may be connected to environmental attitudes. This qualitative study examined to what degree three green student centers influence and impact the campus environment. Strange and Banning's three-dimensional matrix and a modified version of the Salter Environmental Type Assessment (SETA) Form C were used to collect data to inform this study. A collective case study analysis examined green student centers at three campuses. Individual interviews, focus groups, and document review were administered. This information may help advance green initiatives related to student-oriented operations, practices and policies, and subsequently influence universities' strategic goals, master plans, and missions.

This is dedicated to my mother Josephine, my brother Jeff, my family and close friends for your unwavering love, support and encouragement to continue to believe in myself. I

could not have accomplished what I have in life without you. I am forever grateful.

In loving honor of my father, Ronald Harrell, who inspired me to strive for excellence.

“When you get into a tight place and everything goes against you, till it seems as though you could not hold on a minute longer, never give up then, for that is just the place and

time that the tide will turn.” ~ Harriet Beecher Stowe

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TABLE OF CONTENTS

Chapter 1		1
Problem Statement		4
Definition of Terms		4
Purpose Statement and Research Questions		6
Significance of Study		7
Overview of Methodology		8
Organization of Study		9
Chapter 2		11
Sustainability		11
Higher Education and Green Design		12
Sustainability Efforts in Student Affairs		16
Student Unions and Centers		16
Green Student Centers		21
Understanding Environments		22
Summary		26
Purpose, Research Questions, and Hypotheses		28
Hypotheses		28
Chapter 3		29
Qualitative Paradigm and Tradition		29

SETA.....	31
Instrumentation.....	31
Participants.....	33
Data Sources.....	33
Qualitative Data Collection and Analysis.....	34
Potential Risks.....	37
Potential Limitations.....	38
Researcher/Research Team.....	39
Data Analysis.....	40
Summary.....	41
Chapter 4.....	43
Chapter 5.....	101
REFERENCES.....	103
Appendix A.....	111
Appendix B.....	112
Appendix C.....	114
Appendix D.....	116
Appendix E.....	117
Appendix F.....	118

Appendix G..... 125

VITA..... 126

Green Student Centers' Influence on the Campus Environment

Chapter 1

Introduction

Sustainability is currently a prominent topic both locally and globally (Dourish, 2010). Research examining the issues surrounding sustainability is still in the early stages. Literature presents slightly different definitions of the concept itself, mainly because of varying cultural interpretations. The World Commission on Environment and Development's description is "sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 8). Globally, colleges and universities have potential to be agents of change in the sustainability movement (Stephens, Hernandez, Roman, Graham & Scholz, 2008).

Successful initiatives come from goals that have "comprehensive institutional change" and where the culture values and prioritizes sustainability (Pollack, Horn, Costanza, & Sayre, 2009, p. 348). Pollack, et al. (2009) also support the notion that colleges and universities must be leaders in the sustainability movement. By the very nature of the mission of higher education to teach, exchange knowledge, conduct research, and connect with the community, colleges and universities "hold a unique position...to encourage synthesis and integration of knowledge and enhance practical application for change" (Stephens, et al., 2008, p. 319). Often regarded as the heart of campus, student centers' comprehensive operations, services, and programs are inherently able to serve as a model for sustainable initiatives as an institution (Brown & Taylor, 2012). Constantly evolving, student centers "continue to be representative of change taking place in the larger society" (Brown & Taylor, p. 55).

Green building and design is an emerging trend in institutions of higher education. Richardson and Lynes (2007) define a green building as “a building that is more energy and resource efficient, releases less pollution into the air, soil, and water, and is healthier for occupants than standard buildings (p. 340). Stevens (2008) described a green building as having a good design created through smart strategies and selection. Green buildings, also known as intelligent buildings, should meet the needs of users and effectively respond to changing demands (Everett, 2008). As major contributors to new knowledge, it is the responsibility of institutions of higher education to be leaders in green building and design innovation. The growth rate of students on campuses around the world is being met with an increase in the building and renovation of facilities. This physical expansion results in greater impacts on the environment (Richardson & Lynes, 2007). Newly constructed and renovated student centers reflect a sustainable focus and demand in the design and operations (Brown & Taylor, 2012).

It is important to consider the practices and expectations of the users of the buildings (Brown & Cole, 2009). As Cidell (2009) asserted, “there is more to green buildings than technology and economics” (p.203). The attitudes, values, and behaviors of faculty, staff, and students play a key role in the overall successful performance of green buildings (Chau, Tse, & Chung, 2010). Freshmen arrive with expectations that sustainable practices will be integrated throughout the campus, including the student union (Brown & Taylor, 2012). Little is currently known about user perceptions of green buildings (Brown, Dowlatabadi, & Cole, 2009). Perceptions and practice affect a user’s energy decisions. User behavior can be a barrier to implementing sustainable practice and policy (Brown, et al., 2009). Significant energy savings are made when user behavior is addressed (Woolliams, Lloyd, & Spengler, 2005). Incoming

students are more likely to be energy-conscious users of college unions than in the past (Hatton, Farley, Cook, and Porter, 2009).

Planners must consider how users will engage in the facilities such as green student centers, what practices are anticipated, and how the operations will be managed in the design of the buildings. Brown, et al., (2009) assert that architecture is seen as pedagogy; the building acts as an instructor to its users. This knowledge will lead to a better understanding of how the users behave and learn in the building, shaping communication regarding their actions (Brown, et al., 2009). Users can apply the knowledge when considering a student center's "environmental impact, energy use" as well as resource consumption (Hatton, Farley, Cook, and Porter, 2009, p. 21). Brown, et al. (2009) note that education and outreach connected with the building itself can be both passive (in the building design features) and active (through signage and displays). Communication to users of green student centers about the impact of practice and behavior on the campus environment is critical. A lack of knowledge or ineffective communication of goals, actions, and performance may lead to inaction, negativity, and overall disconnect with sustainable goals and initiatives.

The campus environment is, in part, understood by determining the interaction between the person and the environment, by the environmental type characteristics, and the campus design components, purpose, and impact. Salter (2003) describes the interaction between the person and the environment using "behavior as the function of interactions between personal needs and situational demands..." (p. 131). This interaction allows campus planners and designers to better understand how the presence of green student centers can relate to student environmental attitudes, behaviors, and perceptions. Illuminating the various green student center type characteristics, as well as the campus design components, purpose, and impact, gives

additional context to the true nature of the total campus environment, the influences on it, and the perceptions of it.

Problem Statement

While evidence of the benefits of green buildings for users and the environment exists, prior studies have focused more on private sector facilities, primary and secondary education buildings, and traditional higher education academic facilities (Gordon, 2010; Miller, Spivey & Florence, 2008). Traditional student centers have been linked to positive impacts on the campus environment, especially in contributions to involvement (Strange & Banning, 2001). There appears to be a lack of scholarly research that has specifically examined collegiate green student centers and their influence on the campus. Enough is not known about the connection between a user's experiences in a green student center and his or her attitudes or behavior. This exploratory qualitative study examined to what degree three green student centers' influence the campuses on which they exist.

Definition of Terms

A select group of terms related directly to the topic of green student centers was used throughout the research. Several terms are often used interchangeably but a single term was used for each concept for the purpose of this study.

- *Campus environment.* Campus environment includes the physical structures, the people, the curricula, the culture, and the climate (Astin, 1993; Schuetz, 2005).
- *Epoche.* Ongoing analytical process of becoming aware of and setting aside biases, assumptions, and personal viewpoints of the phenomenon that may influence the study (Katz, 1987; Moustakas, 1994; Patton, 2002).

- *Green.* Being green is defined as embracing environmentally conscious and socially responsible policies and practices (Pane, Haden, Oyler, & Humphreys, 2009).
- *Green building.* A green building is defined as “a building that is more energy and resource efficient, releases less pollution into the air, soil, and water, and is healthier for occupants than standard buildings (Richardson & Lynes, 2007, p. 340).
- *Green student center.* A green student center is defined as a student-oriented facility that is healthier for the environment and its occupants than a standard student center and is LEED or LEED EBOM certified, in pursuit of LEED or LEED EBOM certification, or is built to LEED standards.
- *Intelligent building.* Green buildings are also referred to as intelligent buildings (Everett, 2008).
- *Learning outcomes.* The knowledge, skills, and abilities gained from a specific educational experience (Allan, 1996; Eisner, 1979).
- *Leadership in Energy and Environmental Design (LEED).* Standards that provide links between intention and outcome for green buildings that are new constructions (Turner & Frankel, 2008).
- *Leadership in Energy and Environmental Design Existing Building Operation (LEED EBOM).* Standards that provide links between intention and outcome for existing buildings with new green elements (Turner & Frankel, 2008).
- *Sense of place.* Emotional attachment to a specific physical space (Banning, Clemons, McKelfresh, & Gibbs, 2010).

- *Student center.* A student center, also referred to as a student union, is a building dedicated to serving the interests and needs of students and may include spaces for socializing, recreation, dining, academic and student support services, programming space, venues, and retail spots (Brandes, 2006).
- *Sustainability.* Sustainability is “sustainable development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (as cited in Broussard & Bliss, 2007, p. 1).
- *Third place.* The place after home and work where a person spends regular time and enjoys for leisure, camaraderie, and community (Oldenburg, 2001; Strange & Banning, 2001).
- *User.* A user is any occupant or visitor who engages in a green student center.

Purpose Statement and Research Questions

The purpose of this qualitative, exploratory, research was to explore the degree to which green student centers influence a campus environment. It is important to understand facets of green student centers that influence the environment holistically, as it directly relates to perception of and satisfaction with the institution (Strange & Banning, 2001). Green student center designers and administrators should select strategies that incorporate building and programmatic facets that teach and model best practices of sustainability, as colleges and universities “hold a unique position...to encourage synthesis and integration of knowledge and enhance practical application for change” (Stephens, et al., 2008, p. 319). This type of learning and assessment may generate new knowledge and subsequently share values of the institution if “comprehensive institutional change” has occurred (Pollack, et al., 2009, p. 348). Institutions

with an interdisciplinary and collective approach to sustainability are often more successful engaging a wide range of the campus community in such endeavors (Pollack, et al.).

There is one main question that will shape this study:

1. How does the presence of green student centers relate to student environmental attitudes, behaviors, and perceptions?

Several secondary research questions shape the study:

2. What physical, aggregate, organizational, and constructed components are involved in green student centers environmental assessment or action?
3. What are the direct and indirect impacts of the current design of green student centers on learning, engagement, community, and the environment?
4. What is the intended purpose of green student center design?

Significance of Study

This study offers direction for the intentional planning and use of green student centers as didactic tools on college campuses. The qualitative research presents cases of how strategic building planning and design may be connected to learning. This information may help advance green initiatives related to student-oriented operations, practices and policies and subsequently influence universities' strategic goals, master plans, and missions.

The findings from this qualitative study could have considerable value for student affairs and business affairs professionals, specifically student center and facility professionals.

Currently, research on the green building movement on college campuses has not included student centers. This study may demonstrate the connection between green student center features and their impact on the campus community's appreciation for sustainability. The

research may also lead to more intentional assessment of a green student center's operational efficiency and programmatic effectiveness.

The researcher assumes the green student center cases selected for the study have sufficiently evident green design elements. Van Der Ryan and Cowan (1996) define green design as "any form of design that minimized environmentally-destructive impacts by integrating itself with living processes" (p. 18). Additionally, the researcher assumes the universities selected have delineated basic learning outcomes that can be adapted for the study as needed. Green student center users are assumed to be capable of learning through experiences in the facilities.

Delimitations of the research include the time and locations of the study as well as the study sample. Selected aspects of the problem and selected criteria of the study are also stated as delimitations. Data collection occurred in early spring 2012 and the data analysis was accomplished subsequently and concluded in the Fall of 2012.. The location of the study was the continental United States with the sample of the study including green student centers. The study analyzed demonstrated learning enhancement derived from only green student centers built to LEED standards.

Overview of Methodology

The study employed a qualitative research design, which will allow the researcher to determine themes across cases. A sequential data collection design was conducted in order to take data learned from the SETA Form C results to inform the qualitative data analysis and complete the Campus Design Matrix (Driscoll, et al., 2007; Greene, Caracelli, & Graham, 1989; Johnson & Onwuebuozie, 2004). A master table with details of the research questions and design for the study was developed (Appendix A).

The SETA was designed as a comparable environmental assessment to the Myers-Briggs Types Indicator (MBTI) (Salter, 2003). The SETA Form C data collection was administered online, targeting ACUI-member institutions with LEED certified green student centers. Qualitative data analysis followed the SETA Form C data analysis in order to inform a participant composite.

This qualitative design was conducted using the social constructivist research paradigm to determine the degree to which green student centers may influence the campus environment. The collective case study model was used in order to develop an in-depth description of the influence of the identified green student centers on the campus environment. Individual interviews and focus groups were conducted and a detailed analysis of the cases and cross-themes composed (Creswell, 2007). A research team of three people (inclusive of the primary researcher) supported the collective case study analysis for qualitative research.

Organization of Study

A review of literature follows in chapter two, the methodology for the study is described in chapter three, the references, and the appendices. The review of literature includes an introduction that serves as an overview of the organization of the chapter. Chapter two also incorporates an historical overview of the theory and research literature and the theory and research specific to the topic divided into sections that match the research questions. A review of the literature summary denotes what is known and unknown about green student centers. Finally, the contribution of the study and the added value to the field is included in chapter two.

Chapter three is a comprehensive description of the study's methodology. An introductory section overviews the organization of the chapter and is followed by a restatement

of the research questions. The research methodology and design are described as well as the variables of analysis. The population and sample are clearly defined. Chapter three also consists of the method(s) of instrumentation and the specific procedures used prior to data analysis. The data analysis steps are explained in full and the reliability and validity of the study are addressed. The chapter concludes with a methodology summary. References and appendices are the final pieces of this research-based dissertation.

Chapter 2

Literature Review

Sustainability

Sustainability is currently a prominent topic both locally and globally (Dourish, 2010). Research examining the issues surrounding sustainability is still in the early stages and presents slightly different definitions of the concept itself, mainly because of the varying cultural interpretations (Lozano, 2011). The World Commission on Environment and Development's description is "sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 8). According to Brown and Taylor (2012), sustainability involves the interaction between living things and the physical environment. Globally, colleges and universities have the potential to be agents of change in the sustainability movement by demonstrating leadership and commitment (Stephens, Hernandez, Roman, Graham & Scholz, 2008).

Successful sustainability initiatives come from goals that have "comprehensive institutional change" and where the culture values and prioritizes sustainability (Pollack, et al, 2009, p. 348). Pollack, et al. (2009) also support the notion that colleges and universities must be leaders in the sustainability movement. By the very nature of the mission of higher education to teach, exchange knowledge, conduct research, and connect with the community, colleges and universities "hold a unique position...to encourage synthesis and integration of knowledge and enhance practical application for change" (Stephens, et al., 2008, p. 319).

Green building design is an emerging trend in institutions of higher education. Richardson and Lynes (2007) define a green building as “a building that is more energy and resource efficient, releases less pollution into the air, soil, and water, and is healthier for occupants than standard buildings” (p. 340). Stevens (2008) describes a green building as having a good design created through smart strategies and selection. Green buildings, also known as intelligent buildings, should meet the needs of users and effectively respond to changing demands (Everett, 2008). As a major contributor to new knowledge, it is the responsibility of institutions of higher education to be leaders in green building design innovation. The rate of growth of the students on campuses around the world is being met with an increase in the building and renovation of facilities. In 2007, colleges and universities occupied more than five billion square feet of building space (Chapman, 2006, p. 187). This physical expansion results in greater impacts on the environment (Richardson & Lynes, 2007).

This literature review is organized as follows. First, sustainability and green design will be further defined, followed by an overview of sustainability efforts in student affairs. Next, a brief description of student centers will be given. Then, a focus on green student centers will be provided. After that, the theoretical background and research examining the effects of environmental factors on learner perceptions and behaviors will be discussed. Finally, the purpose of this study, including a rationale based on the literature review will be provided.

Higher Education and Green Design

It is important to consider the practices and expectations of the users of educational buildings during the design process (Brown & Cole, 2009). As Cidell (2009) asserted, “there is more to green buildings than technology and economics” (p.203). Further, the attitudes, values, and behaviors of faculty, staff, and students play a key role in the overall successful performance

of green buildings (Chau, Tse, & Chung, 2010). Little is currently known about user perceptions of green buildings although significant energy savings are made when user behavior is addressed (Brown, Dowlatabadi, & Cole, 2009; Woolliams, Lloyd, & Spengler, 2005). If not addressed during the design process, user behavior can be a barrier to implementing sustainable practice and policy (Brown, et al., 2009). Campus authenticity, character, and distinctiveness are all strengthened and supported by sustainable practice and policy (Chapman, 2006).

Smith (1993) highlighted the disconnection between higher education and environmental practice and policy. The crux of Smith's research focused on the environmental impacts of buildings and operations at UCLA, thrusting the green design movement into the forefront of higher education. Institutions must adopt principles of sustainability and community for the campus environment (Cortese, 2003). Colleges and universities need to realize the opportunity to demonstrate this commitment in every aspect of the environment that is occupied and affected (Chapman, 2006). "Sustainability as an educational imperative can no longer be tackled by the fragmentary, incremental manner currently undertaken" in higher education (Chapman, p. 183). The campus environment itself is an integral part of the learning experience and leads to a better understanding of the built environment. Campuses that initiate fundamental change towards a sustainable philosophy integrate it into curriculum, funding, research, operations, programs, and policy (Chapman). Higher education should seek "to discover, teach, and demonstrate" sustainable practice and serve as a model for those in and out of academia (Chapman, 2006, p. 186). Institutions are electing to develop green-building policies and procedures including criteria for selecting architectural firms. This signals an institutional commitment to comprehensive sustainability (Robertson & Kirby, 2001).

Sense of place.

Higher education should demonstrate leadership in the sustainable building design movement (Sinclair, 2009). Campus design is certainly relevant to perceptions and feelings evoked by building users. “There are genuine connections between the environments we create, the emotions we experience, and the behaviors we exhibit” (Sinclair, p. 9). An authentic campus captures the spirit of the place where it is located and is characterized by the setting, including buildings. Consequently, *place* communicates the ideals of the institution (Kenney, Dumont, & Kenney, 2005, p. 190). *Place* can be defined as a meaningful and significant space (Sinclair). Institutional facilities have special meaning and represent a specific place on campus for students (Kenney, et al.). On a college campus, a student’s *third place* is often the student center, the place of main focus after home and work in which a student feel relaxed and part of the campus community (Banning, Clemons, McKelfresh, & Gibbs, 2010). Evidence-based research on the relationship between people and place is important (Sinclair).

The physical campus can enhance student engagement. Social influences related to learning are evident in the various places where students engage – social spaces, lounges, dining areas, dedicated co-curricular spaces, and social media. Student involvement is enhanced by a space’s design and space influences learning (Kenney, Dumont, & Kenney, 2005). Student learning happens outside of the classroom more than half the time (Kenney, et al., 2005, p. 38). Learning can be supported and enhanced by using an integrated approach for educating the whole student that takes advantage of all the educational resources at an institution (Keeling, 2004). Student engagement is further encouraged by and learning is correlated with specific design factors such as a variety of learning spaces, incorporation of the outdoors in the learning environment, and bringing together the natural setting with the building (Kenney, et al.).

Campus community is formed when students, faculty, and staff identify with the institution and continue the connection after leaving (Kenney, et al., 2005). Architects, planners, and administration should support community building by providing improved spaces for students to socialize and engage (Kenney, et al). Space can strategically reflect and shape the campus culture and foster interactive learning (Chapman, 2006). Environmental stewardship on campus reinforces learning, provides cost-saving benefits, and makes institutions more competitive. Sustainability programming provides practical application of theory. Positive impacts on academic performance and well-being are evident on campuses with a sustainable focus (Kenney, et al.).

Language.

Language used to describe green design also includes sustainable design, ecological design, and green building (Wojciechowski, 2001). Intentions behind green building range from a project's environmental approach, response to demand, long-term vision, sustainable movements, and true intention to address a building's impact and minimize any impact on the total environment (Wojciechowski). Green building design includes overall building orientation, spacing, and massing as well as a sustainable approach to create long-lasting facilities (Kenney, et al., 2005). Common categories for green design include site, water, energy, interior environmental quality, materials, and waste (Wojciechowski). Intentional resource management and conservation is critical in long-term planning (Chapman, 2006). During the design phase of student union construction, campus planners and architects must "begin with the end in mind" (Steele, 2001, p. 56). Buildings should be designed with functional adaptability (Kenney, et al.). The shift to green building design has a significant positive impact on the natural environment as well as the interior environment (Chapman, 2006).

Green buildings contribute to the educational experience on campus. Institutions can integrate sustainably designed buildings into educational programming to be used for learning (Kenney, et al., 2005). A building's success is measured by how well it provides the functions it is designed for and how well it contributes to the campus life and mission. Sustainably designed buildings support institutional missions focused on educating responsible citizens and maintain consistency between curricular messages and campus priorities (Kenney, et al.). Buildings provide informal places for the campus community to interact and should be seen as an essential program element, as they foster informal learning (Kenney, et al.).

Sustainability Efforts in Student Affairs

Curricular connections.

Student engagement in sustainability-focused curricular connections emphasizes innovative course development and experiential learning. Institutions such as Ithaca College are committed to bridging undergraduate education and community involvement in support of campus-wide sustainability initiatives (Bardaglio, 2005).

Student Unions and Centers

Early period.

The student union idea developed in England in the early 19th century and is rooted in the simple notion of fusing social interaction and idea exchange (Hamilton, 2009). The Cambridge Union was founded in 1815 to “sharpen wits” of students and encourage socializing amongst the campus community (Butts, 1971, p. 1). The Union concept joined three debate groups at Cambridge (*College Unions: Fifty Facts*, 1982). The Oxford Union emerged as a debating society in the spring of 1823 with the idea of fostering free discussion. This venture took root in

the Attic Society started in 1812 (Butts, 1971). In 1857, the Oxford Union took physical shape and included features similar to modern facilities such as meeting rooms and dining facilities, as well as housing for debate society members (*College Unions: Fifty Facts*, 1982). At Cambridge, the Vice-Chancellor felt the Union hindered academic studies, so he prohibited Union activities, only to have his edict repealed less than four years later (Butts, 1971). The Unions provided public speaking experience and leadership training for future politicians in the early years at Cambridge and Oxford.

Unions also began to form in the United States during the mid to late 19th century. Harvard University had a debating union as early as 1832, existing strictly as a club until 1902 when the Harvard Union building was constructed (*College Unions: Fifty Facts*, 1982). The Harvard Union's design, as with the Ohio Union and Houston Hall, resemble men's clubs of the late 19th century and early 20th century (Szuberla, 1986). The Houston Club at the University of Pennsylvania was established to provide a common plan for students to meet for "suitable recreation" (Butts, 1971, p. 10). Further, student government in the Union concept for Houston Hall was instituted from the very beginning. Houston Hall housed the Houston Club, recreation services, religious activities, and was managed by the students (Houston Club, 1896). According to Szuberla (1986), Houston Hall was simultaneously a men's club, a memorial for fallen soldiers and veterans, and a true union. Rice Institute espoused the sentiment that Unions should be in the heart of campus and provide music, lectures, and debates (Butts, 1971). Unions were still exclusively for men, with only limited access for women, who often had a separate building with a similar intention (Szuberla, 1986). When the Michigan Union was completed in 1929, its purpose heralded a progressive social focus that would soon come to pass. The merit of unions as valuable contributors to the educational mission was more evident in the 1930's and the

buildings were becoming considered as the center of the campus community (*College Unions: Fifty Facts*, 1982).

Post-World War II.

Following the end of World War II, veterans led a massive enrollment increase at colleges and universities in the U.S. Union construction surged in an effort to meet the needs of a new generation of students (*College Unions: Fifty Facts*, 1982). The University of Wisconsin's Memorial Union goals specifically state that part of a college education is to provide common experiences and social association (Butts, 1971). Student unions developed into social-cultural centers for the entire campus community. Similarly as the years following World War I, after World War II, Union buildings were dedicated as living memorials to veterans and as a symbol of democracy (Butts, 1971; Szuberla, 1986). Purdue Memorial Union, Iowa State Memorial Union, Indiana Memorial Union, and the Wisconsin Memorial Union designs include features such as rotundas and assembly halls which honor patriotism (Szuberla, 1986).

Social connection.

Unions bring students together, allowing them to develop as leaders and citizens (Brown & Taylor, 2012). A philosophical underpinning of the union purpose is to serve as a common meeting ground to exchange ideas (Blackburn, 1988). Wisconsin Memorial Union was built to be a place where students would assume leadership and give back to the university (Butts, 1971). The union creates fellowship on the basis of service and leadership. Values and traditions such as freedom, camaraderie, and unity epitomize the fundamental union building idea (Szuberla, 1986). Unions are a part of the full education of a university and "only full living induces full learning and that full living comes only where and when there is the opportunity for...human

give and take..." (Butts, 1971, p. 19). Unions connect social, physical, and intellectual well-being. Blending opportunities for recreation, education, and interpersonal experiences, union programs and facilities provide outlets for student engagement.

Unions bring personality and humanity to an institution, and capture the values of the institution in informal relationships (Butts, 1971). Blackburn (1988) asserts that college unions are community centers that unify campus, while educating students and generating revenue. Unions recognize the importance of leisure and informal interaction, adding to the natural cultivation of student interests, strengthening the educational experience (Butts, 1971). The association outside of the classroom allows students and other community members to get to know each other in a relaxed setting (*College Unions: Fifty Facts*, 1982). Providing informal locations to meet, student unions foster and enrich a campus culture (Price, 2011). The union is a valuable component of successful student recruitment and retention (Blackburn, 1988). Butts (1971) contends that unions directly affect student retention, as many students regard the institution and the union in particular, as a home away from home. Mallinckrodt and Sedlacek (2009) suggest attendance at union programs and the use of specific union services are related to student retention. Student activities and the union function as social outlets in which students can better manage academic, mental, and emotional stresses while away from home. Union activities widen student interests and increase cultural competence, while preparing students not only to be productive leaders in society, but how to balance play with work (Butts, 1971).

Community.

Universities must face the challenge of educating good citizens through sound support of co-curricular activities. Unions are a university's community center and serve various functions on campus including leisure, administrative, and service-oriented. The union facilitates

community life and is both the organization (people, programs and services) and the building itself. Education does not solely occur in the classroom and unions play the role of the laboratory for the theories of social responsibility (Butts, 1971). Lecture, comedy, music, film, art, and community service events are typical examples of co-curricular activities taking place in a union which reflect the campus culture (Blackburn, 1988). The union and its activities give students the chance to fully live and practice curricular teachings on the road to self-discovery.

A Union is not just a building; it is the plan for the campus community life (Butts, 1971). Unions help prepare students to be well-rounded in all aspects of life –work, community, and family, and social. Therefore, a well-planned union must be designed specifically to reflect the campus needs and culture (Butts, 1971). The union atmosphere should encourage participation in activities that develop the whole-person. Union architects can intentionally draw attention to the elements of the building and programs that enhance perspective and learning while still fitting into the original purpose of the space (Butts, 1971). Creation and maintenance of an intentional space designed to foster programming and informal community gathering must be a priority (Blackburn, 1988). Union planning must address the multiple needs of the campus community and, at the same time, be flexible enough to change as needed.

The union is most successful when it is a comprehensive program with individual and group participation in activities that enhance the student experience (Butts, 1971). Blackburn (1988) notes that successful unions are able to balance business operations with educational aspects inherent in union functions. Unions create the campus life outside of the classroom where students learn by doing – managing concerts, debating politics, and making the college experience personal (Butts, 1971). “The union succeeds best – socially, financially,

ideologically – when it is conceived as genuinely the community center for all elements of the campus population” (Butts, 1971, p. 82).

Butts (1971) contends that the most appropriate name for the building is “union” and not “center” (p. 131). According to Butts, “union” has the most appropriate meaning and value, signifying the goal of oneness and bringing together diverse groups; “center” is not a substitute and implies it is only a building and not the organization (p. 131). The original college unions were first associations of campus community members, then physical structures to house the associations. Student center is a more recent name given to buildings that accommodate campus activities and services, which may or may not be established on traditional union ideals. The terms union and center will be used interchangeably for this research.

Green Student Centers

Living building.

Public and private building projects are increasingly designed and refined to conserve and generate resources, be more user-friendly, and enhance the community (Wilde, 2008). Green student centers create sustainable learning environments in which students are able to understand the impact of their decisions on the total environment. The concept of “living building” means the system operates essentially as a thriving organism (Alfieri, Damon, & Smith, 2009, p. 42). Wilde (2008) suggests living buildings should function with maximum efficiency and serve as inspiration for the community. In a living building, both the building and the users learn from each other. Disseminating education on the sustainable features informs building users of environmental impacts in real-time. At Lehman’s College, the science building’s sustainable design education includes displays of the facility’s performance as well as comprehensive

building signage (Alfieri, et al., 2009). The building's design is intended to connect scholarly inquiry with the building (Alfieri, et al., 2009). "The environmental awareness inspired by these buildings could be enough to influence individuals' everyday lifestyle decision" (Alfieri, et al., 2009, p. 48). This inspiration leads to a transformative educational experience.

Planning principles.

Knell & Latta (2006) describe three fundamental planning principles that set the design parameters for a college union. First is broad planning; the macro level signifies the relationship between the union and the university. The second level addresses the exterior and the union's connection to outdoor space and other buildings. The third level focuses on interior planning and shapes the relationships between building users and the building features and amenities. Three levels of sustainable design can be part of a project – features that do not add significant cost to a project and are part of a good design (low-flow toilet), features that add some cost to the project but improve quality (collecting rainwater for irrigation), and features that drastically increase cost and payback time but are the right thing to do (green roof) (Knell & Latta, 2006).

Understanding Environments

The campus environment plays a role in students' learning and campus environment theories must be incorporated into union building design (Knell & Latta, 2006). The building design should emphasize the relationship between the people and the physical environment. Building design must keep programming in mind in order to address the needs of the students and the spaces. The design must address who produces the programs, what the programs are, and how the programs are produced (Knell & Latta, 2006). Orr (1994) contends that buildings have an effective curriculum inherent in the design. Subsequently, unions' design and operations

have an impact on student learning in regards to environmental issues. “The design, the construction, and the operation” of buildings connect all disciplines in the educational experience (pp. 114-115).

Sustainability will necessitate a change in architectural practices (Robertson & Kirby, 2001). From an economic standpoint, the cost of operating a union could be reduced over the life of the building with a long-term, strategic investment in green design elements. Utility savings is one of the most significant cost-reduction areas, and one in which users can have a significant impact (Wojciechowski, 2001). A student union that incorporates green building design and operations contributes to new knowledge in the field, one of the hallmarks of higher education (Wojciechowski). Institutions must focus on student learning through experiential, inter-disciplinary, and co-curricular approaches. Green designed unions facilitate this type of learning.

Planners must consider how users will engage in educational facilities like green student centers, what practices are anticipated, and how the operations will be managed in the design of the buildings. As Brown, et al. (2009) assert, architecture is seen as pedagogy and the building acts as an instructor to its users. Knowledge of intended user engagement will lead to a better understanding of how the users behave and learn in the building, shaping communication regarding their actions (Brown, et al., 2009). Brown, et al. further state that education and outreach connected with the building itself can be both passive (in the building design features) and active (through signage and displays). Cooper (2006) notes that being knowledgeable about sustainability and green features is key to promoting it to the community.

Communication to users of green student centers about their practice and behavior is significant, as a lack of knowledge or ineffective communication of goals, actions, and

performance leads to inaction, negativity, and an overall disconnect with sustainable goals and initiatives. David Ward (2000) argues that higher education must connect all elements of learning including the experience, the community, and the total environment. Moos (1976) contends, “the arrangement of environments is probably the most powerful technique we have for influencing behavior . . . every institution in our society sets up conditions that it hopes will maximize certain types of behavior and certain directions of personal growth” (p. 4).

Strange and Banning (2001) shaped a framework of dimensions to assess the academic environment and understand the person-environment interaction. The four dimensions to understanding human environments include: physical environments, aggregate environments, organizational environments, and constructed environments. These concepts influence behavior, shape the environment, and create experiences (Smith, 2007). Strange and Banning (2001) also propose four conditions for successful learning: inclusion, safety, involvement, and community. Viewing a student center as another learning environment, the four conditions noted by Strange and Banning should be considered when assessing the success of the space.

Physical environments.

Students’ satisfaction with campus is tied to the physical campus environment (Strange & Banning, 2001). The totality of the campus environmental elements such as architectural features, building conditions, space arrangements, and grounds maintenance influence students’ perceptions of the institution (Strange & Banning; see also Smith, 2007). The physical environment, including buildings and building designs, conveys nonverbal messages to users (Strange & Banning; see also Smith, 2007). The physical campus environment impacts students’ behavior and can directly impact their learning and sense of belonging (Strange & Banning).

Aggregate environments.

People influence various types of environments on campuses (Smith, 2007). Aggregate environments are shaped by inhabitants' attitudes, values, and behaviors. Strange (2003) notes that "in order to understand the likely impact of an environment, knowledge of inhabitants' collective character is essential" (p. 301). Various models and theories have been examined to determine the nature of the environment based on the people in the environment (Strange & Banning, 2001). An understanding of person-environment congruence results in a comprehension of characteristics that influence students "to adapt to, leave, or try to change the environment" (Strange & Banning, p. 54). This applies not only to the general campus environment, but also more specifically to the student center environment.

Organizational Environments.

Organizations are described as "environments with a purpose" (Strange & Banning, 2001, p. 61). The need for purpose within an institution creates the need for systematic policies and practices in which accountability is essential (Smith, 2007). This structure directly relates to the campus community environment, as rewards and status systems are formed (Strange, 2003). Organizational environmental characteristics including complexity, centralization, formalization, efficiency, and morale affect the campus environment's dynamics and overall performance (Strange & Banning, 2001). The student center environment must be responsive and flexible to students' demands and needs (Strange & Banning).

Constructed environments.

The constructed environment is shaped by the "subjective views and experiences of participant observers, assuming that environments are understood best through the collective perceptions of the individuals within them" (Strange & Banning, 2001, p. 86). Based on assessment of the collective [student] perceptions, an *environmental press* may be inferred to

determine the characteristics and demands of the campus environment (Strange & Banning; Pace & Stern, 1958; Walsh, 1973). The impressions of the campus culture, environmental press, and social climate allow for the understanding of the campus environment, and therefore, may be useful in determining student center design priorities (Strange & Banning).

Strange and Banning (2001) created a three dimensional matrix to facilitate the assessment and evaluation of campus environments. The matrix focuses on the following three questions:

1. What components are involved in this particular environmental assessment or action?
2. What is the impact of the current design?
3. What is the intended focus or purpose of this design? (p. 203)

Strange & Banning (2001) contend the value of the matrix for environmental assessment is that “it requires consideration of the larger campus ecology, with reference to current impacts and intended purposes. As an evaluative tool, the use of this matrix can alert educational planners to conditions that warrant particular attention” (p. 205).

Summary

As this literature review suggests, higher education institutions have potential to be agents of change in the sustainability movement (Stephens, et al., 2008). Successful sustainability initiatives happen where the culture values and prioritizes sustainability and colleges and universities must be leaders in the sustainability movement (Pollack, et al., 2009). Language used to describe green design also includes sustainable design, ecological design, and green building (Wojciechowski, 2001). Green building design is an emerging trend in higher education, though little is currently known about user perceptions of green buildings or learning

outcomes from students engaging in the space (Brown, et al., 2009; Woolliams, et al., 2005). As Sinclair (2009) notes, “there are genuine connections between the environments we create, the emotions we experience, and the behaviors we exhibit” (p. 9). An authentic campus captures the spirit of the place where it is located and is characterized by the setting, including buildings. Consequently, *place* communicates the ideals of the institution (Kenney, et al., 2005, p. 190).

Student involvement and learning are enhanced by a space’s design (Kenney, et al., 2005). Space can strategically reflect and shape the campus culture and foster interactive learning (Chapman, 2006). Unions connect social, physical, and intellectual well-being. The union atmosphere should encourage participation in activities that develop the whole person. Union architects can intentionally draw attention to the elements of the building and programs that enhance perspective and learning, while still fitting into the original purpose of the space (Butts, 1971). Green student centers create sustainable learning environments in which students are able to understand the impact of their decisions on the total environment.

The campus environment plays a role in students’ learning. Campus environment theories must be incorporated into union building design (Knell & Latta, 2006). Sustainability will necessitate a change in architectural practices (Robertson & Kirby, 2001). Institutions must focus on student learning through experiential, inter-disciplinary, and co-curricular approaches in green student center design. The four dimension framework by Strange and Banning (2001) assesses the academic environment as physical, aggregate, organizational, and constructed. It lends understanding to the person-environment interaction. Strange and Banning’s three dimensional campus design matrix facilitates the assessment and evaluation of a campus environment using the components, impacts, and purposes of the design.

Purpose, Research Questions, and Hypotheses

There is one primary question that shapes this study:

1. How does the presence of green student centers relate to student environmental attitudes, behaviors, and perceptions?

Several secondary research questions shape the study:

2. What physical, aggregate, organizational, and constructed components are involved in green student centers environmental assessment or action?
3. What are the direct and indirect impacts of the current design of green student centers on learning, engagement, community, and the environment?
4. What is the intended purpose of green student center design?

Hypotheses

Four hypotheses provide the assumptions that are examined based on emergent themes in the study:

1. The presence of green student centers is related to students' environmental attitudes, behaviors, and perceptions.
2. Physical, Aggregate, Organizational, and Constructed components are all environmental components of concern for students.
3. The green student center is seen as having an essentially positive impact on learning, engagement, community and environment
4. Community, involvement, and inclusion are intended purposes.

Chapter 3

Methodology

Master Table

A master table was developed with detailed specifications of the qualitative design for the examination of green student centers' influence on the campus environment (Appendix A). The table included the four research questions and the four associated hypotheses. Individual interviews, focus groups, or document analysis were noted as the method for each research question. The specific instrument and protocol employed as well as the analytic procedure used were noted. Participant selection information was provided.

Qualitative Paradigm and Tradition

The qualitative research was conducted using the social constructivist research paradigm to determine the degree to which green student centers may influence and impact the campus environment. The social constructivist paradigm assumes the knowledge of reality is the construction of the consensus of "truths" (Patton, 2002). According to the theory of ontological relativity, "all tenable statements about existence depend on a worldview, and no worldview is uniquely determined by empirical...data" (Patton, p. 97). In this study, each individual user had a unique experience and therefore, the individual's context is vital to understanding the phenomena within each green student center (Patton). In support of the epistemological framework, the researcher and the participants may share perspective and construct knowledge of the understanding of green student centers.

Axiological assumptions of social constructivism state values permeate research at all levels. The researcher identifies and discusses the values of the participants, the setting, and her

own values regarding green student centers and their impact on the campus environment, in an effort to exclude potential influences on the study. Rhetorically, the roles of the researcher and the setting as well as the participants' voices are clearly and accurately communicated in the assessment of green student centers on the campus environment.

The Salter Environmental Type Assessment (SETA) Form C was used after the data collection of the study to inform a participant composite. The Campus Design Matrix was used to aid in the assessment and evaluation of campus environments (Strange and Banning, 2001).

The matrix addresses the following three questions:

1. What components are involved in this particular environmental assessment or action?
2. What is the impact of the current design?
3. What is the intended focus or purpose of this design? (p. 203)

The matrix was used concurrently with the interviews, before the SETA Form C was administered and analysis was completed. The research methodology was comprised of individual interviews and focus groups to expand on commonalities from the SETA results and is reported in detail in the voice of the participant. The Campus Design Matrix was assessed by the researcher for each green student center environment. Additionally, document analysis reviews were employed.

The collective case study model was used in order to develop an in-depth description of the influence, if any, of the identified green student centers on the campus environment. This type of study consists of multiple cases that have one clearly identified "bounded system" focus of being a green student center (Stake, 1995). The in-depth data collection is critical to develop a thorough analysis of the cases in order to inform and develop sustainable design, practice, and policy of student centers to make them more intentional and integrated facets of teaching and

learning (Creswell, 2007). The researcher will suspend assumptions by not imposing personal views about what is real regarding the participants' experiences in regard to the student centers (Creswell). The researcher composed a detailed analysis of the cases and cross-themes (Creswell). Both green buildings and traditional student centers positively impact the campus environment and shape the attitudes of the community (Chapman, 2006; Strange & Banning, 2001). The goal of the study is to provide an accurate description of the cases to gain understanding and knowledge of the degree to which green student centers impact the campus environment and how that impact influences attitudes.

SETA.

A survey based on the SETA Form C, was sent out to Association of College Unions International (ACUI)-member institutions with green student centers in April 2012. Dr. Daniel W. Salter was contacted in May 2011 and approved the use of the SETA for the research. The survey remained active online until April 25, 2012. The request specified the green student center categorical descriptor for the study. An attempt was made to have private and public four-year institutions, as well as a community college, represented in the research. All the student centers were certified or in pursuit of certification as a Leadership in Energy and Environmental Design (LEED) or LEED Existing Building Operation and Maintenance (EBOM) rated building. LEED standards provide links between intention and outcome for green buildings (Turner & Frankel, 2008).

Instrumentation.

The SETA was designed as a comparable environmental assessment to the Myers-Briggs Types Indicator (MBTI) (Salter, 2003). The MBTI is a well-recognized measure of psychological type preference and the SETA accounts for type differences based on

environmental settings (Salter). Based on the MBTI psychological type, behavioral correlates and the emerging theory of environmental types, Salter created the assessment items (Salter). The most current version, SETA Form C is a completely anonymous online assessment comprised of 100 total items divided into four sections, each directing the participant to make a choice about behavioral setting (Salter).

Administration.

The SETA Form C data collection was administered online. The survey took approximately 10–15 minutes to complete. The survey had to be completed in one sitting and could not be saved or continued at a later time. The SETA Form C data analysis followed qualitative data collection in order to deepen the understanding of themes and consistencies discovered. The study took place during the 2012 calendar year, with data collection occurring in the beginning of the spring 2012 semester and data analysis ongoing throughout the fall 2012 semester. A pilot test of the SETA was conducted to determine procedural issues, needed revisions, and usefulness as part of the methodology. The SETA Form C, adjusted specifically with the green student center as the environment to describe, is the most appropriate instrument to measure attitudes related to the campus environment.

Validity and reliability.

The validity of the SETA has been examined and has “been shown to have concurrent validity with those from recognized environmental assessments” (Salter, p. 133; Salter & Vandiver, 2002). In addition, Salter (2003) contends the environmental type theory four-factor model is the best fit for the SETA. The examination of generalizability across four main student domains – work, living, small group, and classroom – has proven encouraging (Salter, 2003).

Participants

The combination strategy allowed for flexibility and triangulation of findings from both the survey and the on-campus individual interviews and focus groups (Creswell, 2007). Intensity sampling was used to identify information-rich cases that exhibit the phenomenon intensely but not extremely (Creswell, 2007; Patton, 2002). Maximum variation was also used as a sampling strategy. Maximum variation fully describes multiple perspectives from the cases. A total sample of thirteen participants (four from the first and third institutional data collection sites and five from the second institutional data collection site) for individual interviews were selected from the three institutions. The first and third institution had four student participants and the second institution had five student participants for the interviews. Additionally, four to seven different participants were selected for a focus group at each institution. The sampling strategy aimed to include variation in participants' gender, age, academic classification, and ethnicity, which were used as covariates.

Data Sources

Data sources that were examined to determine how green student centers influence the campus environment resulted from the SETA Form C, individual interviews, focus groups, and current and archival documents such as institutional sustainability policies, and program calendars. Triangulation of multiple data sources strengthened the study (Denzin, 1978; Patton, 2002, p.247). The SETA Form C results helped describe the person-environment interaction of a student and a green student center (Salter, 2003). Individual interviews provided specific and detail-rich information of the participants' experiences engaging in a green student center. Types of experiences described are; viewing or producing visual indicators of green features that raise awareness, participating in a green-focused program or class that increases knowledge, and

taking steps to address sustainable policy or practice that prompt action and further engagement. Focus groups elicited further explanation of practices and perspectives described in the interviews. Examination of current and archival documents substantiated or refuted data collected from the other sources. This triangulation of data sources, methods, and theories corroborates evidence (Creswell, 2007).

Individual interviews used 14 research questions as part of a complete interview protocol including an introductory paragraph to the study, contact summary and demographic sheets as well as informed consent forms. Examples of the form templates are found in the appendices. Individual interviews lasted approximately 25 minutes to one hour. Following the completion of individual interviews, a focus group consisting of four to seven participants took place at each institution. The third institution was an exception, as the focus group took place before the individual interviews, due to scheduling conflicts. The focus groups followed the protocol of the individual interview, with a slight modification to the questions depending on the phenomenon observed. Examination of current and archival documents informally occurred. Document selection varied depending on availability and access at each institution. Individual interviews and focus groups were conducted in the identified educational green building at each campus when possible.

Qualitative Data Collection and Analysis

Data collection and analysis for the study followed the proposed steps for a collective case study (Creswell, 2007). This analysis attempts to explore a bounded multi-site case over a period of time to illustrate different perspectives on the experiences of the users of green student centers at higher education institutions. The data analysis was based on Stake's model of case study analysis (Stake, 1995); major categories and themes were aggregated from the data and

patterns were identified within categories. Individual case data was analyzed for patterns, and then compared across cases for common participant patterns. Analysis of the data was used to refine research questions and interview protocols for future study. The researcher holistically analyzed the detailed description of the collective case (Creswell). From the history and activities of the collective case, the researcher identified issues and common themes. Prior to launching the study, the primary researcher and the two research team members reflected individually on presuppositions and knowledge related to the research. The research team met to engage in epoche in order to begin the process of becoming aware of and setting aside biases that may influence the study (Moustakas, 1994). Epoche and bracketing of the researchers' experiences was an ongoing process during the study.

Proper Institutional Review Board approval was obtained from Old Dominion University and submitted to participating institutions for approval prior to selection of participants. Four participants were sought for individual interviews and three to eight participants for a focus group at each of the three institutions via email. The email described the study and the requirements for participation. Screening of participants then took place. Participants had to agree to have the conversation digitally recorded during the interview or focus group. The final participants for interviews and focus groups at each institution were then selected. Interviews and focus groups were scheduled and the participants were notified of pertinent details related to their involvement. Day-of solicitation for participants took place at sites two and three after cancellations from original participants. Emails were sent out to the student population and targeted emails were sent to student leaders and employees about the request for participants. Students responded with interest at both sites and were randomly selected to fill in needed interview and focus group spots.

Interview protocol.

Each individual interview and focus group participant had the protocol reviewed for them, signed an informed consent form, and completed a demographic sheet, with the exception of one focus group participant at site three who did not complete a demographic sheet. The questions for all interviews and focus groups were the same, with slight modifications when additional information was elicited and was noted in the results. Interviews and focus groups were transcribed after each were completed at each campus. Interview transcriptions were sent to participants when requested to ensure accuracy of the content and revise if necessary. Focus group transcriptions were also transcribed.

Coding.

Once the transcriptions from the individual interviews and focus groups were completed, the research team met to bracket out assumptions to identify the pure data (Patton, 2002). The team then horizontalized the data to give each equal weight, remove repetitive data, and organize into clusters (Patton). Case transcending themes were then be identified as the team integrated the textural and structural meanings of the data to get meaning of the case (Creswell, 2007; Moustakas, 1994). The research team engaged in consensus coding and the primary researcher created a codebook. The codebook was updated and revised after throughout data analysis and the final codebook applied once the data analysis was completed.

Strategies for trustworthiness.***Validity and reliability.***

Lincoln and Guba (1985) noted social constructivist research criteria include credibility, transferability, dependability, and confirmability. Patton (2002) identifies authenticity, triangulation, reflexivity, and deepened understanding as social constructivist criteria for judging

quality of qualitative research. Several validation and reliability strategies were used to strengthen the rigor of the study. A validation and trustworthiness activity was completed by the research team to assist in determining how various threats play a role in qualitative research (Hays, 2010). Five components (goals, conceptual framework, research questions, role of researcher, and methods) were examined as they relate to the study. The researcher team members discussed potential limitations that might affect the trustworthiness of the study (Hays).

Additional strategies for trustworthiness used in the study are proposed by Creswell (2007). An external auditor with no connection to the study was selected to assess accuracy. The primary researcher built trust with participants and learned the culture of the institutions. The primary researcher used triangulation of data sources to compare perspectives and triangulation of methods to verify consistency of data collections. Researcher bias was clarified through the epoche process and bracketing to attempt to eliminate influences on study interpretations. Thick descriptions were used in all methods of data collection to allow for transferability of information. Finally, transcriptions of interviews were sent to participants when requested to garner feedback on accuracy of content as part of member checking.

Potential Risks

Qualitative research poses potential risks to participants and must be minimized. This study has the following possible risks:

1. Breach of confidentiality
2. Violation of privacy
3. Validation of inappropriate or undesirable behaviors of subjects
4. Presentation of results in a way that does not respect the subjects' interests

5. Possible harm to individuals not directly involved in the research, but about whom data are obtained indirectly, or who belong to the class or group from which subjects were selected
6. Harm to subjects' dignity, self-image, or innocence as a result of indiscreet or age-inappropriate questions in an interview or questionnaire (Gallant & Bliss, 2006, p. 397-398).

Typically, the first five types of risks are minor, though attention will be paid to respect subjects' privacy and informed consent will describe the potential risks and benefits of the study.

Potential Limitations

The study had several limitations. First, there was potential that using only three colleges and universities in the collective case study may be too narrow. This was addressed by expanding the types of institutions in which engagement of users in green student centers is examined. The SETA survey had several additional limitations. The participant sample was limited to students at ACUI-member institutions with LEED certified green student centers. This may have led to a reduced number of and variation in responses. Individuals in the survey target population may not have participated due to unease or discomfort with online assessments. The researcher addressed this by sending an accompanying description of the study and the survey. The overview included contact information for both the primary researcher and the faculty member who oversaw the study.

Any preconceptions of green student centers among the primary researcher and the research team that may affect responses were neutralized. The primary researcher and research team addressed this by epoche and bracketing. The differing definitions of green student centers on each campus may have limited the shaping of consensus of language but was important for

gaining perspective of experiential knowledge. The knowledge gained during the literature review might have influenced tone and manner of question asking. The primary researcher was aware of this potential and attempted to eliminate any intentional influence. Since the study only included four or five individual interviews with students at each campus and three total focus groups, the understanding of transcending themes across the case is somewhat limited. Future research will focus on students' experiences as users of educational green buildings.

The primary researcher did not hold a role at the institutions studied and thereby did not have a legitimate role of authority nor have full rapport and trust with the community. The primary researcher spent time in the campus culture to have additional context of the environment. There were several potential limitations with individual interview and focus group participants. The sample of participants interviewed for inclusion in the study was relatively small. Efforts were made to include more diverse samples. The interview participants potentially fabricated parts of the conversation or tried to reflect a positive reply. The primary researcher conducted member-checking and reviewed the confidentiality of the interviews with all participants.

Researcher/Research Team

The primary researcher conducting the study was a Caucasian female in her early thirties and a doctoral student in the Higher Education Administration program at a public university in Norfolk, Virginia. The primary researcher had prior knowledge and experience on the topic that presented benefits in understanding the issue and reflecting the true essence of the phenomenon. The primary researcher interned at two institutions focusing on sustainability and green building initiatives. Additionally, the primary researcher participated in numerous presentations and national efforts, sponsored by professional organizations, on the topic. The primary researcher

believed that green buildings impact the campus environment. The effectiveness of buildings as influences on the campus environment has been documented (Strange & Banning; see also Smith, 2007). During the study, assumptions were identified (an epoche) and bracketed by the primary researcher.

Investigator triangulation, or the use of multiple researchers, is one of four methods of triangulation that can be used to strengthen a study (Denzin, 1978; Patton, 2002, p. 247). A research team of three people (inclusive of the primary researcher) was developed for the study based on certain criteria. The team members were selected from colleagues in higher education based on interest in supporting the study. The team had an understanding of both green design and student centers at a college or university. The required experience was to ensure the team members had a general understanding of the design elements, terminology, programming, and operations typical of these facilities. The research team experience made the study stronger and employed triangulation to help overcome bias and assumptions. The research team also bracketed existing assumptions prior to the study.

Data Analysis

Research question 1.

How does the presence of green student centers relate to student environmental attitudes, behaviors, and perceptions?

Analytic procedure.

Collective Case Study

Strange & Banning Campus Environmental Types and Impacts

Research question 2.

What physical, aggregate, organizational, and constructed components are involved in green student centers environmental assessment or action?

Analytic procedure.

Document analysis

Collective Case Study

Strange & Banning Campus Environmental Types and Impacts

Research question 3.

What are the direct and indirect impacts of the current design of green student centers on learning, engagement, community, and the environment?

Analytic procedure.

Collective Case Study

Strange & Banning Campus Environmental Types and Impacts

Research question 4.

What is the intended purpose of green student center design?

Analytic procedure.

Collective Case Study

Strange & Banning Campus Environmental Types and Impacts

Summary

The study employed a qualitative research design. The main benefit of approaching the study with a qualitative design was to determine themes across cases. A sequential data collection design was conducted in order to take data learned from the SETA Form C results to inform the qualitative data analysis and concurrently complete the Campus Design Matrix

(Driscoll, et al., 2007; Greene, Caracelli, & Graham, 1989; Johnson & Onwuebuze, 2004). A master table with details of the research questions and design for the study was developed.

The SETA was designed as a comparable environmental assessment to the Myers-Briggs Types Indicator (MBTI) (Salter, 2003). The SETA Form C data collection was administered online, targeting green student centers at ACUI-member institutions. Qualitative data collection followed the SETA Form C data analysis in order to inform any needed revision of the interview protocol. The study took place during the 2012 calendar year.

This qualitative design was conducted using the social constructivist research paradigm to determine the degree to which green student centers influence and impact the campus environment. The collective case study model was used in order to develop an in-depth description of the influence of the identified green student centers on the campus environment. Individual interviews and focus groups were conducted and a detailed analysis of the cases and cross-themes composed (Creswell, 2007). A research team of three people (inclusive of the primary researcher) was developed to support the collective case study analysis for qualitative research.

Chapter 4

Results

The results of the exploratory qualitative study examining the influence of green student centers on the campus environment are presented. SETA survey results are first presented, and then institutional, focus group participant, and individual participant profiles are stated to provide context for the results. The profiles are organized by institutional data collection site. Each site is described in a narrative with the focus group and individual interview participants detailed for each. The four research questions are answered within the framework of the emergent primary and secondary themes described.

Salter Environmental Types Assessment Survey

SETA Results

The SETA Form C data collection was administered online in April 2012, targeting ACUI-member institutions with LEED certified green student centers. The SETA survey remained active until April 25, 2012. 19 students attempted and completed the survey. The following seven participant types were reported:

- ESTJ (2)
- ENFJ (6)
- ENFP (3)
- ENTJ (1)
- ISFP (2)
- ISTP (2)
- ISTJ (3)

The results indicated that the green student center user environmental type varied. The most frequent type was ENFJ with six respondents, followed by ENFP and ISTJ with three respondents each. ESTJ, ISFP, and ISTP each had 2 respondents and ISFP had one.

Institutional, Focus Group, and Individual Profiles

Institutional 1 Profile

The first institutional data collection site was established in the late 1800's. It ranks in the top 20 among national public institutions and has a total enrollment over 55,000, with over 40,000 undergraduates. A majority of admitted first-year students graduated high school in the top 10 percent. The four-year institution has 14 colleges; awards bachelor's, master's, doctoral and professional degrees and research expenditures are in excess of \$700 million. The athletics program is self-supporting, contributing funds to institutional initiatives and academic projects.

Sustainability, diversity, and health and wellness are institutional initiatives. Student life sustainability and energy management efforts are directed by a mission, a vision, and core values. The first Union opened in the early 1900's and moved to new building with equal access to men and women in the 1950's. The current Union was completed within the last four years and was designated as a LEED Silver Certified Green Building from the U.S. Green Building Council (USGBC). The Union LEED features and sustainable guidelines aim to reduce the impact on the total environment.

Focus Group 1

Focus group 1 was facilitated in a lower level meeting room from 2:03p.m. to 3:04p.m. on the only day of data collection at the site. The room had two doors and a large window, making the lounge/reception area visible during the interview. There was little student traffic on

the floor, with most students studying in the area outside of the meeting room. Participants sat at a round table next to each other and engaged in small talk while signing forms prior to the start of the focus group. Introduction of the study started the focus group and was followed with protocol questions and dialogue. The total running time of the focus group was 61 minutes.

The group was comprised of four undergraduate students - three female, one male, and all Caucasian. The students ranged from 20 to 23 in age. Three participants lived on-campus, one lived off-campus, two were seniors, one was a junior, and one was a sophomore. All four focus group 1 participants were actively involved in the discussion.

Individual 1:1

Individual interview 1:1 was conducted at 9:03a.m. in same meeting room in the Union as focus group 1. The interview started late and had a running time of 35 minutes. The participant was a Caucasian male, 23 years in age. He was a senior graduating in May and an off-campus student.

There were three main themes in the interview. Participant 1:1 described a positive experience in the Union. He was knowledgeable about green initiatives and sustainability and able to articulate his definitions and perceptions of each. The participant made connections between green features in the Union and their effects on his own practice and other students' practices. All the interview questions were addressed and no other questions arose during the interview, except to clarify original questions. No unusual phrases or terms came up during the discussion. Interview 1:1 supported the four study hypotheses and also suggested more intentional connections are needed between green elements and student learning.

Individual 1:2

Individual interview 1:2 was also facilitated in same meeting room in the Union as focus group 1. Other students were outside of the room studying in the lounge when the participant arrived. The interview started nearly 10 minutes late at 10:08a.m. and had a running time of 32 minutes. Participant 1:2 was an on-campus student. He was a Caucasian male and 22 years old. He was also a senior graduating in May.

Several main themes emerged during the interview. Participant 1:2 was well-informed about the LEED, green, and sustainable elements and initiatives in the Union and in general. He stated he had not been significantly impacted by the green features of the Union, as he felt there were missed opportunities to connect to students. The participant had ideas to connect the Union green features to student learning.

The interview focused mainly on four interview questions (7, 9, 10, and 13). Six other interview questions arose during the interview:

- What other student organizations are you involved with?
- How so?
- What ideas or examples?
- How come?
- Anything else about learning? and
- What are you thinking and why is it important?

The interview supported the four study hypotheses and suggested missed opportunities connecting the physical space with the green message. The term “siting” came up during the interview to describe the selection of physical site location of a building.

Individual 1:3

Individual interview 1:3 was again facilitated in the lower level meeting room in the Union. Groups of students were informally meeting in the lounge area outside the room when the participant arrived. The interview started 8 minutes late at 12:08p.m. and had a longer running time of 51 minutes. Participant 1:4 walked in the room at the end of the interview. Participant 1:3 was a Caucasian female living on-campus. She was 21 years old and also a senior graduating in May.

One major theme emerged during the interview. The participant thought the Union should have more visible information detailing the green features of the building. No significant additional questions arose and the four study hypotheses were supported. There were no unusual or unknown phrases or terms that came up during the interview.

Individual 1:4

Individual interview 1:4 was conducted in same meeting room in the Union as all of the interviews at the site. Students continued to gather outside of the room in the lounge. Participant 1:4 arrived at the end of the previous interview. The interview started close to the scheduled time of 1:00p.m. and had a running time of 28 minutes. Participant 1:4 was a commuter student. She identified as a Russian - Caucasian female. The participant was 22 years old and an off-campus senior graduating in May.

Two main themes emerged during the interview. Participant 1:4 was extremely knowledgeable of the LEED process, green design, and sustainability philosophy. She articulated that the Union green features need to be more visible. No further questions, hypotheses, or unknown terms arose during the interview. Several interview questions had to be rephrased to clarify meaning for the participant.

Institutional 2 Profile

The second institutional data collection site was established in the early 1930's. It ranks in the top 75 among public institutions for best value and has a total enrollment over 15,000, with nearly 9,000 undergraduates. Almost 1,400 students live on campus and the majority of students identify as Caucasian. The four-year institution has 12 schools; awards bachelor's, master's, doctoral and professional degrees and has a faculty to student ratio of one faculty member to every 12 students. The institution was one of three in the U.S. recognized with the *President's Award for Community Service in Higher Education*.

Sustainability, diversity, and equity are institutional initiatives. The institution was named in the top 50 U.S. green campuses by *Sierra Club*. The original Union opened in the early 1960's when the student population was 3,600. The current Union was completed within the last two years and was designated as a LEED Gold Certified Green Building from the U.S. Green Building Council (USGBC). Sustainability was reflected in the most recent Union mission statement.

Focus Group 2

Focus group 2 was facilitated in a conference-style meeting room on the fourth floor of the Union from 10:10a.m. to about 11:10a.m. on the second day of data collection at the site. The room had one doors and a window and was located at the end of a long hallway. There was no student traffic on the floor. Participants arrived within a few minutes of each other and sat a long conference table next to each other. They engaged in small talk while signing forms and waiting for the last participants to arrive to begin the focus group. Introduction of the study started the focus group and was followed with protocol questions and dialogue. The total running time of the focus group was approximately 60 minutes.

The focus group was comprised of five undergraduate students - two female, three male, one African-American, and four Caucasian. The students ranged from 20 to 24 years old. Three participants lived off-campus, two lived on-campus, two were seniors, two were juniors, and one was unclassified. All five focus group 2 participants were actively involved in the discussion.

Three main themes or issues emerged from the interview. It is not enough just to say the Union is green. More active, hands-on outreach is needed to educate on the green Union features. A majority of the students at the institution do not know about the Union or campus green initiatives or accomplishments. The discussion focused mostly on interview question five and seven through fourteen. Four other questions arose during the interview:

- Do you see this as a learning environment?
- How would you like to know?
- What are ideas for more something more tangible? and
- Consistency is [seen as] an issue across campus?

The study hypotheses were supported and participants suggested students must play a role in influencing the green student union environment. Question six did not elicit significant dialogue, as it was somewhat redundant to topics already discussed. No unknown terms came up during the focus group.

Individual 2:1

Individual interview 2:1 was facilitated in a student involvement area conference room on the third floor in the Union. There was some activity in the student organization center and office outside of the room when the participant arrived. The interview started as scheduled at 2:00p.m. and had a running time of 35 minutes. Participant 2:1 was a junior living on-campus.

The female participant identified as African American and Native American. She was 21 years old.

Two main themes emerged from the interview. Participant 2:1 was not aware of most of the LEED, green, and sustainable elements and initiatives in the Union and in general. She stated there needed to be more education and signage on the sustainable features of the Union.

The interview focused primarily on questions seven through fourteen. Eight additional questions arose during interview 2:1:

- What do you see as energy efficient?
- What is the MindBody Connection?
- Anything else?
- What do you mean by accessibility?
- Would you associate that with a green building?
- Would you be more specific?
- Any questions I did not ask but should have? and
- Has this conversation made you think about this building being green?

The interview supported the four study hypotheses. Participant 2 also suggested that students who do not see or are not exposed to [green] Union outreach, education, or programs do not consciously realize how the green features affect them, even though they are affected. The phrase “MindBody Connection” came up during the interview to describe the collaborative area in the student success center. The Connection space opened to assist students in stress management and enhance personal development.

Individual 2:2

Individual interview 2:2 was again facilitated in student involvement area conference room on the third floor in the Union. There was little activity in the student organization center and office outside of the room during the interview. The interview started at 3:05p.m. and had a running time of 38 minutes. Participant 2:2 was a graduate student living on-campus. The male participant identified as a Turkish international student. He was 30 years in age.

Several themes emerged from the interview. Participant 2:2 did not know about the LEED, green, and sustainable elements and initiatives in the Union. The Union positively adds to campus and provides numerous spaces for students. He stated that he appreciated the institution was doing something for sustainability. The interview focused primarily on questions 10 through 14. Four other questions arose during interview 2:2:

- Do you do any of those things here?
- How could they use that event to increase knowledge?
- What else about the design of the bookstore and the space is useful? and
- Any questions I did not ask but should have?

The interview supported the four study hypotheses. No additional hypotheses or unknown terms came up during the interview.

Individual 2:3

Individual interview 2:3 was held in a student involvement area conference room on the third floor in the Union. Several students and staff members were working in the student organization center and office outside of the room at the time of the interview. The interview started at 4:05p.m. and had a running time of approximately 40 minutes. Participant 2:3 was a

graduate student living off-campus. The female participant identified as Caucasian and was 29 years old.

Three main themes emerged from the interview. The Union is a place to come, have fun, disconnect, and recharge. The Union being green and LEED certified is a benefit to campus. The Union needs to do more outreach about green features and initiatives. All interview questions were well discussed. One other question arose during interview 2:3: (a) What else makes it green? The interview supported the four study hypotheses and suggested that the new Union created a buzz. No unknown terms came up during the interview.

Individual 2:4

Individual interview 2:4 was also facilitated in a student involvement area conference room on the third floor of the Union. There were students and staff members working in the student organization center and office outside of the room when the participant first arrived. The interview started at 6:11 p.m. and had a running time of 21 minutes. Participant 2:4 was a graduate student living on-campus. The female participant identified as a Turkish international student. She was 25 years old.

Three themes emerged from the interview. Nature and an environment that incorporates nature are related to green initiatives. Emails and other methods should be used to increase outreach. Cultural space in a Union is important to students, especially international students. All the interview questions were discussed to some degree. Five additional questions arose during interview 2:4 to clarify or elicit further detail:

- What kind of advertisement?
- Do you mean for green features?

- Are you talking about cultural groups?
- What would that do? and
- How is that important?

The interview supported the four study hypotheses and suggested that international students have a different concept of sustainability and green. No unknown terms or phrases came up during the interview.

Individual 2:5

Individual interview 2:5 was conducted in the same conference meeting room on the fourth floor of the Union as was the focus group. The interview took place during the afternoon of the second day of data collection at the site. There was little activity near the room except those going to a nearby office. The interview started as scheduled at 1:00p.m. and had a running time of 40 minutes. Participant 2:5 was a senior student living off-campus. The male participant identified as Caucasian and was 24 years old.

Four themes emerged from the interview. Institutions cannot “greenwash” when garnering support for sustainable initiatives. The main focus of the Union project was the intentional building design and the use of natural light. Making community connections with the Union, specifically with the green features, must be done. Most students were not aware of the green and LEED elements of the Union. The interview mainly focused questions seven through fourteen. Six other questions arose during interview 2:5 to clarify or elicit further detail:

- Did you do that inside or outside?
- Where [exactly]?
- [Have you] taken advantage of that?

- What components carry that on?
- Was it nice to show it off? and
- Why is it too hard?

The interview supported the study hypotheses and suggested students with academic majors related to sustainability and architectural design were more aware of green building features and those features resonated more than with other students. Two unknown phrases came up during the interview: ground trump and greenwashing. Ground trump referred to the hill the Union building was built into. Greenwashing was explained as potentially deceptive green marketing used to promote the perception that practices and policies are sustainable.

Institutional 3 Profile

The third institutional data collection site was established in the late 1960's as part of the state community college system. It ranks in the top 5 among community colleges for technology delivery and had a total enrollment over 45,000. The student population is diverse in age, race, and ethnicity. The institution generated over 3,000 jobs and has a regional economic impact in the hundreds of millions of dollars.

Institutional-wide energy conservation policies and procedures have been established and all buildings must meet the state requirement for building to LEED Silver standards. The Center was completed within the last two years and was designated as a LEED Silver Certified Green Building from the U.S. Green Building Council (USGBC). The Center is the first stand-alone student center at a community college in the state.

Focus Group 3

Focus group 3 was facilitated in an open multipurpose meeting space at 2:00pm on the first day of data collection at the site. The room had no doors and the partition was open, making the lounge area visible during the interview. There was steady student traffic on the floor, with most students informally meeting near the space. Participants sat at a long table next to each other and engaged in small talk while signing forms prior to the start of the focus group. Introduction of the study started the focus group and was followed with protocol questions and dialogue. There were several interruptions due to the openness of the space and one late participant. The total running time of the focus group was one hour and 19 minutes.

The group was comprised of seven students - one female and seven males. The group was the most diverse of the three focus groups. The students ranged from 19 to 31 years old. The participant identified as African American (two), White, European, Pacific Islander, and Hispanic/White. One participant did not identify race/ethnicity. Two participants were first-year students, four were returning students, and one did not identify classification. Six focus group 3 participants were involved in the discussion. One participant joined the group late and rarely participated.

Individual 3:1

Individual interview 3:1 was conducted in the participant's work office in the veteran's office on the first floor of the building across the street from the Center. The office was a shared space but the other staff member was not present. There was heavy activity in the main veteran's office outside of the room while with the participant. The interview started at 9:00a.m. and had a running time of 24 minutes. Participant 3:1 was a veteran, a student leader, and held a part-time on-campus job. The male participant identified as Black. He was a second year student and 32 years in age.

Several themes emerged from the interview. Participant 3:1 was knowledgeable about the LEED, green, and sustainable elements and initiatives in the Center. He attributed the knowledge to his student leader role. The Center provided opportunities for students to connect. He stated he was more aware of his personal actions and the effects of those actions on the environments after being in the Center. The institution lacked outreach and education Center green initiatives. All interview questions were addressed and no other questions arose during the interview. The interview supported the study hypotheses and suggested students at the institution passively care about green issues versus actively care or not caring at all. No unknown terms came up during the interview.

Individual 3:2

Individual interview 3:2 was conducted in a partitioned meeting space on the fifth floor of the Center on the second day of data collection at the site. The space had dim lighting and the door to get in went through a different part of the multipurpose space. There was some activity in the lounge area outside of the room while with the participant. The interview started at 10:00a.m. and had a running time of 20 minutes. Participant 3:2 was in his third semester at the institution. The male participant identified as Black. He was 28 years old.

Two themes emerged from the interview. The Center was a safe, clean, non-judgmental place for students to come together. He stated he lacked information about the Center's green initiatives. Interview questions seven, nine, and thirteen were discussed the most and no other questions arose during interview. The interview supported the study hypotheses that a clean, comfortable environment makes students feel at home. One unknown term came up during the interview. "SAAB" was an acronym for the Students African American Brotherhood student organization.

Individual 3:3

Individual interview 3:3 was also conducted in a partitioned meeting space on the fifth floor of the Center on the second day of data collection at the site. The space had dim lighting and the door to get in went through a different part of the multipurpose space. As more classes let out, there was heavier activity in the lounge area outside of the room when the participant arrived. The interview started early at 10:48a.m. and had a running time of 22 minutes.

Participant 3:3 was a 22 year old male who identified as White.

Two themes emerged from the interview. The Center building design was important to students. It was also clear that the Center was a place for connections and discourse amongst students. One interview question was asked but the participant did not answer immediately; he addressed his answer later in the discussion. The interview supported the study hypotheses and no other hypotheses were suggested. No unknown terms or phrases came up during the interview.

Individual 3:4

Individual interview 3:4 occurred on the second day of data collection at the site and was the last data collection for the study. The interview also was conducted in a partitioned meeting space on the fifth floor of the Center. The space lighting was dim and the entrance to the room was not directly from the hallway. Student activity was steady in the lounge area outside of the room when the participant arrived. The interview started early at 12pm and had a running time of 23 minutes. Participant 3:4 was a male first-semester student. He identified as White and was 27 years old.

Four themes emerged from the interview. Participant 3:4 was knowledgeable of the Center's LEED design and the green features. The Center made the institution feel more like a campus. Student organizations gathered in the Center and built community. Sustainable efforts at the institution, such as the green Center, were a positive step in the right direction. One additional question arose during the interview: (a) what about it makes it fantastic? The interview supported the four study hypotheses and no other hypotheses were suggested. No unknown terms or phrases came up during the interview.

Institutional and Participant Summary

The three institutional data collection sites were shared commonalities and had significant distinctions. Each site had a LEED certified student center that was built or renovated within the last four years. All three institutions were public; two were four-year institutions and one was a two-year college. Two institutions had student enrollments over 45,000 and two granted doctoral and professional degrees. The establishment of the student centers on the campuses was during the late 1800's, the early 1930's, the 2010's, respectively. One site had a green roof terrace. Sustainability tours were facilitated at one site. One center had recreational facilities in the building. The three institutions have existing green policies and practices and two sites have green student center policies and practices in place. Each institution touted the green student center as a campus showpiece.

The 29 participants in the 13 individual interviews and the three focus groups were diverse overall. There were 19 men and 10 women, with one participant only reporting gender for demographics. Nine students lived on-campus in residence halls or graduate housing and 19 lived off-campus. Participant ages ranged from 18 to 32. Academic classification included first-

year, sophomore, junior, senior, graduate, and returning students. One participant identified as a veteran.

Numerous races and ethnicities were represented in the participant group. The majority of students identified as Caucasian/White (16) and five students identified as African American/Black. Two participants identified as Multiracial; one identified as African American/Native American and one identified as Hispanic/White. Three participants identified as International; one identified as Russian/Caucasian and two identified as Turkish. One student identified as Pacific Islander, one identified as European, and one did not identify.

How does the presence of green student centers relate to student environmental attitudes, behaviors, and perceptions?

Several major and secondary themes emerged that provided further understanding of a green student center's presence and the relation to student environmental attitudes, behaviors, and perceptions during the interviews. Students' concepts and understanding of green and LEED initiatives provided framework for being able to self-identify possible relationships between a green student center and attitudes, behaviors, and perceptions. Communication shared regarding a green student center's design, features, and programs seemed to relate to students' attitudes and perceptions. Participants expressed that student behavior, practices, and attitudes were positively influenced by the green student center. Participants explained that the presence of and engagement in green student centers influenced student environmental attitudes and behaviors. Specifically, they noted aesthetics and sustainable design positively influence student perception and use of green student centers. Participants suggested advertisement and education for the green student center features were missing.

Broad Green Concept

Participants conveyed important concepts regarding sustainability, LEED, and green initiatives. A general understanding of broad green concepts varied by a participant's personal experience, institution, and academic discipline. Participants' concepts of green language and LEED initiatives provided framework for being able to self-identify possible relationships between a green student center and personal environmental attitudes, behaviors, and perceptions. Participant 2:5 said, "if you understand it, and you practice it."

Communication, Education, Perception, Outreach, and Raising Awareness

Poor communication leads to lack of knowledge.

Communication shared regarding a green student center and ways to engage the community, increase awareness of initiatives, and who is involved seemed to be related to students' attitudes and perceptions. Participants described communication as poor and ineffective – which left many students with a lack knowledge about green student center features and efforts. Participant 1:3 shared, "...have minimal information that is visible...[I] don't know how effective it is." Poor communication was described as leading to a lack of knowledge and awareness about green features and initiatives. A focus group 3 participant explained, "I didn't really know this was a green building or how it was a green building." The lack of knowledge seemed to negatively affect a student's concept of the presence of a green student center to environmental attitudes. Participant 3:2 said, "Folks need to understand [the green student center] more and when they understand it more they will appreciate it more."

Positive feedback of influence.

Participants described student behavior, practices, and attitudes were positively influenced by the presence of a green student center. Participant 2:2 explained, "...before I did not think much about sustainability but after the design, after coming here and seeing...the

building...I understood someone is trying to do something...They changed my attitude towards sustainability.” Specific elements and projects in a green student center appeared to relate to participants’ environmental attitudes and behaviors. Participant 1:2 reflected this idea:

[The] importance is that it changed the environment...society [is] driven by...peoples’ everyday behaviors so being aware of the impactful things and the good decisions and good operations going on around them are very important. It is an opportunity to have people re-evaluate what they do, the impact they have. So showing you, ‘here at the union we don’t do this’, fill in the blank, ‘because it wastes that’. People can take that message away and go, ‘oh wow, I didn’t even really think of the impact that I was making every day in a similar situation.’

Visual communication.

Participants explained that visually communicated benefits and information of green student centers facilitated change in awareness and perception. One participant shared an example related to this concept:

Even walking around the building, if you could visually [see]...here are a bunch of benches and I see a bunch of benches but these are benches that are [made] from such and such, so they are good in this way. I think then people would have some...awareness of the benefits of this kind of building.

Participant 1:3 supported a similar opinion that visual marketing, elements, and design influence environmental attitudes, perceptions, and behaviors, “I think it works well to have visual things to look at and have something they can visually see their own impact on the environment or to visually see which types of the buildings fit into LEED certification.”

Nearly all participants stated that advertisement, marketing, and education of green design, initiatives, and impact are missing. Participant 3:1 said:

“To my knowledge, there hasn’t been any sort of marketing being done. If you ask about it, people will tell you, but no one has talked about the environmentally friendly features in the building. There has been no discussion on that, no education on it. So, I think that would be the first thing, is starting a marketing drive to get some of those features out. Some of them are obvious, the lights and the toilets. You will pick up on those. But there needs to be more education as to what the green features of the building are.”

The participants also expressed the need for visible elements of green features in action. A focus group 2 participant shared:

“...if you did put them on the building and they were visible it would be a way to...walk up and see, right off the bat, that this is a more energy efficient building. And it would be, like, you wouldn’t need any additional information; you would just see it and...connect the two. So if it’s something that’s more blunt green features, I think students would then find out about the smaller things, because they saw the big thing, and be, ‘oh, what else do they do in this building?’”

Events and Active Programs Increase Awareness.

Throughout the interviews, participants noted that events and active programs increase awareness of green student center features and initiatives. The participants suggest that active engagement facilitates a connection between a green student center and student perceptions.

Participant 1:1 explained the benefits of, “...having more events...here in the Union for people to realize that it is a green building.” Several participants mentioned tours could highlight green

features and produce a relationship between a green student center and student environmental perceptions. Participant 2:1 gave a specific example for a tour:

“We can do tours of the building for new students, because I’m sure that if you haven’t been in here and it’s your first time walking around, you don’t think anything of [the green elements] unless someone tells you, ‘we put in new light bulbs’. It would be kind of nice to have night tours...of the building to show things off. Night tours because the lights come on by themselves. It’s just little things spark your interest like, ‘Oh, I didn’t know they did that here. We have these kinds of amenities’.”

Overall, participants shared that more activities are needed promoting green elements and ideas should be considered, as participant 2:5 posed, “...what other activities could take place in this building?”

Engagement In and Influence of Student Center

Participants articulated that student behavior, practices, and attitudes were positively influenced by the green student center. Important features of green student centers were noted as contributing to the participants’ environmental awareness. Specifically, participants described green student centers’ influence student practice, behavior, perception, competency, and awareness of, but they are not limited to, sustainable elements and initiatives. Participant 1:1 noted, “Being engaged with this building has helped me to become more green,” and further stated “Being...at the Union...has...changed me.” These experiences in a green student center were shared in further detail, such as with participant 3:1:

“It has made me a lot more cognizant of what I am doing not just here, but at home.

Whereas at home, I would normally just turn on the water to brush my teeth or wash my face and let it run. I noticed that I’ve begun to stop doing that. I’ve become a lot more

cognizant of the effects that one individual can have on the environment just from being in a building where you are limited in how much resources you can use, how many paper towels you can grab at one time. After a while it does begin to sink in and become part of your permanent behavior.”

Issues of Uncertainty, Skepticism, Negative Opinions, and Areas for Improvement

Although participants described that green student centers had a relationship to students’ environmental attitudes, behaviors, and perceptions, some issues and obstacles were identified. Participants acknowledged negative perceptions of green and the potential to view green as a time-limited trend. A focus group 2 participant stated, “I think we get lost in parsing out what’s green and what’s not green. I think that word is...overused...It’s on everything now...it’s the new hype word.” Participants noted that in some instances, efforts are perceived as expensive in the short-term, especially when there is lack of knowledge. A focus group 1 participant spoke of students’ opinions and shared, “I know people who think this is just a big waste of money [and say] ‘I don’t understand why we’re doing this’...” Personal benefit over being sustainable also emerged as an obstacle to the presence of a green student center being related to students’ environmental perceptions. Focus group 1 participant stated, “I think a lot of people would view it as, ‘I’m not paying for it because it doesn’t really affect me personally’, especially a lot of students...on a budget...”

Summary

There were four main themes and four secondary themes associated with the presence of green student centers and the relationship to students’ environmental attitudes, behaviors, and perceptions. The emergent themes supported the hypothesis that the presence of green student centers is related to students’ environmental attitudes, behaviors, and perceptions. Participants’

green and LEED concepts provided support for self-identification of relationships between a green student center and personal environmental attitudes, behaviors, and perceptions.

Communication shared regarding a green student center appeared to be related to students' attitudes and perceptions.

Participants described the presence of green student centers as a positive influence on student behavior, practices, and attitudes. Participants stated the changes in their awareness and perception were facilitated by visually communicated benefits and information of green student centers. Increased awareness of green student center features and initiatives occurred when there are green events and active programs. Participants articulated a positive influence of a green student center on student behavior, practices, and attitudes. Participants described issues and obstacles to students' perceptions that a green student centers' presence was related to their environmental attitudes.

What physical, aggregate, organizational, and constructed components are involved in green student centers' environmental assessment or action?

Five major and several secondary themes emerged that provided further understanding of the physical, aggregate, organizational, and constructed components that are environmental components of concern. Participants described broad green concepts and perceptions of green student centers elements, such as energy efficiency, repurposing of materials, recycling, lighting, and food sources. The need for more green details and challenges of LEED were communicated and participants suggested that LEED is not understood by everyone. LEED building practices were described positively by participants. A green student center was described as providing space for engagement and that the green features are important and positive. Inconsistent green

language and missed opportunities were identified as possible obstacles to recognition of green student center components.

Broad Green Concept

When participants described broad green concepts and perceptions of green student centers elements, they spoke of components including energy efficient operations, the repurposing of materials, recycling, various lighting features, and food processes. Participant 2:3 expressed, "...I know it's very efficient. There are recycling bins everywhere, those are very visible." Additional components were noted by participant 1:2, "...they reused a lot of materials from the previous building; flooring, fire place things of that nature. There are also a lot of light sensors too." Participants described legitimate sustainable efforts that involved the long term health of environment, perspective, effort, and investment. A focus group 1 participant explained that green is, "...taking a long term perspective and doing the smartest things possible..."

Recycling, natural light, LED lighting, light sensors, local and sustainable sourced foods, composting, and water and resource conservation were mentioned as hallmark components of a green student center. Participant 1:1 shared this perspective and described in detail:

"...everything from not using potable water outside of the Union. A lot of...plants are designed to not even need water in the first place. And, as I mentioned before, these [digital] screens. So, there's no paper flyers allowed in the Union anymore. Everything has been digitalized. LED lights. There's a recycling and trash options...they're side by side, where we find one we find the other. The carpet. A lot of the carpet...contains at least 25% recycled material. So, parts of the old Union building were actually used to build this one. So the fireplace upstairs – the brick in it is actually the brick from the old

Union. One of my favorite parts of the building is actually a lot of the seats are made from recycled seat belts.”

Many participants noted physical, aggregate, organizational, and constructed components of importance in a green student center.

Communication and Raising Awareness

Participants suggested that students desire green student center and LEED information and want to know how awareness is fostered and developed. Ideas for education and student outreach were also shared by participants. These ideas ranged from active to passive outreach and included those noted by participant 2:1:

“It would be nice to know that our building is certified nationally for its unique capabilities. Talking about that more in orientation and when students first get here and give them more information about it. I know we have campus ambassadors; if they included that in...tours they do on campus.”

Dissemination of information regarding green student center components was noted as needed and students contributed ideas for outreach.

LEED

LEED buildings and the LEED process were described by participants as using fewer resources, using resources wisely, reducing the environmental impact, and giving back.

Participant 1:4 stated:

“LEED certifications...just the way the building is created, that it is not just sitting there and taking up space and using up all these resources... it’s equal, it’s kind of neutral, if not giving back to the community sense...it’s creating energy through solar something or geothermal and then it’s giving back.”

Participants expressed that challenges of LEED were evident and as a focus group 1 participant explained, "...LEED is imperfect." Further criticisms of the LEED certification component points were shared. A focus group 1 participant noted, "It's definitely a challenge to try to balance what you need with the architecture and what you need the building to do with LEED." Participants expressed that the concept [of the components] involved in the design and construction of a LEED certified building is not understood by everyone. A common response to the question to describe LEED and the important components was similar to that of participant 3:1, "[I] don't know anything about them actually. The one briefing I had on the student center was when it was pretty much already built and close to being ready to open." LEED physical, aggregate, organizational, and constructed components of a green student center were described, supported, and critiqued by participants.

Engagement In and Influence of Student Center

Green student centers provide essential meeting space for students, faculty, staff, and community members to discuss issues. Participants noted the flexibility of the physical spaces and the accessibility to the spaces as valuable components of a green student center. Participant 1:1 stated, "Student meeting space...is very important." Several participants noted that meeting space was in high demand. Participant 2:5 articulated, "...an event or meeting [was occurring] in every single one of the rooms."

Positive impact.

Green components are important to a green student center and are cited as making positive impacts on a campus community. Participants often noted the critical components to environmental action. Participant 1:3 shared:

“I think it has...positive impacts...I can’t imagine I was here when there wasn’t a union. It’s impacted the student body and gives us another place to be. Studying, sleeping, off campus students have a place to stay in between classes...this union is here and this has changed us.”

Participant 1:1 agreed with the perception of impact and explained:

“...those green features, to me, I think they are so very important to this building. I think that’s another reason I am so excited to use it all the time, to know that, ‘Wow! I’m going to a green building, I’m going to feel green while I’m in it’, [and] I [can] say that this room is also green, part of this room is green.”

Participants noted specific green student center physical, aggregate, and organizational, and constructed components that were essential to engagement.

Issues of Uncertainty, Skepticism, and Negative Opinions

Participants shared missed opportunities to promote green components and to display green action. When discussing green student center components, participant 1:2 described, “...reused materials...the energy saving aspects of it. For the most part they're very visible, [that] is the most important thing. Whether people realize that they are green features is perhaps a missed opportunity.” Inconsistent views of green, LEED, and sustainability acted as obstacles to green student center efforts and understanding of important green components. Participant 2:5 noted, “...it's...confusing for people to really understand what LEED is.”

Summary

There were five major and several secondary themes associated that provided further knowledge of the physical, aggregate, organizational, and constructed components that are environmental components of concern in a green student center. The emergent themes supported

the second hypothesis that physical, aggregate, organizational, and constructed components were all environmental components of concern in a green student center. Participants' broad green concepts and perceptions of green student centers elements provided support that students recognized and valued green components.

LEED building practices were positively described by participants, though they also expressed the need for more details. The participants also communicated challenges of the LEED process and stated the LEED concept is not understood by everyone. Green student center physical space was described as critical to student engagement. Obstacles to recognition of green student center components were identified in inconsistent green language and missed opportunities. Participants communicated physical, aggregate, organizational, and constructed components are environmental components of concern in a green student center

What are the direct and indirect impacts of the current design of green student centers on learning, engagement, community, and the environment?

Four questions were asked during the individual interviews and the focus groups to gain greater understanding of the impacts of green student centers on learning and the total environment. Three major themes and several secondary themes emerged from the interviews. Participants noted comprehensive communication, education, and outreach were needed for LEED efforts and green student centers. LEED components of green student centers demonstrated institutional commitment to sustainability. Positive impacts on learning, engagement, community and the environment were described and supported the third hypothesis.

Communication, Education, Perception, Outreach, and Raising Awareness

Participants shared ways to engage the community, increase awareness of initiatives, and stakeholders to engage in the green student center. Curricular connections were suggested by

participants for green student center programs. Participant 1:1 explained that a green student center, "...needs to be interdisciplinary...[a] Union should work with faculty members, to say, '...bring your students to the Union. Come have a class here'..."

Marketing.

Participants said that a multifaceted, creative, and active approach to marketing is necessary to reach students and other stakeholders. A focus group 2 participant explained, "...[have] interactive displays so people can...look at the things we talk about...bringing things to people...is a lot better...[will] get...better results." Email was frequently mentioned by participants as an ineffective method when used solely. A focus group 2 participant noted, "I don't check my emails."

LEED

Participants said that while LEED demonstrated a commitment to green efforts, education was needed on LEED requirements, initiatives, and operations in green student centers. The LEED process was not well known by all participants. The lack of knowledge was perceived to stem from ineffective or missing outreach, as participant 2:2 described, "...nobody...informed us about the features of the new student union..." Participants articulated that a LEED building, such as a green student center, demonstrated an institution's commitment to sustainability. This theme was reflected by participant 1:4, who stated, "...the fact it is LEED certified...makes it better because it shows the school's commitment to sustainability." Several participants noted that the interview was the first time they heard the green student center details in any comprehensive manner. Participant 2:1 stated, "...this conversation has made me think more about it...I didn't realize...our building was...considered...green..."

Engagement

Participants expressed that green student centers were sources of pride and showpieces for institutions. A focus group 2 participant said:

“...I’m more proud of my school with the student union. I feel like I have a lot more to offer with this building. So, if I’m talking to someone about, oh, U___, should I go there, I’m, like, absolutely, you should come here...I’ve always liked U___, and academically...I love the classes and my instructors, but it was missing something, and now it has that.”

Participant also described how green student centers transformed campus life and student engagement. Participant 2:3 shared, “...the year the union opened student life on campus exploded.”

Learning.

Green student centers were identified as educational tools where learning takes place and leadership skills are developed. Participant 3:2 stated, “I learned more team work, more patience...learned to be interactive with the ethnic groups...here, not just one group, but several different [groups]...” A green student center environment was suggested to contribute to learning, as explained by participant 2:3:

“I think by providing a place for students to decompress and just get away from constant demands of being a student. I think that contributes to learning because you are able to concentrate better when you are less stressed out.”

Positive impact.

Green components were described as important to a [green] student center and were seen as making positive impacts on the campus community. Participants shared various initiatives,

features, programs that had both direct and indirect impacts. Overall change from a new, green student center was expressed by participant 1:3:

“I think it has...positive impacts...I can’t imagine I was here when there wasn’t a union. It’s impacted the student body and gives us another place to be. Studying, sleeping, off campus students have a place to stay in between classes...this union is here and this has changed us.”

Participants shared that the design and elements of green student centers impacted engagement and pride. Participant 1:1 said, “...green features...are so...important to this building. I think that’s another reason I am so excited to use it all the time.” Aesthetics and sustainable design was stated to positively influence student perception and use of green student centers. Participant 2:1 explained:

“...before we got this building, I hardly ever went to the student union because it was a fairly dreary kind of place. It wasn’t a place that you want to go hang out in. This place makes it seem more inviting of a place for students.”

Participant 2:4 supported the same idea and said, “I like [the] green [student center]. It reminds me of nature and gives peace.” Positive feedback of green student center features, initiatives, and impact on the community was expressed by participants. Participant 2:5 said, “I do enjoy showing this building off to visitors...it's another good step in the long run for this campus. It makes me like this place more and...give them money, eventually... [it] shows they are taking steps to be a more...sustainable campus.”

Summary

The major themes that emerged were (a) communication, education, perception, outreach, and raising awareness, (b) LEED; and (c) engagement. Participants noted comprehensive

marketing was needed for LEED efforts and green student centers. LEED components of green student centers demonstrated institutional commitment to sustainability. Positive impacts on learning, engagement, community, and the environment were explained; the major and secondary themes supported the third hypothesis.

What is the intended purpose of green student center design?

Participants articulated one major theme, engagement, and four secondary themes related to intended purposes of green student center design. Sense of place, connection, liveliness, and student use were suggested by participants as secondary themes and described engagement in green student centers. Participants expressed that they felt at home in a green student center. It was suggested that connections made were related to usage of facilities and participation in green student center programs. Participants communicated a green student center atmosphere was lively and was flexible for business, social, and personal usage.

Engagement In and Influence of Green Student Center

Place.

Participants stated engagement in green student centers led to a sense of belonging. Students perceived the green student center as a 'living room' and 'heart' of a campus, as supported by participant 1:1, "...I think of it as the living room on campus...it's this hub for students to come to..." Several participants noted the green student center feels like home, as participant 3:4 said, "it's like our own little home where we can escape." A participant in focus group 3 explained:

"Well me personally, I believe it's like being at home. I get to be with my teachers and talk to them and create relationships with a lot of people here, students, some of the staff. We all get to take part in the student center. Go to the fourth floor, play video games

with everybody, just relax. You can go to the third or second floor where you can study. And it gives you a lot of time to think about what you've been working on and what you've done in class, along with building bridges between you and other people and making connections. It also allows you...if you're hungry, to go downstairs [to the] first floor, get some fries. It allows you to get everything that you would necessarily need at home here. You don't have to go all the way home; you've got it all at your hands.”

Participants described a green student center environment as relaxing and stress-relieving.

Participant 3:1 said, “We’re a lot more relaxed [here]...”

Connection.

Participants expressed that green student centers were common gathering places for students to feel welcome and safe, work, learn, have fun, and interact with peers, faculty, and staff. Participant 3:1 said:

“...having a place for students to enjoy themselves; to be able to work out, play basketball, things of that nature. And finally to have a large meeting space for both students and instructors and faculty to be able to use in a central location where you can get...students and faculty together into one room to sit down and discuss issues.”

Participants stated students made and had the opportunity to have made friends, connections, and identify commonalities with others in green student centers. Participant 3:1 explained, “...I’m a student and...a leader of students. So for me, it’s been more of building relationships with the students...building a level of trust and respect...”

Dining areas were also noted by participants as important pieces of green student centers where students developed a sense of connection. Participant 1:3 said, “...the dining areas are a really important component for underclassmen. They spend a lot of time there.”

Liveliness.

Participants said that a green student center gave students a sense of energy and excitement. Activity and design contributed to students' excitement and connection to a green student center. Participant 1:1 explained, "It's like electricity, it's infused into you, when you're into this building you just feel more green."

Use.

A green student center was described as a flexible space for business, social, and personal use. Participants stated that green student centers provided essential meeting space for students, faculty, staff, and community members to discuss issues. Participant 1:1 said, "Student meeting space...is very important." Study and lounge areas were also communicated to be desired spaces in green student centers. Participant 3:3 expressed, "...the study floor is incredibly important, every time I go down there during peak hours every study room is filled and most of the tables on the outside..." Participants explained that students attended and hosted events in green student centers, as noted by participant 1:4, "I've gone to a lot of events in ballroom. I was here last Friday for Taste of __U, I volunteered..."

Participants discussed types of students who used a green student center. Commuter students used green student centers more during the day, more for work, for business, and to attend major events. A focus group 1 participant stated, "I'm in here just to do business...I use the bank branch...the center for leadership if there's club stuff that needs to go on, I'll be in line for tickets, maybe go see a movie." Participants suggested student organization members and student employees were most engaged in green student centers. Participant 1:3 shared, "I am part of students for recycling. We have an office in the Center for Student Leadership and Service...I am the President..."

Summary

Participants identified engagement as the intended purpose green student centers. The engagement theme was described as sense of place (belonging), connection, liveliness, and student use. The identified purpose of engagement supported the fourth hypothesis that community, involvement, and inclusion were intended purposes of green student centers. Participants shared that the energy and space in a green student center gave a sense of belonging and excitement. Green student centers were described as common gathering spaces where anyone could come, for any reason.

Relevant General Themes

Several relevant general themes within broad green concepts and issues emerged from the interviews. Participants expressed genuine sustainability connections to the greater good, such as participant 2:3, who shared, “Sustainability is...[an] effort to...make decisions...conscious of the world...rather than...making decisions...[that are] self centered.” Practices that have a sustainable triple bottom line – people, profits, and planet – were identified by participants as valuable. Participant 1:4 said, “...triple bottom line of people, profits, planet...[is] a way of life to ensure...future generations enjoy the same environmental things...we enjoy...clean air, clean water.”

Participants noted that the term ‘resilience’ was being used more to relate the concept of climate change issues. Participant 1:3 stated, “...resilience is a better way to relate to the concept because sustainability has previous meaning and alternate meanings.” Participants expressed the need for green, sustainability, and LEED language and concepts to be articulated clearly for greater understanding. Participant 2:5 said, “Sustainability should never be too hard to understand or create...” Some participants suggested the notion that students had the

‘Why should I? What’s in it for me?’ mentality about green efforts. A focus group participant explained, “...people...view it as, ‘I’m not paying for it because it doesn’t really affect me personally’...”

Participants indicated they had learned more about green design, initiatives, and impact from the interview than efforts at their institutions. Participant 2:1 shared, “...this conversation has made me think more about it...I didn’t realize...our building was...considered...green...” A lack of knowledge of institutional sustainability committees or their members was noted by participants. A focus group 2 participant said, “I don’t really know who all was on the committee”.

Conclusion

This chapter provides the results of the SETA survey, 13 individual interviews and three focus groups, conducted to illuminate the influence of green student centers on campus environments. The SETA results indicated that the green student center user environmental type varied, with ENFJ as the most frequent type. As associated with the aspects of the behavior environment of a green student center, ENFJ types prefer interaction, tend to be creative, make value-oriented judgments, and more structured.

There were four main themes and four secondary themes associated with the presence of green student centers and the relationship to students’ environmental attitudes, behaviors, and perceptions and supported the hypothesis. Participants’ suggested that green and LEED concepts provided support for self-identification of relationships between a green student center and personal environmental attitudes, behaviors, and perceptions. Students’ attitudes and perceptions appeared to be related to the degree to which green student center components were communicated.

Further knowledge of the physical, aggregate, organizational, and constructed components were environmental components of concern in a green student center. The second hypothesis that physical, aggregate, organizational, and constructed components were all environmental components of concern in a green student center was supported by the emergent themes. Participants suggested that broad green concepts and perceptions of green student centers elements provided support that students acknowledged and appreciated green components.

Comprehensive marketing for LEED efforts and green student centers was determined to be needed. Institutional commitment to sustainability was evident in the LEED components of green student centers. The third hypothesis was supported by the noted positive impacts on learning, engagement, community, and the environment.

The engagement theme described as sense of place (belonging), connection, liveliness, and student use and supported the fourth hypothesis that community, involvement, and inclusion were intended purposes of green student centers. The flexibility and variety of space in green student centers attracted and engaged a range of students for purposes such as business, social, work, and academic. Green student centers were said to be common gathering place where students felt energy and a sense of belonging and excitement.

Chapter 5

Discussion

The extent of green student centers' influence on the campus environment is presented in this study. The results of the study supported the four hypotheses and indicated green student centers influence the campus environment. The presence of green student centers is related to students' environmental attitudes, behaviors, and perceptions. Participants stated the physical, aggregate, organizational, and constructed components are all environmental components of concern in green student centers. Participants discussed how green student centers have an essentially positive impact on learning, engagement, community and environment. Community, involvement, and inclusion are intended purposes of green student centers.

In this chapter, I discuss the emergent significant themes and secondary themes from the interview and focus group data. I also explain study limitations and lessons learned. I present implications for practice, policy, and research as well as provide a conclusion to the study.

Several significant concepts from these themes address the research questions and serve as interesting aspects of the examination. University culture dictates the influence, understanding, and awareness which community members have of green student centers given level of promotion and education. Students consider green features, including LEED design elements, as positive and necessary. Green student centers are living, learning laboratories for sustainability design and initiatives.

University culture also determines the extent to which community members gain awareness and knowledge of green student centers' features and programs. Institutions that consistently and visibly promote sustainable building elements and celebrate efforts and

programs that raise awareness are more likely to have students who are informed of and engaged in green initiatives. Students regard the time and fiscal investments made in a green student center as valuable, when done intentionally and believe sustainability is the right thing to do. The fundamental purpose of a student center or union is to serve as a place for discourse. Green student centers provide learning opportunities for not only students, but for faculty, staff, community members, and other stakeholders such as alumni and donors. Visibility of LEED design features and sustainable programming in a student center make educational connections available that may be more one-dimensional in another facility. Green student centers do positively influence the campus environment.

Broad Green Concept

Participants described the significant concepts regarding sustainability, LEED, and green initiatives, though the degree of understanding of sustainability varied widely by a student's personal experience, institution, and academic discipline. This indicates students who are exposed to green practices at home or in their coursework may have greater foundation and knowledge of the concepts (Chapman, 2006; Pollack, 2009). It also suggests institutions that have comprehensive and integrated green efforts have students familiar with broad green concepts. Participants' who had concepts of green language and LEED initiatives had a framework to self-identify possible relationships between a green student center and their personal environmental attitudes, behaviors, and perceptions. This implies that students who understand green concepts are more likely to be green practitioners and support green policies.

Participants were easily able to identify green student center components including energy efficient operations, recycling, various lighting features including sensors, and food processes such as composting. The results indicate that visible elements clearly convey green

efforts in a student center. Participants described environmental health and investment as legitimate sustainable efforts. This suggests that institutions that endorse green efforts, and charge stakeholders with supporting those efforts, communicate their importance.

Hallmark components of a green student center were identified as recycling options, natural light, LED lighting, light sensors, local and sustainable sourced foods, composting, and water and resource conservation. The results indicate that students place value on green features and consider them an integral part of a student center. This supports the hypothesis that physical, aggregate, organizational, and constructed components are important in a green student center.

Communication, Education, Perception, Outreach, and Raising Awareness

Poor communication leads to lack of knowledge.

Students' attitudes and perceptions are related to communication that is shared regarding a green student center and ways to engage the community, increase awareness of initiatives, and who is involved (Chau, Tsu, & Chung, 2010). Almost all participants described communication as poor and ineffective. This indicates that poor communication leads to a lack of knowledge and awareness about green student center features and efforts. The results also suggest that ineffective communication negatively affects a student's concept of the presence of a green student center to environmental attitudes. This indicates that students appreciate a green student center more and when they understand the components and policy.

Positive feedback of influence.

The results indicate that the presence of a green student center positively influences student behavior, practices, and attitudes. Tangible green design, policies, and practices seem to change students' attitudes towards sustainability. The results suggest specific elements and projects in a green student center relate to participants' environmental attitudes and behaviors, as

they have an opportunity to re-evaluate what they do and the impact they have (Alfieri, Damon, & Smith, 2009). Showing students the green features and explaining the value of the efforts allow for a take-away message of personal impacts in a similar situation.

Visual communication.

This study illustrates that visually communicated benefits of green student centers facilitate change in student awareness and perception (Orr, 1994). This highlights the notion that tangible elements and visual communication of benefits of green student centers raise awareness and positively influence perceptions. It works well to have something visual so students can see their impact on the environment and visually see how a green student center falls into LEED certification. The hypothesis that the presence of green student centers is related to students' environmental attitudes, behaviors, and perceptions is supported.

Nearly all participants stated that marketing, and education of green design, initiatives, and impact were missing on their campuses. Little to no discussion or education about the environmentally friendly features of green student centers may indicate to students that these elements are insignificant. Marketing obvious and hidden green features, as well as educating students on green initiatives, will lead to greater understanding and support (Strange & Banning; see also Smith, 2007). Participants also expressed the need to see visible elements of green features in action. This suggests if elements are visible, students are able to walk up, see that the student center is a green building, and a connection would be made. Clear green features imply that there may be more subtle features, heightening student interest in a green student center (Cooper, 2006).

Events and Active Programs Increase Awareness.

Participants noted that active programs increased awareness of green student center components and initiatives. This result suggests that active engagement facilitates a connection between a green student center and student perceptions. Institutions that implement active programming will increase the number of students who recognize the green features of a [green] student center. Building tours that highlight and explain green features can create a relationship between a green student center and student environmental perceptions. The tours would actively engage not only the students taking the tours, but also the students guides leading the tours. The results support the hypothesis that green student centers impact student engagement.

Curricular connections.

Participants shared ways to engage the academic community. The results indicated that curricular connections were valuable and necessary to integrate into green student center programs. A green student center educational effort needs to have an interdisciplinary approach. Green student center staff should work with faculty members to coordinate courses in the building and have integration into syllabi and practicum requirements. Disciplines such as engineering, business, architecture, environmental science, cultural studies can be immediately connected, although practically any discipline can be linked to green student center design, policy, and practice (Orr, 1994).

Communication of LEED.

Students shared a strong desire for green student center and LEED information and want to know how awareness is fostered and developed. The results indicate that ideas for education and student outreach range from active to passive. Institutions need to consider communicating the green student center's unique capabilities and national LEED certification. Student

orientation and campus tours are advantageous settings to share green student center components and raise awareness.

Marketing methods.

Results suggest that a multifaceted, creative, and active marketing approach is necessary to reach students and other stakeholders (Ward, 2000). Institutions that develop a comprehensive plan to target students and community members will reach a wide audience. Interactive displays allow students to see green components and connect them to their personal concepts. Email should be considered as a basic method, but is ineffective when used solely. Posters, signs, word of mouth, and class announcements are other marketing methods that should be part of innovative and timely approach.

LEED

The results indicate that LEED demonstrates an institutional commitment to green efforts, but considerable education is needed about LEED requirements, initiatives, and operations in green student centers. The LEED process is not well known and the lack of knowledge seems to stem from ineffective or missing outreach. If students are not aware and knowledgeable, learning and engagement may become missed opportunities. Students may also perceive that they are not valued enough to be informed of the LEED details in the green student center. The institutional commitment to sustainable efforts is exemplified positively in a LEED certified student center. The results indicate that the research interview was the first time that participants heard about the green and LEED process in any notable detail. Formal and informal conversations between students, faculty, staff, and other stakeholders about green and LEED efforts facilitate students' self-reflection and deeper understanding of a green student center.

Students indicated that LEED buildings not only use fewer resources, but also use resources wisely, reduce the environmental impact, and give back [to the grid] (Richard & Lynes, 2007). This suggests that LEED is positively perceived by students as valuable investment. Challenges of LEED are evident as the process is imperfect and labor-intensive. It is a challenge for institutions, architects, and contractors to balance what is architecturally and programmatically needed with what is needed for LEED certification.

Results point to a lack of understanding of the concept [of the components] involved in the design and construction of a LEED certified student center. Students know little of the LEED components of the green student center due to ineffective and untimely communication from the institution. The connection between the various components of a LEED certified student center and student understanding is another missed opportunity for education and engagement (Chapman, 2006).

Engagement In and Influence of the Student Center

The study reveals that student behavior, practices, and attitudes were positively influenced by the green student center. Important features of green student centers contribute to participants' environmental awareness and support three of the research hypotheses. This indicates green student centers' influence student practice, behavior, perception, competency, and awareness of, but not limited to, sustainable elements and initiatives. Student engagement in a green student center leads to change in environmental attitudes and practices. Students are more cognizant of personal practices from experiences in student centers with green features. This engagement suggests awareness will lead to change permanent behavior.

The results indicate that green student centers provide essential meeting space for students, faculty, staff, and community members to discuss issues (Kenney, Dumont, & Kenney,

2005; Price, 2011). The flexibility of the physical spaces and the accessibility to the various spaces are valuable components of a green student center (Strange & Banning, 2001). Student meeting space in particular is critical and the high demand underscores the student center as a social hub.

Positive impact.

Participants expressed the views that a green student center makes positive impacts on a campus environment. This suggests that students feel at home at a green student center (Butts, 1971). Students, especially commuters, have a place where they feel comfortable, connected, and challenged (Banning, Clemons, McKelfresh, & Gibbs, 2010; Sinclair, 2009). Green features are important to a student center and give students another reason to use it. Students feel a sense of excitement about being engaged in an eco-friendly effort and being knowledgeable about its importance.

The physical, aggregate, and organizational, and constructed components of a green student center are essential to engagement and make positive impacts on the campus environment (Wojciechowski, 2001). Initiatives, features, and programs that had both direct and indirect impacts contribute to the overall change from a new, green student center. Green student centers' design and elements impact student engagement and campus pride (Kenney, Dumont, & Kenney, 2005). Aesthetics and sustainable design positively influence student perception and use of green student centers. Student centers that are perceived as old, out-of-date, dreary, empty, or uninviting have far less traffic and create little to no excitement. Green student centers features, initiatives, and impacts encourage students to show off the building, creates positive perceptions of the institutional vision, legitimizes the green efforts, and develops potential donors and friends who are invested in green and the institution (Smith, 2009).

Engagement

The results suggest green student centers are sources of pride and showpieces for institutions. Students are more proud an institution with a green student center and feel compelled to discuss the green building and programs with peers and other stakeholders. Green student centers fill a student engagement need on campuses that had no student center or older student centers. The study suggests green student centers transform campus life and student engagement (Butts, 1971). The opening and use of green student centers supports a vibrant and active campus life.

Learning.

The results identified green student centers as educational tools where learning takes place and leadership skills are developed (Butts, 1971). These results support the first and third hypotheses. Students learn team work, patience, multicultural competencies, and social skills engaging in a student center. This suggests a green student center environment contributes to learning, by providing a safe place for students to be themselves and engage in discourse and programming (Kenney, Dumont, & Kenney, 2005).

Issues of Uncertainty, Skepticism, Negative Opinions, and Areas for Improvement

Issues and obstacles for green student centers' relationship to students' environmental attitudes, behaviors, and perceptions were identified in the results. This suggests students have negative perceptions of green and the potential to view green as a time-limited trend. Institutions cannot get off course parsing out what is green and what is not and must be careful not to overuse the term to the degree the meaning is lost. Green efforts can be perceived as expensive in the short-term, especially when there is lack of knowledge. The benefits of being sustainable

need to be conveyed to overcome any obstacles to the presence of a green student center being related to students' environmental perceptions.

The results indicated additional missed opportunities to promote green components and to display green action. Most students do not realize what the green features of a student center are and miss a learning opportunity (Knell & Latta, 2006). LEED can be a confusing process and, together with inconsistent views of green, LEED, and sustainability, acted as obstacles to green student center efforts and student understanding of critical green components.

Relevant General Themes

The results indicated general themes within broad green concepts and issues. Students have genuine sustainability connections to the greater good and make decisions conscious of the world around them. Practices that have a sustainable triple bottom line – people, profits, and planet - are valuable and a way of life to ensure the current environment for future generations.

The study revealed a more recent term, 'resilience', to relate concept of climate change issues. This suggests that resilience may be a better way to relate to the concept because sustainability and green have previous meaning and alternate meanings. Participants expressed the need for green, sustainability, and LEED language and concepts to be articulated clearly for greater understanding. Green language and programs should not be difficult to understand, communicate, or create for students.

The results indicate students learned more about green design, initiatives, and impact from the interview than efforts at their institutions. The conversations were informative and the discussions with peers made them reflect about the green student center and its influence on the campus environment.

Limitations and Lessons Learned

This qualitative collective case study used the Stake's model of case analysis (1995) and generalizability is not the priority. The results are based on patterns found through naturalistic generalization across the specific cases (1978). While the results contribute a rich and cumulative case account, there are study limitations to explain as context for the findings. I explain the limitations and lessons learned for future research.

The study had several limitations. The differing definitions of green student centers at each institution may have limited the shaping of consensus of language but was important for gaining perspective of experiential knowledge. The primary researcher did not hold a role at the three institutions studied and, thereby, did not have a legitimate role of authority nor have full rapport and trust with community members. The primary researcher spent time in the campus culture to have additional context of the environment

SETA survey.

The SETA survey had several limitations. The survey was initially to be administered prior to the finalization of the interview protocol. The results were planned to be used to inform the interview protocol questions. The online SETA Form C version was not available until April, two months after the first data collection. Since the survey was not administered until after the data collection was completed, the results were used to triangulate the type of student who tends to engage in a green student center.

The participant sample was limited to students at ACUI-member institutions with LEED certified green student centers and may have led to only 19 responses. Individuals in the target population may not have participated because of unease or discomfort with online assessments. The primary researcher addressed potential apprehension by sending an accompanying description of the study and the survey. The description included contact information for both

the primary researcher and the faculty member who oversaw the study. The narrow response and late administration of the survey may have also affected the overall applicability to the study.

Institution and participant selection.

There was a limited institution sample and participant population. There was potential that using only three colleges and universities in the collective case study may be too narrow. This was addressed by expanding the types of institutions in which engagement of users in green student centers is examined. There were several potential limitations with individual interview and focus group participants. The sample of participants interviewed for inclusion in the study was relatively small. Efforts were made to include more diverse samples. Since the study only included four or five individual interviews with students at each campus and three total focus groups, the understanding of transcending themes across the case is somewhat limited. The interview participants potentially fabricated parts of the conversation or tried to reflect a positive reply. The primary researcher conducted member-checking and reviewed the confidentiality of the interviews with all participants.

Data collection.

The collective case study established a strong foundation for data collection and provided rich results that offer deeper understanding of green student centers. While the planned number of individual interviews and focus groups were facilitated at all three institutions, scheduling the participants proved extremely complicated. Numerous requests were sent to students prior to arriving at each data collection site and schedules were intended to be finalized before the first interview. At each institution, last minute emails were sent to solicit for participants for an individual interview, a focus group, or both. This was due to a lack of response or confirmed participants cancelling or not showing up. The participants who confirmed last minute had less

of a context for the study then those who had originally confirmed before arriving on site. Despite the challenges, the participants responded positively to the experience. Due to participant scheduling challenges and personal issues the day of data collection, the initial contact summaries for three of the four individual interviews and the focus group for site three were limited. Additional context details were recalled at a later time for each of the interviews and the focus group.

Implications

Implications for practice and policy.

The green student center study findings are not previously documented in the literature. These findings are supported by related research on green issues in education and provide further support for sustainable design, policy, and practice efforts in higher education, specifically in student centers. This is important because transferable knowledge from the study can be the basis of best practices throughout higher education and student life areas. The results provide evidence for current and future student centers to integrate LEED design and green components into practice, policy, and curricular connections.

Broad Green Concept.

Students are aware of the significant concepts regarding sustainability, LEED, and green initiatives, though the degree of understanding of varies widely by personal experience, institution, and academic discipline. Students who are exposed to green practices in their personal lives or in their classes tend to have greater foundation and knowledge of the concepts. Institutions with comprehensive and integrated green initiative have students more familiar with broad green concepts than if efforts are disjointed or non-existent. Institutions need to consider that students who have concepts of green language and LEED initiatives have a framework to

self-identify possible relationships between a green student center and their personal environmental attitudes, behaviors, and perceptions. Efforts should be made to have extensive and integrated education, outreach, and marketing to help student to understand green concepts and thus, become more likely to be green practitioners and support green policies.

Students identify green student center components including energy efficient operations, recycling, various lighting features, and food processes such as composting. Visible elements clearly articulate green efforts in a student center. Environmental health and investment are seen as legitimate sustainable efforts. Institutions need to consider endorsing green efforts and charging stakeholders with supporting those efforts in order to communicate their importance.

Green student centers feature components include recycling options, natural light, LED lighting, light sensors, local and sustainable sourced foods, composting, and water and resource conservation. Physical, aggregate, organizational, and constructed components are important in a green student center. Students place value on green features and consider them an integral part of a student center. Institutions should consider the inclusion of green components in student center design and programming.

Communication, Education, Perception, Outreach, and Raising Awareness

Poor communication leads to lack of knowledge.

Students' attitudes and perceptions of green student centers are related to communication that is shared on initiatives and operations. Communication is widely perceived as poor and ineffective. Poor communication leads to a lack of knowledge and awareness about green student center features and efforts and affects students' concepts of the presence of a green student center to their environmental attitudes. Institutions need to consider developing

comprehensive education and outreach plans to communicate the components and policy and thus facilitate deeper student understanding.

Positive feedback of influence.

The presence of a green student center positively influences student behavior, practices, and attitudes. Green design, policies, and practices seem to change students' attitudes towards sustainability. Institutions may consider incorporating specific elements and projects in a green student center as signals to students in an effort to relate to their environmental attitudes and behaviors, and thus have an opportunity to re-evaluate what they do and the impact they have. Institutions need to show students the green features and explain the value of the efforts to allow for a message of personal impacts in a similar situation.

Visual communication.

Visually communicated benefits of green student centers facilitate change in student awareness and perception. Tangible elements and visual communication of benefits of green student centers raise awareness and positively influence perceptions. Institutions should consider visual outreach so students can see their impact on the environment and how a green student center falls into LEED certification.

Marketing and education of green design, initiatives, and impact are missing in green student centers. Students may perceive initiatives insignificant when there is little to no discussion or education on the environmentally friendly features of green student centers. Institutions need to consider marketing obvious and hidden green features, as well as educating students on green initiatives. This will lead to greater student understanding and support. If students see visible elements of green features in action, they are able to see the student center is a green building and make a connection.

Events and Active Programs Increase Awareness.

Active programs increase awareness of green student center components and initiatives. Active engagement also facilitates a connection between a green student center and student perceptions. Institutions should consider implementing active programming to increase the number of students who to realize the green features of a [green] student center. Building tours highlight and explain green features and create a relationship between a green student center and student environmental perceptions. The tours actively engage not only the students taking the tours, but also the student tour guides.

Curricular connections.

Curricular connections are valuable and necessary to integrate into green student center programs. Green student center staff should consider working with faculty members to coordinate courses in the building and have integration into syllabi and practicum requirements. Engineering, business, architecture, environmental science, cultural studies disciplines can be immediately connected, although any discipline may be linked to green student center design, policy, and practice.

Communication of LEED.

Students have a strong desire for green student center and LEED information and want to know how awareness is fostered and developed. Institutions need to consider communicating the green student center's unique capabilities and national LEED certification by both active and passive methods. Student orientation and campus tours are valuable settings to share green student center components and raise awareness.

Marketing methods.

A multifaceted, creative, and active marketing approach is necessary to reach students and other community members. Institutions should consider developing a comprehensive plan to target students and community members to reach a wide audience. Plans could include interactive displays to allow students to see green components and help connect them to their personal concepts. Email should be considered as a basic method, but should not be used in isolation. General posters, signs, word of mouth, and class announcements are other fundamental methods that institutions should include in an innovative and timely marketing approach.

LEED

LEED demonstrates a positive institutional commitment to green efforts, yet education is needed on LEED in green student centers. The LEED process is not well known and the lack of knowledge stems from ineffective or missing outreach. Learning and engagement may become missed opportunities when students are not aware and knowledgeable. Students may perceive that they are not valued enough to be informed of the LEED details in the green student center. Institutions should consider formal and informal conversations between students, faculty, and staff on green and LEED efforts to facilitate students' self-reflection and deeper understanding of a green student center.

LEED is positively perceived by students and is a valuable investment, but the challenges are evident as the process is imperfect. Students lack knowledge of the LEED components of the green student center due to ineffective and untimely communication from the institution. Institutions should consider the connection between the various components of a LEED certified student center and student understanding as an opportunity for education and engagement.

Engagement In and Influence of Student Center

Student behavior, practices, and attitudes are positively influenced by the green student center. Important features of green student centers contribute to students' environmental awareness. Student engagement in a green student center facilitates change in persona; environmental attitudes and practices. Institutions should consider implementing programs and policies that make students more cognizant of personal practices from experiences in student centers and that lead to change permanent behavior.

Green student centers provide essential gathering and meeting space for students, faculty, staff, and community members to discuss issues and hold events. Student meeting space in particular is critical and the high demand underscores the student center as a social hub. Institutions should consider making the green student center spaces as flexible and accessible as possible to students and the campus community.

Positive impact.

Green components are critical to a green student center, make positive impacts on a campus environment, and give students another reason to use the building. Students feel at home at a green student center and have a place where they feel comfortable, connected, and challenged. Institutions should consider how to create this type of welcoming and inclusive environment in a green student center. If students feel a sense of excitement about the green student center, they may be more engaged in the green effort and be knowledgeable.

Green student center physical, aggregate, and organizational, and constructed components are keys to engagement and make positive impacts on the campus environment. Institutions should consider that initiatives, features, and programs that have both direct and indirect impacts contribute to the overall change from a new, green student center. Green student centers' design and elements also impact student engagement and school pride.

Institutions should also take into account that aesthetics and sustainable design positively influence student perception and use of green student centers. Student centers that are perceived as old, out-of-date, dreary, empty, or uninviting have far less student traffic and create little to no excitement for the facilities or activities. Green student centers can develop investment from the student body and encourage potential donors and friends who are invested in both green efforts and the institution.

Engagement

Green student centers are showpieces for institutions. Students are more proud of an institution with a green student center and are compelled to discuss the green building and programs with peers and other community members. Institutions should consider opportunities to take advantage of the sense of pride and level of interest in the centers. Green student centers also fill a student engagement need on campuses that have no student center or older student centers and transform campus life. Institutions need to consider how to capitalize on green student centers as a part of a strategic plan for active student engagement and a vibrant campus life.

Learning.

Green student centers are educational tools where learning takes place and leadership skills such as team work, patience, multicultural competencies, and social skills are developed. Institutions should think about the various unique learning opportunities of a green student center. As a green student center environment contributes to learning, institutions should develop programs and initiatives related to green components that allow for students to engage in discourse.

Issues of Uncertainty, Skepticism, Negative Opinions, and Areas for Improvement

There are issues and obstacles for green student centers' relationship to students' environmental attitudes, behaviors, and perceptions. Students may have negative perceptions of green or view green efforts as a time-limited trend. Institutions must be careful not to overuse the term to the degree the meaning is lost. Green efforts can also be perceived as expensive when viewed in a short-term outlook, especially when there is lack of knowledge. Institutions need to communicate the benefits of being sustainable to overcome obstacles to the presence of a green student center being related to students' environmental perceptions. Institutions miss opportunities to promote green components and to display green action. Most students do not realize what the green features of a student center are and therefore miss a learning opportunity. Institutions need to develop practices that intentionally link green student center features to student practice. Inconsistent views of green, LEED, and sustainability, act as obstacles to green student center efforts and student understanding of critical green components. Institutions should make green language and efforts consistent throughout campus.

Future research.

This study of green student centers' influence on the campus environment adds to limited research on sustainability within the higher education framework. The findings also add to research specifically on student engagement and student centers as well as student affairs. The study enhances current research on the behavior of building users. Specific suggestions for future research could include using the SETA Form C survey at a larger sample of institutions with green student centers to get a more accurate depiction of the user type. The findings could then be compared to user types at institutions that do not have green student centers. Future studies could also focus on the student leader and student employee experiences in a green student center. The research could look into the reasons the students initially connected to the

green student center and the specific influence and impact of engagement on their attitudes, perceptions, behavior, and understanding. Future research could also examine the major emergent themes in relation to green student centers in more depth. The study could be expanded to look at other types of facilities such as residence halls and recreation centers.

Chapter 5

CONCLUSION

In this study, participants described green student centers' influence on the campus environment. The findings supported the four hypotheses and indicated green student centers do influence the campus environment. The presence of green student centers is related to students' environmental attitudes, behaviors, and perceptions. The physical, aggregate, organizational, and constructed components are environmental components of concern. Participants discussed how green student centers overwhelmingly have a positive impact on learning, engagement, community and environment. Community, involvement, and inclusion are intended purposes of green student centers. The emergent significant and secondary themes were presented and the study limitations and lessons learned explained. Implications for practice, policy, and research were also provided.

The major concepts from these themes addressed the research questions and served as interesting aspects of the examination. It is clear that University culture dictates the influence, understanding, and awareness students have of green student centers, given level of promotion and education. Students consider green features, including LEED design elements, as positive and necessary. Green student centers are living, learning laboratories for sustainability design and initiatives and provide unique opportunities for engagement.

University culture determines the extent students gain awareness and increase knowledge of green student centers' components. Institutions that comprehensively, actively, and visibly promote green building elements and celebrate efforts that raise awareness are much more likely to have students who are informed of and engaged in green initiatives. Students regard intentional investments in a green student center as valuable and perceive it is the right

thing to do for the institution. The fundamental purpose of a student center is to serve as a gathering place for community discourse. Green student centers provide distinctive learning opportunities for students, faculty, staff, and other stakeholders such as alumni, donors, and community members. Visibility of LEED design features and green initiatives in a student center make educational connections available that are multidimensional. Green student centers certainly do positively influence the campus environment.

This study supports the overall influence and impact of green student centers on the campus environment and the need to consider green design and programmatic elements in current student centers and future student center projects, given the limited research. The results from this study may help advance green initiatives related to student-oriented operations, practices and policies, and subsequently influence universities' strategic goals, master plans, and missions. Given that higher education institutions are integrating sustainability and LEED in the curriculum, the mission statements, and the strategic plans, it is critical that administrators, staff, and faculty design and operate student centers that reflect these values. Green student centers should be innovative learning laboratories where green efforts are seamless, well-articulated, and comprehensive.

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Appendix A

Table 1

Master Table with Detailed Specifications of Qualitative Design for Green Student Centers

Research Question	Hypothesis	Method	Instruments/Protocol	Analytic Procedure	Participants
How does the presence of green student centers relate to student environmental attitudes, behaviors, and perceptions?	The presence of green student centers is related to students' environmental attitudes, behaviors, and perceptions	Interviews Focus groups	Questions based on major response themes from the survey	Collective Case Study Campus Environmental Types & Impacts	Students at on-campus interview site (3 focus groups & 13 individual interviews)
What physical, aggregate, organizational, and constructed components are involved in green student centers environmental assessment or action?	Physical, Aggregate, Organizational, and Constructed components are all environmental components of concern for students	Interviews Focus Groups Document Analysis	Campus Design Matrix. Questions based on those suggested by Strange & Banning. Documents will also be analyzed.	Collective Case Study Campus Environmental Types & Impacts	Students at on-campus interviews site
What are the direct and indirect impacts of the current design of green student centers on learning, engagement, community, and the environment?	The green student center is seen as having a positive impact on learning, engagement, community & environment	Interviews Focus Groups	Questions based on major response themes from the survey Campus Design Matrix	Collective Case Study Campus Environmental Types & Impacts	Students at on-campus interview site
What is the intended purpose of green student center design?	Community, involvement, and inclusion are intended purposes	Interviews Focus Group Document Analysis	Questions based on response themes from the survey Campus Design Matrix	Collective Case Study Campus Environmental Types & Impacts	Students at on-campus interview site

Appendix B

Interview Protocol and Questions for Qualitative Study

Interview Protocol

Date: _____ **Time In:** _____ **Time Out:** _____

Interviewer: _____ **Interviewee Code:** PA- _____

Digital File No. ____ **Interview Length:** _____ **Phone #:** _____

Hello, my name is Krista Harrell-Blair and I am conducting this interview for my qualitative dissertation study. Thank you for speaking with me. The interview will last approximately 45 minutes. The purpose of this study is to explore your experiences engaging in a green student center. This interview will be digitally recorded. Do you provide your consent to have this interview recorded? The research team members will be the only ones who will review the data collected prior to being coded and the information will be kept confidential. I will ask you a series of questions, and some may prompt follow-up questions. If you feel uncomfortable with the direction of the interview, you have the right to end it and not participate. Do you have questions regarding the interview? If you are comfortable with this, let us begin.

Questions

1. What is your perception of *sustainability*?
2. Tell me what comes to mind when I say *green building*?
3. What do you know about the Green Student Center on the campus?
4. What are the purposes of a student center?
5. How have you been involved or engaged in the Green Student Center?
6. Would you explain your connection, if any, with the Green Student Center program and/or operations?
7. Explain what you know about the Green Student Center LEED (Leadership in Energy and Environmental Design) EBOM (Existing Buildings: Operations & Maintenance) initiatives?
 - i. If they are not aware, give a brief overview.
 - b. What do you think are effective ways to increase awareness and engagement of LEED design features?
8. What are the important components of the Green Student Center?
9. Based on your experience, what, if anything, have you learned from engaging (visiting/participating/working) in the Green Student Center and the various programs and operations?
10. What are the direct and indirect impacts of the current design of the Green Student Center on learning? Engagement? The environment?
11. How does the presence of the Green Student Center relate to your environmental attitudes and perception? How does it relate to your environmental behaviors?

12. Given your overall thoughts and feelings, please reflect on how, if at all, you have been changed by your experiences in the Green Student Center.
13. What could green student centers do to provide more education to students about sustainability?
14. Are there any other thoughts or experiences you want to share?

Demographics

Age:

Gender:

Ethnicity:

Student Classification:

Resident/Commuter:

Thank you for participating in this interview. The information you provided is valuable to the study. When I finish transcribing the interview, I will send you a copy of the transcript if you would like to allow you to the opportunity to read over our conversation and check it for accuracy. During this time you may provide any clarifications or updates to your initial responses. Again, I appreciate your willingness to participate in this interview for the research study. Thank you so much and it was a pleasure meeting you.

Created 10-15-10

Revised/Added 10-18-10

Revised 10-20-10

Revised/Added 10-28-10

Revised 11-13-11

Revised 11-15-11

Revised 12-3-11

Revised 1-27-12

Appendix C

Focus Group Protocol

The primary researcher will act as the moderator of the focus group. Research team members will also be present to assist with data collection. Participants are greeted and the moderator explains the purpose of the focus group prior to the start of the session.

The participants are selected from students at ___ campus and engaged in the green student center. The sample was identified and contacted by the research team with assistance from student center staff.

Date: _____ **Time In:** _____ **Time Out:** _____

Moderator: _____ **Focus Group Code:** PA- _____

Digital File No. ____ **Focus Group Length:** _____

Hello, my name is Krista Harrell-Blair and I am moderating this focus group for my qualitative dissertation study. Thank you for speaking with me. The focus group will last approximately 60 minutes. The purpose of this study is to explore your experiences engaging in a green student center. This focus group will be digitally recorded. Do you provide your consent to have this interview recorded? The research team members will be the only ones who will review the data collected prior to being coded and the information will be kept confidential. I will ask you a series of questions, and some may prompt follow-up questions. If you feel uncomfortable with the direction of the interview, you have the right to end it and not participate. A few ground rules. I ask each of you to allow other people to finish speaking before making any additional comments. It is ok to disagree with someone's comment but please do not criticize the other participants. Please stay to the topic of the study when answering questions. I want you to feel free to share your own opinions and experiences. There are no right or wrong answers to any of the questions. Do you have questions regarding the focus group? If you are comfortable with this, let us begin.

Questions

1. What is your perception of *sustainability*?
2. Tell me what comes to mind when I say *green building*?
3. What do you know about the Green Student Center on the campus?
4. What are the purposes of a student center?
5. How have you been involved or engaged in the Green Student Center?
6. Would you explain your connection, if any, with the Green Student Center program and/or operations?
7. Explain what you know about the Green Student Center LEED (Leadership in Energy and Environmental Design) EBOM (Existing Buildings: Operations & Maintenance) initiatives?
 - i. If they are not aware, give a brief overview.

- b. What do you think are effective ways to increase awareness and engagement of LEED design features?
8. What are the important components of the Green Student Center?
 9. Based on your experience, what, if anything, have you learned from engaging (visiting/participating/working) in the Green Student Center and the various programs and operations?
 10. What are the direct and indirect impacts of the current design of the Green Student Center on learning? Engagement? The environment?
 11. How does the presence of the Green Student Center relate to your environmental attitudes and perception? How does it relate to your environmental behaviors?
 12. Given your overall thoughts and feelings, please reflect on how, if at all, you have been changed by your experiences in the Green Student Center.
 13. What could green student centers do to provide more education to students about sustainability?
 14. Are there any other thoughts or experiences you want to share?

Demographics

Age:

Gender:

Ethnicity:

Student Classification:

Resident/Commuter:

Thank you for participating in this focus group. The information you provided is valuable to the study. Again, I appreciate your willingness to participate in this focus group for the research study. Thank you so much and it was a pleasure meeting you.

Appendix D**Contact Summary Sheet**

Contact Date: _____ **Site:** _____ **Focus Group:** _____

Interviewer: _____ **Interviewee Code:** _____

Questions

1. What people, events, or situations were involved?

2. What were the main themes or issues in the contact (interview)?

3. Which research questions did the interview focus mostly on?

4. What other questions arose during the interview?

5. What new hypotheses were suggested by the interview?

6. Where should the most time be spent during the next interview?

7. What unusual or unknown phrases or terms came up during the interview?

Appendix F

Codebook

Codebook: Dissertation Interviews and Focus Groups

Theme 1: Broad Green Concepts

Code	Description	Direct Quotations
BGC	Important concepts regarding sustainability, LEED, and green initiatives.	
BGC-1	Green student center is energy efficient.	"...it's very efficient..." (Interview 2:3, Line 54)
BGC-2	Use of repurposed materials in building.	"...reused a lot of materials from the previous building..." (Interview 1:2, Lines 40-41)
BGC-3	Genuine sustainability connections to the greater good expressed.	"Sustainability is...effort to...make decisions...conscious of the world...rather than...making decisions...self centered" (Interview 2:3, Lines 33-35)
BGC-4	Sustainable Triple Bottom line – people, profits, and planet - practices identified as valuable.	"...triple bottom line of people, profits, planet...a way of life to ensure...future generations enjoy the same environmental things...we enjoy...clean air, clean water" (Interview 1:4, Lines 3-4)
BGC-5	Reducing ecological footprint and negative impact on environment critical element of green initiatives.	"...a building that tries to leave the smallest ecological footprint possible (Interview 3:3, Lines 7-8)
BGC-6	Legitimate sustainable efforts involve long term health of environment, perspective, effort, and investment.	"...taking a long term perspective and doing the smartest things possible..." (Focus Group 1, Lines, 55).
BGC-7	Recycling, natural light, LED lighting, light sensors, local and sustainable sourced foods, composting, and water and resource conservation hallmark elements of green student center.	"...recycling and trash options...side by side, where we find one we find the other" (Interview 1:1, Line 30-31)
BGC-8	Resilience becoming more used to relate concept of climate change issues.	"...resilience is a better way to relate to the concept because sustainability has previous meaning and alternate meanings." (Interview 1:3, Lines 7-8)

BGC-9	Sustainability and LEED should be made to be clearly understood.	“Sustainability should never be too hard to understand or create...” (Interview 2:5, Lines 286-287)
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Theme 2: Communication, Education, Perception, Outreach, and Raising Awareness

COM	How is information regarding the Institutions' Green Student Centers shared and what are ways to engage the community, increase awareness of initiatives, and who is involved?	
COM-1	Communication is poor and ineffective – many students lack knowledge about green student center features and efforts.	“...have minimal information that is visible...don't know how effective it is. Don't think students would...read it.” (Interview 1:3, Lines 71-73).
COM-2	Lack of knowledge and awareness about green features and initiatives.	“I didn't really know this was a green building or how it was a green building.” (Focus Group 3, Line 141)
COM-4	Community desires information and wants to know how awareness is fostered and developed.	“It would be nice to know...building is certified nationally for...unique capabilities. Talk about...in orientation and...give them...information about it” (Interview 2:1, Lines 64-66)
COM-5	Make green features visible and tangible.	“...make it a lot more visible. There are all these features kind of hidden inside...” (Interview 1:4, Line 145)
COM-6	Curricular connections needed.	“...needs to be interdisciplinary...Union should work with faculty members, to say, ‘...bring your students to the Union. Come have a class here’...” (Interview 1:1, Lines 204-207)
COM-7	Visually communicate benefits and information to facilitate learning and change.	“...physically point out...features...put up a sign and if it's light sensors...physically point it out...put up the LEED symbol...say what point it is, what it does, what is the benefit to the occupant and the reason why it's a good thing.” (Interview 1:2, Lines 125-129)
COM-8	Multifaceted, creative, active approach to marketing is necessary to reach students.	“...interactive displays so people can...look at the things we talk about...bringing things to people...is a lot better...get...better results.” (Focus Group 2, Lines 536-541)

COM-9	Positive feedback of Green Student Center features, initiatives, and impact.	“I do enjoy showing this building off to visitors...it's another good step in the long run for this campus. It makes me like this place more and...give them money, eventually...shows they are taking steps to be a more...sustainable campus.” (Interview 2:5, Lines 224-232)
COM-10	Student behavior, practices, and attitudes positively influenced	“...before I did not think much about sustainability but after the design, after coming here and seeing...the building...I understood someone is trying to do something...They changed my attitude towards sustainability” (Interview 2:2, Lines 109-114)
COM-11	Events and active programs increase awareness.	“...having more events...here in the Union for people to realize that it is a “green” building” (Interview 1:1, Lines 102-103)
COM-12	Examples would be tours highlighting green features.	“...do tours of building for new students, because...if you haven't been here...you don't think anything of it unless someone tells you...It would be nice to have night tours...because the lights come on by themselves...” (Interview 2:1, Lines 134-138)
COM-13	Green Student Center environment is relaxing and stress-relieving.	“We're a lot more relaxed [here]...” (Interview 3:1, Lines 80-81)
COM-14	Email is not an effective method when solely used.	“I don't check my emails.” (Focus Group 2, Lines 527-528)

Theme 3: LEED, Legal, and Certification

LE	How do community members define and conceptualize LEED and LEED efforts?	
LE-1	LEED buildings use fewer resources, use resources wisely, and give back.	“...the way the building is created...it's creating energy...it's giving back” (Interview 1:4, Lines 7-10)
LE-2	LEED building demonstrates institution's commitment to sustainability.	“...the fact it is LEED certified...makes it better because it shows the school's commitment to sustainability” (Interview 1:4, Lines 85-86)
LE-3	Challenges and criticisms of LEED evident.	“...LEED is imperfect.” (Focus Group 1, Line 284)

LE-4	The concept of LEED certified building is not understood by everyone.	“Don’t know anything...” (Interview 3:1, Line 41)
LE-5	Education needed on LEED requirements, initiatives, and operations.	“...nobody...informed us about the features of the new student union...” (Interview 2:2, Lines 60-61)
LE-6	The concept of LEED certified buildings is understood.	“I understand the actual physical design... natural sunlight,...being built into ground trump...the roof top terrace...and we are trying to make this place zero waste with composting (Interview 2:5, Lines 132-135)

Theme 4: Engagement In and Influence of Student Center

EN	How are students engaging in and influenced by student centers, specifically green student centers? Important features of green student centers.	
EN-1	Common gathering place for students to feel welcome and safe, work, learn, have fun, and interact with peers, faculty, and staff.	“...place for students to enjoy themselves; ...to work out, play basketball...to have meeting space for...students and faculty to...get...together...and discuss issues.” (Interview 3:1, 68-72)
EN-2	Green student centers influence/have potential to influence student practice, behavior, perception, competency, and awareness of, but not limited to, sustainable elements and initiatives.	“Being engaged with this building has helped me to become more ‘green’.” (Interview 1:1, Lines 146-147) “Being...at the Union...has...changed me” (Interview 1:1, Line 196) “Made me...more cognizant of what I am doing...more cognizant of the effects...on the environment... After a while it does...become part of your permanent behavior.” (Interview 3:1, Lines 97-102)
EN-3	Green student center gives students a sense of energy and excitement.	“It’s like electricity, it’s infused into you, when you’re into this building you just feel more ‘green’.” (Interview 1:1, Lines 172-173)
EN-4	Student organization members and student employees are most engaged in green student centers.	“I am part of students for recycling. We have an office in the Center for Student Leadership and Service...I am the President...” (Interview 1:3, Lines 35-36)
EN-5	Provides essential meeting space for	“Student meeting space...is very

	students, faculty, staff, and community members to discuss issues.	important.” (Interview 1:1, Line 122)
EN-6	Students attend and host events in green student center.	“I’ve gone to a lot of events in ballroom. I was here last Friday for <i>Taste of __U</i> , I volunteered...” (Interview 1:4, Lines 30-31)
EN-7	Commuter students use green student centers more during the day, for work, business, and major events.	“I’m in here just to do business...I use the bank branch...the center for leadership if there’s club stuff that needs to go on, I’ll be in line for tickets, maybe go see a movie.” (Focus Group 1, Lines 175-176)
EN-8	Dining areas are important pieces of green student centers where students can develop a sense of connection.	“...the dining areas are a really important component for underclassmen. They spend a lot of time there.” (Interview 1:3, Lines 78-79)
EN-9	Students make/have the opportunity to make friends, connections, and identify commonalities with others in green student centers.	“...I’m a student and...a leader of students. So for me, it’s been more of building relationships with them students...building a level of trust and respect...” (3:1, Lines 76-78)
EN-10	Green student center is a source of pride and showpiece for the University.	“...I’m more proud of my school with the student union...if I’m talking to someone about U__...I’m like, absolutely you should come here...I’ve always liked U__ _ but it was missing something and now...has that...” (Focus Group 2, Lines 502-507)
EN-11	Study and lounge areas are desired spaces in green student centers.	“...the study floor is incredibly important, every time I go down there during peak hours every study room is filled and most of the tables on the outside...” (Interview 3:3, Lines 77-78)
EN-12	Green student centers transform campus life and student engagement.	“...the year the union opened student life on campus exploded.” (Interview 2:3, Line 154)
EN-13	Identified as educational tools where learning takes place and leadership skills are developed.	“I learned more team work, more patience...learned to be interactive with the ethnic groups...here, not just one group, but several different...” (Interview 3:2, Lines 59-60)
EN-14	Students perceive the green student center as the ‘living room’ and ‘heart’ of	“...I think of it as the living room on campus...it’s this hub for students to come

	campus.	to...” (Interview 1:1, Lines 40-41)
EN-15	Green elements are important to the student center and are seen as making positive impacts on the campus community.	<p>“I think it has...positive impacts...I can’t imagine I was here when there wasn’t a union. It’s impacted the student body and gives us another place to be. Studying, sleeping, off campus students have a place to stay in between classes...this union is here and this has changed us.” (Interview 1:3, Lines 98-102)</p> <p>“...green features...are so...important to this building. I think that’s another reason I am so excited to use it all the time.” (Interview 1:1, Lines 129-131)</p>
EN-16	Aesthetics and sustainable design positively influence student perception and use of green student centers.	<p>“...before we got this building, I hardly ever went to the student union because it was a fairly dreary kind of place. It wasn’t a place that you want to go hang out in. This place makes it seem more inviting of a place for students.” (Interview 2:1, Lines 120-122)</p> <p>“I like green. It reminds me of nature and gives peace.” (Interview 2:4, Line 23)</p>

Theme 5: Issues of Uncertainty, Skepticism, Negative Opinions, and Areas for Improvement

USN	What are seen as unfavorable aspects of Student Center and general green initiatives and efforts as well as areas to improve	
USN-1	Advertisement, marketing, and education of green design, initiatives, and impact are missing	“...To my knowledge there hasn’t been any sort of marketing being done... no one has talked about the environmentally friendly features in the building. There has been no discussion...no education on it.” (Interview 3:1, Lines 56-58)
USN-2	Acknowledgement of negative perceptions of green and potential to view green as a time-limited trend.	“I think we get lost in parsing out what’s “green” and what’s not “green.” I think that word is...overused...It’s on everything now...it’s the new “hype” word. (Focus Group 2, Lines 37-39)
USN-3	Missed opportunities to promote green elements and display action.	“Whether people realize that they are green features is perhaps a missed opportunity.”

		(Interview 1:2, Lines 138- 139)
USN-4	Efforts are perceived as expensive in the short-term, especially when there is lack of knowledge.	“I know people who think this is just a big waste of money. ‘I don’t understand why we’re doing this’...” (Focus Group 1, Lines 498-499)
USN-5	Inconsistent views of green, LEED, Sustainability act as obstacle to efforts.	“...it’s...confusing for people to really understand what LEED is (Interview 2:5, Lines 147-148)
USN-6	Minimal to no integration/connection in academic curriculum and activities.	“Students should be learning in this building...should have engineering...classes in this building to learn about how to engineer “green” features” (interview 1:1, Lines 162-165)
USN-7	Need visible elements of green features in action.	“...you would walk up and see...this is a more energy efficient building...you would just see it and...connect the two. ” (Focus Group, Lines 549-551)
USN-8	Need more activities promoting green elements	“...what other activities could take place in this building?” (Interview 2:5, Line 276)
USN-9	What are the reasons behind being sustainable? Why should I? What’s in it for me?	“...people...view it as, ‘I’m not paying for it because it doesn’t really affect me personally’...” (Focus Group 1, Lines 624-625)
USN-10	Learned more from meeting about green design/initiatives/impact	“...this conversation has made me think more about it...I didn’t realize...our building was...considered...green...” (Interview 2:1, Lines 157-158)
USN-11	Lack of knowledge of Sustainability Committee or its composition.	“I don’t really know who all was on the committee” (Focus Group 2, Line 614)

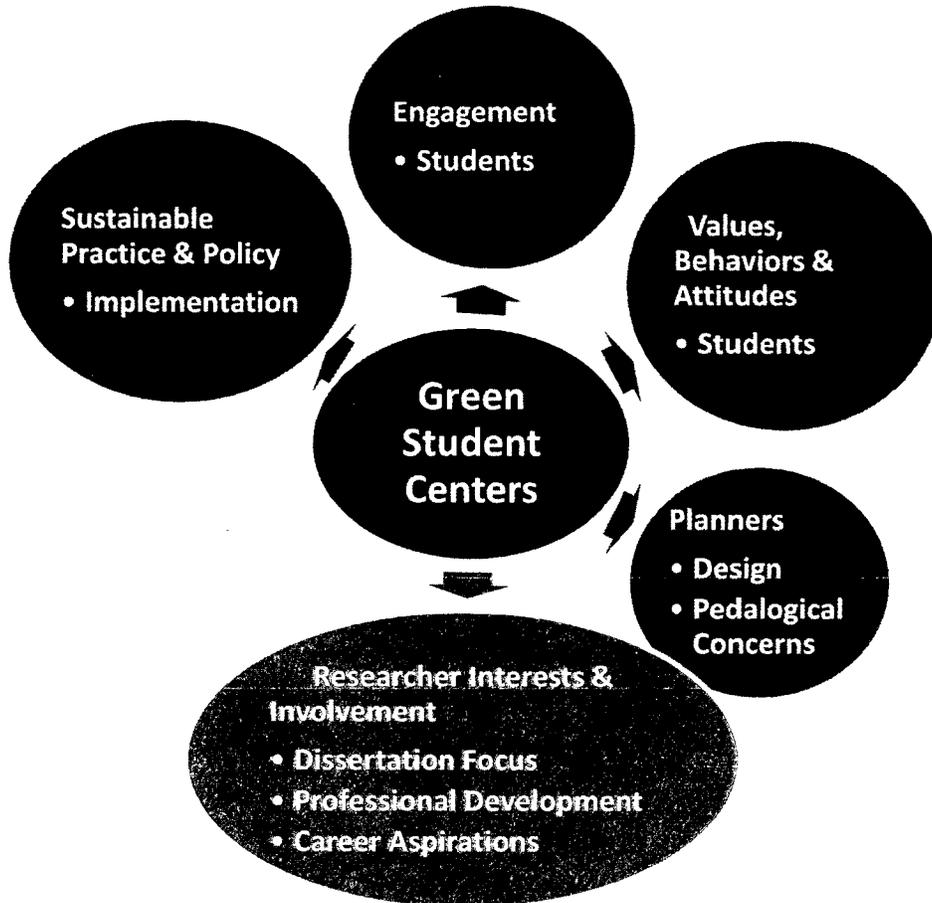
Created 10/31/12

Revised 11/2/12

Revised 11/4/12

Appendix G

Concept Map



VITA

Krista L. Harrell

Home: (251)287-2916 Cell: (757) 618-0507

kristaharrell@southalabam.edu

Education: *Doctorate of Philosophy, Higher Education*

Current Candidate

Dissertation Title: "An Exploratory Qualitative Examination of Green Student Centers Influence on the Campus Environment"

Old Dominion University, Norfolk, Virginia

Comparative Higher Education Abroad Program – Hong Kong Spring 2011

Comparative Higher Education Abroad Program – Italy Spring 2012

Master of Science in Education, Higher Education Administration Dec 2003

Old Dominion University, Norfolk, Virginia

Bachelor of Science in Human Services Counseling May 2001

Old Dominion University, Norfolk, Virginia

Employment History

University of South Alabama

July 2012 - Present

Associate Dean of Students

Student Center

- Supervise Student Center Services, Greek Life, University Programs, and Student Activities
- Oversee Student Center Renovation
- Title IX Coordinator
- Division of Student Affairs Assessment Committee Chair
- Division of Student Affairs Professional Development Committee Chair
- First Year Council of Student Government Association Advisor

University of North Carolina Wilmington

**Assistant Director for Programs*

July 2007 – August 2009

Campus Activities Coordinator

June 2003-June 2007

UNCW Presents, Department of Campus Life

- Supervised Lumina Theater Coordinator
 - Worked with full time professional staff member with responsibilities for a comprehensive film program in the largest single seat venue in Wilmington
- Supervised Graduate Assistant for UNCW Presents/ACE
- Supervised over-all management for the Game Room including student manager and staff scheduling, evaluation, staff training and development, programming initiatives, audience development, supply, equipment, inventory, sales management
- Conducted annual Service Area Training for Managers for 8 different service areas including: Game Room and Box Office, Projectionists, Building Managers, Involvement Specialists, Facilities Managers, Information Desk, and Production Technicians
- Part of Management Team that designed customer service guidelines for overall Campus Life facilities including brand new Student Center, renovated University Union and Burney Conference Center/Ballroom, and existing Warwick Center and Amphitheater totaling over 204,000 sq ft

June 2003 – August 2009

- Assisted in planning activities that enhance the overall education experience of students through development of, exposure to, and participation in social, cultural, multi-cultural, sustainability, intellectual, leadership and governance programs
- Advised the Association for Campus Entertainment (ACE) programming board by providing resources, the recruitment, selection, and training of chair people, and reviewing budgets that exceed \$250,000
- Conducted training sessions/retreats for leadership, programming, personal and group development, and university policy, and procedures
- Coordinate, assisted and ensured quality and professionalism of major campus events such as UNCWelcome and Welcome Back programs, ACE Big Spring Concert, Midnite Madness, Homecoming and other collaborative efforts
- Assisted in the development, implementation, and enforcement of policies applying to the UNCW Presents programs, events, and services
- Served on multiple university planning and selection committees

Selected Achievements

- *Part of staff who planned for and opened new student center and renovated university union*
- *Managed contract negotiations and implementation of performances featuring Kanye West, Dave Chappelle, The All-American Rejects, Citizen Cope, Vanessa Carlton, Michael Ian Black, Demetri Martin, and Nick Swardson*
- *Developed and implemented new programming board structure*
- *Developed and implemented new Homecoming structure with a refined selection process*
- *Supervised profitable game room operations*
- *Established Online ticketing for movie theater*
- *Established sustainability programming and integrated sustainability into a variety of programs and events across campus*

University of North Carolina Wilmington***Student Affairs Fellow***

January – August 2008

Division of Student Affairs Fellowship Program

Office of the Dean of Students, Transition Programs

- Exposure to Dean of Students Office service areas- conduct, off campus students, and student affairs
- Attended various meetings, committees, and events coordinated by the office of the Dean of students
- Learned campus judicial system and observed conduct conferences and campus judicial boards
- Exposure to Transition Programs areas – Commencement, Orientation, Convocation

Graduate and Professional Experience:***Graduate Research Assistant for SACS/COC Reaffirmation***

July 2010 – July 2012

Institutional Research and Assessment, Old Dominion University

- Provide essential support for the SACS/COC Reaffirmation (Southern Association of Colleges and Schools Commission on Colleges) through 2012
- Served as staff to the SACS Compliance Audit and Quality Enhancement Teams
- Gather evidence to support the University's compliance with *SACS Principles of Accreditation*
- Work closely with the Vice Provost for Planning and Institutional Effectiveness and the SACS Faculty Lead and will assist by staffing at least two each of the Compliance Audit and Quality Enhancement Teams
- Researched University records and policy, interviewed faculty and staff members to document policies and procedures, and worked with IRA staff in assembling data and evidence for presentation to SACS
- Drafted and edited narrative and data sections of report, recordkeeping and administrative activities
- Assume a professional role in the University decennial SACS Reaffirmation process
- Perform essential document and evidence collection in Xitrac's Accreditation Management System

Selected Achievements

- *Assisted in the establishment of a new process for faculty credentialing*
- *Assisted in the completion of the Compliance Report that resulted in no recommendations from the on-site committee visit*

Sustainability Coordinator

September 2011 – May 2012

Graduate Intern for Sustainability – STARS

January 2011 – September 2011

Division of Administration and Finance, Old Dominion University

- Participate in research and creation of Sustainability Tracking, Assessment, and Rating System submission by writing documentation for ODU to verify and justify credits related to the institution's environmental, social, and economic performance that will help shape policy
- Collaborate faculty and students from the College of Business and Public Administration and the Office of Procurement on research project to advance sustainable procurement in higher education
- Recognize Sustainability objectives for ODU through collaboration to create and implement initiatives in a supporting role on Go Green Committee
- Examine interests in Sustainability issues and propose recommendations and programs to raise awareness, increase knowledge, integrate education, and inspire action and enhanced engagement
- Establish groundwork for formulating a Sustainability Strategic Plan for ODU
- Explore the functions and operations of the division of administration and finance in comparison to work in student affairs and academic affairs
- Serve as the university representative to the CAA Sustainability Group Steering Committee

Selected Achievement

- *Led the completion of the STARS Report that resulted in a Bronze Rating*

Webb University Center Planning Group

Summer 2011

-- Present

Old Dominion University

- Assess needs as part of development of plan to renovate current facility or construct a new facility
- Part of delegation on site visits to Ohio universities' student centers and unions to gather ideas and insight

Fraternity and Sorority Life Blue Ribbon Task Force

Spring 2011

-- Present

Old Dominion University

Old Dominion University Board of Visitors Student Representative

May 2010

-- May 2011

- Selected by the Board of Visitors after a competitive process to represent 25,000 students

Virginia Wesleyan College

Graduate Intern for Sustainability

August – December 2010

Office of the Vice President of Operations

- Examined campus interests in Sustainability issues and proposed recommendations and programs to raise awareness, increase knowledge, integrate education, and inspire action and enhanced engagement
- Researched possible enhancements for the Clarke Hall LEED EB to verify and justify financial and energy savings to shape policy

- Explored the functions of a small, private, liberal arts college in comparison to larger, public institutions

Governmental Relations Student Advisory Committee

August 2010 – May 2012

- Shaped and organized ODU Day at the GA student delegation to meet with various Virginia legislators in an effort to communicate the needs of the institution and advocate for an increase in base funding that helped secure more than \$11 million in additional funding

President's Advisory Council on Student Success

June 2010 – August 2010

Old Dominion University

- Assessed external Keeling report of all departments, programs, and services through which personal and academic support is provided to students
- Assisted in the development of a reorganization of university structure with a new division – Student Engagement and Enrollment Services - focused on recruitment, retention, engagement, and student success

Advisor for Student Government Association Constitution Review

January – May 2010

Division of Student Affairs, Old Dominion University

- Provided direction and guidance to a committee of students to review and develop a new organizational structure, constitution and bylaws approved by the student body

Graduate Assistant for Event Programming

August 2002- May 2003

Office of Student Activities and Leadership, Old Dominion University

- Supervised and developed the Student Activities Council programming board in coordinating major campus events, such as concerts, within an operating budget that exceeded \$150,000
- Advised 10 Student Activities Council Executive Committee Chairs in all phases of programming
- Advised the Homecoming Chairs and Committee in planning and implementing activities
- Supervised the office of Student Activities and Leadership Program Assistant for the 500+ member student spirit group, 'Monarch Maniacs'
- Planned and implemented campus wide events each semester, such as 'Senior Toast'

Selected Achievement

- *Managed Homecoming that included fireworks and implemented first Homecoming concert with over 3,000 in attendance*

Assistant to the Director for Special Projects

August 2001- May 2002

Office of Student Activities and Leadership, Old Dominion University

- Served as Graduate Assistant for the Leadership and Greek Life Programs for over 200 recognized student organizations and 19 fraternities and sororities
- Advised the Order of Omega Greek Honor Society
- Coordinated the University's annual 'Leadership Lab' for 250 student leaders which included organizing programming sessions, presenter, and keynote speaker
- Shaped and implemented the first Students Promoting Education, Action, and Knowledge diversity lab as committee chair

Selected Achievements

- *State Council for Higher Education of Virginia grant recipient for SPEAK diversity lab*
- *Chaired Student Body Elections with the highest voter turnout on record*

Graduate Intern for Governmental Relations Liaison

January 2003 – April 2003

Institutional Advancement, Old Dominion University

- Attended the Virginia General Assembly session in Richmond once a week to assist with the interactions with state legislators
- Tracked the progress of pertinent legislation through committees to completion by attending Education Committee and Higher Education subcommittee meetings
- Deliberated on campus and in Richmond with faculty and staff relating to legislation concerns
- Observed over 10 Virginia public and private universities' cooperation in working with legislation

Selected Achievements

- *First intern for a program that led to a General Assembly intern staff that living and working in Richmond full-time*

Graduate Intern for Student Judicial Affairs

September – December 2002

Office of Judicial Affairs, Old Dominion University

- Adjudicated student conduct hearings and pre-hearings
- Produced the Academic Integrity Newsletter distributed to students and faculty
- Served as contact for 10-15 community service sites for students referral
- Compiled and managed pending student case files

Graduate Intern for First Year Experience Program

June – October 2002

Office of Residence Life, Old Dominion University

- Enhanced Peer Educator manual with administrative and educational information
- Presented the First Year Experience program at each Freshman Preview for 100 students
- Marketed the First Year Experience program to incoming and prospective freshman
- Met and advised Resident Assistants on academic probation
- Planned and presented Fire Safety Workshops for residents in violation of policy

Graduate Assistant for Director of Higher Education Program

May – September 2002

Office of Educational Leadership and Counseling, Old Dominion University

- Established the Higher Education alumni database consisting of 250 graduates
- Conceived, produced, and distributed the first quarterly Higher Education program newsletter
- Coordinated the New Student Orientation program for Higher Education
- Served as contact for all new and prospective Higher Education students

Teaching Experience:

College of Arts and Sciences First Year Experience 100 Instructor

August 2012 – Present

Graduate Teaching Assistant for Higher Education Recruitment

January - May 2010

Graduate Teaching Assistant HIED 758 Higher Education Leadership

Spring 2010

Graduate Teaching Assistant ELS 732 Statistics Applied to Research in Education

Fall 2009

Preparing Future Faculty Certificate Program

Completed 2011

Freshman Seminar UNI 101 Instructor- Linked with English 101

Fall Semester 2007 and 2008

Freshman Seminar UNI 101 Instructor

Fall Semester 2006

Publications:

Harrell-Blair, K. L. & Ihrke, R. (2011, Nov/Dec). Beyond earth day: Advancing sustainability in campus activities and entertainment. *Campus Activities Programming*, 44(5), 40-43.

Rudisille, J., & Harrell-Blair, K. L. (2011). Funding sustainability initiatives on campus. *Association of College Unions International Sustainability smarts: Applying the core principles of sustainability on campus*, 20-27. Retrieved from http://www.acui.org/content.aspx?menu_id=20&id=300

Harrell-Blair, K. L. (2010, December 19). Graduate students are a good investment [Letter to the editor]. *Daily Press*, p. 23.

Harrell-Blair, K. L., Kitchie, M. A., & Gregory, D. (2010, May). Visioning with your programming board. *Campus Activities Programming*, 43(1), 6-10.

Lindsay, N., Harrell-Blair, K., McDaniel, L., Williams, C., & Reed, D. (2010, May/June). "Green on the Screen": Promoting Sustainability through a Campus Film Series. *About Campus*, 15(2), 26-29.

Harrell-Blair, K.L., Kitchie, M. A., & Meade, C. (2008, September). A team approach to advising. *Campus Activities Programming*, 42(3), 16-19.

Harrell-Blair, K.L. (2010, April). My moments. *Association of College Unions International*. Retrieved from http://www.acui.org/content.aspx?menu_id=124&id=12410

Presentations

American College Personnel Association

2012 Annual Conference, "Are We Constructing Student Affairs Robots?" with J. Lowder, K. McDowell

2011 ACPA National Convention, "Helping SGA Focus on More Than Dollars and Rhetoric" with D. Stansberry

2010 ACPA National Convention, "Planning, Implementing, and Assessing Successful Student Affairs Sustainability Initiatives"

2007 ACPA/NASPA Joint Meeting, "A Common Language: Using Assessment to Impact Student Learning Across Student Affairs"

2004 National Convention, "Yo, Peep This: The Language of Today's College Student" with E. Hoffman, S. Brady, S. Stone

Association of College Unions International

2012 Annual Conference, "Build Your Professional Network: Get Involved!" with J. Camputaro

2012 Annual Conference, "Are We Constructing Student Affairs Robots?" with J. Lowder, K. McDowell

Association for the Advancement of Sustainability in Higher Education

2012 Conference, “Advancing Sustainability in Student Activities”, with R. Ihrke

Poster Session Presenter 2012 Conference, “Starting a Sustainability committee for a national professional organization: Lessons learned from NACA”, with R. Ihrke

2010 National Conference, “Earth Day and Beyond”, with R. Ihrke

National Association for Campus Activities

2010 NACA South Conference, “Earth Day and Beyond”

2010 National Convention, “Economic Crisis Panel II” with J.Ogle

2009 National Convention, “Economic Crisis Panel” with J.Ogle

2009 National Convention, “A Team Approach to Advising” with M. Kitchie

2009 South Regional Conference, “Getting Involved with NACA” with B. Wooten

2008 Regional Conference, “Getting Involved with NACA” with J. Lowder

2007 South Regional Conference, “Free” Speech Zones and Today’s Campus Activism” with W. DiNome

2006 South Regional Conference, “Dollars and Sense of the College Entertainment Industry” with J. Wainright

2006 National Convention, “So, You Need A Ticketing System?” with J. Scaffido, S. Weissman

2005 South Regional Conference, “Taking A Look at Assessment, Getting A Gauge On Student Learning”

Professional Honors and Awards:

Zeta Tau Alpha Helen M. Crafford Founder’s Grant Scholarship - \$9,000, 2011

HESA Conference Scholarship, 2011

Zeta Tau Alpha Helen M. Crafford Founder’s Grant Scholarship - \$9,000, 2010

ACUI Gretchen Laatsch Scholarship, Spring 2010

Doctoral Student Professional Development Award, Spring 2010

ODU Student Affairs Travel Award, Spring 2010

NACA South Outstanding Professional Award, 2008

UNCW Pandion Society Golden Seahawk Award, 2008

UNCW Kudos Award, Fall 2006

NCCPA Outstanding New Professional, 2005

Old Dominion University Honors and Awards:

Old Dominion University Board of Visitors Student Representative, 2010-2011
 Old Dominion University Dean's Education Abroad Award Scholarship, 2011 & 2012
 Chi Sigma Alpha Higher Education Honor Fraternity
 Old Dominion University Board of Visitors Student Representative First Alternate, 2002-2003
 State Council of Higher Education Grant Recipient, Fall 2002
 Old Dominion University Kaufman Award Finalist, 2001
 Order of Omega Greek Honor Society
 Omicron Delta Kappa Leadership Honor Society
 Who's Who Among American Colleges and Universities
 Old Dominion University Philip J. 'Tip' Connell Greek Award

Professional and Campus Involvement:

American College Personnel Association
 Association of College Unions International
 Association for the Advancement of Sustainability in Higher Education
 British Council Going Global Conference
 Certified Master Advisor Program
 Dean of Students Leadership Council of Old Dominion University
 Go Green Committee of Old Dominion University
 Graduate Student Organization
 Higher Education Student Association of Old Dominion University
 North Carolina College Personnel Association
 National Association for Campus Activities
 Wilmington Alumnae Panhellenic Association
 UNCW Field Hockey Club
 Housing and Residence Life "House Calls" of UNCW
 Omicron Delta Kappa National Leadership Honor Society, UNCW Chapter
 UNCW Project B-GLAD
 Student Success Committee of Old Dominion University
 UNCW Human Resources
 Vagina Monologues Production
 Zeta Tau Alpha Tidewater Alumnae Association
 Vice President I and General Advisor, Iota Sigma Chapter at Old Dominion University