

A Second Nature Initiative  
**CAMPUS GREEN BUILDER**

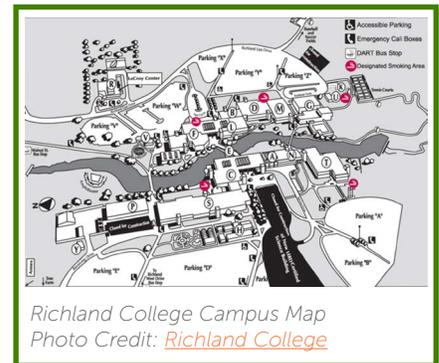
**Institution Profile: Richland College**

Dallas, TX  
 Community College  
 Enrollment: Approx. 17,000

**INSTITUTION PROFILE**

**Brief History**

Richland College is located on approximately 243 acres of former farmland adjacent to the cities of Richardson and Garland.<sup>1</sup> The institution was established in 1972 and is one of the seven campuses comprising the Dallas County Community College District (DCCCD). When they arrived for classes in the fall of 1972, students shared their campus lawn with sheep grazing on the farmland and ducks on the lakes separating the campus buildings. The campus was carefully planned around the natural landscape and today students and staff still enjoy and protect those first campus ducks' descendants.



The diverse student body of 17,000 is estimated to include 55% women, 45% men; 1/3 full-time, 2/3 part-time; 72% baccalaureate-bound; 42% Anglo-American, 20% African-American, 18% Hispanic, 13% Asian-American, and 5% international. In 2003, Thunderduck Hall, the newest of six buildings added since 1972, opened as the college's one-stop student enrollment "front door." Construction of another building, the Sabine Hall, is also currently underway. Funds from the 2004 bond election will add \$54 million in new construction by 2010.<sup>2</sup>

**Academic Programs and Courses**

The mission of Richland College is teaching, learning and community building. The institution serves primarily adult learners, in northeast Dallas, Richardson, and Garland, Texas. Courses, programs, and services are offered to enable students to achieve their educational goals and become lifelong learners and global citizens, building sustainable local and global communities.

As part of its commitment to environmental protection, the institution offers many courses that help students understand the challenges the planet faces and its role in our existence. For instance, an Ecology course emphasizes environmental awareness and knowledge with topics that include pollution, erosion, energy use, etc., while an Environmental Geology course educates about the earth as a habitat, with special attention to the interrelationships between humans and the physical

<sup>1</sup> Richland College. (January 30, 2009). "Richland College Profile." Retrieved July 13, 2009.

<sup>2</sup> Richland College. (October 4, 2005). "Richland College: Profile." Retrieved July 13, 2009.

environment.<sup>3</sup> Richland helps its students build their future through courses that could be applied to the first two years of a baccalaureate degree, one- or two-year certificates in a number of career fields, and training in the latest technologies for students who want to advance in their current careers.<sup>4</sup> Additional information on the academic offerings at Richland College can be found [here](#).

## SUSTAINABILITY MISSION

### Institution and Sustainability

#### *Green Initiatives on Campus*

Dr. Stephen Mittlestet, President of Richland College since 1979, is a leader on campus when it comes to promoting green initiatives. As mentioned by Mr. Eddie Hueston, Director of Facilities Management, Dr. Mittlestet is very much of a visionary when it comes to transforming the current campus into a green one and has been guiding the institution towards sustainability long before the term became popular. The administration takes the leadership role in introducing new ideas and discussing funding and implementation plans. Richland also benefits from the collaboration of Facilities Services who implements these efforts and the Sustainability Office that sets agendas for these sustainability initiatives. The following are a few of such initiatives that are taking place at Richland following the president's advocacy and the support of the facilities office and senior administration:

- **Reuse of all excavated soils** is practiced during construction of any type on the campus. Rather than being shipped to landfills, excavated soils are used throughout the grounds, which have resulted in topography changes, landscaping and creation of green spaces that adorns the campus while also offering space for community gatherings.
- **The recycling program** has been growing for many years at Richland. The institution participated for the first time in the 2009 EPA RecycleMania event and was placed 2nd among Texas institutions. Recycling of paper, non-biodegradables and the use of lasting utensils such as potable water containers are highly advocated on the campus. Students and Facilities Services are actively involved in this program to make it a success. Discussions and updates of the 2009 RecycleMania events can be found at the RecycleMania blog. The institution also puts a lot of effort in educating students and staff about the benefits of recycling. Click [here](#) to learn more about the impact of recycling from RecycleBank.
- **Water efficiency renovations** have taken place throughout the campus buildings. For example, bathroom renovations, which include installation of 200 water-free urinals on campus, save 45,000 gallons of water per urinal per year on campus.
- **The Facilities office has begun analyzing means to reduce operating cost** throughout campus in off peak (vacations and summer) periods. The institution realized that, through reorganization of the locations of classes during the summer vacation, for example, many buildings could go completely "offline." This kind of adjustment into building management practice will inevitably result in energy, maintenance and water savings for the institution. In addition, the "Thunion Report" was instituted in 1999 to identify key performance indicators that are evaluated on monthly basis to determine how the institution is performing vis-à-vis their constituents (students and faculty) as well as the campus energy consumption. Past reports can be found [here](#).

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<sup>3</sup> Dallas Community College District. "2009 - 2010 Catalog - Course Descriptions." Retrieved July 14, 2009.

<sup>4</sup> Richland College. "Richland College Homepage." Retrieved July 14, 2009.

- In addition, the institution also offers an educational opportunity, in the form of a course, which concentrates around sustainability and design.

### ***Sustainability Commitment and Plan***

In recent years, Richland College has begun a massive effort that highlights the institution as a leader in campus sustainability. The [GREENRichland website](#) is a hub where the visions, missions and commitments of the institution are outlined and whose progress can be viewed by all. The Green Richland group is a partnership with the Richland community that aims to develop and implement an action plan for moving the institution onto a path of environmental sustainability and for inviting others to join in this effort. "GREENRichland envisions a college community for which environmental sustainability is a way of life for staff and students, a benchmark for decision makers, an emphasis for educational programs, and a catalyst for collaborative global partnerships."<sup>5</sup> Examples of how Richland is incorporating sustainability in the institution's strategic plan can be viewed here.

Richland is one of the 90 institutions currently participating in a pilot of the Sustainability Tracking, Assessment & Tracking System (STARS). The program is a voluntary, self-reporting framework for gauging relative progress toward sustainability for colleges and universities. A few of the goals are to provide a guide for advancing sustainability in all sectors of higher education as well as to build a stronger and more diverse campus sustainability community.<sup>6</sup>

An original signatory of the American College and University Presidents Climate Commitment (ACUPCC), the institution is one of the twelve higher education institutions chosen to be part of Accelerating Campus Climate Change Initiatives, a collaborative project by the Rocky Mountain Institute (RMI) and the Association for Advancement of Sustainability in Higher Education (AASHE). With this selection come many benefits including:

- Assistance with developing a climate action plan that reduces greenhouse gas (GHG) emissions.
- An opportunity to generate climate solutions and innovative ideas with peer campuses, RMI, and AASHE.
- Seed funding for implementation of high-potential GHG emissions-reduction projects on campus.

Richland's 2008 GHG inventory was completed and a report was submitted to the ACUPCC.

### **Campus Green Building**

Sabine Hall will be the first LEED® certified building at the Richland College. Thunderduck Hall, construction of which was completed in 2003, was also built with green features, but it was planned and built before the widespread implementation of the LEED® benchmarking system. The institution, as part of its commitment to sustainability and the climate neutrality, has decided that all new buildings on the campus will be built at least to LEED® Silver standards.

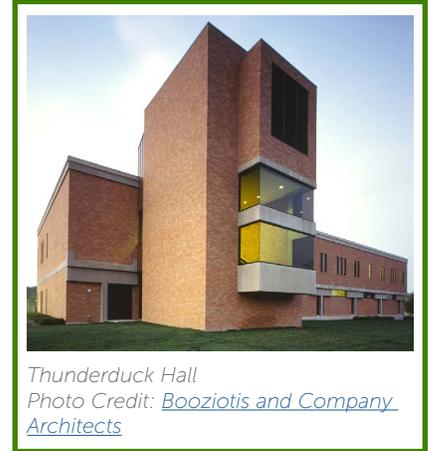


<sup>5</sup> Richland College. "GREENRichland: Vision, Mission, and Priorities." Retrieved July 15, 2009.

<sup>6</sup> Association for the Advancement of Sustainability in Higher Education. "Sustainability Tracking, Assessment & Rating System (STARS)." Retrieved July 15, 2009.

## Challenges in regards to Building Green on Campus

Richland College decided at an early stage of the planning process that the new science building would be built to sustainable, environmentally friendly and energy efficient standards. Following the learning experiences during the green building-related conferences, such as Greenbuild and APPA, the administrative and senior management of the institution decided to adopt the LEED® building criteria for the new construction on the campus. The support from other institution members, senior administration and faculty members further catalyzed this process, encouraging the project team at every stage of planning, design and implementation. However, there were a few challenges that the team encountered and eventually surmounted throughout this journey of building the first LEED® certified building on the campus:



### 1. Incongruence between the Dallas building code and LEED® criteria

The team found that, though LEED® imposed more stringent requirements to provide higher sustainable options, the building codes of the City of Dallas did not always allow for these features to be implemented. The design team found that in many instances the codes were not “keeping up with the evolution of the times,” in the words of Mr. Eddie Hueston, Director of Facilities Services at Richland College. Conflicts arose during inspection and permitting of many of the building features. For example, it was quite challenging to obtain a building permit that would allow the installation of cisterns, which were used for gray water and flushing.

### 2. The structure of the community college district

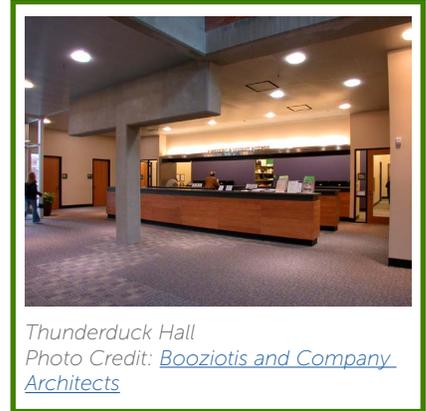
The Dallas County Community College District (DCCCD) system consists of seven independent campuses, but has one chancellor who overlooks the entire district. This structure requires that requests to build green be approved by the district board. Richland found that, since green building requirements were not included in the bond issue documents (the bond that funded the construction of Sabine Hall) and building green was not necessarily an existing doctrine for the district, it was difficult to promote for a construction type that is known to carry a higher upfront cost compared to traditional building methods. Advocating for this initiative to obtain the necessary funds was found to be a difficult task for the passionate and committed staff members at Richland College.

### 3. Selection of Building professionals

Following the decision to adhere to LEED® guidelines, Richland recognized that the selection of appropriate design and construction professionals would be an integral part of the process in order to reap the full benefits of sustainable building. The institution went through a rigorous selection process, which constituted of multiple interviews of local designers, architects, LEED® professionals and other building experts. Throughout the interview process, the institution quickly realized that there was a scarcity of green building expertise, as many firms did not have a portfolio that truly supported sustainable design and construction practices.

#### 4. Cohabitation of laboratories and offices

Sabine Hall is the first science building being constructed on Richland campus since the initial structures were completed years ago. The campus team found that much has changed since then, and that construction of laboratories and offices in one building that follows LEED® criteria represented special set of challenges due to the stringent requirements associated with their function in such close vicinity to frequently occupied spaces. The laboratories also have more rigorous indoor air quality control protocols than other regularly occupied spaces, and designing the HVAC system configuration to meet these demands could also add to the overall cost of the building, if not planned optimally.



Thunderduck Hall  
Photo Credit: [Booziotis and Company Architects](#)

#### Identifying and Assessing Opportunities to Build Green

Evaluating the need for green building on the campus was about recognizing the benefits offered by green buildings and the desire to advance Richland into the sustainability movement. By attending several conferences such as Greenbuild and the one organized by the Association of Higher Education Facilities Officers (APPA), the administration learned about the advantages of high efficiency construction. Once the need to expand the campus was determined, the institution knew that adopting green building practices for this construction was a necessity and not an option to be debated or pondered upon. Even though the institution does not have a clear process as far as building policy is concerned, being an ACUPCC signatory, the institution is dedicated to implementing LEED® Silver criteria, at a minimum, into its new construction projects on the campus. This initiative was strongly supported by the president, Dr. Mittleset, and the senior management who took the lead role in obtaining funding for the project.

#### Green Building Protocols

There are no formerly recorded protocols for green building practice at Richland. However, the institution has made a commitment to itself and future generations to provide learning spaces that are sustainable and livable as well as become educational sources by demonstrating emerging green technologies, which in turn help the campus reduce its carbon footprint. Richland is looking to improve the campus through the current bond issue. However, sources for additional resources and funding are being investigated in order to renovate existing buildings to LEED®-EB standards. The institution realized that the aging infrastructure can benefit from retrofits, which will bring cost savings as the campus continues to grow and create facilities that could satisfy the increasing demands of the campus community. To that respect, the physical plant on the campus was recently expanded and updated to twice its previous size now housing new chillers and boilers. Also, the institution showed its commitment to sustainability by reusing a modular building that needed to be taken apart in order to enable the extension of the central plant. No waste was generated during this process.

## GREEN BUILDING PROJECT PROFILE

### Project Introduction

#### *Sabine Hall (Science Building)*

**Functions:** Laboratories, offices, gathering and conference

**Completion:** Summer 2009

**LEED® Rating Version:** LEED® NC 2.2

**Certification:** Awaiting LEED® Platinum

**Approximate Built-up Area:** 124,000 sq.ft.

The new science building, Sabine Hall, will replace the previous Sabine Hall building and will be home to the School of Engineering and Technology, Sciences, Photography, Trio Programs and other health related courses. This new Science Building/Infrastructure project, with a construction budget of approximately \$41,900,000, is planned to be 115,000 square feet in size.<sup>7</sup> Janet James, associate dean of Special Programs and executive assistant to President Mittlestet, explained some basic changes that will be made to help accommodate faculty, students and staff. The new science building is now named Sabine Hall and the old Sabine building is renamed Wichita Hall.

The changes that are being made are to accommodate the Richland community by making time more manageable and to coordinate each program of study into arranged academic halls. The building will house the existing Follett Bookstore to which a cyber café will be added. One computer lab will be located in the new science building for drop-in science students. Also, two conference rooms were added to make more space for meetings and conducting business. Director of Facilities Services, Eddie Hueston said, "We are going to double the size of the central heating and air conditioning plant located in Pecos Hall."<sup>8</sup>

The facility will be home to the Richland College Bookstore as well as the Health and Science Placement Center programs. The new facility will include new labs, classrooms, offices, and student study areas to support these programs. This project will also include the construction of a new coffee shop, bookstore, upgrades and improvements to Richland's mechanical infrastructure. Please note this project includes Science Building, Infrastructure, and expanded parking projects.

College administrators, architects, and contractors are seeking Platinum status under the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System for this building. Aside from the many environmentally friendly features and processes implemented in the design and construction of this building, there is also a plan to install three small blade wind turbines outside the building as a demonstration project for renewable energy technology. The purpose of the wind turbines will be to assist in electricity generation for one of the classrooms; however, the primary function is to serve as a teaching tool for students and a visual reminder of the building's addition to the campus infrastructure.

In the spirit of sustainability, which has been the core foundation of the institution throughout the years, this new concrete structure embodies many low impact, high performance and energy efficient features. The following are a few of such features that underscore the project team's commitment to green building principles:

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<sup>7</sup> Dallas County Community College District. "[Project Detail](#)." Retrieved October 10, 2009.

<sup>8</sup> Richland Chronicle. "New science building weeks behind schedule." Retrieved May 15, 2009.

- Low or no-VOC materials are used throughout the building.
- Approximately 95% of the waste material has been diverted from landfills during the construction of this project.
- Recycled steel and concrete with 50% fly-ash content were used as primary building materials.
- Green housekeeping, which is already employed on the campus, is part of the maintenance plan following the completion of the building.
- Also, the building has been designed to harvest natural light and has lighting sensors for optimization of lighting-related loads.

### **Project Process**

Initial planning for the Sabine Hall building started in late 2004 and early 2005. During 2005, mostly the institution focused on building the project team while selecting experienced consultants. The actual project work began in early 2006.

During the design and construction of the building, various steps were taken to involve the campus community and determine the exact set of needs that the new building will have to satisfy. Since the building was planned to house programs related to science and humanities, the science and humanities staff was brought onboard. The project team undertook a thorough needs assessment procedure to ensure that the occupants' needs were successfully met at the end of the project.

Specialists for the laboratory construction met with the staff to understand and outline the requirements of the lab systems and apparatus. Also, field trips were organized for the entire faculty for an overview of various stages of the construction. This helped the campus community understand the impact generated by the green building features on the overall design, function, cost, as well as the community and the environment.

In addition, the project team and the administration explored ways in which the building could become a teaching tool and support courses that could educate the students about the benefits offered by green design, construction and management of facilities. In essence, this novel campus green building is attributed a critical position in the curricular and co-curricular activities to enable the future generation of citizenry and professionals to understand the complex issues of climate change as well as potential sustainable solutions to combat this challenge.

Also, a commissioning process was implemented to ascertain installation of energy efficient systems and system protocols. The commissioning agent was selected to perform activities such as infrared testing, mechanical testing, as well as crosschecking of design specifications of HVAC and MEP systems among other measures. The commissioning agent also conducted training sessions for the facilities staff. These training sessions were recorded to make them accessible for the training of the future staff members. This training currently focuses on the maintenance and optimum modus operandi for the HVAC as well as the electrical systems. The institutions also entered into a contract with GCA to employ green cleaning practice for the new Sabine Hall.

## Project Finance

The Dallas County Community College District was formed in 1965 and today serves a sprawling metropolitan area of some 2.4 million people and 860 square miles. The largest community college district in the largest state in the lower 48, Dallas County is delivering educational services to approximately 10 percent of the county's population each year.<sup>9</sup>

The financing of the Sabine Hall building project was done entirely through this bond issue obtained by the Dallas County Community College District (DCCCD). The bonds were obtained through a countywide tax election. On May 15, 2004, the voters overwhelmingly approved a \$450 million bond issue for the district, one that cleared the way for a decade of improvements on its various campuses. DCCCD said the funds would enable it to expand capacity and update classrooms and laboratories to meet students' needs; address safety and accessibility issues at older facilities in the system; and ensure that the district was ready to meet the specific educational and training needs of its fast-growing and changing population. In all, 32 projects were listed in the bond program, spread across the seven individually accredited colleges—Brookhaven, Cedar Valley, Eastfield, El Centro, Mountain View, North Lake and Richland. The work includes new and renovated science and classroom buildings, student services centers, industrial and automotive technology buildings, theater and arts facilities, and athletic fields and support buildings.<sup>10</sup>

One point to note here is that the funds were not issued with a stipulation that construction for which the funds would be utilized needs to follow green building principles or sustainable practices. However, the Richland College decided to follow the path of sustainable design and construction adhering to and promoting its core mission and philosophy.

The complete cost of Sabine Hall, which includes planning, construction and LEED® documentation and certification cost, is estimated to be \$43.2 million. The president and the senior administration acted as ardent advocates and leaders in obtaining and distributing the necessary funds for the project, as well as simultaneously campaigning about the importance of green building practice among peer institutions.

Also, the Director of Facilities Services, Eddie Hueston mentioned that the Bond administration, which is developed for managing and coordinating the bond projects and processes, hired an independent architecture firm to address and assimilate the sustainability aspects of the project into the planning as well as fund-dissemination procedure. More information and updates on the Dallas County Community College District (DCCCD) bond issue can be found at the DCCCD Bond Program information page and this DCCCD website search.

## Project Features

### *Site Selection*

- Integration of the building in the current campus grid and layout
- Reflective roof for minimal heat retention
- Maximized use of sunlight in approximately 90% of the built spaces

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<sup>9</sup> and <sup>10</sup> Archiving Business Excellence Online. (June 8, 2009) "Dallas Community College District." Retrieved October 2, 2009.

### *Energy*

- Occupancy sensors are used throughout the building
- Photocells light harvesting features for lighting control and dimming are installed across the building
- Efficient heating and cooling systems are installed with thermal controls
- Three small size wind turbines to equate the power usage of one classroom are installed as a demonstration project
- Restructuring of the DCCCD power purchase program was investigated to incorporate green power purchase for all campuses in the district

### *Water*

- Low flow fixtures and waterless urinals are installed in the building
- Roof water runoff and HVAC condensation is harvested for irrigation and flushing purposes
- Water efficient landscaping and low maintenance vegetation are incorporated in the landscape as water conservation measures

### *Material and Resources*

- Recycling and management of construction waste with 90% of waste diverted from landfills
- Use of recycled materials at as many locations as possible
- Concrete material with 50% fly-ash content used for the construction

### *Air Quality*

- The new HVAC system is estimated to be 32% more efficient compared to the baseline buildings
- The facilities staff will employ green housekeeping products, a practices that is already in place at the institutions
- Use of low-emitting materials and furniture systems
- Use of low or no VOC paints, sealants and other materials
- Use of GreenGuard-certified carpet systems and carpet adhesives
- An exhaustive air-flushing process was carried out prior to the building occupancy to clear the building of residual air-borne contaminants and products following the construction phase

## **Lessons Learned**

### *Educational*

- The building can serve as an educational tool with displays, tours depicting and highlighting its

green building features. This would educate the campus community as well as off-campus audience about all the benefits offered by green buildings, such as high energy efficiency, improved air quality, overall positive impact on the occupants' health and productivity, as well as reduction in the institutional greenhouse gas emissions.

- Also, the project team strongly feels that it is crucial for the institution to educate its senior administration and decision-makers about the detrimental effects of the built environment on the natural environment and solutions that could help address this challenge. They should acquire at least the basic understanding of what building green entails and how it could assist in pursuing institutional sustainability through research, conference participation and other such learning opportunities. The understanding and knowledge of the Richland College's administrative staff vis-à-vis green building proved to be a catalyst in the successful realization of this campus green building project.

### *Financial*

Replacing the old Sabine Hall with the new science building became essential for Richland because the building could no longer accommodate the programs that it was needed to house, in terms of occupancy and standards for laboratories and other offered courses. The Sabine Hall building was entirely funded by the 2004 bond issued funds. The team learned that:

- Myths about green building costing more than traditional construction are just myths. There are tremendous advantages associated with designing, constructing and managing green building and facilities; for one, the extensive financial saving resulting from the installation of high-efficiency HVAC and MEP systems.
- And, there would be upfront premiums, but they can be recuperated through the long-term benefits and cost savings over the life cycle of the building.
- Since technology and green building knowledge have increased in last few years, there is a wide range of available expertise that could be hired for the project, and because of this growth in the industry, the premium charged by these consulting firms and experts have lowered significantly.
- Also, the project team learned that having a separate administration hired by the Bond office manage the architectural firm proved to be an excellent addition to the financial aspects of the processes. This provided a thorough monitoring and quality management mechanism to the entire project.

### *Social*

- This project certainly brought the community's attention to green building practice. It has enticed the peer institutions and neighboring communities to learn about sustainability. Richland's new campus in Garland is also helping establish the institution as a leader in sustainability.
- The project has heightened awareness on the campus and brought a new focus to other campus buildings that could be retrofitted with sustainability measures. The old Sabine Hall is planned to undergo an adaptive reuse process that will make the building more efficient than the current facility.

- This LEED® Platinum building is certainly proving to be a real life portal for green building information and platform for engaging the community into more sustainability focused initiatives.

### *Technical*

- Not all design firms and professionals have experience and skill regarding green and sustainable building design and construction. During the interviewing process for the construction team selection, Richland realized that many did not have the qualifications necessary to make Sabine Hall the sustainability landmark following the institution's vision.
- It is important to have a LEED® Accredited Professional onboard from the beginning of the project; however, it is equally important to hire a firm that has credible and substantial portfolio of LEED® and/or other green projects and has a local presence in your region/city.
- Participation in green events and conferences could certainly increase one's awareness regarding firms and companies that are involved in and have excelled the green building practice. Richland College selected Rocky Mountain Institute (RMI) as the project's day-lighting consultant after learning about RMI's commitment to sustainability at one of the green events.

## **GREEN BUILDING RESOURCES**

### **Recommendations**

Mr. Tony Schmidt, the project architect from the architecture firm retained for the Richland College's Sabine Hall project, Perkins & Will, as well as Mr. Eddy Hueston, the Director of Facilities Management at the Richland College offered suggestions that could help other institutions, which are planning to build new buildings or retrofit the old infrastructure on their campuses and are interested in pursuing the green design and construction route for these capital projects.

Participation in the conferences and workshops that educate about the logistics of green construction is one crucial resource that Mr. Hueston found to be enormously informative and helpful. By attending Greenbuild and exploring the resources available on the United States Green Building Council (USGBC) website, Mr. Hueston and others were able to acquire green building knowledge that was taken back to the institution and informed the planning of this project. This understanding also greatly benefited the administration, since it helped eliminate the myths about green building costing more and not being worth the effort. Though it is true that there is an added upfront cost to building green, the team realized that the benefits and the cost savings over the lifetime of the building outweigh the initial expense.

In addition to their own research, the project team at the Richland College also took the initiative to search other institutions that were building green on their campuses. The institution met with those peers and visited their campuses. During this networking period, they were able to ask questions about the involved processes and discuss payback and strategies with the administration and facilities staff of those peer institutions.

Mr. Schmidt, the project architect, also noted that deciding on building green and adherence to a specific rating system prior to the commencement of a project is essential to the success of the

design and construction in the given budget: "...making the commitment at the beginning of the project allows the design team to provide the client with a sustainable building at no additional cost. We're showing two buildings in our Dallas office that are achieving LEED® Platinum and have not exceeded the original project budget, have not reduced scope in order to do that. I think the early commitment is key to getting a much more responsible building, one that you receive immediate payback in utility cost and functionality of the building and you're not paying any premium for that."<sup>11</sup>

Mr. Schmidt further noted that the owners should demand high performance buildings from their design professionals and contractors, rather than becoming inactive participants in the process, leaving all the critical decision-making to the hired consultants. Mr. Schmidt acknowledged that many of the features that Richland College requested were not typical of high efficiency buildings. Richland showed the commitment and understanding towards sustainability, which has not only made the institution a leader in the higher education sector, but also helped the infrastructure become significantly more energy-efficient with momentous savings in energy related expenses.

Finally, when asked about recommendations regarding how to generate momentum within the institution in support of campus green building practice, Mr. Hueston concluded: "...I don't have a real firm formula for that but I can say it this way, and I can say this with very much a clear conscious and with some degree of experience, if top administration does not have a strong commitment to this, it's going to be hard to make it happen. If the faculty, for example, is behind this, but top administration (vice president and president) do not feel very strongly about it, it will be really hard to make it work. To me, the success that we've had, comes from the fact that our president not just acted on this idea of building green but he literally led us all the way through."<sup>12</sup>

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<sup>11</sup> and <sup>12</sup> Hueston, E. and Schmidt, T. Telephone Interviews. July 1, 2009 and July 14, 2009.