



# Building Green

## What's It All About?

By Greg Sitek and Cornelia Stumpf

**A**dapting... We must constantly adjust and adapt our thinking to the developing trends that are always emerging. Building construction is and has been undergoing dramatic change. What is Building Green about? Trident Sustainability Group (TSG) is in the business of providing answers to these kinds of questions. Here are some insights into what is developing.

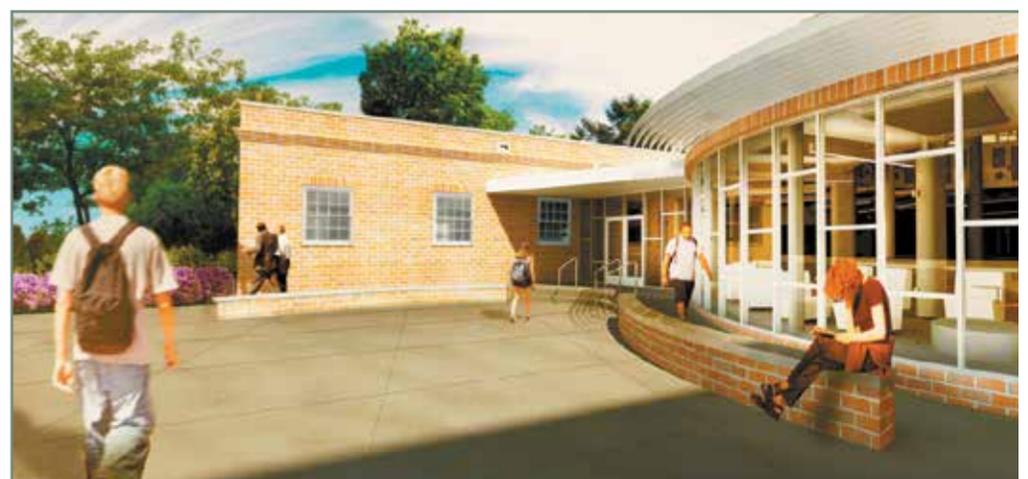
“Commercial and industrial properties are increasingly trending towards adopting sustainable design practices and LEED certification. A lot of the interest is coming from the prospective tenants. On the East coast, European clients are demanding green industrial properties, which are popping up at ports up and down the coast. On the office front, developers are increasingly seeing LEED certification requirements in lease agreements and RFPs from tenants and that is driving them to adopt sustainable design principals. If you are building an office building and not getting it certified, you are going to be at a competitive disadvantage, or worse, unable to even attempt to lease your space to a growing number of organizations.” – Tommy Linstroth, Trident Sustainability Group.

**ACP:** What are some of the things being done to make buildings greener?

Buildings are having an increased focus on energy and water reduction, which tend to offer the greatest payback to owners and developers. Higher efficiency HVAC systems and LED lighting are going a long way towards these savings, while new plumbing fixtures can reduce water use in a building nearly 45 percent (vs 30 percent with older fixtures). Additionally, the plummeting cost of solar is making it much more viable on numerous projects, though it still typically depends on the state incentives that are available for the best payback.

**ACP:** How does LEEDS fit into the increased emphasis/interest in Green Building?

More and more owners and tenants are seeking LEED because they really value the third party certification. They know walking in that it is a high performance, healthy building, that the systems have been commissioned and are working properly, and that a lot of thought was put into how the building was designed and constructed. It just gives them peace of mind. For owners, there are just too many tenants and organizations that require LEED to risk not getting it certified. If you don't all of a sudden you're not even eligible to rent out space to Federal agencies and a number of Fortune 500 companies across the country.





**ACP: Who or what groups are more interested in Green Building?**

It really comes from all sectors (see project sheet).

**ACP: What effect does making a building Green have on costs – construction, construction materials, owning and maintaining?**

One of the biggest miss-conceptions is that to have a green building, you have to spend a ton of money to get there. In the 50+ LEED certified projects I've worked on, the vast majority are under a half of one percent increase in cost. Certainly as you push the envelope in terms of renewables, etc., you are looking at a higher first cost, but the paybacks make it a smart investment. It all goes into the integrated design process. If you give me a budget of \$5,000,000, I can give you a LEED building without increasing that budget. There might be some trade off here or there, but it can certainly be done. Once you get to owning and maintaining the buildings, that's when you're reaping the benefits of 25 percent less energy and 45 percent less water. Not many people's utility rate have gone down recently - it's really also a risk reduction measure for futuring operating cost protection.

**ACP: What are the benefits, immediate and long term for building greener?**

Immediate and long term are lower utility costs and a better working/living environment. Green buildings have been associated with healthier occupants and better performance - higher test scores in schools, better productivity in offices, and quicker recovery times in hospitals. Those benefits just keep accruing. For developers, you can certainly see quicker lease up. Some studies have shown you can get higher rents, but I personally haven't seen that, but it can differentiate your building in a crowded real estate market. If you're leased up in 2 months in instead of 6, that's a huge financial reward.

**ACP: Can buildings be built so that they can be made greener in the future?**

With the quick evolution of technology, there will always be newer and better strategies for buildings. Much as we are installing retrofit LED's today, we'll likely be doing so in 15 years. One strategy I really like for future flexibility is moveable wall systems, such as those from DIRT. I walk through so many buildings that constantly have improvements going on for expansion or rework and its just drywall ripped out, wiring pulled up, and all sorts of waste. With moveable wall systems, you get unlimited flexibility over the next 50 years to constantly reconfigure space without the waste and cost.

**ACP: What factors have the greatest impact, influence or effect on greening a building?**

Materials, technology, design, engineering, construction process... It all starts with design to have the biggest effect. You can take an off the shelf building plan and throw in better HVAC systems, lighting and plumbing fixtures and see results, but to truly elevate the performance of the building, it starts out with an integrated design process to truly analyze the building's program and figure out what the ideal solutions are - not just relying on the "way it's always been done"

## Indigo Hotel

Hotel Indigo Athens is Athens, Georgia's premiere privately owned LEED certified building. It is located at 500 College Avenue in the heart of downtown. The hotel is a testament to sustainability and Athens' focus on supporting local businesses.



Hotel Indigo features:

- A high efficiency VRV HVAC system,
- Efficient lighting controlled by keycards in guest rooms and
- Two ERVs to pre-condition fresh air.

Water use in the building was reduced by 35 percent through the use of pressure-assisted toilets, low flow showerheads, and Watersense faucets. A cistern collects HVAC condensate for use in the courtyard.

A strong emphasis was placed on the use of local materials. Granite from the project site used in the design of the courtyard, a tree that was taken down was formed into a bench, and all steel, concrete and drywall were sourced from within 500 miles. Even the coffee is locally roasted just down the road at Jittery Joes.

## Ellis square Savannah Visitor's Center

Savannah, Georgia's new Ellis Square Visitor's Center warmly welcomes visitors and demonstrates the city's commitment to a sustainable future. The Center is the city's first LEED certified project and is rebirth of an historic Savannah Square. Ellis Square is one of the original squares and was historically the site of the City Market but spent its most recent forty years as a parking deck.

The site is in the heart of the historic downtown and easily accessed by tourist foot traffic or ample mass transit service. The building features public restrooms with low flow plumbing fixtures that reduce water consumption over 40 percent.

The Ellis Square Visitor's Center features an efficient VRV HVAC system and the lighting is tied into daylight and occupancy sensors. This project has connected the original downtown master plan with the both 21st century technologies and Savannah's commitment to sustainability.



## Georgia Power Office Savannah

The Georgia Power Coastal Regional Offices in Savannah, Ga. are a perfect blend of historic charm and cutting-edge, 21st century technology. This 10,000 square-foot project maintained nearly 100 percent of the existing building shell while incorporating energy-efficiency and renewable energy technologies to make this a truly showcase LEED building. The building features a Mitsubishi VRV HVAC system to provide extremely efficient heating and cooling while giving occupants extensive amounts of personal controls. LED lighting further reduces the load, while a solar thermal system and 35 KW solar PV array provide energy directly into the building.

The project has earned a LEED Platinum rating – the first of its kind in the region, and one of only a handful of Platinum projects that are also on the National Register of Historic Places. On top of the energy efficiency, the project cut water use nearly in half with 1 GPF pressure assist toilets, waterless urinals, and low flow faucets. The entire parking lot is pervious through the use of GravelPave, and an electric vehicle recharging station will keep Georgia Power's vehicles on the road and emissions free



## Other Green Building Projects:

### The Penn Jersey Headquarters and Distribution Center, Philadelphia (2011)

255,500-square-foot, build-to-suit office and distribution center which earned LEED NC Silver certification. Some project highlights include the highly efficient T5 lighting on occupancy sensors and a zoned HVAC that reduced energy consumption by a quarter, as well as Water-efficient fixtures and the use of high-recycled and locally-produced building materials.

### Sustainable Fellwood, Savannah, Ga. (2012)

Affordable Housing project with three phases. Located in close proximity to the historic core of Savannah, GA, the entire project earned LEED ND Stage 2 Silver certification from the USGBC in June 2009. Phase 1 received LEED H Gold and EarthCraft Home certification in December 2009. Phase 2 earned LEED H Gold in March 2012, while Phase 3 building received LEED H Platinum certification in May 2012. The project is one of the largest mixed-use, mixed-income sustainable affordable housing developments in the USA.

### Fontaine Hall Student Residences, Columbus, Ga. (2012)

Listed on the National Trust's Register of Historic Places, this project received LEED NC Gold and also achieved preserving nearly 95 percent of the building shell and restoring over 80 percent of interior walls. Originally constructed in 1895, it was Columbus' first mixed use building.

### Clarendon Hospital Addition, Manning, S.C. (2012)

The 47,000-square-foot addition earned LEED certification in July 2012 and is the premiere LEED certified project in Manning, S.C. The project features a white TPO roof and concrete parking lot to reduce the heat island effect. The indoor environmental quality was designed to provide a healthy, restorative atmosphere. Some of the highlight features are: Ample glazing for a connection to the outdoors and natural light, individual controls in each room for comfort, highly filtered fresh outside air and low-emitting paints, sealants and adhesives to maximize air quality.



### Elizabeth Logistics Center, Elizabeth, N.J. (In Construction)

Currently under construction, this LEED NC Silver project, with 277,000 square feet, is scheduled for completion by end of summer 2013.

### McDonald's Restaurant at Abercorn Common, Savannah, Ga. (2006)

This is the first McDonald's in the world to occupy a LEED Core and Shell certified building. This restaurant combines a traditional McDonald's kitchen layout with a high performance, healthy building design. Water use inside the building was reduced by 50 percent through the incorporation of pressure-assisted toilets, waterless urinals, and low flow faucets. High-efficiency lighting and HVAC allow for 20 percent more energy efficiency. The site design handles onsite runoff through porous pavement. The landscape requires no potable water for irrigation, and preferred parking is available for low-emitting and hybrid vehicles.

## Abercorn Common Shopping Center, Savannah, Ga. (2005)

The first all retail LEED Core and Shell shopping center in the nation with roughly a 180,000 square foot strip shopping center, located on the south-side of Savannah, Ga. The award winning retail center is the combination of renovating the existing shopping center combined with new construction. Designing around existing tenants and incorporating design standards from numerous retailers was challenging but overcome by the design team and developer and resulted in a LEED Silver certification in 2005. Abercorn Common features high efficiency rooftop package units and lighting, high performance glazing, and a reflective TPO roof membrane to reduce heat gain and resulting in energy savings.

## The Granite Mill, Augusta, Ga. 2008

The Granite Mill located adjacent to the canal in Augusta, Ga. on the historic Enterprise Mill. The 3-story, 15,000 square-foot, mixed-use annex is composed of one floor of residential apartments and 2 floors of professional office space. Granite Mill features a blend of historic renovation with cutting-edge renewable energy technologies demonstrating the ability to marry sustainable design elements with historic integrity. The on-site hydro-electric system supplies 100 percent green power.

## Residence at West Waldburg, Savannah, Ga. (under construction/delivery date summer 2013)

Blending historically compatible materials with a modern flare, this LEED for Homes Platinum (under review) project is helping to redefine sustainable housing. Located in the Victorian District of Savannah, Ga., the new construction sets new standards for LEED homes in an historic environment. With a budget of \$150/square-foot, this residence demonstrates that high levels of sustainability can be achieved without the elevated price tag. The home features a 20 SEER variable speed heat pump, 3 kw solar array, LED lighting, and a high performance building envelope that significantly reduces the need for supplemental heating and cooling.

## Additional projects in 2013

Harmony Greene –An affordable Housing Project of 50 homes in Pooler, Ga., which received LEED Gold in early 2013.

AASU Library on the Campus of Armstrong Atlantic University, Savannah, Ga.; slated to be LEED Gold by early fall 2013.

Chatham County Health Center – Savannah, Ga., slated to be finalized, with LEED Silver certification, by end of summer 2013.

Georgia Southern University Dining Halls (Lakeside and Landrum), Statesboro, Ga. Two projects, to be certified Silver by the end of 2013.

Trident Sustainability Group (TSG) provides sustainability consulting services to a broad spectrum of clients in the following primary areas:

- LEED Certification
- Green Building Design, Construction, Operation
- Systemic Organizational Sustainability
- Comprehensive Green Municipal Solutions

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