

Green Building and LEED: LEED-CS at 171 17th St., Atlanta, GA



Figure 1. 171 17th St.⁷

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10/19/06

Sustainable Design
ENVS 664

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Atlantic Station is a 138 acre smart-growth development in Midtown Atlanta, Georgia. In addition to being a mixed-use, brownfield remediation site, Atlantic Station also boasts a significant LEED high-rise containing 509,237 square feet of class A office space.* The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certification program is the standard in American green design, and this acronym is truly embodied at this site. It is the first structure that visitors encounter upon crossing 17th St. bridge, and its symbolic presence actualizes the ideals and accomplishments of Atlantic Station. 171 17th Street, also known as the Wachovia Building, is a LEED-CS Silver building under the LEED-CS Pilot Project. In fact, when 171 17th St. was awarded this certification in 2005 it became one of the first buildings in the Southeast built to LEED specifications, the first high-rise office building in Georgia to receive any LEED certification, the first commercial high-rise in Atlantic Station to receive LEED certification, and the first high-rise commercial office tower in the world to get a LEED-CS certification.^{1,2,5}

The attainment of a Silver level rating was assisted by the designation of Atlantic Station as a LEED campus; 7 of the 37 prerequisites and credits that 171 17th St. received apply to all buildings in the Atlantic Station development.² Atlantic Station is the first and one of the few sites in the world to get credits for site wide attributes in the larger community master plan.^{2,5} Southface Energy Institute coordinated this effort on behalf of the Georgia Environmental Facilities Authority (GEFA) and Atlantic Station, by working closely with the U.S. Green Building Council to develop and document the campus pilot program.⁵

The LEED-CS category is one of several new additions to the LEED certification system. The Green Building Rating System for Core and Shell Development (LEED-CS) has been created for designers, builders, developers and new building owners who address sustainable design for new core and shell construction.⁴ In general, core and shell construction covers base building elements, such as the structure, envelope and building-level systems like central HVAC among others.⁴ The CS product recognizes that the division between owner and tenant responsibility for certain elements of a building varies between markets.⁴ It is a market specific application that acknowledges the restricted influence over which a developer can exert control in a speculatively developed building, and it encourages the implementation of green design and construction practices in areas where the developer has control.⁴ This category aims to set up a synergistic relationship which allows future tenants to capitalize on green strategies implemented by the

* The square-footage conflicted between sources. The value chosen here was intermediate and came from an article in the Atlanta Business Chronicle.³ The other values were 514,314 SF from bizjournals.com,⁶ 525,000 SF from an article in the Fulton County Daily Report,¹⁰ and 500,000 SF from a LEED press release.⁵ This variance is likely due to differentials in measurement criteria and only represents a small portion of the area.

developer.⁴ Tenants have authority over key building areas such as interior space layout, building finishes, lighting, mechanical distribution, and plumbing fixtures, etc., that are often outside the direct control of the developer.⁴ This freedom for tenant decisions within the CS category was designed to be complementary to the LEED for Commercial Interiors Green Building Rating System (LEED-CI).⁴ Atlantic Station encourages this in the Tenant Design & Construction Guidelines, which educate individual tenants about LEED and give them the tools to pursue LEED for Commercial Interiors certification.⁵

To reach the LEED Silver level, Atlantic Station L.L.C. worked closely with Southface Energy Institute and GEFA, and employed The Epsten Group as their LEED consultant to coordinate details of the certification.^{5†} "Atlantic Station...integrated the LEED certification framework in a new and exciting way; [it] represents a style of reduced impact development that other environmentally-conscious businesses should strive to match, and [it] will certainly be viewed as a model for all future LEED development," said Rick Fedrizzi, President, CEO and Founding Chair, U.S. Green Building Council.⁵ This building is a landmark on the LEED landscape as well as within Atlanta.

The building achieved a Silver Rating in Core and Shell as of June 30 2005.⁹ This rating was received with a score of 30; Silver is 30-35, out of 65 possible credits.⁹ The structure itself then received 23 credits in addition to the 7 campus credits and 7 prerequisites. A copy of the LEED 171 17th Street. checklist is attached in the appendix, and analysis of the categorical points follows below.^{9‡}

Sustainable Sites

171 17th St. received 9/15 points in this category, making this category its largest source of points. The prerequisite for erosion and sedimentation control was satisfied. Credits were received for: site selection (1), development density (1), brownfield redevelopment (1), alternative transportation: public transportation access (1) and parking capacity (1), reduced site disturbance: development footprint (1), heat island effect: roof (1) and non-roof (1), and tenant design and construction guidelines (1). Many of these credits are likely campus credits as well. 171 17th Street is located in an the largest infill brownfield redevelopment in the country which was remediated at a cost of over \$10 million.¹¹ There is a 7,000 spot parking garage which favors vans and carpools, easy access to electric buses that service the whole of Atlantic Station, and 1717 17th St. possesses a white roof to reflect heat.¹¹

Bike racks could presumably have been added with ease, and perhaps their exclusion came when the developers realized that the site would not get over 35 points so they cut their losses. Catering to points and not site specific traits is one of the biggest downfalls of LEED

[†] See Appendix for information on these organizations. From LEED news report on 171 17th St.⁵

[‡] Unless otherwise cited, the information in the LEED checklist heading came from the LEED checklist itself.⁹

certification. As a mixed use development with bike lanes, embracing bicycling in addition to public transit and walking seems highly appropriate. Atlantic Station also has a number of electric buses and cars, so it is curious that these credits did not appear on the checklist for alternative fuels. The development also has a substantial groundwater recovery and management system, so credits for stormwater management also seem to be lacking from the checklist.

Water Efficiency

The structure was awarded 4/5 credits in this section: water efficient landscaping: reduction by 50% (1) and no potable use or no irrigation (1), water use reduction: 20% reduction (1) and 30% reduction (1). Water use was reduced by over 37% on the site through the use of efficient faucets (0.5 gallons/minute vs. 2 gallons /minute normally) and urinals (half-gallon per flush, half of normal value), and native plant materials which do not require an irrigation system, require less fertilizers, and require fewer pesticides.¹¹

This section is susceptible to abuse since surrounding a building by concrete could achieve 4/5 points; though there is some green, this seems like it may be the strategy that 171 17th St. employed. Green design should be environmentally sound and energy efficient, and integration of green space should be rewarded and encouraged, especially in a commercial building which is declaring itself green.

Energy and Atmosphere

The building meets prerequisite credits for fundamental building systems commissioning, minimum energy performance, and CFC reduction in HVAC&R equipment. The only credit received in this category is for ozone reduction (1). Atlantic Station's environmentally-friendly central cooling system on site will save building owners more than \$35 million in construction costs, while operating more than 25 percent more efficiently than traditional building HVAC systems resulting in lower energy bills for tenants.¹ This category receives points from HVAC equipment and drinking fountains which use refrigerant instead of CFCs or HCFCs.¹¹ The campus HVAC also meets this criteria and the building exceeds ASHRAE 90.1-2001 standards with an energy efficient curtainwall, white roof, and optimized mechanical systems.¹¹

Materials and Resources

The Wachovia building met a prerequisite credit for collection of recyclables and then went on to get 4/11 points. Credits were awarded for: recycled content: 5% (1) and 10% (1) (post-consumer + ½ post-industrial), local/regional materials 20% manufactured locally (1) and of that 50% harvested locally (1). During the property's reclamation, concrete building foundations were uncovered, which were broken into smaller pieces and reused as backfill.¹ Over 28% of the value of materials came from recycled material such as recycled steel and wallboard with recaptured

gypsum.¹¹ The concrete, acoustical panel ceiling, and aluminum curtain wall all contain recycled material as well.¹¹ Most of the buildings materials were made in Georgia or nearby states from recycled materials.¹¹

Indoor Environmental Quality

171 17th St. satisfied the category prerequisites of minimum IAQ performance and environmental tobacco smoke (ETS) control. Within the category, 7/13 possible points were earned: carbon dioxide (CO₂) monitoring (1), low-emitting materials: adhesives and sealants (1) and paints (1) and carpets (1), indoor chemical and pollutant source control (1), thermal comfort: comply with ASHRAE 55-1992 (1), and daylight and views: daylight 75% of spaces (1) and views 90% of spaces (1). Daylit interiors, direct views, low-emitting materials, and indoor pollutant source control help to improve indoor environmental quality, and paints, adhesives, and sealants are all in compliance with strict environmental standards.¹¹ Permanent walk-off grates will reduce dirt and dust in the building, and a permanent “no-smoking” policy will help as well.¹¹

This number adds up to 8, not 7 total points; unless one only counts partially, either one of these credits is not counted or was mistakenly not labeled as a prerequisite on the worksheet. This oversight would make the building actually deserve 31 instead of 30 credits.

Innovation and Design Process

This category was the only category in which the building received all possible points, 5/5. Points were awarded for: innovation in design: exemplary perf. recycled materials (1) and exemplary perf. local and regional materials (1) and comprehensive trans. monitoring plan (1) and exemplary perf. local and regional materials (1), and LEED accredited professional (1). The building doubled LEED requirements for both recycled and local materials; this was accomplished through vigilant monitoring and materials confirmation by the design and construction team.¹¹ By working directly with a LEED accredited consultant the process was facilitated and verified in real time.¹¹ While working with a LEED professional is certainly helpful, it seems dubious that this is worthy of a point.

Discussion and Conclusions

The purpose of LEED certification is more than just to document the level of environmental stewardship within a building; by achieving this designation, the building itself becomes an icon, representative of a commitment to environmental standards. This has the effect of generating press and attracting attention which benefits the parties involved in the building’s construction and management as well as the issues that are represented.

This has certainly happened at 171 17th St. It validated the economic viability of green-design when it was purchased in a high-profile \$170.5 million deal by J.P. Morgan, the largest office investment sale in Atlanta in 2005.³ At approximately \$335 per square foot, this sale was a record for the highest price per square foot for an asset building sale in Atlanta.³ That it was purchased for such a rate and by such a large mainstream company further propels green-design into the public eye. Also, the sale of 171 17th Street received an Honorable Mention in the office category in Atlanta Business Chronicle's Best in Atlanta Real Estate awards.³ "From a commercial real estate investment perspective, it has one of the best rent rolls in town with Wachovia, Arnall Golden Gregory, Burr & Forman and Carter as the four major anchors to the building," noted Will Yowell, an executive vice president of investment properties for CB Richard Ellis Inc.³ Thus, while the certification did increase the budget it did not do so by much, and some prospective tenants inquired about LEED and are now satisfied with the comfortable indoor environment and green site amenities.⁸

The LEED system is not perfect, though. Indeed, many professionals critique the cost and effort involved in becoming LEED certified. Also, LEED buildings are green, but all green buildings do not have to be LEED. LEED certification can result in a building being crafted for the checklist more than the site itself, a building not maximizing its sustainability either because certain features would not gain points, or a buildings foregoing several sustainable features since their inclusion would not change the certification level. LEED certification is also an expensive and time consuming effort. In the case of 171 17th St., there were multiple organizations involved, and a special LEED Consultant was hired. These costs and administrative efforts can exceed budgets and add to the inconvenience of greening. In this instance, however, there was substantial financial and organizational backing, and the benefits of LEED certification outweighed the costs. The nature of Core and Shell Certification is to be halfway to having a fully green building. Atlantic Station does provide the materials to encourage and facilitate LEED-CI for the tenants, and the certification status is quite innovative and suited to a commercial office building. Nonetheless, this methodology does not ensure that the building becomes green throughout.

LEED-CS is ultimately a successful compromise in green certification that affords more buildings the opportunity to pursue LEED status without compromising their financial viability. Indeed, buildings with LEED-CS will be able to attract more tenants and for higher prices with better air quality, for instance, which can increase productivity and reduce absenteeism, health-care costs, and operating costs.¹⁰ Such clear and substantial benefits are among the strictly economic reasons for choosing a LEED building which are supplemented by the environmental benefits. LEED-CS represents a next step in the diffusion of green building technology across the spectrum of construction, and with its successful implementation some of the most energy intense buildings, commercial office high-rises, will have the opportunity to become green with less hassle.

Appendix⁵

About The U.S. Green Building Council

The U.S. Green Building Council is the nation's leading coalition of corporations, builders, universities, government agencies and nonprofit organizations working together to promote buildings that are environmentally responsible, profitable and healthy places to live and work. Since its founding in 1993, the Council has grown to more than 5,400 member companies and organizations; a 50-person professional staff; a broad portfolio of LEED® products and services; the industry's popular Greenbuild International Conference and Expo; and a network of 67 local chapters, affiliates and organizing groups.

About The Georgia Environmental Facilities Authority

The Georgia Environmental Facilities Authority (GEFA) Division of Energy Resources promotes energy efficiency and renewable energy programs that stimulate economic development and improve environmental quality in Georgia. The Division also provides education on the importance of energy conservation and supports a diversified and balanced approach to cost effective energy solutions.

About Southface Energy Institute

Since 1978, Southface has encouraged responsible solutions for environmental living. Driven by the Southeast's growing need to save energy and water and preserve our natural resources, Southface has successfully fostered unique partnerships with public, private and nonprofit organizations. Southface programs and publications reach design and construction professionals, homeowners, government officials and others to promote sustainable homes, workplaces and communities through education, research, advocacy and technical assistance.

About The Epsten Group, Inc.

The Epsten Group, Inc., a full-service Atlanta architectural-engineering firm, has shown leadership in sustainable architecture since 1991. They have expertise in green building rating systems including LEED®, SPiRiT, and Earthcraft HouseT. They also specialize in energy and daylighting simulations, green roofs, and envelope and mechanical systems commissioning. In their work, The Epsten Group has demonstrated that green design principles not only enhance the quality of a project, but typically result in both immediate and long-term economic benefits.

Figure 2 LEED-CS Checklist for 171 17th St.⁹



Figure 3 From Epsten Group.²



Figure 4 From Southface Journal 2005.⁸

Figure 5 From Epsten Group.²

Figure 6 Water use reduction.¹¹

Figure 7 Walk off grates reduce dirt and dust.¹¹

References

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