A photograph of a tall, modern skyscraper at night, illuminated from within. The building's facade is dark, but the windows are lit up, creating a grid of light. At the top of the building, the word "WACHOVIA" is written in large, white, illuminated letters. To the right of the name, there is a blue square logo with a white stylized wave or 'X' shape. The sky is dark, and the overall scene is a nighttime cityscape.

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

Nick Beck

10/19/06

Sustainable Design

ENVS 664

LEED-CS

- The Green Building Rating System for Core and Shell Development (LEED-CS)
- For designers, builders, developers and new building owners who address sustainable design for new core and shell construction
- Base building elements, such as the structure, envelope and building-level systems like central HVAC
- Synergistic relationship which allows future tenants to capitalize on green strategies implemented by the developer
- 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
- 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)

LEED-CS and 171 17th St.

- LEED-CS Silver building under the LEED-CS Pilot Project
- Certified June 2005
- One of 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
- Atlantic Station as a LEED campus; 7 of the 37 prerequisites and credits
- One of the few sites in the world to get credits for site wide attributes
- 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
- LEED consulting with The Epstein Group
- Atlantic Station provides Tenant Design & Construction Guidelines, which educate individual tenants about LEED and give them the tools to pursue LEED for Commercial Interiors certification



LEED-CS

171 17th Street- Atlantic Station, LEED-CS® Pilot Project
 LEED-CS Certification Level: Silver
 June 30, 2005

30 Points Achieved **Possible Points: 65**

Certified 24 to 29 points Silver 30 to 35 points Gold 36 to 47 points Platinum 48 or more points

9 Sustainable Sites **Possible Points: 15**

Y		
Y	Prereq 1	Erosion & Sedimentation Control
1	Credit 1	Site Selection
1	Credit 2	Development Density
1	Credit 3	Brownfield Redevelopment
1	Credit 4.1	Alternative Transportation, Public Transportation Access
1	Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms
1	Credit 4.3	Alternative Transportation, Alternative Fuel Vehicles
1	Credit 4.4	Alternative Transportation, Parking Capacity
1	Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space
1	Credit 5.2	Reduced Site Disturbance, Development Footprint
1	Credit 6.1	Stormwater Management, Rate and Quantity
1	Credit 6.2	Stormwater Management, Treatment
1	Credit 7.1	Heat Island Effect, Non-Roof
1	Credit 7.2	Heat Island Effect, Roof
1	Credit 8	Light Pollution Reduction
1	Credit 9	Tenant Design and Construction Guidelines

4 Water Efficiency **Possible Points: 5**

Y		
1	Credit 1.1	Water Efficient Landscaping, Reduce by 50%
1	Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation
1	Credit 2	Innovative Wastewater Technologies
1	Credit 3.1	Water Use Reduction, 20% Reduction
1	Credit 3.2	Water Use Reduction, 30% Reduction

1 Energy & Atmosphere **Possible Points: 16**

Y		
Y	Prereq 1	Fundamental Building Systems Commissioning
Y	Prereq 2	Minimum Energy Performance
Y	Prereq 3	CFC Reduction in HVAC&R Equipment
10	Credit 1	Optimize Energy Performance
1	Credit 2.1	Renewable Energy, 1%
1	Credit 2.2	Renewable Energy, 5%
1	Credit 3	Additional Commissioning
1	Credit 4	Ozone Depletion
1	Credit 5	Measurement & Verification
1	Credit 6	Green Power

4 Materials & Resources **Possible Points: 11**

Y		
Y	Prereq 1	Storage & Collection of Recyclables
1	Credit 1.1	Building Reuse, Maintain 75% of Existing Shell
1	Credit 1.2	Building Reuse, Maintain 95% of Existing Shell
1	Credit 2.1	Construction Waste Management, Divert 50%
1	Credit 2.2	Construction Waste Management, Divert 75%
1	Credit 3.1	Resource Reuse, Specify 5%
1	Credit 4.1	Recycled Content, 5% (Post-consumer + 1/2 post-Industrial)
1	Credit 4.2	Recycled Content, 10% (Post-consumer + 1/2 post-Industrial)
1	Credit 5.1	Local/Regional Materials, 20% Manufactured Locally
1	Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally
1	Credit 6	Rapidly Renewable Materials
1	Credit 7	Certified Wood

7 Indoor Environmental Quality **Possible Points: 13**

Y			
Y	Prereq 1	Minimum IAQ Performance	
Y	Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1	Credit 1	Carbon Dioxide (CO ₂) Monitoring	
1	Credit 2	Increase Ventilation Effectiveness	
1	Credit 3	Construction IAQ Management Plan, During Construction	
1	Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1 point for 2
1	Credit 4.2	Low-Emitting Materials, Paints	2 points for 3
1	Credit 4.3	Low-Emitting Materials, Carpet	3 points for 4
1	Credit 4.4	Low-Emitting Materials, Composite Wood	
1	Credit 5	Indoor Chemical & Pollutant Source Control	
1	Credit 6.1	Controllability of Systems, Perimeter	
1	Credit 6.2	Controllability of Systems, Non-Perimeter	
1	Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	
1	Credit 7.2	Thermal Comfort, Permanent Monitoring System	
1	Credit 8.1	Daylight & Views, Daylight 75% of Spaces	
1	Credit 8.2	Daylight & Views, Views for 90% of Spaces	

5 Innovation & Design Process **Possible Points: 5**

Y		
1	Credit 1.1	Innovation in Design: Exemplary Perf., Recycled Content
1	Credit 1.2	Innovation in Design: Exemplary Perf., Local & Regional Materials
1	Credit 1.3	Innovation in Design: Comprehensive Trans. Monitoring Plan
1	Credit 1.4	Innovation in Design: Exemplary Perf. Local & Regional Materials
1	Credit 2	LEED® Accredited Professional

Sustainable Sites

9	Sustainable Sites	Possible Points: 15	
Y			
Y	Prereq 1	Erosion & Sedimentation Control	
1	Credit 1	Site Selection	1
1	Credit 2	Development Density	1
1	Credit 3	Brownfield Redevelopment	1
1	Credit 4.1	Alternative Transportation, Public Transportation Access	1
	Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1
	Credit 4.3	Alternative Transportation, Alternative Fuel Vehicles	1
1	Credit 4.4	Alternative Transportation, Parking Capacity	1
	Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	1
1	Credit 5.2	Reduced Site Disturbance, Development Footprint	1
	Credit 6.1	Stormwater Management, Rate and Quantity	1
	Credit 6.2	Stormwater Management, Treatment	1
1	Credit 7.1	Heat Island Effect, Non-Roof	1
1	Credit 7.2	Heat Island Effect, Roof	1
	Credit 8	Light Pollution Reduction	1
1	Credit 9	Tenant Design and Construction Guidelines	1

Sustainable Sites

- Campus credits
- In the largest infill brownfield redevelopment in the country which was remediated at a cost of over \$10 million
- 7,000 spot parking garage which favors vans and carpools
- Easy access to electric buses that service the whole of Atlantic Station
- 1717 17th St. possesses a white roof to reflect heat
- Bike racks?
- Alternative fuels?
- Stormwater management?

WACHOVIA



From

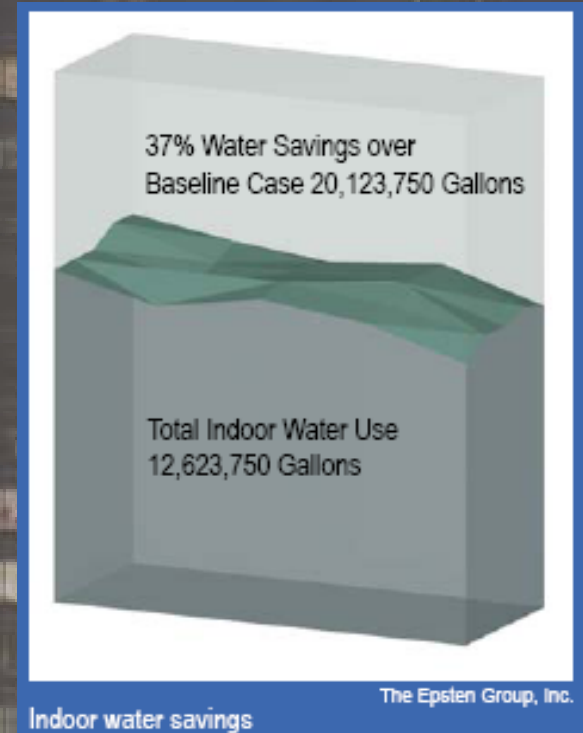
<http://www.southface.org/web/resources&services/publications/journal/sfjv305/sfjv305-greenbuilding-n-ga.htm>

Water Efficiency

4	Water Efficiency	Possible Points:	5
Y			
1	Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1
1	Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1
	Credit 2	Innovative Wastewater Technologies	1
1	Credit 3.1	Water Use Reduction, 20% Reduction	1
1	Credit 3.2	Water Use Reduction, 30% Reduction	1

Water Efficiency

- Water use was reduced by over 37% on the site
- Efficient faucets (0.5 gallons/minute vs. 2 gallons /minute normally)
- Efficient urinals (half-gallon per flush, half of normal value)
- Native plant materials
- No irrigation system after temporary hand-watering
- Fewer pesticides, less fertilizers



•From <http://www.atlanticstation.com/press/presskit/171.pdf>

Energy and Atmosphere

1	Energy & Atmosphere	Possible Points: 16
Y		
Y	Prereq 1	Fundamental Building Systems Commissioning
Y	Prereq 2	Minimum Energy Performance
Y	Prereq 3	CFC Reduction in HVAC&R Equipment
	Credit 1	Optimize Energy Performance 10
	Credit 2.1	Renewable Energy, 1% 1
	Credit 2.2	Renewable Energy, 5% 1
	Credit 3	Additional Commissioning 1
1	Credit 4	Ozone Depletion 1
	Credit 5	Measurement & Verification 1
	Credit 6	Green Power 1

Energy and Atmosphere

- Atlantic Station's environmentally-friendly central cooling system on site saves building owners more than \$35 million in construction costs and operates more than 25 percent more efficiently than traditional building HVAC systems resulting in lower energy bills for tenants
- HVAC equipment and drinking fountains which use refrigerant instead of CFCs or HCFCs
- Campus HVAC also meets this criteria
- Building exceeds ASHRAE 90.1-2001 standards with an energy efficient curtainwall, white roof, and optimized mechanical systems



Illustration by Dan Hamon

•From <http://www.atlanticstation.com/press/presskit/171.pdf>

Materials and Resources

4	Materials & Resources	Possible Points: 11
Y		
Y	Prereq 1 Storage & Collection of Recyclables	
	Credit 1.1 Building Reuse, Maintain 75% of Existing Shell	1
	Credit 1.2 Building Reuse, Maintain 95% of Existing Shell	1
	Credit 2.1 Construction Waste Management, Divert 50%	1
	Credit 2.2 Construction Waste Management, Divert 75%	1
	Credit 3.1 Resource Reuse, Specify 5%	1
1	Credit 4.1 Recycled Content, 5% (Post-consumer + 1/2 post-Industrial)	1
1	Credit 4.2 Recycled Content, 10% (Post-consumer + 1/2 post-Industrial)	1
1	Credit 5.1 Local/Regional Materials, 20% Manufactured Locally	1
1	Credit 5.2 Local/Regional Materials, of 20% Above, 50% Harvested Locally	1
	Credit 6 Rapidly Renewable Materials	1
	Credit 7 Certified Wood	1

Materials and Resources

- Reclamation, concrete building foundations were uncovered, broken into smaller pieces, and reused as backfill
- Over 28% of the value of materials from recycled material such as recycled steel and wallboard with recaptured gypsum
- Concrete, acoustical panel ceiling, and aluminum curtain wall all contain recycled material as well
- Most of the buildings materials were made in Georgia or nearby states from recycled materials



•From <http://www.atlanticstation.com/press/preskit/171.pdf>

Indoor Environmental Quality

7		Indoor Environmental Quality	Possible Points:	13
Y	Prereq 1	Minimum IAQ Performance		
Y	Prereq 2	Environmental Tobacco Smoke (ETS) Control		
1	Credit 1	Carbon Dioxide (CO₂) Monitoring		1
	Credit 2	Increase Ventilation Effectiveness		1
	Credit 3	Construction IAQ Management Plan, During Construction		1
1	Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1 point for 2	1
1	Credit 4.2	Low-Emitting Materials, Paints	2 points for 3	1
1	Credit 4.3	Low-Emitting Materials, Carpet	3 points for 4	1
	Credit 4.4	Low-Emitting Materials, Composite Wood		
1	Credit 5	Indoor Chemical & Pollutant Source Control		1
	Credit 6.1	Controllability of Systems, Perimeter		1
	Credit 6.2	Controllability of Systems, Non-Perimeter		1
1	Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992		1
	Credit 7.2	Thermal Comfort, Permanent Monitoring System		1
1	Credit 8.1	Daylight & Views, Daylight 75% of Spaces		1
1	Credit 8.2	Daylight & Views, Views for 90% of Spaces		1

Indoor Environmental Quality

- Daylit interiors
- Direct views
- Low-emitting materials
- Indoor pollutant source control
- Paints, adhesives, and sealants are all in compliance with strict environmental standards
- Permanent walk-off grates will reduce dirt and dust in the building
- Permanent “no-smoking” policy



The Epstein Group, Inc.

Walk-off mats at main entrance

•From
<http://www.atlanticstation.com/press/presskit/171.pdf>

Innovation and Design Process

5	Innovation & Design Process	Possible Points:	5
Y			
1	Credit 1.1	Innovation in Design: Exemplary Perf., Recycled Content	1
1	Credit 1.2	Innovation in Design: Exemplary Perf., Local & Regional Materials	1
1	Credit 1.3	Innovation in Design: Comprehensive Trans. Monitoring Plan	1
1	Credit 1.4	Innovation in Design: Exemplary Perf. Local & Regional Materials	1
1	Credit 2	LEED® Accredited Professional	1

Innovation and Design Process

- The building doubled LEED requirements for both recycled and local materials
- Vigilant monitoring and materials confirmation by the design and construction team
- Worked directly with a LEED accredited consultant, facilitating the process and verifying efforts in real time



•From <http://www.atlanticstation.com/press/presskit/171.pdf>

Conclusions

- Purchased in a high-profile \$170.5 million deal by J.P. Morgan, the largest office investment sale in Atlanta in 2005
- Approximately \$335 per square foot, this sale was a record for the highest price per square foot for an asset building sale in Atlanta
- Sale of 171 17th Street received an Honorable Mention in the office category in Atlanta Business Chronicle's Best in Atlanta Real Estate awards
- Prospective tenants inquired about LEED and are now satisfied with the comfortable indoor environment and green site amenities
- LEED-CS represents a next step in the diffusion of green building technology across the spectrum of construction



References

- 1 Atlantic Station FAQ: <http://www.atlanticstation.com/faq.php>
- 2 Release on 171 17th St. The Epsten Group, Inc.
<http://www.egrouparchitects.com/171%2017th%20Street.pdf>
- 3 Sale of 171 17th St. a Record Setting Deal. Atlanta Business Chronicle. March 3, 2006.
<http://atlanta.bizjournals.com/atlanta/stories/2006/03/06/focus5.html>
- 4 What is LEED-CS? <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=295&>
- 5 Title: 171 17th Street Building in Atlantic Station Receives LEED Designation Author: Source: Date Written: 7/12/2005. <http://www.usgbc.org/News/LEEDNewsDetails.aspx?ID=1685>
- 6 Building Statistics:
http://www.bizjournals.com/bizspace/atlanta/enhancedview.html?id=162170&t=lease&sale_lease=lease&use_type_id=1
- 7 Atlantic Station Newswire http://www.atlanticstation.com/press_171.php
- 8 Southface Journal Fall 2005.
<http://www.southface.org/web/resources&services/publications/journal/sfjv305/sfjv305-greenbuilding-n-ga.htm>
- 9 LEED-CS checklist, 171 17th St. <http://www.usgbc.org/ShowFile.aspx?DocumentID=902>
- 10. Fulton County Daily Report.
<http://www.usgbc.org/News/USGBCInTheNewsDetails.aspx?ID=2470>
- 11 Atlantic Station Press Kit 171 17th St. <http://www.atlanticstation.com/press/presskit/171.pdf>
- Background photo from <http://www.citydesigngroup.net/media/17117th.pdf>