LEED SYNERGIES:

Maximizing Compatible Credit Strategies

Georgia Planning Association (GPA) 2013 Fall Conference – Jekyll Island, GA



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Presentation Overview



I. LEED Campus Projects

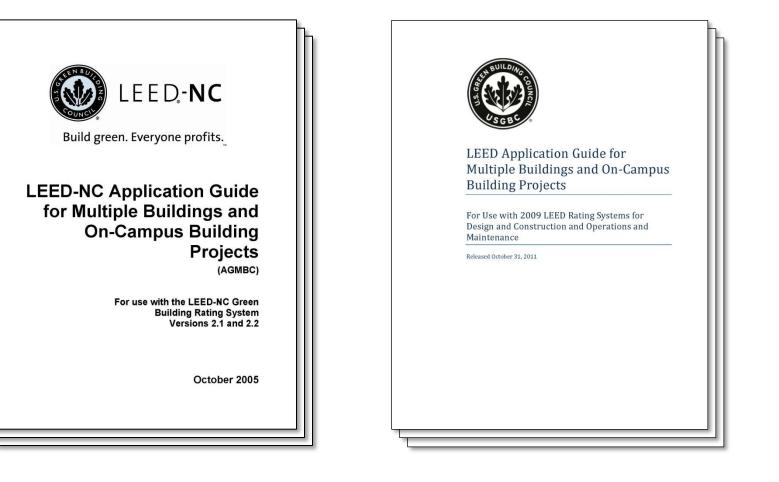
- What is a Campus Project?
- Examples of Campus Projects
- Guidance for Campus Projects

II. Case Studies

- Atlantic Station
- Georgia World Congress Center
 - College Football Hall of Fame
 - New Falcons Stadium

Some of the things to think about during the presentation:

- What are the benefits of reviewing projects at a campus level? Disadvantages?
- What are some of the design elements which serve as "low hanging fruit"?
- Which credits work towards the achievement of more than one credit?
- Which credits don't always work hand-in-hand?



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Group

Overview



What is a campus?

• A single site under the ownership or management of a single entity (military base, corporate campus, or university).

What is a campus credit?

 A LEED prerequisite or credit that can be attempted for most or all projects within a LEED Campus Boundary because of shared site features uniformly in project or management traits.

What is a LEED campus boundary?

• The site area defined as the LEED project boundary for all campus credits. This may be the legal limits of the shared site or an alternative boundary for LEED purposes. It must be a single unbroken site, unless the non-contiguous parcels meet the conditions stated in the MPR supplemental guidance.

What is a Master Site?

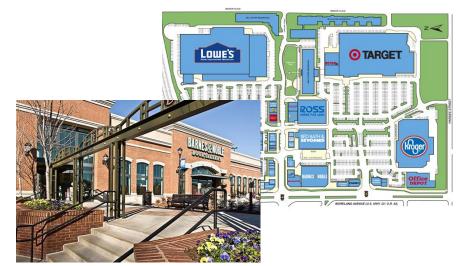
• A LEED project registration for the purposes of holding all campus credits for review. At no time will it receive a LEED Certification.

Overview- Project Types





Technology Square, Atlanta



Edgewood Retail District, Atlanta



Fort McPherson, Atlanta





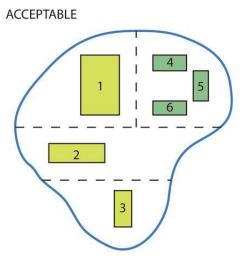
East Campus Village, Athens

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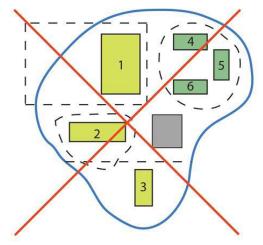
Overview- LEED Campus Boundary

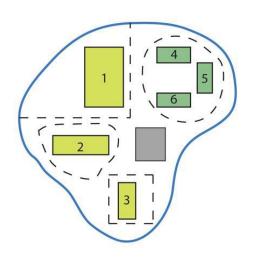


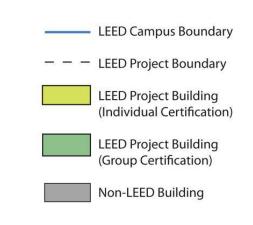
Figure 2: Determining the LEED campus boundary













LEED Campus and Project Boundary Requirements:

- Must be defined for the Master Site as well as individual LEED Project Boundaries for each registered project.
- Both the LEED Campus boundary and the LEED Project Boundaries must individually comply with the MPR's.
 - Must be a single unbroken site.
 - Must comply with the minimum project area.
- The LEED Campus Boundary must be wholly contained within the legal ownership rights of the site, and must be under the same ownership, property manager, or developer.
- All individual LEED project boundaries must be wholly contained within the LEED Campus Boundary.
- It is not necessary that the sum of all individual LEED project boundaries make up the entire LEED Campus Boundary area. However, all site features and amenities within the LCB will be considered during the review of the campus credits.

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2010 LEED Application Guide for Multiple Buildings and On-Campus Building Projects (2010 AGMBC)

- Provides guidance for all LEED 2009 projects
- Part I: released October 11, 2010
 - Provides guidance for individual buildings on new or existing campuses
- Part II: released October 28, 2011
 - Provides guidance for a group of projects receiving a single rating
- Appendix A:
 - Applicability for LEED 2009 Design and Construction Rating Systems
- Appendix B:
 - Applicability for LEED 2009 EBOM Rating System



- released October 11, 2010
- Contains guidance to help project teams certify projects individually on the same site on either a new or existing campus where there is one owner or common property management control.
- LEED 2009 project teams that wish to utilize campus or shared-site approaches to credits are required to use the guidance contained within the 2010 AGMBC.
- This is NOT a new rating system. Users may follow this guidance and apply it to existing rating system requirements in a campus or shared site setting.
- Each project is registered and certified independently.
- Once earned, the campus credits are available to individual projects located within that same LEED Campus Boundary.

Overview- 2010 AGMBC: Part 1



2010 AGMBC Part 1

- Who should use the 2010 AGMBC?
 - v2009 projects
 - Projects under the same ownership, same property developer, or property management
 - Projects located on a single shared, physical site
 - Each of the projects can independently meet the MPR's and prerequisites

Applicable Rating Systems

- LEED for New Construction (LEED-NC)
- LEED for Core and Shell (LEED-CS)
- LEED for Schools (LEED for Schools)
- LEED for Retail
- LEED for Healthcare
- LEED for Commercial Interiors (LEED-CI)
- LEED for Existing Buildings: Operations and Maintenance (LEED-EBOM)

Overview- 2010 AGMBC: Part 1



- Who should NOT use the 2010 AGMBC?
 - The LEED Volume Program
 - Organizations planning to certify either a large number of newconstruction projects or existing projects that are all based on a uniform prototype.
- Non-Applicable Rating Systems
 - LEED for Homes
 - LEED for Neighborhood Development

LEED Campus Projects Overview- 2010 AGMBC: Part 1



- Tables IA and IB
 - Identifies credits that may be pursued as campus credits.
 - Provides "supplemental notes" on documenting each credit as a campus credit.
 - If the project team believes that they can demonstrate compliance with a credit not listed in the guidance as a campus credit, they may submit the approach during the Master Site review (or submit a CIR).
- Some credits are only applicable to projects built/renovated simultaneously under the same construction contract.
- If a campus credit involves FTEs or occupants, the FTE or occupant calculations must be provided for all projects contained within the LCB in the Master Site even if the project is not seeking certification.

Overview- 2010 AGMBC: Part 1



2010 AGMBC Part 1: Table IA: Design and Construction

NC Susta	Schools inable Sites	cs	сі	Credit	Credit Name	Submittal Notes Apply to LEED Campus Boundary
		SSc1 Site selection			Site selection	The credit requirements apply to the area within the LEED Campus Boundary.
						Note that for LEED-CI projects, only Paths 2, 3, 4 and 7 are available as campus credits/
				SSc4.2 (SSc3.2 in Cl)	Alternative Transportation: Bicycle Storage and Changing Rooms	Submit campus documentation demonstrating that sufficient bicycle racks are provided for the FTE occupancy for the entire site (students, staff and/or employees, visitors etc.) and that sufficient showers are provided for 0.5% of the FTE occupancy for the entire site (students, staff and/or employees housed on campus). The appropriate number of bike racks and showers provided must be within 200 yards of the projects on the shared-site/campus that are attempting LEED certification.
				SSc4.3	Alternative Transportation: LEV & FE vehicles	All of the parking located within the LEED Campus Boundary must be included within the calculations (including parking associated with projects within the
				SSc4.4 (SSc3.3 in Cl)	Alternative Transportation: Car-/Van-pools (Alternative Transportation: Parking Availability in CI)	LEED Campus Boundary that are not pursuing LEED certification). A campus parking plan must be provided in order to illustrate the site/campus parking and a reasonable distribution of preferred parking spaces for the projects seeking LEED certification.
				SSc5.1	Site Development: Protect or Restore Habitat	Note: Construction Phase Credit
					Restore Habitat	CASE 2 ONLY:
						The development footprints of all of the projects contained within the LEED Campus Boundary (including projects within the LEED Campus Boundary that are not pursuing LEED certification) must be included in the credit calculations. Projects cannot use the green roof option until SS Credit 2 is achievable as a campus credit.
				SSc5.2	Site Development: Maximize Open Space	CASE 1 and CASE 3 ONLY:
					орен зрасе	The development footprints of all of the projects contained within the LEED Campus Boundary (including those projects not pursuing LEED certification) must be included in the credit calculations.
				SSc6.1	Stormwater Design: Quantity Control	The stormwater runoff calculations must account for the total shared- site/campus area. The rate and quantity reduction requirements must be met at the LEED Campus Boundary.
				SSc6.2	Stormwater Design: Quality	The credit requirements are applied to the total area within the site/campus

LEED Campus Projects Overview- 2010 AGMBC: Part 2



- released October 28, 2011
- Addresses multiple projects on a shared site, such that more than one building may be included within a single LEED registration.
- Applicable Rating Systems
 - LEED for New Construction (LEED-NC)
 - LEED for Core and Shell (LEED-CS)
 - LEED for Schools (LEED for Schools)
 - LEED for Retail
 - LEED for Healthcare
 - LEED for Commercial Interiors (LEED-CI)
 - LEED for Existing Buildings: Operations and Maintenance (LEED-EBOM)

LEED Campus Projects Overview- 2010 AGMBC: Part 2



- Clarifications from Part 1:
 - In addition to meeting the MPR's, MPR#6: buildings must INDIVIDUALLY meter and make available whole building energy and water usage data after certification.
 - Campuses using both a BD+C / ID+C rating system and the EBOM rating system must have separate master site registrations even if the buildings are located on the same campus.



- **Block-** A free project management tool for customers with multiple LEED projects. Projects may be grouped together as specified by the customer.
- **Group credit-** A LEED prerequisite or credit that, when pursued within a group project certification, requires credit documentation that is aggregated from multiple buildings or spaces. Points are awarded based on the performance of the project as a whole.
- **Group project** Multiple buildings or spaces that pursue one LEED certification and rating.
- Substantially similar- For EBOM group certification, projects must contain buildings that function as a cohesive facility, such as a collection of dormitories or a corporate headquarters. In these cases, it is expected that all buildings are the same space type, but exceptions may be made for some projects with limited deviation.

LEED Campus Projects Overview- 2010 AGMBC: Part 2



- 2 strategies for credit documentation:
- Campus credits
 - Eligible LEED credits and prerequisites reviewed as campus credits within a master site.
- Group Credits
 - Document credit compliance for a group of buildings or spaces within a single LEED project boundary. The entire group receives a single LEED rating and certification.

Overview- 2010 AGMBC: Part 2



Group Project Certification

- Multiple buildings/spaces may be certified as a group within one LEED project registration.
- The entire group receives a single rating.
- The buildings/spaces must be under the same construction contract and constructed at the same time.
- All buildings/spaces must use the same rating system and must use the same compliance paths for all credits/prerequisites.
- The definition of the group project must be consistent across all credits/prerequisites.
- Calculations/documentation for all credits/prerequisites must represent all real property and site features within the LPB for the group project.
- Each building/space must independently qualify for the chosen rating system.
- Must use the credit specific documentation paths included in the AGMBC (Appendix A). Where credit documentation is site-wide or aggregates form multiple buildings or spaces, points are awarded to the group based on the performance of the project as a whole. For credits documented on an individual building basis, points are awarded to the group based on the lowest performing building except where noted (ex. EAc1) in the credit specific information in the appendices.

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2010 AGMBC Appendix A

Table 1 summarizes the prerequisites and credits in the LEED 2009 Design and Construction rating systems that can be either campus or group credits. Gray shaded boxes in the Applicable Rating System columns indicate which rating system(s) are included.

- The Campus Credit column contains a "C" for credits and prerequisites that are eligible to be included as campus credits in a master site. This column will be blank for those that may be pursued separately by each LEED project within the LEED campus boundary.
- The Group Credit column contains a "G" for credit and prerequisites that have group application guidance that must be followed if pursued in a group project certification. This column will be blank for those credits where compliance must be demonstrated on an individual building basis for all buildings within a group project.
- This table is intended for reference only.

Overview- 2010 AGMBC: Appendix A



			Table	e 1. AC			-	Credits and Prerequisites in LEED 2009		
						Design 8	k Constru	action Rating Systems		
APPLICABLE RATING SYSTEM									ELIG	IBILITY
LEED FOR NEW CONSTRUCTION	LEED FOR SCHOOLS	LEED FOR CORE AND SHELL	LEED FOR COMMERCIAL INTERIORS	LEED FOR HEALTHCARE	LEED FOR RETAIL; NEW CONSTRUCTION	LEED FOR RETAIL; COMMERCIAL INTERIORS	CREDIT	CREDIT NAME	CAMPUS CREDIT	GROUP CREDIT
						Ū				
							SUSTAL	NABLE SITES		
							SSp1	Construction Activity Pollution Prevention		G
							SSp2	Environmental Site Assessment		G
							SSc1 [†]	Site selection	С	G
							SSc2 [†]	Development Density and Community Connectivity	С	G
							SSc3 [†]	Brownfield Redevelopment	С	G
			SSc3.1		SSc4	SSc3	<u>SSc4.1[†]</u>	Alternative Transportation- Public Transportation Access	С	
			SSc3.2		SSc4	SSc3	SSc4.2	Alternative Transportation- Bicycle Storage and Changing Rooms	с	G
					SSc4	SSc3	SSc4.3	Alternative Transportation- LEV & FE vehicles	С	G



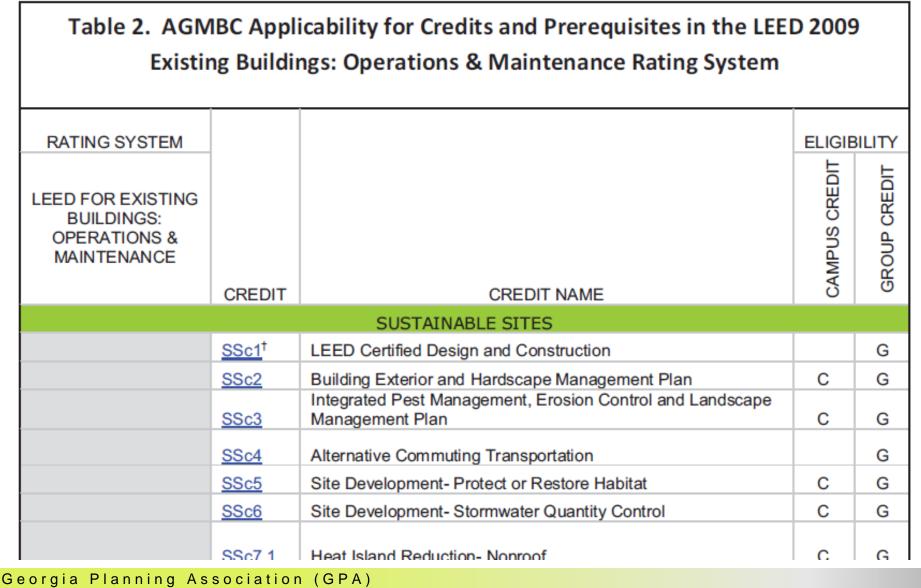
2010 AGMBC Appendix B

Table 2 summarizes the prerequisites and credits in the LEED 2009 Existing Buildings: Operation and Maintenance rating system that can be either campus or group credits. Gray shaded boxes in the Applicable Rating System columns indicate which rating system(s) are included.

- The Campus Credit column contains a "C" for credits and prerequisites that are eligible to be included as campus credits in a master site. This column will be blank for those that may be pursued separately by each LEED project within the LEED campus boundary.
- The Group Credit column contains a "G" for credit and prerequisites that have group application guidance that must be followed if pursued in a group project certification. This column will be blank for those credits where compliance must be demonstrated on an individual building basis for all buildings within a group project.
- This table is intended for reference only.

LEED Campus Projects Overview- 2010 AGMBC: Appendix B





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II. Case Studies





Atlantic Station Midtown, Atlanta, GA



Georgia World Congress Center Downtown, Atlanta, GA

Atlantic Station Midtown, Atlanta, GA





- 1901- Atlanta Hoop Company had 120 employees and produced cotton bale tiles and barrel hoops
- December 1915- became Atlantic Steel Company
- 1952- the company had 2,100 employees
- 1979- Ivaco purchased;
 1,400 employees
- 1980s- operations partially shut down; moved abroad
- 1997-400 employees
- 1998- Jacoby purchased

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Source: <u>http://en.wikipedia.org/wiki/Atlantic_Steel</u> and <u>http://www.metrojacksonville.com/article/2007-jun-learning-from-georgia-ii-atlantic-station</u>

Atlantic Station

Midtown, Atlanta, GA





- 138 acres
- Over 5,000 residential units- SF, lofts, & condos
- Over 30,000 jobs
- Eventually 12M SF of retail, office, residential and hotel space
- 11 acres of public parks
- \$76M purchase cost
- \$10M to remediate the site
- 2005- 171 17th Street building awarded LEED certification
- On-site central cooling system- save more than \$35M in construction costs and operates more than 25% more efficiently than HVAC systems

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Atlantic Station Midtown, Atlanta, GA





- 2005- 171 17th Street building awarded LEED certification
 - On-site central cooling system saves more than \$35M in construction costs and operates more than 25% more efficiently than traditional HVAC systems

Atlantic Station

Midtown, Atlanta, GA



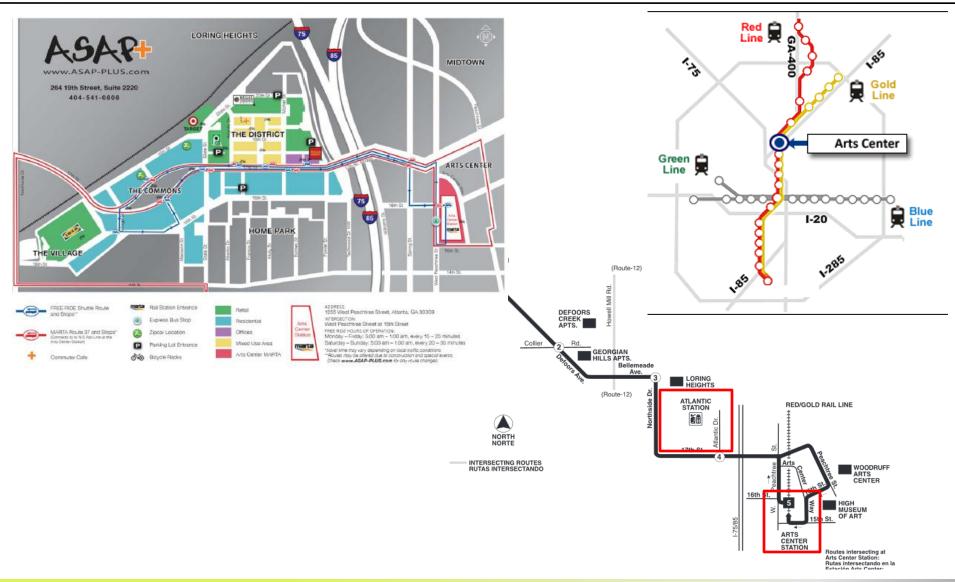


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Source: http://transformagination.wordpress.com/category/design/ and http://www.city-data.com/forum/atlanta/99567-charlotte-vs-atlanta-one-best-11.html

Atlantic Station Midtown, Atlanta, GA

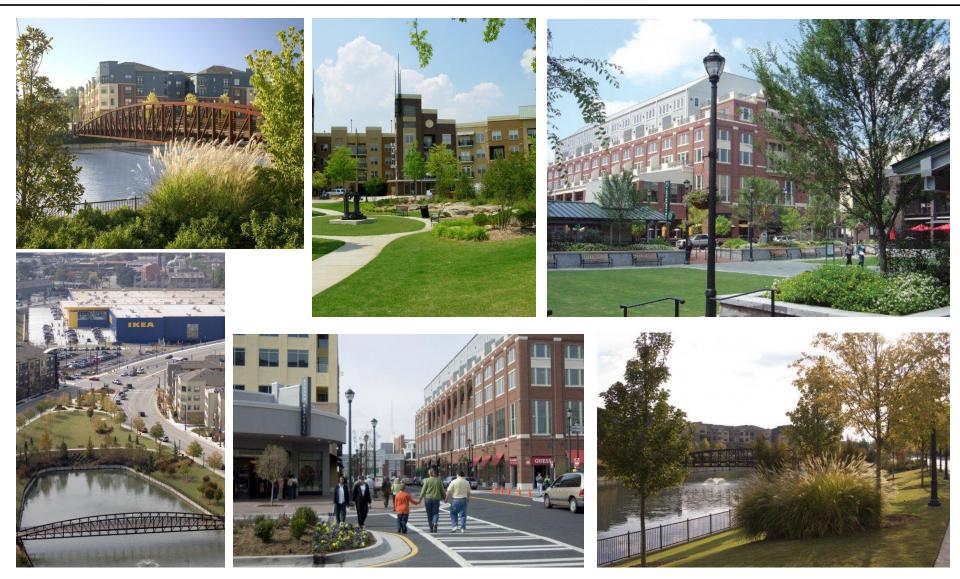




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Atlantic Station Midtown, Atlanta, GA





Atlantic Station

Midtown, Atlanta, GA



(3,5,5,7,2,8)	2009 for New Construction and A	lajor Renovations			Ati	antic Station	
		ssible Points: 26	Materials and Resources, Continued				
Y ? N	Fo Fo	SSIDIE FUITLS. 20	Y 7 1		and resources, continued		
Prereg 1	Construction Activity Pollution Prevention			Credit 4	Recycled Content	1 to 2	
1 Credit 1	Site Selection	1		Credit 5	Regional Materials	1 to 2	
5 Credit 2	Development Density and Community Connectivity	5		Credit 6	Rapidly Renewable Materials	1	
1 Credit 3	Brownfield Redevelopment	1		Credit 7	Certified Wood	1	
6 Credit 4.1		Access 6		-			
1 Credit 4.2				Indoor	Environmental Quality Possible Points	s: 15	
3 Credit 4.3							
2 Credit 4.4	Alternative Transportation-Parking Capacity	2	Y	Prereq 1	Minimum Indoor Air Quality Performance		
1 Credit 5.1	Site Development-Protect or Restore Habitat	1	Y	Prereq 2	Environmental Tobacco Smoke (ETS) Control		
1 Credit 5.2	Site Development-Maximize Open Space	1		Credit 1	Outdoor Air Delivery Monitoring	1	
1 Credit 6.1	Stormwater Design-Quantity Control	1		Credit 2	Increased Ventilation	1	
1 Credit 6.2	Stormwater Design-Quality Control	1		Credit 3.1	Construction IAQ Management Plan-During Construction	1	
1 Credit 7.1	Heat Island Effect—Non-roof	1		Credit 3.2	Construction IAQ Management Plan-Before Occupancy	1	
Credit 7.2	Heat Island Effect—Roof	1		Credit 4.1	Low-Emitting Materials-Adhesives and Sealants	1	
Credit 8	Light Pollution Reduction	1		Credit 4.2	Low-Emitting Materials—Paints and Coatings	1	
				Credit 4.3	Low-Emitting Materials—Flooring Systems	1	
Water	Efficiency Po	ssible Points: 10		Credit 4.4	Low-Emitting Materials-Composite Wood and Agrifiber Products	1	
				Credit 5	Indoor Chemical and Pollutant Source Control	1	
Y Prereq 1	Water Use Reduction-20% Reduction			Credit 6.1	Controllability of Systems-Lighting	1	
Credit 1	Water Efficient Landscaping	2 to 4				1	
Credit 2	Innovative Wastewater Technologies	2		Credit 7.1	Thermal Comfort—Design	1	
Credit 3	Water Use Reduction	2 to 4		Credit 7.2	Thermal Comfort-Verification	1	
				Credit 8.1	Daylight and Views-Daylight	1	
Energy	y and Atmosphere Po	ssible Points: 35		Credit 8.2	Daylight and Views—Views	1	
Y Prereq 1	Fundamental Commissioning of Building Energy Sys	tems		Innova	tion and Design Process Possible Points	5: 6	
Y Prereq 2	Minimum Energy Performance				rossister onte		
Y Prereg 3	Fundamental Refrigerant Management			Credit 1.1	Innovation in Design: Public Transportation Access	1	
Credit 1	Optimize Energy Performance	1 to 19			Innovation in Design: Specific Title	1	
Credit 2	On-Site Renewable Energy	1 to 7		_	Innovation in Design: Specific Title	1	
Credit 3	Enhanced Commissioning	2			Innovation in Design: Specific Title	1	
Credit 4	Enhanced Refrigerant Management	2		Credit 1.5	Innovation in Design: Specific Title	1	
Credit 5	Measurement and Verification	3		Credit 2	LEED Accredited Professional	1	
Credit 6	Green Power	2		-			
			1	Region	al Priority Credits Possible Point	is: 4	
Materi	ials and Resources Po	ssible Points: 14					
			1		Regional Priority: Public Transportation Access	1	
Y Prereq 1	Storage and Collection of Recyclables				Regional Priority: Specific Credit	1	
Credit 1.1					Regional Priority: Specific Credit	1	
Credit 1.2	Building Reuse-Maintain 50% of Interior Non-Struct			Credit 1.4	Regional Priority: Specific Credit	1	
Credit 2	Construction Waste Management	1 to 2	I STATE I	-			
Credit 3	Materials Reuse	1 to 2	25	Total	Possible Point	is: 110	
				Certified	40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110		

Georgia World Congress Center Downtown, Atlanta, GA





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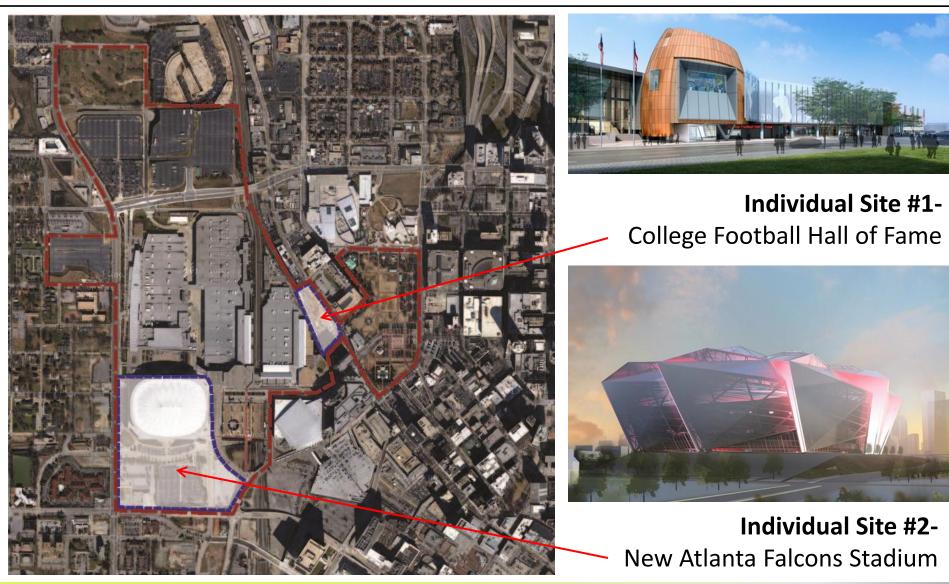
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Source: http://clatl.com/freshloaf/archives/2012/12/31/college-football-hall-of-fame-to-breakground-in-downtown-at-end-of-january

Georgia World Congress Center Downtown, Atlanta, GA



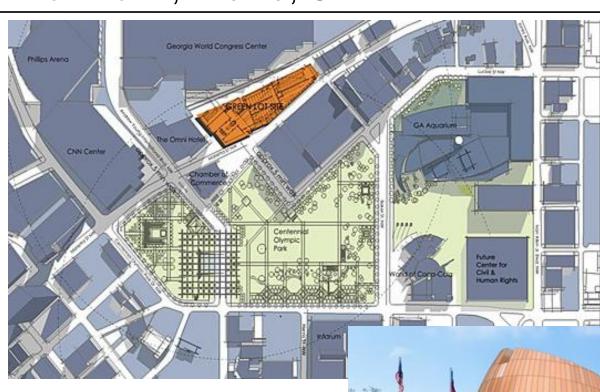


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Source: http://clatl.com/freshloaf/archives/2013/06/18/new-falcons-stadium-design-getsapproved-heres-what-it-might-look-like

College Football Hall of Fame Downtown, Atlanta, GA



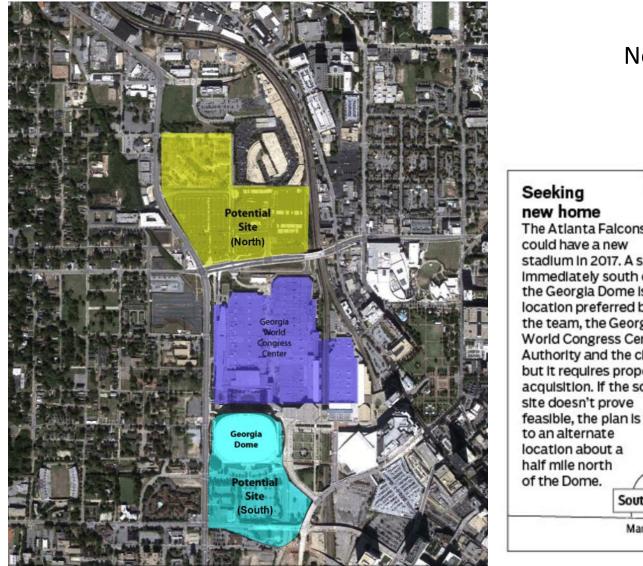


Individual Site #1-College Football Hall of Fame

- Opening Fall of 2014
- \$66.5 million dollar facility
- 94,256 square feet, including 30,000 square feet of exhibition space, as well as a 45-yard indoor football field

New Atlanta Falcons Stadium Downtown, Atlanta, GA





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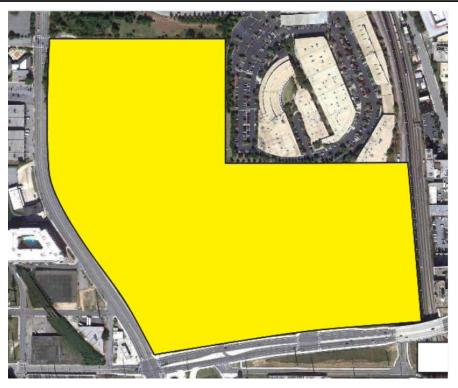


CHRISTOPHER SMITH / STAFF

Source: www.myajc.com%2Fnews%2Fnews%2Fan-up-close-look-at-the-falcons-stadiumdeal and http://newstadium.atlantafalcons.com/wp-content/uploads/2013/06/graphic-

New Atlanta Falcons Stadium Downtown, Atlanta, GA





Potential North Site

PROs:

- Larger and already state-owned
- More flexibility in positioning the stadium
- More potential parking and tail-gaiting space

CONs:

- ¹/₂ mile from MARTA station
- Contaminated soil would have to be addressed
- Power lines would have to be relocated
- Strong opposition from neighborhood groups which say that the site is too close to residences









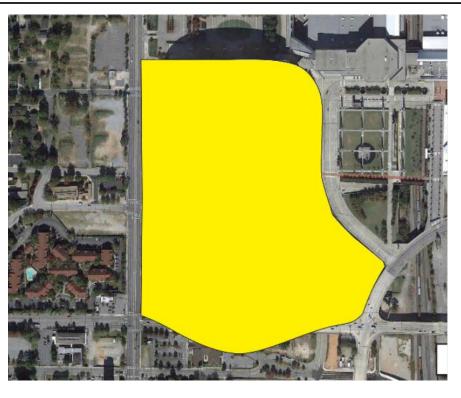
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Source : http://newstadium.atlantafalcons.com/wp-content/uploads/2013/06/graphiclocation-full.jpg

New Atlanta Falcons Stadium



Downtown, Atlanta, GA



Potential South Site

PROs:

- Proximity to two MARTA stations
- Adjacent to the GWCC campus
- Allows for leverage into the existing infrastructure and activity that is planned for the area (such as the new MMPT)

CONs:

- Not as much land for surface parking and tailgating
- Unclear how design can spotlight skyline
- Need to acquire additional historic properties



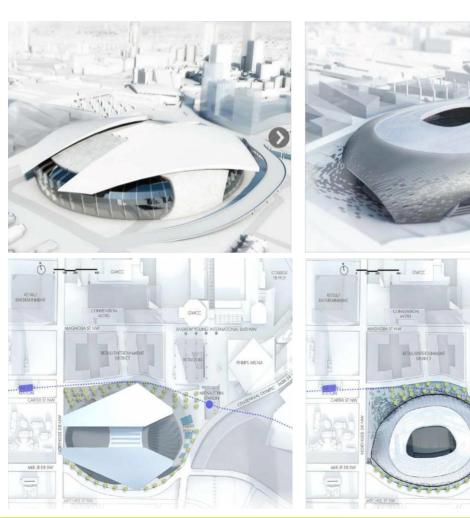
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Source: http://bizj.us/cbirn/i/1 and http://www.bizjournals.com/atlanta/morning_call/2013/07/focus-shifts-to-alternative-sitefor http://www.bizjournals.com/atlanta/morning_call/2013/07/focus-shifts-to-alternative-site-

Downtown, Atlanta, GA

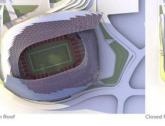


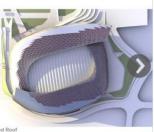
Initial Concept Design Renderings



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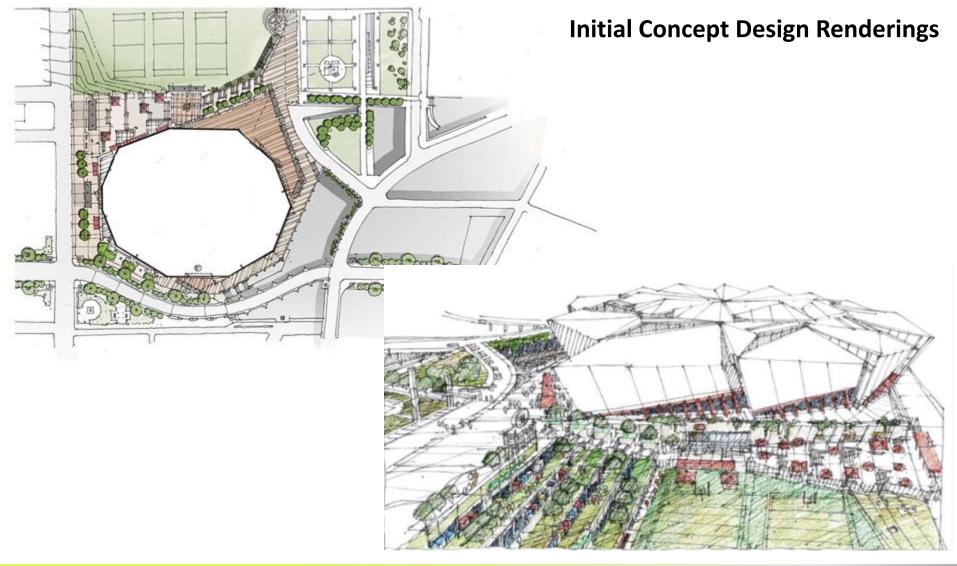




Source: http://clatl.com/freshloaf/archives/2013/06/14/local-architecture-firms-to-helpdesign-new-falcons-stadium

Downtown, Atlanta, GA



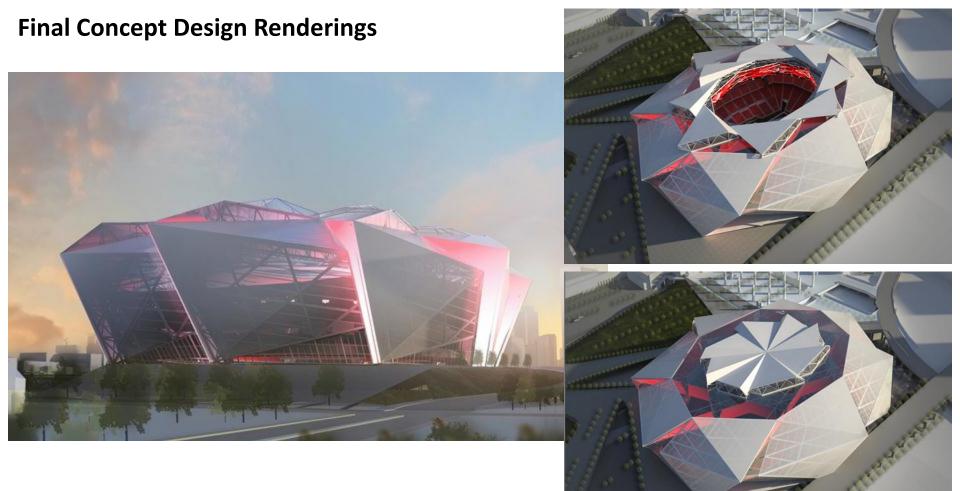


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Source: http://clatl.com/freshloaf/archives/2013/06/18/new-falcons-stadium-design-getsapproved-heres-what-it-might-look-like

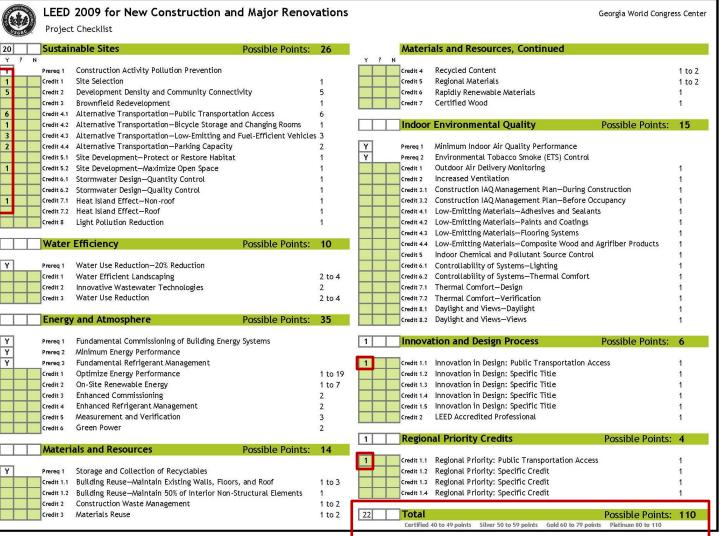
Downtown, Atlanta, GA





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Downtown, Atlanta, GA





SSc2: Development Density & Community Connectivity

CREDIT INTENT:

To channel development to urban areas with existing infrastructure, protect greenfields, and preserve habitat and natural resources.

CREDIT REQUIREMENTS:

Option 1: Development Density

Construct or renovate a building on a previously developed site AND in a community with a minimum density of 60,000 square feet per acre net. The density calculation is based on a typical two-story downtown development and must include the area of the project being built.

Option 2: Community Connectivity

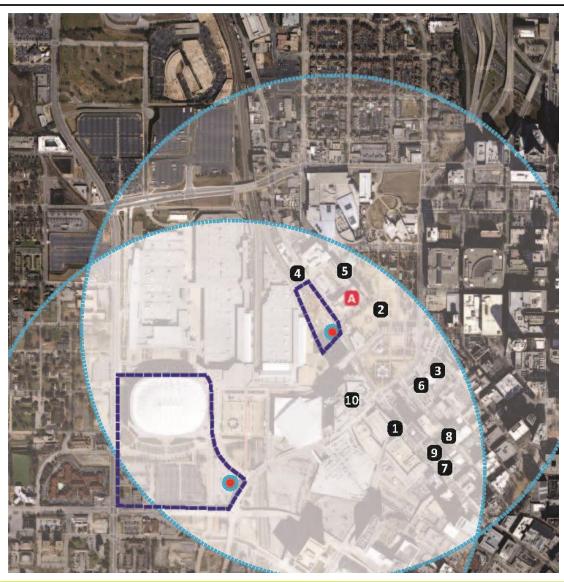
Construct or renovate a building on a site that meets the following criteria:

- Is located on a previously developed site
- Is within ½ mile of a residential area or neighborhood with an average density of 10 unites per acre
- Is within ½ mile or at least 10 basic services
- Has pedestrian access between the building and basic services

Epsten

SSc2: Development Density & Community Connectivity





Basic Services:

- 1. Glenn Hotel (hotel)
- 2. Centennial Olympic Park (park)
- 3. Tabernacle (entertainment)
- 4. Der Biergarten (restaurant)
- 5. Subway (restaurant)
- 6. City Cutz (hair salon)
- 7. U.S. Post Office (post office)
- 8. Walton Food Market (convenience grocery)
- 9. Downtown Dental Center (dentist)
- 10. CNN Center Dry Cleaning (dry cleaning)

Residential District:

A. Centennial Park West Condos (48 units per acre)

SSc2: Development Density & Community Connectivity









2 Centennial Olympic Park



3 The Tabernacle



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4 Der Biergarten



5 Subway



6 City Cutz



U.S. Post Office



8 Walton Food Market



9 Downtown Dental Center



10 CNN Center Dry Cleaning

Photographs of Basic Services:

- 1. Glenn Hotel (hotel)
- 2. Centennial Olympic Park
- 3. (park)
- 3. Tabernacle (entertainment)
- 4. Der Biergarten (restaurant)
- 5. Subway (restaurant)
- 6. City Cutz (hair salon)
- 7. U.S. Post Office (post office)
- 8. Walton Food Market (convenience grocery)
- 9. Downtown Dental Center (dentist)
- 10. CNN Center Dry Cleaning (dry cleaning)

Residential District:

A. Centennial Park West Condos (48 units per acre)



A Centennial Park West Condos

Epsten SSc4.1: Alternative Transportation, Public Transportation Access

CREDIT INTENT:

To reduce pollution and land development impacts from automobile use.

CREDIT REQUIREMENTS:

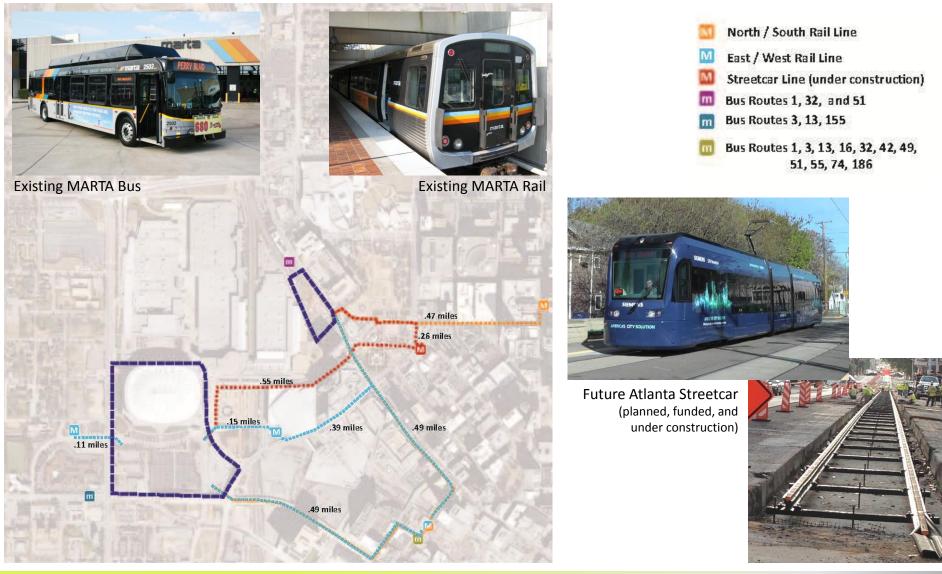
Option 1: Rail Station Proximity

Locate the project within ¹/₂ mile walking distance (measured from a main building entrance) of an existing or planned and funded commuter rail, light rail, or subway station.

Option 2: Bus Stop Proximity

Locate the project within ¼ mile walking distance (measured from a main building entrance) of 1 or more stops for 2 or more public, campus, or private bus lines usable by building occupants.

SSc4.1: Alternative Transportation, Public Transportation Access



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Source: http://www.itsmarta.com//

Epsten SSc4.1: Alternative Transportation, Public Transportation Access

EXEMPLARY PERFORMANCE REQUIREMENTS:

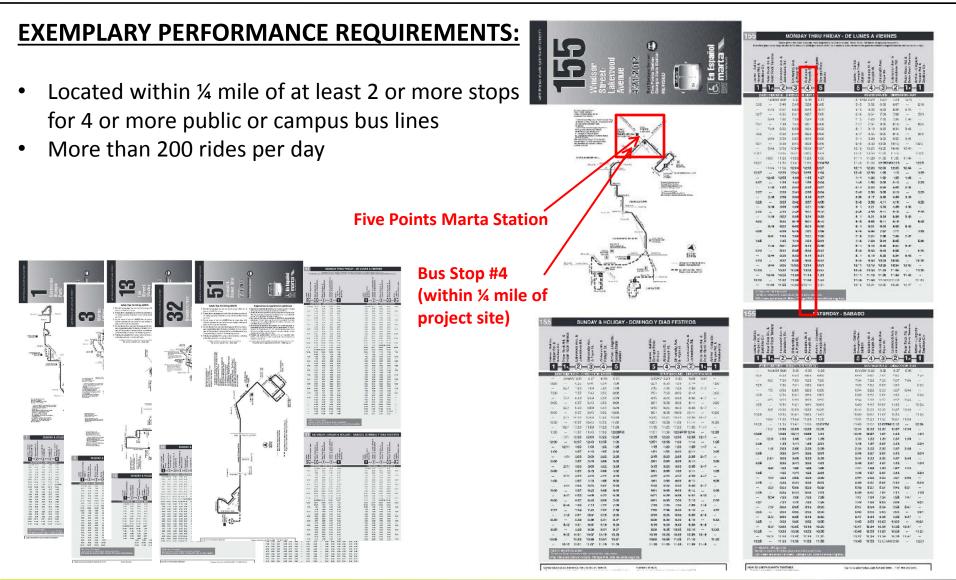
Option 1: Comprehensive Transportation Management Plan

Institute a comprehensive transportation management plan that demonstrates a quantifiable reduction in personal automobile use through any of multiple alternative options.

Option 2: Double Transit Ridership

- Locate the project within ½ mile of at least 2 existing commuter rail, light rail, or subway lines OR locate the project within ¼ mile of at least 2 or more stops for 4 or more public or campus bus lines usable by building occupants. AND
- Frequency of service must be at least 200 transit rides per day, total, at these stops. A combination of rail and bus lines is allowable... Include a transit schedule and map.

Epsten SSc4.1: Alternative Transportation, Public Transportation Access



SSc4.3: Alternative Transportation, LE/FE Vehicles

CREDIT INTENT:

To reduce pollution and land development impacts from automobile use.

CREDIT REQUIREMENTS:

Option 1: Provide preferred parking for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity of the site. Providing a discounted parking rate is an acceptable substitute for preferred parking for low-emitting/fuel-efficient vehicles. To establish a meaningful incentive in all potential markets, the parking rate must be discounted at least 20%. The discounted rate must be available to all customers (i.e., not limited to the number of customers equal to 5% of the vehicle parking capacity), publicly posted at the entrance of the parking area, and available for a minimum of 2 years.

Option 2: Install alternative-fuel fueling stations for 3% of the total vehicle parking capacity of the site. Liquid or gaseous fueling facilities must be separately ventilated or located outdoors.

Option 3: Provide LE/FE vehicles for 3% of full-time equivalent (FTE) occupants. Provide preferred parking for these vehicles.

Option 4: Provide building occupants access to a LE/FE vehicle-sharing program.



GWCC Master Site Project- Case Study SSc4.3: Alternative Transportation, LE/FE Vehicles





Total Parking: 5,683 spaces

Option 1:

Low-Emitting/Fuel-Efficient Spaces: 5,683 * 0.05 = 284.15 \rightarrow 285



Option 2:

Alternative Fueling Stations: 5,683 * 0.03 = 170.49 \rightarrow 171



SSc4.4: Alternative Transportation, Total Parking Capacity

CREDIT INTENT:

To reduce pollution and land development impacts from automobile use.

<u>CREDIT REQUIREMENTS</u>: Case 1: Non-Residential Projects:

Option 1: Parking capacity must meet, but not exceed, minimum local zoning requirements. *NC Additional Requirement:* Provide preferred parking for carpools or vanpools for 5% of the total parking spaces.

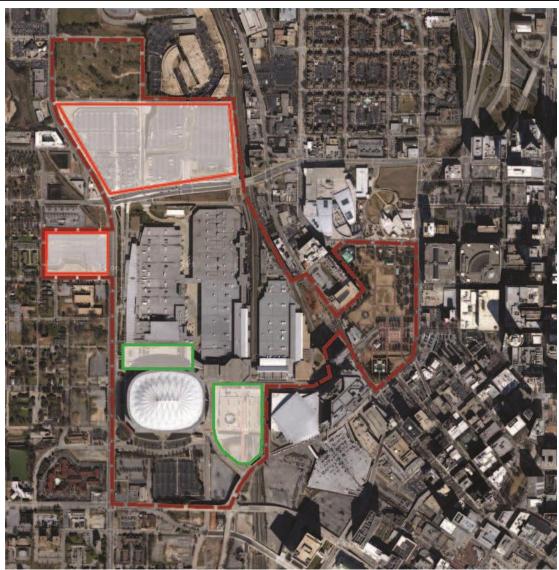
Option 2: For projects that provide parking, provide preferred parking for carpools/vanpools, marked as such, for 5% (for NC) or 3% (for CS) of total parking spaces. Providing a discounted parking rate is an acceptable substitute for preferred parking for carpool/vanpool vehicles. To establish a meaningful incentive in all potential markets, the parking rate must be discounted at least 20%. The discounted rate must be available to all customers (i.e., not limited to the number of customers equal to 5% of the vehicle parking capacity), publicly posted at the entrance of the parking area, and available for a minimum of 2 years.

Option 3: Provide no new parking.



GWCC Master Site Project- Case Study SSc4.4: Alternative Transportation, Total Parking Capacity





Total Parking: 5,683 spaces

Option 1:

The total parking capacity meets, but does not exceed, the minimum local zoning requirements.

Carpool/Vanpool Spaces: 5,683 * 0.05 = 284.15 → 285



SSc5.2: Site Development, Maximize Open Space

CREDIT INTENT:

To promote biodiversity by providing a high ratio of open space to development footprint.

CREDIT REQUIREMENTS:

Case 1: Sites with Local Zoning Open Space Requirements

Reduce the development footprint and/or provide vegetated open space within the project boundary such that the amount of open space exceeds local zoning requirements by 25%.

Case 2: Sites with No Local Zoning Requirements (e.g. some university campuses, military bases)

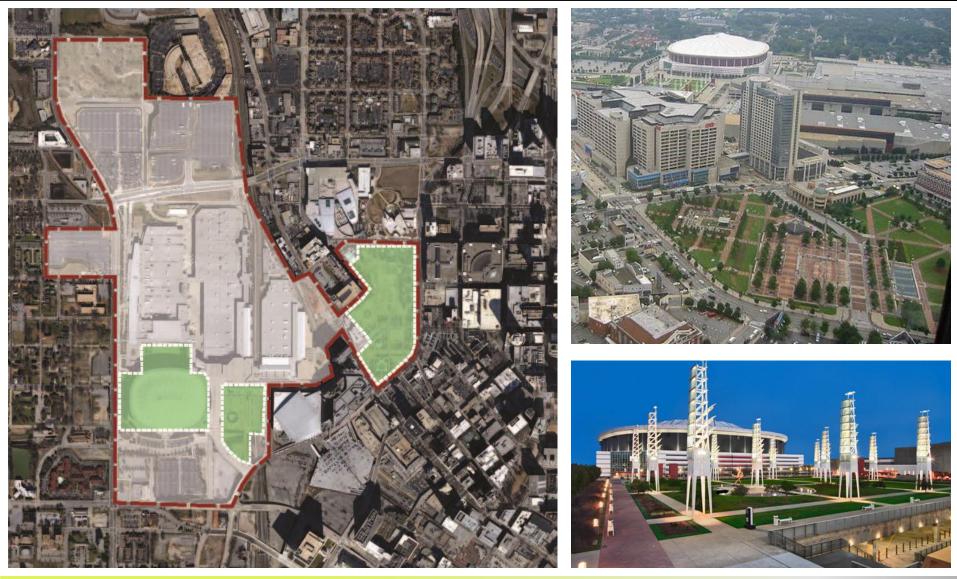
Provide vegetated open space adjacent to the building that is equal in area to the building footprint.

Case 3: Sites with Zoning Ordinances but No Open Space Requirements

Provide vegetated open space equal to 20% of the project's site area.

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SSc5.2: Site Development, Maximize Open Space



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Source: http://enr.construction.com/buildings/sustainability/2012/extras/0709/slideshow.asp?slide=10

Epsten Group

SSc7.1: Heat Island Effect, Non-Roof

CREDIT INTENT:

To reduce heat islands to minimize impacts on microclimates and human and wildlife habitat

CREDIT REQUIREMENTS:

Option 1: Use a combination of the following strategies for 50% of the site hardscape:

- Provide shade from existing tree canopy or within 5 years of landscape installation.
- Provide shade from structures covered by solar panels that provide energy used to offset some nonrenewable resource use.
- Provide shade from architectural devices or structures that have Solar Reflectance Index (SRI) of at least 29.
- Use hardscape materials with an SRI of at least 29.
- Use an open-grid pavement system (at least 50% pervious).

Option 2: Place a minimum of 50% of parking spaces under cover. Any roof used to shade or cover parking must have an SRI of at least 29, be a vegetated green roof, or be covered by solar panels that produce energy used to offset some nonrenewable resource use.

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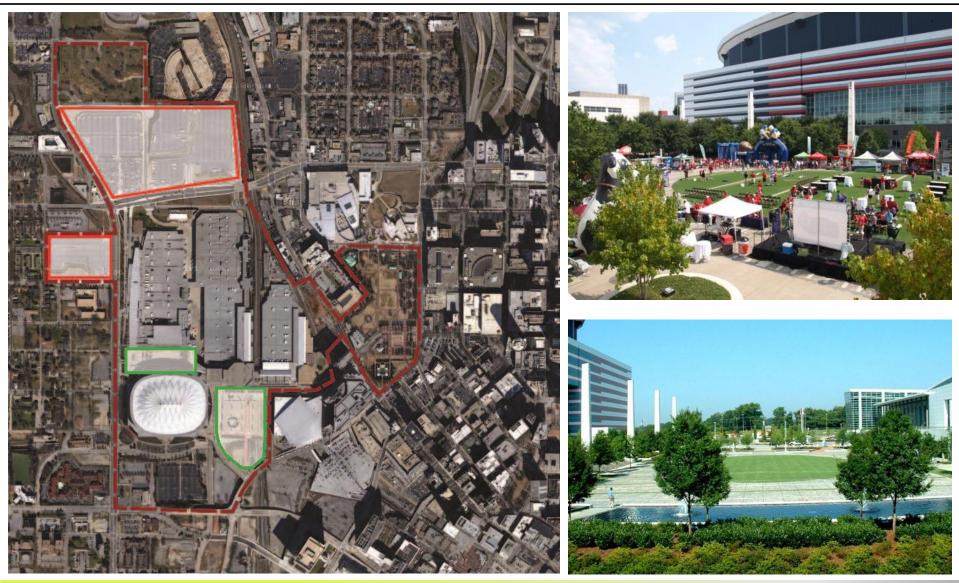
GWCC Master Site Project- Case Study SSc7.1: Heat Island Effect, Non-Roof



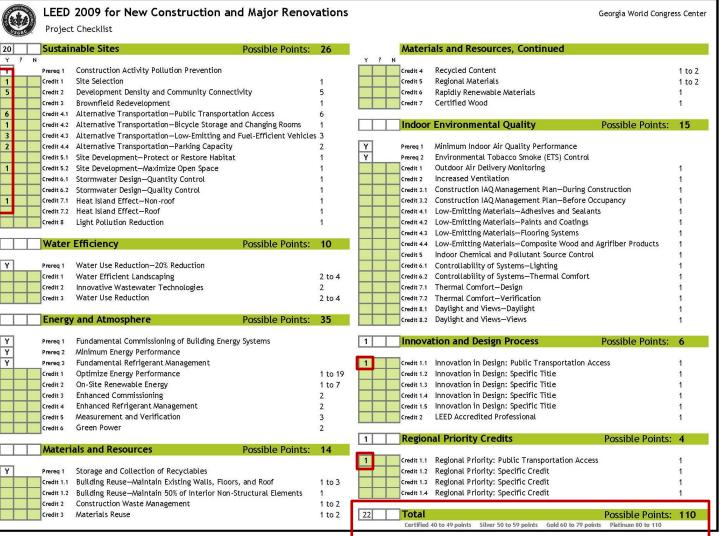


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GWCC Master Site Project- Case Study SSc7.1: Heat Island Effect, Non-Roof Group



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