

LEED-CI ANALYSIS

June 2015

100 PARK AVENUE



To learn more please visit the sustainability section of our website:
www.slgreen.com or contact Jay Black, SL Green's director of
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Prepared for
SL Green Realty Corp. by



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LEED CI 2009 Background

The LEED for Commercial Interiors (LEED-CI) 2009 program provides a set of criteria for certifying tenant and interior projects. Unlike the whole-building approach set forth in the LEED-NC program, LEED-CI places emphasis on green office and retail environments that are healthy and productive spaces for employees and occupants alike. LEED for Commercial Interiors gives the power to make sustainable choices to tenants and designers, who do not always have control over whole building operations. Achieving LEED certification for a commercial interior space distinguishes the tenant as a socially responsible company dedicated to sustainability.

The overall intent of LEED-CI is to assist in the creation of high performance, energy efficient, healthful, durable, affordable, and environmentally sound interior environments that reduce operation and maintenance costs. Similarly, prerequisites and credits under the LEED-CI program are comparable to other LEED programs, focusing on reduced water use, efficient energy and system performance, sustainable and low-volatile organic compound (low-VOC) materials, and enhanced indoor air quality.

The LEED certification system is a point based system comprised of different “green” measures spread over six (6) categories of sustainability:

1. Sustainable Sites (SS)
2. Water Efficiency (WE)
3. Energy & Atmosphere (EA)
4. Materials & Resources (MR)
5. Indoor Environmental Quality (EQ)
6. Innovation in Operations (IO)

A CI space can accrue points by implementing a number of these credits where the higher number of points earned, the higher level of certification is obtained such that:

- **Certified:** 40-49 credits
- **Silver:** 50-59 credits
- **Gold:** 60-79 credits
- **Platinum:** 80-110 credits

While achieving a LEED-CI certified space may in large part be the result of tenant motivated sustainability measures, the selection of the correct base building and the sustainability characteristics of the building itself can greatly aid a project in achieving a LEED-CI certification.

LEED-CI Certification at 100 Park Avenue

For a space pursuing LEED-CI certification, characteristics of the base building itself can attribute a multitude of points towards certification. 100 Park Avenue provides base building characteristics and has implemented sustainable measures that may contribute up to 29 points towards a tenant space pursuing LEED-CI certification. This potentially provides any space beginning the certification process with almost 75% of the total 40 points required for basic certification. With additional sustainable design and material considerations, as well as additional tracking during construction, it should be very feasible for tenant’s to build-out their space to achieve a LEED certification.

Base Building Contributions Towards LEED-CI v3 Certification at 100 Park Avenue		
Sustainable Sites		
Credit 1	Site Selection	
	Option 1: Select a LEED Certified Building	5
Credit 2	Development Density and Community Connectivity	6
Credit 3.1	Alternative Transportation - Public Transportation Access	6
Credit 3.3	Alternative Transportation - Parking Availability	2
Energy & Atmosphere		
Credit 3	Measurement and Verification	5
Materials & Resources		
Prereq 1	Storage and Collection of Recyclables	Prereq. Compliant
Credit 1.1	Tenant Space - Long-Term Commitment	1
Credit 2	Construction Waste Management (50%)	1
Indoor Environmental Quality		
Prereq 1	Minimum Indoor Air Quality Performance	Prereq. Compliant
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Prereq. Compliant
Credit 5	Indoor Chemical & Pollutant Source Control	1
Innovation in Design		
Credit 1	Exemplary Performance: SSc3.1	1
Credit 2	LEED® Accredited Professional	1
Total Points Contributed:		29
Total Points Required for Basic Certification:		40
Percentage of Base Building Contribution towards Certification:		73%

Table 1: LEED-CI v3 2009 Credits that are currently achievable due to 100 Park Avenue’s Base Building Features

The following is a detailed description of the credits and characteristics at 100 Park Avenue that may contribute to a tenant's pursuit of LEED-CI certification. 100 Park Avenue provides a tenant project with 29 potential points, which is broken out as follows under the LEED credit categories:

SUSTAINABLE SITES (SS)

The selection of a building that addresses sustainability in both its site and development are of fundamental importance in the build-out of a sustainable CI space. This category under the LEED program addresses building landscape, hardscape, and exterior building issues. The following outlines sustainable characteristics as they apply to LEED-CI credits that 100 Park Avenue may contribute to a CI build-out within the building:

SSc1: Option 1: Select a LEED Certified Building

The LEED for CI program awards 5 points for any tenant who constructs their new office space(s) in a LEED certified building. Since 100 Park Avenue achieved LEED for Existing Buildings (LEED-EB) Silver certification, it provides a tenant 5 immediate points, with no additional work necessary.



Image 1: 100 Park Avenue was awarded LEED-EB Silver in June 2009

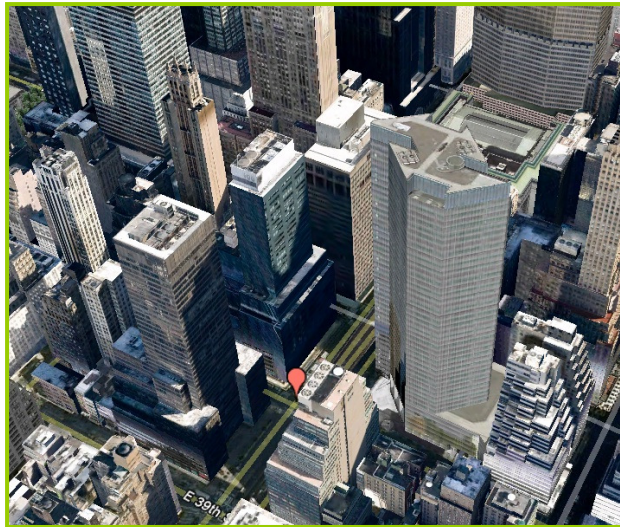


Image 2: Aerial view of 100 Park Avenue

SSc2: Development Density & Community Connectivity, 6 pts

The LEED program encourages tenants to choose space in areas with existing infrastructure to protect greenfields and preserve habitat and natural resources. Locating a commercial interiors project in an infill site helps control urban sprawl and uses existing infrastructure, including roads, utility services, and other basic services.

100 Park Avenue is located in the Midtown Manhattan within walking distance to a multitude of basic services. It is well within the LEED requirements for this credit of being located in an established, walkable community with a minimum density of 60,000 sq. ft. per acre net.

SSc3.1: Public Transportation Access, 6 pts

To reduce pollution and land development as a result of automobile use, the LEED-CI program encourages tenants to choose a space that provides access to modes of alternative transportation. 100 Park Avenue is within a ¼ mile (close walking distance) to a number of MTA bus lines as well as within a ½ mile from Grand Central Station a commuter rail hub including subway and rail lines. This accessibility to public transportation provides tenants an opportunity to commute in a more sustainable manner and reduce carbon emissions from single-occupancy vehicle use.



Image 3: Grand Central Station and the 4, 5, 6, M, and E MTA subway lines are within ½ mile from 100 Park Avenue.

SSc3.3: Parking Availability, 2 pts

As part of the SS credits encouraging alternative modes of transportation, a project can gain points by providing no parking for tenant occupants. Because there is no parking associated this building, this credit can be achieved if the tenant is not subsidizing parking for occupants. LEED advocates this practice as a means to decrease the need for paved parking area and to encourage the use of alternative modes of transportation.

MATERIALS & RESOURCES (MR)

MRp1: Storage and Collection of Recyclables

The building has implemented a recycling program addressing glass, plastic, cardboard, metals, and lightbulbs. The building’s vendor has an off-site sorting facility that ensures these materials are diverted from landfill and recycled. Pick-ups are made nightly Monday – Friday. Additionally, 100 Park Avenue management utilizes an onsite bulb dispensing system that satisfies LEED requirements.

MRc1.1: Tenant Space – Long-Term Commitment, 1 pt

In an effort to conserve resources, reduce waste, and reduce environmental impacts of tenancy as they relate to materials, manufacturing, and transport, the LEED program rewards tenants for signing a long-term lease. By arranging a lease term of a minimum of 10 years, tenants may gain 1 pt towards their LEED certification.

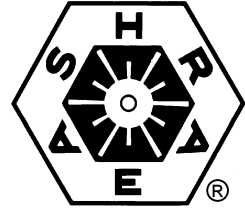
MRc2: Construction Waste Management, 1-2 pts

Building Management utilizes a hauler that can provide all the necessary tracking documentation to demonstrate construction waste material is being diverted from landfill. Should the tenant express interest in working with management on this credit, management would be able to provide a waste diversion plan and waste diversion rates to comply with during construction. By adhering to the construction waste management plan and utilizing the sample tracking documentation provided by the building, the tenant space may achieve 1 point for a 50% diversion rate or 2 pts for a 75% diversion rate. For this report we have assumed a minimum of 50% diversion rate, but the building’s typical hauler has shown rates of 75% diversion and higher.

INDOOR ENVIRONMENTAL QUALITY (IEQ)

IEQp1: Minimum Indoor Air Quality Performance

100 Park Avenue's air distribution systems adequately satisfied the ASHRAE 62.1 standards during its LEED certification and will provide sufficient enough outside air to satisfy this requirement.



IEQp2: Environmental Tobacco Smoke (ETS) Control

The no smoking policy at the building complies with the requirements set forth in the prerequisite of the LEED-CI 2009 program. Building policy prohibits smoking in the building and 25' from entrances, outdoor air intakes, and operable windows.

IEQc5: Indoor Chemical & Pollutant Source Control

100 Park's air distribution system currently utilizes MERV 14 air filters which comply with the requirements necessary in this credit. Secondly, there are permanently in-place entryway mats in the building lobby that are greater than 10 feet in length. Building management can provide diagrams photographs and air filter cutsheets for LEED credit documentation.



Image 4: Permanent Entryway mats at 100 Park Avenue meet the minimum 10 feet length required for IEQc5.

INNOVATION IN DESIGN (ID)

IDc1: Exemplary Performance: SSc3.1 – Alternative Transportation Access

Innovation Credits are awarded for exceeding a select group of LEED credits by doubling the requirements. LEED requires the building show a doubling of the amount of transportation access trips that serve the building. With 100 Park Avenue being locating to various modes of transportation, such as subways, railways, and buses the building can easily achieve this innovation credit.

IDc2: LEED Accredited Professional, 1 pt.

This credit is awarded to projects that have a LEED Accredited Professional as part of the project team. The 100 Park building team has a number of LEED Accredited Professionals working with the building that will allow CI projects to earn this credit.



APPENDIX

- 100 Park Avenue Base Building Credits Checklist



CODEGREEN
Sustainable Building Consulting

LEED 2009 for Commercial Interiors Base Building Contributions towards LEED-CI Certification

Project Name: 100 Park Avenue
Project Address: 100 Park Avenue, New York, NY 10017

Yes	?	No
19	0	0
5		

SUSTAINABLE SITES 21 Points

Credit 1	Site Selection	1 to 5
	<input checked="" type="checkbox"/> 5 Option 1: Select a LEED Certified Building	5
	OR Option 2: Locate in a Building That Meets:	Up to 5
	<input type="checkbox"/> Path 1: Brownfield Redevelopment	1
	<input type="checkbox"/> Path 2: Stormwater Design - Quantity Control	1
	<input type="checkbox"/> Path 3: Stormwater Design - Quality Control	1
	<input type="checkbox"/> Path 4: Heat Island Effect - Nonroof	1
	<input type="checkbox"/> Path 5: Heat-Island Effect - Roof	1
	<input type="checkbox"/> Path 6: Light Pollution Reduction	1
	<input type="checkbox"/> Path 7: Water Efficient Landscaping -Reduce by 50%	2
	<input type="checkbox"/> Path 8: Water Efficient Landscaping - No Potable Water Use or Irrigation	2
	<input type="checkbox"/> Path 9: Innovative Wastewater Technologies	2
	<input type="checkbox"/> Path 10: Water Use Reduction: 30% reduction	1
	<input type="checkbox"/> Path 11: On-site Renewable Energy	2
	<input type="checkbox"/> Path 12: Other Quantifiable Environmental Performance	1
Credit 2	Development Density and Community Connectivity	6
Credit 3.1	Alternative Transportation - Public Transportation Access	6
Credit 3.2	Alternative Transportation - Bicycle Storage and Changing Rooms	2
Credit 3.3	Alternative Transportation - Parking Availability	2

6		
6		
2		

Yes	?	No
0	0	0
N		

WATER EFFICIENCY 11 Points

Prereq 1	Water Use Reduction	Required
Credit 1	Water Use Reduction	6 to 11
	<input checked="" type="checkbox"/> 30% Reduction	6
	<input checked="" type="checkbox"/> 35% Reduction	8
	<input checked="" type="checkbox"/> 40% Reduction	11

Yes	?	No
5	0	0
-		
-		

ENERGY & ATMOSPHERE 37 Points

Prereq 1	Fundamental Commissioning of Building Energy Systems	Required
Prereq 2	Minimum Energy Performance: 90.1-2007, 10% LPD Reduction, 50% Energy Star Appl.	Required
Prereq 3	Fundamental Refrigerant Management	Required
Credit 1.1	Optimize Energy Performance - Lighting Power	1 to 5
	<input checked="" type="checkbox"/> 15% Reduction	1
	<input checked="" type="checkbox"/> 20% Reduction	2
	<input checked="" type="checkbox"/> 25% Reduction	3
	<input checked="" type="checkbox"/> 30% Reduction	4
	<input checked="" type="checkbox"/> 35% Reduction	5
Credit 1.2	Optimize Energy Performance - Lighting Controls	1 to 3
	<input checked="" type="checkbox"/> Daylight Controls for Daylit Areas	1
	<input checked="" type="checkbox"/> Daylight Controls for 50% of the Lighting Load	1
	<input checked="" type="checkbox"/> Occupancy Sensors for 75% of the Connected Lighting Load	1

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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 1.3	Optimize Energy Performance - HVAC	5 to 10
				<input checked="" type="checkbox"/> Equipment Efficiency	5
				<input checked="" type="checkbox"/> Zoning Controls	5
				OR	
				<input checked="" type="checkbox"/> Reduce Design Energy Cost and 15% Improvement	5
				<input checked="" type="checkbox"/> Reduce Design Energy Cost and 30% Improvement	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 1.4	Optimize Energy Performance - Equipment and Appliances	1 to 4
				<input checked="" type="checkbox"/> 70% ENERGY STAR	1
				<input checked="" type="checkbox"/> 77% ENERGY STAR	2
				<input checked="" type="checkbox"/> 84% ENERGY STAR	3
				<input checked="" type="checkbox"/> 90% ENERGY STAR	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 2	Enhanced Commissioning	5
5			Credit 3	Measurement and Verification	2 to 5
				<input checked="" type="checkbox"/> Install Sub-Metering Equipment	2
				<input checked="" type="checkbox"/> Tenant Pays for Energy	3
				OR	
				<input checked="" type="checkbox"/> Metering, Measurement and Payment Accountability	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4	Green Power	5

Yes	?	No	MATERIALS & RESOURCES			14 Points
2	0	0	Prereq 1	Storage and Collection of Recyclables	Required	
Y			Credit 1.1	Tenant Space - Long-Term Commitment	1	
1			Credit 1.2	Building Reuse - Maintain Interior Nonstructural Components	1 to 2	
				<input checked="" type="checkbox"/> 40% Reuse	1	
				<input checked="" type="checkbox"/> 60% Reuse	2	
1			Credit 2	Construction Waste Management	1 to 2	
				<input checked="" type="checkbox"/> Divert 50% from Disposal	1	
				<input checked="" type="checkbox"/> Divert 75% from Disposal	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 3.1	Materials Reuse	1 to 2	
				<input checked="" type="checkbox"/> 5% Reuse	1	
				<input checked="" type="checkbox"/> 10% Reuse	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 3.2	Materials Reuse - Furniture and Furnishings	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4	Recycled Content	1 to 2	
				<input checked="" type="checkbox"/> 10% of Content	1	
				<input checked="" type="checkbox"/> 20% of Content	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 5	Regional Materials	1 to 2	
				<input checked="" type="checkbox"/> 20% of Materials Manufactured	1	
				<input checked="" type="checkbox"/> 20% of Materials Manufactured and 10% Extracted	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 6	Rapidly Renewable Materials	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 7	Certified Wood	1	

Yes	?	No	INDOOR ENVIRONMENTAL QUALITY			17 Points
1	0	0	Prereq 1	Minimum Indoor Air Quality Performance	Required	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required	
Y			Credit 1	Outdoor Air Delivery Monitoring	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 2	Increased Ventilation	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 3.1	Construction Indoor Air Quality Management Plan - During Construction	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 3.2	Construction Indoor Air Quality Management Plan - Before Occupancy	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.1	Low-Emitting Materials - Adhesives and Sealants	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.2	Low-Emitting Materials - Paints and Coatings	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.3	Low-Emitting Materials - Flooring Systems	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.4	Low-Emitting Materials - Composite Wood and Agrifiber Products	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.5	Low-Emitting Materials - Systems Furniture and Seating	1	

1			Credit 5	Indoor Chemical and Pollutant Source Control	1
			Credit 6.1	Controllability of Systems - Lighting	1
			Credit 6.2	Controllability of Systems - Thermal Comfort	1
			Credit 7.1	Thermal Comfort - Design	1
			Credit 7.2	Thermal Comfort - Verification	1
			Credit 8.1	Daylight and Views - Daylight	1 to 2

x	75% of Spaces	1
x	90% of Spaces	2

			Credit 8.2	Daylight and Views - Views for Seated Spaces	1
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Yes ? No

2	0	0	INNOVATION IN DESIGN		6 Points
1			Credit 1	Innovation in Design	1 to 5

x	SSc3.1:Transportation Exceeded	1
x	Innovation or Exemplary Performance	1
x	Innovation or Exemplary Performance	1
x	Green Education	1
x	Innovation	1

1			Credit 2	LEED® Accredited Professional	1
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Yes ? No

0	0	0	REGIONAL PRIORITY		4 Points
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Zip Code 10017: SSc1/O2/P1:Brownfield; SSc1/O2/P2: Brownfield; WEc1 - 40%; MRc3.1 - 10:Material Reuse%; IEQc6.1; IEQc7.1

			Credit 1	Regional Priority	1 to 4
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x	IEQc6.1: Controllability of Systems - Lighting	1
x	IEQc7.1:Thermal Comfort-Design	1
x	Regionally Defined Credit Achieved	1
x	Regionally Defined Credit Achieved	1

Yes ? No

29	0	0			110
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Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points



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