

LEED Rating System for New Construction (LEED-NC) Version 2.1

City of Chicago Green Permit Credit Narrative
09 December 2005

Point Key & Summary

	SS	WE	EA	MR	EQ	ID	Total
Prerequisite	0	0	3	1	2	0	6
Probable	8	4	7	5	10	5	39
In question / under study	2	0	1	3	1	0	7
Not pursuing / not obtainable	4	1	9	5	4	0	23
Total	14	5	17	13	15	5	69

Achievement Level	Point Range	Achievement Threshold	Goal	Current Status
LEED Certified	26-32	38%		Gold
LEED Silver	33-38	48%	Silver	
LEED Gold	39-51	57%		
LEED Platinum	52-69	75%		

Sustainable Sites (SS)

Credit	Credit Title and Implementation Plan
SS PR1	Erosion & Sedimentation Control The general contractor will develop an erosion control plan to meet the requirements of EPA 832/R-92-005 for this site type and location. Specific measures include a silt fence at the perimeter of the project site. Dewatering of the site will be done using a sediment basin. Filtration for all dewatering will be accomplished by pumping through a filter fabric.
SS 1	Site Selection Site is not parkland; it is beyond 100' of any wetlands; it does not support any threatened or endangered species; it is higher than the 100-year flood plan; and it is not farmland.
SS 2	Development Density This site is in one of the most built-up and developed areas of Chicago. This project and its associated district exceed FAR 1.8.
SS 3	Brownfield Redevelopment Phase II Site Environmental Assessment indicates the site contains lead contaminants, classified by EPA standards as "characteristic hazardous waste", which requires remediation. These contaminants will be removed in December 2005.

SS 4.1	Alternative Transportation: Public Transportation The project is located within ½ mile of Harrison Red Line stop and Van Buren METRA stop.
SS 4.2	Alternative Transportation: Bicycle Storage & Changing Rooms Project provide bicycle parking for 5% of FTE employees and one shower for every 8 bicycle parking spaces, which translates as 9 bicycle spaces & 2 showers.
SS 4.4	Alternative Transportation: Parking Capacity Project does not include any parking spaces. 2 subsidized carpool spaces for Spertus employees will be provided in a nearby parking garage.
SS 7.2	Heat Island Effect: Roof 50% of roof area is planned as vegetated roof. The reminder is a reflective roof membrane as required by the Chicago Building Code.
SS 8	Light Pollution Reduction Since the project is zero lot line, there is a minimum of exterior site lighting on Spertus property. A small number of fixtures are located in the ceiling of exterior overhang areas. These fixtures point directly down and their maximum candela value falls within the site boundary. See site plan and reflected ceiling plan. The interior lighting at the building façade meets ASHRAE/IESNA recommendations for no light trespass from the building. See attached description from ISP Design.
Total Points 8	

Water Efficiency (WE)

<i>Credit</i>	<i>Credit Title and Implementation Plan</i>
WE 1.1	Water Efficient Landscaping: 50% Reduction The project is zero lot line and therefore does not have any landscaping or landscaping irrigation. LEED-NC CIR ruling 11/03/2005 states that “projects that do not have landscaping may earn WE Credits 1.1 and 1.2 since potable water is not being used for site irrigation.”
WE 1.2	Water Efficient Landscaping: No Potable use or No Irrigation See WE 1.1.
WE 3.1	Water Use Reduction: 20% Reduction The project will utilize dual flush water closets, 0.5 g/f urinals and reduced flow lavatory facets with automatic controls. Water reduction of over 35% is anticipated with these measures.
WE 3.2	Water Use Reduction: 30% Reduction See WE 3.1.
Total Points 4	

Energy & Atmosphere (EA)

<i>Credit</i>	<i>Credit Title and Implementation Plan</i>
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EA PR1	<p>Fundamental Building Systems Commissioning ESD, Inc. / ComEd have been retained to perform all commissioning activities including those under EA 3 Additional Commissioning. The ComEd portion of the commissioning team will perform those activities which are required to have independent third party involvement.</p>
EA PR2	<p>Minimum Energy Performance The HVAC system is a variable primary chilled water system with (2) air-cooled chillers, (2) chilled water pumps, and a “dry-cooler”. Each chiller is equipped with a digital scroll compressor capable of 90% turndown. The dry-cooler will be activated for ambient temperatures of 40 F and below allowing the chillers to be deactivated and “free cooling” to be utilized. Both CHW pumps are equipped with variable frequency drives. Two (2) Variable Air Volume (VAV) Air Handling Units (AHU) provide conditioned air to occupied spaces. Both AHU’s are equipped with enthalpy recovery wheels to conserve energy in heating and cooling seasons. The estimated building energy performance resulting from MEP and building envelope energy saving strategies is a 25% improvement compared to ASHRAE 90.1 -1999 prescriptive minimum requirements.</p> <ol style="list-style-type: none"> 1. The project was developed to meet or exceed the minimum criteria outlined in ASHRAE 90.1. In particular, attention was given to the following: <ol style="list-style-type: none"> a. Building Envelope – Roof R30, Walls R20, Vertical face of foundation R10 b. Heating, Ventilating and Air Conditioning Systems were designed to meet or exceed the mandatory and prescriptive requirements outlined in ASHRAE 90.1 including sections covering the following: <ol style="list-style-type: none"> i. Equipment Efficiencies ii. Load Calculations iii. Controls iv. HVAC System Construction and Insulation v. Completion Requirements vi. Air and Water Economizers vii. Simultaneous Heating and Cooling viii. Air System Design ix. Hydronic System Design x. Heat Rejection Equipment xi. Energy Recovery xii. Kitchen and Fume Hoods xiii. Radiant Heating Systems xiv. Hot Gas Bypass Limitations c. Service Water Heating: <ol style="list-style-type: none"> i. Load calculations were performed in accordance with generally accepted engineering standards including the ASHRAE Handbooks. ii. Equipment efficiencies meet or exceed the prescriptive requirements indicated. iii. Hot Water piping insulation meets or exceeds the prescriptive requirements indicated. iv. Service water heating systems are controlled in accordance with the prescriptive requirements. v. Heat traps have been provided meeting the prescriptive requirements indicated.

	<ul style="list-style-type: none"> d. Electric Power Distribution: <ul style="list-style-type: none"> i. Feeders and branch circuits have been sized for maximum voltage drops not to exceed the prescriptive requirements indicated. e. Electric Motors and Drives: <ul style="list-style-type: none"> i. Motors and Drives comply with the requirements of EPACT 1992 (where applicable). f. Lighting: <ul style="list-style-type: none"> i. Lighting systems meet or exceed the mandatory provisions for lighting control, wiring, and exterior lighting power. ii. Lighting systems interior lighting power allowance has been designed to comply with the space-by-space method compliance path. <p>2. Building energy consumption performance simulations was performed using the DOE2.1E version 96 and Carrier HAP (Hourly Analysis Program) energy modeling programs. In both cases, a baseline energy model was developed using the minimum prescriptive requirements. This baseline model was compared to the design model which was developed using actual proposed design values for various criteria (such as glazing performance characteristics, or equipment efficiencies).</p> <p>3. Building energy consumption performance simulations was performed using the DOE2.1E version 96 and Carrier HAP (Hourly Analysis Program) energy modeling programs. In both cases, a baseline energy model was developed using the minimum prescriptive requirements. This baseline model was compared to the design model which was developed using actual proposed design values for various criteria (such as glazing performance characteristics, or equipment efficiencies).</p>
EA PR3	CFC Reduction in HVAC&R Equipment Refrigerant R-134a is specified.
EA 1	Optimize Energy Performance (3 credits) See EA PR2. 25% Reduction
EA 3	Additional Commissioning See EA 3
EA 4	Ozone Protection: Elimination of HCFC's and Halons See EA PR3. No Halon is specified for fire suppression systems. No HCFC is specified for water coolers, icemakers, refrigerators and insulation systems.
EA 5	Measurement & Verification Spertus Institute will be equipped with a DDC Building Automation System (BAS) which will be capable of trending, logging, reporting, etc on the performance of building MEP systems and energy usage in conformance with the LEED criteria for this credit. A Measurement and Verification (M&V) plan consistent with option D of the 2001 International Performance Measurement & Verification Protocol (IPMVP) Volume I will be developed.
EA 6	Green Power Spertus intends to purchase Green-e rated certificates for 100% of the building's electrical needs for a 2-year contract period.
	Total Points 7

Materials & Resources (MR)

<i>Credit</i>	<i>Credit Title and Implementation Plan</i>
MR PR	Storage & Collection of Recyclables The project provides a central recycling area of 150 SF at the loading dock for separation, storage and collection for paper, metals, plastic, glass, and corrugated cardboard. This area is adequate for the uses of the building. Individual recycling containers will be provided at pantries and employee and student break areas as well as administrative office, library and study areas, which are anticipated to generate waste paper. See enclosed plan.
MR 2.1	Construction Waste Management: Divert 50% from Landfill Because of limited site area, the general contractor will utilize a single on-site dumpster. Recycling separation will occur at an off-site by the Roy Strom Company.
MR 4.1	Recycled Content: Use 5% Post-consumer or 10% Post-Consumer + Post-Industrial The project has ample opportunities including steel structural framing, rebar, decking, wall studs, toilet partitions, doors and frames, concrete, CMU, ACT, ceiling grid, composite wood, gypsum board, carpet, carpet backing, and insulation to incorporate materials containing recycled content. Specifications target 10% Post-Consumer or 20% Post-Consumer + Post-Industrial content of the project's materials value.
MR 4.2	Recycled Content: Use 10% Post-Consumer or 20% Post-Consumer + Post-Industrial See MR 4.1.
MR 5.1	Regional Materials: 20% Manufactured Regionally Specifications require this level of regional materials and final assembled products estimated at a material value of \$2,700,000 to be met.
MR 7	Certified Wood The project will utilize Forest Stewardship Council (FSC) certified wood for 50% of its total wood, including blocking.
	Total Possible Points 5

Environmental Quality (EQ)

<i>Credit</i>	<i>Credit Title and Implementation Plan</i>
EQ PR1	Minimum IAQ Performance Minimum ventilation rates to occupied spaces will be calculated using the Ventilation Rate Procedure and conform to ASHRAE 62.1-1999 Table 6-1 Minimum Ventilation rates in Breathing Zone including accompanying notes. Proper separation between intake and exhaust louvers will be maintained. Air flow rates will be monitored via flow measuring stations. Filtration will meet or exceed MERV 13.
EQ PR2	Environmental Tobacco Smoke (ETS) Control Spertus will not allow any smoking within the new facility. No smoking will allowed within 25 feet of main entrance.
EQ 1	Carbon Dioxide (CO₂) Monitoring Carbon Dioxide (CO ₂) sensors will be provided in densely populated areas and on each floor which will provide feedback to building operators regarding building ventilation system performance via the Building Automation System (BAS) to facilitate automatic or manual outside air damper adjustment.
EQ 3.1	Construction IAQ Management Plan: During Construction

	General Contractor will develop and implement a Construction IAQ Plan meeting or exceeding SMACNA IAQ Guidelines for Occupied Buildings under Construction, 1995, Chapter 3, utilize MERV 8 filters when AHUs are operated during construction and protect absorptive materials from moisture.
EQ 3.2	Construction IAQ Management Plan: Before Occupancy The project schedule allows for a two week flush out with MERV 13 filters of the entire building with replacement by all new medium.
EQ 4.1	Low-Emitting Materials: Adhesives & Sealants All LEED VOC requirements for adhesives and sealants used inside the building envelope will be met.
EQ 4.2	Low-Emitting Materials: Paints & Coatings All LEED VOC requirements for paints & coatings used inside the building envelope will be met.
EQ 4.3	Low-Emitting Materials: Carpet All carpet materials will meet VOC limits set by Green Label Testing Program.
EQ 4.4	Low-Emitting Materials: Composite Wood All composite wood (plywood, MDF and agrifiber board) is specified without added urea formaldehyde, including all fire-rated material.
EQ 5	<p>Indoor Chemical and Pollutant Source Control Project provides a stainless steel walk-off mat at the main entry. This entry is the only public pedestrian entry to the building. Access to the alleyway is by overhead door for loading and a small pedestrian door is for delivery and service personnel. See attached site plan.</p> <p>LEED air separation, pressurization and exhaust requirements for janitor closets, conservation lab and paint shop will be met. Drains utilized for chemical disposal will have appropriate plumbing. See below:</p> <ol style="list-style-type: none"> 1. An acid neutralizing basin has been provided in the 7th floor conservation room to accommodate local use of small amounts of chemicals used in art and book conservation. 2. Source capture equipment (lab hood) is provided in the conservation room and exhausted directly to outside with a minimum exhaust rate of 0.5 CFM/SF. 3. 1st Floor Workshop has been provided with two source capture systems (dust collector and paint booth) to reduce dust in this area. Workshop is also equipped with exhaust fan with a minimum exhaust rate of 0.5 CFM/SF. <p>No high volume printing areas are part of the project program.</p>
EQ 7.1	Thermal Comfort: Compliance with ASHRAE 55-1992, Addenda 1995 To facilitate ASHRAE 55-1995 compliance, main air handling units are equipped to maintain temperature and humidity levels in occupied spaces at acceptable levels as prescribed in the referenced standard. Variable Air Volume (VAV) Terminal Units provide independent zoning and control of occupied areas. Temperature and humidity sensors are provided to afford permanent monitoring and trending of thermal conditions in all occupied areas.
EQ 7.2	Thermal Comfort: Permanent Monitoring System See EQ 7.1.
	Total Points 11

Innovation & Design (ID)

Credit	Credit Title and Implementation Plan
ID 1.1	100% Green Power See EA 6.
DE 1.2	Sustainability Education Spertus will develop and implement an educational program that highlights and explains various aspects of the building's sustainable features, including docent tours, website and a brochure explaining sustainable aspects of the project. This is similar to other known innovation education credits and is consistent with current CIRs.
DE 1.3	Green Housekeeping & Maintenance Spertus will develop and implement a Green Housekeeping & Maintenance containing the following features: <ol style="list-style-type: none"> 1. A statement of purpose describing what the green housekeeping policy is trying to achieve from a health and environmental standpoint, focusing on cleaning chemicals and custodial training at a minimum. 2. A contractual or procedural requirement for operations staff to comply with the guidelines, including a written program for training and implementation. 3. A clear set of acceptable performance level standards by which to measure progress or achievement, such as Green Seal standard GS-37 (see www.greenseal.org) or California Code of Regulations, Title 17 Section 94509, VOC standards for cleaning products (go to www.calregs.com, click on California Code of Regulations and perform a keyword search for 94509). 4. Documentation of the program's housekeeping policies and environmental cleaning solution specifications, including a list of approved and prohibited chemicals and practices. Demonstrate that the products used in the project are non-hazardous, have a low environmental impact, and meet the criteria set forth in #3 above. Concentrated cleaning products should be utilized when available.
DE 1.4	High Efficiency Equipment and Appliances 70% of equipment and appliances wattage, including monitors CPUs, copiers, scanners, fax machines, refrigerators, ice makers, dishwashers will be <i>Energy Star</i> rated. This innovation credit is based on LEED-CI v2.0 credit EA 1.4 which addresses plug loads for equipment and appliances. <i>Energy Star</i> is the benchmark. This proposed Innovation credit is consistent with all current CIRs for LEED-CI credit EA 1.4.
DE 2	LEED Accredited Professional Rico Cedro (Krueck & Sexton, Director of Sustainable Design) and Andy Silverstein (ESD, Engineer of Record) are LEED Accredited Professionals.
	Total Points 5