

Organizations and Individuals Consulted
in preparation of the response

Los Angeles City Departments and Agencies

Jim Holmes, *City Planning Department*
Dan Scott, *City Planning Department*
Maxine Chavez, *Community Redevelopment Agency*
Margarita de Escontrias, *Community Redevelopment Agency*
Sally Richman, *Housing Department*

Housing Experts and Organizations

Jan Breidenbech, Executive Director, *Southern California Association of Non-Profit Housing*
Beth Steckler, Deputy Director, *Southern California Association of Non-Profit Housing*
Lauren Saunders, Director, *Slum Housing Abatement Unit, Bet Tzedik Legal Services*
Rod Fields, Director, *Los Angeles Housing Law Project*
Kalima Rose, *PolicyLink*
Robin Hughes, Executive Director, *Los Angeles Community Design Center*
Alice Salinas, Senior Project Manager, *Esperanza Community Housing Corporation*
Mary Lee, *Attorney at Law*
Marlene Garza, *Westside Fair Housing Council*

Environmental Experts and Organizations

Steve Fleishli, Executive Director, *Santa Monica Baykeeper*
Jacqueline Hamilton, Director, *Environmental Defense, Los Angeles Environmental Justice Project Office*

Health Experts and Organizations

Brian Dolan, *M.D., M.P.H.*
Diana Dolan, *M.P.H.*
Jim Mangia, Executive Director, *St. John's Well Child Center*
Health Promoters, *Esperanza Community Housing Corporation*

Community Organizations

— Action for Grassroots Empowerment and Neighborhood Development Alternatives (AGENDA)
All People's Christian Center
Association of Community Organizations for Reform Now (ACORN)
Central American Resource Center (CARECEN)
Coalition for Humane Immigrant Rights of Los Angeles (CHIRLA)
Clínica Oscar Romero
Coalition for Community Health
Coalition LA
Community Coalition for Substance Abuse Prevention and Treatment
Concerned Citizens of South Central Los Angeles
El Rescate
Environmental Defense B Environmental Justice Project Office
Episcopal Church of St. Phillip the Evangelist
Esperanza Community Housing Corporation
Hotel Employees and Restaurant Employees (HERE) Local 11
Inquilidos Unidos
Los Angeles Alliance for a New Economy (LAANE)
Los Angeles Conservation Corps
Neighbors for An Improved Community (NIC)
Pico Union / Westlake Cluster Network
Pico Union Neighborhood Association
— St. Agnes Catholic Church
St. John's Episcopal Church
St. John's Well Child Center
St. Mark's Lutheran Church
Service Employees International Union (SEIU) Local 1877
Strategic Actions for a Just Economy (SAJE)
Student Coalition Against Labor Exploitation (SCALE)
United University Church

Neighborhood Residents

Reina Acencio
Miguel Alas
Olimpia Alas
Elba Alcaraz
Cruzanta Aleman
Fernando Aleman
Guadalupe Aleman
Angeles Alvarado
Enrique Alvarado

Isidra Alvarado
Angela Amaya
Maricruz Aparicio
Eloy Aquino
Lucy Arias
Raay Arias
Pablo Arteaga
Pedro Ausencio
Gerardo Ayala
Mirian Barillas
Ivan Bautista
Maria Becerra
Maria de Jesus Burgos
Rosa M. Calderon
Jorge Calvario
Rosa Carrete
Macrina Castillo
Veronica Castillo
Artemio Castro
Irene Castro
Veronica Cazares
Maria Ceja
Gustavo Conchas
Ofelia Conchas
Raymundo Contreras
Tomas Cornelio
Yasmin Corona
Rufino Celis
Ricardo Cortes
Imelda Cruz
Armando Delgado
Israel Diaz
Eladia Dumas
Daisy Echeverri
Garica Elias
Manuel Escobar
Margarita Espinoza
Virginia Espinoza
Hector Estrada
Patricia Estrada
Marcelino Estrada
Maria Estrada
Ernestina Flores

Lorenza Flores
Margarito Flores
Maricela Flores
Roni Flores
Ada Funes
Felipe Garcia
Jesus Garcia
Mario Garcia
Pablo Garcia
Pedro Garcia
Raymundo Garcia
Victorino Gaytan
Apolonio Gonzales
Adrian Gonzalez
Dolores Gonzalez
Leonicio Gonzalez
Diego Gudino
Juana Gudino
Civuelo Guerrero
Salvador Guerrero
Petra Gutierrez
Virginia Gutierrez
Augustina Hernandez
Corina Hernandez
Eva Hernandez
Gabriela Hernandez
Jose Hernandez
Lucrecia Hernandez
Maricruz Hernandez
Marisol Hernandez
Patricia Hernandez
Petra Hernandez
Cosme Flores Herrera
Hernelinda Herrera
Santiago Huerta
Reyna Ibarra
Galilia Jose
Jaime Jose
Lourdes Juarez
Maria Leon
Rocio Leon
Alicia Lerma
Dolores Lopez

Juanita Lopez
Dolores Lorta
Ricarda Loza
Angela Luna
Elena Luna
Lucrecia Luna
Angela Martinez
Angelica Martinez
Elizabeth Martinez
Erika Martinez
Jesus Gonzalez Martinez
Joaquina Martinez
Jose E Martinez
Rita Martinez
Rocio Martinez
Reynalda Mecina
Maria Medel
Adelfo Medel
Filiberto Mendez
Gregoria Mendez
Aurelia Mendoza
Cecilia Mendoza
Juana Mercado
Jose Millan
Juan Millan
Susana Millan
Cornelio Montes
Evelin Montes
Jesus Moran
Cruz Moreno
Ciro Munoz
Imelda Nunez
Bertha Nuno
Ana Ochoa
Lucia Ochoa
Maria Ochoa
Emilia Olive
Magda Ortega
Severiana Ortiz
Danny Oybarra
Manuel Pacheco
Genoveva Paredes
Lucila Paredes

—
Maria Pena
Felipe Perez
Matias Perez
Andres Pineda
Patricia Pineda
Dulces Puebla
Dora Ramirez
Juliana Ramirez
Lidia Ramirez
Olga Ramirez
Esperanza Ramirez
Gilberto Ramon
Candy Ramos
Victor Ramos
Reyna Reyes
Lauro Medel
Claudia Reyna
Maria Reyna
Ricardo y Narcisa Rivera
Genoveba Rocha
Alejandra Rodriguez
Elbira Rodriguez
— Marcos Rojas
Lee Romero
Manuel Rosas
Guadaupe Rubio
Paula Rubio
Antonia Ruiz
Doris Ruiz
Irma Ruiz
Jose Ruiz
Juan Ruiz
Pedro Rumualdo
Ana Salguero
Acension Salinas
Manuel Pacheco
Maria Salinas
Jose Salvador
Oscar Samano
Cleto Sanchez
Pablo \ Sonia Sanchez
Sonia Sanchez
— Isabel y Arturo Santana

Jose Savala
Albina Sierra
Isidra Benites
Lidio Solano
Leticia Solis
Isabel Tiburcia
Agapito Torres
Consuelo Torres
Jessica Torres
Jorge Torres
Rosa Torres
Teresa Torres
Francisca Tovar
Ana Valenzuela
Margarita Vazquez
Vicenter Vazquez
Mirna Vega
Raymundo Veitia
Maria Velasquez
Martin Victoria
Ismael Villalobos
Eucebia O. Villalobos
Adela Villanucva
Dora Villasana
Pascual Villasana
Martha Villegas
Ramona Villegas
Guadalupe Zavala
Jose Zepeda
Maria Zepeda
Sebastian Zuloaga



FIGUEROA CORRIDOR COALITION FOR ECONOMIC JUSTICE

ORGANIZATIONAL MEMBERS

(AS OF 2-22-00)

- Action for Grassroots Empowerment and Neighborhood Development Alternatives (AGENDA)*
- All People's Christian Center*
- Association of Community Organizations for Reform Now (ACORN)*
- Blazers Youth Services*
- Budlong and Jefferson Block Club*
- Central American Resource Center (CARECEN)*
- Clínica Oscar Romero*
- Coalition for Community Health*
- Coalition LA*
- Community Coalition for Substance Abuse Prevention and Treatment*
- Concerned Citizens of South Central Los Angeles*
- El Rescate*
- Environmental Defense – Environmental Justice Project Office*
- Episcopal Church of St. Phillip the Evangelist*
- Esperanza Community Housing Corporation*
- Faithful Service Baptist Church*
- Hotel Employees and Restaurant Employees (HERE) Local 11*
- Los Angeles Alliance for a New Economy (LAANE)*
- Neighbors for An Improved Community (NIC)*
- St. John's Episcopal Church*
- St. John's Well Child Center*
- St. Mark's Lutheran Church*
- Service Employees International Union (SEIU) Local 1877*
- Strategic Actions for a Just Economy (SAJE)*
- Student Coalition Against Labor Exploitation (SCALE)*
- United University Church*





Green Building Rating System™

Version 2.0

Leadership in Energy
and Environmental Design

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U.S. GREEN BUILDING COUNCIL

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The LEED Green Building Rating System™ 2.0 is the second edition of this standard. The U. S. Green Building Council makes its best effort at promulgating a standard that improves environmental and economic performance of commercial buildings using established or advanced industry principles, practices, materials, and standards. The LEED Green Building System™ is intended to be used by commercial building project stakeholders and project teams as a guide for green and sustainable design.

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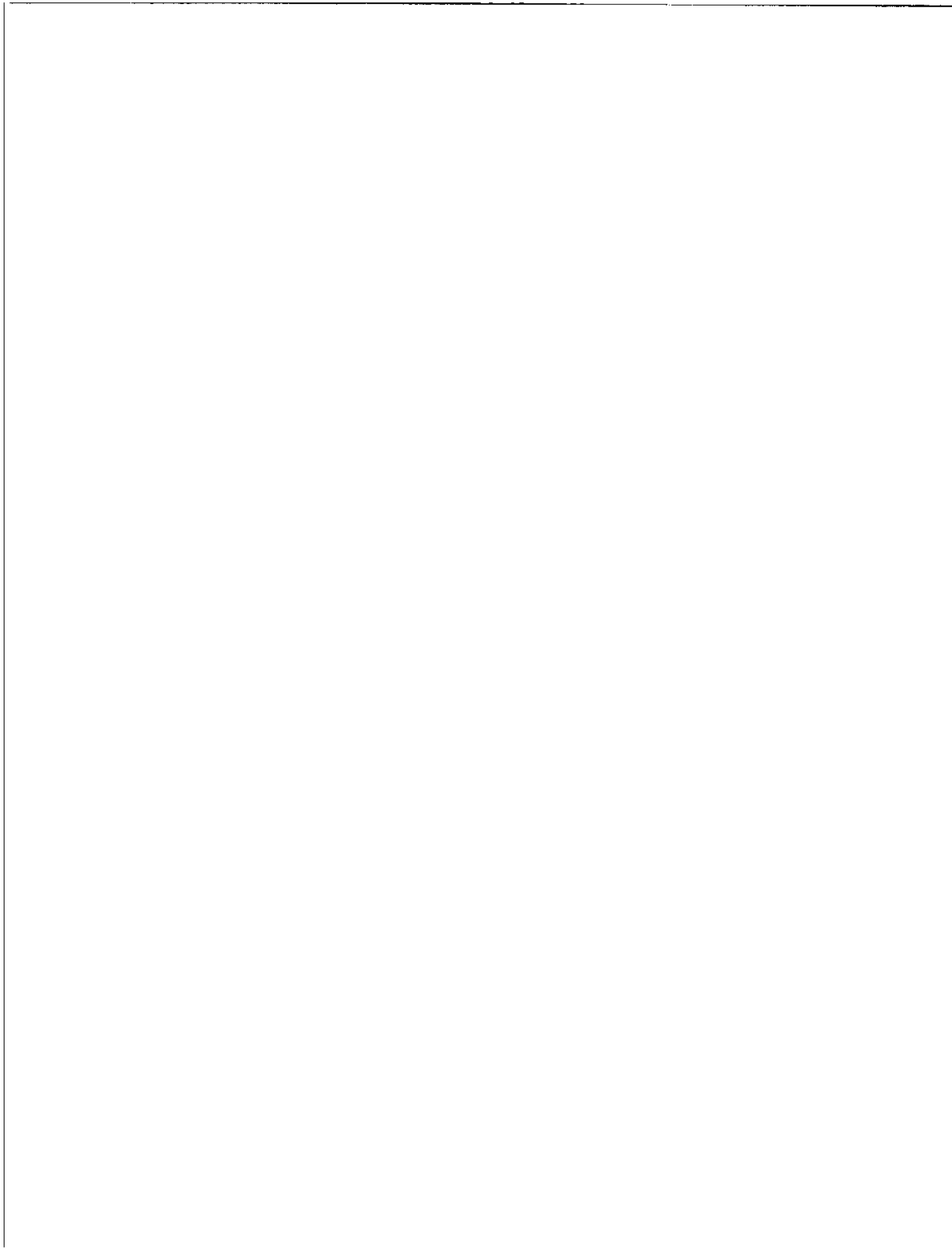
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Sustainable Sites

Points

Site Prerequisite:
Erosion and
Sedimentation Control

INTENT:
Control erosion to reduce negative impacts on water and air quality.

Required

REQUIREMENT:

- Design to a site sediment and erosion control plan that conforms to best management practices in the EPA's Storm Water Management for Construction Activities, EPA Document No. EPA-833-R-92-001, Chapter 3, OR local Erosion and Sedimentation Control standards and codes, whichever is more stringent. The plan shall meet the following objectives:
 - Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
 - Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter.

TECHNOLOGIES/STRATEGIES:

The EPA standard lists numerous measures such as silt fencing, sediment traps, construction phasing, stabilization of steep slopes, maintaining vegetated ground cover and providing ground cover that will meet this prerequisite.

Site Credit 1:
Site Selection

INTENT:
Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.

1

REQUIREMENT:

- Do not develop buildings on portions of sites that meet any one of the following criteria:
 - Prime agricultural land as defined by the Farmland Trust
 - Land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA
 - Land that provides habitat for any species on the Federal or State threatened or endangered list
 - Within 100 feet of any wetland as defined by 40 CFR, Parts 230-233 and Part 22, OR as defined by local or state rule or law, whichever is more stringent.
 - Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public land owner. (Park Authority projects are exempt.)

TECHNOLOGIES/STRATEGIES:

Screen potential building sites for these criteria prior to purchasing the land, and/or ensure that these criteria are addressed by the designer during the conceptual design phase. Utilize landscape architects, ecologists, environmental engineers, civil engineers, and similar professionals for the screening process. New wetlands constructed as part of stormwater mitigation or other site restoration efforts are not affected by the restrictions of this prerequisite.



Sustainable Sites (cont.)

Points

Site Credit 2: Urban Redevelopment	<p>INTENT: Channel development to urban areas with existing infrastructure, protecting greenfields and preserving habitat and natural resources.</p> <p>REQUIREMENT: <input type="checkbox"/> Increase localized density to conform to existing or desired density goals by utilizing sites that are located within an existing minimum development density of 60,000 square feet per acre (2 story downtown development).</p> <p>TECHNOLOGIES/STRATEGIES: During the site selection process give preference to previously developed sites with urban redevelopment potential.</p>	1
Site Credit 3: Brownfield Redevelopment	<p>INTENT: Rehabilitate damaged sites where development is complicated by real or perceived environmental contamination, reducing pressure on undeveloped land.</p> <p>REQUIREMENT: <input type="checkbox"/> Develop on a site classified as a brownfield and provide remediation as required by EPA's Brownfield Redevelopment program requirements.</p> <p>TECHNOLOGIES/STRATEGIES: Participate in EPA's Brownfield Redevelopment program. Utilize EPA OSWER Directive 9610.17 and ASTM Standard Practice E1739 for site remediation where required. Gain community support by highlighting the social and urban benefits of brownfield redevelopment. Negotiate with local municipalities and landowners for below-market purchase price for brownfield real estate. Obtain tax incentives be meeting geographic requirements for EPA's Brownfield tax credits.</p>	1
Site Credit 4: Alternative Transportation	<p>INTENT: Reduce pollution and land development impacts from automobile use.</p> <p>REQUIREMENT: <input type="checkbox"/> Locate building within ½ mile of a commuter rail, light rail or subway station or ¼ mile of 2 or more bus lines. (1 point) <input type="checkbox"/> Provide suitable means for securing bicycles, with convenient changing/shower facilities for use by cyclists, for 5% or more of building occupants. (1 point) <input type="checkbox"/> Install alternative-fuel refueling station(s) for 3% of the total vehicle parking capacity of the site. Liquid or gaseous fueling facilities must be separately ventilated or located outdoors. (1 point) <input type="checkbox"/> Size parking capacity not to exceed minimum local zoning requirements AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants, OR, add no new parking for rehabilitation projects AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants. (1 point)</p> <p>TECHNOLOGIES/STRATEGIES: Select sites near public transit served by safe, convenient pedestrian pathways.</p>	1-4



Sustainable Sites (cont.)

Points

Site Credit 5:
Reduced Site
Disturbance

INTENT:

Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

1-2

REQUIREMENT:

- On greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways, and main utility branch trenches, and 25 feet beyond pervious paving areas that require additional staging areas in order to limit compaction in the paved area; OR, on previously developed sites, restore a minimum of 50% of the remaining open area by planting native or adapted vegetation. (1 point)
- Reduce the development footprint (including building, access roads and parking) to exceed the local zoning's open space requirement for the site by 25%. (1 point)

TECHNOLOGIES/STRATEGIES:

Note requirements on plans and in specifications. Establish contractual penalties for destruction of trees and site areas noted for protection. Reduce footprints by tightening program needs and stacking floorplans. Establish clearly marked construction and disturbance boundaries. Delineate laydown, recycling, and disposal areas. Use areas to be paved as staging areas. Work with local horticultural extension services or native plant societies to select indigenous plant species for site restoration and landscaping.

Site Credit 6:
Stormwater Management

INTENT:

Limit disruption of natural water flows by minimizing storm water runoff, increasing on-site infiltration and reducing contaminants.

1-2

REQUIREMENT:

Implement a stormwater management plan that results in:

- No net increase in the rate or quantity of stormwater runoff from existing to developed conditions; OR, if existing imperviousness is greater than 50%, implement a stormwater management plan that results in a 25% decrease in the rate and quantity of stormwater runoff. (1 point)
- Treatment systems designed to remove 80% of the average annual post development total suspended solids (TSS), and 40% of the average annual post development total phosphorous (TP), by implementing Best Management Practices (BMPs) outlined in EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA 840-B-92-002 1/93). (1 point)

TECHNOLOGIES/STRATEGIES:

Significantly reduce impervious surfaces, maximize on-site stormwater infiltration, and retain pervious and vegetated areas. Capture rainwater from impervious areas of the building for groundwater recharge or reuse within building. Use green/vegetated roofs. Utilize biologically-based and innovative stormwater management features for pollutant load reduction such as constructed wetlands, stormwater filtering systems, bioswales, bio-retention basins, and vegetated filterstrips.



<p>Site Credit 7: Landscape and Exterior Design to Reduce Heat Islands</p>	<p>INTENT: Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.</p> <p>REQUIREMENT:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide shade (within 5 years) on at least 30% of non-roof impervious surface on the site, including parking lots, walkways, plazas, etc., OR, use light-colored/high-albedo materials (reflectance of at least 0.3) for 30% of the site's non-roof impervious surfaces, OR place a minimum of 50% of parking space underground OR use open-grid pavement system (net impervious area of LESS than 50%) for a minimum of 50% of the parking lot area. (1 point) <input type="checkbox"/> Use ENERGY STAR Roof compliant, high-reflectance AND low emissivity roofing (initial reflectance of at least .65 and three-year-aged reflectance of at least .5 when tested in accordance with ASTM E408) for a minimum of 75% of the roof surface; OR, install a "green" (vegetated) roof for at least 50% of the roof area. (1 point) <p>TECHNOLOGIES/STRATEGIES: Employ design strategies, materials, and landscaping designs that reduce heat absorption of exterior materials. Note albedo/reflectance requirements in the drawings and specifications. Provide shade (calculated on June 21, noon solar time) using native or climate tolerant trees and large shrubs, vegetated trellises, or other exterior structures supporting vegetation. Substitute vegetated surfaces for hard surfaces. Explore elimination of blacktop and the use of new coatings and integral colorants for asphalt to achieve light colored surfaces.</p>	<p>1-2</p>
<p>Site Credit 8: Light Pollution Reduction</p>	<p>INTENT: Eliminate light trespass from the building site, improve night sky access, and reduce development impact on nocturnal environments.</p> <p>REQUIREMENT:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Do not exceed Illuminating Engineering Society of North America (IESNA) footcandle level requirements as stated in the Recommended Practice Manual: Lighting for Exterior Environments, AND design interior and exterior lighting such that zero direct-beam illumination leaves the building site. <p>TECHNOLOGIES/STRATEGIES: Consult IESNA Recommended Practice Manual: Lighting for Exterior Environments for Commission Internationale de l'Eclairage (CIE) zone and pre and post curfew hour descriptions and associated ambient lighting level requirements. Ambient lighting for pre-curfew hours for CIE zones range between .01 footcandles for areas with dark landscapes such as parks, rural, and residential areas, and 1.5 footcandles for areas with high ambient brightness such as urban areas with high levels of nighttime activity. Design site lighting and select lighting styles and technologies to have a minimal impact off-site and minimal contribution to sky glow. Minimize lighting of architectural and landscape features.</p>	<p>1</p>



Water Efficiency

Points

Water Credit 1:
Water Efficient
Landscaping

INTENT:

Limit or eliminate the use of potable water for landscape irrigation.

1-2

REQUIREMENT:

- Use high efficiency irrigation technology, OR, use captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means. (1 point)
- Use only captured rain or recycled site water for an additional 50% reduction (100% total reduction) of potable water for site irrigation needs, OR, do not install permanent landscape irrigation systems. (1 point)

TECHNOLOGIES/STRATEGIES:

Develop a landscaping water use baseline according to the methodology outlined in the LEED Reference Guide. Specify water-efficient, native or adapted, climate tolerant plantings. High efficiency irrigation technologies include micro irrigation, moisture sensors, or weather data based controllers. Feed irrigation systems with captured rainwater, gray water, or on-site treated wastewater.

Water Credit 2:
Innovative Wastewater
Technologies

INTENT:

Reduce generation of wastewater and potable water demand, while increasing local aquifer recharge.

1

REQUIREMENT:

- Reduce the use of municipally provided potable water for building sewage conveyance by a minimum of 50%. OR, treat 100% of wastewater on site to tertiary standards.

TECHNOLOGIES/STRATEGIES:

Develop a wastewater baseline according to the methodology outlined in the LEED Reference Guide. Implement decentralized on-site wastewater treatment and reuse systems. Decrease the use of potable water for sewage conveyance by utilizing gray and/or black water systems. Non-potable reuse opportunities include, toilet flushing, landscape irrigation, etc. Provide advanced wastewater treatment after use by employing innovative, ecological, on-site technologies including constructed wetlands, a mechanical recirculating sand filter, or aerobic treatment systems.



Water Efficiency (cont.)

Points

Water Credit 3:
Water Use Reduction

INTENT:

Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

1-2

REQUIREMENT:

- Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements. (1 point)
- Exceed the potable water use reduction by an additional 10% (30% total efficiency increase). (1 point)

TECHNOLOGIES/STRATEGIES:

Develop a water use baseline including all water consuming fixtures, equipment, and seasonal conditions according to methodology guidance outlined in the LEED Reference Guide. Specify water conserving plumbing fixtures that exceed Energy Policy Act of 1992 fixture requirements in combination with ultra high efficiency or dry fixture and control technologies. Specify high water efficiency equipment (dishwashers, laundry, cooling towers, etc.). Use alternatives to potable water for sewage transport water. Use recycled or storm water for HVAC/process make up water.



Energy and Atmosphere

Points

Prerequisite 1:
Fundamental Building
Systems Commissioning

INTENT:

Verify and ensure that fundamental building elements and systems are designed, installed and calibrated to operate as intended.

Required

REQUIREMENT:

Implement all of the following fundamental best practice commissioning procedures.

- Engage a commissioning authority.
- Develop design intent and basis of design documentation.
- Include commissioning requirements in the construction documents.
- Develop and utilize a commissioning plan.
- Verify installation, functional performance, training and documentation.
- Complete a commissioning report.

TECHNOLOGIES/STRATEGIES:

Introduce standards and strategies into the design process early, and then carry through selected measures by clearly stating target requirements in the construction documents. Tie contractor final payments to documented system performance. Refer to the LEED Reference Guide for detailed descriptions of required elements and references to additional commissioning guides.

Prerequisite 2:
Minimum Energy
Performance

INTENT:

Establish the minimum level of energy efficiency for the base building and systems.

Required

REQUIREMENT:

Design to meet building energy efficiency and performance as required by ASHRAE/IESNA 90.1-1999 or the local energy code, which ever is the more stringent. Analyze expected baseline building performance using the System/Component Method.

TECHNOLOGIES/STRATEGIES:

Use building modeling and analysis techniques to establish and document compliance. ASHRAE/IESNA 90.1-1999 provides guidance for establishing building base case development and analysis. Refer to the LEED Reference Guide for a wide variety of energy efficiency strategy resources.



Energy and Atmosphere (cont.)

Points

Prerequisite 3:
CFC Reduction in
HVAC&R Equipment

INTENT:
Reduce ozone depletion.

Required

REQUIREMENT:

- Zero use of CFC-based refrigerants in new base building HVAC&R systems. When reusing existing base building HVAC equipment, complete a comprehensive CFC phaseout conversion.

TECHNOLOGIES/STRATEGIES:

Specify only non-CFC-based refrigerants in all base building HVAC&R systems.

Energy Credit 1:
Optimize Energy
Performance.

INTENT:
Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

2-10

REQUIREMENT:

Reduce design energy cost compared to the energy cost budget for regulated energy components described in the requirements of ASHRAE/IESNA Standard 90.1-1999, as demonstrated by a whole building simulation using the Energy Cost Budget Method described in Section 11.

<u>New Bldgs.</u>	<u>Existing Bldgs.</u>	<u>Points.</u>
<input type="checkbox"/> 20%	10%	2
<input type="checkbox"/> 30%	20%	4
<input type="checkbox"/> 40%	30%	6
<input type="checkbox"/> 50%	40%	8
<input type="checkbox"/> 60%	50%	10

Regulated energy components include HVAC systems, building envelope, service hot water systems, lighting and other regulated systems as defined by ASHRAE.

TECHNOLOGIES/STRATEGIES:

Develop and use building modeling and analysis techniques to establish a base case that meets the minimum prerequisite standard. ASHRAE/IESNA 90.1-1999 provides guidance for establishing building base case development and analysis. Perform interactive energy use analysis for selected design elements that affect energy performance and document compliance.

Unit of measure for performance shall be annual energy cost expressed in dollars. Annual energy costs shall be determined using rates for purchased energy, such as electricity, gas, oil, propane, steam, and chilled water and approved by the adopting authority, OR using the default purchased energy costs set forth in the Reference Guide. Refer to the LEED Reference Guide for a wide variety of energy efficiency resources and strategies including conservation measures, electromechanical energy efficiency technologies, passive heating and cooling strategies, and daylighting.



Energy and Atmosphere (cont.)

Points

Energy Credit 2: Renewable Energy

INTENT:

Encourage and recognize increasing levels of self-supply through renewable technologies to reduce environmental impacts associated with fossil fuel energy use.

1-3

REQUIREMENT:

Supply a net fraction of the building's total energy use (as expressed as a fraction of annual energy cost through the use of on-site renewable energy systems).

	<u>% of Total Energy Cost in Renewables</u>	<u>Pts.</u>
<input type="checkbox"/>	5%	1
<input type="checkbox"/>	10%	2
<input type="checkbox"/>	20%	3

TECHNOLOGIES/STRATEGIES:

Employ the use of on-site non-polluting-source renewable technologies contributing to the total energy requirements of the project. Consider and use high temperature solar and/or geothermal, wind, biomass (other than unsustainably harvested wood), and bio-gas. Passive solar, solar hot water heating, ground-source heat pumps, and daylighting do not qualify for points under this credit. Credit for these strategies is given in Energy & Atmosphere Credit 1: Optimizing Energy Performance.

Energy Credit 3: Additional Commissioning

INTENT:

Verify and ensure that the entire building is designed, constructed, and calibrated to operate as intended.

1

REQUIREMENT:

- In addition to the Fundamental Building Commissioning prerequisite, implement the following additional commissioning tasks:
 1. Conduct a focused review of the design prior to the construction documents phase.
 2. Conduct a focused review of the construction documents when close to completion.
 3. Conduct a selective review of contractor submittals of commissioned equipment.
 4. Develop a system and energy management manual.
 5. Have a contract in place for a near-warranty end or post-occupancy review.
 Items 1, 2, and 3 must be performed by someone other than the designer.

TECHNOLOGIES/STRATEGIES:

Introduce standards and strategies into the design process early, and then carry through selected measures by clearly stating target requirements in the construction documents. Tie contractor final payments to documented system performance. Refer to the LEED Reference Guide for detailed descriptions of required elements and references to additional guidelines.

Energy Credit 4: Elimination of HCFC's and Halons

INTENT:

Reduce ozone depletion and support early compliance with the Montreal Protocol.

1

REQUIREMENT:

- Install base building level HVAC and refrigeration equipment and fire suppression systems that do not contain HCFC's or Halon.

TECHNOLOGIES/STRATEGIES:

Utilize base building HVAC and refrigeration systems that use non-ozone damaging liquids for the refrigeration cycle. Refer to the LEED Reference Guide for qualifying alternatives.



Energy Credit 5:
Measurement and
Verification

INTENT:
Provide for the ongoing accountability and optimization of building energy and water consumption performance over time.

1.

REQUIREMENT:

- Comply with the installed equipment requirements for continuous metering as stated in Option B: Methods by Technology of the US DOE's International Performance Measurement and Verification Protocol (IPMVP) for the following:
 - Lighting systems and controls.
 - Constant and variable motor loads.
 - Variable frequency drive (VFD) operation.
 - Chiller efficiency at variable loads (kW/ton).
 - Cooling load.
 - Air and water economizer and heat recovery cycles.
 - Air distribution static pressures and ventilation air volumes.
 - Boiler efficiencies.
 - Building specific process energy efficiency systems and equipment.
 - Indoor water risers and outdoor irrigation systems.

TECHNOLOGIES/STRATEGIES:

Design and specify equipment to be installed in base building systems to allow for comparison, management, and optimization of actual vs. estimated energy and water performance. Employ building automation systems to perform M&V functions where applicable. Tie contractor final payments to documented M&V system performance and include in the commissioning report. Provide for ongoing M&V system maintenance and operating plan in building operations and maintenance manuals. Refer to the LEED Reference Guide for a synopsis of IPMVP options.

Energy Credit 6:
Green Power

INTENT:
Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.

1

REQUIREMENT:

- Engage in a two year contract to purchase power generated from renewable sources that meet the Center for Resource Solutions (CRS) Green-E requirements.

TECHNOLOGIES/STRATEGIES:

Purchase power from a provider that guarantees a fraction of its delivered electric power is from net nonpolluting renewable technologies. Begin by contacting local utility companies. If the project is in an open market state, investigate Green Power and Power Marketers licensed to provide power in that state. Grid power that qualifies for this credit originates from solar, wind, geothermal, biomass, or low-impact hydro sources. Low-impact hydro shall comply with the Low Impact Hydropower Certification Program.



Materials and Resources

Points

Materials Prerequisite: Storage & Collection of Recyclables **INTENT:** Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills. **Required**

REQUIREMENT:

- Provide an easily accessible area that serves the entire building that is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, glass, plastics, and metals.

TECHNOLOGIES/STRATEGIES:

Reserve space for recycling functions early in the building occupancy programming process and show areas dedicated to collection of recycled materials on space utilization plans. Broader recycling support space considerations should allow for collection and storage of the required elements and newspaper, organic waste (food and soiled paper), and dry waste. When collection bins are used, bin(s) should be able to accommodate a 75% diversion rate and be easily accessible to custodial staff and recycling collection workers. Consider bin designs that allow for easy cleaning to avoid health issues.

Materials Credit 1: Building Reuse **INTENT:** Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste, and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport. **1-3**

REQUIREMENT:

Reuse large portions of existing structures during renovation or redevelopment projects.

- Maintain at least 75% of existing building structure and shell (exterior skin and framing excluding window assemblies). (1 point)
- Maintain an additional 25% (100% total) of existing building structure and shell (exterior skin and framing excluding window assemblies). (1 point)
- Maintain 100% of existing building structure and shell AND 50% non-shell (walls, floor coverings, and ceiling systems). (1 point)

TECHNOLOGIES/STRATEGIES:

Evaluate retention of existing structure. Consider facade preservation, particularly in urban areas. During programming and space planning, consider adjusting needs and occupant use patterns to fit within existing building structure and interior partition configurations. Identify and effectively address energy, structural, and indoor environmental (lead & asbestos) issues in building reuse planning and deconstruction documents. Percentage of reused non-shell building portions will be calculated as the total area (s.f.) of reused walls, floor covering, and ceiling systems, divided by the existing total area (s.f.) of walls, floor covering, and ceiling systems.

