

PALO ALTO PUBLIC SAFETY BUILDING
Green Building (LEED-NC v2.2) Priorities Matrix

Prepared by Simon & Associates, Inc.

DRAFT December 22, 2006

CREDIT	DESIGN/CONSTRUCTION REQUIREMENTS	YES / NO (1/0)	MAYBE	SUBMITTALS	PARTIES RESPONSIBLE FOR DOCUMENTATION	COMMENTS/ACTION ITEMS
Sustainable Sites						
SS Prereq. 1	Construction Activity Pollution Prevention Create and implement an Erosion and Sedimentation Control (ESC) Plan for all construction activities associated with the project. The ESC Plan shall conform to the erosion and sedimentation requirements of the 2003 EPA Construction General Permit, OR local erosion and sedimentation control standards and codes, whichever is more stringent. The Plan shall describe the measures implemented to accomplish the following objectives: <ul style="list-style-type: none"> Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse. Prevent sedimentation of storm sewer or receiving streams. Prevent polluting the air with dust and particulate matter. 	X		C	Civil Engineer	
SS 1.0	Site Selection Do not develop buildings, hardscape, roads or parking areas on portions of sites that meet any one of the following: <ul style="list-style-type: none"> Prime farmland as defined by the United States Department of Agriculture in the United States Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5 (citation 7CFR657.5) Previously undeveloped land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA Land which is specifically identified as habitat for any species on Federal or State threatened or endangered lists Within 100 feet of any wetlands as defined by United States Code of Federal Regulations 40 CFR, Parts 230-233 and Part 22, and isolated wetlands or areas of special concern identified by state or local rule, OR within setback distances from wetlands prescribed in state or local regulations, as defined by local or state rule or law, whichever is more stringent Previously undeveloped land that is within 50 feet of a water body, defined as seas, lakes rivers, streams and tributaries which support or could support fish, recreation or industrial use, consistent with the terminology in the Clean Water Act 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 landowner 	1		D	Architect	
SS 2.0	Development Density & Community Connectivity OPTION 2 - COMMUNITY CONNECTIVITY Construct or renovate building on a previously developed site AND within 1/2 mile of a residential zone or neighborhood with an average density of 10 units per acre net AND within 1/2 mile of at least 10 Basic Services AND with pedestrian access between the building and the services. Basic Services include, but are not limited to: 1) Bank; 2) Place of Worship; 3) Convenience Grocery; 4) Day Care; 5) Cleaners; 6) Fire Station; 7) Hair Care; 8) Hardware; 9) Laundry; 10) Library; 11) Medical/Dental; 12) Senior Care Facility; 13) Park; 14) Pharmacy; 15) Post Office; 16) Restaurant; 17) School; 18) Supermarket; 19) Commercial Office; 20) Community Center; 21) Fitness Center; 22) Museum. Proximity is determined by drawing a 1/2 mile radius around the main building entrance on a site map and counting the services within that radius.	1		D	Architect	
SS 3.0	Brownfield Redevelopment Develop on a site documented as contaminated (by means of an ASTM E1903-97 Phase II Environmental Site Assessment or a local Voluntary Cleanup Program) OR on a site defined as a brownfield by a local, state or federal government agency.	1		D	Owner	
SS 4.1	Alternative Transportation Public Transportation Access: Locate project within 1/2 mile of an existing, or planned and funded, commuter rail, light rail or subway station OR Locate project within 1/4 mile of one or more stops for two or more public or campus bus lines usable by building occupants.	1		D	Architect	
SS 4.2	Bicycle Storage & Changing Rooms: For commercial or institutional buildings, provide secure bicycle storage (within 200 yards of a building entrance) for 5% or more of all building users (measured at peak periods), AND provide shower and changing facilities in the building, or within 200 yards of a building entrance, for 0.5% of Full-Time Equivalent (FTE) employees.	1		D	Architect	Total FTE=162; Peak users=120 (single shift). 6 bike racks required. What is FTE single shift?
SS 4.3	Low Emitting and Fuel Efficient Vehicles: OPTION 2: Provide preferred parking for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity of the site.	1		D	Architect	Total parking capacity for site 182; therefore, 10 spaces required.
SS 4.4	Parking Capacity: OPTION 1 - NON-RESIDENTIAL <ul style="list-style-type: none"> Size parking capacity to meet, but not exceed, minimum local zoning requirements, AND, provide preferred parking for carpools or vanpools, marked as such, capable of serving 5% of the total provided parking spaces. 	1		D	Architect	

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SS 5.1	Site Development	Protect or Restore Habitat: OPTION 2: On previously developed or graded sites, restore or protect a minimum of 50% of the site area (excluding the building footprint) with native or adapted vegetation. Native/adapted plants are plants indigenous to a locality or cultivars of native plants that are adapted to the local climate and are not considered invasive species or noxious weeds. Projects earning SS credit 2 and using vegetated roof surfaces may apply the vegetated roof surface to this calculation if the plants meet the definition of native/adapted.		1		Contractor or Landscape Architect	Site is 1.6 acres
SS 5.2		Maximize Open Space: OPTION 3: Where a zoning ordinance exists, but there is no requirement for open space (zero), and the project is located in an urban area (as demonstrated by compliance with SSc2), designate open space equal to 20% of the project's site area. ALL OPTIONS: • For projects located in urban areas that earn SS credit 2, vegetated roof areas can contribute to credit compliance. • For projects located in urban areas that earn SS Credit 2, pedestrian oriented hardscape areas can contribute to credit compliance. For such projects, a minimum of 25% of the open space counted must be vegetated. • Wetlands or naturally designed ponds may count as open space if the side slope gradients average 1:4 (vertical:horizontal) or less and are vegetated.	1		D	Architect	
SS 6.1	Stormwater Design	Quantity Control CASE 2: IF THE EXISTING IMPERVIOUSNESS IS GREATER THAN 50% Implement a stormwater management plan that results in a 25% decrease in the volume of stormwater runoff from the two-year 24-hour design storm.		1	D	Civil Engineer	
SS 6.2		Quality Control: Implement a stormwater management plan that reduces impervious cover, promotes infiltration, and captures and treats the stormwater runoff from 90% of the average annual rainfall (see Rating System for rainfall rates per relevant watershed) using acceptable best management practices (BMPs). Best management practices (BMPs) used to treat runoff must be capable of removing 80% of the average annual post development total suspended solids (TSS) load based on existing monitoring reports. BMPs are considered to meet these criteria if (1) they are designed in accordance with standards and specifications from a state or local program that has adopted these performance standards, or (2) there exists in-field performance monitoring data demonstrating compliance with the criteria. Data must conform to accepted protocol [e.g., Technology Acceptance Reciprocity Partnership (TARP), Washington State Department of Ecology] for BMP monitoring.	1		D	Civil Engineer	
SS 7.1	Heat Island Effect	OPTION 2 Place a minimum of 50% of parking spaces under cover (defined as under ground, under deck, under roof, or under a building). Any roof used to shade or cover parking must have an SRI of at least 29.	1		C	Architect	
SS 7.2		Roof: OPTION 1: Use roofing materials having a Solar Reflectance Index (SRI) equal or greater than the values in Table 2 (below) for a minimum of 75% of the roof surface OR OPTION 2: Install a "green" (vegetated) roof for at least 50% of the roof area, OR OPTION 3: Install high albedo and vegetated roof surfaces that, in combination, meet the following criteria: (Area of SRI Roof/0.75) + (Area of vegetated roof /0.5) <= Total Roof Area Table 2 Roof Type Slope Low-Sloped Roof ≤ 2:12 = SRI 78 Steep-Sloped Roof > 2:12 = SRI 29	1		D	Architect, Landscape Architect, Green Roof Consultant	
SS 8.0	Light Pollution Reduction	FOR INTERIOR LIGHTING: The angle of maximum candela from each interior luminaire as located in the building shall intersect opaque building interior surfaces and not exit out through the windows. OR All non-emergency interior lighting to be automatically controlled to turn off during nonbusiness hours. Provide manual override capability for after hours use. AND FOR EXTERIOR LIGHTING: Only light areas as required for safety and comfort. Do not exceed 80% of the lighting power densities for exterior areas and 50% for building facades and landscape features as defined in ASHRAE/IESNA Standard 90.1-2004, Exterior Lighting Section, without amendments.	1		D	Electrical Engineer	

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Water Efficiency							
WE 1.1	Water Efficient Landscaping	Reduce by 50%: Reduce potable water consumption for irrigation by 50% from a calculated mid-summer base-line case. Reductions shall be attributed to any combination of the following items: <ul style="list-style-type: none"> • Plant species factor • Irrigation efficiency • Use of captured rainwater • Use of recycled waste water • Use of water treated and conveyed by public agency specifically for non-potable uses 	1		D	Landscape Architect	
WE 1.2		No Potable Water Use or No Irrigation: Achieve WE credit 1.1 and use only captured rainwater, recycled wastewater, recycled greywater, or water treated and conveyed by a public agency specifically for nonpotable uses for irrigation. OR Install landscaping that does not require permanent irrigation systems. Temporary irrigation systems used for plant establishment are allowed only if removed within one year of installation.		1	D	Landscape Architect	
WE 2.0	Innovative Wastewater Technologies	OPTION 1: Reduce potable water use for building sewage conveyance by 50% through the use of water conserving fixtures (water closets, urinals) or non-potable water (captured rainwater, recycled greywater, and on-site or municipally treated wastewater).		1	D	Plumbing Engineer	
WE 3.1	Water Use Reduction	Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements. Calculations are based on estimated occupant usage and shall include the following fixtures (as applicable to the building): water closets, urinals, lavatory faucets, showers, and kitchen sinks.	1		D	Plumbing Engineer	
WE 3.2		Employ strategies that in aggregate use 30% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.	1		D	Plumbing Engineer	

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Energy and Atmosphere											
EA Prereq. 1	Fundamental Commissioning of the Building Energy Systems	<p>The following commissioning process activities shall be completed by the commissioning team, in accordance with the LEED-NC 2.2 Reference Guide.</p> <p>1) Designate an individual as the Commissioning Authority (CxA) to lead, review, and oversee the completion of the commissioning process activities.</p> <p>a) The CxA shall have documented commissioning authority experience in at least two building projects with technical and managerial complexity similar to this project.</p> <p>b) The individual serving as the CxA shall be independent of the project's design and construction teams, though they may be employees of the firms providing those services. The CxA may be a qualified employee or consultant of the Owner.</p> <p>c) The CxA shall report directly to the Owner.</p> <p>d) For projects smaller than 50,000 gross square feet, the CxA may include qualified persons on the design or construction teams who have the required experience).</p> <p>2) The Owner shall document the Owner's Project Requirements (OPR). The design team shall develop the Basis of Design (BOD). The CxA shall review these documents for clarity and completeness. The Owner and design team shall be responsible for updates to their respective documents.</p> <p>3) Develop and incorporate commissioning requirements into the construction documents.</p> <p>4) Develop and implement a commissioning plan.</p> <p>5) Verify the installation and performance of the systems to be commissioned.</p> <p>6) Complete a summary commissioning report.</p> <p>Commissioned Systems: Commissioning process activities shall be completed for the following energy related systems, at a minimum:</p> <ul style="list-style-type: none"> • Heating, ventilating, air conditioning, and refrigeration (HVAC&R) systems (mechanical and passive) and associated controls • Lighting and daylighting controls • Domestic hot water systems • Renewable energy systems (PV, wind, solar etc.) 					X		C	Commissioning Agent	
EA Prereq. 2	Minimum Energy Performance	<p>Design the building project to comply with both:</p> <ul style="list-style-type: none"> • the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4) of ASHRAE/IESNA Standard 90.1-2004 (without amendments); and • the prescriptive requirements (Sections 5.5, 6.5, 7.5, and 9.5) or performance requirements (Section 11) of ASHRAE/IESNA Standard 90.1-2004 (without amendments). 					X		D	Mechanical Engineer	
EA Prereq. 3	Fundamental Refrigerant Management Required	<p>Zero use of CFC-based refrigerants in new base building HVAC&R systems. When reusing existing base building HVAC equipment, complete a comprehensive CFC phase-out conversion prior to project completion. Phase out plans extending beyond the project completion date will be considered on their merits.</p>					X		D	Mechanical Engineer	

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EA 1	<p>Optimize Energy Performance</p> <p>Select one of the three compliance path options described below. Project teams documenting achievement using any of the three options are assumed to be in compliance with EAp2.</p> <p>OPTION 1 - WHOLE BUILDING ENERGY SIMULATION (1-10 Points)</p> <p>Demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1-2004 (without amendments) by a whole building project simulation using the Building Performance Rating Method in Appendix G of the Standard.</p> <p>% Energy Cost Savings (minimum) Points</p> <table border="1" data-bbox="380 492 1333 727"> <thead> <tr> <th>% Savings</th> <th>Points</th> </tr> </thead> <tbody> <tr><td>10.5%</td><td>1</td></tr> <tr><td>14%</td><td>2</td></tr> <tr><td>17.5%</td><td>3</td></tr> <tr><td>21%</td><td>4</td></tr> <tr><td>24.5%</td><td>5</td></tr> <tr><td>28%</td><td>6</td></tr> <tr><td>31.5%</td><td>7</td></tr> <tr><td>35%</td><td>8</td></tr> <tr><td>38.5%</td><td>9</td></tr> <tr><td>>42%</td><td>10</td></tr> </tbody> </table> <p>Appendix G of Standard 90.1-2004 requires that the energy analysis done for the Building Performance Rating Method include ALL of the energy costs within and associated with the building project. To achieve points using this credit, the proposed design:</p> <ul style="list-style-type: none"> • must comply with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4) in Standard 90.1-2004 (without amendments); • must include all the energy costs within and associated with the building project; and • must be compared against a baseline building that both complies with Appendix G to Standard 90.1-2004 (without amendments). The default process energy cost is 25% of the total energy cost for the baseline building. For buildings where the process energy cost is less than 25% of the baseline building energy cost, the LEED submittal must include supporting For the purpose of this analysis, process energy is considered to include, but is not limited to, office and general miscellaneous equipment, computers, elevators and escalators, kitchen cooking and refrigeration, laundry washing and drying, lighting exempt from the lighting power allowance (e.g. lighting integral to medical equipment) and other (e.g. waterfall pumps). Regulated (nonprocess) energy includes lighting (such as for the interior, parking garage, surface parking, façade, or building grounds, except as noted above), HVAC (such as for space heating, space cooling, fans, pumps, toilet exhaust, parking garage ventilation, kitchen hood exhaust, etc.), and service water heating for domestic or space heating purposes. For EA Credit 1, process loads shall be identical for both the baseline building performance rating and for the proposed building performance rating. <p>However, project teams may follow the Exceptional Calculation Method (ASHRAE 90.1-2004 G2.5) to document measures that reduce process loads. Documentation of process load energy savings shall include a list of the assumptions made for both the base and proposed design, and theoretical or empirical information supporting these assumptions.</p>	% Savings	Points	10.5%	1	14%	2	17.5%	3	21%	4	24.5%	5	28%	6	31.5%	7	35%	8	38.5%	9	>42%	10	1		D	Mechanical and Electrical Engineer	The USGBC will allow an equivalency of using T-24 instead of ASHRAE with the same thresholds as identified on the Table under Option 1.
% Savings	Points																											
10.5%	1																											
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EA 2	<p>On-Site Renewable Energy (1-3 points)</p> <p>Use on-site renewable energy systems to offset building energy cost. Calculate project performance by expressing the energy produced by the renewable systems as a percentage of the building annual energy cost and using the table below to determine the number of points achieved. Use the building annual energy cost calculated in EA credit 1 or use the Department of Energy (DOE) Commercial Buildings Energy Consumption Survey (CBECS) database to determine the estimated electricity use. (Table of use for different building types provided in Reference Guide)</p> <p>% Renewable Energy Points</p> <table border="1" data-bbox="380 1284 1333 1344"> <tbody> <tr><td>2.5% 1</td></tr> <tr><td>7.5% 2</td></tr> <tr><td>12.5% 3</td></tr> </tbody> </table>	2.5% 1	7.5% 2	12.5% 3	1	1	D	City, Electrical Engineer																				
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EA 3.0	Enhanced Commissioning	<p>Implement, or have a contract in place to implement, the following additional commissioning process activities in addition to the requirements of EA prerequisite 1 and in accordance with the LEED-NC 2.2 Reference Guide:</p> <p>1. Prior to the start of the construction documents phase, designate an independent Commissioning Authority (CA) to lead, review, and oversee the completion of all commissioning process activities. The CA shall, at a minimum, perform Tasks 2, 3, and 6. Other team members may perform Tasks 4 and 5.</p> <p>a. The CA shall have documented commissioning authority experience in at least two building projects with similar technical and managerial complexity as this project.</p> <p>b. The individual serving as the CA shall be:</p> <p>i. Independent of the design and construction process,</p> <p>ii. Not an employee of the design team, though they may be contracted through them, and</p> <p>iii. Not an employee of, or contracted through, a contractor or construction manager holding construction contracts.</p> <p>iv. The CA may be a qualified employee or consultant of the Owner.</p> <p>c. The CA shall report directly to the Owner.</p> <p>d. This requirement has no deviation for project size.</p> <p>2. The CA shall conduct, at a minimum, one commissioning design review of the Owner's Project Requirements (OPR), Basis of Design (BOD), and design documents prior to mid-construction documents phase and back-check the review comments following design submission.</p> <p>3. The CA shall review contractor submittals applicable to systems being commissioned for compliance with the OPR and BOD. This review shall be concurrent with A/E reviews and submitted to the design team and the Owner.</p> <p>4. Develop a systems manual that provides future operating staff the information needed to understand and optimally operate the commissioned systems.</p> <p>5. Verify that the requirements for training operating personnel and building occupants are completed.</p> <p>6. Assure the involvement by the CA in reviewing building operation within 10 months after substantial completion with O&M staff and occupants. Include a plan for resolution of outstanding commissioning-related issues.</p>	1		C	Commissioning Agent	
EA 4.0	Enhanced Refrigerant Management	<p>OPTION 1: Do not use refrigerants.</p> <p>OR</p> <p>OPTION 2: Select refrigerants and HVAC&R that minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming. The base building HVAC&R equipment shall comply with the following formula, which set a maximum threshold for the combined contributions to ozone depletion and global warming potential:</p> $LCGWP + LCODP \times 10^5 \leq 100$ <p>Small HVAC units (defined as containing less than .5lbs of refrigerant), and other equipment such as standard refrigerators, small water coolers, and any other colling equipment that contains less than .5 lbs of refrigerant, are not considered part of the 'base building' system and are not subject to the requirements of this credit.</p> <p>AND</p> <p>Do not install fire suppression systems that contain ozone depleting substances (CFCs, HCFCs or Halons).</p>	1		D	Mechanical Engineer	
EA 5.0	Measurement & Verification	<ul style="list-style-type: none"> Develop and implement a Measurement and Verification (M&V) plan consistent with Option D: Calibrated Simulation (Savings Estimation Method 2), or Option B: Energy Conservation Measure Isolation, as specified in the International Performance Measurement & Verification Protocol (IPMVP) Volume III: Concepts and Options for Determining Energy Savings in New Construction, April, 2003. The M&V period shall cover a period of no less than one year of post-construction occupancy. The M&V period shall cover a period of no less than one year of post-construction occupancy. 	1		C	Mechanical Engineer	
EA 6.0	Green Power	<p>Provide at least 35% of the building's electricity from renewable sources by engaging in at least a two-year renewable energy contract. Renewable sources are as defined by the Center for Resource Solutions (CRS) Green-e products certification requirements.</p> <p>DETERMINE THE BASELINE ELECTRICITY USE: Use the annual electricity consumption from the results of EA Credit 1 OR Use the Department of Energy (DOE) Commercial Buildings Energy Consumption Survey (CBECS) database to determine the estimated electricity use.</p>		1	C	Owner	

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Materials and Resources						
MR Prereq.	Storage & Collection of Recyclables	Provide an easily accessible area that serves the entire building and is dedicated to the collection and storage of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics and metals.				
		X		D	Architect	
MR 1.1	Building Reuse	Maintain 75% of Existing Walls, Floors, and Roof				
		0		C		
MR 1.2		Maintain 95% of Existing Walls, Floors, and Roof:				
		0		C		
MR 1.3		Maintain 50% of Interior Non-Structural Elements				
		0		C		
MR 2.1	Construction Waste Management	Divert 50% From Disposal: Recycle and/or salvage at least 50% of non-hazardous construction and demolition debris. Develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and whether the materials will be sorted on-site or co-mingled. Excavated soil and land clearing debris do not contribute to this credit. Calculations can be done by weight or volume, but must be consistent throughout.				
		1		C	Contractor	
MR 2.2		Divert 75% From Disposal: Recycle and/or salvage an additional 25% beyond MR credit 2.1 (75% total) of non-hazardous construction and demolition debris. Excavated soil and land clearing debris do not contribute to this credit. Calculations can be done by weight or volume, but must be consistent throughout.				
		1		C	Contractor	
MR 3.1	Materials Reuse	5% salvaged, refurbished or reused				
		0		C		
MR 3.2		10% salvaged, refurbished or reused				
		0		C		
MR 4.1	Recycled Content	10% (post-consumer + 1/2 pre-consumer): Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost) of the total value of the materials in the project. The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value. Mechanical, electrical and plumbing components and specialty items such as elevators and equipment shall not be included in this calculation. Only include materials permanently installed in the project. Furniture may be included, providing it is included consistently in MR Credits 3-7.				
		1		C	Architect, Contractor	\$26 million total construction cost
MR 4.2		20% (post-consumer + 1/2 pre-consumer): Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes and additional 10% beyond MR credit 4.1 (Total of 20%, based on cost) of the total value of the materials in the project.				
			1	C	Architect, Contractor	
MR 5.1	Regional Materials	10% extracted, processed and manufactured regionally: Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 10% (based on cost) of the total materials value. If only a fraction of the material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value. Mechanical, electrical and plumbing components and specialty items such as elevators and equipment shall not be included in this calculation. Only include materials permanently installed in the project. Furniture may be included, providing it is included consistently in MR Credits 3-7.				
		1		C	Architect, Contractor	City needs to research if flyash can be acquired from treatment plant
MR 5.2		20% extracted, processed and manufactured regionally				
		0		C		
MR 6.0	Rapidly Renewable Materials	Use rapidly renewable materials (made from plants that are typically harvested within a ten-year cycle or shorter) for 2.5% of the total value of all building materials and products used in the project, based on cost.				
			1	C	Architect, Contractor	
MR 7.0	Certified Wood	Use a minimum of 50% of wood-based materials and products, certified in accordance with the Forest Stewardship Council's (FSC) Principles and Criteria, for wood building components. The components include, but not limited to, structural framing and general dimensional framing, flooring, sub-flooring, wood doors and finishes. Only include materials permanently installed in the project. Furniture may be included, providing it is included consistently in MR Credits 3-7.				
		1		C	Architect, Contractor	

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Indoor Environmental Quality							
EQ Prereq. 1	Minimum IAQ Performance	Meet the minimum requirements of sections 4 through 7 of ASHRAE 62.1-2004, Ventilation for Acceptable Indoor Air Quality. Mechanical ventilation systems shall be designated using the Ventilation Rate Procedure or the applicable local code, whichever is more stringent. Naturally ventilated buildings shall comply with ASHRAE 62.1-2004, paragraph 5.1.	X		D	Mechanical	
EQ Prereq. 2	Environmental Tobacco Smoke (ETS) Control	Option 1. Prohibit smoking in the building. <ul style="list-style-type: none"> Prohibit smoking in the building Locate any exterior designated smoking areas at least 25 feet away from entries, outdoor air intakes and operable windows. 	X		D	Owner	
EQ 1.0	Outdoor Air Delivery Monitoring	Install permanent monitoring systems that provide feedback on ventilation system performance to ensure that ventilation systems maintain design minimum ventilation requirements. Configure all monitoring equipment to generate an alarm if under-ventilation is detected, via either a building automation system alarm to the building operator or via a visual or audible alert to the building occupants. FOR MECHANICALLY VENTILATED SPACES <ul style="list-style-type: none"> Monitor carbon dioxide concentrations within all densely occupied spaces (those with a design occupant density greater than or equal to 25 people per 1000 ft²). CO₂ monitoring locations shall be between 3 feet and 6 feet above the floor. For mechanical ventilation systems serving non-densely occupied spaces, provide a direct outdoor airflow measurement device capable of measuring the minimum outdoor airflow rate with an accuracy of plus or minus 15% of the design minimum outdoor air rate, as defined by ASHRAE 62.1-2004. 	1		D	Mechanical	
EQ 2.0	Increased Ventilation	FOR MECHANICALLY VENTILATED SPACES: <ul style="list-style-type: none"> Increase breathing zone outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates required by ASHRAE Standard 62.1-2004 as determined by EQ Prerequisite 1. 		1	D	Mechanical	
EQ 3.1	Construction IAQ Management Plan	During Construction: Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows: <ul style="list-style-type: none"> During construction meet or exceed the recommended Design Approaches of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995, Chapter 3. Protect stored on-site or installed absorptive materials from moisture damage. If permanently installed air handlers are used during construction, filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 shall be used at each return air grill, as determined by ASHRAE 52.2-1999. Replace all filtration media immediately prior to occupancy. 	1		C	Contractor	
EQ 3.2		Before Occupancy: Develop and implement an Indoor Air Quality (IAQ) Management Plan for the pre occupancy phase as follows: OPTION 1 - Flush-Out • After construction ends, prior to occupancy and with all interior finishes installed, install new filtration media and perform a building flush-out by supplying a total air volume of 14,000 ft ³ of outdoor air per ft ² of floor area while maintaining an internal temperature of at least 60 degrees F and, where mechanical cooling is operated, relative humidity no higher than 60% OR <ul style="list-style-type: none"> If occupancy is desired prior to completion of the flush-out, the space may be occupied following delivery of a minimum of 3,500 ft³ of outdoor air per sq.ft. of floor area to the space. Once a space is occupied, it be ventilated at a minimum rate of 0.30 cfm/sq.ft. of outside air or the design minimum outside air rate determined in EQ Prerequisite 1, whichever is greater. During each day of the flush-out period, ventilation shall begin a minimum of three hours prior to occupancy and continue during occupancy. These conditions shall be maintained until a total of 14,000 ft³/ft² of outside air has been delivered to the space. 	1		C	Mechanical or Commis. Agent	

PALO ALTO PUBLIC SAFETY BUILDING
Green Building (LEED-NC v2.2) Priorities Matrix

Prepared by Simon & Associates, Inc.

DRAFT December 22, 2006

CREDIT		DESIGN/CONSTRUCTION REQUIREMENTS	YES / NO (1/0)	MAYBE	SUBMITTALS	PARTIES RESPONSIBLE FOR DOCUMENTATION	COMMENTS/ACTION ITEMS
EQ 4.1	Low-Emitting Materials	Adhesives and Sealants: All adhesives and sealants that are used indoors (defined as inside of the weatherproofing system and applied on-site) shall comply with the requirements of the following reference standards: <ul style="list-style-type: none"> • Adhesives, Sealants and Sealant Primers: South Coast Air Quality Management District (SCAQMD) Rule #1168. VOC limits are listed in the table on page 333 of the Reference Guide and correspond to an effective date of July 1, 2005 and rule amendment date of January 7, 2005. • Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on October 19, 2000. 	1		C	Architect, Contractor	
EQ 4.2		Paints and Coatings: Paints and coatings used on the interior of the building (defined as inside of the weatherproofing system and applied on-site) shall comply with the following standards: <ul style="list-style-type: none"> • Architectural Paints, coatings and primers applied to interior walls and ceilings. Do not exceed the VOC contents limits established in Green Seal Standard GS-11, Paints, First Edition, May 20, 1993. Flats: 50g/L Non-Flats: 150 g/L • Anti-Corrosive and Anti-Rust Paints applied to interior ferrous metal substrates: Do not exceed the VOC content limit of 250 g/L established in Green Seal Standard GC-03, Anti-Corrosive Paints, Second Edition, January 7, 1997. • Clear wood finishes, floor coatings, stains, and shellacs applied to interior elements: Do not exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004. • Clear wood finishes: varnish 350 g/L; lacquer 550g/L • Floor Coatings: 100 g/L • Sealers: Waterproof sealers 250 g/L, sanding sealers 275 g/L; all other sealers 200 g/L • Shellacs: Clear 730 g/L; pigmented 550 g/L • Stains: 250 g/L 	1		C	Architect, Contractor	
EQ 4.3		Carpet: All carpet installed in the project shall meet the testing and product requirements of the Carpet and Rug Institute's Green Label Plus program All carpet cushion installed in the building shall meet the requirements of the Carpet and Rug Institute Green Label program. All carpet adhesive shall meet the requirements of EQ credit 4.1: VOC limit of 50 g/L	1		C	Architect, Contractor	
EQ 4.4		Composite Wood and Agrifiber Products: Composite wood and agrifiber products used on the interior of the building (defined as inside of the weather proofing system), shall contain no added urea formaldehyde resins. Laminating adhesives used to fabricate on-site and shop-applied assemblies shall contain no added urea-formaldehyde resins. Composite wood and agrifiber products are defined as: particleboard, Medium Density fiberboard (MDF), plywood, wheatboard, strawboard, panel substrates and door cores. Materials considered fit-out, furniture, and equipment (FF&E) are not considered base building elements and are not included.	1		C	Architect, Contractor	
EQ 5.0		Indoor Chemical & Pollutant Source Control	Design to minimize and control pollutant entry into buildings and later cross contamination of regularly occupied areas: <ul style="list-style-type: none"> • Employ permanent entryway systems at least six feet long in the primary direction of travel to capture dirt, particulates, etc. from entering the building at all entryways that are directly connected to the outdoors. Acceptable entryway systems include permanently installed grates, grilles, or slotted systems that allow for cleaning underneath. Roll-out mats are only acceptable when maintained on a weekly basis by a contracted service organization. Qualifying entryways are those that serve as regular entry points for building users. • Where hazardous gases or chemicals may be present or used (including garages, housekeeping/laundry areas, and copying/printing rooms), exhaust each space sufficiently to create negative pressure. For each of these spaces, provide deck to deck partitions or a hard lid ceiling and self-closing doors with outside exhaust at a rate of at least 0.50 cubic feet per minute per square foot, no air re-circulation, and operated at a negative pressure compared with the surrounding spaces of at least an average of 5 Pa (0.02 inches of water gauge) and with a minimum of 1 Pa (0.004 inches of water) when the doors to the rooms are closed. • In mechanically ventilated buildings, provide regularly occupied areas of the building with new air filtration media prior to occupancy that provides a Minimum Efficiency Reporting Value (MERV) of 13 or better. Filtration should be applied to process both return and outside air that is to be delivered as supply air. 	1		D	Architect, Mechanical, Plumbing, Contractor

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EQ 6.1	Controllability of Systems	Lighting: Provide individual lighting controls for 90% (minimum) of the building occupants to enable adjustments to suit individual task needs and preferences. AND Provide lighting system controllability for all shared multi-occupant spaces to enable lighting adjustment that meets group needs and preferences.	1		D	Architect, Electrical	
EQ 6.2		Thermal Comfort	0		D		
EQ 7.1	Thermal Comfort	Design: Design HVAC systems and the building envelope to meet the requirements of ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy. Demonstrate design compliance in accordance with the Section 6.1.1 Documentation.	1		D	Mechanical	
EQ 7.2		Verification: Agree to implement a thermal comfort survey of building occupants with-in a period of six to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the building including an assessment of overall satisfaction with thermal performance and identification of thermal comfort related problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of the occupants are dissatisfied with thermal comfort in the building. This plan should include measurement of relevant environmental variables in problem areas in accordance with ASHRAE Standard 55-2004.	1		D	owner	
EQ 8.1	Daylight and Views	OPTION 1 - CALCULATION Achieve a minimum glazing factor of 2% in a minimum of 75% of all regularly occupied areas. The glazing factor is calculated as follows: Glazing Window Area [SF] Window Actual Tvis Window Factor = Floor Area [SF] x Geometry Factor x Minimum Tvis x Height Factor OR OPTION 2 - SIMULATION Demonstrate, through computer simulation, that a minimum daylight illumination level of 25 footcandles has been achieved in a minimum of 75% of all regularly occupied areas. Modeling must demonstrate 25 horizontal footcandles under clear sky conditions, at noon, on the equinox, at 30 inches above the floor.	1		D	Architect	
EQ 8.2	Daylight and Views	Views for 90% of Spaces: Achieve direct line of sight to the outdoor environment via vision glazing between 2'6" and 7'6" for building occupants in 90% of all regularly occupied areas. Determine the area with direct line of sight by totaling the regularly occupied square footage that meets the following criteria: <ul style="list-style-type: none"> In plan view, the area is within sight lines drawn from perimeter vision glazing. In section view, a direct sight line can be drawn from the area to perimeter vision glazing. Line of sight may be drawn through interior glazing. For private offices, the entire square footage of the office can be counted if 75% or more of the area has direct line of sight to perimeter vision glazing. For multi-occupant spaces, the actual square footage with direct line of sight to perimeter vision glazing is counted. 		1	D	Architect	

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CREDIT	DESIGN/CONSTRUCTION REQUIREMENTS	YES / NO (1/0)	MAYBE	SUBMITTALS	PARTIES RESPONSIBLE FOR DOCUMENTATION	COMMENTS/ACTION ITEMS
Innovation & Design Process						
	Innovation in Design Intent To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED-NC Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by the LEED-NC Green Building Rating System. Requirements Credit 1.1 (1 point) In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance, and the design approach (strategies) that might be used to meet the requirements. Credit 1.2 (1 point) Same as Credit 1.1 Credit 1.3 (1 point) Same as Credit 1.1 Credit 1.4 (1 point) Same as Credit 1.1					
ID 1.1	Building as an Educational Tool	Must complete two of the following: comprehensive signage program; case study, manual or brochure; and educational outreach program or guided tour [e.g., to MEP groups].		1		D S&A
ID 1.2	Green Housekeeping	Must meet LEED-EB requirements for this credit		1		D Owner
ID 1.3	Reduced Heat Island	100% parking underground			1	D TBD
ID 1.4	Water Use Reduction	40% Water Use Reduction			1	D TBD
ID 2.0	LEED Accredited Professional	At least one principal participant of the project team that has successfully completed the LEED Accredited Professional exam		1		D TBD
TOTAL POINTS				45	15	

LEED Certified = 26-32, Silver = 33-38, Gold = 39-51, Platinum = 52 or more

RESPONSIBLE PARTY KEY:

- Owner** City of Palo Alto
- Architect** Ross Drulis Cusenbery
- Civil**
- Landscape**
- Electrical** Flack & Kurtz
- Mechanical** Flack & Kurtz
- Plumbing** Flack & Kurtz
- Cx Agent** TBD
- LEED/Sustainability** Simon & Associates, Inc.
- Contractor** TBD

LEED-Online Access: <http://leedonline.usgbc.org>

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