

CHAPTER 11

APPLICATION MATRICES AND WORKSHEETS

APPLICATION MATRIX (AM-BSC)

GREEN BUILDING MEASURE	REQUIRED	VOLUNTARY
PLANNING AND DESIGN		
SITE DEVELOPMENT (406)		
406.1 General. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.		<input type="checkbox"/>
406.2 Storm water drainage and retention during construction. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall develop and implement a plan to manage storm water drainage during construction. Use one or more of the following methods: 1. Retention basins of sufficient size shall be utilized to retain storm water on the site. 2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattles or other method approved by the enforcing agency. 3. Compliance with a lawfully enacted storm water management ordinance.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
ENERGY EFFICIENCY		
PERFORMANCE REQUIREMENTS (503)		
503.1 Energy performance. Using an Alternative Calculation Method approved by the California Energy Commission, calculate each nonresidential building’s TDV energy and CO2 emissions, and compare it to the standard or “budget” building. 503.1.1 Tier 1. Exceed 2007 <i>California Energy Code</i> requirements by 15 percent. 503.1.2 Tier 2. Exceed 2007 <i>California Energy Code</i> requirements by 30 percent.		<input type="checkbox"/> <input type="checkbox"/>
PRESCRIPTIVE MEASURES (504)		
504.1 ENERGY STAR equipment and appliances. All equipment and appliances provided by the builder shall be ENERGY STAR labeled if ENERGY STAR is applicable to that equipment or appliance.		<input type="checkbox"/>
504.2 Energy monitoring. Provide submetering or equivalent combinations of sensor measurements and thermodynamic calculations, if appropriate, to record energy use data for each major energy system in the building.		<input type="checkbox"/>
504.3 Demand response. HVAC systems with Direct Digital Control Systems and centralized lighting systems shall include preprogrammed demand response strategies that are automated with either a Demand Response Automation Internet Software Client or dry contact relays. 504.3.1 HVAC. The preprogrammed demand response strategies should be capable of reducing the peak HVAC demand by cooling temperature set point adjustment. 504.3.2 Lighting. The preprogrammed demand response strategies should be capable of reducing the total lighting load by a minimum 30 percent through dimming control or bilevel switching. 504.3.3 Software clients. The software clients will be capable of communicating with a DR Automation Server.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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APPLICATION MATRIX (AM-BSC)—continued

GREEN BUILDING MEASURE	REQUIRED	VOLUNTARY
ENERGY EFFICIENT STEEL FRAMING (513)		
513.1 Steel framing. Design for and employ techniques to avoid thermal bridging.		<input type="checkbox"/>
WATER EFFICIENCY AND CONSERVATION		
INDOOR WATER USE (603)		
603.1 Meters. Separate meters or submeters shall be installed for indoor and outdoor potable water use.		<input type="checkbox"/>
603.2 Twenty percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. (Calculate savings by Water Use Worksheets.)		<input type="checkbox"/>
603.3 Appliances. 1. Clothes washers shall have a maximum Water Factor (WF) that will reduce the use of water. 2. Dishwashers shall meet the criteria in Section 603.3(2)(a) and (b). 3. Ice makers shall be air cooled. 4. Food steamers shall be connection-less or boiler-less. 5. The use and installation of water softeners shall be limited or prohibited by local agencies.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
603.4 Wastewater reduction. Each building shall reduce the generation of wastewater by one of the following methods: 1. The installation of water-conserving fixtures or 2. Utilizing nonpotable water systems		<input type="checkbox"/> <input type="checkbox"/>
603.5 Dual plumbing. New buildings and facilities shall be dual plumbed for potable and recycled water systems		
OUTDOOR WATER USE (604)		
604.1 Water budget. A water budget shall be developed for landscape irrigation use.	<input type="checkbox"/>	
604.2 Potable water reduction. Provide water efficient landscape irrigation design that reduces by 50 percent the use of potable water. Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in Section 604.2.		<input type="checkbox"/>
604.3 Potable water elimination. Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment. Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in Section 604.3.		<input type="checkbox"/>
604.4 Graywater irrigation system. Install graywater collection system for onsite subsurface irrigation using graywater.		<input type="checkbox"/>
604.5 Rainwater or stormwater collection systems. Constructed water collection devices may store water for landscape irrigation.		<input type="checkbox"/>
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY		
EFFICIENT FRAMING SYSTEMS (704)		
704.1 Wood framing. Employ advanced wood framing techniques, or OVE, as permitted by the enforcing agency.		<input type="checkbox"/>
MATERIAL SOURCES (705)		
705.1 Regional materials. Select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site, meeting the criteria listed in Section 705.1.		<input type="checkbox"/>

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APPLICATION MATRICES AND WORKSHEETS

APPLICATION MATRIX (AM-BSC)—continued

GREEN BUILDING MEASURE	REQUIRED	VOLUNTARY
705.2 Bio-based materials. Select bio-based building materials per Section 705.2.1 or 705.2.2.		
705.2.1 Certified wood products. Certified wood is an important component of green building strategies, and the California Building Standards Commission will continue to develop a standard through the next code cycle.		<input type="checkbox"/>
705.2.2 Rapidly renewable materials. Use materials made from plants harvested within a ten-year cycle for at least 2.5 percent of total materials value, based on estimated cost.		<input type="checkbox"/>
705.3 Reused materials. Use salvaged, refurbished, refinished or reused materials for at least 5 percent of the total value, based on estimated cost of materials on the project.		<input type="checkbox"/>
705.4 Recycled content. Use materials, equivalent in performance to virgin materials, with postconsumer or preconsumer recycled content value (RCV) equaling at least 10 percent of the total value, based on estimated cost of materials on the project.		<input type="checkbox"/>
705.5 Cement and concrete. Use cement and concrete made with recycled products complying with Sections 705.5.1 through 705.5.3.		
705.5.1 Alternate fuels. Where permitted, use high-energy waste materials in the cement kiln.		<input type="checkbox"/>
705.5.2 Cement. Meet ASTM standards for portland cement or blended cement.		<input type="checkbox"/>
705.5.3 Concrete. Use concrete per Section/s 705.5.3.1 and/or 705.5.3.2.		<input type="checkbox"/>
705.5.3.1 Industrial byproducts. Use industrial byproducts in the concrete.		<input type="checkbox"/>
705.5.3.2 Recycled aggregates. Use recycled aggregates in the mix.		<input type="checkbox"/>
ENHANCE DURABILITY AND REDUCED MAINTENANCE (706)		
706.1.1 Service life. Select materials for longevity and minimal deterioration under conditions of use.		<input type="checkbox"/>
706.1.2 Reduced maintenance. Select materials that require little, if any, finishing.		<input type="checkbox"/>
706.1.3 Recyclability. Select materials that can be re-used or recycled at the end of their service life.		<input type="checkbox"/>
WEATHER RESISTANCE AND MOISTURE MANAGEMENT (707)		
707.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by T24, Part 2, Section 1403.2 and Part 6, Section 150, manufacturer's installation instructions, or local ordinance.	<input type="checkbox"/>	
707.2 Moisture control. Employ moisture control measures by one of the following methods:		
707.2.1 Sprinklers. Prevent irrigation spray on structures.		<input type="checkbox"/>
707.2.2 Entries and openings. Design exterior entries and openings to prevent water intrusion into buildings.		<input type="checkbox"/>
CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING (708)		
708.1 Construction waste diversion. Establish a construction waste management plan or meet local ordinance, whichever is more stringent.		<input type="checkbox"/>
708.2 Construction waste management plan. Submit plan per this section to enforcement authority.		<input type="checkbox"/>
708.3 Construction waste. Recycle and/or salvage for reuse a minimum of 50 percent of nonhazardous construction and demolition debris or meet local ordinance, whichever is more stringent.		<input type="checkbox"/>
Exceptions:		
1. Excavated soil and land-clearing debris.		
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.		
708.4 Excavated soil and land clearing debris. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled.		<input type="checkbox"/>
LIFE CYCLE ASSESSMENT (709)		
709.1 Materials and system assemblies. Select materials assemblies based on life cycle assessment of their embodied energy and/or green house gas emission potentials. See Sections 709.1.1 and 709.1.2 for available tools.		<input type="checkbox"/>

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APPLICATION MATRIX (AM-BSC)—continued

GREEN BUILDING MEASURE	REQUIRED	VOLUNTARY
BUILDING MAINTENANCE AND OPERATION (709)		
710.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling.	<input type="checkbox"/>	
ENVIRONMENTAL QUALITY		
FIREPLACES (803)		
803.1 Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove, and refer to residential requirements in the <i>California Energy Code</i> , Title 24, Part 6, Subchapter 7, Section 150.		<input type="checkbox"/>
POLLUTANT CONTROL (804)		
804.1 Indoor air quality (IAQ) during construction. Maintain IAQ as provided in Sections 804.1.1 and 804.1.2.		
804.1.2 Temporary ventilation. Provide temporary ventilation during construction in accordance with Section 121 of the <i>California Energy Code</i> , CCR, Title 24, Part 6, and Chapter 4 of CCR, Title 8, and as listed in Items 1 through 4 in 804.1.2.		<input type="checkbox"/>
804.1.3 Additional IAQ measures. Employ additional measures as listed in Items 1 through 5 in Section E 804.1.3:		<input type="checkbox"/>
804.2 IAQ postconstruction. Flush out the building per Section 804.2.1 prior to occupancy or if the building is occupied.		<input type="checkbox"/>
804.4 Finish material pollutant control. Finish materials shall comply with Sections 804.4.1 through 804.4.4.		
804.4.1 Adhesives. Adhesives used on the project shall meet the requirements of the following standards:		
1. Adhesives, adhesive bonding primers and adhesive primers shall comply with Table 804.4.1.		<input type="checkbox"/>
2. Aerosol adhesives shall meet the requirements of <i>California Code of Regulations</i> , Title 17, commencing with Section 94507		<input type="checkbox"/>
804.4.2 Paints and coatings. Architectural paints and coatings shall comply with Table 804.4.2.		<input type="checkbox"/>
804.4.3 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the programs listed in Items 1 through 4 in Section 804.4.3.		<input type="checkbox"/>
804.4.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.		<input type="checkbox"/>
804.4.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 804.4.1.		<input type="checkbox"/>
804.4.4 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 804.4.	<input type="checkbox"/>	
804.4.4.1 Early compliance. Where complying product is readily available for nonresidential occupancies, meet Phase 2 requirements before the compliance dates indicated in Table 804.4.		<input type="checkbox"/>
804.4.4.2 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:		<input type="checkbox"/>
1. Product certifications and specifications		
2. Chain of custody certifications		
3. Other methods acceptable to the enforcing agency		
804.4.5 Resilient flooring systems. Comply with the VOC-emission limits defined in the CHPS Low-emitting Materials List.		<input type="checkbox"/>
804.4.6 Thermal insulation. Comply with Chapter 12-13 in Title 24, Part 12 and with the VOC-emission limits defined in CHPS Low-emitting Materials List.		<input type="checkbox"/>
804.4.7 Acoustical ceilings and wall panels. Comply with Chapter 8 in Title 24, Part 2 and with the VOC-emission limits defined in the CHPS Low-emitting Materials List.		<input type="checkbox"/>

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APPLICATION MATRIX (AM-BSC)—continued

GREEN BUILDING MEASURE	REQUIRED	VOLUNTARY
<p>804.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas.</p> <p>804.5.1 Entryway systems. Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in Section 804.5.1.</p> <p>804.5.2 Isolation of pollutant sources. In rooms where activities produce hazardous fumes or chemicals, exhaust them and isolate them from their adjacent rooms as listed in Items 1 through 3 in Section 804.5.2.</p> <p>804.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV of 13.</p>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>804.6 Ozone depletion and global warming reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 804.6.1, and optionally Section 804.6.2.</p> <p>804.6.1 CFCs. Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.</p> <p>804.6.2 HCFCs and Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain HCFCs or Halons.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>804.7 Environmental tobacco smoke (ETS) control. Prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings; or as enforced by local ordinances, regulations or policies, whichever are more stringent.</p>		<input type="checkbox"/>
INDOOR MOISTURE AND RADON CONTROL (805)		
<p>805.1 Indoor moisture control. Buildings shall meet or exceed the provisions of <i>California Building Code</i>, CCR, Title 24, Part 2, Sections 1203 and Chapter 14.</p>		<input type="checkbox"/>
AIR QUALITY AND EXHAUST (806)		
<p>806.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 of the <i>California Energy Code</i>, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8, or the applicable local code, whichever is more stringent.</p>	<input type="checkbox"/>	
<p>806.2 Carbon dioxide (CO₂) monitoring. Install permanent CO₂ monitoring equipment that permits adjustment of ventilation system controls and set points and meets the latest edition of the <i>California Energy Code</i> requirements.</p> <p>Exception: In buildings without energy management systems, monitoring equipment shall trigger alarms to alert facilities operators or occupants of ventilation deficiencies.</p>		<input type="checkbox"/> <input type="checkbox"/>
ENVIRONMENTAL COMFORT (807)		
<p>807.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections 807.1.1 and 807.1.2.</p> <p>807.1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the 2007 <i>California Energy Code</i> by Sections 807.1.1.1 and 807.1.1.2.</p> <p>807.1.1.1 Lighting. Provide individual task lighting and/or daylighting controls for at least 90 percent of the building occupants.</p> <p>807.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least 50 percent of the building occupants by Items 1 and 2 in Section 807.1.1.2.</p> <p>807.1.2 Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces.</p>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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APPLICATION MATRIX (AM-BSC)—continued

GREEN BUILDING MEASURE	REQUIRED	VOLUNTARY
<p>807.2 Verification of indoor environmental quality. Within a period of six to 18 months after occupancy, conduct an indoor environmental survey of building occupants.</p> <p>1. Collect voluntary anonymous responses about indoor environmental quality, including thermal comfort, air quality, lighting, acoustics, daylighting and operable windows.</p> <p>2. Take corrective action if the survey results indicate that more than 20 percent of surveyed occupants are dissatisfied with thermal comfort, or if more than 5 percent complain of odor, irritation, fatigue, nausea and respiratory problems arising from the workplace.</p>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>807.3 Daylight. Provide daylit spaces as required for toplighting and sidelighting in the 2007 <i>California Energy Code</i>. In constructing a design, consider Items 1 through 4 in Section 807.3.</p>		<input type="checkbox"/>
<p>807.4 Views. Achieve direct line of sight to the outdoor environment via vision glazing between 2' 6" and 7' 6" above finish floor for building occupants in 90 percent of all regularly occupied areas.</p> <p>807.4.1 Interior office spaces. Entire areas of interior office spaces may be included in the calculation if at least 75 percent of each area has direct line of sight to perimeter vision glazing.</p> <p>807.4.2 Multi-occupant spaces. Include in the calculation the square footage with direct line of sight to perimeter vision glazing.</p>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>807.5 Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E 90 and ASTM E 413.</p> <p>807.5.1 Exterior noise transmission. Wall and floor-ceiling assemblies making up the building envelope shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for any of the building locations listed in Items 1 through 3 in Section 807.5.1.</p> <p>807.5.2 Interior sound. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 50.</p>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>