

2013 CALGreen Checklist Nonresidential New Construction

BPC-039

(This form is effective January 1, 2014, and applies to newly constructed nonresidential buildings without sleeping accommodations. Additions and alterations to existing structures¹ are also subject to the requirements of CALGreen but are not included in this checklist. Existing site and landscaping improvements that are not otherwise disturbed are not subject to the requirements of CALGreen.

SECTION A5.602 (Revised per County of Sonoma Requirements, based on CALGreen + Tier 1)

Project Address: _____

Project Name: _____

Project Description: _____

INSTRUCTIONS:

1. The owner/owner's agent and the design professional, as required, shall initially complete **Columns 1 and 2** of this checklist, sign and date the **Design Verification** section at the end of this checklist for submission of permit application. PRMD plans examiners shall review checklist for compliance. The approved checklist shall be printed on the project plans as a prerequisite for plan approval.

2. Prior to final inspection by the Building Department, the Building Inspector shall complete **Column 3** and sign or initial, and date the **Implementation Verification** section at the end of this checklist.

Sonoma County Permit and Resource Management Department

2550 Ventura Avenue, Santa Rosa, CA 95403-2829 (707) 565-1900 Fax (707) 565-1972

¹ Where more than fifty percent (50%) of all existing walls of an existing structure are demolished or deconstructed the structure shall be treated as a new building (PRMD Policy #9-2-12).

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p align="center">PLANNING AND DESIGN</p>	<p align="center"><i>All checked items are required for the project</i></p>	<p align="center"><i>Select at least one (1) elective measure from A5.1</i></p>	<p align="center"><i>Select all measures verified in the completed project</i></p>
<p>A5.103.1 Community connectivity. Locate project on a previously developed site within a 1/2 mile radius of at least ten basic services (as listed in Section A5.103.1) and readily accessible by pedestrians.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>A5.103.2 Brownfield or greyfield site redevelopment or infill area development. Select for development a brownfield in accordance with Section A5.103.2.1 or on a greyfield or infill site as defined in Section A5.102.</p> <p>A5.103.3.1 Brownfield redevelopment. Develop a site documented as contaminated and fully remediated or on a site defined as a brownfield.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>SITE PRESERVATION</p>			
<p>A5.104.1.1 Local zoning requirement in place. Exceed the zoning's open space requirement for vegetated open space on the site by 25 percent.</p> <p>A5.104.1.2 No local zoning requirement in place. Provide vegetated open space area adjacent to the building equal to the building footprint area.</p> <p>A5.104.1.3 No open space required in zoning ordinance. Provide vegetated open space equal to 20 percent of the total project site area.</p>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES</p>			
<p>A5.105.1.1 Existing building structure. Maintain at least 75 percent of existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing) based on surface area.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Window assemblies and non-structural roofing material. 2. Hazardous materials that are remediated as a part of the project. 3. A project with an addition of more than 2 times the square footage of the existing building. 		<input type="checkbox"/>	<input type="checkbox"/>

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<p>A5.105.1.2 Existing non-structural elements. Reuse existing interior non-structural elements (interior walls, doors, floor coverings and ceiling systems) in at least 50 percent of the area of the completed building (including additions).</p> <p>Exception: A project with an addition of more than 2 times the square footage of the existing building.</p> <p>A5.105.1.3 Salvage. Salvage additional items in good condition such as light fixtures, plumbing fixtures, and doors for reuse on this project in an onsite storage area or for salvage in dedicated collection bins. Document the weight or number of the items salvaged.</p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>SITE DEVELOPMENT</p>			
<p>A5.106.1 Storm water pollution prevention plan. For projects of one acre or less, develop a Storm Water Pollution Prevention Plan (SWPPP) that has been designed, specific to its site, conforming to the State Storm water NPDES Construction Permit or local ordinance, whichever is stricter, as is required for projects over one acre. The plan should cover prevention of soil loss by storm water run-off and/or wind erosion, of sedimentation, and/or of dust/particulate matter air pollution.</p>	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>
<p>A5.106.2 Storm water design. Design storm water runoff rate and quantity in conformance with Section A5.106.3.1 and storm water runoff quality by Section A5.106.3.2, or by local requirements, whichever are stricter.</p> <p>A5.106.2.1 Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions.</p> <p>Exception: If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity.</p> <p>A5.106.2.2 Storm water runoff quality. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter, or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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<p>A5.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.3.1. Employ <u>at least two</u> of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air, or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to those listed in A5.106.4.</p> <ol style="list-style-type: none"> 1. Bioretention (rain gardens) 2. Cisterns and rain barrels 3. Green roofs 4. Roof leader disconnection 5. Permeable and porous paving 6. Vegetative swales and filter strips & tree preservation 7. Volume retention suitable for previously developed sites 		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>5.106.4 Bicycle parking and changing rooms.</p> <p>5.106.4.1.1 Short-term bicycle parking. If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.</p> <p>5.106.4.1.2 Long-term bicycle parking. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking capacity being added, with a minimum of one space.</p> <p>A5.106.4.3 Changing rooms. For buildings with over 10 tenant-occupants, provide changing/shower facilities in accordance with Table 5.106.4.3, or document arrangements with nearby changing/shower facilities.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p>
<p>A5.106.5.1 Designated parking for fuel-efficient vehicles. Provide designated parking for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as shown in Table A5.106.5.1.1 for 10 percent of total spaces. (Tier 1)</p> <p>5.106.5.2 Designated parking. Provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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<p>A5.106.7 Exterior walls. Meet requirements in the current edition of the <i>California Energy Code</i> and comply with either Section A5.106.7.1 or A5.106.7.2 for wall surfaces:</p> <p>A5.106.7.1 Fenestration. Provide vegetative or man-made shading devices for east-, south-, and west-facing walls with windows.</p> <p>A5.106.7.1.1 East and west walls. Shading devices shall have 30% coverage to a height of 20 feet or to the top of the exterior wall, whichever is less.</p> <p>A5.106.7.1.2 South walls. Shading devices shall have 60% coverage to a height of 20 feet or to the top of the exterior wall, whichever is less.</p> <p>A5.106.7.2 Opaque wall areas. Use wall surfacing with SRI 25 (aged), for 75% of opaque wall areas.</p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>5.106.8 Light pollution reduction. Outdoor lighting systems shall be designed and installed to comply with the following:</p> <ol style="list-style-type: none"> The minimum requirements in the <i>California Energy Code</i> and for lighting zones 1-4 as defined in Chapter 10 of the <i>California Administrative Code</i>; and Backlight, Uplight and Glare (BUG) ratings as defined in IESNA TM-15-11; and Allowable BUG ratings not exceeding those shown in Table 5.106.8. <p>Exceptions:</p> <ol style="list-style-type: none"> Luminaires that qualify as exceptions in Section 147 of the <i>California Energy Code</i>. Emergency lighting 	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>
<p>5.106.10 Grading and Paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water from entering buildings. Examples of methods to manage surface water include those shown in Items 1-5.</p>	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>
<p>A5.106.11 Heat island effect. Reduce non-roof heat islands, and roof heat islands as follows:</p> <p>A5.106.11.1 Hardscape alternatives. Use one or a combination of the following strategies for 50% of site hardscape <u>or</u> put 50 percent of parking underground.</p> <ol style="list-style-type: none"> Use light colored materials with an initial solar reflectance value of at least .30 as determined in accordance with ASTM E1918 or C1549. Use open-grid pavement system or pervious or permeable pavement system. 		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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A5.106.11.2 Cool roof for reduction of heat island effect. Use roofing materials having a minimum aged solar reflectance, thermal emittance complying with Section A5.106.11.2.2 or a minimum Solar Reflectance Index (SRI) ³ equal to or greater than the values shown in Table A5.106.11.2.2. Exceptions: <ol style="list-style-type: none"> 1. Roof construction that have a thermal mass over the roof membrane, including areas of vegetative (green) roofs, weighing at least 25 lb/sf. 2. Roof area covered by building integrated solar photovoltaic and building integrated solar thermal panels. 	<input checked="" type="checkbox"/>		<input type="checkbox"/>
ENERGY EFFICIENCY	<i>All checked items are required for the project</i>	<i>No elective measures required</i>	<i>Select all measures verified in the completed project</i>
PERFORMANCE REQUIREMENTS			
5.201.1 Scope. Building meets or exceeds the requirements of the California Building Energy Efficiency Standards.	<input checked="" type="checkbox"/> ²		<input type="checkbox"/>
WATER EFFICIENCY AND CONSERVATION	<i>All checked items are required for the project</i>	<i>Select at least one (1) elective measure from A5.3</i>	<i>Select all measures verified in the completed project</i>

² Provisions of the 2013 CEC and the 2013 Building Energy Efficiency Standards (BEES) become effective July 1, 2014. From January 1, 2014, to June 30, 2014, the 2010 CEC and 2008 BEES shall be used for Residential and Non-Residential portions of this code for Energy Efficiency. Appendix Chapter A5.2 is not applicable to this section.

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<p>INDOOR WATER USE</p>			
<p>5.303.1 Meters. Separate meters shall be installed for the uses described in Sections 5.303.1.1 and 5.303.1.2.</p> <p>5.303.1.1 New buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows:</p> <ol style="list-style-type: none"> 1. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day. 2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: <ol style="list-style-type: none"> a. Makeup water for cooling towers where flow through is greater than 500 gpm b. Makeup water for evaporator coolers greater than 6 gpm c. Steam and hot-water boilers with energy input more than 500,000 Btu/hr <p>5.303.1.2 Excess consumption. Any building within a project or space within a building that is projected to consume more than 1,000 gal/day.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>5.303.2 Water reduction. Plumbing fixtures shall meet the maximum flow rate values shown in Table 5.303.2.3.</p> <p>Exception: Buildings that demonstrate 20% overall water use reduction. In this case, a calculation demonstrating a 20% reduction in the building “water use baseline,” as established in Table 5.303.2.2, shall be provided.</p>	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>
<p>5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:</p> <p>5.303.3.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets.</p> <p>Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush</p> <p>5.303.3.2 Urinals. The effective flush volume of urinals shall not exceed 0.5 gallons per flush.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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<p>5.303.3.3 Showerheads.</p> <p>5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of U.S. EPA WaterSense Specification for Showerheads.</p> <p>5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.</p> <p>Note: A hand-held shower shall be considered a showerhead.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>A5.303.3 Appliances.</p> <ol style="list-style-type: none"> Clothes washers shall have a maximum Water Factor (WF) that will reduce the use of water. Dishwashers shall meet the criteria in Section A5.303.3(2)(a) and (b). Ice makers shall be air cooled. Food steamers shall be connectionless or boilerless. The use and installation of water softeners shall be limited or prohibited by local agencies. Combination ovens shall not consume more than 10 gph in full operational mode. Commercial pre-rinse spray valves manufactured on or after January 1, 2006 shall function at equal to or less than 1.6 gpm at 60 psi and: <ol style="list-style-type: none"> Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate; Be equipped with an integral automatic shutoff; Operate at static pressure of at least 30 psi when designed for a flow rate of 1.3 gpm or less. 		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>5.303.4 Wastewater reduction. Each building shall reduce the generation of wastewater by <u>one</u> of the following methods:</p> <ol style="list-style-type: none"> The installation of water-conserving fixtures <p align="center">OR</p> <ol style="list-style-type: none"> Utilizing non-potable water systems 	<p align="center">As applicable</p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>A5.303.5 Dual plumbing. New buildings and facilities shall be dual plumbed for potable and recycled water systems.</p>		<p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p>
<p>5.303.6 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the <i>California Plumbing Code</i>, and shall meet the applicable standards referenced in Table 1401.1 of the <i>California Plumbing Code</i> and in Chapter 6 of this code.</p>	<p align="center">As applicable</p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>

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<p>OUTDOOR WATER USE³</p>			
<p>5.304.1 Water budget. A water budget shall be developed for landscape irrigation use in accordance with Chapter 7-D3 of the Sonoma County Code – Water Efficient Landscaping.</p>	☒		☐
<p>5.304.2 Outdoor potable water use. For new water service, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas of at least 1,000 sf but not more than 5,000 sf.</p>	☒		☐
<p>A5.304.2.1 Outdoor potable water use. For new water service not subject to the provisions of Water Code Section 535 (i.e. single-family residential connections), separate meters or submeters are installed for indoor and outdoor potable water use for landscaped areas between 500 square feet and 1,000 square feet.</p>		☐	☐
<p>5.304.3 Irrigation design. In new nonresidential projects with at least 1,000 sf but not more than 2,500 sf of landscaped area (the level at which the MLO applies), install irrigation controllers and sensors which include the following criteria and meet manufacturer’s recommendations.</p> <p>5.304.3.1 Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:</p> <ol style="list-style-type: none"> 1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants’ needs as weather conditions change. 2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input. 	☒		☐
<p>A5.304.4.1 Potable water reduction. Provide water efficient landscape irrigation design that reduces the use of potable water to a quantity that does not exceed 60% of the ETo times the landscape area.</p>	☒		☐
<p>A5.304.4.3 Verification of compliance. A calculation demonstrating the applicable potable water use reduction required by this section shall be provided.</p>	☒		☐

³ Refer to SCC 7-D3 “Water Efficient Landscape” for other requirements, http://www.sonoma-county.org/prmd/docs/landscape_ord/index.htm

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<p>A5.304.5 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 A5.304.4.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>A5.304.6 Restoration of areas disturbed by construction. Restore all areas disturbed during construction by planting with local native and/or non-invasive vegetation.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>A5.304.7 Previously developed sites. On previously developed or graded sites, restore or protect at least 50% of the site area with native and/or non-invasive vegetation.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>A5.304.8 Graywater irrigation system. Install graywater collection system for onsite subsurface irrigation using graywater.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>WATER REUSE</p>			
<p>A5.305.1 Nonpotable water systems. Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the <i>California Plumbing Code</i>.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>A5.305.2 Irrigation systems. Irrigation systems regulated by Sonoma County Code Chapter 7D3 regarding Water Efficient Landscape or by the California Department of Water Resources Model Water Efficiency Landscape Ordinance (MWELO) shall use recycled water.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</p>	<p align="center"><i>All checked items are required for the project</i></p>	<p align="center"><i>Select at least one (1) elective measure from A5.4</i></p>	<p align="center"><i>Select all measures verified in the completed project</i></p>
<p>EFFICIENT FRAMING SYSTEMS</p>			
<p>A5.404.1 Wood framing. Employ advanced wood framing techniques, or OVE, as permitted by the enforcing agency.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>MATERIAL SOURCES</p>			
<p>A5.405.1 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 A5.405.1.</p>		<input type="checkbox"/>	<input type="checkbox"/>

<p align="center">Column 1 Feature or Measure</p>	<p align="center">Column 2 Project Requirements</p> <p align="center"><i>When checked, these items become part of the approved plans and must be installed or incorporated into the project.</i></p>		<p align="center">Column 3 Verification</p> <p align="center"><i>Complete prior to final inspection approval</i></p>
<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>A5.405.2 Bio-based materials. Select bio-based building materials per Section A5.405.2.1 or A5.405.2.2.</p> <p>A5.405.2.1 Use 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.</p> <p>A5.405.2.2 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.</p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>A5.405.3 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.</p>		<p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p>
<p>A5.405.4 Recycled content. Use materials, equivalent in performance to virgin materials, with post-consumer or pre-consumer recycled content value (RCV) equaling at least 10 percent of the total value, based on estimated cost of materials on the project.</p> <p>Note: Use the equations in the subsections for calculating total materials cost, recycled content, RCV of materials and assemblies, and total RCV.</p>	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>
<p>A5.405.5 Cement and concrete. Use cement and concrete made with recycled products and complying with the following sections:</p> <p>A5.405.5.1 Cement. Meet the following standards for cement:</p> <ol style="list-style-type: none"> Portland cement shall meet ASTM C 150. Blended hydraulic cement shall meet ASTM C 595. Other hydraulic cements shall meet ASTM C 1157 <p>A5.405.5.2 Concrete. Unless otherwise directed by the engineer, use concrete manufactured with cementitious materials in accordance with Sections A5.405.5.2.1 and A5.405.5.2.2, as approved by the enforcing agency.</p> <p>A5.405.5.2.1 Supplementary cementitious materials (SCMs). Use concrete made with one or more of the SCMs listed in Section A5.405.5.2.1</p> <p>A5.405.5.2.1.1 Mix design equation. Use any combination of one or more SCMs, satisfying Equation A4.5-1.</p> <p>Exception: Minimums in mix designs approved by the Engineer of Record may be lower where high early strength is needed.</p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>A5.405.5.3 Additional means of compliance. Any of the following measures may be employed for the production of cement or concrete, depending on their availability and suitability, in conjunction with A5.405.5.2.</p> <p>A5.405.5.3.1 Cement. The following measures may be used in the manufacture of cement:</p> <p>A5.405.5.3.1.1 Alternative fuels. Where permitted by state or local air quality standards.</p> <p>A5.405.5.3.1.2 Alternative power. Alternate electric power generated at the cement plant and/or green power purchased from the utility meeting the requirements of A5.211.</p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>A5.405.5.3.2 Concrete. The following measures may be used in the manufacture of concrete:</p> <p>A5.405.5.3.2.1 Alternative energy. Renewable or alternative energy meeting the requirements of Section A5.211.</p> <p>A5.405.5.3.2.2 Recycled aggregates. Use concrete made with one or more of the materials listed in Section A5.405.5.3.2.2.</p> <p>A5.405.5.3.2.3 Mixing water. Water recycled by the local water purveyor or water reclaimed from manufacturing processes and conforming to ASTM C 1602.</p> <p>A5.405.5.3.2.4 High strength concrete. Concrete elements designed to reduce their total size compared to standard 3,000 psi concrete, as approved by the Engineer-of-Record.</p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>ENHANCED DURABILITY AND REDUCED MAINTENANCE</p>			
<p>A5.406.1.1 Service life. Select materials for longevity and minimal deterioration under conditions of use.</p> <p>A5.406.1.2 Reduced maintenance. Select materials that require little, if any, finishing.</p> <p>A5.406.1.3 Recyclability. Select materials that can be re-used or recycled at the end of their service life.</p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>WEATHER RESISTANCE AND MOISTURE MANAGEMENT</p>			
<p>A5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by <i>California Building Code</i> Section 1403.2, <i>California Energy Code</i> Section 150 or manufacturer's installation instructions, whichever is more stringent.</p>	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>A5.407.2 Moisture control. Employ moisture control measures by the following methods:</p> <p>5.407.2.1 Sprinklers. Prevent irrigation spray on structures.</p> <p>5.407.2.2 Entries and openings. Design exterior entries and openings to prevent water intrusion into buildings.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING</p>			
<p>5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction waste in accordance with Sections 5.408.1.1, 5.408.1.2 or 5.408.1.3.</p> <p>5.408.1.1 Construction waste management plan. Submit a construction waste management plan that complies with Items 1 through 4 of this section.</p> <p>5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction waste material diverted from the landfill complies with this section.</p> <p>Exceptions to Sections 5.408.1.1 and 5.408.1.2:</p> <ol style="list-style-type: none"> Excavated soil and land-clearing debris. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. Demolition waste calculated in consideration of local recycling facilities and markets. <p>5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed 2 psf of building area may be deemed to meet the 50% minimum as approved by the enforcing agency.</p> <p>5.408.1.4 Documentation. Provide documentation of the waste management plan that meets the requirements listed in Section 5.408.1.1 through 5.408.1.3, and the plan is accessible to the enforcement authority.</p> <p>5.408.3 Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled.</p> <p>Exception: Reuse, either on- or off-site, of vegetation or soil contaminated by disease or pest infestation.</p> <p>A5.408.3.1 Enhanced Construction waste. Divert to recycle and/or salvage at least 65% of non-hazardous construction and demolition waste generated at the site.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>A5.408.3.1.2 Verification of compliance. A copy of the completed waste management report or documentation of certification shall be provided.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Excavated soil and land-clearing debris. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. Demolition waste calculated in consideration of local recycling facilities and markets. 	<input checked="" type="checkbox"/>		<input type="checkbox"/>
<p>LIFE CYCLE ASSESSMENT</p>			
<p>A5.409.1 General. Life cycle assessment shall be ISO 14044 compliant. The service life of the building and materials assemblies shall not be less than 60 years.</p> <p>A5.409.2 Whole building life cycle assessment. Conduct a whole building life assessment, including operating energy, showing that the building project achieves at least a 10% improvement for at least three of the impacts listed in Section A5.409.2.2, one of which shall be climate change, compared to a reference building.</p> <p>A5.409.3 Materials and system assemblies. If whole building analysis of the project is not elected, select a minimum of 50% of materials or assemblies based on life cycle assessment of at least three for the impacts listed in Section A5.409.2.2, one of which shall be climate change.</p> <p>A5.409.4 Substitution for prescriptive standards. Performance of a life cycle assessment completed in accordance with Section A5.409.2 may be substituted for other prescriptive provisions of Division A5.4, including those made mandatory through Sonoma County's adoption of Tier 1 in Division A5.6.</p> <p>A5.409.5 Verification of compliance. Documentation of compliance shall be provided as follows:</p> <ol style="list-style-type: none"> The assessment is performed in accordance with ISO 14044. The project meets the requirements of other parts of Title 24. A copy of the analysis shall be made available to the enforcement authority. A copy of the analysis and any maintenance or training recommendations shall be included in the operations and maintenance manual. 		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>5.410.2.6 Commissioning report. A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.</p>	☒		☐
<p>5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.</p> <p>5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include, as applicable to the project, the systems listed in 5.410.4.2.</p> <p>5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with applicable standards on each system.</p> <p>5.410.4.3.1 HVAC balancing. Before a new space-conditioning system serving a building or space is operated for normal use, balance in accordance with the procedures defined by national standards listed in 5.410.4.3.1.</p> <p>5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.</p> <p>5.410.4.5 Operation and maintenance manual. Provide the building owner with detailed operating and maintenance instructions and copies of guaranties/warranties for each system prior to final inspection.</p> <p>5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports to the enforcing agency.</p>	☒ ☒ ☒ ☒ ☒ ☒ ☒		☐ ☐ ☐ ☐ ☐ ☐ ☐
<p align="center">A5.5 ENVIRONMENTAL QUALITY</p>	<i>All checked items are required for the project</i>	<i>Select at least one (1) elective measure from A5.5</i>	<i>Select all measures verified in the completed project</i>
<p>FIREPLACES⁵</p>			
<p>5.503.1. 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.</p> <p>5.503.1.1 Woodstoves. Woodstoves shall comply with US EPA Phase II emission limits.</p>	☒ ☒		☐ ☐

⁵ Refer to SCC Ch 7C "Wood Burning Appliances" for applicable local ordinance and Technical Bulletin B-35 "Masonry Fireplaces"

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site and until final startup of the heating, cooling and ventilation equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.</p> <p>5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.4.</p> <p>5.504.4.1 Adhesives, sealants, caulks. Adhesives and sealants used on the project shall meet the requirements of the following standards:</p> <ol style="list-style-type: none"> 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with Tables 5.504.4.1 and 5.504.4.2. 2. Aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507. <p>5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with Table 5.504.4.3.</p> <p>5.504.4.3.1 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances (CCR, Title 17, Section 94520 et seq.).</p> <p>5.504.4.3.2 Verification. Verification of compliance with this section shall be provided.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in 5.504.4.4.</p> <p>5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.</p> <p>5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 5.504.4.1.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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<p>5.504.4.5 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 5.504.4.5.</p> <p>A5.504.4.5.1 Early compliance with formaldehyde limits. Meet the requirements contained in Table 5.504.4.5.</p> <p>5.504.4.5.2 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least <u>one</u> of the following:</p> <ol style="list-style-type: none"> 1. Product certifications and specifications. 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120 et seq.). 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards. 5. Other methods acceptable to the enforcing agency. 	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>5.504.4.6 Resilient flooring systems. Comply with the VOC-emission limits defined in the 2012 CHPS criteria and listed on its High Performance Products Database; products compliant with the CHPS criteria certified under the Greenguard Children & Schools program; certified under the FloorScore program of the Resilient Floor Covering Institute. ; or meet California Department of Health 2010 Specification.</p> <p>A5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>5.504.4.7 Resilient flooring systems, Tier 1. For 90% of floor area receiving resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 CHPS criteria certified under the Greenguard Children a& Schools program, certified under the FloorScore program of the Resilient Floor Covering Institute; or meet California Department of Health 2010 Specification 01350.</p> <p>A5.504.4.7.2 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>A5.504.4.8 Thermal Insulation, Tier 1. Comply with the standards listed in Items 1 through 3.</p> <p>A5.504.4.8.2 Verification of compliance. Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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<p>A5.504.4.9 Acoustical ceilings and wall panels. Comply with Chapter 8 in Title 24, Part 2 and with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database.</p> <p>A5.504.4.9.1 Verification of compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.</p>		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
<p>A5.504.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas.</p> <p>A5.504.5.1 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 A5.504.5.1.</p> <p>A5.504.5.2 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 A5.504.5.2.</p>		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
<p>5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a MERV of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> An ASHRAE 10-15% efficiency filter shall be permitted for an HVAC unit meeting the 2013 California Energy Code having 60,000 Btu/h or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/cfm or less at design air flow. Existing mechanical equipment. <p>A5.504.5.3.1 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air infiltration media for outside and return air prior to occupancy that provides at least a MERV of 11.</p> <p>5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>5.504.7 Environmental tobacco smoke (ETS) control. Prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows where outdoor areas are provided for smoking and within the building where already prohibited by other laws or regulations; or as enforced by ordinances, regulations, or policies of Sonoma County whichever is more stringent.</p>	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<p align="center">Column 1 Feature or Measure</p>	<p align="center">Column 2 Project Requirements</p> <p align="center"><i>When checked, these items become part of the approved plans and must be installed or incorporated into the project.</i></p>		<p align="center">Column 3 Verification</p> <p align="center"><i>Complete prior to final inspection approval</i></p>
<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>INDOOR MOISTURE AND RADON CONTROL</p>			
<p>5.505.1 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 14.1.</p>	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>
<p>AIR QUALITY AND EXHAUST</p>			
<p>5.506.1 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.</p>	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>
<p>5.506.2 Carbon dioxide (CO2) monitoring. For buildings equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the <i>California Energy Code</i>, CCR, Title 24, Part 6, Section 121(c)(4).</p>	<p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p>
<p>ENVIRONMENTAL COMFORT</p>			
<p>A5.507.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections A5.507.1.1 and A5.507.1.2.</p> <p>A5.507.1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the <i>California Energy Code</i> by Sections A5.507.1.1.1 and A5.507.1.1.2.</p> <p>A5.507.1.1.1 Lighting. Provide individual task lighting and/or daylighting controls for at least 90 percent of the building occupants.</p> <p>A5.507.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least 50 percent of the building occupants by Items 1 and 2 in A5.507.1.1.2.</p> <p>A5.507.1.2 Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces.</p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>A5.507.2 Daylight. Provide daylit spaces as required for toplighting and sidelighting in the <i>California Energy Code</i>. In constructing a design, consider Items 1 through 4 in A5.507.3.</p>		<p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p>
<p>5.507.4 Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E90 and ASTM E413 or OITC determined in accordance with ASTM E1332, using either prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2.</p>			

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>5.507.4.1 Exterior noise transmission, prescriptive method. Wall and roof-ceiling assemblies exposed to the noise source making up the building envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in building locations listed in Items 1 and 2 in Section 5.507.4.1.</p> <p>5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB during any hour of operation shall have building exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).</p> <p>5.507.4.2 Performance method. For buildings located as defined in Sections A5.507.4.1 or A5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level of 50 dBA in occupied areas during any hour of operation.</p> <p>5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the project to mitigate sound migration to the interior.</p> <p>5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.</p> <p>5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces, and tenant spaces and public places shall have an STC of at least 40.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center">OR</p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center">OR</p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>OUTDOOR AIR QUALITY</p>			
<p>5.508.1 Ozone depletion and global warming reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.</p> <p>5.508.1.1 CFCs. Install HVAC and refrigeration equipment that does not contain CFCs.</p> <p>5.508.1.2 Halons. Install fire suppression equipment that does not contain Halons.</p> <p>A5.508.1.3 Hydrochlorofluorocarbons (HCFCs). Install HVAC and refrigeration equipment that does not contain HCFCs.</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center"><input checked="" type="checkbox"/></p>		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>A5.508.1.4 Hydrofluorocarbons (HFCs). Install HVAC complying with either of the following:</p> <ol style="list-style-type: none"> 1. Install HVAC, refrigeration and fire suppression equipment that do not contain HFCs or that do not contain HFCs with a global warming potential greater than 150. 2. Install HVAC and refrigeration equipment that limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1. 		<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>	<p align="center"><input type="checkbox"/></p> <p align="center"><input type="checkbox"/></p>
<p>5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater.</p> <p>Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO₂), and potentially other refrigerants.</p> <p>5.508.2.1 Refrigerant piping. Piping compliant with the <i>California Mechanical Code</i> shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted below.</p> <p>5.508.2.1.1 Threaded pipe. Threaded connections are permitted in the compressor rack.</p> <p>5.508.2.1.2 Copper pipe. Copper tubing with an OD less than 1/4 inch may be used in systems with a refrigerant charge of 5 pounds or less.</p> <p>5.508.2.1.2.1 Anchorage. 1/4 inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils.</p> <p>5.508.2.1.3 Flared tubing connections. Double-flared tubing connections may be used for pressure controls, valve pilot lines and oil.</p> <p>Exception: Single-flared tubing connections may be used with a multi-ring seal coated with an industrial sealant suitable for use with refrigerants and tightened in accordance with manufacturer's recommendations.</p> <p>5.508.2.1.4 Elbows. Short radius elbows are only permitted where space limitations prohibit use of long radius elbows.</p> <p>5.508.2.2 Valves. Valves and fittings shall comply with the <i>California Mechanical Code</i> and as follows:</p>	<p align="center"><input checked="" type="checkbox"/></p> <p align="center">As applicable</p>		

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<p align="center"><i>See Chapter 5 and Appendix A5 of the California Green Building Code for complete descriptions of features or measures listed here.</i></p>	<p align="center">Mandatory Requirements</p>	<p align="center">Tier 1 electives <i>Applicant selects elective measure(s)</i></p>	<p align="center">Verification by Building Inspector</p>
<p>5.508.2.2.1 Pressure Relief Valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.</p>			
<p>5.508.2.2.1.1 Pressure Detection. A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve.</p> <p>5.508.2.2.2 Access valves. Only Schrader access valves with a brass or steel body are permitted for use.</p> <p>5.508.2.2.2.1 Valve caps. For systems with refrigerant charge of 5 pounds or more, valve caps shall be brass or steel and not plastic.</p> <p>5.508.2.2.2.2 Seal caps. If designed for it, the cap shall have a neoprene O-ring in place.</p> <p>5.508.2.2.2.2.1 Chain tethers. Chain tethers to fit over the stem are required for valves designed to have seal caps.</p> <p>Exception: Valves with seal caps that are not removed from the valve during stem operation.</p> <p>5.508.2.3 Refrigerated service cases. Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances.</p> <p>5.508.2.3.1 Coil coating. Consideration shall be given the heat transfer efficiency of coil coating to maximize energy efficiency.</p> <p>5.508.2.4 Refrigerant receivers. Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device that indicates the level of refrigerant in the receiver.</p> <p>5.508.2.5 Pressure testing. The system shall be pressure tested during installation prior to evacuation and charging.</p> <p>5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and appropriate tracer gas to bring system pressure up to 300 psig minimum.</p> <p>5.508.2.5.2 Leaks. Check the system for leaks, repair any leaks and retest for pressure using the same gage.</p> <p>5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more than +/- one pound pressure change from 300 psig, measured in the same gage.</p> <p>5.508.2.6 Evacuation. The system shall be evacuated after pressure testing and prior to charging.</p> <p>5.508.2.6.1 First vacuum. Pull a system vacuum to at least 1000 microns (+/- 50 microns), and hold 30 minutes.</p> <p>5.508.2.6.2 Second vacuum. Pull a second system vacuum to a minimum of 500 microns and hold 30 minutes.</p>			

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<p>5.508.2.6.3 Third Vacuum. Pull a third vacuum to a minimum of 300 microns, and hold for 24 hours with a maximum drift of 100 microns over a 24-hour period.</p>			
<p align="center">ADDITIONAL ELECTIVE MEASURE</p>			
<p>A5.601.2.4 Voluntary measures for CALGreen Tier 1, Item 5. Pursuant to Tier 1 requirements, select one additional Tier 1 elective measure from any division above. The total number of boxes checked under the Tier 1 electives in Column 2 must be at least five (5).</p>	<input checked="" type="checkbox"/>	<hr style="width: 50%; margin: 0 auto;"/> <i>Total elective measures checked</i>	<input type="checkbox"/>
<p align="center">INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS</p>		<p><i>All checked items are required for the project</i></p>	<p><i>Select all measures verified in the completed project</i></p>
<p>QUALIFICATIONS</p>			
<p>702.1 Installer training. HVAC system installers are trained and certified in the proper installation of HVAC systems.</p>	<input checked="" type="checkbox"/>		<input type="checkbox"/>
<p>VERIFICATIONS</p>			
<p>703.1 Documentation. Documentation used to show compliance with this code shall include but not be limited to construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified in the application checklist.</p>	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Green Building Acknowledgments

Project Address: _____

Project Description: _____

Section 1 – Design Verification

Complete all lines of Section 1- "Design Verification" and submit the completed checklist (Columns 1 and 2) with the plans and building permit application to the Building Department.

The owner/owner's agent, design professional and PRMD Plans Examiner have reviewed the plans and certify that the items checked above are hereby incorporated into the project plans and will be implemented into the project in accordance with the requirements set forth in the *2013 California Green Building Standards Code*.

Owner's Signature

Date

Owner Name *(Please Print)*

Design Professional's Signature

Date

Design Professional's Name *(Please Print)*

Signature of Plans Examiner

Date

Section 2 – Implementation Verification

Complete, sign and submit the completed checklist, including Column 3, together with all original signatures on Section 2 – "Implementation Verification" to the Building Department prior to Building Department final inspection.

I have inspected the work have received sufficient documentation to verify and certify that the project identified above was constructed in accordance with this Green Building Checklist and in accordance with the requirements set forth in the *2013 California Green Building Standards Code*.

Inspector Signature

Date

Inspector's Name *(Please Print)*