

MARIN COUNTY 2019 CALGREEN CHECKLIST

Tier 1 Standards for Nonresidential New Construction

This checklist is effective January 1, 2020, and applies to new nonresidential projects without sleeping accommodations. Existing site and landscaping improvements that are not otherwise disturbed are not subject to CALGreen.

Submit this checklist with your plans to demonstrate compliance with the green building ordinance. This checklist includes modifications specific to Marin County. For more information on the County's Green Building requirements, please visit www.maringreenbuilding.org

For more information on CALGreen and complete measure language, see Chapters 5 and Appendix 5 here: <https://codes.iccsafe.org/content/CAGBSC2019/table-of-contents>

PROJECT DETAILS

Project Address

APN

Applicant Name (Please Print)

PROJECT VERIFICATION

The Green Building Rater, listed below, has reviewed the plans and certifies that the mandatory and elective measures listed above are hereby incorporated into the project plans and will be implemented into the project in accordance with the requirements set forth in the 2019 California Green Building Standards Code as amended by the County of Marin.

Signature

Date

Name (Please Print)

Green Building Certification¹ and License Number

¹ CalGREEN Special Inspector, LEED AP, or Green Point Rater are acceptable certifications

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DIVISION 5.1 PLANNING AND DESIGN

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

5.106.1 (MANDATORY) Newly constructed projects and additions which disturb less than one acre of land shall prevent the pollution of stormwater runoff from the construction activities through compliance with the County of Marin's stormwater management ordinance.

[Link: County of Marin's stormwater management ordinance](#)

Completed N/A Plan sheet reference (if applicable): _____

5.106.2 (MANDATORY) Comply with all lawfully enacted stormwater discharge regulations for projects that disturb one acre or more of land or disturb less than one acre of land but are part of a larger common plan of development or sale. Projects must comply with National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities.

Completed N/A Plan sheet reference (if applicable): _____

5.106.4.1.1 (MANDATORY) Short-term bicycle parking. If the new 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 new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.

Completed N/A Plan sheet reference (if applicable): _____

5.106.4.1.2 (MANDATORY) Long-term bicycle parking. For new buildings with 10 or more tenant-occupants provide secure bicycle parking for 5 percent of the tenant vehicular parking spaces being added, with a minimum of one space.

Completed N/A Plan sheet reference (if applicable): _____

5.106.4.1.4 (MANDATORY) For new shell buildings in phased projects provide secure bicycle parking for 5 percent of the anticipated tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

Completed N/A Plan sheet reference (if applicable): _____

5.106.4.1.5 (MANDATORY) Acceptable bicycle parking facility for Sections 5.106.4.1.1 through 5.106.4.1.4 shall be convenient from the street and shall meet one of the following:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; or
3. Lockable, permanently anchored bicycle lockers.

Completed N/A Plan sheet reference (if applicable): _____

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A5.106.5.1.1 (MANDATORY) Provide 10 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.106.5.1.3 (MANDATORY) Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle:

CLEAN AIR/
VANPOOL/EV

Completed N/A *Plan sheet reference (if applicable):* _____

A5.106.5.1.4 (MANDATORY) Building managers may consult with local community Transit Management Associations (TMAs) for methods of designating qualifying vehicles, such as issuing parking stickers.

Completed N/A *Plan sheet reference (if applicable):* _____

5.106.5.3 (MANDATORY) Construction shall comply with Section 5.106.5.3.1 and A5.106.5.3.1 or Section 5.106.5.3.2 and A5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code and the California Electrical Code, and as outlined by the County of Marin Green Building Standards. To comply with local requirements, select one of the following options:

- **100% EV Ready**, in which 10% of spaces are built to be EV Ready and the remaining spaces are built to be EV Capable, OR
- **EV Installed**, in which 10% of spaces are built to be EV Ready and EV Chargers are installed in 5% of the spaces, not less than two charging ports. Installation of EV supply equipment and chargers shall be in accordance with the California Building Code and the California Electrical Code.

Completed N/A *Plan sheet reference (if applicable):* _____

5.106.5.3.4 (MANDATORY) The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as “EV CAPABLE.” The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.”

Completed N/A *Plan sheet reference (if applicable):* _____

5.106.5.3.5 (MANDATORY) Future charging spaces qualify as designated parking as described in Section A5.106.5.1 designated parking for clean air vehicles.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.106.8 (MANDATORY) Outdoor lighting systems shall be designed and installed to comply with the minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code and maximum backlight, uplight, and glare (BUG) ratings shown in CALGreen Table 5.106.8

Completed N/A *Plan sheet reference (if applicable):* _____

5.106.10 (MANDATORY) Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.106.11.2 (MANDATORY) Use roofing materials having a minimum aged solar reflectance and thermal emittance complying with CALGreen Sections A5.106.11.2.1 and A5.106.11.2.2 or a minimum aged Solar Reflectance Index (SRI) complying with Section A5.106.11.2.3 and as shown in Table A5.106.11.2.2

Completed N/A *Plan sheet reference (if applicable):* _____

DIVISION 5.2 ENERGY EFFICIENCY

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

5.201.1 (MANDATORY) Meet minimum California Energy Commission energy efficiency standards and comply with one of the following energy efficiency and electrification compliance options adopted in the Marin County Building Code, Chapter 19.04, Subchapter 2.

1. All-Electric and complies with minimum energy efficiency standards; OR
2. Limited mixed-fuel (natural gas only allowed for cooking appliances and gas fireplaces) and an energy efficiency compliance margin of 5%; OR
3. Mixed-fuel (natural gas and electric allowed for all appliances) and an energy efficiency compliance margin of 10%

[Link: Marin County Building Code, Chapter 19.04, Subchapter 2](#)

Completed N/A *Plan sheet reference (if applicable):* _____

A5.203.1.1.1 (MANDATORY) Newly installed outdoor lighting power shall be no greater than 90 percent of the Allowed Outdoor Lighting Power. The Allowed Outdoor Lighting power calculation is specified in Title 24, Part 6, Section 140.7 "Requirements for Outdoor Lighting."

Completed N/A *Plan sheet reference (if applicable):* _____

A5.203.1.1.2 (MANDATORY) Newly constructed restaurants 8,000 square feet of greater and with service water heaters rated 75,000 Btu/h or greater shall install a solar water-heating system with a minimum solar savings fraction of 0.15.

Completed N/A *Plan sheet reference (if applicable):* _____

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A5.203.1.2.1 (MANDATORY) Comply with one of the energy efficiency and electrification options outlined in 5.201.1 above.

Completed N/A *Plan sheet reference (if applicable):* _____

DIVISION 5.3 WATER EFFICIENCY AND CONSERVATION

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

5.303.1.1 (MANDATORY) For new buildings or additions in excess of 50,000 square feet, separate submeters shall be installed as follows:

1. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop.
2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems:
 - a. Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s).
 - b. Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s).
 - c. Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW).

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.1.2 (MANDATORY) A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/ day

Completed N/A *Plan sheet reference (if applicable):* _____

A5.303.2.3.1 (MANDATORY) A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 12 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the *California Building Standards Code*.

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.1 (MANDATORY) 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.

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.2.1 (MANDATORY) The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.303.3.2.2 (MANDATORY) The effective flush volume of floor-mounted urinals shall not exceed 0.5 gallons per flush.

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.3.1 (MANDATORY) Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.3.2 (MANDATORY) 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 1.8 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.

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.4.1 (MANDATORY) Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi.

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.4.2 (MANDATORY) Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.4.3 (MANDATORY) Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 [rim space (inches) at 60 psi].

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.4.4 (MANDATORY) Metering faucets shall not deliver more than 0.20 gallons per cycle.

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.3.4.5 (MANDATORY) Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per cycle/20 [rim space (inches) at 60 psi].

Completed N/A *Plan sheet reference (if applicable):* _____

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5.303.4.1 (MANDATORY) Food waste disposers shall either modulate the use of water to no more than 1 gpm when the disposer is not in use (not actively grinding food waste/no-load) or shall automatically shut off after no more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water.

Completed N/A *Plan sheet reference (if applicable):* _____

5.303.6 (MANDATORY) Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code and in Chapter 6 of this code.

Completed N/A *Plan sheet reference (if applicable):* _____

5.304.1 (MANDATORY) Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources Model Water Efficient Landscape Ordinance (MEWLO), whichever is more stringent.

Completed N/A *Plan sheet reference (if applicable):* _____

5.305.1.1 (MANDATORY) All newly constructed nonresidential developments, where disinfected tertiary recycled water is available from a municipal source to a construction site, shall be provided with both a potable water supply system and a recycled water supply system. The recycled water supply system shall allow the use of reclaimed (recycled) water for aboveground and subsurface irrigation to all landscape irrigation systems.

Completed N/A *Plan sheet reference (if applicable):* _____

5.305.1.2 (MANDATORY) Recycled water supply systems for outdoor applications shall meet the requirements of this code, and the California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 1; Title 22, Division 4, Chapter 3; and Title 23, Division 2, Chapter 2.7, as applicable.

Completed N/A *Plan sheet reference (if applicable):* _____

DIVISION 5.4 MATERIAL CONSERVATION & RESOURCE EFFICIENCY

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

A5.405.4 (MANDATORY) Use materials, equivalent in performance to virgin materials with a total (combined) recycled content value (RCV) not less than 10 percent of the total material cost of the project, or use two products which meet the minimum recycled content levels in Table A5.405.4 for at least 75%, by cost, of all products in that category in the project.

Completed N/A *Plan sheet reference (if applicable):* _____

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A5.405.4.1 (MANDATORY) Total material cost is the total estimated or actual cost of materials and assembly products used in the project. The required total recycled content value for the project (in dollars) shall be determined by the following equation:

$$\text{Required Total RCV (dollars)} = \text{Total Material Cost (dollars)} \times 10 \text{ percent}$$

Completed N/A *Plan sheet reference (if applicable):* _____

A5.405.4.2 (MANDATORY) Total RCV may be determined either by dollars or percentage as noted in this section.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.405.4.3 (MANDATORY) The recycled content value of each material (RCVM) is calculated by multiplying the cost of material, as defined by the recycled content. See Equations A5.4-6 and A5.4-7.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.405.4.4 (MANDATORY) The recycled content value of assemblies is calculated by multiplying the total cost of assembly by the total recycled content of the assembly (RCA), and shall be determined by Equation A5.4-8.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.405.4.5 (MANDATORY) When Supplementary Cementitious Materials (SCMs), such as fly ash or ground blast furnace slag cement, are used in concrete, an alternate method of calculating and reporting recycled content in concrete products shall be permitted. When determining the recycled content value, the percent recycled content shall be multiplied by the cost of the cementitious materials only, not the total cost of concrete.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.405.5 (MANDATORY) Use cement and concrete made with recycled products and complying with standards outlined in A5.405.5.1 through A5.405.5.5 and comply with limits adopted in Marin County Ordinance 3717.

[Link: Marin County Ordinance 3717](#)

Completed N/A *Plan sheet reference (if applicable):* _____

5.407.1 (MANDATORY) Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1403.2 (Weather Protection), manufacturer's installation instructions or local ordinance, whichever is more stringent.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.407.2.1 (MANDATORY) Design and maintain landscape irrigation systems to prevent spray on structures.

Completed N/A *Plan sheet reference (if applicable):* _____

5.407.2.2.1 (MANDATORY) Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following:

1. An installed awning at least 4 feet in depth.
2. The door is protected by a roof overhang at least 4 feet in depth.
3. The door is recessed at least 4 feet.
4. Other methods which provide equivalent protection.

Completed N/A *Plan sheet reference (if applicable):* _____

5.407.2.2.2 (MANDATORY) Install flashings integrated with a drainage plane.

Completed N/A *Plan sheet reference (if applicable):* _____

5.408.1 (MANDATORY) Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with the reporting standards outlined by Zero Waste Marin.

[Link: Zero Waste Marin](#)

Completed N/A *Plan sheet reference (if applicable):* _____

5.408.3 (MANDATORY) 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.408.3.1 (MANDATORY) Divert to recycle or salvage at least 65 percent of nonhazardous construction and demolition waste generated at the site. Any mixed recyclables that are sent to mixed-waste recycling facilities shall include a qualified third party verified facility average diversion rate. Verification of diversion rates shall meet minimum certification eligibility guidelines, acceptable to the local enforcing agency.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.408.3.1.2 (MANDATORY) A copy of the completed waste management report or documentation of certification of the waste management company utilized shall be provided.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.410.1 (MANDATORY) Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.2 (MANDATORY) For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. All occupancies other than I-occupancies and L-occupancies shall comply with the California Energy Code as prescribed in California Energy Code Section 120.8. For I-occupancies which are not regulated by OSHPD or for I-occupancies and L-occupancies which are not regulated by the California Energy Code Section 100.0 Scope; all requirements in sections 5.410.2 through 5.410.2.6 shall apply. Commissioning requirements shall include:

1. Owner's or owner representative's project requirements.
2. Basis of design.
3. Commissioning measures shown in the construction documents.
4. Commissioning plan.
5. Functional performance testing.
6. Documentation and training.
7. Commissioning report.

Exceptions:

1. Unconditioned warehouses of any size.
2. Areas less than 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses.
3. Tenant improvements less than 10,000 square feet as described in Section 303.1.1.
4. Open parking garages of any size, or open parking garage areas, of any size, within a structure.

Note: For the purposes of this section, unconditioned shall mean a building, area, or room which does not provide heating and/or air conditioning.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.2.1 (MANDATORY) Owner's or Owner representative's Project Requirements (OPR). The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following:

1. Environmental and sustainability goals.
2. Energy efficiency goals.
3. Indoor environmental quality requirements.
4. Project program, including facility functions and hours of operation, and need for afterhours operation.

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5. Equipment and systems expectations.
6. Building occupant and O&M personnel expectations

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.2.2 (MANDATORY) A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the following systems:

1. Heating, ventilation, air conditioning [HVAC) systems and controls.
2. Indoor lighting system and controls.
3. Water heating system
4. Renewable energy systems.
5. Landscape irrigation systems.
6. Water reuse systems.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.2.3 (MANDATORY) Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning plan shall include the following:

1. General project information.
2. Commissioning goals.
3. Systems to be commissioned. Plans to test systems and components shall include:
 - a. An explanation of the original design intent.
 - b. Equipment and systems to be tested, including the extent of tests.
 - c. Functions to be tested.
 - d. Conditions under which the test shall be performed.
 - e. Measurable criteria for acceptable performance.
4. Commissioning team information.
5. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.2.4 (MANDATORY) Functional performance tests shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.410.2.5 (MANDATORY) A systems manual and systems operations training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.2.5.1 (MANDATORY) Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representative. The systems manual shall include the following:

1. Site information, including facility description, history and current requirements.
2. Site contact information
3. Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log.
4. Major systems.
5. Site equipment inventory and maintenance notes.
6. A copy of verifications required by the enforcing agency or this code.
7. Other resources and documentation, if applicable.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.2.5.2 (MANDATORY) A program for the training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:

1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces).
2. Review and demonstration of servicing/preventative maintenance.
3. Review of the information in the systems manual.
4. Review of the record drawings on the system/equipment.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.2.6 (MANDATORY) 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.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.4 (MANDATORY) Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.4.2 (MANDATORY) 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:

1. HVAC systems and controls.
2. Indoor and outdoor lighting and controls.

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3. Water heating systems.
4. Renewable energy systems.
5. Landscape irrigation systems.
6. Water reuse systems.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.4.3 (MANDATORY) Perform testing and adjusting procedures in accordance with applicable standards on each system as determined by the enforcing agency.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.4.3.1 (MANDATORY) In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balancing the system in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.4.4 (MANDATORY) After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.4.5 (MANDATORY) Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/ warranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

Completed N/A *Plan sheet reference (if applicable):* _____

5.410.4.5.1 (MANDATORY) Include a copy of all inspection verifications and reports required by the enforcing agency.

Completed N/A *Plan sheet reference (if applicable):* _____

DIVISION 5.5 ENVIRONMENTAL QUALITY

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

5.503.1 (MANDATORY) Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.503.1.1 (MANDATORY) Woodstoves and pellet stoves shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable and shall have a permanent label indicating they are certified to meet the emission limits.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.1 (MANDATORY) The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2 1999, or an average efficiency of 30 percent based on ASHRAE 52.1 1992. Replace all filters immediately prior to occupancy or, if the building is occupied during alteration, at the conclusion of construction.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.3 (MANDATORY) At the time of rough installation and during storage on the construction site until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, Sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.1 (MANDATORY) Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products as specified in subsection 2, below.
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 one 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.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.504.4.3 (MANDATORY) Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3 shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board Suggested Control Measure, and the corresponding Flat, Nonflat, or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.3.1 (MANDATORY) Aerosol paints and coatings shall meet the PWMIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.3.2 Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification
2. Field verification of on-site product containers

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.4 (MANDATORY) All carpet installed in the building interior shall meet at least one of the following testing and product requirements:

1. Carpet and Rug Institute's Green Label Plus Program;
2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as CDPH Standard Method V1.1 or Specification 01350);
3. NSF/ANSI 140 at the Gold level or higher;
4. Scientific Certifications Systems Sustainable Choice; or
5. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.4.1 (MANDATORY) All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program

Completed N/A *Plan sheet reference (if applicable):* _____

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5.504.4.4.2 (MANDATORY) All carpet adhesive shall meet the requirements of Table 5.504.4.1.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.5 (MANDATORY) 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 ARB's Air Toxics Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.). Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.5.3 (MANDATORY) Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

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

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.6 (MANDATORY) For 80 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following:

1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program;
2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010;
3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or
4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program).

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.4.6.1 (MANDATORY) Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

Completed N/A *Plan sheet reference (if applicable):* _____

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A5.504.4.7 (MANDATORY) For 90 percent of floor area receiving resilient flooring, install resilient flooring that is:

1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program;
2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010;
3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or
4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program).

Completed N/A *Plan sheet reference (if applicable):* _____

A5.504.4.7.2 (MANDATORY) Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

Completed N/A *Plan sheet reference (if applicable):* _____

A5.504.4.8 (MANDATORY) Comply with the following standards:

1. Chapters 12-13 (Standards for Insulating Material) in Title 24, Part 12, the California Referenced Standards Code,
2. The VOC-emission limits defined in 2009 CHPS criteria and listed on its High Performance Products Database.
3. California Department of Public Health 2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010

Completed N/A *Plan sheet reference (if applicable):* _____

A5.504.4.8.2 (MANDATORY) Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.504.5.3 (MANDATORY) 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 Minimum Efficiency Reporting Value (MERV) of 8. Specified 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.

Exceptions:

1. An ASHRAE 10-percent to 15-percent efficiency filter shall be permitted for an HVAC unit meeting the 2016 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.
2. Existing mechanical equipment

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.5.3.1 (MANDATORY) Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.

Completed N/A *Plan sheet reference (if applicable):* _____

5.504.7 (MANDATORY) Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent. When ordinances, regulations or policies are not in place, post signage to inform building occupants of the prohibitions

Completed N/A *Plan sheet reference (if applicable):* _____

5.505.1 (MANDATORY) Indoor moisture control. Buildings shall meet or exceed the provisions of the California Building Code, CCR, Title 24, Part 2, Section 1203 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures not applicable to low-rise residential occupancies, see Section 5.407.2 of this code.

Completed N/A *Plan sheet reference (if applicable):* _____

5.506.1 (MANDATORY) Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements for Ventilation) of the 2016 California Energy Code or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.

Completed N/A *Plan sheet reference (if applicable):* _____

5.506.2 (MANDATORY) For buildings or additions equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the 2016 California Energy Code, Section 120.1(c)4.

Completed N/A *Plan sheet reference (if applicable):* _____

5.507.4 (MANDATORY) Acoustical control. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E90 and ASTM E413 or Outdoor-

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Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2.

Exception: Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage, enclosed parking structures and utility buildings.

Completed N/A *Plan sheet reference (if applicable):* _____

5.507.4.1 (MANDATORY) Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered 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 the following locations:

1. Within the 65 CNEL noise contour of an airport

Completed N/A *Plan sheet reference (if applicable):* _____

5.507.4.1.1 (MANDATORY) Buildings exposed to a noise level of 65 dB Leq-1-hr during any hour of operation shall have building, addition or alteration 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).

Completed N/A *Plan sheet reference (if applicable):* _____

5.507.4.2 (MANDATORY) For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq -1Hr) of 50 dBA in occupied areas during any hours of operations

Completed N/A *Plan sheet reference (if applicable):* _____

5.507.4.2.1 (MANDATORY) Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior.

Completed N/A *Plan sheet reference (if applicable):* _____

5.507.4.2.2 (MANDATORY) An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.

Completed N/A *Plan sheet reference (if applicable):* _____

5.507.4.3 (MANDATORY) Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

Completed N/A *Plan sheet reference (if applicable):* _____

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5.508.1 (MANDATORY) Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.

Completed N/A *Plan sheet reference (if applicable):* _____

5.508.1.1 (MANDATORY) Install HVAC, refrigeration and fire suppression equipment that do not contain Chlorofluorocarbons (CFCs.)

Completed N/A *Plan sheet reference (if applicable):* _____

5.508.1.2 (MANDATORY) Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.

Completed N/A *Plan sheet reference (if applicable):* _____

5.508.2 through 5.508.2.6.3 (MANDATORY) 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. New refrigeration systems include both new facilities and replacement of existing refrigeration systems in existing facilities.

Completed N/A *Plan sheet reference (if applicable):* _____

DIVISION 5.5 ELECTIVE MEASURES

Enter elective measures from [2019 California Green Building Standards Code Appendix 5, Nonresidential Voluntary Measures](#):

Enter One ELECTIVE Measure from Section A5.1: Algren Measure Number: _____

Plan sheet reference (if applicable): _____

Enter One ELECTIVE Measure from Section A5.3: CALGreen Measure Number: _____

Plan sheet reference (if applicable): _____

Enter One ELECTIVE Measure from Section A5.4: CALGreen Measure Number: _____

Plan sheet reference (if applicable): _____

Enter One ELECTIVE Measure from Section A5.5: CALGreen Measure Number: _____

Plan sheet reference (if applicable): _____