



GREEN BUILDING CODE CORRECTION SHEET FOR NEWLY CONSTRUCTED NON-RESIDENTIAL BUILDINGS (2017 LAGBC)

Plan Check Submittal Date: _____

Plan Check / Permit Application Number: _____ / _____ - _____ - _____

Job Address: _____

Applicant: _____ Phone: _____

P.C. Engineer: _____ Phone: _____

E-mail: _____

INSTRUCTIONS FOR PROCEEDING WITH THE PLAN CHECK (PC) PROCESS:

1. **Review corrections marked on this Plan Check Correction Sheet**, the plans, and the calculation sheets.
2. Provide a written response or reference to details pursuant to the corrections. Location of any revisions on the plans shall be identified as part of your responses. Any of the forms requested by this document can be found on-line at <https://www.ladbs.org/forms-publications/forms/green-building>
3. Phone or email the Plan Check engineer for a verification appointment after you have addressed the corrections. Verification of corrections is done by appointment only.
4. Bring the originally checked set of plans and calculations at the time of your appointment with this correction sheet.
5. **If you have any questions or need clarification on any plan check matters, please contact a plan check supervisor at (213) 202-3400.**

ADMINISTRATIVE

1. Complete and incorporate *Mandatory Requirements Checklist for Newly Constructed Non-Residential Buildings*, Form GRN 5 (revised 01/01/2017), into the plans. (102.2)
2. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy. Refer to residential correction sheet for residential portion. (302)

PLANNING AND DESIGN

3. The *Storm Water Pollution Control*, Form GRN 1, shall be incorporated into the plans. (5.106.1)

4. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering the building. Contour lines, elevation points, and/or slope arrows may be used to show compliance with this requirement. (5.106.10)
5. State on plans that the outdoor lighting systems shall be designed and installed to comply with all of the following:
 - a. The minimum requirements in California Energy Code for Lighting Zones 1-4
 - b. Backlight, Uplight and Glare (BUG) ratings as defined in IESNA TM-15-11
 - c. Allowable BUG ratings not exceeding those shown in on Table 5.106.8. (5.106.8)
6. Provide parking summary to indicate the number of visitor parking spaces vs. tenant parking spaces along with the following parking requirements:

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

a. Show on site plan the location and number of anchored bicycle racks for short-term parking corresponding to a minimum of 5% of the total provided parking stalls for the building, with a minimum of one two-bike capacity rack. Show on site plan that the proposed anchored bicycle racks are located no more than a walking distance of 200 feet from the visitor's entrance. (5.106.4.1)

b. Show on site plan the location and number of anchored bicycle racks for long-term bicycle parking that is conveniently accessed from the street. A minimum of one bicycle space shall be provided. Acceptable parking facilities include:
 i. Covered, lockable enclosure with permanently anchored racks for bicycle;
 ii. Lockable bicycle rooms with permanently anchored racks; and
 iii. Lockable, permanently anchored bicycle lockers. (5.106.4.2)

c. Provide and show the location of required low emitting, fuel- efficient, and carpool/van pool vehicles parking spaces. The amount of these designated clean air vehicle spaces shall be based on the number of new vehicular spaces provided per Table 5.106.5.2

d. Permanent marking or a sign for the designated parking space for any combination of low-emitting, fuel- efficient, and carpool/van pool vehicles shall be provided. Show detail of such sign or marking. (5.106.5.2)

e. Construction shall facilitate the installation of electric vehicle supply equipment (EVSE). Plans shall show the following:
 i. Location of single EV or multiple EV charging space(s) per Table 5.106.5.3.3.
 ii. Location of EV charging station(s) per Table 5.106.5.3.3.
 iii. For single EV charging space, add note to plans: "A listed raceway capable of accommodating a 208/240 volt dedicated branch circuit shall be installed. The raceway shall not be less than trade size 1".
 iv. When multiple EV charging spaces are required, add note to plans: "A separate electrical plan check is required to verify the raceway method(s), wiring schematics and electrical calculations for the electrical charging system. The electrical system shall have sufficient capacity to simultaneously charge all electric vehicles at their full rated amperage."
 v. Add note to plans: "The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated

40 ampere minimum branch circuit(s) for the future installation of the EVSE." (5.106.5.3)

7. Provide computations showing that at least 25% of the total site hardscape consists of one or a combination of the following:
 a. Shade provided by trees
 i. Include plants' fact sheet justifying crown spread at 5 years maturity
 b. Hardscape material with an initial solar reflectance of at least 0.30
 i. Include manufacturer's specs for pavers or specify uncolored concrete with smooth cement finish.
 c. Open grid or permeable pavement systems
 i. Include detail of permeable system
 d. Shade provided by canopy shade systems consisting of solar panel arrays (5.106.11)

ENERGY EFFICIENCY

8. For nonresidential buildings of three stories or less, comply with the following:
 a. Designate on the roof plan solar zone area(s) with total area equal to or greater than 15% of the building's roof area. The solar zone shall be comprised of areas that have no dimension less than 5 feet and each area shall not be less than:
 i. 80 sq ft for roof areas of 10,000 sq ft or less
 ii. 160 sq ft for roof areas over 10,000 sq ft.
 b. For roof slopes > 2:12 (9.5° from horizontal), show that the solar zone is oriented between 110° and 270° of true north.
 c. The solar zone shall be free of obstructions and be setback at least two times the height of any obstruction, including but not limited to, vents, chimneys equipment, parapets, and stairwells.
 d. For roof slopes ≤ 2:12, a minimum 4 foot center line axis pathway shall be provided on both axes of the roof.
 e. For roof slopes ≤ 2:12, a minimum 4-foot straight line pathway shall be provided from the access path to roof standpipes, roof access hatches, skylights and/or ventilation hatches.
 f. For roof slopes ≤ 2:12, the solar zone shall allow for a (6-foot) (4-foot) wide clear perimeter access around the edges of the roof.
 g. For roof slopes > 2:12, the solar zone not be located higher than (18-inches)(3 feet) below the ridge and shall not be located closer than 18-inches to a hip or valley if placed on both sides of the hip or valley.

- h. For roof slopes > 2:12, provide a minimum 3 foot-wide clear access pathway (measure from the load bearing wall to the solar zone) to the ridge on all side of each roof slope where the solar zones are located.
 - i. Plans shall indicate a location for inverters and metering equipment and a pathway for routing from the solar zone to the main service panel.
 - j. Plans shall indicate a pathway for routing of plumbing from the solar zone to the water-heating system. (5.211.1, Energy Code §110.10, LAFD Requirement No.96)
9. Add note to plans: “A copy of the construction documents or a comparable document indicating the information from Energy Code Section 110.10(b) through 110.10(c) shall be provided to the occupant.” (Energy Code §110.10(d))

WATER EFFICIENCY AND CONSERVATION

10. For buildings in excess of 50,000 sq. ft., add note to plans:
- Separate submeters shall be installed as follows:*
- a. *For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day.*
 - b. *Where meters for individual buildings tenants are unfeasible, for water supplied to the following subsystems:*
 - i. *Makeup water for cooling towers where flow through is greater than 500 gpm.*
 - ii. *Makeup water for evaporative coolers greater than 6gpm.*
 - iii. *Steam and hot-water boilers with energy input more than 500,000 Btu/h.*
 - c. *For each building that uses more than 100 gallons per day on a parcel containing multiple buildings* (5.303.1.1)
11. Add note: “Separate submeters shall be installed in any building or new space within a building that is projected to consume more than 1,000 gal/day.” (5.303.1.2)
12. Provide computations demonstrating a 20 percent reduction in the building’s “water use baseline” as established in Table 5.303.2.2. New buildings having a water supply no greater than 2-inches may attach GRN 17 and install fixtures complying with the maximum flow rates listed. (5.303.2)
13. Document on drawings: “New plumbing fixtures and fittings shall not exceed the maximum allowable flow rates specified in Section 5.303.3.” (5.303.3)
14. Add note to plans: “When a shower is served by more than one showerhead, the combined flow rate of all the 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 only allow one showerhead to be in operation at a time.” (5.303.3.3)

15. Project with new landscape areas of 500 square feet or more are subject to the 2015 Model Water Efficient Landscape Ordinance (MWELo). Refer to the MWELo supplemental correction sheet for additional comments. (5.304.1)
16. Add note to plans: “For projects that include landscape work, the *Landscape Certification*, Form GRN 12, shall be completed prior to final inspection approval.” (State Assembly Bill No. 1881, 5.304.1)
17. Show location of irrigation controller(s) on plans. Irrigation controller(s) shall be either weather- or soil-based under any of the following conditions:
- a. Any newly-installed irrigation controller(s); or
 - b. On sites with 500 square feet or more of cumulative irrigated landscape areas. (5.304.3)
18. Building on site with 1,000 square feet or more of cumulative landscape area shall have separate meters or submeters for outdoor water use. (5.304.4)
19. Add the following note to plans:
- a. Locks shall be installed on all publicly accessible exterior faucets and hose bibs. (5.304.5)
 - b. For sites with over 500 square feet of landscape area, waste piping shall be arranged to permit discharge from the clothes washer, bathtub, showers, and bathroom/restrooms wash basins to be used for a future graywater irrigation system. (5.305.1)
 - c. Water used in the building for water closets, urinals, floor drains, and process cooling and heating shall come from city-recycle water if available for use within 200 feet of the property line. (5.305.2)
 - d. Cooling towers shall have a minimum of 6 cycles of concentration (blowdown) or have a minimum of 50% of makeup water supply to cooling towers come from non-potable water sources. (5.305.3)
 - e. Where groundwater is being extracted and discharged, a system for onsite reuse of the groundwater shall be developed and constructed if the groundwater will not be discharged to the sewer. (4.305.4)

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

(5.410.2.1)

20. Plans shall contain cross-sectional details showing that a weather-resistant exterior wall and foundation envelope as required by Los Angeles Building Code Section 1403.2 and California Energy Code Section 150 is provided. (5.407.1)

21. Add note on plans: “Automatic landscape irrigators shall be installed in such a way that it doesn’t spray on the building.” (5.407.2.1)

22. Show on plans how the exterior entries and openings are protected against water intrusion using features such as overhangs, awnings and/or recesses for a combined depth over the entry of at least 4 feet. (5.407.2.2.1)

23. Nonabsorbent interior floor and wall finishes shall be used within at least 2 feet around and perpendicular to exterior entries and/or opening subject to foot traffic. (5.407.2.2.1)

24. Provide details for exterior entries showing flashing integrated with a drainage plane. (5.407.2.2.2)

25. Construction waste shall be reduced by 65%. Indicate how construction waste will be handled:
a. City of Los Angeles certified hauler
b. Source separated on site (incorporate waste management plan onto plans) (5.408.1)

26. Specify on plans: “100% of excavated soil and vegetation resulting from land clearing shall be reused or recycled.” (5.408.3)

27. Identify on the plans the recycling area for the occupants. (5.410.1)

COMMISSIONING

28. The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation, known as the owner’s project requirement (OPR), shall include the following:

- a. Environmental and sustainability goals
- b. Energy efficiency goals
- c. Indoor environmental quality requirements
- d. Project program, including facility functions and hours of operation, and need for after hours operation
- e. Equipment and systems expectations
- f. Building occupant and operation and maintenance (O&M) personnel expectations

Complete Form GRN 20 and incorporate into the plans

29. The Basis of Design (BOD) document shall include the following systems:

- a. HVAC
- b. Indoor lighting and controls
- c. Water heating
- d. Renewable energy
- e. Landscape irrigation
- f. Water reuse

Complete Form GRN 21 and incorporate into the plans (5.410.2.2)

30. Provide a Commissioning Plan that includes the following:

- a. General Project information
- b. Commissioning goals
- c. Systems to be commissioned
- d. Commissioning team information
- e. Commissioning process activities, schedules, and responsible parties.

Complete Forms GRN 22 and GRN 23 and incorporate into the plans (5.410.2.3)

31. Add note to plans: “After functional performance tests are concluded, form **GRN 24** shall be completed and readily available to the field inspector prior to final approval.” (5.410.2.4)

32. A System Manual and Systems Operations Training are required. Add the following notes on the plans:

- a. “All operational aspects of the building shall be documented within a Systems Manual. This Systems Manual shall be delivered to the owner or representative.” (5.410.2.5.1)
- b. “The training of the appropriate maintenance staff for each equipment type and/or system shall be documented in the Commissioning Report. (5.410.2.5.2)

c. “Form **GRN 25** shall be completed and readily available to the field inspector prior to final approval.”

33. Add note to plans: “A complete Commissioning Report **and** Form **GRN 26** (completed) shall be provided to the owner or representative and will be readily available to the field inspector prior to the final approval. (5.410.2.6, 5.410.4.4)

TESTING AND ADJUSTING

34. Testing and adjustment is required for all new installation of any of the following systems:

a. Heating Ventilating and Air Conditioning system

- i. Describe the HVAC systems and controls
- ii. Plans shall indicate that the HVAC system and components will be tested, adjusted and balanced in accordance with one of the following standards:
 - TABB’s Construction Specification Institute Masterformat (§23 05 93 and §15990)
 - NEBB’s Standards for Testing, Adjustment, and Balancing of Environmental Systems (7th Edition)
 - AABC’s National Standards for Total System Balance (6th Edition)
 - ASHRAE’s Standard 111-2008

b. Indoor and outdoor lighting and controls

- i. Describe the types of lighting fixtures and their corresponding controls at various spaces/rooms within the building (e.g. dimming systems, occupancy sensors, programmable time switches, photocontrols, motion sensors, etc...)
- ii. Provide a narrative of the testing and adjustment procedure for the lighting controls.

c. Water heating systems

- i. Describe the type of water heating systems
- ii. Provide a narrative of the procedure for the testing and adjustment of the system (e.g. temperature readings, flow rate, etc...)

d. Renewable energy systems

- i. Describe the type of system (e.g. solar photovoltaic, wind turbines, etc...)
- ii. Provide a narrative of the testing and adjustment procedure for the system

e. Landscape irrigation systems

- i. Describe the types of irrigators and controller(s)
- ii. Provide a narrative of the the testing and adjustment procedure for the irrigation system, including but not limited to, pressure tests, water coverage, and proper controller function

f. Water reuse systems

- i. Describe the greywater or reclaimed/recycled water system
- ii. Provide a narrative of the testing and adjustment procedure for the system

(5.410.4.2, 5.410.4.3)

35. Add note to plans: “A final report for the testing and adjusting of all new systems shall be completed and provided to the field inspector prior to final approval. This report shall be signed by the individual responsible for performing these services.” (5.410.4.4)

36. Add note to plans: “An *Operation & Systems Manual*, shall be provided to the owner or representative and to the field inspector at the time of final inspection.” (5.410.4.5)

ENVIRONMENTAL QUALITY

37. Plans shall state that the fireplace is direct-vent, sealed combustion type. Incorporate manufacturer’s specifications onto plans. (5.503.1)

38. Wood burning fireplaces and other wood burning devices are prohibited. (AQMD Rule 445)

39. Add note to plans: “If the HVAC system is used during construction, use return air filters with a MERV of 8. Replace all filters immediately prior to occupancy.” (5.504.1.3)

40. Add note to plans: “All duct and other related air distribution component openings shall be covered with tape, plastic, or sheetmetal until the final startup of the heating, cooling and ventilating equipment.” (5.504.3)

41. Add note to plans: “Architectural paints and coatings, adhesives, caulks and sealants shall comply with the Volatile Organic Compound (VOC) limits listed in Tables 5.504.4.1- 5.504.4.3.” (5.504.4.1- 5.504.4.3)

42. The *VOC and Formaldehyde Limits*, Form GRN 11, shall be incorporated into the plans.

43. Add the following note(s) to plans:

a. The *VOC Content Verification Checklist*, Form GRN 2, shall be completed and verified prior to final inspection approval. The manufacturer’s specifications showing VOC content for all applicable products shall be readily available at the job site and be provided to the field inspector for verification. (5.504.4.3.2)

b. All new carpet installed in the building interior shall meet the testing and product requirements of one of the following:

- i. Carpet and Rug Institute’s Green Label Plus Program
- ii. California Department of Public Health’s Specification 01350
- iii. NSF/ANSI 140 at the Gold level or higher
- iv. Scientific Certifications Systems Sustainable Choice

v. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 and listed in the CHPS High Performance Product Database.

- (5.504.4.4) edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c). (5.506.2)
- c. All new carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program. (5.504.4.4.1)
- d. New hardwood plywood, particle board, and medium density fiberboard composite wood products used in the interior or exterior of the building shall meet the formaldehyde limits listed in Table 5.504.4.5. (5.504.4.5)
- e. The *Formaldehyde Emissions Verification Checklist*, Form GRN 3, shall be completed prior to final inspection approval. The manufacturer's specifications showing formaldehyde content for all applicable wood products shall be readily available at the job site and be provided to the field inspector for verification. (5.504.4.5)
- f. 80% of the total area receiving resilient flooring shall comply with one or more of the following:
- Certified as a CHPS Low-Emitting Material in the CHPS High Performance Products Database
 - Certified under UL GREENGUARD Gold
 - Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program
 - Meet the California Department of Public Health's Specification 01350
- (5.504.4.6)
- g. An air filter with a Minimum Efficiency Reporting Value (MERV) of 8 or higher shall be installed in the mechanical system for outside and return air prior to occupancy. (5.504.5.3)
- h. Mechanically ventilated buildings within 1,000 feet of a freeway shall provide regularly occupied areas of the building with a MERV 13 filter for outside and return air. 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. (5.504.5.3)
- i. Designated outdoor smoking area shall be at least 25 feet from an outdoor air intake or operable windows. (5.504.7)
- j. The building shall meet or exceed the provisions for mechanical ventilation of Section 1203 of the Los Angeles Building Code. (5.505.1)
- k. Buildings that use Demand Control Ventilation shall have CO₂ sensors and ventilation controls installed in accordance with the requirements of the current
44. The building is within the 65 CNEL noise contour of an airport; comply with either of the following:
- Provide construction sections showing that the walls and roof ceiling assemblies are built to achieve an STC rating of at least 50 (or OITC of no less than 40) and that exterior windows achieve a minimum STC rating of 40 (or OITC of 30).
 - Provide an acoustical analysis approved by the architect or engineer of record documenting that the interior noise environment attributable to exterior sources does not exceed L_{eq}-1Hr of 50 dBA in occupied areas during any hour of operation. (5.507.4)
45. The building is within 1,000 feet of a freeway right of way; noise readings shall be performed and documented by an acoustical engineer. If noise level readings of 65 dB L_{eq}-1-hr are documented during any hour of operation, comply with either of the following:
- Provide construction sections showing that the walls and roof ceiling assemblies are built to achieve an STC rating of at least 45 (or OITC of no less than 35) and that exterior windows achieve a minimum STC rating of 40 (or OITC of 30).
 - Provide an acoustical analysis approved by the architect or engineer of record documenting that the interior noise environment attributable to exterior sources does not exceed L_{eq}-1Hr of 50 dBA in occupied areas during any hour of operation. (5.507.4)
46. If the building is not exposed to a noise level of 65dB L_{eq}-1-hr during any hour of operation, clearly state this on the plans. Otherwise, comply with either of the following:
- Provide construction sections showing that the walls and roof ceiling assemblies are built to achieve an STC rating of at least 45 (or OITC of no less than 35) and that exterior windows achieve a minimum STC rating of 40 (or OITC of 30).
 - Provide an acoustical analysis approved by the architect or engineer of record documenting that the interior noise environment attributable to exterior sources does not exceed L_{eq}-1Hr of 50 dBA in occupied areas during any hour of operation. (5.507.4)
47. Acoustical control compliance using the prescriptive method, shall have sound-rated assembly details specify the STC (or OITC) rating, the construction used to achieve

such rating, and the reference document used to justify the rating (e.g. "Ga File No." from the Gypsum Manual, Item # from LADBS's Information Bulletin P/BC 2011-069, Test Report from an L.A. City Approved Testing Agency, Section # from Office of Noise Control's STC Catalog). (5.507.4.1)

assemblies. Provide detailing showing a construction achieving an STC of at least 40. (5.507.4.3)

48. Acoustical control compliance using the performance method shall show the site features and construction materials used in the building envelope on the plans, as determined by the acoustical report. The acoustical report shall be incorporated into the plans. (5.507.4.2)

51. Add note to plans: "The HVAC, refrigeration, and fire suppression equipment shall not contain CFC or Halons. (5.508.1)

49. Demising walls and floor-ceiling assemblies separating two tenant spaces shall be identified as sound-rated assemblies. Provide detailing showing a construction achieving an STC of at least 40. (5.507.4.3)

52. For retail food stores of 8,000 sq. ft. or more of conditioned area that have a commercial refrigeration system, add the following note to plans:

Leak reduction measures in accordance with LAGBC §5.508.2 shall apply to refrigeration systems with a global-warming potential (GWP) of 150 or greater. Separate mechanical plan check is required. (5.508.2)

50. Walls and floor-ceiling assemblies separating tenant spaces from public spaces shall be identified as sound-rated

ADDITIONAL CORRECTIONS / COMMENTS

No.		Code Sec. No.
	When the building plans are complete, please make an appointment with your plan check reviewer. Bring the final set of plans along with this correction sheet and marked set for Green Building approval and permit clearance.	

No.		Code Sec. No.