



GREEN BUILDING CODE CORRECTION SHEET FOR ADDITIONS AND ALTERATIONS TO 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.
3. Phone or email the Plan Check engineer for a verification appointment after you have addressed the corrections.
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: Additions and Alterations to Non-Residential Buildings, Form GRN 10 (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. (5.106.10)
5. Show on plans, the total amount of new parking spaces provided. (5.106.4)
6. If 10 or more new parking spaces are provided:
a. Show on the site plan the location and number of anchored bicycle racks for short-term parking corresponding to a minimum of 5% of the newly provided parking stalls, with a minimum of one two-bike capacity rack. (5.106.4.1.1)

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.

- b. Show on the site plan the location and number of anchored bicycle racks for long-term bicycle parking corresponding to a minimum of 5% of the newly provided parking stalls, with a minimum of one. Such racks shall be conveniently accessed from the street. Acceptable bicycle parking facilities shall include one of the following:
  - 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. (5.106.4.1.2)
- c. Provide and show the location of the designated parking spaces for any combination of low emitting, fuel- efficient, and carpool/van pool vehicles. 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. (5.106.5.2.1)
- f. For roof slopes  $\leq 2:12$ , 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)
- 8. 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))

## ENERGY EFFICIENCY

- 7. Additions to nonresidential buildings of three stories or less resulting in 2,000 s.f. or more of new roof area shall 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  $> 2:12$  ( $9.5^\circ$  from horizontal), show that the solar zone is oriented between  $110^\circ$  and  $270^\circ$  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  $\leq 2:12$ , a minimum 4 foot center line axis pathway shall be provided on both axes of the roof.
  - e. For roof slopes  $\leq 2:12$ , 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.

## WATER EFFICIENCY AND CONSERVATION

- 9. For additions 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)
- 10. Add note: “Separate submeters shall be installed in any new addition or space within the addition that is projected to consume more than 1,000 gal/day.” (5.303.1.2)
- 11. 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)

12. Attach GRN 17 and comply with the listed maximum flow rates or provide computations demonstrating a 20 percent reduction in the building's "water use baseline" as established in Table 5.303.2.2. (5.303.2)
13. 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." (5.303.3.3.2)
14. Rehabilitated landscapes of 2,500sqft and 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)
15. 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)
16. 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)
17. 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)
18. Add note to plans: "Locks shall be installed on all publicly accessible exterior faucets and hose bibs." (5.304.5)
19. For buildings on sites with at least 500 square feet of new landscape area and where the main building's drain is not replaced, add note to plans: "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)
20. For buildings on sites with at least 500 square feet of new landscape area and where the entire potable water system is being replaced, add note to plans: "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)

## MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

21. 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)
22. 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)
23. Show on plans how the new 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)
24. Nonabsorbent interior floor and wall finishes shall be used within at least 2 feet around and perpendicular to new exterior entries and/or openings subject to foot traffic. (5.407.2.2.1)
25. Provide details for new exterior entries showing flashing integrated with a drainage plane. (5.407.2.2.2)
26. 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)
27. Non-residential additions and alterations shall require verification that California prohibited Universal Waste materials are disposed of properly and diverted from landfills. (5.408.2)
28. Specify on plans: "100% of excavated soil and vegetation resulting from land clearing shall be reused or recycled." (5.408.3)
29. For additions resulting in an increase in floor area of 30% or more, identify on the plans the recycling area for the occupants. (5.410.1)

## TESTING AND ADJUSTING

30. Testing and adjustment is required for all new installation of any of the following systems:
  - a. **Heating Ventilating and Air Conditioning system**

## ENVIRONMENTAL QUALITY

- 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 (7<sup>th</sup> Edition)
    - AABC's National Standards for Total System Balance (6<sup>th</sup> 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 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)
31. Add note to plans: "A final report for the testing and adjusting of all new systems shall be completed prior to final approval by the field inspector. This report shall be signed by the individual responsible for performing these services." (5.410.4.4)
32. 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)
33. Plans shall state that the fireplace is direct-vent, sealed combustion type. Incorporate manufacturer's specifications onto plans. (5.503.1)
34. Wood burning fireplaces and other wood burning devices are prohibited. (AQMD Rule 445)
35. In existing developments, only cleaner wood burning devices are allowed. The devices that are allowed shall be either US EPA Phase II-certified wood heaters, pellet-fueled heaters, or ASTM E 1602-03 defined masonry heaters. (AQMD Rule 445)
36. Add note to plans: "If the new 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)
37. Add note to plans: "All duct and other related air distribution component openings shall be covered with tape, plastic, or sheet metal until the final startup of the heating, cooling and ventilating equipment." (5.504.3)
38. 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)
39. The *VOC and Formaldehyde Limits*, Form GRN 11, shall be incorporated into the plans.
40. 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)

- 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:
  - i. Certified as a CHPS Low-Emitting Material in the CHPS High Performance Products Database
  - ii. Certified under UL GREENGUARD Gold
  - iii. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program
  - iv. 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 building entries, outdoor air intakes, 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. Additions to buildings that use Demand Control Ventilation shall have CO<sub>2</sub> sensors and ventilation controls installed in accordance with the requirements of the current edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c). (5.506.2)

- 41. The building is within the 65 CNEL noise contour of an airport; comply with either of the following:
  - a. Provide construction sections showing that the new 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 new exterior windows achieve a minimum STC rating of 40 (or OITC of 30).
  - b. Provide an acoustical analysis approved by the architect or engineer of record documenting that the interior noise environment at the addition/alteration envelope attributable to exterior sources does not exceed L<sub>eq</sub>-1Hr of 50 dBA in occupied areas during any hour of operation. (5.507.4)
- 42. 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<sub>eq</sub>-1-hr are documented during any hour of operation, comply with either of the following:
  - a. Provide construction sections showing that the new 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 new exterior windows achieve a minimum STC rating of 40 (or OITC of 30).
  - b. Provide an acoustical analysis approved by the architect or engineer of record documenting that the interior noise environment at the addition/alteration envelope attributable to exterior sources does not exceed L<sub>eq</sub>-1Hr of 50 dBA in occupied areas during any hour of operation. (5.507.4)
- 43. If the building is not exposed to a noise level of 65dB L<sub>eq</sub>-1-hr during any hour of operation, clearly state this on the plans. Otherwise, comply with either of the following:
  - a. Provide construction sections showing that the new 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 new exterior windows achieve a minimum STC rating of 40 (or OITC of 30).
  - b. Provide an acoustical analysis approved by the architect or engineer of record documenting that the interior noise environment at the addition/alteration envelope attributable to exterior sources does not

exceed  $L_{eq}$ -1Hr of 50 dBA in occupied areas during any hour of operation. (5.507.4)

44. 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 2008-069, Test Report from a L.A. City Approved Testing Agency, Section # from Office of Noise Control's STC Catalog). (5.507.4.1)

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

46. New 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)

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

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

49. For new commercial refrigeration systems in retail food stores of 8,000 sq. ft. or more of conditioned area, 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)*

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### 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.