

**LOS ANGELES' DRAFT ORDINANCE FOR
EXISTING BUILDING ENERGY AND WATER EFFICIENCY (EBEWE)**

Sample proposed retro-commissioning requirements
(Derived from New York City's Local Law 87)

The owner shall ensure that retro-commissioning is performed on the base building systems of a covered property prior to filing a summary retro-commissioning report as required by this ordinance. Retro-commissioning shall be performed by or under the supervision of a retro-commissioning professional, in accordance with rules promulgated by the manager. Such rules, at a minimum, shall identify appropriate professionals and ensure that sufficient analysis, corrections and testing have been done so that the base building systems meet the following criteria demonstrating efficient operation:

1. Operating protocols, calibration, and sequencing:
 - 1.1. HVAC temperature and humidity set points and setbacks are appropriate and HVAC operating schedules reflect major space occupancy patterns and the current facility requirements.
 - 1.2. HVAC sensors are properly calibrated.
 - 1.3. HVAC controls are functioning and control sequences are appropriate for the current facility requirements.
 - 1.4. Loads are distributed equally across equipment when appropriate (i.e. fans, boilers, pumps, etc. that run in parallel).
 - 1.5. Ventilation rates are appropriate for the current facility requirements.
 - 1.6. System automatic reset functions are functioning appropriately, if applicable.
 - 1.7. Adjustments have been made to compensate for oversized or undersized equipment so that it is functioning as efficiently as possible.
 - 1.8. Simultaneous heating and cooling does not occur, unless intended.
 - 1.9. HVAC system economizer controls are properly functioning, if applicable.
 - 1.10. The HVAC distribution systems, both air and water side, are balanced, with the exception of tenant-owned systems.
 - 1.11. Light levels are appropriate to the task.
 - 1.12. Lighting sensors and controls are functioning properly according to occupancy, schedule, and/or available daylight.
 - 1.13. Domestic hot water systems have been checked to ensure proper temperature settings.
 - 1.14. Water pumps are functioning as designed.
 - 1.15. System water leaks have been identified and repaired (booster pumps, backflow preventers, trap primes, strainers, and makeup water).
 - 1.16. Fixture water leaks have been identified and repaired (tanks, bowls, flush valves, urinals, showerheads, faucets, laundry systems, and drinking fountains).
 - 1.17. Equipment water leaks have been identified and repaired (kitchen, lab, and medical equipment)

- 1.18. Exterior water leaks have been identified and repaired (irrigation system, pools, fountains, and spas).
- 1.19. Steam quenching temperature is set no lower than allowed per local law.
- 1.20. Cooling tower cycles of concentration are set to minimize amount of blow down from the condenser water system.
- 1.21. Water treatment conductivity controller is functioning as designed.
- 1.22. Domestic water make-up supply to HVAC systems is functioning as designed.
- 1.23. Protocols are in place for monitoring for leaks in open-loop and closed-loop heating and cooling systems.
- 1.24. There is no improper use of domestic water to supplement cooling functions.
- 1.25. Outlet temperature of single pass-cooling systems is functioning as designed.
- 1.26. Domestic water make-up supply to recycled water systems, if applicable, is functioning as designed.
- 1.27. Plumbing fixtures are performing per nameplate specifications and are operating at approved American Society of Mechanical Engineers (ASME) rating.
- 1.28. System water pressure is within approved pressure range.
- 1.29. Automatic fixtures and flush valves sensors are properly calibrated.
- 1.30. Flow restrictors are functioning properly (faucets and showerheads).
- 1.31. Self-closing hose nozzles are installed and functioning properly (interior and exterior).
- 1.32. Irrigation controls, timers and rain sensors are functioning properly and in accordance with local regulation.
- 1.33. Swimming pool, fountain, and spa timers and controls are properly set, temperature setpoint is optimized to limit evaporation, and recirculation systems and makeup water are functioning as-designed.
- 1.34. Kitchen hood wash down cycle is functioning as-designed.
2. Cleaning and repair:
 - 2.1. HVAC equipment (vents, ducts, coils, valves, soot bin, etc.) is clean.
 - 2.2. Filters are clean and protocols are in place for replacement.
 - 2.3. Light fixtures are clean.
 - 2.4. Motors, fans, and pumps, including components such as belts, pulleys, and bearings, are in good operating condition.
 - 2.5. Steam traps have been replaced as required to maintain efficient operation, if applicable.
 - 2.6. Manual overrides on existing equipment have been remediated.
 - 2.7. Boilers have been tuned for optimal efficiency, if applicable.
 - 2.8. Exposed hot and chilled water and steam pipes three (3) inches or greater in diameter with associated control valves are insulated in accordance with the standards of the current International Energy Conservation Code.
 - 2.9. In all accessible locations, sealants and weather stripping are installed where appropriate and are in good condition.

- 2.10. Exhaust ventilation systems do not have leakage gaps at the connection to the intake registers or at the connections to the roof exhaust vents.
- 2.11. Swimming pool and spa covers are in good repair, and protocol is in place to replace.
- 2.12. Swimming pool and spa filters are in good repair and protocol is in place to replace.
3. Training and documentation:
 - 3.1. Permits for all HVAC, electrical and plumbing equipment are in order.
 - 3.2. Critical operations and maintenance staff have received appropriate training, which may include labor/management training, on all major equipment and systems and general energy and water conservation techniques.
 - 3.3. Operational and maintenance record keeping procedures (log books, computer maintenance records, etc.) have been implemented
 - 3.4. The following documentation is on site and accessible to the operators: the operations and maintenance manuals, if such manuals are still available from the manufacturer, the maintenance contracts, and the most recent retro-commissioning report.
 - 3.5. Ensure that staff has been trained in water efficiency protocols.
 - 3.6. Ensure that protocol is in place to monitor all existing utility meters.
 - 3.7. Ensure that protocol is in place to read, monitor, and document all existing sub-meters, and a replacement protocol is in place.