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STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

2015 Washington State Energy Code Development Energy Code Proposal Short Form

For editorial **Coordination, Clarifications & Corrections** only,
without substantive energy or cost impacts

Code being amended: [Commercial](#) Provisions [Residential](#) Provisions
(A MS Word version of the code is linked to the name)

Code Section # C405.2.1 Occupant Sensor Controls

Brief Description:

Supplemental submission for 21 GP1-93 with consensus language changes from a small group discussion.

Prior proposal had been to eliminate the prescriptive list of spaces clearly subject to the use of occupant sensor controls in the IECC. Some of these were moved to a subsequent section. The goal of the change is understandable, but we suggest that the wording remain aligned with IECC text to simplify use of the code document for intermittent users, including those who may be practicing in Washington from other states. Keeping the language uniform, where reasonable, simplifies use for all.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

Note: Formatting is may not be perfect.

C405.2.1 Occupant sensor controls. Occupant sensor controls shall be installed to control lights in the following space types and in compliance with Sections C405.2.1.1 through C405.2.1.6.:

1. Classrooms/lecture/training rooms.
2. Conference/meeting/multipurpose rooms.
3. Copy/print rooms.
4. Lounge/breakrooms.
5. Enclosed offices.
6. Open plan office areas.
7. Restrooms.
8. Storage rooms.
9. Locker rooms.

10. Other spaces 300 square feet (28 m²) or less that are enclosed by floor-to- ceiling height partitions.

11. Warehouse storage areas.

12. Enclosed fire-rated stairways.

13. Service corridors.

14. Covered parking areas.

15. Library stacks

~~Occupant sensor controls in warehouse storage areas, stairways, corridors and library stacks shall comply with Section C405.2.1.2. Occupant sensor controls in open plan office areas shall comply with Section C405.2.1.3. Occupant sensor controls in covered parking areas shall comply with Section C405.2.1.4.~~

~~Occupant sensors in fire-rated stairways shall comply with Section C405.2.1.5.~~

Occupant sensor controls for all other spaces shall comply with Section C405.2.1.1.

Exceptions:

1. Corridors in manufacturing facilities.
2. General lighting and task lighting in shop and laboratory classrooms.
- 2.3. Luminaires that are required to have specific application controls in accordance with Section C405.2.6 unless specifically required to comply with this section by Section C405.2.6.

NB: There seems to be general agreement to delete 3.4 from a different change request.

~~3.4. Digital timer switch controls may be provided in lieu of occupant sensor controls in the following space types if under 300 square feet: copy/print rooms, storage rooms and janitorial closets.~~

~~Digital timer switches shall comply with the following:~~

~~3.1.4.1. Turn lights on or off with operation of a button, switch or other manual means.~~

~~3.2.4.2. Automatically turn lights off within 15 minutes of the lights being turned on. The means for setting the time delay shall not be visible on the front of the switch.~~

~~3.3.4.3. The switch shall provide both audible and visual indication of impending time-out of the the switch. Visual indication shall consist of turning the lights momentarily off, and then back on.~~

C405.2.1.1 Occupant sensor control function. Occupant sensor controls for the space types listed ~~in this Section~~ Section C405.2.1 shall comply with all of the following:

1. They shall be configured to automatically turn off lights within 20 minutes of all occupants leaving the space.

2. They shall be manual on or shall be configured to automatically turn the lighting on to not more than 50 percent power.

2.3. They shall incorporate a manual control to allow occupants to turn off lights.

Exception: Full automatic-on controls with no manual control shall be permitted ~~to control lighting in public corridors, interior parking areas, stairways, restrooms, locker rooms, library stacks, primary building entrance areas and lobbies, and areas where manual-on operation would endanger the occupant safety or security of the room or building occupants.~~

3.4. They shall incorporate a manual control to allow occupants to turn lights off.

4. This section applies to the following space types:

4.1. Classrooms/lecture/training rooms.

4.2. Conference/meeting/multipurpose rooms.

4.3. Copy/print rooms.

4.4. Lounge/breakrooms.

4.5. Enclosed offices.

4.6. Restrooms.

4.7. Storage rooms.

4.8. Locker rooms.

4.9. Other spaces 300 square feet (28 m²) or less that are enclosed by floor to ceiling height parti

C405.2.1.2 Occupant sensor control function in warehouses, storage areas and library stacks ~~and service corridors. Occupant sensor controls~~ Lighting in library stacks and warehouse storage areas shall be controlled as follows ~~shall be configured to comply with all of the following:~~

1. Lighting in each aisleway or stack shall be controlled independently of lighting in all other aisleways and open areas.

1.2. Occupant sensors shall automatically reduce lighting power within each controlled area by not less than to an unoccupied setpoint of not more than 50 percent within 20 minutes of after all occupants leaving the have left the controlled area.

2. Control lighting in each aisleway and corridor independently, and shall not control lighting beyond the aisleway or corridor being controlled by the sensor.

3. Lights which are not turned off by occupant sensors shall be turned off by time-switch time schedule sweep to off. Control automatically turn lighting off within 20 minutes of all occupants leaving the space, or comply

with complying with Section C405.2.2 to turn lighting off when the building is vacant.

4.3 Restore lighting to full power or target light level when occupants enter the space.

54. A manual control shall be provided to allow occupants to turn off lights in the space.

C405.2.1.3 Occupant sensor control function in open plan office areas. Occupant sensor controls in open plan office spaces less than 300 square feet (28 m²) in area shall comply with Section C405.2.1.1.

Occupant sensor controls in all other open plan office spaces shall be configured to comply with all of the following:

1. General lighting is controlled separately in control zones with floor areas not greater than 600 square feet (55 m²) within the open plan office space.

1.2. General lighting in each control zone shall be permitted to automatically turn on upon occupancy within the control zone. General lighting in other unoccupied zones within the open plan office space shall be permitted to turn on to not more than 20 percent of full power or remain unaffected.

3. Automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the open plan office space.

NB: This note refers to an exception that will likely be deleted.

~~Exception: Where the general lighting is turned off by time switch controls comply with Section C405.2.2.1.~~

~~2.4. General lighting power in each control zone shall turn off or uniformly reduce lighting power is reduced by not less than 80 to an unoccupied setpoint of not more than 20 percent of the full zone general lighting power within 20 minutes of after all occupants leaving that have left the control zone. Control functions that switch control zone lights completely off when the zone is unoccupied meet this requirement.~~

~~3. Daylight responsive controls activate open plan office space general lighting or control zone general lighting only when occupancy for the same area is detected.~~

C405.2.1.4 Occupant sensor control function in parking garages. Occupant sensor controls shall be configured to comply with all of the following:

1. Lighting power of each luminaire shall be automatically reduced by a minimum of 30 percent when there is no vehicle or pedestrian activity detected within a lighting zone for 20 minutes. Lighting zones for this requirement shall be no larger than 3600 square feet.

Exceptions: Lighting in daylight transition zones and ramps without parking.

~~4.1 Covered parking garages with a total lighting power less than 0.07 watts per square foot.~~

2. Where time switch controls in accordance with Section C405.2.2 are not installed, the occupant

sensor shall automatically turn all the lighting off within 20 minutes of all occupants leaving the space and restore lighting to full power when occupants enter the space.

C405.2.1.5 Occupant sensor control function in enclosed fire rated stairways. Occupant sensor controls shall be configured to automatically reduce lighting power by not less than 50 percent when no occupants have been detected in the stairway for a period not exceeding 20 minutes and restore lighting to full power when occupants enter the stairway. All portions of stairways shall remain illuminated to meet the requirements of Section 1009 of the International Building Code when the lighting power is reduced.

C405.2.1.6. Occupant sensor control function in corridors. Occupant sensor controls in corridors shall uniformly reduce lighting power to an unoccupied setpoint of not more than 50 percent of full power within 20 minutes after all occupants have left the space.

Exception: Corridors provided with less than two foot-candles of illumination on the floor at the darkest point with all lights on.

Purpose of code change:

Simplification for all users.

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Instructions: For use with Coordination, Clarifications & Corrections ONLY. Send this form as an email attachment, along with any other documentation available, to: sbcc@des.wa.gov. For further information, call the State Building Code Council at 360-407-9277.