

# Seattle Permits

— part of a multi-departmental City of Seattle series on getting a permit

## Controlled Receptacles

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### What the Seattle Energy Code Requires

“Controlled receptacles” are electrical outlets that are automatically turned on and off by occupancy sensors or time switch systems. Seattle Energy Code Section C405.10 requires at least 50 percent of all outlets to be controlled receptacles in the following space types:

- Private offices
- Open offices
- Conference rooms
- Classrooms
- Print/copy rooms
- Break rooms
- Individual workstations (including office cubicles)

Individual workstations include those formed by modular partitions and “office cubicles.” Controlled receptacles are not required in lobbies, circulation areas, or other associated areas.

This list defines the function of the various spaces, not just the room labels on the plans. So an office area labeled “work space,” or a classroom labeled “student learning,” would still have to follow the rules for office or classroom.

At least 50 percent of branch circuit feeders serving modular furniture that’s not shown on permit documents must have these controls.

There are some exceptions to the requirement for controlled receptacles. As stated in the Seattle Energy Code, “Receptacles designated for specific equipment requiring 24-hour operation, for building maintenance functions, or

for specific safety or security equipment” are exempt. Thus, an outlet intended for a wall clock, a security camera, or a vacuum cleaner does not have to be on a controlled circuit or located near a controlled outlet.

### Operation of Controlled Receptacles

Receptacles can be controlled either by occupancy sensors or by automatic time switch. Occupancy sensors must be set to turn off power after 20 minutes without detecting people in the space. Several types of occupancy sensors are available, including passive infrared, ultrasonic, microwave and various combinations. Be sure to select a type that will work correctly for each particular space, especially where office partitions or other objects in the room might interrupt the line of sight from the detector to the occupants. Carefully locate sensors so that they won’t be blocked by columns, furniture, door swings, and the like.

Automatic time switch systems must be able to program an independent schedule for each area of the building, with no individual area larger than 5,000 square feet. Provide each of those areas with an override switch that turns on power to the controlled receptacles in that area for up to two hours. The override function allows occupants to work late or to have an event off-hours. (An automatic time switch is a lighting control system that turns lights on and off on a predetermined schedule, and in this case is extended to include receptacle control.)

### Configuration of Controlled Receptacles

One way to comply with this requirement is to split each duplex receptacle so that the top half is a controlled receptacle, and the bottom half is not controlled. This is the most convenient and intuitive for users, who can simply learn to use the bottom half for equipment that needs to stay on 24/7.

Another option is to locate a controlled duplex receptacle within 12 inches of each non-controlled duplex. Within a single modular office cubicle, the duplex receptacles are allowed to be up to 72 inches apart.

## How Controlled Receptacles Can Interact with Lighting Controls

Lighting must be controlled by occupancy sensors in classrooms, private offices, print/copy rooms and break rooms. In an open office, lighting can also be controlled by a time switch system with a two-hour override switch. These lighting controls and override switches could potentially also be used to operate the controlled outlets in those spaces, so that the lights and the controlled plug loads would turn off and on together. Individual override switches are not allowed to control more than 2,500 square feet for lighting, so that limit also applies to the receptacles when the two controls are combined.

## Are Controlled Receptacles Required for Alterations?

In general, controlled receptacles are required in alterations where electrical outlets are being added or replaced in the room types listed. The following clarifying exceptions can be found in Seattle Energy Code Section C503.7.7 for alteration projects:

- Controlled receptacles are not required in alterations smaller than 5,000 square feet.
- Controlled receptacles are not required for existing “office cubicles” or modular partitions that are moved or reconfigured within the same space.
- Outlets that are specifically intended for 24-hour operations, building maintenance, or safety and security functions don’t have to be controlled receptacles, and don’t have to be located close to non-controlled receptacles. Just as for new construction format, this exempts electrical outlets intended for clocks, security cameras, vacuum cleaners, computer servers and the like.

Existing electrical outlets that remain in place do not have to be converted to controlled receptacles.

A wi-fi enabled “smart plug” system may be a viable option for alterations projects, as opposed to hard-wired controls, provided the system meets both energy code and electrical code requirements.

## Where to Find the Code Language

- **2021** Seattle Energy Code, [Chapter 4](#)
- **C405.10** Automatic receptacle control lists the rooms and spaces that require receptacle controls.
- **C405.10.1** Automatic receptacle control function specifies how the controls should work.
- **C405.13** Commissioning clarifies that controlled receptacles must be commissioned.
- **C408.1.2.3** Functional performance testing – sampling provides rules for sampling of controlled receptacles in commissioning.
- **C408.4** Controlled receptacle and lighting control system commissioning has the thresholds and requirements for commissioning controlled receptacles. Note that the thresholds are governed by the extent of lighting systems, regardless of the number of controlled receptacles.
- **Chapter 5** of the 2021 [Seattle Energy Code](#)
- **C501.6** Commissioning outlines requirements for commissioning of altered systems in existing buildings.
- **C503.7.7** Controlled receptacles has rules for adding controlled receptacles in alteration projects.

## Useful Definitions in Chapter 2

- **Automatic Control Device:** A device capable of automatically turning loads off and on without manual intervention
- **Controlled Receptacle:** An electrical receptacle that is controlled by an automatic control device

## Access to Information

Links to electronic versions of SDCI Tips, Director's Rules, and the Seattle Municipal Code are available on the "Tools and Resources" page of our website at [www.seattle.gov/scdi](http://www.seattle.gov/scdi).