

# **Energy Performance Compliance**

## ***as directed by the King County Strategic Climate Action Plan (SCAP)***

2015 SCAP: The *Buildings and Facilities Energy* chapter of the SCAP includes a Priority Action to: "Maximize energy efficiency in new King County facility projects. All King County government capital projects with energy-consuming equipment shall meet the equivalent energy performance of the city with the most stringent energy code in the county."

This Priority Action currently calls for all King County government construction to be built to the efficiency performance of Seattle's energy code, which is the most stringent commercial energy code in the county. Because it would be unreasonable for projects being built outside of Seattle to truly follow the energy code from two jurisdictions, this checklist has been developed. The intent is for projects to follow all permitting, etc. for the jurisdiction where the construction is taking place, but to design and construct facilities to a higher efficiency in-line with Seattle's more advanced code, by exceeding baseline code requirements for the sections below.

**Projects that check all boxes in the Seattle code section are considered in compliance with this SCAP Priority Action. This checklist should initially be reviewed at 30% design and confirmed at completion**

## **2015 Commercial Energy Code Highlights – Seattle**

All Seattle provisions highlighted in red

Y N/A

**(ALL items marked "N/A" must be justified/detailed on back of sheet)**

- C303.1.5 – New default value table for spandrel panel U-factors.
- C401.3 – Target Performance Path – the nation's first "outcome-based code."
- C402.1.3 – New exception for non-conditioned stair and elevator shafts in parking garages regarding insulation R-value.
- Table C402.1.3 – Envelope U-values more stringent than state code.
- C402.4 – Requires choice between very high-performance glazing or a heating system *other than* fossil fuel or electric resistance, typically a heat pump system.
- C402.5 – Leakage test standard reduced from 0.40 cfm/sf to 0.30 cfm/sf.
- C405.2.5 – In Seattle, lighting in enclosed stairwells and parking garages is required to dim at least 50% when no one is detected in the space for some period of time.
- Table C405.4.2 – Interior lighting power allowances reduced 20% from the 2012 State code, and will be reduced another 10% in 2018.
- C407.2.1 – Requires projects using the modeling compliance path to provide progressively better overall energy efficiency for each percentage of glazing above 45%. So a building with 55 or 60% glazing would have to be significantly better overall.
- C411 – For 5,000+ sq. ft. buildings, there is a renewable energy requirement of 70 watts of photovoltaics (solar panels) per 1,000 square feet of conditioned floor area. Exceptions allow substitution with high-efficiency HVAC equipment, additional heat recovery, or improved building envelope.
- C412 – Requires a solar zone
- C503.4.6 – Requires upgrade of either the heating system or the building envelope for "substantial alterations" or alterations where the heating equipment and most of the ductwork are replaced.
- C503.8 – "Substantial alterations," generally defined as projects that significantly extend the physical or economic life of the building, are required to bring the building up most of the way (but not all the way) up to current energy code.
- C506.2 – Requires metering to be installed when HVAC systems and equipment are replaced.
- C506.3 – Requires sub-metering and energy dashboards to be provided for full-floor tenant improvements.

# 2015 Commercial Energy Code Highlights – Washington State

## Recent changes to WA State Commercial Energy Code, for all jurisdictions.

These WA State energy code requirements are standard for all projects, but are highlighted for stakeholders to have a better understanding of key changes made during the most recent energy code cycle.

- **Table C402.1.3** – Continuous insulation required for most wall types.
- **C402.5** – Air barrier pressure testing required all new buildings.
- **C402.5.7** – Air curtains can now be used in lieu of vestibules.
- **C403.2.4.1** – Simultaneous heating and cooling of one space is no longer allowed. “A zone is a zone.”
- **C403.2.6.2** – Demand-controlled ventilation required for spaces as small as 500 sf, with occupant loads equal to or greater than 25 people per 1000 sf.
- **C403.6** – DOAS (dedicated outdoor air system) required for office, retail, education, library and fire station occupancies. Separates ventilation air supply system from heating and cooling systems to reduce fan power and reheating of previously-cooled air. Energy recovery from exhaust air is required.
- **C405.2** – Spaces require lighting be controlled by occupancy sensors or automatic time clock systems.
- **C405.2.5** – Daylight-responsive controls required in all daylight zones. In other words, the lights have to turn down when daylight is available.
- **C405.2.7** – Most exterior lighting has to turn down or off between midnight and 6:00 AM
- **C405.10** – Controlled outlets: At least half of all electrical outlets in offices, classrooms, copy rooms, break rooms and individual workstations are required to be controlled by occupancy sensors or automatic time clock functions. This allows monitors, desk lamps, personal sound systems to be turned off completely when unoccupied.
- **C406** – Two “additional efficiency options” from a list of 8 options must be implemented.
- **Table C407.5.1(1)** – Sets new limits on fan power.
- **C408** – Extensive commissioning requirements for HVAC, lighting, water heating and metering systems in almost all buildings.
- **C409** – Metering of incoming energy flows (generally gas and electric) plus sub-metering of HVAC and water heating systems is required. Seattle adds sub-metering of lighting, plug loads and process loads, as well as separate electric use dashboards for full-floor tenant spaces. All require a central graphic display that can compare energy use patterns between different time periods.
- **C412** – Solar-ready roof required for most non-residential buildings, up to 5-story buildings statewide and up to 20 stories in Seattle. Generally, requires 40% of the net roof area to be readied for future solar, and space for future electrical gear at the service entrance.
- ☞ **DOWNLOAD WASHINGTON'S CODE:** <https://fortress.wa.gov/ga/apps/SBCC/File.ashx?cid=6195>

**Note:** The Commercial Energy Efficiency chapter contains 12 sections, 2 of which are mandatory. Each section should be evaluated individually to determine which provisions apply to the project. The triggers for compliance, along with the basis of exemption from those requirements, differs in each section. Buildings or spaces which are not heated, are semi heated, or are considered low energy have different requirements but it is not accurate to say that it does not need to meet the Energy Code because it is not heated. There are 11 other sections in which compliance must be demonstrated if the project has components that are covered by the code. For example, C402.1.1 Low-energy buildings contains certain exemptions from the thermal envelope requirements in C402 however it is still required to meet the lighting and power requirements.

## N/A EXPLANATION/NOTES: