



SEATTLE
**building
tune-ups**

COMMON TUNE-UP ACTIONS

The Seattle Building Tune-Ups mandate is designed to help commercial building owners identify opportunities to reduce energy and water costs. As the largest municipal buildings have been required to complete their Tune-Ups one year ahead of the private market, we've identified a handful of low-cost corrective actions that appear in most Tune-Ups which can deliver big energy and cost savings.

Here's a run-down of the usual suspects in our municipal buildings and how we've made some fixes:

- **Minimize excess outside air (OSA) for ventilation.**

Excess OSA is a challenge for most buildings. Low-cost, low-effort fixes our Tune-Ups have revealed include:

- Revise the minimum OSA setting for ventilation to the design specification or ASHRAE values for the space's current use. Engineers often specify OSA ventilation rates that exceed ASHRAE guidelines, and installers may add additional OSA than engineers specify. Physically inspect the minimum OSA setting and reset to the appropriate design or ASHRAE-specified level for your current needs.
- Close the outdoor inlet damper during warm-up and all unoccupied hours for most uses. Certain unique uses, such as pools, will need some nighttime ventilation to maintain acceptable indoor air quality.
- Verify the performance of economizer cooling functions. A well-known source of poor building performance in our region, failed economizers can introduce large amounts of cold air into buildings during winter.

- **Eliminate heating & cooling conflicts between HVAC units.** This can deliver dramatic energy and cost savings and help address tenant comfort complaints. Our top tips:

- Choose a single master thermostat or average thermostat signal when multiple units feed a single heating zone. Maintaining two different temperatures in a common



zone is inefficient and costly, and people may experience temperature swings and even drafts as two or more HVAC systems battle.

- Maintain a four to five degree temperature “dead band” between heating and cooling set points. This will reduce the likelihood of the system fighting itself from frequent switching between active heating and active cooling.

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- Review the air-conditioning’s compressor staging. Particularly during spring and fall seasons, too much cooling capacity can be brought on too fast and run for too long, leading to chilly tenants and operational challenges.
- **Shut off equipment when it is not needed.** Reducing heating and cooling to spaces when they are vacant or at reduced occupancy can take many forms, and it is not all about turning down the thermostat. Fruitful Tune-Ups strategies include:
 - Match lighting, equipment and set point schedules with the operating hours of your tenants. Schedules often fall out of sync with occupancy for a variety of reasons: new tenants, special events, holidays, system testing, and equipment servicing.
 - Review and revise the HVAC system’s optimum start, so that your building is warm when people arrive, but no earlier than needed. This includes the time-to-temp optimization routine. Check the optimized start enable window: is it appropriate for morning warm-up hours? Is the optimized start feature working? If so, make sure it’s “ON.” If not, turn it “OFF” to ensure systems aren’t warming up too early.
- Turn fans and circulation pumps to “AUTO” during unoccupied hours. Fans and distribution circulation pumps should turn “ON” only when there is a call for conditioning for most uses, however, some uses like pools, will not be suited to this strategy due to indoor air quality needs.
- **Improve equipment efficiency.** Use less energy but get the same performance? Simple, efficient best practices include:
 - Implement an outside air (OSA) temperature reset for the hydronic heating system circulation supply temperature. This delivers the most energy efficient performance from condensing boilers by lowering the temperature of the system supply when the outside temperatures are moderate, as they frequently are in our mild Seattle climate.
 - Implement supply air temperature reset and static pressure reset for variable air volume systems. These reset strategies will significantly improve part-load system efficiencies.

Seattle Building Tune-Ups is a progressive energy efficiency policy that helps building owners identify smart, responsive ways to reduce energy and water costs.



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