

ENERGY MANAGEMENT

Summer means AC ... Adjust the thermostat to reduce energy



By RUTH HEIL
Business Journal Columnist

As the summer. That can mean relaxing in the sun, sipping an ice-cold drink, and building castles in the sand. It can also

THE GREEN SCENE

mean crippling electric bills and relentless complaints about the temperature in your building.

Summer air conditioning and ventilation accounts for 20 percent of the average small business electric bill. It plagues utilities as they monitor grid activity and force rolling blackouts during extreme heat waves. A lack of air conditioning closes schools and drives away customers. Meanwhile, this mechanical operation rarely receives the attention it deserves.

Bob Burkholder, president of Burkholder's Heating and Air Conditioning Inc. in Emmaus, says, "Commercial buildings rely heavily on their air conditioning, and it is not uncommon for a system to be operating eight to nine months of the year. One of the largest demands on the air conditioning is conditioning the ventilation air that is required by code. If for some reason the economizer is not operating or if the units

are not running properly or have not been cleaned and checked, there could be a lot of dollars wasted."

Seniors today still remember retreating to the only place in town with AC—the movie house—for its luxuriously cool air. Times have changed. We now demand AC in every location, and many indoor thermometers read below the recommended 73 degrees to 79 degrees.

A case study revealed that raising the thermostat 2 degrees saved one 20,000-square-foot office 3 percent in energy costs. In home offices, the savings may reach 14 percent.

It's also difficult to find agreement. Women may want a warm setting while men like it

In 2005, Japan's Ministry of the Environment let employees skip the suit so thermostats could be raised to 82 degrees. Based on estimates from a follow-up survey, the "Cool Biz" campaign reduced Japan's carbon dioxide contribution by 460,000 tons. Results improved in subsequent years, and the current campaign has been dubbed the "Super Cool Biz."

Something had to be done. During a heat wave in 1990, Japan's energy consumption came within 1 percent of its available capacity. Cool Biz was a big culture change, and while the short-sleeved suit never took off, the fashion industry did produce professional, non-suit options.

the southside—should be shielded with trees or bushes.

- Look inside. Use standby modes to turn off unused, heat-generating equipment. Ventilate moisture (such as steam) to the outside.

- Change the filters. Clogged filters both restrict airflow and pollute indoors. Use filters with a Minimum Efficiency Rating Value (MERV) 6 or higher. Don't just remove the filter without replacing it; the particles will build up on the evaporator coil.

- Service it. From the fans and pumps that distribute air, to the compressors and towers that cool it, to the thermostats and sensors that control it, your HVAC (heating, ventilation and air-conditioning) system is a complicated, electric parasite. Burkholder says, "By performing scheduled maintenance visits four times per year, companies can save 10 percent."

- Audit it. Tax incentives and grants are available for HVAC efficiency including costs to perform an energy audit. Start with one to determine whether the system is properly designed or to learn where the air is seeping out.

- Upgrade it. Smart, new, efficient systems (Seasonal Energy Efficiency Rating of 13 or better) make HVAC a great candidate for savings, especially since it accounts for, on average, 32 percent of a commercial (office, retail, service and warehouse) building's energy consumption. Many structures have had hodgepodge expansions, or the primary use has changed since the original system was installed. Thermal zones should be based on building size, orientation, layout, function, occupant density and after-hours use. Humidity control and natural ventilation are as important as cooling power.

Air-conditioning, for all its wonders, isolates us from the outside world. To truly connect to and enjoy our summer vacation, we must accept the heat. Otherwise, our only retreat will be to the hotel-room cave.

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Emmaus



cold, but there's more to it than this common gender stereotype. Preferences vary according to the type of work or one's weight, age, ethnicity and fitness. Attire is another. A suit and tie is sultry compared with a thin, cotton blouse and open-toed shoes.

Americans have become more casual on their own, but we still want it cold. We, too, must rethink our temperature settings. Meanwhile conservation doesn't stop at the thermostat. Here are other ways to save:

- Check the envelope. Does your building keep the cool air in and heat and humidity out? Low-cost solutions include shading (or coating) windows and keeping outside doors closed. Investments include upgrading windows, insulation or roofing.

- Look into the light. Consider LED lighting that doesn't generate heat. Reflect daylight to replace artificial lights. We need proper lighting, but we can afford to dim things a little.

- Look outside. Plants or other objects should not interfere with the condenser's airflow. The hottest part of the building—

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