Grab a clipboard and take this map along on your treasure hunt. Focus on uncovering opportunities to save. When you find something, make notes about location; tools, materials, or expertise needed; or further research required. Feel free to add to or modify this list to suit your own needs.

**Facility Management**

- Make note of your EUI and ENERGY STAR Score in Portfolio Manager.
- Ensure that facility energy management plan and operations & maintenance plan is up to date and that appropriate staff have reviewed the latest versions.
- Review building management system (BMS) and/or building automation system (BAS) code to ensure that specific commands to reduce unneeded energy consumption (e.g., on/off times) have not been overwritten.
- Consider daytime cleaning to reduce the hours the space is occupied. This allows for more aggressive “unoccupied mode” scheduling for lighting and HVAC.

**Lighting**

- Identify where lights have been left on in unoccupied spaces (e.g., common areas, storage rooms, restrooms, break rooms, outdoor areas).
- Identify and assess opportunities to use automated lighting controls:
  - Occupancy/motion sensors for low-traffic areas.
  - Timers or daylight sensors to dim or turn off exterior and parking lot lights during the day.
  - Timers to turn off decorative lighting.
  - Dimming controls in locations where there is natural lighting (e.g., near windows, skylights, light tubes).
- Confirm that installed lighting controls are operating as intended.
- Assess need to institute a regular cleaning plan for lamps/fixtures for maximum light output.
- Identify where reflectors can be practically added to existing lighting.
- Assess whether any areas are over-lit, compared to requirements or design levels; consider opportunities for de-lamping.
- Identify and de-energize and/or remove ballasts that are not in use.
Treasure Map FOR COMMERCIAL BUILDINGS

NOTES:

❑ Evaluate the opportunity to upgrade to more energy-efficient lighting options:
  ❑ Replace T12 fluorescents with T8s or T5s with electronic (rather than magnetic) ballasts; consider the use of tubular LEDs (TLEDs).
  ❑ Upgrade incandescent and CFL applications to LED (especially for task lighting or specialty applications).
  ❑ Use LED Exit signs in place of incandescent or CFL models.

3 Building Envelope

❑ Inspect doors and windows to identify gaps or cracks that can be repaired.
  ❑ Note damaged or missing weather stripping.
  ❑ Note air leaks that should be sealed with caulking or other sealant.
  ❑ Inspect insulation levels and identify inadequacies to be addressed (including loading docks and garage doors, if appropriate).
  ❑ Assess opportunity to install vinyl curtains in loading areas, if applicable.
  ❑ Note any doors left open to the outside and to any unheated or uncooled areas.
  ❑ Assess the opportunity to install solar film or other window coverings on east, west, or south exposures to reduce solar heat gain and heat loss.
  ❑ Assess the opportunity to install air lock doors for main entrances.
  ❑ Assess the opportunity to install a reflective ("cool") roof covering in warm climates.

4 Equipment/Plug Loads

❑ Identify any new office equipment that will be needed soon; make plan to ensure they are ENERGY STAR certified where possible.
  ❑ Identify any equipment left on overnight (including those left in sleep/idle or screen saver mode).
  ❑ Ensure that power management settings are activated on office equipment such as computers, monitors, printers, and copiers.
  ❑ Ensure that any large-screen TV monitors are turned off during unoccupied times.
  ❑ Ensure that networked printers are being used, rather than personal printers in offices or workstations.
Identify and discontinue the use of personal heaters and fans in offices or workstations (the use of such personal devices may indicate broader hot/cold issues that should be addressed at the system level).

Identify where power strips can be used for easy disconnect from power source. Consider the use of advanced power strips.

Identify any rechargeable devices left plugged in when fully charged; make plan to educate staff about unplugging fully charged devices.

Check if vending machines get turned off or put in sleep mode at the end of the day. Consider installing motion/occupancy-based vending machine controls.

Look for opportunities to replace older vending machines with new ENERGY STAR certified vending machines.

If your building has refrigerated space, follow the tips on the Treasure Map for Retail/Grocery Stores.

If your building has commercial kitchen and food service areas, follow the tips on the Treasure Map for Retail/Grocery Stores.

**HVAC**

Identify and make plans to address instances of simultaneous heating and cooling.

Ensure that thermostats and outside air temperature sensors are properly calibrated/maintained.

Ensure that thermostats are set to appropriate temperatures based on season and local weather conditions.

Ensure that thermostats are properly located to be representative of the room or zone for which the temperature is being controlled.

Ensure that electronics are located away from thermostats.

Identify where locking covers for thermostats and ventilation controls can be installed to prevent unauthorized adjustments.

Confirm proper implementation of a temperature setback policy for heating/cooling when the building is unoccupied (including any special considerations for summer months).

Perform testing and balancing of air and water systems.

Ensure that space heaters are not being used in offices, break rooms, and other spaces.

Ensure free airflow to and from registers; clear furniture, books, papers, or other materials.

Ensure window shades are available to block excess heat gain; make plan to educate staff about when to use them.
Identify where ceiling fans can be installed to move and de-stratify air layers. Ensure all existing ceiling fans are operating properly.

Monitor make-up air ventilation; ensure the proper functioning of dampers to achieve outside air requirements.

Ensure that HVAC system components are being maintained regularly, including:

- Replace filters on a regular schedule.
- Inspect and clean evaporator and condenser coils.
- Clean fan blades and adjust belts as needed.
- Inspect water/steam pipes and ducts for leaks and/or inadequate insulation; address as needed.
- Verify and calibrate operation of variable air volume (VAV) boxes, where applicable.
- Evaluate furnace/boiler efficiency and clean/tune up as needed (including boiler water treatment and inspection of steam traps, as appropriate).
- Check chiller and cooling tower components for fouling or corrosion; ensure proper water treatment is in place.
- Check for unusual noise, vibration and/or decrease in performance of compressors/motors.

Evaluate how chillers operate during the cold months and determine if chiller or pumps can be shut off.

Assess opportunities to install hot water reheat coils in place of electric reheats, and to use waste heat where possible.

Assess the opportunity to install and use air-side economizers, so that outside air can be used for “free cooling.”

Identify and assess opportunities for heat recovery.

Identify and assess opportunities for installing variable frequency drives (VFDs) for fan and pump motors, and variable air volume (VAV) boxes in the ductwork – especially where variable loads are being served.

Identify and assess opportunities for demand-controlled ventilation in areas with variable loads (e.g., conference rooms, auditoriums, cafeterias).

Identify and assess opportunities to use occupancy sensors to control HVAC in personal offices or conference rooms.

Check underground parking garage ventilation systems for operation during unoccupied times.

Assess the opportunity to install carbon monoxide monitoring/control for garage ventilation systems.