



Building Tune-Up Program Data Gathering Form

General Information:

Contact Person: Position/Company: _____

Phone No and Fax No: _____

Email: _____

Building Name: _____

Year Built: _____

Building Address: _____

Building Owner Name: _____

Property Manager Name/Company: _____

Building Engineer Name/Company: _____

Building Energy Use:

Austin Energy Billing Account Number(s): _____

Elec. Rate Schedule Type: _____ No. of Meters: _____

Gas: _____ MCF/yr, Chilled Water: _____ Ton-hrs/yr, Steam: _____ 1,000 lbs/yr

If not connected to Austin Energy's district energy plants, is this a consideration for the future?
Yes No

Existing peak electric/gas demand: _____ kW, _____ MCF

Existing annual electricity/gas consumption: _____ kWh, _____ MCF

Total building floor area: _____ square feet, Number of floors: _____

Total building conditioned area: _____ square feet

Percent of conditioned space currently occupied: _____ percent

Building and System Details

1. Describe building space types, their scheduling, and typical occupant density (e.g. 200,000 square feet, office building that is occupied 6 AM to 6 PM weekdays).
2. Describe major interior loads. Which of these loads, if any, dictate how the HVAC system is operated?
3. Complete the table to list the major building energy systems/equipment contributing to peak electric load (add more rows as needed).

| Equipment | Type | Size | Age |
|--------------------------------------|--|---------------------------|-----------------|
| Chillers | | | |
| <i>(Example)</i> Chiller 1,2,3 | <i>Air Cooled Reciprocating., 10 EER</i> | <i>200 ton</i> | <i>10 years</i> |
| Air Handling Units | | | |
| <i>(Example)</i> AHU 1,2,3,4 | <i>Constant Volume</i> | <i>7,500 Design CFM</i> | <i>15 years</i> |
| Lighting Systems | | | |
| <i>(Example)</i> Lighting Systems | <i>34W-T12 w/ std ballast</i> | <i>100% of floor area</i> | <i>20 years</i> |

4. Briefly describe building cooling equipment and controls. Can the equipment meet peak building load? How much excess capacity does the system have on a hot summer day?
5. Briefly describe lighting system on/off controls and scheduling.
6. What type of glazing does the building have (e.g. single-pane, tinted)?
7. When is the chiller (or rooftop packaged units, if no chiller) likely to be replaced or receive a major upgrade?

8. Are “as-built” drawings and sequences of control for the HVAC systems available? Are they current?

Type of HVAC/BAS Controls (Hardware)

1. Does the building have a building automation system (BAS)? If so, when was original system installed? Has the system been upgraded or expanded? If so, when?
2. If so, what type of BAS is in place (manufacturer, type)?
3. What components of the central plant, air handlers, and/or zone level (VAV boxes) are controlled pneumatically?
4. If DDC is utilized, approximately how many points (actuators/sensors) throughout the building are monitored by the DDC BAS? What types of points are controlled?
5. Is the BAS capable of trending and storing data for numerous points simultaneously? How much data (in length of time) can be stored?
6. What are the specifications of the computer workstation that runs the BAS interface (for example, 1.3 GH Pentium IV, 128 MB Ram, 10.0 GB HD, CD, and so forth)?
7. When is the BAS likely to be replaced or receive a major upgrade? Has this replacement or upgrade been assigned a target date? Is funding available for this project?
8. What is currently the worst building problem and how is it managed?
9. What is the source of the majority of tenant complaints? Are tenant complaints tracked by lease space or particular problem area?

BAS System Performance

1. Outline current control strategies. Is the system operational? Have frequent failures resulted in system being by-passed?
2. Does the system have an automatic shutdown, does it function properly, if not describe?
3. Does facility use a zone temperature setback strategy? If so, please describe.
4. What is supply air temperature setpoint during the summer? Is a reset strategy used? If reset is used, what is the reset variable?
5. What is the supply chilled water temperature? If so, what is the reset variable?
6. What is condenser water setpoint? Is it reset? If so, under what conditions?
7. Does central air system have reheat? Does it operate year round? Please describe operational strategy.
8. How is the outdoor air controlled (CO2 sensors, schedule, fixed, building pressurization, etc.)?
9. Is free cooling used (i.e. with an air-side or water-side economizer)?
10. Can the system track tenant after-hour usage? Is it being used for billing purposes? How many cooling after-hours are being used on average per month?
11. Is air distribution system Variable Air Volume or Constant Air Volume? If both, list approximate square foot served by each.

12. For VAV systems, what is the supply static pressure setpoint? Is the static setpoint varied based on schedule or load? Where is the pressure sensor located?
13. Are VAV boxes DDC controlled?
14. For VAV systems, is supply static pressure reset used?
15. Is variable volume chilled water pump employed? If so, where is the differential pressure sensor located?
16. Is an optimum start or stop strategy used?
17. Is system equipped with zone isolation devices for minimizing energy use in off-hour operation?
18. Is there exhaust air heat recovery?
19. Describe any peak load shedding strategies currently employed.
20. Describe problems that currently exist related to the HVAC system or equipment. Has an attempt been made to correct these?
21. Describe operation and maintenance opportunities of which you are aware.
22. Briefly describe past energy efficiency projects completed for the facility. Describe planned future projects. Include dates if available.
23. Are there any scheduling issues that will delay or expedite the building tune-up work (e.g. major renovations or equipment replacements/upgrades planned)?

Facility Staff

1. Who is responsible for building operations and how long have they held their positions?
2. What is the level of capability of the chief engineer and/or facility staff for interacting with the EMS? For example:
 - (a) No EMS management
 - (b) Can change setpoints
 - (c) Can make basic program changes and set up trends
3. Are the facility manager and operators enthusiastic about energy improvements and conservation?
4. Do facility operators have some discretionary time to devote to the project?
5. Is the simple payback criteria a written corporate policy? How are projects evaluated internally and how are funds allocated to implement energy efficiency projects?
6. In the last two years, have energy efficiency projects been rejected or postponed by upper management? What contributed to that outcome?