

Appendix F: Summarized Commercial Data

This assessment was conducted using a combination of on-site visual inspections, conversations with building maintenance personnel, and measurements from the BuildingAdvice system. Particular attention was paid to obtaining accurate data. Due to potential changes in occupancy, operations, and variable weather conditions, implementation of the proposed energy conservation measures does not guarantee a reduction in energy usage.

1001 – Office

This is an office building originally built as a bank. The office configurations have changed many times over the past 30+ years. These changes did not always take into account the original ducting, temperature settings and facility control mechanisms. This is a government facility so funding for major capital improvements needed depend on inclusion in annual budgets.

1002 – Office

This location is primarily office space, with a bank, restaurant, and small exercise room. This facility is an example of excellent maintenance and some needed upgrades over the years. The building owners are trying to determine what to do next. Among the options are more energy efficient control systems and new elevators. A more efficient boiler was installed in the past year.

1003 – Office and Warehouse

This mail/cargo handling facility underwent a major lighting retrofit over the 2010 summer. The changes to electricity consumption should be apparent in the winter months. The customer asked for tracking and feedback over the next 6 months. Since it is a large facility and a time critical operation, any downtime does not allow for complete or even partial shutdown of boilers during summer months. This customer has chosen to maintain and rebuild large pieces of equipment rather than replacing. The lighting was an obvious change with a quick payback period and could be done without impacting operations. Lighting is a quarter to a third of the facility's operating costs.

1004 - Office

This was the largest facility in the BEM project. It is an extremely well maintained building. Although it became a government facility about ten years ago, it has retained a professional property management team. The government made a decision to fund the maintenance to keep the integrity of a premier building. Boilers have been replaced, HVAC and controls are monitored. The managers of this building are very enthusiastic about being an ENERGY STAR building. They are already eligible; a few lighting changes could get them to a score of 100. We will revisit the building in January.

1005 - Office

This building has not been maintained as well as other facilities its age. Things have been fixed and upgraded on an as-needed basis. The one energy plus is installation of new boilers a year ago. The building owner is considering selling it or doing a major overhaul if kept. The recommendations will be followed if they decide to keep the facility.

1006 - Office

Built and maintained as an office condominium, this building presents additional challenges in the decision making process. The condominium group had put aside funds, anticipating the need to upgrade to more energy efficient building systems and common area changes. Individual office owners had upgraded lighting but many T 12's tube lights needed conversion to T-8. The common areas had some compact fluorescents but the tube lights need to be converted. At the time of our assessment, plans were

being made to move ahead on HVAC and control upgrades. We were able to connect them to Otis for information about an energy efficient elevator which uses one-third less energy.

1007 – Office & Warehouse

This customer's facilities include refrigeration for perishable cargo. All wiring for the main units and refrigeration are buried underground which makes it difficult to access and assess. CCI believes that it may be a major energy hog. The company is considering upgrades to more efficient systems on a company-wide basis. They have a team designated to make green improvements to the facility.

1008 – 1009 - Schools

Anchorage School District facilities management had determined that these two school facilities are energy hogs. 1009 had gone through an extensive upgrade so the low score was a disappointment. The BEM pointed out two issues that could be resolved through communication and control adjustment – lights had been left on and fans running 24/7. Funding to implement recommendations is based on bonds requiring voter approval so it is difficult to strategically plan changes. The school district is pursuing grants and opportunities to become more energy efficient.

1010 – Office, Small Industrial & Warehouse

This facility was one of the stars as the owner is very interested in energy efficiency as it impacts the bottom line. The facility has undergone majority lighting retrofit in the past few years. The retrofit resulted in a 22% reduction in utility costs and the investment was returned in less than one year. We continue to work with the facility toward its goal to attain an ENERGY STAR rating of 100. Even more important to the owner is to eliminate the electric demand charges by changing from a Large General Service customer to a Small General Service customer. This customer believes the business model for improving the bottom line goes hand-in-hand with improving the earth by being energy efficient.

Control Contractors conducted a blower test and found the building to be very well sealed, with little room for improvement. Control Contractors is helping the customer look at changes in its equipment operation to lower the demand levels. Once some of the older machines are retrofitted, this location is likely to attain a 100 ENERGY STAR rating.

1011 – Office & Telecommunications

This facility is a wires center in the communication industry. As such, it has a very low worker census but some very high tech computers and other equipment. It was difficult to identify potential for savings in either efficiency or cost. The equipment requires a certain level of HVAC systems to maintain the temperatures and humidity. In the current economy, making optimum use of the space is not an option. The space configuration used previously by a much bigger workforce has been left as is. Energy efficiency opportunities may be small and consist mostly of lighting changes. As with many of the locations, the lights are retrofitted as ballasts go bad and retrofit becomes easy and low cost.

1012 – Retail & Mixed Use

This facility has eclectic uses – standard retail, office, theater, residential (one apartment) and audio-visual center. The owner pays the electricity and gas for the entire building. The owner is aware the HVAC and control systems need major overhaul. Short term fixes have been made to control temperatures. In winter some of the retail tenants use space heaters most of the time they are open. Control Contractors will be working with the owners to upgrade the control systems and HVAC which should result in greater energy efficiency.

1013 – Office & Radio Stations

The office areas of this building are pretty standard. The customers noted that the ambient light affects their HVAC system. They are also dealing with two systems rather than one integrated system. They plan to budget for some changes in 2011. The radio stations are an unusual addition and some run 24/7.

There are also problems with heat generated by the equipment. The customer will not be making changes to the radio station areas but will check on the control side. This facility has the same problem as 90% of the facilities we monitored; i.e. changing walls and office configurations. Most buildings have gone through several different types of tenants. This building was originally built as a Native Corporation headquarters.

1014 – Retail/Supermarket

The high ENERGY STAR rating from this assessment was a surprise, as the walk-through and discussions led us to expect a low rating. Most of the facility, originally a Safeway Store, is close to 40 years old. The equipment has been maintained but no major upgrades have been made. The refrigeration both in the back area and the front are running well. Major changes could help reduce energy costs. The local owners are sticking with the "if it isn't broke why fix it" attitude toward upgrades. Control Contractors helped the customer resolve problems with the air handling system. The customer was most concerned about ML&P billing for demand. The ML&P website has a good explanation of demand billing so that was forwarded to the customer.

1015 – Office – Engineering

This building is looking at control issues, major renovations and updating of several floors. The building has been well maintained and used as office space since first built. The space is used primarily for engineering work so lighting is an issue. The customer is considering a lighting retrofit and has received bids. If the lighting work is included in the budget, the customer would see energy reduction in 2011. The customer has requested information on alternatives to the expensive seasonal affective disorder lights that some workers have requested. The property manager informed us at the assessment meeting that we had the wrong square footage. We ran the report again with the correct square footage which raised their ENERGY STAR rating.

1016 – Office & Retail

The primary tenant sells electrical supplies and has a retail operation in addition to its sales department. We found some immediate low-cost fixes such as replacing and moving thermostats. These would be the responsibility of the tenants. The owners do not plan any major capital improvements. The lights have been changed out to T-8s as they fail.

1017 - Office

These offices were originally built as office condominiums but have come under one owner in the past few years. The building has a lot of cooling and heating problems. They recently replaced the boiler, which presumably has corrected the excessive-heat/excessive-cold problem. This will be the first winter for the new boilers. All the offices have very cut-up spaces so ventilation through the HVAC is proving difficult. It was recommended they start with simple steps of checking controls, checking dampers and thermostats. In the coming months, it will be interesting to see the impact of the major boiler change.

1018 – Office

This building has a good control system but the ducts and ventilation handling should be studied more. The standard damper check should be done. The equipment for the most part is original equipment that has been maintained. The recurring theme of offices being changed as the occupants have changed may be a major culprit of uneven ventilation. Lighting retrofit, which the facility manager would like to see, would yield some energy and cost savings. He felt that the results of our assessment may help him get

the retrofit through for 2011. CCI has offered to run a cost analysis to determine approximate return on investment.

1019 – Office

The facility manager needs some help in understanding its controls and dampers adjustment. The lease is coming up for renewal so the discussion and assessment provided information for the owner to become more energy efficient. All their lights were T-8s. The customer was very interested in power factor not for this building but for the batch plants they own and operate. They also would like to discuss the total electrical system for their primary facilities including the batch plant and asphalt plant. This education opportunity will be done as soon as the construction season is completed.

1020 – Office

This building was probably the worst example of space changes due to movement of walls and cubicles . It is fully occupied by one tenant, a state entity, which has had the property about one year. We met with the owner's property manager. They are trying to assess what changes are needed. A lighting retrofit of all the remaining T-12s is doable. A full assessment of controls and schedules for the controls will most likely be undertaken. The timing of the assessment and the new owner should allow for some energy efficiency improvements.

1021 – Office

This building is one of the older Class A spaces in town. Its ENERGY STAR score of 82 indicates the building is well maintained and all the big fixes have been done, e.g. lighting retrofits. New energy efficient boilers were installed in the past few years which has added to the total efficiency of the facility. Easy ways for this building to boost its rating include careful study of dampers, control schedules and elimination of space heaters in the offices. The building managers know that many space heaters are being used in the building but cannot find a way to shut them down. This is a common problem in older office spaces and differences in employees' comfort levels.

1022 – Office & Warehouse

This facility is owned 49% by the employees, which adds an unusual element to perspectives about energy savings. One employee-owner gave us the walk through and he felt strongly that saving energy would result in more earnings for the employee shareholders. This is a huge facility that includes administration, the sales staff and the warehouse. The administration employees had more complaints about the temperatures. About 80% of the lights in the warehouse had been retrofitted. Some offices had new lighting. Retrofitting the remaining lights would produce additional savings.

1023 – Office & Warehouse

This is the only facility where construction of an addition was about to begin and some ventilation issues could be addressed as part of the work. There is obviously high humidity and condensation that have affected the window sills and some of the office spaces. This facility is making use of space air conditioners to combat the heat and humidity problems. The HVAC and control systems need overhaul. The manager would like to see how the additional 3,000 square feet will impact energy consumption and would budget for some changes. There is a fair amount of T-12 lighting that could be changed to T-8 for some immediate impact on energy costs. Balancing the ventilation and the additional space may even out the anticipated increase in energy costs.

1024 – Office & Printing Warehouse

This facility presents a puzzle. Its large warehouse space is a printing facility. A more detailed study is needed of the printing equipment and its power draw. When the presses are running there is a huge heat

factor. The building as a whole has been retrofitted and moved to CFLs where appropriate. The office spaces have but are not using programmable thermostats. This building is an example of the problems that arise from repeated reconfiguration of office space. Thermostats that control several offices were moved as the offices were reconfigured and occupants didn't know how to control them. It was an easy fix, however, and the maintenance staff was able to resolve the problem. The facilities manager is budgeting funds to implement many of the recommendations in the assessment. It will be interesting to track their consumption in the next year.

1025 – Office and Warehouse w/refrigeration

This facility is a huge beverage distributor, with plans to expand its warehouse space in the next year. Chugach previously conducted a lighting audit that recommended a total retrofit. The lighting in some key areas was so low that many mistakes were made in order filling. The complete retrofit in the warehouse is probably a major factor in its rating of 68. The changes in controls and ventilation would most likely bring it up to an ENERGY STAR building. The manager has seen the evidence of lowering costs through energy efficiency.

1026 – Office

This is one of the smallest facilities at 10,000 square feet. It was built originally as an office condo but the developer/owner did not follow through with it as condominium space. The building is leased to a variety of small businesses. This facility hit the magic number of 75 to be an ENERGY STAR building. The heating and cooling for most of the building is balanced by the owner who also has his business in the building. He does recognize how long it takes to cool his facility down by using the windows and air conditioning fans at the right time. In the warm months, they shut off the boilers, and control heating and cooling with sunlight and opening windows. A lighting retrofit could most likely bring the rating up.

1027 – Office & Warehouse

This is the star of the facilities we monitored with a 97 rating. It is only 7 years old so was built with some thought to energy efficiencies. We did find a few items including one very low-cost: weather stripping a high-traffic door with a 2-inch gap that lets in ice and snow. It has a heat balance problem with the upstairs and the downstairs where the windows bring in lots of light and heat. Putting in another zone with a separate thermostat could solve the problem. The warehouse lighting could be changed to high bay T-5s. It could significantly reduce costs and require much less maintenance. They may want to look at an analysis of return on investment. Ironically, they could have installed T-5s when the warehouse was built but it was a newer technology at the time.

1028 – Office/High Electronic Usage

This government-owned building has a low score mostly because of what they can't do. It is a 24/7 operation with many computers and equipment that cannot be turned off. Because of the security level they could not provide specific information. Since the original part of the facility was built in the 1960's they have added on and changed configuration many times. The main energy efficiency change being made is retrofitting lights as they burn out or the ballasts go bad. We have recommended they look at the fans (HVAC) and thermostats, as well as controls. There were instances of two sides of a shared office space having completely different air temperatures. It will be interesting to see how they deal with the executive order that mandates energy efficiency changes by 2012.

1029 – Office

This building had 1-1/2 tenants in the facility during the monitoring. By the time the assessment was done, the half tenant had moved out. The lower level is fully occupied and has a high level of computer use. The facility manager and the building owner were very concerned about "dirty power" which was mentioned by an ML&P crewman. Chugach checked the lines and the power. It all seemed to be a good

secondary power coming into the entrance. The “dirty power” label may be referring to the potential for surges, in light of the quantity of computers. Low-cost suggestions included getting a handle on controls for the building, and checking ducts and dampers.

1030 – Office & Warehouse

This facility utilizes its space for offices, customer payment/service and a warehouse/garage for trucks. CCI began working with them on controls and HVAC while we were in the middle of the BEM project. The warehouse set up brings in a lot of outside air. The doors to the warehouse are continually open from 7:00 – 4:00 which can translate to excess ventilation. The facilities manager was concerned about CO2 but it did not show up at danger levels in the monitoring process. The manager plans to budget for system improvements.

1031 – Office/ Athletic Club (Medical Facility Match)

ENERGY STAR did not have a category for an athletic club. CCI decided that it fit the parameters of a medical facility because of the equipment. One part of the club was recently renovated as the premier level for the club. This side has all energy efficient lighting and equipment. The other side of the facility is much older and has a swimming pool as well. The boilers serve both sides of the building. The temperature in the boiler room with all the pool pumps operating can be as high as 90-100 degrees. They are looking into boiler replacements. Lights are being retrofitted to T8s as the T12s burn out. The new boilers, if they move ahead, will definitely make a difference.

1032 – Lodge –no match in ENERGY STAR

This is the only facility considered rural and the only one that had no match in ENERGY STAR. The BuildingAdvice system can do the report without the ENERGY STAR component. The other anomaly is that this building is fueled by propane. The costs per square foot are extremely high. Temperature is controlled by opening and shutting windows and doors. All possible lighting has been changed to T8s and CFLs. The aesthetic qualities of certain fixtures prevent changing to energy efficient bulbs. This facility is used from mid-May to mid-September but the administration and facilities shop are open year-round.