The Energy of an Office

An Initial Review of Office Energy Audits

By

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**Project Scope**

The purpose of this project was to evaluate the use of energy within departments and individual offices in both the Facilities Management Building and Wilson Wallis Hall on the campus of East Tennessee State University. By implementing an “Office Energy Audit Checklist”, the goal was to assess the amount of energy either saved or wasted by faculty and staff members. Our goal also included creating a list of recommendations for decreasing the amount of energy consumed within each department and personal office.

**Data Collection**

We began by conducting a trial run using the “Office Energy Audit Checklist”. After careful evaluation of our findings, we determined that a majority of questions on the checklist were inconclusive. We then revised the checklist and included a chart to tally the number of electronic devices (e.g. computers, printers, fax machines, etc.) found in each department and office.

The total number of audits performed included five separate departments and four individual offices. Departments that participated were Construction/Renovation, Custodial, Facilities Office, Technology, and Technology Chairperson. Office audits included Room 006A, Room 002, Room 217, and Room 205.

**Data Summary and Recommendations**

Tally sheets were calculated and totaled for each department. The following chart includes the total number of each electronic device in each department, as well as the approximate cost of energy per unit per year.
Based on the chart, the Facilities Office department was determined a high energy consumption area because it has a large number of computers and printers. Because this department has an open floor plan layout, there are more employees to account for having a computer. However, the number of personal printers was noticeably larger in this department than any other departments audited. Looking at the ‘Approx. Energy Cost Per Year Per Unit’ from Figure 1, the cost of energy per laser printer is greater than any other piece of equipment listed. Because there is a large, multi-function printer accessible to all employees of this department, it is recommended that fewer to no personal printers be used. It is also recommended for this area to only utilize overhead lighting when needed. Local switches have been installed, but are not being utilized properly.

The audit checklists completed for individual offices were determined to be inconclusive for three out of four offices. The office in Room 205 included in the individual office audits was determined to be a high energy consumption area as well. More than three desk lamps using
incandescent light bulbs were in place and said to have been used regularly. It is recommended that overhead lighting in that office be de-lamped and the occupant to use L.E.D. light bulbs in desk lamps.

**Summary**

A new checklist needs to be created based on information gathered in this initial audit. It is important to keep in mind what information is needed to determine whether or not a department or individual office is a high energy consumption area. After establishing a set of guidelines for each checklist, it will become easier for the auditor to understand the necessary steps to make improvements and suggestions to faculty and staff members.

In order for a future “Green Office Initiative” to take place on the campus of ETSU, it is highly proposed that a faculty or staff representative from each department or building be elected. This representative will help any future student interns to perform audits and implement necessary behavioral and facility changes and decrease the energy consumed at ETSU.
References