

Energy - Action Plan

Tremper Library Media Center

December 13, 2004

By Ruth Stamm, Library Media Specialist

1. Tremper High School is 272,786 square feet square feet and has a student population of over 2400 students. An energy action plan for that large of a building needs the attention of a large and diverse committee with representatives of building administrators, staff and students along with representatives of the central administration. Since I am the only person taking this class from Tremper High School, my plan will only address the Tremper Library Media Center, of which I am one of two Department Chairs. I have identified cost savings for an area over which I have a bit of control and knowledge. Cost savings identified for the Library Media Center could serve as an example to the rest of the building and at the very least be a starting point for energy conservation building wide. Staff Development days could be devoted to department and/or committee plans to duplicate the library media's success. Pat Finnemore has already (Fall 2004) spoken to the staff about voluntary measures to save energy. Speakers from KEEP and facilities can be scheduled for faculty meetings and inservice days.

2. Tremper Library Media Center encompasses 5676 square feet on the second floor of Tremper High School, Kenosha, WI. There are 72 computers for student and staff use including circulation and administration computers. The facility is uncarpeted and is built as a bridge between the East and West wings – there is no first floor below. It is divided into an East Room, West Room and Central Room. A 30 computer lab is located in both the East and West Room, with the East room additionally having a mini lab of 5 Macintosh computers. There are 78+ computers in the library media area.

There are 16 windows which are approximately 12 feet high and which do not open. There are two univents in both East and West Rooms located under four of the large windows. The library is used 7:00 AM through 3:30 PM by students and staff. Often the librarian will stay late (4 or 5 PM).

With a student population 2400+ there are no periods during the day that the library space is not occupied. Most computers are utilized by classes and by individuals with passes from class or study hall.

3. Kenosha Unified School District has been exploring energy conservation measures through a District Wide Energy Efficiency Pilot Program. Pat Finnemore, District Facilities Coordinator, has made a presentation to Tremper High School requesting voluntary compliance with energy conservation measures. He asked for personal appliance use to be examined and lights turned off whenever possible and informed us that the district will be setting the heating to one degree cooler for the winter. He also informed us that the district is also implementing energy savings district wide. This project furthers the Tremper's voluntary compliance.

4. There are several energy issues to be addressed:

- a. A florescent light, which was moved when an air conditioning univent was installed on the ceiling of the Center back room, has no on/off switch.

This univent also leaks when it rains which means that heated and cooled air is probably being lost.

- b. Computers in the library are all networked. Maintenance and antivirus software are run in the evening. So, it is necessary for the computers to stay on unless they had “wake on LAN” software to wake them up only when these functions are performed. This could generate a cost savings of \$53,000 per year according to John Allen, Facilities.
 - c. Copy machine and fax machines are left on all night. Manually switching the off in the evening could save energy.
 - d. Heating and cooling is inconsistent:
 - i. Each room has a different temperature. Existing ceiling fans should be utilized optimally for heating and cooling season.
 - ii. Library has high ceilings, which are not very energy efficient. Work to have ceiling fans blow heat down in room. May need new fans that can be switched to accommodate cooling and heating.
 - iii. Investigate window replacement with high efficiency ratings.
 - e. Custodian turns library lights on in the early morning (6:00 AM) at the same time he turns on hall lights. Lights are burning before staff arrives.
 - f. Custodian turns off library lights after he cleans at approximately 5:00 PM. Staff could turn off lights and custodian could turn back on.
 - g. Because the library is located on a bridge with no first floor below, the tile floor is cold. In the winter staff must wear heavy socks or thick-soled shoes to keep their feet warm. Insulating properties of carpet could improve comfort and be more energy efficient and promote the quiet atmosphere of a library.
 - h. Personal Appliances:
 - i. Refrigerator (one 4 cu ft) Approximately 8 people utilize this refrigerator
 - ii. 2 coffee pots
 - iii. 1 microwave – Used by 8-10 people and occasionally by classes reheating food for classroom projects
 - iv. 1 water cooler with heat spigot – approximately 15 people use
5. Methods and Timeline – Meet with Principals and explain how this project fits in with KUSD District Energy Efficiency Pilot. With principals’ approval, meet with Library Media Staff and share the contents of this plan. Solicit additional ideas. (January 2005)
- a. Write work order and submit to custodian requesting on/off switch or sensor for light. (January 2005)
 - b. Work with Information Services to implement “wake on LAN” software or different schedule for maintenance and virus scanning. (February 2005) Cost is absorbed by Information Services.
 - c. Library Media staff will investigate whether sleep mode of the fax and copy machine save as much energy as turning them off at night. (February 2005)
 - d. Need to work with custodians and/or facilities to regulate heating and cooling in the library and window replacement (March 2005).

- e. Ask custodian to leave library lights off until staff arrives (January 2004).
 - f. Ask library staff to turn off lights as they leave for the evening (January 2005)
 - g. Work with facilities to evaluate whether carpeting would make a significant difference in conservation of heat. Additional benefit of carpeting is that it absorbs noise, which is good for a library. Another idea could be to insulate under the bridge. Whereas, insulation is a better answer, it is more costly.(Submit request in March 2005)
 - h. Personal Appliances
 - i. Investigate replacing with a larger but energy efficient model (April 2005).
 - ii. Thermos servers used after coffee brews and coffee pots turned off (December 2004)
 - iii. Already consolidated two microwaves into one (December 2004)
 - iv. Water cooler should be turned off at night and on weekends to conserve energy used by heat and refrigeration functions (December 2004)
6. Evaluation Criteria and Process. Work with Facilities and Custodians to measure energy savings for the building. Facilities will do a load calculation of items turned off and figure out the savings
7. No funding required items: items a, b, c, e, f, h, I
 Funding required:
 d: If ceiling fans need replacing the cost would be \$300 per fan 10 fans = \$3,000. Cost for window replacement would be in excess of \$10,000.
 g: Both suggestions would require putting on a project list for Tremper to submit to Facilities for funding: Carpeting - \$17,000 (\$3 per square foot) approximately or Insulation for the bridge, \$25,000.
 h: \$350 for energy efficient refrigerator.
8. Speak at a faculty meeting to explain success and savings of Library Media Center Energy Plan. Encourage rest of the building to follow suit. I will volunteer to be on a building wide energy committee. Fall of 2005