



Since its opening in 1996, the Center for High Technology Materials (CHTM) facility has been the largest per-square-foot consumer of electrical power among all of the 300-plus buildings on the UNM campus. In January of 2014, CHTM's administration made a strategic decision to reduce the facilities overall energy consumption. By the spring of 2014, CHTM

formed a Green Committee comprised of students, faculty and staff to make recommendations and implement initiatives to reduce the facilities energy use. Meanwhile, the Physical Plant Department made funds available to replace CHTM's heating, cooling and ventilation controls (HVAC) with a new state of the art digital control system. CHTM departmental funds were also allocated for energy efficient lighting features.

Phase 1 of the new digital HVAC controls installation was completed in June 2014, which included all of the offices and common spaces on the East, South and West sides of the building. This has allowed us to monitor and control the temperatures of these spaces remotely from anywhere there is internet connectivity. The new system also allows us to set schedules for all of the major HVAC equipment. Identifying off-peak hours will minimize the time this equipment is operating when the building is typically unoccupied and will save energy consumption while also extending the lifecycle of the equipment. Users may still override the schedule and adjust the temperature by a few degrees for at least 30 minutes and up to 2 hours (since the traditional thermostats were replaced with electronic sensors). By using digital controls that are schedule-oriented allow for added comfort in the spaces in addition to reducing energy consumption, much like cruise-control in your car. The Phase 2 of the HVAC controls project, which will provide electronic control of the laboratory HVAC and hoods, began in January and should be completed by the end of the semester. Upon completion, we anticipate at least 10-percent reduction in energy consumption beyond the current savings.

You may have noticed new lighting features in many areas of the building. In July of 2014, occupancy sensors that control lighting were installed in both of the laboratory chases (service corridors). In Classroom 101, a combination of new LED fixtures and retrofits of existing lighting was completed, and in the Director's office new LED fixtures were installed. Over the last month, all three of CHTM's conference rooms were retrofitted with LED fixtures and dimmers. These lighting features not only save energy, but also allow for user-controlled light levels tailored to the users' needs and comfort. Additionally, all four restrooms currently have occupancy sensors, which will lead to added energy savings in the long term and reduce user exposure to grime left on the light switch.

We are glad to report that the automated HVAC and lighting upgrades have lowered CHTM's power consumption by over 20 percent in addition to providing occupant comfort to our research and office spaces. While building control automation can have a significant impact on energy savings the primary factor in reducing energy is changing user behavior. The CHTM Green Committee will be kicking-off a "Lights out Campaign" in mid-March to encourage everyone to turn off lights and other power-consuming equipment whenever they are not in use. Developing good but small habits, such as considering lighting only your task surface instead of the entire room and opening the blinds to capitalize on Albuquerque's natural daylight wherever possible, can make a significant impact on energy consumption. The intent is to make us all more aware of our energy use, and eventually adopt reducing energy consumption as a way of life.