TBE may help save home energy

by David Cherry

A pair of small buildings recently added to the top of the Thomas Beam Engineering complex will eventually result in some very big energy savings.

The buildings, measuring a mere eight feet high and 12 feet wide, were constructed by subcontractors using donated materials and a \$21,000 grant from Nevada Power.

Robert Boehm, chair of mechanical engineering, said the reason the lab was built was to study how occupant behavior affects energy use. Real houses occupied by real people cannot be studied with the same accuracy the lab provides.

Items such as new air conditioning controls, advanced window systems and highly reflective paint are all scheduled for evaluation. The data from new facility finally complete,

the tests will be gathered on equipment provided by the university and eventually recorded on to computer.

Boehm and Samir Moujaes, an engineering professor, plan to study factors such as wind direction and velocity, temperature changes and exposure to the sun in order to evaluate the energy saved when a given device is in place.

To the casual observer, the arid regions building laboratory probably looks more like a pair of matching tool sheds than a precise scientific model. Each building contains a single door and window as well as an attic.

According to Moujaes, the lab's designer, the configuration of each building is meant to simulate the typical bedroom found in a Las Vegas tract home.

With the construction of the

Moujaes and Boehm are now ready to begin outfitting the lab with the necessary equipment to collect the data for all upcoming tests.

According to Moujaes, the lab's first scheduled experiment, known as the Attic Radiant Barrier System, will involve a new type of insulation. Consisting of sheets of plastic bubbles covered by thin silver foil, the insulation is designed to reflect heat in the summer and retain heat in the winter.

The effectiveness of the Attic Radiant Barrier System will be measured by installing the insulation in only one of the lab's test buildings. By comparing the electricity use between the insulated and non-insulated buildings, the energy being saved can be measured.

Using the two buildings, one as a test site and one as a control

site, allows for an experiment free of variables other than those imposed by the experimenter. Boehm calls this a "test-tube evaluation."

Boehm and Moujaes see the testing facilities as a benefit to students and the general public. In the future, graduate students will be able to conduct tests on behalf of manufacturers and builders who are seeking new ways to save energy.

Moujaes said master's and Ph.D degree candidates will be able to use the arid regions building lab. According to Moujaes, future research will probably be conducted with a research contract between the university and companies who wish to utilize the lab's testing facilities.

This would provide graduate student funding and possibly a salary for researchers and research assistants.

Boehm said he hopes the lab's practical applications will lead to solutions for many of the energy problems currently plaguing Southern Nevada and the U.S.

Growth problems will lead to serious water and energy problems," Boehm said. He said he is looking to create "alternate cooling modes" to save energy.

Boehm said new non-polluting refrigerants containing no chloro-fluorocarbon's (CFC's) might be an area of study for the project.

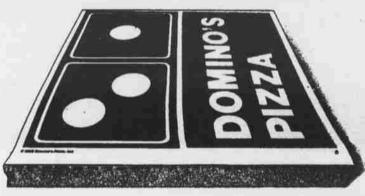
In the near future Boehm said he will be examining passive and non-passive methods of cooling homes. He also hopes to explore solar energy to help alleviate the nation's dependence on foreign oil.

"The lab is one small piece in an overall energy conservation package," said Boehm.

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getting much more aggressive that in the past," he said.

Ackerman said despite being unable to ask them to leave (the campus is not private property) the university is concerned about protecting students. But measures can by taken if there are enough complaints.

Besides meeting with students upset over their encounters, Ackerman is also kept up to date on the group's activities by Gretchen Stamos, protestant campus minister at the University Center for Religion and Life, and Larry Thiel, staff worker for Intervarsity Rebel Christian Fellowship at UNLV.

Former member Donna, who also asked that her full name not be revealed, said the group tried to lead her away from her school duties.

"They said I was too independent and needed to spend less time in school and more time with the church," she said.

Donna said that once a person is baptized into the church,"they take almost all of your time and you are accountable to someone for all of your time. When you hear cult, you think devil worshippers, but these people seem normal."

Francis Beckwith, a philosophy lecturer at UNLV, cited two cases in which students he knew to be affiliated with the church suffered lower test score and class grades once they were involved with the church.

A support and recovery group is being offered by the Religion and Life Center and Rebel Christian Fellowship.

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