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UNH Engineering, Occupational Therapy Students Design Space For Exeter HealthCare

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DURHAM, N.H. — An unlikely alliance of University of New Hampshire students – civil engineers and occupational therapists – has designed an environmentally sensitive atrium space to bring natural beauty to patients rehabilitating from major medical services in Exeter. The 14 students and their faculty mentors, associate professor of civil engineering Charles Goodspeed III and associate professor of occupational therapy Lou Ann Griswold, presented their proposed atrium design to Exeter HealthCare in December and will continue to move the project toward completion during the spring semester.

The project, which the students undertook for course credit, matched the structural engineering skills of the engineering students with the therapeutic insights of the OT students to create a space that is functional, accessible, safe and "so beautiful that I could cry," according to Exeter HealthCare occupational therapist Annie Harris, who initiated the collaboration. Exeter HealthCare provides comprehensive sub-acute skilled care, including rehabilitative and complex medical services during the transition from hospital to home, outpatient therapy services, and driver training and adaptation programs.

The students were tasked with designing a beautiful area for Exeter HealthCare residents to retreat to, regardless of temperature or allergens. From the perspective of the occupational therapy students, building parameters included optimal functionality, aesthetics, heat and humidity, lighting, space, and accessibility factors. Many Exeter HealthCare patients are long-term and require ventilator care, and some have severe behavioral issues.

Engineering challenges included structural issues related to the unique framing of the structure and shear loadings from wind. In addition, students sought to design a space that would qualify for Leadership in Energy and Environmental Design (LEED) Certification, the nationally accepted benchmark for the design construction and operation of high-performance green buildings.

The end design integrated therapy and architecture by optimizing the large open space, surrounding it with oversized large windows to amplify the natural lighting. The design provides secure access to outdoor gardens, a gas fireplace lined on both sides with a cascading waterfall, and art and performance space. Floor heat uses a piping system that transmits hot air upward resulting in uniform efficient heating.

Exeter HealthCare's Harris gives the design – and the student designers – high marks. "The physical and emotional needs of the people who will be using this building have indeed been addressed - this gives the structure a soul," she said.

For the students, the opportunity to work not only outside their disciplines but also outside the university community was rewarding. "This project represented a unique opportunity to blend structural engineering with the human emotions of hope and vision in order to create a building that truly has a soul and a great purpose," said civil engineering student Jack Welch of Boston.

"It was inspiring to join forces with the engineering team to deliver the beginnings of such an important community-based project," said occupational therapy student Rachel Bradt of Rye. "The heart of this atrium project is securely based in the core tenets of occupational therapy - enabling and empowering individuals so they can participate in meaningful day-to-day activities."

Most of the students who worked on this project plan to stay with it through the 2008 spring semester. Spring semester's objective will be to further detail the current design, provide Exeter HealthCare with a complete bid package and associated costs.

Civil engineering students involved in the project were:

Jillian Sanctuary of Milford
J.R. Collins of Weare
Brittany File-Huntsberger of Kennebunk, Maine
Ryan Kline of Wolfeboro
Heather Newton of Sharon
Michael McGurl of Arlington, Mass.
Craig Shillaber of Deerfield
Adam Sprague of Epsom
Jack Welch of Boston
John Westover of Concord

Occupational therapy students involved in the project were:

Lindsey Napurano of Blirstown, N.J.
Rachel Bradt of Rye
Lindsey Parent of Walpole
Beth Geyer of Newmarket

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HIGH RESOLUTION PHOTOS/CAPTIONS:

<http://www.ceps.unh.edu/images/atrium1high.jpg>

Exterior of proposed atrium, designed by University of New Hampshire civil engineering and occupational therapy for Exeter HealthCare in Exeter, New Hampshire.

<http://www.ceps.unh.edu/images/atrium2high.jpg>

Interior of proposed atrium, designed by University of New Hampshire civil engineering and occupational therapy for Exeter HealthCare in Exeter, New Hampshire.

<http://www.ceps.unh.edu/images/atrium3high.jpg>

For comfort there is a warm and tranquil gas fireplace lined on both sides with a cascading waterfall. Included also is space to display local art.

<http://www.ceps.unh.edu/images/atrium4high.jpg>

Many of the Exeter HealthCare residents are long-term and require ventilator care. Logistical issues along with some severe behavioral issues strengthened the argument to create a spacious calming therapeutic environment.

<http://www.ceps.unh.edu/images/atrium5high.jpg>

The atrium design includes space to display local art as well as a performing artist area.

<http://www.ceps.unh.edu/images/atrium6high.jpg>

Large open space amplifies the natural lighting in the UNH-proposed design of the Exeter HealthCare atrium. The design also features secure access to the aesthetically pleasing and therapeutic gardens.

