

## Fort Hood Leads the Way in Greening the Military

Fort Hood, an Army installation located near Killeen, Texas, is designing and building their first green building. Appropriately, the building is to be used as an Environmental Training Facility. The new 5,000 square foot multi-purpose training facility will be located in the southwest part of main Fort Hood.

The Army's sustainability movement was kicked off by a December 2000 Sustainability Conference facilitated by the [Rocky Mountain Institute](#). This conference put Fort Hood firmly on the path to what they today call Sustainable Design Development (SSD). It is now Army policy that the concepts and principles of sustainable design be incorporated into installation planning and infrastructure projects. In fact, the Army Chief of Staff for Installation Management (ACSIM) has decreed that all new military facilities will be designed and built according to sustainable principles. The ACSIM has asked the U.S. Army Corps of Engineers (COE) to provide technical guidance to ensure that sustainability principles are incorporated to the fullest extent possible, balanced with funding constraints and customer requirements.

In April 2001, Austin Energy's Green Building Program got involved by presenting an overview of green building and the [USGBC LEED rating system](#) for [Fort Hood's Directorate of Public Works \(DPW\)](#).

The COE's Construction Engineer Research Laboratory (CERL) has now developed a rating tool that will help identify and measure sustainable principles. This tool, called the "Sustainable Project Rating Tool" (SPiRiT), is based on the LEED 2.0 rating system. The new rating tool will help designers of Army projects incorporate sustainable criteria, methods, and materials into their projects to meet policy requirements.

The Fort Hood Environmental Training Facility is scheduled to be the first of its kind to earn the COE's SPiRiT Platinum certification level. A platinum rating is the highest certification level achievable. "The initial Army goal is for all MACOM [Major Army Command] and installation projects to achieve a minimum SPiRiT Bronze sustainability rating," said Army Assistant Chief of Staff for Installation Management in a May 2001 memorandum.

The quest for a Platinum SPiRiT rating at the new Fort Hood building required a dedicated team effort that capitalized on sustainable building practices while integrating new energy management technologies and methods. The team, in this case, includes [Steinbomer and Associates Architects](#), Bragg Landscape, Fire Protection Engineering, [Beneco Enterprises](#), Jaster-Quintanilla & Associates, Way Consulting Engineers, HMG Engineering Associates, Austin Energy's Green Building Program, and the Army Corps of Engineers.

Ground breaking for this one-a-kind facility is scheduled to begin any day now. This facility will combine the latest in energy management technologies and sustainable design concepts. The orientation of the building, including full-length porches on the southern exposure and a breezeway to capture wind, will maximize local weather patterns for cooling. The exterior walls will be straw bale, and the sand for the stucco will be made of ground bottles from Fort Hood's recycling center. Thanks to the insulation factor of the straw bales, combined with highly efficient, double-hung Pella windows, and a metal roof, Fort Hood anticipates a reduced need for conditioned air during the long, hot Texas summers. Active daylighting will also be used, along with motion sensors throughout the facility to turn lights off when not needed.

Part of the floor is salvaged from a recently demolished base bowling alley. The facility will utilize waterless urinals and low flow toilets to conserve water. In addition, rainwater collection will be used for a drip irrigation system. The landscaping design will utilize low maintenance, local vegetation while meeting the military's force protection requirements. These requirements must be met by new buildings to protect against terrorist activity.

"This quest has been a valuable educational experience for Fort Hood," says Jeff Salmon, Pollution Prevention Program Manager for DPW Environmental Division. "We quickly came to the realization that we can't do it all. Decisions have to be made based upon desired sustainability versus budgetary restrictions."

Fort Hood utilized life-cycle cost analysis to determine which energy management methods would have the biggest bang for their buck, while earning enough points to achieve certification. For example, they made the decision to use higher cost Pella windows for the higher efficiency value. The success of the project is a direct result of an energized team that had experience with sustainable designs and projects, and was motivated to think outside of the box. Scheduled for completion in fall 2002, the Fort Hood training facility will be a government showcase for sustainable design.

### Lee Gros Speaks at Two Programs for a Prestigious Canadian Company

As part of an effort to facilitate information exchange between American and Canadian firms active in Green Building, the [Canadian Mortgage and Housing Corporation](#) (CMHC) and the Canadian consulate in Dallas invited three architects from the United States to present their unique perspectives on green building trends and designs in residential, commercial, and municipal settings. One of the invited speakers was our very own Green Building Program Architect, Lee Gros. Lee is a Project Manager with the [Commercial Green Building Program](#) with many years' experience with sustainable building design and sustainable materials review. Along

with GBP founding member Peter Pfeiffer of [Barley + Pfeiffer Architects](#), and Eric Van Aukee of [Perkins & Will](#) from Santa Monica, California, Lee made a presentation about Green Building at the "Green Building Across Borders" Architects Roundtable on March 21 in Vancouver, British Columbia. The three guest presenters discussed the opportunities and challenges of Green Building in North America with the architects and engineers present.

A second program called "Green Across Borders" was held on Friday morning with the intention of promoting Canada's green abilities and determining green market development. Lee and Peter presented their perspectives on green building trends and opportunities for marketing green building products in the U.S. to a large group of Canadians.

After the work was finished, Lee, Peter, and Eric toured two green buildings at the University of British Columbia, the C.K. Choi Institute and the Liu Center for the Study of Global Issues; a green home in Vancouver; and the EuroLine Window factory in Delta, B.C. They also toured the BC Gas Operations Center in Surrey, B.C., a very sustainable daylit building with atria and operable windows that promote natural ventilation and provide fresh air. See the photos below for highlights of the tour.

#### Daylighting

This interior view of the BC Gas Operations Center shows the floor-to-ceiling sun-shaded glazing.



The actual interior light shelf is constructed from inexpensive acoustical ceiling tiles and stock extrusions.

Photos courtesy of Peter Pfeiffer, AIA

### Green Building Program Welcomes Rich MacMath to Staff

Green Building's newest Residential Program Conservation Specialist is a Registered Architect with a Masters degree from the University of Texas. Rich started his sustainable career back in the 70's as the Co-founder of Sunstructures Architects in Ann Arbor, Michigan. He designed single-family and multi-family buildings as well as small commercial and educational facilities. Sun structures specialized in energy-efficient design, using passive solar, earth sheltering, and daylighting. Rich has lived in Austin since 1990. He currently resides in the Hyde Park neighborhood with his wife and two children. Rich comes to the Green Building Program from the [Center for Maximum Potential Building Systems](#), where he has worked for the last 10 years. He has a lot of experience with materials and products life-cycle analysis and database development. As a sustainable architecture consultant, he has worked on many commercial, educational, and office building projects, including obtaining LEED ratings for commercial and office buildings.

## Member Bulletin Board

### Shirley Muns Wins Vice-Chair Spot

Shirley Muns, the Green Building Program's Energy Code Specialist, was elected Vice-Chairperson of the IECC (International Energy Conservation Code) Code Development Committee. There are fifteen members and three staff liaisons on the Code Development Committee. The Chair and Vice-Chair are elected by members of the committee.

Shirley attended the public code change hearings in Pittsburgh, PA, on April 8 - 19, 2002. At the public hearings, all proposed changes to the energy code are presented. The Committee hears the proposed changes and recommends them for approval or disapproval by the International Code Council (ICC). Of the 78 proposed changes presented in April, 42 were recommended for approval, the remaining either denied or withdrawn. The committee recommendations will be heard by the full ICC membership at the annual code forum to be held this November in Fort Worth.

"Overall, the code changes are beneficial to improving energy efficiency," says Shirley. "This is important since the energy code is the baseline for the Green Building Program's rating system. Everyone must meet energy code requirements as part of the GBP rating system."

Also of interest at the code change hearings was a presentation made by the Department of Energy proposing a revision in the number of US climate zone classifications. The DOE suggests reducing from 17 zones to 8. There was a lot of discussion about this idea and revisions will be made to the proposal before it is brought back to the Code Development Committee in the next cycle.

### New Version of Manual J Now Available

The short scoop is: Version 8 of the Manual J software has been released, the first update in 15 years. As many of you already know, Manual J is the standard method of calculating residential heat loss and gain, which allows HVAC contractors to correctly size the HVAC system. You can read more about it in the [May 2002 Energy Design Update](#) newsletter published by Aspen Publishers. Look for a review of the new software in the July issue of the Green Building Program Newsletter.