

# Public Works DIGEST

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U.S. ARMY INSTALLATION MANAGEMENT COMMAND

# IMIGOM



Soldiers relax by the pool in the privatized Marne Point unaccompanied personnel housing complex at Fort Stewart, Ga., one of the Army's pilot projects testing privatization of single-Soldier housing. Photo courtesy of the Fort Stewart project team. Page 14

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## Your home away from home: Army lodging privatization

by Maj. Gen. Merdith W.B. (Bo) Temple

In 2009, the Department of Defense operated nearly 70,000 lodging rooms — similar to hotel rooms — and spent nearly \$1 billion to operate them. Yet many of the Army lodging facilities were not in the best of condition and were deficient in many life-safety and critical system areas.

Since August 2009, exciting progress has been made to upgrade the lodging at 10 Army installations — about 3,200 rooms — through the Privatization of Army Lodging program. About 5,000 rooms at 11 other installations, as announced on Sept. 23, 2010, will be added to the program this calendar year, once approved by Office of Management and Budget.

PAL is committed to providing the convenience and consistency of consumer-branded hotels at favorable rates with the comforts of home and the conveniences of the office. PAL is based on the successful structure and lessons learned during the privatization of military Family housing, called the Residential Communities Initiative program.

The national team developed during the RCI program employed its experience and expertise to leverage government facilities to raise private funds to improve on-post stays. The team is led by the deputy assistant secretary of the Army for installations, housing and partnerships and includes members from the Installation Management Command and the Office of the Assistant Chief of Staff for Installation Management, who protect and advocate for the installations' needs, and the U.S. Army Corps of Engineers, who provide real estate, environmental and counsel support.

After a competitive selection process organized by the national team, the Army entered into a lease with Rest Easy LLC to privatize the first 10 installations. The lease will be amended this year to add the next 11 installations.

Rest Easy LLC is a joint venture of



Maj. Gen. Merdith W.B. (Bo) Temple  
Photo by F.T. Eyre

two entities that are uniquely and highly qualified to provide the right mix of proficiencies and know-how to solve Army lodging problems. Actus Lend Lease has been involved in designing, renovating and building military Family housing for more than 30 years and is the managing member in six of the Army's RCI projects. InterContinental Hotels Group, the most globally diversified hotel company in the world, is the hotel operator for the program. Existing and new facilities will be brought up to the operating standards of the IHG's Holiday Inn Express, Candlewood Suites and Staybridge Suites brands.

Under the lease, Rest Easy LLC has the responsibilities to manage, finance, build, renovate, maintain and operate the lodging facilities. Rest Easy LLC earns income by charging a daily room rate to guests, but in accordance with the lease, on average across the portfolio, this rate must be less than 75 percent of the General Services Administration's per diem lodging rate.

Rest Easy LLC immediately set about correcting commercial code noncompliance issues and overhauling the mechanical, electrical and plumbing systems of the existing inventory of the first group of installations in 2009. Once the amended lease agreement is executed, Rest Easy LLC plans to finance and invest \$250 million in development and construction

### Acronyms and Abbreviations

|       |                                    |
|-------|------------------------------------|
| IHG   | InterContinental Hotels Group      |
| PAL   | Privatization of Army Lodging      |
| RCI   | Residential Communities Initiative |
| USACE | U.S. Army Corps of Engineers       |

services on the first group of installations and another \$350 million in the next group.

Rest Easy LLC and their hotel operator, IHG, strive to bring the convenience and consistency of consumer-branded hotels while providing a guest experience specially tailored for Army travelers. Their commitment is evident in the high level of guest services now offered at IHG Army Hotels.

Complimentary breakfasts are provided to registered guests in the great room of each central hotel building. Concierge services are located in the central hotel of each installation and offer services designed to welcome and meet the informational needs of registered guests. On most installations, a regularly scheduled courtesy shuttle service provides transportation within the installation seven days a week. The hotels provide free laundry facilities for registered guests and complimentary high-speed Internet access. Most lodging facilities are pet friendly. Moreover, when military members and civilians stay at an IHG Army Hotel, they are eligible to earn points in the corporate reward system, which are redeemable at IHG hotels worldwide.

The first of group of installations to have their lodging privatized, known as "Group A," includes Forts Rucker, Ala.; Leavenworth, Kan.; Riley, Kan.; Polk, La.; Sill, Okla.; Hood, Texas; Sam Houston, Texas; and Myer, Va.; along with Fort Shafter-Tripler Army Medical Center, Hawaii; and Yuma Proving Ground, Ariz. The second group of PAL installations, known as "Group B," includes Forts Belvoir, Va.; Bliss, Texas; Buchanan, Puerto Rico; Campbell, Ky.; Gordon, ➤



# Good housing is essential to readiness

by Command Sgt. Maj. Neil L. Ciotola

**W**e are the Army's Home," the Installation Management Command's slogan, refers quite literally to homes for our Soldiers and their Families. This endeavor is part of Line of Effort 4 in the Installation Management Community Campaign Plan, and it involves a lot of other moving pieces. The Commander's Intent diagram makes this clear: housing directly affects the well-being and readiness of our Army.

IMCOM is doing a great job of both sustaining great facility standards and adopting best business practices for the barracks, Family housing and lodging. As the chart suggests, however, IMCOM housing facilities are just a part of a larger system of systems.

Housing is not only one of my professional concerns, it is a very personal issue. I have not always been a command sergeant major with my own home. As a new recruit, I lived in open rooms with up to 40 others. Even as a buck sergeant, I shared my room with another noncommissioned officer. Later, when I was married, my Family and I lived in a variety of places including the "stairwells" in Germany.

Recent barracks initiatives will ultimately provide private rooms for Soldiers; the privatization of stateside Family housing and lodging have given us ways to leverage quality through commercial partnerships. The First Sergeant's Barracks Program creates effective management cells that improve sustainability, assignments and terminations. These are great initiatives



Command Sgt. Maj. Neil L. Ciotola  
U.S. Army photo

and, with reservations, I applaud the entrepreneurial spirit that has moved these efforts forward.

However, the move toward privacy and privatization creates challenges for leadership. One of my favorite books, *Guardians of the Republic: A history of the Non-Commissioned Officer Corps of the US Army* by Ernest F. Fisher, captures the essence of the difficulty. In protecting our nation, we are charged with using the nation's resources wisely. America's parents entrust us with their children. The benefits of more privacy for our Soldiers are not necessarily at odds with our obligation to America, but they create leadership challenges in our enlisted community.

Recent increases in the suicide rate emphasize the importance of whole-Soldier welfare. Private rooms may allow Soldiers to isolate themselves and compound their personal challenges. Keeping Soldiers engaged with others and creating healthy

## Acronyms and Abbreviations

|       |                                 |
|-------|---------------------------------|
| IMCOM | Installation Management Command |
| NCO   | noncommissioned officer         |

social systems has to be a joint effort.

At each of the 50 installations I have visited, I have directed our NCOs to be more vigilant and aware of where and how our Soldiers live; to be aware of the warning signs of despair and destructive behavior. In addition, intelligent barracks and community design should create areas for congregation and interaction so that there is a sense of community everywhere. IMCOM is rising to this challenge and creating a new sense of community-conscious design.

Housing programs are holding our Soldiers and their Families more accountable than ever before. We are making our service members liable for physical damage to property under their care.

What is not as obvious but just as important is energy stewardship and utility use. Gone are the days of running air conditioners or heaters full blast with the doors open. The same thing is true with water use and all other utilities. To manage this, IMCOM is making great progress in monitoring utility consumption in our housing. Soldiers and Families are stakeholders in this effort, and the core Army value of integrity includes good stewardship of American tax dollars.

eMH is a new enterprise housing management system that has remarkable potential to integrate and connect all of ➤

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Ga.; Hamilton, N.Y.; Huachuca, Ariz.; Knox, Ky.; Leonard Wood, Mo.; and Wainwright, Alaska; plus White Sands Missile Range, N.M.

USACE is proud of its continuing role as part of the team executing the PAL program for the Army. Norfolk District's Real Estate Office and Mobile District's Planning and Environmental

Division provide ongoing support to the Army PAL team to ensure that all Rest Easy LLC lease requirements are met. USACE also provides land surveys, other real estate needs and the environmental studies necessary for Rest Easy LLC to complete the development plans for all 21 installations. Development plans are a collaborative effort between Rest Easy LCC and the Army PAL team who

jointly visit each installation to ascertain the local lodging needs.

*USACE's efforts help the Army provide military members and civilians with a good night's rest at their home away from home.*

*Maj. Gen. Meredith W.B. (Bo) Temple is the deputy commanding general, USACE.* 



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these dots. Managing all housing resources, barracks, Family housing, furniture, and assignments and terminations, eMH is now being used by the Navy and the Marines and will likely be adopted by the Air Force.

IMCOM Housing will be one of the first to use a truly “purple” system. IMCOM’s Public Works Division is leading this effort by adopting this system. This step builds upon all of our efforts to continuously improve and do more with less.

In closing, I need to say I am intensely proud to be part of an organization so important to our country’s defense. IMCOM’s team sustains great housing standards. By fiscal 2015, we will complete the permanent party barracks buy-out, and by fiscal 2017, our training barracks program will be complete. Enterprise management systems, privatization, the First Sergeant’s Barracks Program and other creative initiatives will continue to improve Family housing and lodging. We will continue to make effective design and funding decisions while considering how

the configuration of facilities supports readiness and wellness.

However, we must never lose touch with individual Soldiers and NCOs. Ultimately, we support how they live and interact. They are our reason for being. What is absolutely critical for the continued success of these programs is Soldier and NCO involvement with each other and with the extended IMCOM community.

Command Sgt. Maj. Neil L. Ciotola is the command sergeant major, IMCOM. 





# The future of Family housing

by David Pfeffer and Kerry Solan

**E**nergy use, the environment, carbon footprints and sustainability are prominent and important topics these days. It's said that buildings use too much and the wrong kind of energy, their waste streams pollute the environment and leave a large carbon footprint. Too much energy is consumed, which can't be sustained.

Housing isn't immune to this building design movement — a shift from a focus on function, livability, maintenance and keeping the budget low to what is now, seemingly, a focus on the utility room, mechanical systems and the hose bib.

## Aiming for sustainability

The Army is rising to the challenge, and new requirements raise the bar for engineers. The gauntlet was thrown down several times: first, with the Sustainable Project Rating Tool Gold requirement, then the Leadership in Energy and Environmental Design Silver requirement,



*This premanufactured company grade officer house at Radford Army Ammunition Plant, Va., meets LEED Silver requirements and is built to match the traditional style of nearby residences.*



*At Fort McCoy, Wisc., this unit, built to SPiRiT Gold requirements, is the home of an Army Family.*

and now an ongoing policy for the latest sustainable design and development.

“The new sustainability requirements are challenging our designers, engineers and construction folks to find more innovative ways to use green technology and be good stewards of the environment,” said Cheryl Fromme, Engineering Branch chief at Norfolk District, U.S. Army Corps of Engineers.

The goals are houses that are more energy efficient, perhaps 45 percent more energy efficient than in the past; homes that reduce water use and produce less waste; houses that rely more on the sun for heating, shade for cooling and less on standard gas-fired, forced-air systems; homes that benefit from natural light; and, in a few years, homes that don't consume any energy at all.

These kinds of greens systems will be required in all Army construction activities, a requirement spelled out in the *Department of the Army's Sustainable Design and Development Policy Update*, adopted Oct. 27, 2010, available at [http://army-energy.hqda.pentagon.mil/policies/asa\\_sustainable\\_ddpolicy.asp](http://army-energy.hqda.pentagon.mil/policies/asa_sustainable_ddpolicy.asp). Beginning with fiscal 2013, it's the future of Army Family housing.

The update includes a variety of green requirements.

**Energy efficiency** – Structures must meet or exceed stringent American Society of Heating, Refrigerating and Air Conditioning Engineers 189.1 requirements.

**Roofs** – Cool roofs are required in most climates where the cooling load is greater than the heating load.

**Metering** – Advanced utility metering is a must on projects of more than \$200,000. This requirement

## Acronyms and Abbreviations

|        |   |
|--------|---|
| LEED   | Leadership in Energy and Environmental Design |
| SDD    | Sustainable Design and Development            |
| SPiRiT | Sustainable Project Rating Tool               |

covers hourly, daily, monthly and annual consumption for each energy supply source to the facility, including gas, electricity and district energy.

**Hot-water heating** – Solar water heating designed to meet 30 percent of hot-water demand where more than 50 gallons a day is used is required. In lieu of solar water heating, waste heat harvesting, integrated co-generation systems or a combination of the two may be used.

**Storm water** – Low-impact development criteria to manage storm drainage needs to maximize use of existing topography and minimize site clearing and soil grubbing.

**Outdoor water** – Consumption must be reduced by 50 percent with efficient landscape and irrigation strategies that include rainwater retention, water reuse, recycling and xeriscaping. Military Construction projects are to use no potable water for irrigation.

**Indoor water** – Potable water consumption needs to be reduced by 30 percent below baseline, meeting Energy Policy Act of 1992. ➤

## Center of Standardization

The Center of Standardization at Norfolk District provides planning and design expertise and maintains design criteria for Army Family housing, dining facilities, general instruction buildings, military entrance processing stations, information systems facilities and the Criminal Investigation Command. The chief is Terry Deglandon, who can be reached at 757-201-7698, [Terry.l.deglandon@usace.army.mil](mailto:Terry.l.deglandon@usace.army.mil)



# Improved website gives new face for Army Housing

by Shenise Foster

In December, the Army debuted the Army Housing Online User Services website. The customizable website is user friendly and comprehensive, features that were lacking in previous versions of housing websites.

The Army Housing Online User Services website offers a more streamlined avenue for providing Soldiers and Families with one of the most important aspects of the moving process: housing. The website can be explored at <https://www.housing.army.mil/ab/>.

This official Army Housing website

allows Soldiers, Families and Department of Defense Civilians easy access to information on Family, single-Soldier and off-post housing options. Updated on a quarterly basis by each installation Housing Services Office, the Army Housing Online User Services website is a resourceful tool that is consistently evolving.

This interactive site features installation welcome videos, estimated off-post housing costs and on-post housing floor plans. It allows Soldiers and Families to check their position on on-post housing wait lists. The site also includes links to related quality-of-

life issues such as child care and education.

Army Housing Online User Services has enhanced the Army Housing marketing strategy of continually providing accessibility and reliability from Army Housing careerists around the world.

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**Building commissioning** – Design requirements and specifications for the building envelope, storm-water management, water treatment and information technology systems must be met during and after construction.

**Certification** – Attaining LEED for Homes Silver level or higher, certified by the U.S. Green Building Council, is required. Otherwise, homes will be designed to achieve energy consumption levels 45 percent below the baseline set by the International Energy Conservation Code in 1999.

This SDD update allows the Army to effectively ensure energy systems are at their optimal performance levels, collect data and compare notes with other facilities and installations. The Corps of Engineers' Engineering and Construction Bulletin 2011-01, *High Performance Energy and Sustainability Policy – Applicability: Directive and Guidance*, available at [http://www.wbdg.org/cdb/browse\\_cat.php?o=31&t=214](http://www.wbdg.org/cdb/browse_cat.php?o=31&t=214), implements a high-performance energy and sustainability policy.

## Adjusting to sustainability

The trend is greater application of SDD rather than less SDD use. But while the Army is making changes, the public is moving more slowly.

In the private sector, demand isn't following on the heels of the sustainability hype. The jury is out on whether people would opt to live in a thick-walled home with acres of south-facing glass, no lawn and a complicated water system. How many people would choose to monitor and fine-tune a house?

In January, the Wall Street Journal reported that Martha Stewart joined forces with a builder to offer environmentally friendly homes that include solar panels on the roof, kitchen composting bins and rainwater-collection systems. Following initial successes, sales fell along with the rest of the housing market.

The problem seems to reside in changing people's perception of sustainable housing from passing fad to fixed practice.

"I'll build the greenest house in the world if the market demands it," a chief executive of a Texas-based builder told the Journal.

The general public doesn't seem to understand the value of, for instance, a super-insulated home as well as the value of, for example, a granite countertop, said Kevin Morrow, senior program manager, National Association of Home Builders' Green Building Programs.

## Assimilating sustainability

The Army's mission is to build high-


quality homes for its service members. This goal requires leadership in sustainability as well as features to which the public is accustomed.

In the meantime, the Army is taking lessons from Europe, where the concept of *Passivhaus*, or passive house, has rooted and continues to grow. *Passivhaus* significantly reduces energy demand, using super-insulation, maximum daylight, less landscaping and motion-sensor lighting, among other features.

With the private sector cautious with sustainable building, the Army is acknowledging the challenges of going green while also meeting the needs of end users. It's a marriage on which the Army is going to have to work.

Builders will learn to build, installations will learn to maintain, and Soldiers will learn to live in the future of Family housing. It's an opportunity to be a leader in the environment. The Army will stand tall, take that leap and lead the way to sustainable Family housing.

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# When tragedy strikes: response to Fort Leonard Wood tornado

by Ivan G. Bolden

**O**n Dec. 31, an EF3 tornado struck Fort Leonard Wood, Mo., taking direct aim at the 487 homes in the Piney Hills neighborhood.

EF3 tornados pack winds of 158 to 206 mph and cause severe harm. This tornado caused significant destruction in Piney Hills, leaving most units damaged to varying degrees by wind, hail and flying debris. In the end, 38 homes were declared a total loss, and 199 units suffered damages ranging from minor to major.

In the aftermath, the Fort Leonard Wood community stepped forward. The garrison command, local fire and safety units and Balfour Beatty Communities, which manages Fort Leonard Wood's Family housing, orchestrated an impressive disaster response.

## Response

Immediately after the event, BBC staff and installation personnel began the tasks of search, rescue and damage assessment. The first priorities were to secure the area and locate all residents.

BBC contacted each Piney Hills Family to check its status and safety, and to inform those who were away of what had occurred. The Fort Leonard Wood Fire Department conducted an initial sweep through the devastated neighborhood.

Within two hours of the tornado, the BBC maintenance team joined the fire department in cutting trees and clearing debris to reopen the roads and began classifying homes as having suffered minor, moderate or major damage. Additional first responder support came from several local communities' fire departments.

Simultaneously, BBC community manager Shawna Swanson and her staff began coordinating Piney Hills information for emergency responders, providing maps, floor plans, resident lists, house keys and occupancy records. The information helped

emergency response teams conduct thorough searches to account for all residents. Swanson and her staff also relocated Families to a temporary shelter, which had been set up by the Army in the Davidson Gym.

Local utilities crews immediately de-energized electric systems, shut off water lines that were ruptured and capped gas lines to ensure the community's safety. They worked with the installation to secure the area and then safely restore power and gas to homes that were not severely damaged.

Under the lead of BBC facilities manager Ronald (Ron) Hesteness, the facilities team went straight to work making repairs so that people could get back into their homes as soon as possible.

Hesteness called on his strong relationships with the installation's many service providers and contractors to request that they assemble teams. They answered the call, dropping other plans for the holiday weekend and bringing manpower and equipment by the next afternoon. By day two, teams were moving debris, clearing roads and pitching in wherever needed.

The installation's trash service provider brought in 35-foot containers to help with initial cleanup. A maintenance contractor and a roofing and renovations contractor repaired broken windows, sealed roofs and fixed electrical issues. A landscaper and an excavating company also volunteered.

BBC divided crews into three teams, each to work in a designated area. Teams removed hazards, cleared paths and helped residents access their homes so that they could assess damage and salvage belongings.

BBC quickly notified the property insurance carrier and the renters' insurance carrier. Claim adjustment teams traveled to Fort Leonard Wood, so they could assess damage to buildings and personal property.



*Emergency responders search through debris after an EF3 tornado struck a Fort Leonard Wood Family housing area Dec. 31. Photos by Ron Hesteness, Balfour Beatty Communities, Fort Leonard Wood*

Communication was very important. Starting the evening of day one, the garrison command and BBC held mandatory town halls for the residents to provide briefings on the extent of the damage and actions taken, address resident expectations, assure their safety and answer questions.

"We were all in this together, and we wanted to be open and provide transparent information out there about the situation and the steps being taken by everyone to secure the area and get life back to normal for our residents," said Swanson.

## Keys to Success

In every stage, the common threads that led to the overwhelming success of the disaster response were communication, organization, the strength of the partnership and the sense of community.

**Communication:** The BBC community management team was in constant communication with residents through all available channels — phone calls, a Facebook page, town hall meetings and word of mouth. BBC set up a command center in the community center, which served as the main point for information dissemination.

Mandatory town hall meetings were held every night to keep residents updated.

| Acronyms and Abbreviations |                            |
|----------------------------|----------------------------|
| BBC                        | Balfour Beatty Communities |





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A BBC team member begins damage assessment in the Piney Hills neighborhood of Fort Leonard Wood.

BBC kept the flow of information open between all parties at all times, including residents and the garrison command. The Pentagon relied on Swanson's daily briefs to stay informed.

**Organization:** Extremely detailed and organized operations played a critical role. BBC and the Army worked together to set up temporary shelter for affected residents. On days two and three, BBC began the process of identifying permanent relocation for those in homes deemed no longer safe for habitation. By the end of the first week, everyone affected was assigned new quarters, and only six Families chose to move off post.

Coordination among disaster response teams allowed for the efficient removal of light debris, temporary repairs to secure homes and prevent further damage, and the subsequent demolition and heavy debris removal. Teams immediately began making damage assessments throughout the impacted area, and insurance claims adjustment teams were brought in.

**Partnership and sense of community:** The hands-on support from Soldiers and the garrison command is a testament to the partnership between BBC and the Army. Soldiers spread out across the post to recover debris and personal property, and helped their neighbors dig through the rubble to find Family photos and other

possessions. One woman's missing purse was discovered. A couple of missing cats and even a dog that had been missing for almost two weeks were reunited with their Families.

Military Police kept the area well lit and secure. The Directorate of Logistics provided immediate transportation support for affected Families. Called "You call, we haul," the service was well received. The Directorate of Emergency Services established a lost-and-found location for articles recovered from the blowing debris.

The Directorate of Family and Morale, Welfare and Recreation published the *Tornado Emergency Information and Contact List* daily and set up a Family Assistance Center within 24 hours of the storm. An on-post dining facility went to 24-hour operation to provide cooked meals for affected Families. The Staff Judge Advocate mobilized claims assistance teams and worked side-by-side with the BBC's claims adjustors.

Outside organizations played an important role as well. The Red Cross, local chapters of Masons and the USO made their presence felt, setting up a food bank and a lending closet. The local community and others on post who were unaffected by the tornado showed support with many donations.

"I wouldn't have wanted to be anywhere else when the tornado hit because of the tremendous support we've continued to receive from this community," said Capt. Nathan Kaminski, who lost his home.

"I don't remember an Army installation getting hit by a natural disaster of this magnitude," said Gen. George W. Casey, Army chief of staff, during his visit following the storm. "As I went around today ... I was just amazed at the resilience of our Soldiers and Families, and amazed at the teamwork not only on the installation but from local communities."


By Jan. 31, 22 structures comprising 38 units were demolished, and more than 20,000 tons of debris had been removed from Piney Hills. The BBC staff, contractors, insurance providers and the corporate disaster response team that came in logged more than 11,000 man-hours in January. In all those hours, there were only four minor injuries and zero worker injuries.

### Lessons learned

While the installation and community partners did an outstanding job of managing the disaster response, the team learned some important lessons. Some of the biggest challenges they faced involved cross-coordination and communication among all of the departments involved:

- Housing communities should assign one person from their staff to be the designated communicator to free others to be out in the field helping residents; project directors may be best suited for that role.
- Use the emergency broadcast system. This automated voice message system calls all residents, using contact numbers residents supply, and makes the task of keeping all residents informed more manageable.
- Formalize who is in charge. It was a good problem to have, but so many emergency crews jumped into action, each with its priority role, that it caused duplication of updates and information, leading to lost time. Identifying one leader, whether it is the fire department or the garrison command, will streamline the process of getting help to the community.

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# Army training barracks: operational readiness training complexes

by Jerry Harbison

One barracks program that covers all three components of the U.S. Army — the active force, the U.S. Army Reserve and the Army National Guard — is the operational readiness training complex. The ORTC is a barracks complex for units in transient training. This requirement is huge and one of the more complex facility inventories to manage in the Army.

Holistically, the ORTC program has some very big challenges and funding requirements. One of the challenges is that much of the inventory is World War II wood.

How can the Army be relying on World War II wood facilities designed for a 10-year life and still in use 70 years later? These facilities are needed to support critical Army training on a part-time basis, mostly during the summer months. These buildings support the Army's Reserve Officer Training Corps' cadet training programs and active units, but they are needed mainly for the Reserve and Guard components for their weekend drills, annual training events and to execute their Army Force Generation training cycles.

To meet the demand for modern, sustainable training barracks, the U.S. Army Corps of Engineers and the Office of the Assistant Chief of Staff for Installation Management developed the Army standard ORTC in 2006. This Army standard was assigned to the Corps' Louisville District.

The Louisville District is in the process of refining the Army standard design, applying the new sustainability and energy saving criteria, and performing facility design reviews.

The ORTC standard battalion design consists of austere barracks for enlisted Soldiers, noncommissioned officers and officers; a dining facility; administrative space and vehicle maintenance capability. The first full battalion ORTC is scheduled to be completed at Fort Bliss, Texas. A fiscal 2011 ORTC project will complete the supporting facilities.

Forces Command, the Army's Readiness Core Enterprise, has training oversight



Modern and sustainable ORTC barracks meet the needs at Camp McGregor, Fort Bliss, Texas. Photo courtesy of John Gallup and Associates

### Acronyms and Abbreviations

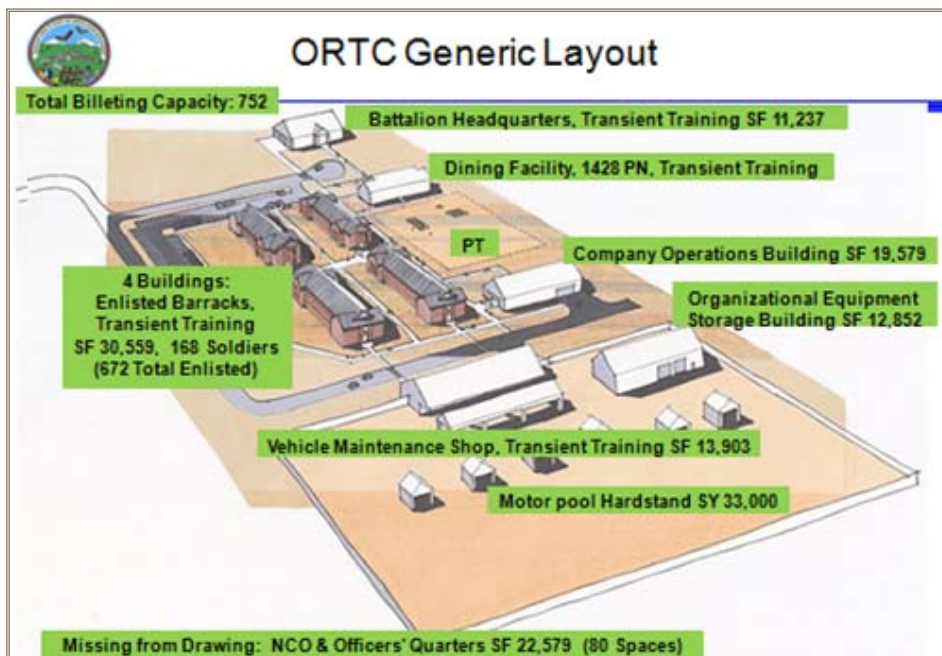
|         |  |
|---------|--|
| FORSCOM | U.S. Army Forces Command   |
| HQDA    | Headquarters, Department of the Army                               |
| MILCON  | Military Construction  |
| OACSIM  | Office of the Assistant Chief of Staff for Installation Management |
| ORTC    | operational readiness training complex                             |

and determines how and where the entire Army conducts collective training events to meet the Army's demand for trained and ready units. To meet this significant training and facility challenge, the Army must decide how to best recapitalize and utilize its aging barracks inventory.

Because there are so many stakeholders, action officers formed a Headquarters, Department of the Army, ORTC working group to provide analytical support to OACSIM's Housing Division. The team is co-led by FORSCOM and the OACSIM program manager for transient training barracks, and has representatives from the training, the engineer and the housing communities.

OACSIM and FORSCOM have two key initiatives that will help the Army begin to recapitalize the transient training barracks.

First, OACSIM is developing a comprehensive facility investment strategy that includes funding for Military Construction, restoration and modernization, sustainment and demolition. The effect of optimizing funding programs allows commanders and the three Army components more options and tools to improve existing barracks when prudent and use MILCON when necessary to increase capacity or recapitalize failed and failing structures.



A conceptual architectural rendering shows layout of an ORTC. Graphic by HQDA ORTC Team



# Branded hotels: What is branding and how does it benefit the Army?

by Vern Abdo

A major benefit of the Privatization of Army Lodging program is that it brings branded hotels to Army installations. But what does that really mean to the Army?

A brand is a persistent, unique business identity intertwined with associations of personality, quality, origin, liking and more. One of the benefits of branding hotels on Army installations is that it creates a consistent experience for lodging customers, which leads to a more comfortable atmosphere for guests. When guests check into a PAL hotel, they know they will receive a level of service and overall lodging experience consistent with that brand.



A room in the Holiday Inn Express at Fort Sill, Okla., displays the signature color themes and bedding of its brand. Photos courtesy of IHG Army Hotels

Actus Lend Lease, the Army's PAL partner, chose InterContinental Hotels Group as the PAL hotelier. The three IHG brands in the PAL program are: Holiday Inn Express, Candlewood Suites and StayBridge Suites. Holiday Inn Express is a mid-scale hotel, while Candlewood Suites and StayBridge Suites are extended-stay hotels. All are well known names with brand-specific identities.

Branding does not mean that each hotel is a cookie cutter version of other properties in the same brand, but that consistent themes and standards are woven into each hotel. For instance, each brand has its own color themes, bath products, bedding and similar breakfast offerings — features designed to breed familiarity for guests.

In addition to the brand-specific characteristics, the PAL hotels will have additional amenities designed specifically for the Army traveler, such as great rooms, concierge services, shuttle service and weekly barbecue socials.

For a hotel to fly a brand's flag, the hotel must meet the brand's standards. Brand standards are the detailed description of all aspects of the hotel that make up the brand. These standards define everything from color

| Acronyms and Abbreviations |                               |
|----------------------------|-------------------------------|
| IHG                        | InterContinental Hotels Group |
| PAL                        | Privatization of Army Lodging |



The familiar sign announces the presence of a Holiday Inn Express at Fort Sill, Okla.

palettes, furniture and lighting to employee uniforms and breakfast offerings.

When the PAL Group A project closed, the process of branding hotels began at several properties. Transitioning an Army facility to a branded hotel starts with representatives from the brand evaluating the facility to create each hotel's specific identity. The evaluation includes the development of a plan that weaves the brand themes into the hotel while ensuring that the hotel conforms to all brand standards.

After a plan is created, a construction team renovates the hotel to brand standards according to the plan. A second team decorates the hotel with brand-consistent furniture and accessories, and incorporates other brand characteristics — right down to the music that plays in the lobby.

These changes ensure that customers have a consistent experience in each hotel within a specific brand. Only after all of the steps have been accomplished can a hotel fly its flag as a branded hotel.

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(continued from previous page)

Second, FORSCOM is working on a Regional Training Center study and initiative with HQDA that will allow the Army to focus on key regional locations as an effective tool to gain training efficiencies, reduce redundancy in the training support system and focus Army investments. These goals are achieved by concentrating facility requirements at selected installations that will become important regional centers where units go to get collective training at the platoon and higher level.

Over time, the barracks at these key regional centers will improve with OACSIM's facility investment strategy, which will raise the barracks inventory to current Army standards. At the same time, the Army will continue training the world's best Soldiers with barracks and training support facilities that are increasingly modern and sustainable.

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# Privatized Army lodging makes an impact

by Rhonda Hayes

The Privatization of Army Lodging program was initiated to improve the quality of life for traveling Soldiers and their Families, to recapitalize the on-post lodging inventory by developing new and renovated hotels, to deliver superior hotel amenities and services for guests and to provide for the long-term sustainment of the facilities.

The Army's private PAL partner is Actus Lend Lease, an experienced privatized Family housing developer. Their chosen hotelier is InterContinental Hotels Group, the largest hotelier by room count in the world. In August 2009, Actus Lend Lease took ownership of PAL Group A — 62 lodging facilities and 3,219 rooms across 10 installations.

The challenges at takeover were significant. The facilities required immediate attention to make them compliant with commercial code safety standards and to address the backlog of previously deferred maintenance to the mechanical, electrical and plumbing systems. The condition of the facilities and turmoil in the financial markets delayed the start of the work and limited the available funding, but Actus was able to secure \$85 million to put directly into the facilities, while IHG focused on adding guest services.

The services introduced included shuttle

service, front desk concierges to help orient new arrivals to post, expanded breakfast offerings and points in IHG's Priority Club Rewards program for stays at the privatized hotels. All of the installations that are part of the PAL program can also be found on one central reservation platform, *ihgarmyhotels.com*, for easy-to-make reservations.

Over the past 18 months of privatized operation, the PAL Group A portfolio has performed better than expected on all key operational metrics, including occupancy and guest satisfaction projections. Guest satisfaction, in particular, has increased every month since privatization.

The portfolio has also provided official travelers with a discounted room rate relative to the off-post market. Weighted fiscal 2010 rates averaged 74 percent of the lodging per diem.

Like privatized Family housing, the funds generated by the project stay within the project. Room rentals pay operating expenses and debt service, and the remaining funds go into renovation work and new construction. In the out-years, they will also fund a dedicated sustainment account.

PAL Group A development activities are ahead of initial projections. The deferred maintenance backlog has been removed, and four facilities have held grand-openings to mark their conversions to Holiday Inn Express hotels.

The former Army lodges were required to meet all of IHG's corporate brand standards to earn the Holiday Inn Express flag. The Holiday Inn Express hotels can be found at Fort Polk, La. (70 rooms), Fort Hood, Texas (274 rooms) and Fort Sill, Okla. (544 rooms).

"I have been working

| Acronyms and Abbreviations |                               |
|----------------------------|-------------------------------|
| IHG                        | InterContinental Hotels Group |
| PAL                        | Privatization of Army Lodging |

here for 19 years. I think it's the greatest thing that ever happened. Because to me the Soldiers are finally getting the services they deserve and the amenities that they deserve," said Gabriele Whitaker, former Army lodging general manger and current IHG general manager, at the January ribbon-cutting for the two Holiday Inn Express hotels at Fort Sill.


Additional Holiday Inn Express hotels will be unveiled in the months ahead at Fort Polk (60 rooms) and Fort Rucker, Ala. (193 rooms).

With the success of PAL Group A, the Army will expand the portfolio to include 11 more installations. The additional installations, PAL Group B, should transfer to private operation this summer.

At that time, Actus Lend Lease will start renovations of thousands of rooms across the 21 installations into Holiday Inn Express hotels and to construct brand new Candlewood Suites hotels at several installations. The Candlewood Suites hotels will feature extended-stay guest rooms designed to meet the needs of the official Army traveler and will replace older facilities that do not meet renovation standards.

Overall, the PAL initiative is another great example of how the Army and the private sector can work cooperatively to leverage private sector funding and expertise to the benefit of Soldiers and their Families.

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A Soldier checks in at Fort Polk's Holiday Inn Express, one of the Army's privatized lodging facilities. Photo courtesy of IHG Army Hotels



# Housing Services: off-post experts

by Megan Purkey

For more than 10 years, the improvement of on-post housing through the Residential Communities Initiative has given Soldiers and Families access to closer, newer housing previously unavailable through government oversight. Despite the wonders of RCI, only about 30 percent of Soldiers and Families reside on an installation. So, what type of services and programs are available to the other 70 percent who reside in the community?

Enter the Housing Services Office. The HSO's primary functions are

- housing counseling services,
- accurate and nondiscriminatory housing rental listings,
- information on rental partnership and utility deposit programs,
- lease negotiation and landlord mediation, and
- military relocation assistance.

HSOs' invaluable services are often minimally used, and Headquarters, Department of the Army, is determined to change that through several new initiatives.

In September, the U.S. Army, Fannie Mae and several national lenders signed a memorandum of commitment pledging to work together to assist Soldiers and military Families to avoid foreclosures. Fannie Mae introduced a program that allows forbearance on a mortgage of up to six months when the death or injury of a service member on active duty causes a financial hardship. Credit bureau reporting is suspended during the forbearance to minimize negative impact.

More information on the forbearance program can be found at [www.knowyouroptions.com](http://www.knowyouroptions.com). Fannie Mae has also set up a hotline, 877-MIL-4566, for



Megan Purkey  
Courtesy photo

military service members seeking guidance and assistance on mortgages.

As part of the memorandum of commitment, the Army pledged to provide training on foreclosures and general counseling to its HSO staffs. The training will be presented by NeighborWorks America, a nonprofit, professional organization used by Housing and Urban Development to train its staff, and the courses are the same ones required for its Homeownership and Community Lending certificate. The specific courses under the certificate are: HO103, Lending Basics for Homeownership Counselors; HO105, Compliance with State and Federal Regulations; HO109, Foreclosure Basics; HO110, Introduction to Housing Counseling; HO229, Homebuyer Education Methods: Training the Trainer; and HO247, Post-purchase Education Methods. Completion of these courses ensure HSO staffs are well educated on how to counsel Soldiers and Families requiring assistance in securing off-post housing.

To standardize business practices across installations and provide quality and relevant housing service that meets current housing conditions, HQDA is finalizing an HSO certification this year. For the first year, installations will self-certify after completion of a check-list provided in the roll-out package. Installation HSOs will be graded in four areas: management, oversight, office setup and services.

More information on the specific

requirements under each area will be available in May, but installations will be graded on participation in such programs as the Basic Allowance for Housing survey and rental partnership program, personnel management, HSO customer service environment and the HSO staff's ability to perform the duties outlined in Army Regulation 420-1, Chapter 3.




One of the duties of an HSO employee is to monitor and inspect properties added to the Automated Housing Referral Network, a Department of Defense web-based system that shows properties for rent and sale in the communities around military installations. Recent changes to AHRN as a result of user feedback include the system's deployment in overseas locations, primarily Europe, and the addition of such functions as allowing landlords to show rooms for rent and to post up to 10 pictures of the property.

Such changes further assist DoD and the Army in helping Soldiers and Families find quality, off-post housing worldwide. AHRN can be found at [www.ahrn.com](http://www.ahrn.com).

HSOs are located on just about every Army installation worldwide. Specific location information can be found via the installation website or the Army Housing Online User Services website, <https://www.housing.army.mil/ah/>. The services are available to Soldiers, Family members and Army Civilians.

Army HSO staffs take pride in their work and are prepared to assist customers with any housing concerns, questions or issues that may arise or be present.

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| Acronyms and Abbreviations |                                      |
|----------------------------|--------------------------------------|
| AHRN                       | Automated Housing Referral Network   |
| DoD                        | Department of Defense                |
| HQDA                       | Headquarters, Department of the Army |
| HSO                        | Housing Services Office              |
| RCI                        | Residential Communities Initiative   |



# Home for 1: Should unaccompanied personnel housing be privatized?

by Donald H. Brannon

**T**hat is the question. Partnering with the private sector to provide housing for military Families is now accepted practice. But is it also the answer for unaccompanied personnel?

In the mid-1990s, the Army committed to improving Army Family housing to match the quality of rental housing in local communities. Due to shortfalls in construction and funds, it became apparent it would take an innovative program to revitalize Army housing. After intensive research, partnering with the private community emerged as the best solution to modernize Family housing and improve customer service. The Residential Communities Initiatives was introduced as the way ahead for Army Family housing.

RCI reflected a shift in the Army's philosophy toward managing installations as strategic assets. The Army leveraged existing assets and appropriated funds by partnering with private entities to obtain private-sector capital and expertise for the construction, repair and maintenance of military Family housing over 50 years.

RCI has been an outstanding success, not only for the Army to meet its commitment, but also for Soldiers and their Families who have a highly improved housing experience on Army installations. RCI changed the way Families are housed on garrisons and significantly reduced Soldiers' concerns about housing, especially when deployed.

RCI has come a long way in a short time, and it is now time to look at housing for single unaccompanied Soldiers.

## UPH timeline

In 1996, Congress provided authority to privatize Family housing, lodging and unaccompanied personnel housing, which includes barracks for single privates and sergeants, unaccompanied senior enlisted quarters for staff sergeants to sergeants major, and unaccompanied officer quarters.

In 2004, the Army expanded RCI to include single, unaccompanied Soldier

housing. The UPH program for senior enlisted and officers in the ranks of staff sergeant and above ramped up that year. The first pilot site was at Fort Irwin, Calif., followed in 2005 with UPH apartments at Fort Drum, N.Y.

In 2006, the Army approved privatized UPH for senior enlisted and officers at Fort Bliss, Texas; Fort Stewart, Ga.; and Fort Bragg, N.C. In November 2006, the Office of the Secretary of Defense gave the go-ahead for developing these projects as government-private industry limited liability companies.

These five UPH projects required no Army equity investment of government funds, and by 2008, all except Fort Bliss were ready for occupancy. The privatized UPH housing projects are fully maintained and regularly renovated as an integral part of the 50-year partnership with funding made possible through rent. The pilot projects were awarded to the same RCI partner at each garrison as part of their RCI projects.

## Pilot projects

To parallel off-post rental apartments, rent is based on floor plan features. Unlike off-post apartments, rent typically includes all utilities, a washer, a dryer and extended cable, telephone and high-speed Internet access. Residents also enjoy exclusive access to high-speed wireless at neighborhood centers along with other amenities, such as weight rooms, business centers, volleyball courts and outdoor swimming pools.

At present, most RCI UPH units provide one- and two-bedroom apartments. Housing is also designed to be in compliance with force-protection requirements and to offer a first-class living environment.

**Fort Irwin** – The project features a town center along with innovative housing for senior

| Acronyms and Abbreviations |                                    |
|----------------------------|------------------------------------|
| RCI                        | Residential Communities Initiative |
| UPH                        | unaccompanied personnel housing    |

enlisted and officers, and apartments above retail outlets, paving the way for a complete community experience. Fort Irwin was the first RCI project to deliver UPH units. Phase I of the UPH neighborhood, Town Center Terrace, comprises 104 one-bedroom garden-style apartments.

Completed in October 2008 and catering to single staff sergeants and above, this phase is close to full occupancy. Phase II, scheduled to be completed in July, will integrate 200 one-bedroom apartments into the town center with retail tenants that include Starbucks, Subway, Pizza Hut and a UPS Store.

Standard to each apartment is an electric range with self-cleaning oven, a full-size refrigerator, a microwave, a garbage disposal, granite countertops, a dining and living area, fiber-optic media capability, an assigned carport, walk-in closets, a washer and a dryer. Tenants can choose to rent furnished units for an additional cost.

**Fort Drum** – The Timbers — part of Fort Drum Mountain Community Homes — consists of 192 apartments for senior enlisted and officers. Along with washers and dryers, the units are equipped with refrigerators, microwaves, electric ovens,



*Spacious kitchens are a popular feature of the town center's apartment-style living in Fort Irwin. Photo courtesy of the Fort Irwin Project team*



(continued from previous page)  
garbage disposals and dishwashers.

All apartments include large, comfortable living spaces and full-size kitchens with breakfast bars. The two-bedroom, two-bath apartments are designed for roommate living. Bedrooms have full baths and oversized closets attached.

The Timbers features a community center for residents that has free weights in a gym-style workout facility, big-screen TV, video gaming and a professional business center with Internet access.

**Fort Bragg** – Randolph Pointe, the privatized senior enlisted and officers UPH complex at Fort Bragg, includes 312 one- and two-bedroom apartments with exterior private entrances. Along with a full-size washer and dryer, apartments are

equipped with refrigerators, microwaves, self-cleaning ranges, garbage disposals and dishwashers. There is television and Internet access in each bedroom and in the living area.

Randolph Pointe units feature large bedrooms with private baths, walk-in closets, full-size kitchens with breakfast bars and dining areas. Units with patios or balconies are also available, and exterior storage and garages can be rented, ideal for extended deployments. Residents can enjoy exclusive access to high-speed wireless capability at the neighborhood center, which includes a weight room, business center, volleyball court and outdoor swimming pool.

**Fort Stewart** – The new privatized UPH housing community, Marne Point, includes 334 one- and two-bedroom apartments for senior enlisted and officers. The apartments are equipped with refrigerators, microwaves, self-cleaning ranges, garbage disposals, dishwashers, washers and dryers.

Each apartment has television and Internet access and a full-size kitchen and dining area. A centrally located neighborhood center features a clubhouse, gym-style workout facility, a television-movie room, a state-of-the-art business center and a heated saltwater pool.

**Fort Bliss** – The Fort Bliss UPH project is on hold until the financial markets become more favorable. When it is completed, there will be more than 400 units, and the project will include amenities comparable to those provided by the other UPH projects.

### Considering the future

These privatized UPH projects provide outstanding housing for the residents, but they are only pilot projects. The Army is studying whether privatized UPH for senior enlisted and officers makes sense at

all Army garrisons.

An Installation Management Command-wide assessment will help determine the requirements for each installation. The assessment will include a complete, up-to-date housing market analysis to determine the need for privatized UPH at each installation. The privatized housing partnership must be able to afford the program without a negative impact on the Family housing project. The UPH development must be able to stand alone financially, and the local garrison command and senior installation leadership must support the effort.

After all of these points have been taken into consideration, the next step will be to present a project concept plan to the senior Army leadership for approval.

The Army's investment in Family housing is an excellent recruiting and retention tool. The same approach applies to single Soldiers. Having a place to call home after returning from deployments is just as important for single Soldiers as it is for Soldiers with Families. The Army recognizes this vital fact.

An important characteristic of the existing privatized UPH housing projects is consistency. Creating a more balanced housing experience between married and single Soldiers is paramount to the success of privatized single Soldier housing.

Is privatized UPH needed at other installations? You can decide for yourself, but the privatized pilot UPH projects have demonstrated that they are well worth the time and investment, and present an avenue to meet the Army's commitment to provide quality housing to all its Soldiers.

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Architectural elements such as stone walls and wooden beams give a mountain feel to the Timbers apartment community at Fort Drum. Photo courtesy of the Fort Drum project team



## Fort Knox brings historic house to net-zero

by Maureen Rose

When the Fort Knox, Ky., energy team proposed renovating the historic Henry House into a net-zero home, it took on a big challenge. “Net-zero” means the building generates as much energy as it uses, which is easier to achieve when constructing new homes but particularly difficult when the building in question was built in 1934.

First, thermal infrared imaging was applied to determine where the house was losing energy.

“It lit up like a Roman candle,” said Robert J. Dyrdek of the post’s Energy Office. “It was losing so much energy through the roof, it was solid red on the image, and the windows leaked like sieves.”

Other leaks were soon discovered. The fireplaces were not functional, but the flues were operational and open, allowing heat to escape and cold air to enter. Closer inspection showed there was no insulation in the home.

“I don’t just mean the insulation was insufficient,” Dyrdek explained. “There was absolutely zero insulation.”

Fiberglass wasn’t commercially available until 1938, and didn’t become a standard in home construction until the 1960s. Plaster had been applied over the original brick in the attic and the walls.

Next, a waiver was secured to allow the old windows to be replaced, an important measure. Replacing the windows was so vital to achieving energy efficiency, Dyrdek said, that it was decided to install “smart” windows on the south side, where the sun exposure is the greatest. Rheostats on the windows darken the glass, similar to transition lenses in eyeglasses.

The light transmission can range from 75 percent to just 5 percent, explained Gary Horner of Harshaw Trane.

Smart windows are expensive, and their life expectancy is undetermined, but they won’t warp like traditional glass.

“Nobody really knows, but the windows

should last forever, as long as they aren’t broken by an errant baseball,” Dyrdek said.

Push buttons are being installed in rooms with smart windows to allow occupants to override the programmed shading as they prefer. The manual overrides will be on timers so the programmed settings will return after about an hour.

“We’re trying to be energy-efficient while still allowing people to be comfortable,” Horner said.

The other windows in the house were replaced with triple-pane, high-efficiency windows. Doors were also replaced, and insulation was injected into the walls between the plaster and brick.

The insulation project was unlike common attic insulation projects. Holes were drilled in the exterior walls in a grid pattern. The insulation was pumped into the lowest hole of the grid and pressure applied until the insulation, which is the consistency of dense cotton candy, oozed through the next highest hole. The process was repeated until the pressure forced the excess insulation through the next hole up the grid and so on until reaching the highest hole.

Once completed, Trane used thermal infrared cameras to ensure all the gaps had been filled.

The old hot water heater was replaced with one powered by solar panels. The heat tank is equipped with a heat-exchange device that preheats the cold water coming into the heater when hot water is being drawn off. A second water heater serves as backup, using the rejected water from the home’s heat pump, which makes air conditioning far more efficient.

A mixer valve between the two tanks allows cold water into the solar heater if that water is too hot. Because the Henry House is unoccupied at times — it’s used as VIP guest quarters — there was concern that the water might overheat when there was no usage. The mixer technique



*Henry House’s smart windows reduce light and heat entering the house to conserve air conditioning or let in more light to augment heating. Photo by Maureen Rose*

prevents scalding accidents.

The home’s other energy needs are primarily met by solar panels, three of which are located a block away. One panel is fixed, and the other two are tracking panels that adjust to align with the sun as it moves across the sky.

Monitors permit the energy team to see the captured energy and compare the fixed panel’s and tracking panels’ totals. By gauging the extra energy, the staff can determine if the added expense of the tracking panels was a wise investment.

Other energy savers include toilets with green handles. When the handle is pulled up, one gallon of water is released, which is adequate to eliminate paper and liquid. When the handle is pushed down, 1.6 gallons are released to eliminate solids from the toilet bowl.

The bedrooms employ daylighting through a ceiling fixture that funnels natural daylight into the rooms from the attic, which captures natural sunshine through its south-facing dormers.

“Basically, it’s free light,” Dyrdek said. “With the smart windows and the daylight feature, it’s bright enough to read in here without any artificial light.”

The kitchen is being remodeled with Energy Star appliances. In the basement, a 4 millimeter vapor barrier was installed to keep the foundation dry and the ground floors warm.

With all the new measures, the





# Family housing revitalization in Europe

by Kenneth Day

Anyone who has served a tour of duty with the military in Europe knows that the most common Family housing accommodations are in 18- to 24-dwelling-unit, stairwell-type apartment buildings that were constructed in the early 1950s. Although the units are structurally sound, the infrastructure — water, sewage pipes and electrical circuitry — is reaching the limit of its life cycle.

The typical Europe stairwell housing unit is small, often with only one bathroom and with community laundry facilities located in the basement. The latter poses a major problem for Families with small children; a parent cannot safely leave a child alone in an apartment for the amount of time that it takes to do the laundry in the basement. The security of personal belongings in the community laundry rooms has been an item of concern for many Families, too.

The housing units also do not comply with the Unified Facilities Criteria 4-010-01 because the buildings present an unacceptable risk in that they each contain more than 12 housing units.

The Installation Management

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home's ability to hold its energy has improved drastically.

When the first compression readings were attempted, nothing would register, because the structure was not tight enough for a seal, Horner said. However, later readings indicated that the energy seal was officially "tight" even before the work was finished.

Wherever possible, the home's original



*A Soldier and her Family enjoy a spacious condo in what was the attic of a former stairwell building. Photo courtesy of the U.S. Army Garrison Stuttgart Housing Office*

Command's Europe Region had initially programmed for the replacement of all stairwell-type Family housing buildings with townhouses throughout the theater by the year 2029. The current region leadership revised the strategy to revitalize the existing buildings by redesigning the interior to provide 12 condo-type apartments.

This concept also enables the U.S. Army to capitalize on the available real estate, the major cost encountered in new construction in Europe. Buildings containing 12 condos require much less ground space than would be needed to construct a comparable number of townhouses.

This configuration provides residents with spacious apartments — more than is typically available in townhouses — a minimum of two bathrooms and private laundry facilities within each unit. The best part is the cost of developing a condo

unit is about \$100,000 less than the cost of constructing a similar townhouse.

historic design was maintained. The window frames, for example, are the originals. But they were matched with the smart window framing so well that it's difficult to tell where old and new meet.

The overall savings in the home will be monitored closely and compared to the home next door. Those quarters are almost identical to the Henry House. Both were built at the same time. They have the same exposure to the sun, the same floor plan and almost equal shade

protection from trees.

"The data garnered from this renovation should help the installation save money in the future by knowing which energy-efficient technologies pay for themselves in the least amount of time," Dyrdek said.

Europe Region's revised housing revitalization strategy allows better utilization of the scarce funding that is available for housing upgrades, permits the construction of more housing units in the available space, adds balconies to the condo type units where possible and generally provides a welcome quality-of-life improvement for Soldiers and their Families.

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*Maureen Rose is associate editor, Turret, Fort Knox, Ky. This article was adapted from a Turret piece.*



# Fort Carson barracks find more than one path to success

by Eileen Williamson

In Fort Carson, Colo., five barracks facilities stand as testaments to modern construction methods. These structures feature energy-efficient design, motion-sensing lights and low-flow fixtures. The projects were driven by tight timelines and a requirement that they be designed to achieve Leadership in Energy and Environmental Design certification.

But that's where most of the similarities end. Each facility is unique in its design and how it is constructed.

Different project teams applied differing solutions for completing the facilities. Each contract was awarded as a performance-based design-build project. This contract type allowed designers and contractors to team up and use construction methods best suited to their experience.

"The reason this works is because different contractors have different specialties," said Matt Ellis, U.S. Army Corps of Engineers resident engineer for the Fort Carson restationing workload surge. "We didn't specify how the facilities needed to be constructed. The contract specified what was needed and the timeframe for completion."

The techniques employed included stackable modular units, complete bathroom modules and wooden wall-panel sections. The projects and their construction methods are prototypes for similar facilities throughout the United States.

**Brigade combat team-heavy barracks** – These barracks include five four-story buildings. The rooms or suites are wood-frame modular units constructed off site in a controlled environment helping to reduce waste and maintain project deadlines.

While the modular units were being constructed in Colorado and Iowa, the foundations and site work — including plumbing, sewer and electrical connections — were completed at Fort Carson. The foundations are cast-in-place concrete on auger-grouted piers.

The modular units were brought to Fort Carson for on-site assembly and came complete with windows and built-in cabinets, light fixtures, sinks and microwave ovens. Each modular unit was stacked and connected with wooden frame construction, and the exterior finish of one-half-inch thick brick veneer tiles was applied.

The project was completed more than a month early and earned LEED Gold certification in November 2009.

**Division headquarters company operations flight barracks** – For this project, modular units were also constructed off site and assembled on site. The contractor opted to use steel-frame construction for the stairwells and lobby entry, and finish the building's exterior with traditional brick veneer.

The contract included constructing the company operations facility. The buildings earned LEED Silver certification in February 2010.

**O'Connell Barracks** – The contractor for the three-story O'Connell Barracks constructed the project using panelized wood with a center lobby and stairwell framed of structural steel. Residential construction jobs are scarce, and using methods like panelized construction or modular construction provides job opportunities outside the traditional vertical construction market.

Crews built the panels in nearby Fort Lupton, Colo., and shipped them to Fort Carson for assembly on a slab-on-grade foundation. The wooden panels were numbered and assembled much like a jigsaw puzzle or flat-pack furniture.

The facility has 122 units, each with two bedrooms, a bathroom and a small kitchen. Its exterior consists of traditional brick and masonry veneer.

The O'Connell Barracks received LEED Silver certification in February 2010.



Modular units containing two suites with fixtures, cabinetry and doors are hoisted into place at the brigade combat team-heavy barracks. Photos by Harry Weddington



At the Warrior-in-Transition barracks, a four-story precast wall panel is placed, completing the building's exterior early in construction.

| Acronyms and Abbreviations |   |
|----------------------------|---|
| LEED                       | Leadership in Energy and Environmental Design |

**Unaccompanied enlisted personnel housing-North** – Panelized wood sections were also used for this facility. Wood panel sections consisted of wooden stud frames complete with framing for doorways and window openings and exterior plywood.

Similar to other projects, site preparation work took place while the prefabricated panels were constructed off site. The facility's exterior consists of traditional brick and masonry veneer.

The project was designed to achieve LEED Silver certification. The certification process is under way.

**Warrior In Transition barracks** – This 96,400-square-foot building has two wings with 80 two-bedroom apartments with shared kitchens and dining areas. ➤



# Schweinfurt housing team takes on barracks program

by Cheryl Richardson

**A**t U.S. Army Garrison Schweinfurt, Germany, the First Sergeant's Barracks Program has been up and running for two years. These two years have been a whirlwind adventure with many lessons learned along the way.

Teamwork was the key to getting the barracks program implemented in USAG Schweinfurt. Until a contractor could be brought on board, Housing Office employees took on this challenge.

In spring 2009, the Housing Office team consisted of three permanent and five temporary employees. The staff was given six months to assume control and management of 18 barracks buildings. Meeting Headquarters, Installation Management Command's suspense was a significant challenge with summer leave plans already in place and 50 percent of the barracks buildings undergoing repairs.

At the start, the Housing Office staff had limited knowledge of how the barracks program should be run. It had the Barracks Management Guide from Headquarters, IMCOM, and guidance from the chief of Housing and garrison leadership. As staff members planned the project, they gained understanding of the magnitude of the

task and realized that teamwork and communication were going to be the keys to success.

The Family housing inspectors stepped up, volunteering to train team members to perform conditional room surveys and to inspect government furniture. The barracks room inspections began in the summer one building at a time.

The team had to find its way over many hurdles. The summer heat was a factor, because the buildings were not air conditioned. Another example involved window coverings. The contract did not include curtains, and the garrison did not want Soldiers to have to purchase drapes, so the team called all over Europe to borrow curtains until eventually money was found to have them made in house.

As the building repairs were completed, a team performed walk-through inspections to make sure everything was correctly done. The inspection team consisted of representatives from the Housing Office, Furnishings Management Office, Engineering Division, Operations and Maintenance Division and the leadership of the unit assigned to the barracks.

Firm All-Star won the bid to manage the barracks program for Germany, and on Nov. 16, 2009, the Housing Office turned over 11 buildings to the contractor. Housing Office staff briefed each military



*The single-Soldier housing team at USAG Schweinfurt includes (right to left) Ute Meining, Joachim Sonntag and Cheryl Richardson. Photo courtesy of USAG Schweinfurt Housing Office*

unit individually and explained the roles and responsibilities of a partnership between the unit and the Housing Office. With the units' assistance, the Housing Office developed a *USAG Schweinfurt Barracks Management Guide*.

For the barracks program to be successful, it was very important to have unit leadership buy-in. Eventually, the Housing Office attained 100 percent support from the units.

Today, the FSBP has full control of all 18 barracks buildings in USAG Schweinfurt. The Housing Office assuming control of the barracks might have seemed a mammoth challenge in the beginning, but with outstanding team work, the Housing Office team was able to prove it can be done.

There are still obstacles to overcome, but together, the team members are taking care of Soldiers one Soldier at a time and giving them the best quality of life that the team can provide during their tours in Schweinfurt.

In Schweinfurt, the Housing Office team believes in the maxim, "Taking care of Soldiers is our business, and that is what we do."

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*Cheryl Richardson is the FSBP manager, USAG Schweinfurt.*

## Acronyms and Abbreviations

|       |                                   |
|-------|-----------------------------------|
| FSBP  | First Sergeant's Barracks Program |
| IMCOM | Installation Management Command   |
| USAG  | U.S. Army Garrison                |

*(continued from previous page)*

The building's exterior consists of precast concrete panels with brick facing.

Cranes hoisted the panels into place while crews connected them to the foundation. The panels are connected at each floor level using bar joists to support hollow core flooring at the first level and cast-in-place flooring at the higher levels.

The barracks' design incorporates 120 complete modular bathroom units that will arrive with installed cabinets, tiling, fixtures, and plumbing and electrical

wiring ready to be connected to the main systems.

These barracks will also have geothermal heating and cooling systems. The project is designed to achieve LEED Gold certification, and the facility should be finished in early December.

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# Fort Hood Family Housing blends comfort, sustainability

by Michelle Wallace

**F**ort Hood Family Housing, the partnership between the U.S. Army and developer Lend Lease, expanded its Patton Park and Wainwright Heights communities by adding 232 Leadership in Energy and Environmental Design Silver certified homes. With the addition, Fort Hood's Family housing not only became the largest LEED-certified, single-Family military development in Texas, but it also now boasts the largest number of LEED Silver-certified homes in the Army as well.

The new homes were constructed to the U.S. Green Building Council's stringent LEED for Homes Silver standard, a nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED-H promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

"We are extremely proud to provide efficient, quality homes to Fort Hood's Families that reduce [their] impact on the environment while maximizing heating and

cooling savings," said Mack Quinney, Fort Hood Family Housing project director. "Our focus is on improving the quality of life for our Soldiers and their Families, and one way we achieve this is through offering highly energy-efficient homes built in a traditional Texas Hill Country design, which provides a 'sense of place' specific to Fort Hood and our surrounding community."

Homes that are certified through LEED complete a technically rigorous verification process that includes a home energy rating and on-site inspections. A 100-point scale allows everyone to quickly understand how a building is performing. A rating of 50 indicates average energy performance, while a rating of 75 or better indicates top performance.

The Patton Park and Wainwright Heights LEED-H communities are located on the main cantonment within walking distance of public transportation, shops and other conveniences. Each community includes three- and four-bedroom homes that feature innovative energy-saving technologies, such as Energy Star high-performing windows; high-efficiency appliances and lighting fixtures;

compact fluorescent bulbs; and high-density, recycled newspaper cellulose insulation, which fills voids better and has a higher fire rating than fiberglass insulation. Other energy-efficient upgrades include programmable thermostats

## Acronyms and Abbreviations

|        |   |
|--------|---|
| LEED-H | Leadership in Energy and Environmental Design for Homes |
|--------|---|

and high-efficiency gas furnaces and air conditioners.

Low-toxicity building materials and fresh-air ventilation systems with heat recovery were used to provide a healthier indoor air quality. Materials used throughout the homes included low volatile organic compound paints, recycled-fiber carpet, resilient plank flooring and 75-percent Forest Stewardship Council-certified sustainably harvested wood content moldings.

By incorporating energy-saving products and technologies, these homes achieved an average 74 score on the Home Energy Rating System. Homes must achieve an average minimum score of 62 on the 100-point scale to be deemed certifiable at the Silver level of LEED-H.

"We could have just built homes, but, in the beginning stages of this new development project, we chose a path of environmental stewardship in planning for a green community," Quinney said. "Today, we know that we have created a sustainable community beyond the buzz word. A comprehensive education program, coupled with extensive outreach, brings the community along on this journey with us."

Fort Hood Family Housing now has a history of innovative green practices and energy efficiency. The process towards green living at Fort Hood began in 2007 when the project began under the LEED-H pilot program. Over the last several years, the project has celebrated many sustainable milestones, most recently the completion of its newest neighborhood community center which was built to LEED-New Construction Silver standards.

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The homes in Fort Hood's Patton Park are LEED-H Silver certified. Photo by Jim Harrison



# At Fort Carson, Warrior in Transition project finds new ways to cut building costs, production time, energy consumption

by Robert T. Giles

To meet the needs of the Army, contractors are finding new ways to deliver quality products that are under budget and ahead of schedule while improving design-build efficiency. The Fort Carson, Colo., Warrior in Transition barracks is such a project.

The WTB is being built to house up to 160 Soldiers receiving medical treatment and rehabilitation. Under construction at a cost of \$25 million by M.A. Mortenson Company, the WTB is using new building methods and superior energy-saving designs to make this Leadership in Energy and Environmental Design facility the standard for others across the Army.

The barracks is just one part of the new Warrior in Transition Campus being built by the Omaha District of the U.S. Army Corps of Engineers. The campus also includes a company and battalion headquarters administration building, a Soldier-Family care clinic and a Soldier-Family assistance center.

The Warrior in Transition program offers rehabilitation for wounded or injured Soldiers by providing treatment until they can be returned to their units, reassigned or medically discharged. The program is currently borrowing facilities from the nearby Evans Army Community Hospital.

Most living units in the WTB will have individual bedrooms with a shared kitchen, laundry and bath. Other units have individual baths. The building will have elevators, and the first-floor units are American with Disability Act-accessible.

“The construction methods are designed to provide excellent quality control, safe practices and improved building time that will keep the project ahead of schedule and accident free,” said Douglas Foster, project engineer.

Unique building features include four-story-high precast concrete exterior wall panels and preconstructed modular bathrooms, both manufactured off site

while the building foundation was being constructed. Masonry units and colored bands were embedded into the panels to produce an aesthetically pleasing appearance and continue the campus’s architectural theme.

When the concrete foundation was ready, the four-story panels were delivered and set in place, saving the builder months of wall construction and brick masonry work. The avoided time and safety costs of working on scaffolding in the winter made the savings even greater. After the wall panels were in place, hollow core concrete floor panels were installed on grade beams supported by foundation piers due to the expansive soil in the area.

When the rough plumbing and electrical were completed, a truck began unloading preconstructed bathroom units. These 60-square-foot bathrooms were designed and produced by Egg Rock, an American company that has been using this methodology in the hotel industry for years. The 120 bathrooms — each complete with finished walls, plumbing fixtures, tile and a door — were also built during other construction activities that normally must be completed first, further cutting production time. After the bathroom pods were placed, a quick connection to the plumbing and electrical was all that was needed.

“By having the walls and bathrooms built off site in factory controlled environments, we had the quality control necessary to meet the strict requirements of the project,” said Chip Kossow, construction representative.

Before the walls were delivered to the project site, construction of the roof trusses began. Workers assembled the roof in large

## Acronyms and Abbreviations


|      |   |
|------|---|
| LEED | Leadership in Energy and Environmental Design |
| WTB  | Warrior in Transition barracks                |

sections on the ground instead of building it in place. By assembling on the ground, they could work faster without relying on a crane, saving time and money, and reducing the safety hazards inherent with assembling a roof structure 60 feet up.

The WTB is designed to meet LEED Silver, but the contractor hopes to attain Platinum. A geothermal heating and cooling system under the parking lot will serve the 96,000-square-foot barracks and will help cut the post’s energy bills while being environmentally friendly. Other energy saving features being considered for the project include a photovoltaic electrical generation array, interior and exterior LED lighting, solar hot-water heating and water-saving enhancements.

The project is scheduled for completion by September.

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Workers prepare preassembled roof trusses for lifting by cranes onto the WTB roof at Fort Carson. Photo by Chip Kossow



# At Fort Irwin, perks of single life front and center

by Brian Clark

**F**ort Irwin, Calif., is making good on the Army's promise to modernize living quarters on post with its newly constructed unaccompanied barracks scheduled for occupation in March. This state-of-the-art facility has been designed to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design Silver rating, putting 88 of 11th Cavalry's single Soldiers into one of the most modern barracks in Installation Management Command's West Region.

By raising the standard for building construction with Soldier comfort and contentment in mind, Fort Irwin's Directorate of Public Works and partner U.S. Army Corps of Engineers are enhancing the quality of life for the troops tasked with training the nation's deploying forces in desert combat warfare.

For some National Training Center Soldiers living in buildings erected more than 50 years ago, this transition will provide a drastic improvement from facilities overcrowded and riddled with maintenance problems. The new facility will be Fort Irwin's first "1+1" barracks and has been designed to some of LEED's most stringent occupant care criteria. Used as a template to accomplish the Army's ambitious energy and environmental goals, this project pursued several LEED points specifically for Soldier satisfaction.

With Mojave Desert temperatures fluctuating wildly from day to night,



Fort Irwin's new two-story, 32,000-square-foot unaccompanied barracks features a glass entrance. Photos by Brian Clark

Soldiers often complain of inadequate heating, ventilation and air conditioning responses. To ensure that thermal loads are quickly and effectively managed, mechanical designs include a split high-efficiency heating and cooling system that services units on an individual basis via digital wall-mounted thermostats. To verify that this dual-operating, individually controlled system functions to the Soldiers' liking and within design temperature ranges, performance surveys and subsequent adjustments will be conducted within the first 18 months.

Indoor air quality and temperature were a focus from the outset. An IAQ management plan was developed with both construction-related restrictions, such as additional on-site storage measures, and pre-occupancy requirements, like flush outs and air testing, to provide Soldiers the cleanest environment possible.

While the project's IAQ plan focused on minimizing the presence of dust and mold, strict standards on low-emitting construction materials will mitigate the lingering effects of chemical contaminants in the air. All adhesives, sealants, paint and coatings applied on site were selected based on their low volatile organic compound content. For these efforts and additional actions taken to increase occupants' lighting control and fresh air intake, Fort Irwin's barracks project is set to earn an additional 11 points towards its LEED certification.

Though the project's overall energy-efficient and environmentally conscious plans are projected to reduce life-cycle costs by more than \$50,000, LEED is a secondary concern to Soldier quality of life. The barracks integrates several amenities. Occupancy design, for example, guarantees each Soldier a private room with cosmetic lighting, adjustable windows and a locking walk-in closet. The adjacent common area is outfitted with a refrigerator, microwave and combination oven-stovetop unit, rendering this new facility the first among

## Acronyms and Abbreviations

|      |   |
|------|---|
| IAQ  | indoor air quality                            |
| LEED | Leadership in Energy and Environmental Design |

Fort Irwin's barracks to employ fully complemented kitchens. Down the hall, two centralized laundry rooms have been sized for peak demand

Far from a mere utilitarian structure, these barracks offer more than a place to sleep, cook and clean. Downstairs, a 300-square-foot dayroom features couches, a full-size pool table and an entertainment center equipped with a 52-inch flat screen television and DVD player. Outdoors, an array of solar water-heating panels on an elevated platform provides a canopy for Soldiers gathering to grill, socialize or just rest in the shade. A dining facility, shoppette, Soldier community center, and sports bar and grill are within walking distance.

The new unaccompanied quarters are on Fort Irwin's major road between the installation's main shops and services and range control access, illustrating the dichotomy of modern military living. On one hand, the installation exists as a medium within which Soldiers are allotted the training and tools necessary to endure the hardships of war. On the other, this arduous lifestyle mandates that Soldiers are supported in a manner proportional to their responsibility.

Projects like Fort Irwin's unaccompanied barracks, with its advancements and amenities, represent necessary improvements owed to today's Soldiers. Fort Irwin is proud to provide such quality-of-life enhancements and continues to strive towards the betterment of the community that serves its Soldiers and Families.

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# Northeast Region Soldiers, Families enthusiastic about new homes

by Regina Fremont-Gomez, Marilyn Balzarini and Alice Logan

As part of the 2009 American Recovery and Reinvestment Act, the Northeast Region received funds to replace aging houses at several small garrisons. ARRA funds were also made available at other small garrisons to perform maintenance and repair to existing Family housing.

At Radford Army Ammunition Plant, Va., the money came in the nick of time. The garrison had planned to combine eight two-bedroom duplexes built in the 1940s to create four four-bedroom homes. Thanks to the ARRA funds, the garrison was able to demolish the four duplexes and construct four three-bedroom homes for military Families assigned for duty in that area.

Navy Lt. Cullen Matthews and his wife, Casey, moved into their Radford home in December. They were the first recipients of a new home constructed via this program.

“My wife and I love the house,” Matthews said. “It’s the best place we’ve ever lived.”

Army Sgt. 1st Class Benjamin Linkous and his Family moved into their new home on Radford in January. Linkous, who recently came on active duty, and his wife, Alyson, had lived off post and were drawn to the community environment on post.

“The home is top-notch,” he said. “Not only is it a new home, but the security and the neighborhood are what I always envisioned for my children. My daughter is able to join other children at the playground, and my two young boys are able to use the basketball courts. In addition, my wife is able to interact with other military spouses, which is an important factor in the lives of military Families.”

Radford’s commander, Lt. Col. Antonio “Andy” Munera, is well pleased with the effort.

“We are very excited to be able to provide new housing for recruiters and military personnel such as instructors who live in southwest Virginia,” Munera said.

These homes not only provide affordable housing for military Families, but their construction provided needed employment in the local area, Munera said. He described the Radford housing as one of the hidden treasures in the Army.

In Wisconsin, ARRA funds brought forward Fort McCoy’s Military Construction project for 23 new homes. Construction began in the spring of 2010 and is about 80 percent complete. The first residents are expected to get keys around Memorial Day.

In addition, Fort McCoy was able to use bid savings from the contract to advertise and award a project for eight additional new homes. Construction of those homes will begin in the spring.

“Fort McCoy benefitted tremendously as a result of the ARRA stimulus funding program,” said Col. David Chesser, garrison commander. “Historically, we have endured a significant deficit of adequate housing in the Fort McCoy area. The construction of 31 new homes helps to reduce that deficit and measurably improve the quality of life on the installation. Families arriving this summer will find the housing wait list to be considerably shorter.”

Fort McCoy is located in a rural, economically depressed area, and many local tradesmen were employed as the result of these projects, Chesser added.

Three new homes at Letterkenny Army Depot, Pa., and two new homes at Rock Island Arsenal, Ill., are also nearing



Sgt. 1st Class Benjamin Linkous and his wife, Alyson, pose in the kitchen of their home at Radford Army Ammunition Plant. Photo by Betty Roop

completion. At Tobyhanna Army Depot, Pa., construction of two replacement homes with ARRA funds is expected to begin later this year.

The Installation Management Command, Northeast Region, has 14 traditional housing sites, including two garrisons — Fort Monroe, Va. and Fort Monmouth, N.J. — that will close in September as a result of Base Realignment and Closure legislation. ARRA funds provided an opportunity for small garrisons to improve existing or construct new Family housing.

In the spirit and intent of ARRA, these projects provided jobs for contractor and industry personnel performing the maintenance, repair and new construction while at the same time improving the quality of life for the military Families housed at these locations.

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Regina Fremont-Gomez, Marilyn Balzarini and Alice Logan are housing management specialists, Northeast Region, Installation Management Command.

## Acronyms and Abbreviations

|      |  |
|------|--|
| ARRA | American Recovery and Reinvestment Act |
|------|--|



# Baghdad's huge U.S. Embassy housing complex nears completion

by Glen L. Mitchell

**A**t the East End Housing Complex for the U.S. Embassy in Baghdad, construction management camps were located on the site itself with the idea that the construction staff would literally build their way off of the project site. The construction staff succeeded at its goal, and the roughly \$160,550,000 project is nearly complete.

The Department of State project, managed by the U.S. Army Corps of Engineers, was awarded to Perini Corporation in October 2008. The project included construction of 13 multi-unit apartment buildings and supporting infrastructure including a water treatment plant and warehouse. The project's construction was driven by the need for additional staff at the largest U.S. embassy in the world.

After the design was completed by Tetra Tech Inc., Perini mobilized its construction team. A USACE field office was also established on site. At the peak of construction, about 1,400 individuals were living and working at the site.

The project's location near the embassy allowed for a high degree of client interaction during construction. By basing construction management personnel on site, USACE ensured a quality project through continuous monitoring. Stationing a project manager forward also allowed for

consistent interaction with the end user. The access and constant presence proved crucial to the on-time execution of the project.

The critical need for more embassy housing made construction of the housing units a top priority. The apartment buildings were designed to house 576 personnel. After the first two buildings were completed, they were sectioned off from the rest of the construction site using T-walls, which are precast concrete walls that appear as an upside down "T" in cross section, and turned over to the embassy. The same approach was used as the next nine buildings were completed.

In addition to meeting the embassy's housing requirements, the buildings had to be designed and constructed to applicable building codes and to withstand indirect fire, a constant safety concern. Several buildings were struck before and after occupation, but there were no injuries from those strikes. Modifications for repairs addressed the damage using contract contingency funds.

The overall site plan required a number of ancillary services. These services included groundwater extraction wells, a state-of-the-art reverse osmosis water purification system, roads, parking areas, a warehouse, an above ground packaged wastewater treatment plant, security gates and extensive upgrades to the utility network of electrical, sewer and data lines.

The East End Housing project posed a number of very unique challenges. Due to the project location and insufficient space in the surrounding area, the construction site had to serve as the lay down area, primary storage, man camps and construction office. This situation meant a tremendous

## Acronyms and Abbreviations

|       |                              |
|-------|------------------------------|
| DoS   | Department of State          |
| USACE | U.S. Army Corps of Engineers |

amount of planning and coordination on the contractor's part to constantly shift resources as structures were completed.

The scope of the project changed throughout its life cycle with items from the original design removed and new items added. For example, two of the 13 buildings were combined into one larger apartment building that was subsequently awarded under a separate contract. This evolution required close coordination among DoS, the design-build team and the USACE oversight team.

Iraq presents an ever-changing environment. Changes to government regulations in access badge processing, import duty and customs clearance had direct impact on the work flow.

Given the constant threat of an indirect fire attack, bunkers situated around the site provided force protection. It was essential that the alarm system was audible across the site and all personal knew how to react to a duck-and-cover alarm. Despite the early warning system and training, nine site workers were injured in a single mortar attack in 2009 while placing concrete. In 2010, DoS security forces lost three personnel in a single mortar attack at an adjacent site. Analysis of the 2010 attack led to a vulnerability assessment that prompted a design change for the East End Housing.

Throughout the project's two and a half years from concept to completion, the entire team worked together effectively to address issues as they arose. The project is on track to finish at the end of March, marking a completion that will be both within budget and ahead of schedule.

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The U.S. Embassy's East End Housing Complex project in Baghdad is nearing completion. Photo by Robert Dowd





# Joint Base-Lewis McChord opens new barracks

by Andrea Takash

**E**ven the Army's elite forces need a comfortable place to rest their head after a hard day of work.

Two new barracks at Joint Base Lewis-McChord, Wash., fit the bill by providing contemporary Northwest design garden-style suites for the Soldiers of 2nd Battalion, 75th Ranger Regiment and 4th Battalion, 160th Special Operations Aviation Regiment.

After more than 18 months of construction, the U.S. Army Corps of Engineers, Seattle District, and Archer Western Contractors put on the final touches in February.

With 550 square feet of living space for two Soldiers, each room offers the amenities of a standard apartment, complete with government-furnished beds, standard appliances, a washer and a dryer.

Not only do the barracks provide the comforts of home, they also are tracking for Leadership in Energy and Environmental Design Silver certification. Several features — bike racks, building materials, a recycling room and 100 percent storm-water management on site — count toward LEED points.

In addition to thinking green, the project team also thought of the Soldiers' needs when designing various spaces.

"Each module provides space inside and outside for the Soldiers to clean their gear," said Ken Weaver, Seattle District's project

manager for the barracks. "On the outside wall, there are water spigots for Soldiers to spray off muddy boots and equipment. Upon entering the tower, there is a mud room with large utility sinks."

On the outside, both the SOAR and Ranger barracks look alike, but the subtle differences in the projects set them apart.

## SOAR barracks

The SOAR site includes nine modules with living space for 200 Soldiers and a central courtyard at a total project cost of \$22 million. The project team plans to finish ahead of schedule.

"Throughout the project, we were running six weeks ahead of the Ranger barracks," Weaver said. "This allowed the contractor to apply lessons learned to the Ranger barracks."

During construction, the team realized space challenges existed in one of the modules.

"The biggest challenge was in module eight," said Kris Keffer, Seattle District quality assurance representative. "We only had one room for mechanical and electrical systems. The space was tight. But the contractor worked with what they were given and made it fit."

## Ranger barracks

The Ranger barracks sit on a large campus that includes other barracks and a dining facility. Ten three-story modules comprise this \$23 million project with living space for 228 Soldiers.

"This is phase two for the Ranger barracks," Weaver said. "We completed phase one of the barracks in 2008. The first phase barracks are hotel-style, while the second phase is garden-style. The main requirement was to make the new barracks visually match the existing buildings."

In the course of construction,

## Acronyms and Abbreviations

|      |   |
|------|---|
| JB   | Joint Base                                    |
| LEED | Leadership in Energy and Environmental Design |
| SOAR | Special Operations Aviation Regiment          |



Ken Weaver (right), project manager, and an unidentified man inspect the mud room in new barracks at JB Lewis-McChord. Photos by Andrea Takash

the project team learned that the Rangers' overseas deployment was ending sooner than expected.

"We bettered the completion date with a full team effort and plan to finish a month ahead of schedule," Weaver said.

Weaver attributes the success to partnerships.

"We partnered the project with JB Lewis McChord's Directorate of Public Works, Network Enterprise Center and the Directorate of Emergency Services," he said. "There were tough issues tackled during the project, but we are ending on a high note."

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The Northwest design SOAR barracks at JB Lewis-McChord, Wash., will house 200 Soldiers.



## Integrating facility standard mission criteria into Installation Status Report

by Nadia Abou-El-Seoud, Kelly Dilks and Michael Grussing

The Army's Installation Technology Transition Program performed an analysis to identify the latest mission-critical criteria for Army facilities in fiscal 2010. The impetus was the massive transformation the Army is undergoing, and the goal was to examine alignment of the Installation Status Report – Infrastructure with Army facility standards.

### Coloring in the lines

The ISR-I process measures the conditions, performance and readiness of Army facility infrastructure. This assessment is done through individual facility inspections based on specialized criteria. The results establish the quantity, quality and functionality of facility category groups for comparison with set requirements.

Following specified rating guidelines, the facilities are given a rating of green, amber or red based on observed conditions. For example, for the quantity metric for barracks, the inspector determines whether there is enough space at the installation to house all of its Soldiers. In comparison, the quality metric addresses the condition of the barracks buildings. The ISR data helps to determine the priorities for Military Construction and facility rehabilitation within the Army's large real property inventory.

Although quantity and quality are significant factors, a facility also needs to be configured to support the mission of the tenants. The mission assigned and the type of facility relate to the overall design of the building, which includes the layout and required systems and components. These issues remain separate from facility conditions and quality, which are driven by degradation and repair needs.

Although the ISR has been updated recently to distinguish between condition-related quality issues and mission-related issues, the current Army facility standards are not fully incorporated in these mission criteria. This project developed a process to fully incorporate these standards within the ISR-I framework.

### Filling the gaps

The investigation began with two tactical buildings types — the tactical equipment maintenance facility and the company operations facility. The MILCON Integrated Process Team requested that these two building be investigated first based on the facility types' priority in the upcoming MILCON planning and budgeting cycle. The investigation focused on integrating Army standard mission criteria with ISR data components, becoming part of the criteria for the fiscal 2011 ISR-I rating cycle and ensuring the installation community is providing the best facilities to Army units.

The first step was an extensive review and decomposition of the Army standard and Army standard design documents. This step resulted in detailed and tabulated mission criteria elements for each of the facility types.

Following the identification of these

| Acronyms and Abbreviations |  |
|----------------------------|--|
| CERL                       | Construction Engineering Research Lab                              |
| ISR                        | Installation Status Report   |
| ISR-I                      | Installation Status Report - Infrastructure                        |
| MILCON                     | Military Construction  |
| OACSIM                     | Office of the Assistant Chief of Staff for Installation Management |


criteria elements, feedback from facility users and proponents was gathered to rank the most mission-critical elements of each facility. The information was then compared against existing ISR-I mission criteria, and the gaps were identified.

This process allowed the ISR-I mission criteria to be fully aligned with the Army standards and the facility user's feedback. In some cases, components or elements of the ISR assessment criteria already existed, and the rating criteria itself was just updated to reflect the latest standards. In other cases, such as for the company operations facility, new facility specific components, such as the secure nonsensitive storage and arms vault, needed to be added to the ISR booklet.

### Recommendations

This project was funded as part of the Office of the Assistant Chief of Staff for Installation Management's Installation Technology Transition Program. Based on the results, the research team recommends the full integration of Army facility standard criteria into the ISR-I mission criteria. This integration would align existing facility assessments with the latest Army facility standards and provide more accurate information for restoration, modernization and MILCON decisions.

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A study recommends that alignment of criteria for installation buildings, such as tactical equipment maintenance facilities like this one at Fort Richardson, Alaska, with the ISR-I would provide more accurate information for decision making. Photo by Ravin Horwell, Combat Readiness Support Team, U.S. Army Corps of Engineers



# Linking BUILDER, Installation Status Report

by Nadia Abou-El-Seoud, Michael Grussing and Louis Bartels

A demonstration was performed in fiscal 2010 under the Army's Installation Technology Transition Program to explore integration of data elements between the BUILDER Sustainment Management System and the Installation Status Report for Infrastructure system.

The Army is responsible for assessing the condition of the facilities on its installations. This information is used to report readiness and determine sustainment, restoration and modernization requirements. To accomplish this task, the Army relies on the ISR-I to measure facility quality and other mission-essential criteria for Army facility category groups. This reporting tool provides regional- and headquarters-level decision support for Army infrastructure.

The Engineer Research and Development Center's Construction Engineering Research Laboratory developed the BUILDER Sustainment Management System to measure conditions and identify work requirements down to the systems and components in an individual facility. BUILDER provides decision support information for installation Public Works personnel.

ISR-I and BUILDER work on different scales, but integration between the two systems was deemed potentially complementary and beneficial.

## Approach

This demonstration project identified common data elements between the BUILDER and ISR-I systems. Facility components and elements in the ISR assessment booklets were linked to the corresponding BUILDER facility inventory based on the ASTM standard

| Acronyms and Abbreviations |   |
|----------------------------|---|
| ERDC- CERL                 | Engineer Research and Development Center's Construction Engineering Research Laboratory |
| ISR                        | Installation Status Report  |
| ISR-I                      | Installation Status Report for Infrastructure   |

UniFormat II classification system.

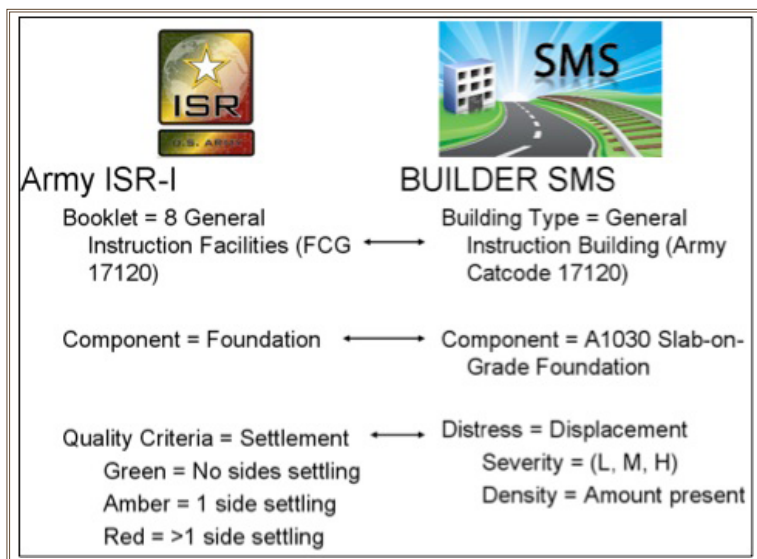
In addition, ISR condition ratings of green, amber or red, which relate the quality of the facility, were mapped to the appropriate condition index range on the zero-to-100 scale that BUILDER uses. Doing so provided a method for BUILDER to extract necessary ISR condition and functionality data.

## How BUILDER differs from ISR

Both ISR-I and BUILDER are web-based enterprise systems that support facility assessment, record keeping and decision support functions. The difference between the two systems is in their level of focus in identifying facility metrics and requirements information to Public Works personnel.

The ISR provides information about the state and readiness of facilities at a macro level for a class of facilities, for example barracks, maintenance shops or administrative buildings. BUILDER targets local information within an installation, such as the system and components within a facility. This local information provides specific sustainment, restoration and modernization work requirements for life-cycle planning and execution.

Because of these differences, the structure and methods of assessment also differ. ISR assessments are accomplished by providing cursory facility ratings



This chart shows the data relationship between the ISR and BUILDER. Graphic by Mike Grussing

performed by building tenants using preset criteria. The combination of these ratings determines the general status for a facility or a group of facilities.

BUILDER assessments provide detail, where appropriate down to a component level, which describes material type, equipment category type and location within the building. This helps the installation Directorate of Public Works identify specific facility requirements for projects and allows personnel to predict condition over a building's life cycle. BUILDER provides a user-friendly method for facility managers to see critical condition information regarding their buildings.

While the two systems differ in assessment approach, they provide complementary information adjusted to the appropriate level of detail.

## Benefits

By linking the two systems, BUILDER improves the ISR's capability for decision support to installation facility managers.

ISR information can populate BUILDER facility data, lowering its implementation costs. The benefit



# Bulletin describes soil sampling, coring for land managers

by Dick Gebhart

The U.S. Army Corps of Engineers released a Public Works Technical Bulletin, PWTB 200-1-74, *Effective Use of Soil Coring for Archaeological and Pollution Prevention Site Characterization*. This bulletin guides installation archaeologists and pollution prevention specialists in using these two techniques to screen for archaeological deposits and environmental contaminants.

Soil sampling and coring offer inexpensive, minimally invasive field methods to evaluate the presence, nature and condition of surface or subsurface pollution and archaeological deposits. Traditionally, archaeologists have used hand-excavated test pits and, in some situations, mechanized trenches to document the subsurface soil stratigraphy of a site.

These methods are not only labor-intensive, expensive and time-consuming, but they also result in substantial environmental damage to the site and its archaeological deposits. Land managers interested in identifying and monitoring soil pollution must balance the need to collect enough data to reduce uncertainty with the need to limit data collection costs.

Soil coring is a method to examine subsurface stratigraphy that can be

useful for a wide range of archaeological projects, from site detection and evaluation of a site's eligibility for the National Register of Historic Places to large-scale excavations. Soil coring should not be used as a replacement for conventional archaeological evaluations, but it can be used effectively to characterize local sedimentary sequences, quickly map stratigraphy across large areas, estimate feature depth and content, and determine if geophysical anomalies are associated with cultural features.

Environmental protection personnel require both discrete and composite soil samples of contaminated sites. Discrete samples are collected from a specific horizontal and vertical location. Composite samples consist of multiple subsamples from one or more sampling points. Composite samples can be obtained using a variety of bulk unconsolidated soil-sampling techniques, such as grab sampling or augering, while discrete sampling is usually done using undisturbed, shallow and/or deep soil core sampling methods.

In most cases, selection of soil-sampling equipment and sampling protocols must be tailored to individual project objectives and site conditions. Guidance provided in this PWTB will help archaeologists and pollution prevention specialists make

condition index information can likewise feed ISR reporting requirements.

### Costs

The costs of BUILDER implementation are the costs of collection of facility inventory data and subsequent condition information. That price tag is significantly reduced by using information from the ISR system. As a result, installations can realize the benefits of BUILDER without significant costs above the ISR inspection effort.

### Recommendations

Integrating BUILDER with the ISR provides numerous benefits to facility

### Acronyms and Abbreviations

|      |  |
|------|--|
| CERL | Construction Engineering Research Laboratory |
| ERDC | Engineer Research and Development Center     |
| PWTB | Public Works Technical Bulletin              |



Soil core samples are collected using hydraulically operated coring equipment. Photos courtesy of Michael Hargrave, ERDC-CERL

such decisions. It provides an overview of soil sampling equipment, soil sampling strategies, and soil sample collection, handling, processing, and analysis for archaeological and pollution prevention applications.

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is the minimal time required to initially populate the BUILDER database with useful inventory information that is easily interfaced with ISR quality criteria. In addition, ISR facility rating information is collected electronically to feed BUILDER component condition ratings, while still accomplishing basic ISR inspection requirements simultaneously.

The outcome is a higher level of interoperability between the BUILDER and ISR-I systems. BUILDER leverages ISR condition data to support the development of installation annual work plans. In addition, BUILDER-generated

reporting and requirements analysis. Therefore, it is recommended that the process and framework discussed above be used to share common data elements between the two systems.

This project was sponsored by the Office of the Assistant Chief of Staff for Installation Management's Installation Technology Transition Program.

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# Quality assurance checklist helps successful furniture installation

by Alicia Allen

Requests for training received by the Centralized Furniture Program at the U.S. Army Engineering and Support Center, Huntsville, Ala., often include the desire for information on conducting successful quality assurance inspections. Below is a short summary of things to look for while performing quality assurance for barracks and administrative furniture.

## General suggestions

Prior to inspecting individual furniture items, discuss previous quality issues or concerns about the project with the stakeholders. Review project specifications, the contract and floor plans. If you are not responsible for the furnishings installation, discuss the project with the person who is.

Take reference pictures of the site and building. Move inside and take pictures of the overall view of the furniture layout. Inspect at least 10 percent of the furniture to ensure quality is consistent from location to location.

## Administrative furniture

It is recommended that furniture quotes be structured so that pricing is by assembled item, not by component. For example, the quote should cite an L-shaped 6-by-8-foot work station, rather than panels, connectors and brackets. Assembled item quotes make it much easier to inspect

furniture without having to count the assembly subparts.

First, compare the contract's technical requirements with the items delivered to make sure they agree. Model numbers quoted must match model numbers delivered. Inspect each component for scratches, dents, alignment, functionality, correct finish and finish consistency compared with other components and with other cubicles or offices.

Then, measure each component for correct size. Ensure all components are secured properly and that there is no play or wobble in the assembly. Check that the correct fasteners were used. Verify all components are functional and do not impede or hinder other components when in use. For example, an overhead cabinet must be able to be opened fully without being constrained by another overhead or nearby shelf. Verify that the style, product line and components are consistent with the winning quote. Take a picture of the entire cubicle or office.

Finally, take pictures of components that show nonconformity or noncompliance. Summarize the findings in a receiving report for corrective action, if required, or to document the rationale for a partial payment.

## Barracks furniture

First, compare the contract's technical requirements with the items delivered to make sure they agree. Model numbers quoted must match model numbers delivered. Measure all case good items, including overall dimensions and drawer sizes. Compare measurements to the requirements in the contract, or if dimensions are not specified in the contract, the requirements as published by the furniture manufacturer's published literature for that model number.

Ensure items required by contract to have manufacturer's labels have them, and that the labels include the month

and year the items were produced.

Next, verify that the material or fabric used matches that ordered on the contract. Confirm that finish colors match the colors ordered. Verify construction type from the contract, i.e., glued and screwed, dry construction, solid oak, oak veneer on plywood.

Are the top, bottom and back edge finishes of acceptable quality and as specified in the contract? For example, are bottom edges sealed, drawer bottoms securely fastened to the drawer box, and all surfaces finished, including the back?

Confirm that the drawer pulls are as ordered. Make sure the drawer capacity is reasonable, i.e., the drawer depth is within two inches of the back of the case and drawer sides are within one inch of the drawer box.

Check and verify that mattresses and box springs meet specifications. If mattresses are not from a mandatory source, per the Federal Acquisition Regulation, find out whether the vendor was authorized to buy a commercial mattress.

Check appliances for Energy Star rating, as appropriate to meet federal energy regulations. Check lamps for plug-in florescent bulbs if required by your agency. Take pictures of all items that were installed for reference and to document any nonconformities. Note discrepancies and report them to the contracting officer for corrective action, if needed, and to support partial receiving reports.

Keeping this information in mind as you plan and execute a furniture purchase will help ensure the process is completed satisfactorily and on time.

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Deborah Neel (right), a Spectra Tech Inc. contractor and Centralized Furniture Program project manager, performs a post-occupancy furniture inspection of Lydia Tadesse's office at Huntsville Center. Photo by William S. Farrow



# Good job! ... Or was it?

by Eric Mucklow

**A**t the ribbon cutting, orange vests and jeans give way to neatly pressed slacks and smiling faces. The project is a big success. It was completed on schedule, within budget and fully meets all the users' functional requirements. *Really?*

It's logical to think we met the customer's needs. We followed the latest standards, which were thoroughly developed, vetted and refined over time. We involved stakeholders as team members and presented the designs periodically throughout project development to address comments and concerns.

Is that enough to be sure we got it right? The truth is that we probably did get it at least mostly right for the slice of time during which the project was delivered. But, as always, things change.

Formal processes to evaluate delivered facilities' performance are called post-occupancy evaluations or surveys. The Army uses coordinated design charrettes, waiver request reviews, lessons learned submissions and other methodologies.

The challenge comes in capturing what needs to be changed in a way that can be used to make adjustments to the next project's technical criteria. A formal review ensures that the facility designs are in compliance with the authorized scope of work and the Army is receiving a facility that meets evolving mission needs.

The U.S. Army Corps of Engineers' Fort Worth District Center of Standardization developed an End State Technical Review process to evaluate building performance for projects that use standard facility types. All project delivery team members are actively involved, and the lessons learned are recorded.

This evaluation system can be implemented during at least one of three different phases of the completed facility's life:

- *Phase I: Project Review* – Within six months of building occupation, the design development process, acquisition,

construction and initial user input are reviewed.

- *Phase II: Operational Review* – Within one to one and a half years after building occupancy, the building space performance, seasonal performances, energy utilization and acoustics are reviewed.
- *Phase III: Strategic Review* – Within three to five years after building occupancy, overall program mission changes and facility adaptations are reviewed.

What is gained by this hindsight? First, the results validate the programming requirements and cost input data. This feedback also assists the COS in developing better solutions and methods to deliver quality products. Missteps during and after turnover are caught, allowing the opportunity for correction. These typically involve not utilizing the facility in the intended way, preventing the gain of maximum benefits.

Also, unauthorized construction modifications that may hamper some facility's ability to meet current and future mission needs are discovered. Identifying these issues and understanding the intent behind them help further refine future projects and enhance communication.

A post occupancy evaluation is no small affair. For example, the Savannah District COS sent a team to Fort Carson, Colo., to discuss with military users the functional and operational suitability of current standard designs for the tactical equipment maintenance facility, company operations facility, brigade headquarters and division headquarters. Another goal was to obtain construction feedback from the Army functional proponent; the Office of the Assistant Chief of Staff for Installation Management; Headquarters, Installation Management Command; the area engineer office; and the Fort Carson Directorate of Public Works.

The team learned that the message centers in the headquarters design standards were no longer needed, but additional office space was needed

## Acronyms and Abbreviations

|       |                              |
|-------|------------------------------|
| COS   | Center of Standardization    |
| USACE | U.S. Army Corps of Engineers |



*Valuable information for improving standard designs is gathered from end-state technical reviews at projects like this Joint Base Langley-Eustis Va., barracks. Photo by Dwain Scott, Fort Worth District*

for several functions that had been consolidated at the brigade level.

Two energy-saving features got positive remarks; a radiant floor heating system in a maintenance facility worked well as did translucent panels that provided natural light to the interior. However, the team also learned that the central corridor was not used as intended, a common problem observed at other installations. Headquarters, Department of the Army is preparing an instructional manual to resolve this issue. Technical design details, such as hardware preventing exterior doors from being opened from the outside, were also identified and corrected or are being investigated for future design standard changes.

Hindsight programs like these will enhance the benefits and contribute to knowledge management for installations and communities of practice.

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# Toward more efficient solid waste collection

by Richard Scholze

The Corps of Engineers posted a Public Works Technical Bulletin addressing efficient solid waste collection, PWTB 200-1-68, *Efficient Solid Waste Collection*, at [http://www.wbdg.org/ccb/ARMYCOE/PWTB/pwtb\\_200\\_1\\_68.pdf](http://www.wbdg.org/ccb/ARMYCOE/PWTB/pwtb_200_1_68.pdf). This document describes current Army solid waste collection and disposal practices. Because private contractors largely provide solid waste services on installations, this PWTB also presents alternative contracting concepts — performance-based and resource management-based — designed to save money and promote waste reduction.

The U.S. Army generated nearly one million tons of municipal solid waste and close to two million tons of construction and demolition waste in a typical recent year. In addition, thousands of tons of yard waste and more than 1,200 tons of waste metals were produced.

While there is a strong Army recycling program, substantial amounts of solid waste are still disposed in landfills. Costs for refuse and recycle services are in the tens of millions of dollars and are a function of competition among haulers, competition among landfills, hauling distance, tipping fees and how they are paid, local haulers' or landfills' monopolies and current contract requirements.

An installation's solid waste program may include refuse, recycling, yard waste, hazardous waste, C&D waste and closed landfill monitoring. All Army installations use contracts for solid waste collection.

The collection contracts vary widely. Some installations have multiple or separate contracts for areas such as the cantonment, industrial activities or waste, medical activities and waste, or special waste or activities.

Contracts and costs also differ between geographical areas. For example, Fort Belvoir, Va., is in a metropolitan area with many surrounding municipalities while Fort Irwin, Calif., is more remote with few neighbors and limited hauler choices and

landfill areas.

The Army's Residential Communities Initiative has passed responsibility for solid waste disposal to the partner, so waste from RCI housing areas is no longer the installation Directorate of Public Works' responsibility in most cases. There are, however, some C&D and inert waste landfills on installations. Some installations also use transfer stations.

While the PWTB describes the general state of solid waste collection, a few highlights are presented here. Reducing labor and fees represents the greatest savings in refuse and recycle operations.

Collection costs account for the majority of the solid waste budget and carry the most opportunity for cost savings. Collection costs can be lowered through economies of scale and reducing frequency of pickup. Labor and fuel costs are the majority of collection costs, so larger container size, routing efficiency reviews and truck automation can all reduce costs. Of course, each installation's needs must be addressed individually, as different facilities may require differing frequencies of service or specific circumstances may apply.

Performance-based contracting options should result in savings to the installation; opportunities include better management of container use, possible performance-based collection — empty when half full, for example, and allowing flexibility in collection frequencies to adjust for changing waste volumes. The PWTB provides examples of standards and provisions.

Resource management contracting is an innovative partnership between a waste-generating organization and a contractor. Resource management contracting changes the nature of the current disposal services to support waste minimization and recycling. Because compensation for hauling and disposal contracts is currently based on volume, collectors and landfill operators have an incentive to handle ever-increasing volumes of waste.

## Acronyms and Abbreviations

|      |                                    |
|------|------------------------------------|
| C&D  | construction and demolition        |
| PWTB | Public Works Technical Bulletin    |
| RCI  | Residential Communities Initiative |




At Fort Campbell, Ky., a worker operates a waste container that has rollers at the bottom so it can be left onsite to collect C&D waste. After use, the container is rolled onto the truck's tilt bed and hauled away. Photo courtesy of Stephen Cosper, ERDC

Their customers, on the other hand, have an equal incentive to decrease waste volumes. These conflicting motivations work to impede serious progress in waste prevention, recycling and recovery.

Resource management is an alternative in which the financial prize of effective source reduction and increased material recovery is shared between waste generators and the providers of recycling and waste collection services. The keys to success in this type of contracting are changing the compensation structure to provide incentives for contractors and rewarding them for achieving mutually determined goals, shifting the contractors' profitability model from "haul and dispose more volume" to "minimize waste and manage resources better."

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## Fort Huachuca puts new spin on generating power

by Daniel J. Calderón

**F**ort Huachuca, Ariz., tenant commands and residents may soon benefit from the breezes that blow in from the neighboring mountains. The U.S. Army Corps of Engineers' Los Angeles District erected the Army's first wind turbine power generator on the fort Jan. 19.

"The Army is pushing sustainability, and this is a way to produce energy here on site," said Mike Brown, the district's project engineer. "It's clean energy, and the wind is always there. Electricity from burning coal is dirty, and eventually, the supply will run out."

At 70 meters from the ground to the hub, the turbine will take advantage of the wind available in the Sierra Vista area of Arizona. The unit reaches full production when wind speed approaches 16 meters per second, or roughly 35 mph. It starts producing electricity at wind speeds of about 9 mph; however, there must be sustained wind at this speed or above before it sends power to the post's internal grid.

"This turbine can continue to produce energy 24 hours a day," Brown said. "Day or night, as long as there is wind, there is power. At that height, we will have wind most of the day."

The wind turbine is designed to withstand fickle winds, according to Dan Phipps, director of Projects and Services for Nordic Windpower, the contractor responsible for the turbine. The two-blade turbine is capable of generating a megawatt of power per year when operating at peak efficiency. Phipps said the turbine could power 250 to 300 average American households in locations with relatively good wind resources.

"Every megawatt-hour the turbine produces is one less for the base to pay for from the grid," said Phipps.

The average household uses about 850 kilowatt-hours per month, the equivalent of 10 megawatt-hours per year.

More than 10,000 people live on post, and the installation consumes between 19 and 21 megawatts of electricity per year, according to Sam Montañez, Fort Huachuca's energy engineer for the Directorate of Public Works.

"Electricity is not cheap," said Montañez. "If we can produce more of our own power, then we don't have to rely so much on outside sources."

The mandate from Congress is for military facilities to reduce their energy consumption by 3 percent per year from 2005 to 2015. This requirement is a recent change from the original mandate to reduce consumption by 2 percent per year in the same time period. This change means some installations that were in compliance are now noncompliant.

Fort Huachuca's goal is to reduce consumption by 18 percent during fiscal year 2011. Meeting this target will put the base ahead of the congressional mandate.

Although three-blade turbines might be more familiar to some, the two-blade turbine is more cost efficient, according to

Phipps. Two-bladed wind turbines are 15 to 20 percent lighter, which results in less material cost and simpler installation.

The 70-meter wind turbine weighs in at more than 110 tons. Maneuvering the machinery into place without damaging it was the combined responsibility of the crane operators and the riggers.

Mike Rowlands, field coordinator for Prestige Telecom, was responsible for the seven-man team of riggers and engineers. The riggers ensured the separate components of the turbine and tower were harnessed properly to move them into place. Rowlands' team designed and built a special set of lifting lugs for the project to ensure the specially-calibrated bolt housings inside the pieces of the tower weren't altered while the tower was being lifted into place. If the housings were damaged, the tower may have become unstable after completion.

A.J. Lizotte and his team from Bragg Crane Services selected and operated the cranes for the job. They chose to use one crane rated at 330 tons and another rated at 90 tons. The team needed two cranes to properly raise the tower segments. If they had used one, the end not attached to the crane would have dug into the ground and been damaged. The smaller crane served as a lift assist for the larger one, which was used to move the pieces into place.

"They did an excellent job out there," ➤



The crane crew hoists the top half of the 70-meter wind turbine tower into place on Fort Huachuca. Photos by Daniel J. Calderón



Mike Brown (left), project engineer for the Corps' Fort Huachuca Office, and an unidentified man take a look at the nacelle for the wind turbine before it is lifted into place.





# Fort Irwin opens state-of-the-art child development center

by Elizabeth Casebeer

The U.S. Army Corps of Engineers' Los Angeles District completed the Cactus Corner Child Development Center at Fort Irwin, Calif., last October. In January, contractor RQ Construction announced the CDC had been awarded Leadership in Energy and Environmental Design Gold under the U.S. Green Building Council's rating system. The Gold rating, Fort Irwin's first, was verified by the Green Building Certification Institute.

The contract for the \$9.8 million Fort Irwin project was awarded by the Los Angeles District to RQ Construction and Richard Brady and Associates of Carlsbad, Calif. Ground was broken for the facility July 27, 2009. The contract also included renovations, which are ongoing, to the school-age CDC, built in the 1980s.

Upon completion, the CDC achieved LEED Silver certification. However, RQ Construction incorporated additional features for energy use, lighting, water and material use as well as incorporating a variety of other sustainable strategies, at no additional cost. The added sustainability features enabled the building to be certified LEED Gold.

| Acronyms and Abbreviations |   |
|----------------------------|---|
| CDC                        | child development center                      |
| LEED                       | Leadership in Energy and Environmental Design |

Among the updated features were an irrigation system with rain sensing technology, dual-frame windows that reduce heating loss and heat absorption into the room, and a cool roofing system that cuts solar reflectance.

"The green building movement offers an unprecedented opportunity to respond to the most-important challenges of our time, including global climate change, dependence on unsustainable and expensive sources of energy and threats to human health," said Rick Fedrizzi, president, CEO and founding chair, U.S. Green Building Council, in a statement on the RQ Construction website. "The work of innovative building projects such as the [Fort Irwin] Child Development Center is a fundamental driving force in the green building movement."

The 25,000-square-foot facility replaces a building that had a capacity of only 130 children. The new facility is designed to hold up to 232 children ages 6 weeks to 5 years and boasts 16 classrooms, administrative areas with a staff lounge and a training room, a commercial kitchen, and outdoor playgrounds and activity areas



The playground equipment at Fort Irwin's newly completed CDC is made of recycled materials, including the spongy flooring, which used to be tennis shoes. Photo by Elizabeth Casebeer

constructed from recycled materials.

"There are now more opportunities for the Soldiers to have their children in care while they're at work, and we're also able to have better quality of care, because we are able to have a lower ratio in the classrooms," said Jennifer De Los Reyes, Fort Irwin's Child, Youth and School Services facility director.

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said Brown. "They were extremely safety conscious and always professional."

On site continually during construction were Nancy S. Mehaffie and other quality assurance representatives for Eco and Associates Inc., the prime contractor. They had daily safety meetings with everyone who worked at the site.

Phipps and his team ensured the turbine is labeled with the latest Occupational Safety and Health Administration safety placards. He even took steps to comply with safety

requirements enacted after the contract had begun so that the workers who will maintain the turbine will have up-to-date safety information at their disposal.

With the turbine complete, Montañez and Brown are looking to the future. Montañez said his office will be studying both the amount of power the turbine actually generates through the first year of its operation in addition to the effects across the post. Both men said it will take a full wind farm to generate enough energy to make Fort Huachuca truly energy independent.

"Future wind turbine projects will depend on funding, like all military projects," Brown said. "But, I do understand the Defense Department is looking at ways to reduce costs and produce energy. This is the cleanest, best and most efficient use of available resources."

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# Base Realignment and Closure NEPA program wrapping up

by Lisa Coghlan

The 2005 Base Realignment and Closure round resulted in 25 major Department of Defense installations being marked for closure, 24 others identified for major realignment and 764 smaller actions. The recommendations represented the most aggressive BRAC actions ever proposed, affecting more than 800 installations. Like all federal agencies, the Army had to meet the requirements of the National Environmental Policy Act before the actions could take place.

BRAC 2005 realigned DoD's global force posture to transform it from a Cold War stance to one geared toward 21st century threats. For the Army, BRAC 2005 resulted in the single biggest change in basing since before World War II.

Based upon a request from the Office of the Assistant Chief of Staff for Installation Management's BRAC Division, Headquarters U. S. Army Corps of Engineers designated Mobile District as the lead to execute the Army's BRAC 2005 NEPA program.

Mobile District had extensive experience with the prior four Army BRAC rounds and broad experience in working with Army installations and commands. Mobile District organized the BRAC NEPA Support Team to provide oversight and quality control for all NEPA documents prepared for Army installation realignment or closure actions.

More than 20 project and technical managers were designated within the

Mobile, Savannah, New England and Fort Worth districts to be members of the NEPA Support Team. The project managers prepared government cost estimates and scopes of work, negotiated task orders and oversaw the preparation of the NEPA documents assigned to them. The technical specialists were subject matter experts who ensured that concerns related to their area of expertise were appropriately evaluated during the NEPA process. Their technical specialties included cultural resources, threatened and endangered species, hazardous wastes, noise, air quality, socioeconomics and environmental justice.

BRAC 2005 closed 408 Army facilities and realigned 178 Army installations in 50 states and U.S. territories.

"I believe this was the largest single NEPA program ever undertaken by the Army and possibly any other federal agency," said Neil Robison, BRAC NEPA executive agent. "When complete, the entire program will total approximately 150 NEPA documents prepared by our team."

As of February, the NEPA Support Team had completed 12 environmental impact statements and 106 environmental assessments.

"No movement of personnel, new construction, installation closure or property disposal, or property leases can take place until appropriate NEPA documentation is complete," said Robison.

NEPA is a national charter for protection of the environment. NEPA procedures ensure that environmental information is available to public officials and citizens before decisions are made and actions are taken. The NEPA process is intended to help officials make decisions that are based on an understanding of environmental consequences and take actions that protect, restore and enhance the environment.

The Corps is responsible for preparing EAs to determine the significance of

| Acronyms and Abbreviations |                                   |
|----------------------------|-----------------------------------|
| BRAC                       | Base Realignment and Closure      |
| DoD                        | Department of Defense             |
| EA                         | environmental assessments         |
| EIS                        | environmental impact statements   |
| NEPA                       | National Environmental Policy Act |

the environmental effects and to look at alternatives. An EA is intended to briefly provide sufficient evidence and analysis for determining whether to prepare an EIS. The Corps prepares an EIS if it is proposing a major federal action significantly affecting the quality of the human environment. An EA usually takes six months to a year, and an EIS averages 18 months to two years.

The BRAC NEPA Support Team prepared documents for more than \$11 billion of new construction that could not have happened without the NEPA requirements being satisfied.

The team also reduced the NEPA process time.

"We put in place review systems where we all did concurrent reviews with all Army reviewers rather than the typical hierarchical reviews run through the Army command structure," Robison said. "As a result of this and other changes in processing the NEPA documents, our average time to complete a BRAC EIS was about 16 months." EA time for new construction averaged just six months.

This particular BRAC round extensively realigned the armed forces, especially the Army due to the heavy involvement of the Army National Guard and Army Reserve units, Robison said. BRAC 2005 is an important milestone in restructuring DoD's domestic base structure to improve efficiency and operational capabilities as part of its global positioning strategy.

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Katie Rowland and Brian Peck of the BRAC NEPA Support Team review NEPA documentation. Photo by Lisa Coghlan



# Importance of energy and water management planning

by Tammie Learned and Trace Taylor

Studies being conducted throughout the Department of Defense are helping leaders and staff measure, define and implement current and future energy and water strategies. More than 20 of the 45 funded Installation Management Command-directed Comprehensive Energy and Water Management Plan studies have been completed at various Army installations in all IMCOM regions.

A CEWMP study documents the installation's progress based on a predetermined baseline, painting a picture of that progress while giving guidance in the form of strategic-level recommendations and action plans on how to reach the mandated goals set by Congress. A CEWMP study provides important data and analyzes the overall health of each system. It gives an installationwide systems overview that allows energy managers and engineers to recognize trends that will help prioritize projects that will ultimately lead to meeting the energy and water reduction goals.

The information and data that is gathered is constantly evolving. Changes can occur in the form of personnel and Soldier staffing, power and water systems changes, and overall square footage increases and decreases. With these changes come fluctuations in the data and the need for updates.

The CEWMP process is new, so the updates have yet to occur, but it is intended that the CEWMP will become an addendum to the Installation's Real Property Master Plan and will be updated in line with real property master plan updates.

When the installation's CEWMP is

completed and the project action plans are developed, they become tools for the Energy Engineering Analysis Program through which the capital investment strategy is created. The EEAP team can use the CEWMP action plans to move from a strategic level to a more building- and system-specific level and create a basis for DD Form 1391s.

Once the CIS has been created, both the CIS and the CEWMP are incorporated into the installation's RPMP as an appendix to the CIS component. The installation's RPMP is updated every five years, and, as a component of the RPMP, the CEWMP and CIS will be updated as well, and new energy and water management goals will then be set.

Dorothy Robyn, deputy under secretary of defense for energy management at military installations, testified before the House Armed Services Committee's Subcommittee on Readiness Feb. 24, 2010. Robyn talked about why installation energy management matters and what we are doing to improve it. She discussed the importance of two goals: long-term cost avoidance and mission assurance, and two-related impediments: flawed incentives and lack of information.

"The department currently lacks an enterprisewide energy information management system that can provide the appropriate information on energy consumption at various levels of aggregation including the individual building, the installation, the geographic region and the military department," Robyn said. "This hampers DoD's ability to monitor, measure, manage and maintain energy systems at their optimal performance levels; collect renewable energy generation and performance data;



Key stakeholders participate in a visioning workshop at the U.S. Military Academy, West Point, NY. Photo courtesy of AECOM Technology Corp

and compare performance across facilities and across military departments."

The CEWMP is not intended to lie on a shelf. Three energy conservation projects identified in the EEAP survey, for which funding is planned in the CIS, if appropriate, become DD Form 1391s for Energy Conservation Investment Program submissions. Additional funding types and mechanisms can be used to execute those projects: Military Construction; operation and maintenance; and third-party financing, such as Energy Savings Performance Contracts, Utilities Energy Service Contracts, Enhanced Use Leases and power purchase agreements.

The CEWMP, EEAP and the CIS, which become appendices to the installation's RPMP, provide the key information the installation needs to properly plan and execute energy- and water-saving projects. In addition, information gathered across installations can fill the gap so enterprisewide initiatives can be implemented based on solid projects with detailed measurement and verification.

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| Acronyms and Abbreviations |  |
|----------------------------|--|
| CEWMP                      | Comprehensive Energy and Water Management Plan |
| CIS                        | Capital Investment Strategy                    |
| DoD                        | Department of Defense                          |
| EEAP                       | Energy Engineering Analysis Program            |
| IMCOM                      | Installation Management Command                |
| RPMP                       | Real Property Master Plan                      |



# In Ansbach, Corps builds ultra energy-efficient housing

by Carol E. Davis

Construction is nearly complete on the most energy-efficient homes that the U.S. Army has ever built in Europe. Part of a new housing development at U.S. Army Garrison Ansbach, Germany, the houses, called *Passivhäuser*, or passive houses, heat and cool themselves, hence the term “passive.”

With 12-inch thick insulation, triple-paned windows and foam-sealed utilities, these homes feature some of the latest technology found in super energy-efficient homes.

“These houses are like energy efficiency on steroids,” said James McPeak, the U.S. Army Corps of Engineers’ Europe District project engineer. “Every energy-saving commodity is included in these houses.”

The Corps is overseeing the construction

of 22 passive houses as part of a three-phased, \$106 million Urtas Family housing program that will ultimately place 206 new homes at the installation. Although the remaining 184 homes are not designed to meet *Passivhaus* standards, they will adhere to German *Energieeinsparverordnung*, or Energy Conservation Ordinance, standards, which are more energy efficient than American standards.

“This is a pilot project for U.S. Army in Europe using a combination of U.S. Army housing requirements with cutting-edge German design criteria,” said McPeak. “*Passivhaus* units are about 15 to 20 percent more expensive to build than a standard German house, but large, long-term energy savings are expected.”

The passive houses are expected to consume only one-quarter of the energy demanded by an EnEV home, McPeak said. Their most impressive feature is the innovative heating and ventilation system design, which captures and recycles about 92 percent of the waste heat from the lighting fixtures, major appliances, ground heat pump circuits, exhaust air and even the people or animals in the rooms, to help the house to heat itself.

This whole-building perspective requires an air-tight seal to every utility cable, window and door. The sealed structure makes for a home that keeps a consistent

| Acronyms and Abbreviations |   |
|----------------------------|---|
| EnEV                       | Energieeinsparverordnung or Energy Conservation Ordinance |
| LEED                       | Leadership in Energy and Environment Design               |

temperature in summer or winter, with only a one- or two-degree temperature difference between the center of the room and the window area. In addition, the seal ensures energy savings and sustainability by eliminating gaps that could allow moisture to enter, raise humidity levels and, over time, damage the structure.

Passive house standards are more rigorous than Leadership in Energy and Environment Design or Sustainable Project Rating Tool standards, but passive house technology concentrates solely on energy efficiency and consumption.

“Comparing passive house standards to, say, LEED is like comparing apples and oranges,” said McPeak. “LEED takes into account things like proximity to school, shopping and highways when getting a rating. Passive house design is just about energy efficiency, so a true comparison can’t be made.”

Although a comparison cannot be made, passive house technology fits nicely into the Corps’ sustainability policy, said Richard Gifaldi, a Europe District sustainability engineering manager. The most popular Army definition of sustainability is, “Meeting today’s missions without compromising the missions of tomorrow.”

“From the district’s perspective, sustainability means we are concerned with not only the material on the outside but also the materials on the inside,” said Gifaldi. “Reducing operating costs, increasing energy efficiency and preserving our natural resources are major parts of the Corps’ sustainability policy.”

With their advanced technology, these houses are designed to be simple for the occupants to live in and use.

“The Family living inside will not ➤



The \$52 million Urtas townhouses construction project comprises 106 houses, including 22 *PassivHaus* units, new roads and sidewalks, utilities, playgrounds, two basketball courts, trees, landscaping and a water plant. Photo by James McPeak



# Using the sun to light the night in Kabul

by Steven Ernst

**W**ith the urgent need for direct and immediate improvement in the quality of life for Kabul, Afghanistan, residents, Mayor Muhammad Yunus Nawandish developed a campaign and went to the U.S. Army Corp of Engineers for support in implementing it. The mayor's idea was to harness solar power to provide streetlights.

"Lighting is essential to improving the quality of life throughout Afghanistan," Nawandish said.

The city of nearly six million residents receives the majority of its power from its neighbors to the north, Uzbekistan and Tajikistan, but the demand surpasses what Afghanistan's electrical infrastructure and northerly neighbors can provide.

Providing the city with traditional streetlights would only increase the electrical load throughout the town. However, solar-powered streetlights would restore what was once lost from the great city of Kabul.

"With over 300 days of sun in a year, Kabul was an ideal location for solar powered lights," said U.S. Navy Lt. Cmdr. Joel VanEssen, a member of the Corps' Kabul Area Office. Solar streetlights would provide an energy-efficient, environmentally friendly and low maintenance way of ensuring lighting within the busy sections of the city.

"No streetlights work in the city of Kabul," said Lt. Col. Stephen Danner,

the Corps' Kabul area officer in charge, "By lighting up the city, the benefits can be seen from multiple viewpoints. Commerce throughout the evening will increase, and it will allow the city to become a vibrant community 24/7. More importantly, it will improve the personal safety for all people, especially women and children, walking home at night."

The Afghanistan Engineer District North worked with Sustainable Energy Services Afghanistan, a company based in Kabul, to complete the first phase of solar lighting installation on nearly one kilometer of roadway located in the heart of the city. The local company strives to build the economy and the skills of the citizens along with the infrastructure.

The solar street light pilot program came to a successful end Dec. 29, and the district started looking toward the future with two more projects.

Key locations have been identified where solar will provide the most impact for the community. The new projects will light up 4.4 additional kilometers within the center



*Pedestrians in Kabul stroll along lighted sidewalks Dec. 29, thanks to a solar streetlights project completed that day. Photo by David Salazar*

of the city, some of the most essential areas within Kabul. These locations will provide visibility and security along two essential pillars within the community, the Wazir Akbar Khan mosque and Indira Gandhi Children's Hospital.

Work on these projects began March 8 and is expected to be completed in November.

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see any difference," said Darren Walls, a district project manager. "There is no space-age control panel that requires a master's degree in electronics to operate. There will be regular thermostats on the wall, and everything else is in a mechanical room not located in the house."

The tree-lined streets and fenced back yards will make the community

picturesque. The only visual difference will be roof-mounted solar panels that support the homes' primary passive solar heating systems.

"Passive house technology is the perfect blend of sustainability and energy efficiency," said Walls. "Both technologies used together are a win-win; they ensure these houses will be here for future Soldiers and help reduce the Army's energy footprint."

The passive houses are expected to be complete this spring.

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## Building strong for the future

by Lt. Gen Robert L. Van Antwerp

It has been truly an honor to serve as your functional chief for Career Program 18, Engineers and Scientists, during the past four years. I am as convinced today as I was four years ago when I told you, “It is all about people.”

We have accomplished much in our journey to GREAT that has included a laser-like focus on building a deep bench of career program professionals with the technical and leadership competencies required to provide distinctive service to the nation and the Army. Our career program and leader development initiatives have endowed the Army with a passionate and technically proficient workforce with the skills necessary to face the toughest challenges that the future will require us to face.

With all that we have accomplished together, we can take pride in the progress we have made on our journey to GREAT, while still recognizing that it is a journey with many more miles to travel.

From its inception in 1998, the CP-18 Leadership Development Program has emphasized developing employees at the GS-12 and GS-13 levels and preparing them for future leadership positions. With almost 160 graduates and 20 current participants, this program continues to build our bench with effective engineers and scientists by providing training, including the Army’s Civilian Education System, developmental assignments and senior level mentoring opportunities for our careerists.

As the program moves forward, we are refreshing the curriculum to embrace new methods for training and identifying developmental assignments with industry and other service components. The curriculum is being redesigned to ensure we are consistently providing the most



Lt. Gen. Robert L. Van Antwerp  
Photo by F.T. Eyre

up-to-date information, new technologies and best business practices as well as providing the best return on investment for our careerists and the Army.

One of the tasks I established early for CP-18 was setting high standards not only for our own workforce but for our profession. Our initiatives toward establishing core and specialty competencies, in collaboration with other Army commands that have CP-18 careerists, has significantly contributed to elevating the standards for “professionalizing” our workforce to new levels.

The collective endeavors of talented subject matter experts have laid the groundwork for professional development maps for more than 28 of our 49 career series that cover 98 percent of our current population. The maps provide not only a career roadmap down one path but present options to individuals wishing to become competitive and accomplished in other areas. Efforts continue to develop maps for at least three additional series this fiscal year to cover about 99 percent of our careerists. Further expansion of our career maps’ content is currently under way to incorporate specialty and supplemental competencies that will include more complete competency definitions and proficiency level descriptions.

We have incorporated the competency efforts and professional development maps into a new training strategy that

allows us to train more efficiently and effectively. Part of the strategy is to provide on-site training courses to districts and installations that target competency gap areas. Other key contributors to the strategy are identifying new sources of training and leveraging existing training opportunities.

Our web-based training pilot allows our licensed individuals to maintain their professional continuing education requirements to the tune of more than 750 courses completed equating to more than 3,800 hours. That is only the midway completion mark. The U.S. Army Corps of Engineers’ Learning Center is leading an effort to identify competencies gained by successfully completing Proponent Sponsored Engineer Corps Training. We will begin to see the link between competencies and PROSPECT courses published in this year’s catalog. Additional new and existing opportunities were identified, such as the University of Missouri Science and Technology web-based master’s certificate and centrally funded training through sources such as Army e-Learning and the Civilian Human Resources Training System.

These efforts will further leverage established relationships as well as create new partnerships that will significantly expand opportunities for personal and professional development for our careerists.

I am extremely proud of how far we have come in achieving our goal of building the bench. Collectively, our efforts have ensured that we have an educated, trained, competent, experienced and certified professional workforce prepared to meet the current and future demands of the nation and the Army. I trust that your individual and group efforts, in conjunction with the continuing support of the CP-18 Proponency Team and your organizational career program managers, will guarantee long-lasting success in the years to come. The strong foundation we have laid down will carry on with the transition to the ➤

| Acronyms and Abbreviations |  |
|----------------------------|--|
| CP-18                      | Career Program 18, Engineers and Scientists – Resources and Construction |
| PROSPECT                   | Proponent Sponsored Engineer Corps Training                              |



# Housing management training, career development

by Deborah Reynolds

**C**areer Program 27, Housing Management, is one of many career programs that support the installation management community in its support of Soldiers, Civilians and Families who live, work and utilize our posts, camps and stations worldwide. Housing services and facilities are critical to the delivery of the *Army Family Covenant* and a major quality-of-life program that covers the Housing Services Offices, the First Sergeant's Barracks Program, government-owned and -controlled assets, and housing privatization.

Housing management specialists in CP-27 manage five distinct types of Army housing: off-post, on-post unaccompanied, on-post Family, privatized and lodging.

The **Housing Services Office** advocates for and assists service members to find suitable, nondiscriminatory, off-post housing. About 67 percent of active duty Army personnel reside off post.

**Unaccompanied personnel housing** is managed through the First Sergeant's Barracks Program. The congressionally mandated program manages barracks in an effort to improve and maintain the physical condition of the barracks while maximizing utilization. The latter can have a significant impact on the Basic Allowance for Housing bill.

**Army Family housing** comprises government-owned on-post housing, which is primarily located overseas.

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next functional chief.

I wish all of you my best in your personal journey from good to GREAT. It has been my pleasure to serve you.

*Essays!*

*Lt. Gen. Robert L. Van Antwerp is chief of engineers, commanding general of the U.S. Army Corps of Engineers and the functional chief of CP-18. He plans to retire from the Army in May.*



*Deborah Reynolds  
Photo courtesy of Professional  
Housing Management  
Association*

Housing professionals working in AFH are responsible for the daily property management operations associated with on-post quarters.

The **Residential Communities Initiative** encompasses privatized, on-post housing throughout the United States. Government housing management professionals provide oversight of the RCI program through asset management principles learned in specialized training programs.

**Army lodging** comprises our transient lodging facilities for military and Civilians on temporary duty, permanent change of station and recreational trips. The lodging management employees are responsible for the day-to-day operations, planning, programming and budgeting of nonappropriated funds and long-term strategic planning to ensure our lodging facilities and services remain outstanding.

Each of these functions requires a different skill set obtained through housing-specific training, which is centrally managed in CP-27 through the Army Housing and Army Lodging divisions. Training our staffs is critical to ensuring our customers receive the most up-to-date housing information and quality services and products.

Many changes to our housing world have happened over the past 10 to 15 years from privatization of Family housing to changes in standards and policies for

| Acronyms and Abbreviations |  |
|----------------------------|--|
| ACTEDS                     | Army Civilian Training, Education and Development System |
| AFH                        | Army Family housing                                      |
| BAH                        | Basic Allowance for Housing                              |
| CP-27                      | Career Program 27, Housing Management                    |
| HSO                        | Housing Services Office                                  |
| RCI                        | Residential Communities Initiative                       |

barracks. Skill sets needed today are very different than those needed 15 years ago. For example, oversight of privatization projects requires additional knowledge and skills in contracts, private sector financing, financial reviews, negotiation skills and other expertise not required in the operation of "traditional" military housing.

Dramatic changes in the mortgage markets have pushed housing managers and specialists to know the ins and outs of foreclosures, upside down mortgages, short sales, and the Department of Defense Homeowners Assistance Program to ensure our assistance to Soldiers and Families provides the most up-to-date information.

CP-27 has a well-developed Army Civilian Training, Education and Development System plan and has been cited as a model training plan for other career plans, including those of our sister services. CP-27 relies heavily on the associated ACTEDS program funds to provide the critical training to develop the specialized skills required to manage the Army's housing programs.

Some of the specialized training required for housing professionals includes real estate finance and housing site management, both of which ensure that Army personnel working under RCI have a better understanding of financial and property management plans presented by the RCI private partners. CP-27 also hosts courses on credit counseling, homeownership lending, fair housing and foreclosures, all of which help HSO counselors better assist Soldiers and Families residing in off-post communities. In addition, BAH data collection





# Army Housing Intern Program update

by Elizabeth K. Liggett

It has been an exciting couple of months for the Army Housing Intern Program. Four interns came on board, seven interns started their second year in the program, six interns graduated, and a change in the intern training cycle was enacted.

## Training revisions

The HIP is a two-year program requiring a combination of on-the-job and classroom training. As a result of recommendations from the Career Program 27 Career Planning Board, the intern training plan underwent revision in fiscal 2010.

In the past, interns were required to complete five months of on-the-job training in all four core areas of housing — Housing Services Office, Army Family housing, Residential Communities Initiative and unaccompanied personnel housing. Because of Base Realignment and Closure legislation, the diminishing supply of traditional Army Family housing within the 50 United States and the challenges associated with training at installations overseas, the CPB decided that interns will now be required to complete six months of on-the-job training in HSO, RCI and

UPH, and only two months in Army Family housing. In addition, interns are now required to take a federal budget or appropriations law class.

## New interns

The first-year interns began their Army housing training assignments at various installations throughout the continental United States.

**Robert “Grier” Armour**, an Army veteran who served in South Korea and at Fort Bragg, N.C., was selected for the HIP at Fort Gordon, Ga. Prior to joining the program, Armour was an assistant business manager for Bee Southern LLC while earning his bachelor’s degree in business administration with cum laude honors.

**Lorenzo Claxton** met his future supervisor and mentor at a NeighborWorks training event and became determined to work for Army Housing. After earning his master’s degree in public administration from the University of Nebraska in 2006, Claxton worked in nonprofit and community housing.

**Analisa Sweat**, a former Navy military police officer, joined the Army Housing team at Joint Base Lewis-McChord, Wash. While she is new to military housing,

| Acronyms and Abbreviations |                                       |
|----------------------------|---------------------------------------|
| CP-27                      | Career Program 27, Housing Management |
| CPB                        | Career Planning Board                 |
| FSBP                       | First Sergeant’s Barracks Program     |
| HIP                        | Housing Intern Program                |
| HSO                        | Housing Services Office               |
| RCI                        | Residential Communities Initiative    |
| UPH                        | Unaccompanied Personnel Housing       |

Sweat has more than four years experience in real estate sales. She earned her master’s degree in human resource management from Chapman University, Bangor, Wash. in 2005.

**Bettie Jean Trent** jumped ship to join the Army housing family after working at the Naval Medical Center in Portsmouth, Va., for nearly 20 years.. Trent is learning the ropes at Fort Drum, N.Y. She earned her master’s degree in urban education community counseling from Norfolk State University in 2008.

## Second-year interns

All seven of the second-year interns are excelling in their final year of the program. In addition to the valuable hands-on experience they have gained in each aspect of housing during their rotational assignments, the second-year interns have also diligently worked on special

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training is offered annually to educate housing professionals on the appropriate methodology for collecting accurate and representative local market data, which ultimately impacts service members’ BAH.

Classes on barracks and furnishings management are also regularly offered to those personnel working under the First Sergeant’s Barracks Program. In addition to that training, Army Housing has developed a comprehensive contract to create basic, intermediate and advanced military-housing-specific courses to be provided in-house. This contract will improve the quality of training and reduce some of the costs associated with external training providers. It is expected

the contract will be awarded in the near future.

The CP-27 Housing Management Intern Program has seen a strong revitalization in recent years and is key to ensuring that there are professionally developed employees to fill future vacancies created by our retiring workforce. This two-year program with a GS-7/9/11 track has historically produced flourishing professionals. Since 2007, 22 interns have graduated from the program.

Our intern graduates are mobile, filling management roles across our installations, including Europe and Korea. Most of the senior housing officers in key management positions on the Army staff, secretariat and at Headquarters, Installation

Management Command, began their housing careers through the CP-27 Housing Intern Program.

We will advertise additional intern positions this year after we receive our intern allocations from the Army G-1.

Housing Management is dynamic and varies from installation management. As such, it requires a greater level of knowledge and professional skill sets for the complex personal interaction and services we offer Soldiers and Families. These requirements have been successfully captured through the rigorous professional program CP-27 has established.

*Deborah Reynolds is the functional chief’s representative for CP-27.*







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projects.

**Stefanie Casey**, Office of the Assistant Chief of Staff for Installation Management, is identifying new category structures for each furnishings item in the consolidated Army furnishings list as part of the transition from the Housing Operations Management System to the Enterprise Military Housing system.

**Tasha Conde**, Joint Base Lewis-McChord, created an informational brochure that identifies all local police departments, Crime Stoppers organizations, sheriffs' offices and crime statistics websites for use by service members relocating to Joint Base Lewis-McChord.

**LaShandra Gray**, Fort Jackson, S.C., spearheaded the establishment and launch of the Fort Jackson housing website, a thorough and informative resource for Fort Jackson Soldiers and Families.

**Lynn Hammond**, Fort Leavenworth, Kan., arranged and attended the 2010 annual meeting of the CP-27 CPB in Kansas City, Mo. The CPB comprises 15 senior-level housing managers from locations throughout the Army.

**Lidia Hedderman**, Fort Bliss, Texas, conducted a study to compare the benefits of using in-house personnel versus contract personnel to manage Fort Bliss's First Sergeant's Barracks Program.

**Angie Maccue**, Fort Drum, assisted with the privatization of roughly 125 Section 801 leased housing units at Fort Drum by conducting inspections, assisting residents to complete the required paperwork and serving as a liaison between the government and the privatization partner.

**Monica Richmond**, Fort Campbell, Ky., revised the *Fort Campbell Housing Services Office Desktop Guide*, which is used by the installation's HSO personnel.

### Recently graduated interns

The 2010 HIP graduates are at work

across the Army.

**Sharon Butler** is serving as the RCI liaison at Fort Gordon, where she had interned for the previous two years.

Larry Jones became the contracting officer's representative for the FSBP contract at Fort Carson, Colo., after completion of his internship at Fort Drum.

**Liz Korczynski Liggett** interned at Headquarters, Installation Management Command, and is now permanently assigned to the Office of the Assistant Chief of Staff for Installation Management as the Training and Intern Program manager. *(Editor's note: Liggett is the author of this article.)*

**Pam Morlewski** serves as the RCI property asset manager at Fort Riley, Kan., where she had interned for the previous two years.

**Judy Shepherd** was permanently assigned to Joint Base Lewis-McChord as the HSO deputy branch chief after completing her internship there.

**Ricky Wallace** is now serving as a FSBP area manager at Fort Hood, where he had interned for the past two years.

### Program success

Of the 22 Army housing interns who have graduated since fiscal 2007, 20 are still working for the Army in housing positions, one is working for the U.S. Army Corps of Engineers, and the other is working for Navy housing. HIP graduates are eagerly filling management roles at installations across the globe, making significant contributions throughout the Army housing community.

Many of the senior housing officers in key management positions on the Army staff, secretariat and at Headquarters, Installation Management Command, began their housing careers through the



Current Army HIP interns are (back row, left to right) Bettie Jean Trent, Robert "Grier" Armour, Angie Maccue, Lynn Hammond, Tasha Conde, Monica Richmond and Stefanie Casey; (front row, left to right) Analisa Sweat, Lidia Hedderman, Lorenzo Claxton and LaShandra Gray. Photo by Elizabeth K. Liggett

HIP, a testament to the success of the program.

POC is Elizabeth K. Liggett, 703-604-2470, [Elizabeth.k.liggett@us.army.mil](mailto:Elizabeth.k.liggett@us.army.mil).

Elizabeth K. Liggett is the Training and Intern Program manager, Office of the Assistant Chief of Staff for Installation Management.

## Useful WEBSITES

Army Civilian Training Education and Career Development catalog  
<http://www.cpol.army.mil/library/train/catalog/>

Army e-Learning Program  
<https://usarmy.skillport.com/>

Career Program 18, Engineers and Scientists, web site  
<https://ekopowered.usace.army.mil/cp18/>

Communities of Practice web site  
<https://eko.usace.army.mil/usacecop/>



## Kuhr is IMCOM G-4, director of Facilities and Logistics

by Mary Beth Thompson

For every downside, there is an upside. The sun shines brightly after the storm. Spending time studying results in an A on an exam. The job presents continuing challenges, yet the work is enjoyable.

For Greg Kuhr, director of Facilities and Logistics at Headquarters, Installation Management Command, working with great people is the good part.

"I enjoy working with professional employees, who know their business, are experienced, have expertise with good analytical skills and are good teammates," Kuhr said. "Probably the most enjoyable thing about this job is that, at the headquarters and region and garrison, everybody is trying to get the mission accomplished, and everybody is working in a collaborative fashion. We have some very talented and experienced employees who are dedicated to serving the Army."

The challenging part of the job — not surprisingly — is stretching the resources to cover ever greater needs.

"Everybody's short of resources," he said. "How we move resources around to ensure that our most critical requirements are properly resourced is our daily challenge."

Kuhr's two functional areas — Logistics and Public Works — are the largest in terms of resources for IMCOM. The logistics function will transfer to Army Materiel Command in fiscal 2013, and he is overseeing the steps leading to that move in addition to all the normal logistics issues that confront Army garrisons daily.

On the Public Works side, Kuhr is responsible for the facilities at IMCOM installations worldwide.

"We are focused IMCOM-wide on our overall facilities strategy, our energy



Greg Kuhr  
U.S. Army photo

program and aligning our resources with the strategic direction established in the Installation Management Community Campaign Plan," he said.

In addition to resources, Kuhr is responsible for resolving policy issues that affect Army Public Works. When an installation is trying to accomplish something but is constrained by a policy, the issue usually reaches Headquarters, IMCOM, where Kuhr and his staff work to settle the issue.

Another element of Kuhr's job involves planning for the future.

"At the headquarters level, we take our commanding general's intent, and we set a strategic direction where we want to go over the next five to 10 years," he said, "and we make sure that the actions we're taking today align with that long term direction." (Editor's note: A graphic of the Commander's Intent can be seen on page 5.)

Top on his list at the moment is development of a Facilities Investment Strategy, which will determine how Army infrastructure investments will be focused on mission support in a cost-effective and efficient manner. The strategy applies to the goals IMCOM is setting for itself concerning quality and quantity of facilities and how it is aligning Military Construction dollars and Operations and Maintenance dollars to ensure it

accomplishes that strategy.

"Our specific challenge there is, how do we ensure that MILCON and O&M investments are one comprehensive program, not two separate, independent, stovepipe programs," he said.

Kuhr came to the job last August from IMCOM Pacific Region where he was chief of staff since 2003. Prior to taking that position, he served as an Army officer on active duty.

Before retiring as a colonel, Kuhr served as the director of Facilities, Engineering and Logistics at Fort Benning, Ga. There, he dealt with the complex issues that installations face every day — environmental concerns, food service, transportation and equipment accountability, to name a few.

During his 26-year career as an engineer officer, Kuhr served in assignments at Fort Hood, Texas; Fort McClellan, Ala.; and Fort Irwin, Calif. He also held positions on the Army staff with the Office of the Assistant Chief of Engineers and with the U.S. Army Corps of Engineers' headquarters. He was also the deputy commander of the New Orleans District and the commander of the Far East District.

Kuhr earned his bachelor's degree in engineering from the U.S. Military Academy at West Point, N.Y., and his master's degree in civil engineering from the University of Illinois. He is a graduate of the Army Command and Staff College, the Army War College and the Harvard Senior Executive Fellows program.

"I enjoy what I do," Kuhr said about his current assignment. He focuses on resolving issues and getting resources to the installations so they can get their jobs done.

"Headquarters, IMCOM, is here to enable garrisons to support our Army," Kuhr said. "It's all geared to getting better every day. That's what we work at."

Kuhr talked about a website that can be used to share ideas, challenges and

| Acronyms and Abbreviations |                                 |
|----------------------------|---------------------------------|
| IMCOM                      | Installation Management Command |
| MILCON                     | Military Construction           |
| O&M                        | Operations and Maintenance      |



# Corps headquarters opens support office in San Antonio

by Mary Beth Thompson

**W**hen Headquarters, Installation Management Command, moved to San Antonio last fall, it joined several other U.S. Army Corps of Engineers customers in the Texas city. As a result, officials took a look at USACE's presence there and launched the Installation Support San Antonio Office in December.

IMCOM, a major USACE customer, now calls San Antonio home, along with other USACE clients — the Army and Air Force Medical Commands, U.S. Army North, U.S. Army South, the Air Force Center for Engineering and the Environment, the Air Education and Training Command, and the Army Environmental Command, which is part of IMCOM.

The new office provides Headquarters, USACE, with an installation support presence in San Antonio, according to Stacy Hirata, chief of the Installation Support Community.

Currently, the office comprises two people. Derya Smith is the chief. Smith is supported by Rod Thompson, a general engineer from the Engineering and

Support Center, Huntsville, Ala.

Thompson provides guidance on Huntsville Center capabilities and programs, such as Military Construction, the Operations and Maintenance program, and other installation support resources.

Eventually, the office will have a staff of five or six with the addition of liaison officers for San Antonio customers, Smith said.

“My mission is strategic communication with customers — just connecting the dots, finding the right people to be able to accomplish our goals,” Smith said. “I’m here to support our customers.”

Smith is working with USACE’s San Antonio customers to build relationships. Her goal is to identify their needs and develop strategies to help customers address those needs.

“I’m trying to find out what value we can add and to truly accomplish meeting their objectives,” Smith said.

“Physically, being in this area helps a lot, because we do have face-to-face communication,” she said. “If I cannot help, at least I know where to get help. That is my mission.”

Smith acquired an in-depth knowledge of the Army engineering world through 21 years of experience. She served in Directorates of Public Works in



Derya Smith  
Photo by Peter Able, USACE

Germany and in South Korea. She worked at USACE’s Center for Public Works, deployed to Iraq and served previously as a USACE employee at a joint office in San Antonio. She also has held positions with the Office of the Assistant Chief of Staff for Installation Management and U.S. Army Europe.

“To be able to do this job correctly, you have to understand the installation world as well as the USACE world,” she said.

“We are together in this mission — Army engineers,” Smith said. “We have one mission and are one team.”

Mary Beth Thompson is the managing editor, Public Works Digest.

## Acronyms and Abbreviations

|       |                                 |
|-------|---------------------------------|
| IMCOM | Installation Management Command |
| USACE | U.S. Army Corps of Engineers    |

(continued from previous page)

best practices. He is looking forward to seeing input from the field at [www.garrisoncommand.com](http://www.garrisoncommand.com).

“We welcome everybody’s suggestions and recommendations,” Kuhr said. “Put it on the website, and see what response you get.”

Maybe you can turn a dark cloud into a silver lining by posting or by reading what is posted on the website.

Mary Beth Thompson is the managing editor, Public Works Digest.

## Call for ARTICLES

The May/June 2011  
issue of the  
Public Works Digest  
will feature

## Environment and Sustainability

Deadline is April 11  
Submit articles to  
[mary.b.thompson@usace.army.mil](mailto:mary.b.thompson@usace.army.mil)  
202-761-0022

**U.S. Army Installation Management Command**  
11711 North IH35, Suite 110  
San Antonio, TX 78233-5498  
[www.imcom.army.mil](http://www.imcom.army.mil)

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