

# Public Works *Digest*

*In this issue:*

## Facilities Management





## U.S. Army Installation Management Agency

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**On the cover:**  
Directorate of Public Works employee trims a tree at West Point's Trophy Point in preparation for graduation events. Photo by Kathy Eastwood, the Pointer View

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## L E T T E R F R O M T H E E D I T O R



**A**n anonymous quote goes, “Change is inevitable, except from vending machines.” I do not know about that second part, but the first part is certainly true. Change is all around us and, in the Army public works world, coming at us fast.

The Army Modular Force, the Base Realignment and Closure 2005 and the Global Defense Posture Realignment initiatives require major construction and alteration to facilities on Army installations. These change agents, arriving in the same window of time with the need to repair and replace aging infrastructure, combine to bring an unprecedented facilities engineering workload to be accomplished in the next few years.

For installations to acquire the facilities to accommodate these changes in a relatively short period of time and with a limited budget requires a different way of doing business. It appears change is not only inevitable, but also inevitably challenging, because to accommodate change will require change. Specifically, it requires changing the way military construction has traditionally been carried out.

The term for this change is military construction transformation, or MILCON Transformation. If you are not already familiar with MILCON Transformation, you will become acquainted soon. The Web site <http://www.bq.usace.army.mil/cemp/milcontrans/milcontransformation.htm> provides information, and the next issue of Public Works Digest will include articles on the topic.

This edition, themed “Facilities Engineering,” is packed with articles on subjects such as: the assistance Fort Bragg received from Huntsville Engineering and Support Center, the new facilities engineering regulation, a plan to revitalize the Job Order Contracting program, how Rock Island Arsenal is saving money by shutting down its central heating plant for the summer, Army Reserve changes in roofing acquisition, Operational Readiness Training Complexes, facilities standards updates, corrosion prevention and more.

Stories of how uncommon challenges were overcome are in another section. They include pieces on how West Point prepares for large, high-profile events like graduation, coping with snow removal at Fort Greeley, maintaining a historic bridge at Rock Island Arsenal, constructing in Arctic conditions in Greenland and building an airfield where there is no land in Japan.

The automation, construction and installation management sections also contain many valuable articles on ECONPACK software, the new NEPA desktop reference, LEED, installation management in Afghanistan, master planning, facilities that are under construction and other subjects.

The Professional Development section leads with a commentary by Lt. Gen. Carl A. Strock, the functional chief of Career Program 18, Engineers and Scientists (Construction). That section continues with several articles about training opportunities just in time to help with fiscal year 2007 planning.

Mary Beth Thompson

Mary Beth Thompson, Managing Editor **PWD**



## Fort Bragg calls on Huntsville Center to fix faulty HVAC systems

by Debra Valine

It was so hot in the Post Exchange at Fort Bragg, N.C., in April that people were actually passing out. To get the problem with the chiller fixed fast, Fort Bragg's Directorate of Public Works called the Engineering and Support Center in Huntsville, Ala.

"I got a 6-BOSS call — a complaint that goes directly into the commanding general's office," said Derrick McRae, the project manager and mechanical engineer with the Fort Bragg Directorate of Public Works. "We already had a contract with the Huntsville Center. We did all the work within a week's timeframe. There is no other way I could have gotten the work done. I can call Huntsville Center and they get the work done very, very quickly."

Ken Arrington, a project manager in Huntsville's Project Management Directorate said one of the more interesting projects completed at Fort Bragg involved a fast track project to rid barracks of mold and upgrade the heating, ventilating and air conditioning (HVAC) controls before Soldiers returned from Iraq.

Huntsville received the task order in March. One of the buildings has been completed, and troops have moved in. The other building is nearly completed.

"We had mold in two of the buildings, and it was due to a faulty HVAC system," Arrington said. "It didn't need mold remediation, just some bleach to clean it out. We had our contractor, Johnson Controls, go in and remove the mold and upgrade the controls in the HVAC units. They had about two months to do that. They got it to the point where it was safe to house the troops — get them out of a hotel and into the barracks.

"The commander there was very impressed with the speed with which we were able to get that work done," Arrington said. "All the Fort Bragg

work is going well, and Huntsville Center will continue to ensure it provides quality and timely service. Taking caring of Soldiers and their families is our number one priority."

"There is no way in the world we could have gotten that work done by a local contractor," McRae said.

The \$8 million worth of work being done at Fort Bragg involves upgrading the controls to the outdated HVAC system and emergency repair work on valves and pumps.

Huntsville Center is home to the U.S. Army Corps of Engineer's Mandatory Center of Expertise for Utility Monitoring and Control Systems.

"We are renovating and modernizing the control systems at Fort Bragg," said Donnie Lambert, the project engineer. "We are converting them from old pneumatic and some analog systems to direct digital controls.

"The first project there was an existing Johnson Controls System from a previ-

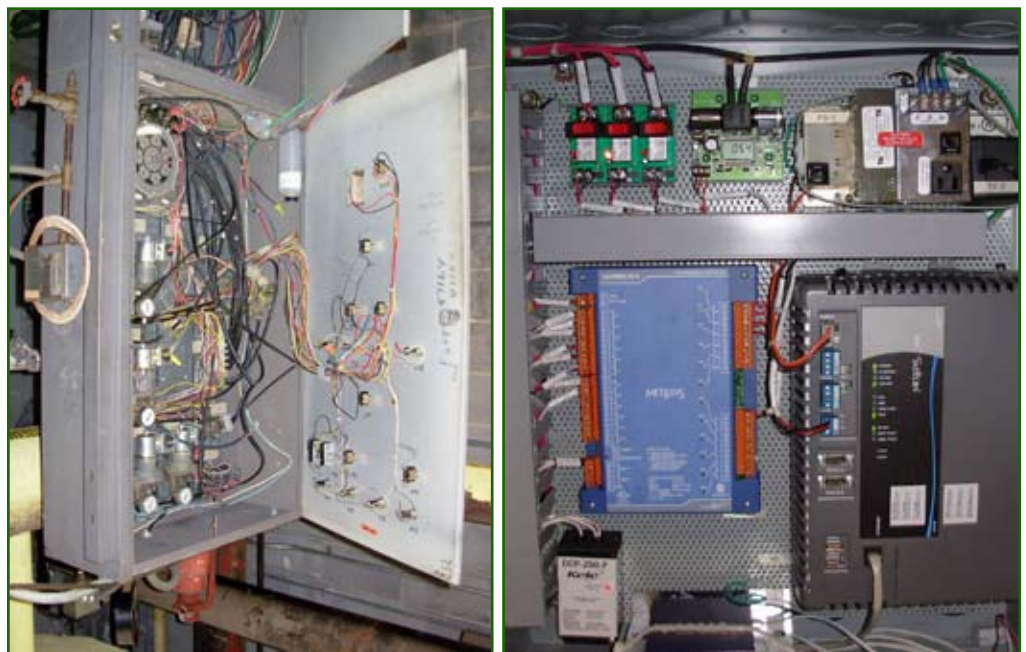
ous contract," Lambert said. "We put in new controls on variable air volume boxes and air handlers. And after tying that into the server, Fort Bragg could monitor the equipment and see the display values like temperatures values, humidity values and damper positions. All the normal HVAC sequences could be monitored from a local station."

From that start, the work expanded.

"Today we are putting in nothing but electronic equipment," Lambert said. "This will reduce maintenance, increase reliability and provide more information back to the central server. It's state-of-the-art equipment that is compatible with the existing HVAC system."

Two of the barracks buildings are about 95 percent complete, but in those cases, the decision was to provide temperature control and modernize the HVAC system, Lambert said.

"We installed a dedicated outside air unit," he said. "We are the first to use this approach at Fort Bragg. It was recently reviewed by the Construction Engi- ➤



HVAC controls before upgrade (left). HVAC controls after upgrade (right). Photos by Darryl Goodwin, Johnson Controls Inc.



# Plans underway to revitalize JOC program

by John W. Wehmanen

The Headquarters Department of the Army Job Order Contracting program is looking for a few good JOC practitioners. Get on board now to get with and grow with the program.

It has been more than two years since the last full-time DA JOC program manager left the Office of the Assistant Chief of Staff for Installation Management (ACSIM). In the meantime, life went on.

The JOC program at the grass roots level has gone about its business in an admirable fashion. Installation Directorates of Contracting continued to issue contracts and delivery orders, as did the Corps of Engineers through its contracting offices. And the Huntsville Engineering and Support Center held training regularly.

That is as it should be, but there is more expected. The wheels are turning at the Department of the Army and elsewhere to bring back a requisite amount of coordination and central direction to the JOC program and to provide a central source of information for the field practitioner who has questions about policy and practice.

A cadre of new and former members of the JOC Steering Committee has been

meeting to formulate plans to revitalize DA support to the JOC workforce in the field.

Information is again flowing. POC lists are being updated. The Web site is getting the first tweaks of an update as this issue goes to press.

The Army Contracting Agency (ACA) is the home of the JOC Steering Committee vice-chair, Steve White. White coordinates JOC matters with ACA headquarters staff and its geographical regions. The Installation Management Agency's Anthony White is pulling together information from IMA regions and garrisons. The only holdover from the old JOC Steering Committee is the U.S. Army Corps of Engineers' Jim Lovo. Lovo represents JOC within the Corps and is the program's elder statesman, its repository of institutional knowledge.

These representatives will be reaching out to the field to contact known experts and emerging talent who can help revitalize the program. Future plans include updating the Web site as well as updating and Web-enabling the JOC Guide.

A mini-Steering Committee meeting via video teleconference is in the works for this summer or fall. The group hopes to

realize plans for a full, multi-day, on-site JOC Steering Committee meeting with field representation from ACA, IMA and USACE in the next fiscal year and make that event, once again, the highlight of the JOC world calendar.

Call or e-mail any of the steering committee members with questions or to offer help. And check into the net. Offer your help, too.

The JOC program has a lot to offer the Army in the next five years as it transforms and reorganizes. Fine tuning the long-standing JOC contracting capabilities will help these organizations to do a lot of good for the war-fighters.

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neering Research Lab and they said the renovation under way at those barracks was excellent. The newly installed HVAC would provide both humidity and temperature control and help reduce mold."

Lambert said security is sometimes a challenge.

"Some of the headquarters buildings require escort," he said. "Some require working after hours and nights. One of the things that we have to be careful of is taking into account existing energy savings that are in place at Fort Bragg. We do not want to do anything that will impact that existing contract.

"My job has been a lot easier because of the group at Fort Bragg. Derrick McRae, the project manager at Fort Bragg, and the

Contracting Officer Representative David Taylor did an excellent job of reviewing the contract and keeping me abreast of changes. They have a new mechanical engineer, Russ Hayes. They call him the mechanical champion at Fort Bragg. He is new, and he is focused on correcting some of these deficiencies. He has really been motivated to get a handle on all the issues," Lambert said.

"I am very satisfied with the work being done by the Huntsville Center," McRae said. "The customers here are very satisfied. You are providing them with heating and air conditioning controls."

McRae said the centralized monitoring system also will help Fort Bragg cut costs.

"We spend \$40 million a year on electricity at Fort Bragg," McRae said. "Right

now a lot of these buildings have systems that operate in two modes: on and off. That is not very energy efficient. These systems will help us become more energy efficient.

"The fast action I have gotten by sending the money to Huntsville to get the work done has been amazing. I wish I had more money to send to Huntsville so that I could execute more task orders," McRae said. "I wish the Huntsville Center UMCS (Utility Monitoring and Control Systems) team was solely dedicated to Fort Bragg."

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*Debra Valine is the deputy chief of public affairs, Engineering and Support Center, Huntsville, Ala.*

**PWD**



# Rock Island Arsenal shuts down central heating plant for summer

by Carlo Facciolla, James Thompson and Dave Osborn

The U.S. Army Garrison Rock Island Arsenal (USAG-RIA), Ill., is doing something unique and innovative this summer — shutting down its central heating plant for four months, mid-May to mid-September.

This process began in 2003 when engineers from the USAG-RIA and the U.S. Army Corps of Engineers, Rock Island District, performed an initial study of the coal-fired steam plant's six failing and inefficient steam absorption chillers. On average, the chillers were almost 30 years old, five years past their normal useful life, and some on the verge of complete failure. The engineers' initial projections showed that savings would be realized by simply replacing the old steam absorption chillers with modern steam absorption chillers.

During further analysis, however, the engineering team generated the idea of completely shutting down the installation's central heating plant for a period of time each summer. They projected enormous energy and economic savings when this plant shutdown was added to the equation.

The team's analysis showed significant savings could occur from reduced coal costs, reduced heating plant maintenance and lower electrical use from the 120 day shutdown each year. In addition, the shutdown would allow the required heating plant maintenance to be performed during this period each year, eliminating the periodic weekend shutdowns that were extremely costly due to overtime rates.

The engineers also determined that the shutdown was necessary to improve the reliability of chiller plants, create energy savings necessary to meet energy goals and reduce emissions of pollutants as required by Executive Order 13148. In fact, they estimated that hydrochloric acid reductions at the installation could be reduced by nearly 20 percent.

After the engineers completed the concept plan, the garrison's energy engineer



*The central heating plant at Rock Island Arsenal, Ill., is shut down this summer to improve the reliability of chiller plants, create energy savings and reduce emissions of pollutants. Photo Courtesy of U.S. Army Garrison Rock Island Arsenal*

sought the funding to make the dream a reality. Shortly afterwards, the garrison received nearly \$5.5 million for the project from the Army Chief of Staff for Installation Management as part of the Department of Army Energy Conservation Investment Program.

The final project design was developed through a partnership between engineers at the garrison's Directorate of Public Works Engineering Services Division and engineers at the Corps' Louisville District.

The complex project now includes the replacement of six steam absorption chillers with five new 600-ton, high-efficiency electric chillers; the installation of two new 135-psi gas boilers, one new 30-psi gas boiler and new electric boilers; and other utility system upgrades. The chillers, which are located in three chiller plants, provide comfort cooling to all of the occupants at Rock Island Arsenal. The new boilers will serve existing process equipment.

Moreover, a new high-tech direct digital

control system, utilizing the open non-proprietary BACnet protocol, will operate the new chillers in the most efficient and optimal way, allowing the garrison to provide its customers with the highest level of comfort cooling using the least amount of energy and achieving maximum economic savings.

The new control system also provides for open competition in the garrison's chiller service contract and in future control system upgrades.

The USAG-RIA now estimates that the annual savings for these projects will be about \$1.1 million and 100,000 million British thermal units.

Project construction for the two multi-million dollar energy program projects began in October and was completed in May.

Ultimately, the benefits of these projects will be enormous to the arsenal. The infrastructure will be greatly improved, and the reliability of the installation's utility ➤



# New facilities engineering regulation on the horizon

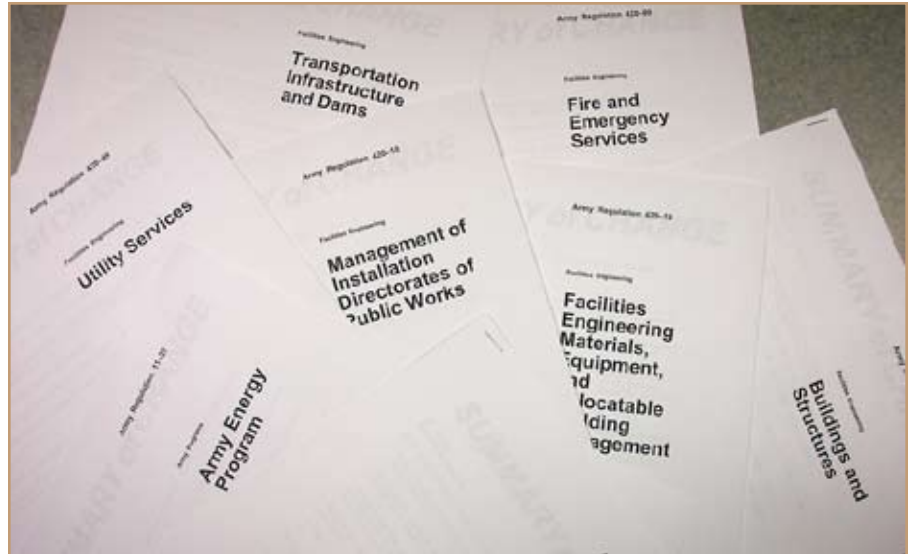
by John W. Wehmanen and Philip R. Columbus

**W**here is it in the regs? That's a good question, and one that facilities personnel will soon be able to answer, "It's in Army Regulation 420-1."

When the AR 420-1, the Army's new Facilities Engineering regulation, is complete, the first stage of which is now projected to be sometime early this fall, it will be easy. The answer to most questions concerning facilities policy, Directorate of Public Works matters, real estate, housing, construction and all the other aspects of the facilities engineering world will be in AR 420-1. Almost all the Army's public works and facilities engineering policy regulations will all be together under one cover.

The Facilities Policy Division of Assistant Chief of Staff for Installation Management (ACSIM) has been working for several years to review and update facilities regulations, Web-enable them and make them available in a "virtual library" on the ACSIM Web site. Quite a bit of progress has been made, and a quantum leap forward is expected with the pending publication of consolidated AR 420-1.

This is one step in a multiphase approach to updating facilities engineer-



Where is it in the regs? Facilities personnel will soon be able to refer to a single regulation, AR 420-1, rather than several that apply now. Photo by Mary Beth Thompson

ing regulations. The new regulation will replace 10 current regulations, including: AR 11-27, AR 210-50, AR 415-15, AR 415-19, AR 420-10, AR 420-18, AR 420-49, AR 420-70, AR 420-72 and AR 420-90. The existing AR 210-50 has already been revised and includes the material from AR 210-12, and AR 415-15 has been updated and includes AR 415-19.

The review and comment cycle is complete, and ACSIM Facility Policy staffers and contractors are completing incorporation of comments, formatting and preparation for dispatch to the Army Publishing Directorate. Publication of the new AR 420-1 is planned for early fall.

But the program doesn't stop there. After a similar preparation and review process, DA Pamphlets 420-6 and 420-11 will be revised and republished, the second contract package. The DPW Reference Book will receive the same treatment and be republished in the third contract package. The fourth package will address 14 more documents.

Most of these documents are existing Army regulations which will be added to AR 420-1 as new chapters. The final big

increment will also comprise additions to AR 420-1. About 10 new chapters are currently planned from existing Army regulations in the 405, 415 and 420 series.

This program was spun up shortly after the creation of the Installation Management Agency made wholesale revision of facilities-related Army regulations important. The staffers at Facilities Policy Division have worked intensely to overcome some high barriers since then, but they and ACSIM senior officials are optimistic that the log jam is breaking up and excited that the new regulation will soon be on the street.

Watch the ACSIM Web site for developments as this regulation is published and comes online. See it and other engineering, public works and housing publications become a Web-enabled virtual library right before your eyes on the ACSIM Web site.

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systems will be drastically increased.

The engineers from the USAG-RIA and the Corps' Louisville District will evaluate the effectiveness of these projects and the plant shutdown during the fall. They are anxious to assess the success of this innovative initiative and will report their findings.

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Carlo Facciolla and James Thompson are mechanical engineers; Dave Osborn is a general engineer and the Energy Program manager. All three work in the U.S. Army Garrison Rock Island Arsenal Directorate of Public Works, Engineering Services Division. **PWD**



# Army Reserve revamps roofing acquisition to reduce M&R costs

by Dana Finney

A program for life-cycle roof management developed for Army Reserve installations could later be adapted for active duty sites as an Installation Management Agency (IMA) Common Level of Support. The National Roofing Initiative (NRI) is based on the premise that consistent design, quality materials and expert application will extend the service life and reduce maintenance and repair (M&R) costs over time.

“The Southeast Region of IMA is committed to the improvement of public works operations across the spectrum,” said Michael Frnka, chief of the Public Works Division at IMA’s Southeast Region. “We are using a variety of methods to develop and incorporate better business practices, such as the Strategic Sourcing initiative, which is sponsored by Headquarters, IMA.

“In particular, we are focusing on the better management of roofs which are a very significant requirement that can be improved,” Frnka explained. “The quality products from the National Roofing Initiative efforts by the Army Reserve Office of IMA will help accelerate the roofing management improvements.”

IMA’s Army Reserve Office (IMA ARO) launched the NRI in response to re-roofing expenses at reserve installations, which have 26 million square feet of roofs.

“If you look at our overall M&R funding, roofs are the largest single expenditure, and they shouldn’t be,” said Olan “Bud” Lewis, director of the National Roofing Initiative at IMA ARO. “The average age of our roofs is nine years. There’s no magic system, but any one type properly designed and installed can last for at least 20 years.”

IMA ARO conducted an extensive evaluation of the roofing industry in partnership with the Louisville District of the U.S. Army Corps of Engineers to develop a strategic plan for the roofing initiative. In addition, the Army Engineer Research and Development Center (ERDC) committed



*The National Roofing Initiative requires a 20-year manufacturer’s guarantee for roofs. Photo courtesy of the U.S. Army Engineer Research and Development Center*

to updating the ROOFER sustainment management system (SMS), which is to be the main tool for Army Reserve roof asset management.

“The objectives of the strategic plan were to ensure good specifications, products, contractor work and management oversight; leverage existing Army expertise and tools; and manage roofs on a 20-year life cycle,” said Douglas Jones, chief of Operations at IMA ARO.

In specifying roof projects, usually the manufacturer’s technical installation guide is followed. Throughout the roofing industry, this guide is considered a minimum acceptable standard of installation consistent with the National Roofing Contractors Association Roofing and Waterproofing Manual.

However, the Army Reserve wanted to set a higher standard. To develop new specifications, IMA ARO hired a team of registered roof consultants (RRCs), who are accredited as experts by passing a rigorous test.

“It’s a tough, tough exam,” said Lewis. “It takes the profession to another level because you can be sure the people who pass it really know what they’re doing.”

The roof consultants wrote the new guidance for four types of roofs: built-up, modified bitumen, EPDM rubber and PVC systems. The contracts all require a 20-year, no-dollar limit warranty, which is the best standard warranty offered in the industry. The warranty covers repair or replacement due to poor workmanship or defective materials regardless of cost.

This requirement ensures that manufacturers will provide their best high-performance membranes and certified installers. The specifications include detail drawings and require better quality systems. For example, built-up systems must be four-ply versus three-ply and use higher strength felts than previously specified.

Army Reserve Installation Management Region Offices have the flexibility to choose a roofing system that meets their needs. ►





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However, once chosen, the guide specifications and details for that system must be followed.

“We’re putting the national manufacturers on notice that their contractors are expected to be competent for installing the roof, and if they’re not, we won’t consider using that manufacturer for future projects,” Lewis said.

Louisville District negotiated two Multiple Award Task Order Contracts to support the NRI. One is for firms that employ RRCs to do inspections, write specifications and provide on-site quality control and quality assurance. The other is with roofing contractors qualified to install the selected roofing system and to provide timely

response to emergencies such as natural disasters.

To manage inspection and scheduling, IMA ARO uses the ROOFER SMS, which provides a consistent, objective way to analyze M&R needs. ERDC’s Construction Engineering Research Laboratory last updated ROOFER eight years ago and, subject to funding, plans to provide the latest software capabilities and features requested by ARO.

“The current system doesn’t have an inspection format for modified bitumens,” Lewis said. “Also, our concept for managing roofs differs from how ROOFER was originally developed.” ROOFER was intended for use by a trained layperson who would rely on the system’s objective features to determine if a roof should be

repaired or replaced. If a replacement was indicated, a certified inspector would take another look and determine more specific project requirements.

“We want the inspection to be enhanced by using RRCs who do this every day so they can add their subjective experience to the analysis, while still using ROOFER as a management tool for long-range, network M&R planning,” Lewis said.

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## SERO improving other roof management initiatives

by Dana Finney

In concert with the new standards and specifications under development as a part of the National Roofing Initiative (NRI), the Installation Management Agency’s Southeast Region Office (SERO) is working to improve roofing management by two other means: the Strategic Sourcing Initiative and Regional Roofing Management.

### Strategic Sourcing Initiative

SERO is leading IMA’s strategic sourcing effort for maintenance and repair (M&R) services. The goal is to develop recommendations on how IMA can reduce costs, improve service delivery and generally improve the procurement and management of M&R services.

The focus is on four key areas: 1) roofing; 2) fire alarm and fire suppression systems; 3) heating, ventilating and air conditioning systems; and 4) other building renovation, general maintenance and minor construction.

The process includes several installations participating in phone interviews to determine the current procurement environment and opportunities for improvements. These installations also complete a data call that captures current Sustainment,

Restoration and Modernization spending information for contracting in these areas. This initiative is currently scheduled for completion in September.

### Regional Roofing Management

SERO is also working to create a regional contract vehicle to help installations with their roofing management needs. The agency is looking at a number of ways to accomplish this regional solution, either through Army contracting channels, the General Services Administration or by employing the Multiple Award Task Order Contracts already in place in support of the NRI. The objective is to have this regional contract in place for use in fiscal year 2007.

The collective goal is to employ these two initiatives to help improve roofing management across the region, with an additional benefit of enhancing the success of the NRI.

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# Civil affairs unit tours water facilities to prepare for missions

by Christine Luciano

When a civil affairs battalion deploys, it goes into a war-torn country to help build or rebuild the infrastructure. One of the key components of infrastructure is water, a critical resource.

“There are many situations in which we are helping reestablish the civilian government,” said Maj. Fred Harmon, functional specialties officer for the 413th Civil Affairs Battalion, an Army Reserve unit with the U.S. Army Civil Affairs Psychological Operations Command, Lubbock, Texas. “We train our Soldiers how to go into an area and assess the hospitals, the water treatment plants and sewage plants to find the state of a municipality, a city or a small town.”

The battalion recently went to Fort Hood, Texas, for their annual training. Like many other reserve units, the battalion had weapons qualification, simulation training with civilians and security procedures training. The Soldiers also trained in civil affairs skills.

Harmon coordinated with Gary Goodman, Fort Hood’s Directorate of Public Works’ drinking water specialist, to take a tour of the Bell County water treatment facility and the post’s main pump station. The battalion toured the sites to learn about the tests, processes, chemicals and supplies needed to make these systems work.

“Many of our Soldiers have not seen these types of facilities,” Harmon said.

The battalion has used the Lubbock water treatment plant for training in the past. However, not all the Soldiers were able to tour the plant. Harmon took the opportunity during their annual training at Fort Hood to bring 52 of his Soldiers to visit the facilities at the installation.

“This tour helps educate our Soldiers about what a plant looks like and gives them a base line reference when they go into another country,” Harmon said.

Although the Soldiers may be deployed



Gary Goodman, Fort Hood drinking water specialist, explains to the 413th Civil Affairs Battalion how the water treatment plant produces Fort Hood’s drinking water. Photo by Christine Luciano.

to third world countries where plants are 40 or 50 years old, the concept is the same. Larry Drake, of the Bell County Water Control and Improvement District No. 1 Water Treatment Plant, explained to the Soldiers that although technology has advanced and the water treatment processes have evolved, the basics have not changed.

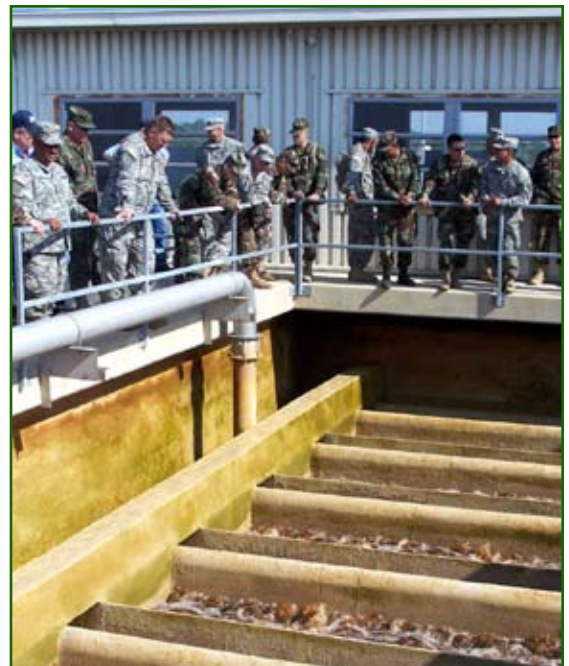
“The main things are filtration and disinfectant chemicals,” Drake said.

The Soldiers also toured the Fort Hood pump station to learn that adequate pressure is key to maintaining safe water to the customer.

“Pressure is important because if water is going in one direction, it’s not scouring the pipe,” said Clarence Pierce III, Fort Hood DPW’s water utilities operator. “By maintaining pressure, the water is always going out the system and into the community.”

“You never want to run out of water because it is critical at all times,” Pierce said.

Through the hands-on interactive tours, Soldiers learned how the filters and the process to treat the water work, and how that water is pumped into the community. ➤



Soldiers from the 413th Civil Affairs Battalion watch the filtration process at the water treatment plant. Photo by Christine Luciano.



# Army standards approved for ORTC, AFH

by John A. Scharl

The Army standards for design and construction of Operational Readiness Training Complexes (ORTCs) was approved in February for implementation by then Assistant Chief of Staff for Installation Management Lt. Gen. David Barno. The ORTC standard applies to Army, Army Reserve and National Guard military construction projects.

The ORTC supports the mission training requirements of reserve component annual and weekend, active component when away from their home installation and mobilization/demobilization.

The ORTC Army standard is mandatory for military construction projects starting in fiscal year 2008. The standard includes required design and construction criteria

for barracks, officer quarters, dining facility, company operations facility, battalion headquarters, brigade headquarters and maintenance facility.

The Army standard for Family Housing was approved in April. This standard was developed to support the needs of Soldiers and their families. It applies to all government-constructed Army Family Housing (AFH) on active Army installations.

The AFH standard provides the mandatory requirements, functional relationships and associated space necessary for new family housing and neighborhood design. Components ranging from recreation space, parking, utilities, room configuration, communication systems and safe alarms are included in the AFH standard.

The AFH standard is mandatory for all military construction-funded Army family housing projects starting in FY 2008.

The Army standards for ORTC and AFH were the first facility standards approved in 2006 and the ninth Army standard approved since the Army Facilities Standardization process was established in 2003. Exceptions to these Army standards must be approved by the Army Facilities Standardization Committee.

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John A. Scharl works in the Facilities and Housing Directorate of the Assistant Chief of Staff for Installation Management. **PWID**

# Army Facility Standardization Program update

by John A. Scharl

The Army Facilities Standardization Program was approved by the Vice Chief of Staff, Army in April 2003. The program provides standardization in Army facilities across installations and garrisons in design, construction and the application of best practices and new technology. The

mandated goal is to achieve sustainable, reliable and efficient facilities throughout the Army.

In May, the Army Facilities Standardization Committee approved the new charter for the Army Facilities Standardization Program, which implemented the Lean Six Sigma recommendation to streamline the program and restructure the process. The reorganized process will be published in the new AR 420-1, due this fall.

The committee is co-chaired by the chief, Engineering and Construction, Headquarters, U.S. Army Corps of Engineers; the deputy director, Headquarters, Installation Management Agency; and the director, Facilities and Housing, Office of the Assistant Chief of Staff for Installation Management.

The committee recommended the Army standard for Army Community Service Centers be adopted. This standard is consistent with a new Department of Defense Unified Facilities Criteria without Army exceptions. The committee further assigned

priority to the effort to publish interim guidance for the construction of Tactical Equipment Maintenance Facilities (TEMF) for Forts Bliss, Texas, and Carson, Colo., as well as guidance for other installations on a project requirements basis.

Pilot projects using new dining facilities criteria were discussed, along with a potential change in the standard design for company operations facilities. However, the committee confirmed these actions must remain within the scope of current project authorizations. The U.S. Army Corps of Engineers received approval to proceed with interim design guidance using the standard design developed for brigade and battalion headquarters.

The committee will next consider the proposed Army standards for Brigade and Battalion Headquarters, TEMF and Command and Control Facilities (division and corps headquarters).

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“The tours gave our Soldiers a better understanding of how the system operates,” Harmon said.

The knowledge from the tours will be used as a foundation to help Soldiers make assessments, recommendations and gather further information to help rebuild infrastructure in other countries.

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Christine Luciano is an outreach coordinator in the Environmental Section of the Fort Hood, Texas, Directorate of Public Works. **PWID**



# Army installations benefit from DoD Corrosion Prevention and Control Program

by Vicki L. Van Blaricum

The term “corrosion” means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. Most Department of Defense (DoD) equipment and facilities are composed of materials that are susceptible to oxidation, stress, surface wear and other chemical and environmental mechanisms that cause corrosion.

DoD was required to develop and implement a long-term strategy to reduce corrosion and the effects of corrosion on military equipment and infrastructure by Section 1067 of the Bob Stump National Defense Authorization Act for fiscal year 2003, Public Law Number 107-314. As a result of this law, the Office of Secretary of Defense (OSD) has established a coordinated research and development program for the prevention and mitigation of corrosion for new and existing military equipment and infrastructure, including a plan to transition new corrosion prevention technologies into operational systems.



This Fort Drum water tower underwent installation of an ice free cathodic protection system to prevent corrosion even when surface ice forms in the water. Photo by Vicki Van Blaricum

The Army Facilities Corrosion Prevention & Control Program began in FY 2005 and is funded by OSD and Headquarters, Installation Management Agency. Its objective is to implement new corrosion prevention technologies for infrastructure at Army installations, document the benefits, and develop guidance and specifications.

Several Army facilities projects were funded in FY 2005 and are being executed by the U. S. Army Engineer Research and Development Center, Construction Engineering Research Laboratory, including:

- measuring the rates and impact of corrosion damage on DoD equipment and installations (multiple sites);
- leak detection for pipes and tanks at Fort Hood, Texas;
- non-hazardous corrosion inhibitors/SMART control systems for heating and cooling at Fort Carson, Colo., and Fort Rucker, Ala.;
- pipe corrosion sensors at Fort Bragg, N.C.;
- ice-free cathodic protection systems for water storage tanks at Fort Drum, N.Y.;
- corrosion resistant materials for water and wastewater treatment plants at Fort Bragg;
- surface tolerant coatings for aircraft hangars, flight control tower and deluge tanks at Fort Campbell, Ky.;
- remote monitoring of cathodic protection systems and cathodic protection system upgrades for tanks and pipelines at Fort Carson;



Vicki Van Blaricum, who managed the Fort Drum project, checks on the progress of work inside the bowl of the tank during the installation of the ice-free corrosion prevention system. Photo by John Field

- cathodic protection of hot-water storage tanks using ceramic anodes at Fort Sill, Okla.;
- electro-osmotic pulse technology for prevention of water intrusion and corrosion of electrical and mechanical equipment at Fort Drum; and
- innovative corrosion resistant materials/indicator coatings for high temperature/steam piping at Fort Jackson, S.C.

Ten additional projects will be started by the end of FY 2006.

Initial response from installation Directorates of Public Works has been very favorable. One of the most successful and well-received FY 2005 projects involved the installation of an innovative, ice-free impressed current cathodic protection (CP) system in two elevated water storage tanks at Fort Drum.

CP is a commonly used technique that reduces the corrosion of a metal surface by making that surface the cathode of an electrochemical cell. However, when surface ice forms inside water storage tanks in cold weather, traditionally-designed CP systems comprising anodes suspended from





# Critical Army Reserve barracks to be completed this fall

by Charles Huffman

The Army Reserve Components are a critical part of today's total force supporting Operations Iraqi Freedom and Enduring Freedom and other operations in the United States and overseas. Citizen Soldiers integrating into active forces are trained and mobilized from transient training facilities, which are now collectively called Operational Readiness Training Complexes (ORTC, pronounced OR-TECH).

A shortage of transient facilities has adversely affected both the mobilization of Army personnel and the Army concept of "Train-Alert-Deploy." Seeking to eliminate this readiness issue, the Army approved the ORTC Army standard this year.

Construction of new ORTCs will help eliminate critical facility deficits. ORTCs will provide economical essential housing, dining, and administration and operational facilities to accommodate transient training,

mobilization and demobilization activities.

Construction of a battalion-size barracks piece of an ORTC project at Fort Bliss, Texas, Fort Carson, Colo., and Fort Riley, Kan., was approved in fiscal year 2005. Each project includes housing for about 670 Soldiers from the Army reserve component to accommodate mobilization and demobilization.

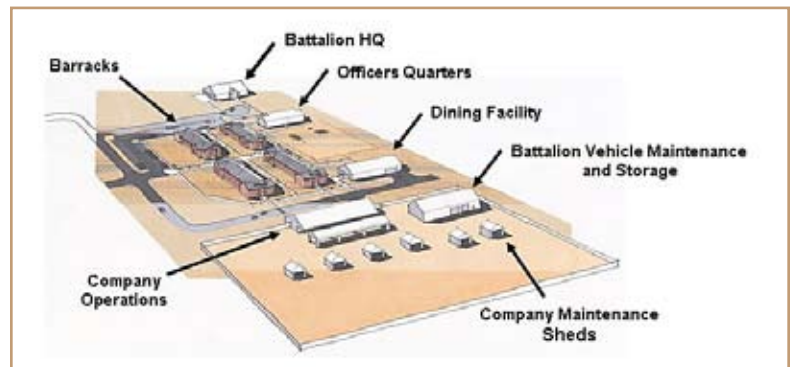
These barracks will also serve a long term transient collective training mission for both reserve and active component Soldiers. Construction began in August 2005.

The barracks will start coming online as early as this September.

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PWD



Typical ORTC battalion layout

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the roof of the tank are often prematurely damaged or destroyed.

"The CP system in one of our potable water storage tanks was completely destroyed in 2000 because of ice damage after only a few years of service," said Tom Ferguson, Fort Drum Operations and Maintenance Division chief. "When a CP system fails, the inside of a tank may remain unprotected for months, or even years, until funds can be obtained to replace it."

In an impressed current CP system, a rectifier is connected to anodes that discharge direct current through the water and onto the protected structure, stopping the natural process of corrosion. In the ice-free systems implemented at Fort Drum, ceramic-coated wire anodes are wrapped around an umbrella-like flotation and support system that keeps them submerged in water underneath surface ice, regardless of the water level.

The system moves up and down as the water level in the tank changes. Because the anodes and their supports are kept away from the ice, they are not susceptible to ice damage.

"One major benefit of the CP system is that it allows us to extend the life of the water tank's interior coating," Ferguson said. "Recoating is expensive and requires the tank to be taken out of service for several weeks."

Fort Drum's existing Supervisory Control and Data Acquisition (SCADA) system is used to monitor the performance of the ICCP, recording rectifier outputs, "on" potentials and "instant off" potentials. The SCADA system also monitors key parameters in the installation's water and sewage systems and helps control the operation of pumps, valves and other equipment.

"The project was highly successful from operability and cost-benefit perspectives, solving a major corrosion problem for our installation," Ferguson said. "The systems

are well designed and engineered to tolerate the icing conditions associated with cold regions.

"The ability of the ice-free cathodic protection systems to withstand exposure to a wide variety of temperatures without incurring damage will prolong the life of our water towers and ensure our Soldiers have a high-quality and reliable drinking water supply," he said.

For more information about the DoD Corrosion Prevention and Control Program, as well as detailed, comprehensive information about DoD-related corrosion issues, visit the DoD Corrosion Exchange at <http://www.dodcorrosionexchange.org>.

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# Maintenance centered on reliability can save money

by Ron Mundt

Ten years ago, Fort Tank was deemed one of five installations that would be home for command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) headquarters and support facilities. This opened the money door for an infrastructure upgrade including a new exterior electrical system.

Joe Sparks had been an electrical engineer at Fort Tank for more than 30 years. He had seen the exterior electrical system go from an old 10-Mw single feed substation with 4.16 kv oil circuit breakers and distribution that was grossly overloaded to a brand new system.

The exterior electrical system now consists of a double-ended substation with 115-kv feeds from two independent utility substations. Each side of the substations has a 50-Mw, oil-filled 115-34.5-kv transformer that feeds vacuum circuit breakers and switchgear with a normally open-tie circuit breaker in between the two switchgear line-ups.

The problem with funding an upgrade is that, typically, there are no additional "big bucks" to maintain the new system. That's OK initially, but after a few years, if additional funds are not available, the operational reliability becomes an issue. After 10 years of continued reduction in maintenance funds, these were the issues that were of deep concern to Sparks.

Sparks was responsible for maintaining the highest level of reliability for all C4ISR missions within Fort Tank. Each mission had its own building complex; however, he was particularly concerned with Mission X.

Mission X accounted for 50 percent of Spark's overall maintenance budget for the entire post. The reliability of the complex electrical and mechanical systems exceeded six nines of availability. N+2 components (where N was the required number) was the norm for generators, chillers and uninterruptible power supplies.

Every time a critical chiller went offline

unscheduled or hallway lighting malfunctioned, a call was made to maintenance and a work order was immediately issued. Maintenance was a 24/7 operation. Preventative maintenance was a priority for all equipment. All manufacturers' recommendations were implemented.

Sometimes Sparks thought that they were not performing preventive maintenance wisely or using their maintenance staff efficiently. Too often, replaced belts showed minimal usage wear and the equipment inspections seemed far too frequent.

As usual, Sparks drove his "old reliable" diesel Rabbit home that night. Its main mission was to economically get him back and forth to work every day at 50 miles per gallon. Sparks did not care about minor problems with the car or what it looked like.

As he sped down the country road to his home, his radio stopped working and although he did enjoy listening to country and western music, he knew the radio would probably not get fixed.

A great deal of maintenance went into keeping the car running, but since Sparks had a limited budget, he did not spend time or money on areas such as body work, entertainment systems or minor maintenance.

Suddenly, Sparks realized that the approach he used to maintain his car was the approach he should be using to maintain Mission X. Several years ago, he had attended a two-hour presentation on reliability centered maintenance (RCM). There, they had talked about the importance of prioritizing maintenance tasks based on failure consequences, severity, frequency of occurrence and reliability.

RCM is a logical, structured approach for determining an effective and efficient level of maintenance on systems and subsystems to maximize reliability and minimize cost. The purpose of RCM is to preserve functions, not just to prevent failures (e.g., one would not be concerned with

Spark's dome light going out). Preventing all failures is economically and technically impractical.

At home later that night, Sparks decided to review his notes on RCM from the seminar. He read about the process of conducting an RCM analysis for a C4ISR facility, the ranking of all critical equipment and systems by their relative importance and risk to the overall facility mission, and prescribing preventive maintenance tasks based on subsystem system ranking.

He found that the RCM process is based on performing the following:

- a. Developing a system configuration for all systems within the facility. For instance, the diesel generator system is supported by 1) fuel storage, 2) air intake, 3) air exhaust and 4) fuel oil transport system. The fuel transport system is supported by drain pumps, storage pumps and transfer pumps.
- b. Performing a failure modes effects and criticality analysis (FMECA) of all systems. This determines the failure modes associated with each system (e.g., chilled water supply can have no water flow or degraded flow); assigns failure

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mechanism to each failure mode (e.g., degraded flow can be the result of leaky gasket, low supply voltage to motor) and determines the failure effects on system (e.g., no effect, decrease in chiller water temperature). Severity levels are assigned along with probability of failure and a risk priority is determined. This greater emphasis and funding can be assigned to systems that have a higher risk of failure. Thus, systems with higher risk priority would receive more preventive and predictive maintenance than systems with lower risk priorities.

c. Classifying risk priority with a risk priority number (RPN). This is equal to the product of severity level of a component, occurrence level and detection level.

The purpose of preventive maintenance is not to prevent every component failure from occurring, but to prevent system operational failure, he thought.

Critical components and sub-systems that compromise system operation should receive a high degree of preventive and predictive maintenance. These are critical components or sub-systems. A component or sub-system that represents a single point failure that does not compromise the system would receive less preventive and predictive maintenance. This component may be allowed to run to failure.

FMECA is the analytical process of RCM that categorizes components and sub-systems. There are several methods that can be used to categorize systems depending on how much data is available for the particular systems. A basic block diagram of the RCM process is shown at right:

The next day, Sparks made an informal proposal to his management team to evaluate the maintenance currently being performed at the Mission X facility based on RCM. Several weeks later his supervisor approached him and said, "Hey Joe, upper management really liked your idea about

applying the RCM concept at Mission X. They would like you to head a team to reduce maintenance cost at Mission X without reducing mission reliability."

Later that month, Sparks called a meeting with the engineering and maintenance staff to brainstorm the RCM concept, and that was how it started. Two years after applying the RCM concept to Mission X, maintenance funding was no longer as difficult to deal with.

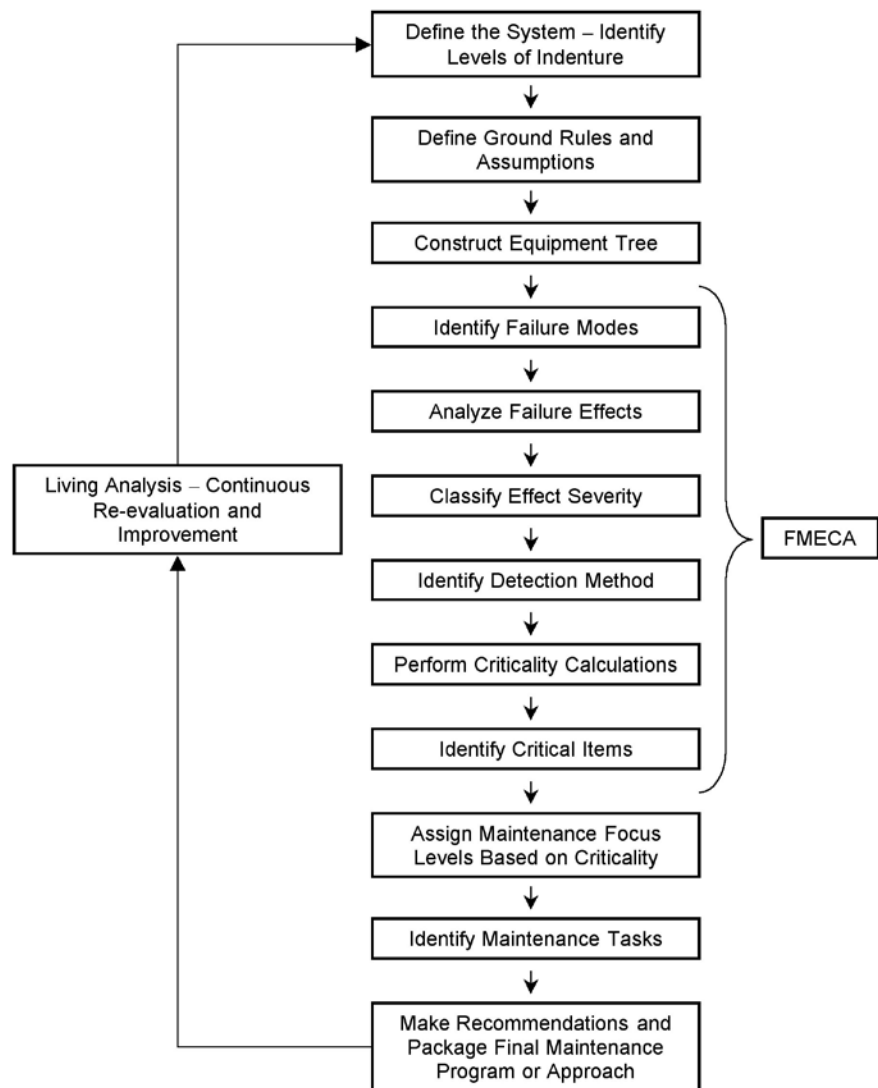
During that time, Sparks also saved several hundred dollars in fuel costs by main-

taining his 50 miles per gallon diesel. He decided to reward himself by purchasing a new car radio. Once again, he enjoys music while driving back and forth to work.

*The Power Reliability Enhancement Program Office currently has technical manuals for RCM and FMECA available for distribution. For information, contact Ron Mundt, (703) 704-2763 DSN: 654, e-mail: ronald.k.mundt@us.army.mil.*

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**PWD**





## Army announces Installation Management Command activation

The Army is reorganizing how it manages installations worldwide into an integrated command with the activation of the Installation Management Command in early fiscal year 2007.

The current installation-management structure includes four separate organizations: components of the Assistant Chief of Staff for Installation Management offices, the Installation Management Agency, the Army Environmental Center, and the U.S. Army Community and Family Support Center. The new Installation Management Command will be accountable to the Chief of Staff of the Army for effective garrison support of mission activities — to serve as the Army's single authority and primary provider of base support services.

This initiative is part of Army efforts reorganizing its commands and specified headquarters to obtain the most efficient command and control structures to support its Modular Force. The Army Environ-

mental Center as well as the U.S. Army Community and Family Support Center will remain separate organizations — subordinate commands — under Installation Management Command. The new command also will consolidate the current four Installation Management Agency regions within the United States into just two to be located at Fort Sam Houston, Texas, and Fort Eustis, Va.

"This new command is the next logical step in the evolution of Army installation management," said Lt. Gen. Robert Wilson, the assistant chief of staff for installation management. "It will dramatically improve our ability to effectively and efficiently manage this critical function with agility to support commanders, Soldiers and their families."

The new command, most of which is currently based in Virginia and Maryland, will relocate to Fort Sam Houston in accordance with requirements of the recently

concluded Base Realignment and Closure process. The Army staff functions will remain at the Pentagon.

Wilson also said that while the new organization will most likely be smaller than the current structure, it will be an organization that is "committed to managing personnel changes through attrition in order to minimize turbulence."

The Army's intent is that Installation Management Command will be commanded by a lieutenant general, who would also hold the position of assistant chief of staff for installation management on the Army staff. That will not occur, however, until an officer is nominated by the president and then confirmed by the Senate.

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Army News Service release dated Aug. 4. **PWD**

## Master planning, planning principles, Installation Design Guides, standards lead the way

by Jerry Zekert

Master planning is the process that guides the orderly development of communities. On Army installations, we have real property master plans that describe the process of long-range development of our installations.

The master plan is organized around five major sections: the *Real Property Master Plan Digest*, which defines the base's strategy for development, i.e., its vision goals and objectives; the *Long-Range Component*, which defines the land use and long-range development strategies for the installation including area development plans; the *Installation Design Guide* (IDG), which defines the urban standards for installation development; and two implementation sections, the *Capital Investment Strategy* and the

*Short-Range Component*.

The Army's policy is that all development must be *in compliance with* the installation real property master plan (RPMP). This means not only site approval but also in compliance with Installation Design Guide guidelines. It also means that all development must meet all the planning principles set forth in the RPMP as described in either the digest or the long-range component. This includes sustainability, critical infrastructure protection, etc.

How does the concept of planning principles and standards fit together in these times of military construction transformation? How does it fit into a design-build concept?

The key is holistic, comprehensive

planning. When rapidly planning for the massive amount of construction ahead, the Army has prescribed pretty succinctly the mission needs that should be imbedded into the projects. However, when we are defining the project requirements, we must recognize that these mission requirements are only one of the major sets of principles that must be adhered to in the design and construction of these complexes.

When the requirements analysis/charrette effort is initiated, we must ensure the IDG guidelines are prescribed as guiding principles in the design-build package as well as standards for sustainability and the mission needs. We must ensure the design and construction agent maintains commitment to these standards throughout the process. ➤





# Army adopts LEED rating system for new construction

by John A. Scharl

The shift from using the Army's SPiRiT (Sustainable Project Rating Tool) to the U.S. Green Building Council's (USGBC) LEED (Leadership in Energy and Environmental Design) Green Building Rating Tools began Jan. 5 when the deputy assistant secretary of the Army for installations and housing signed the new Army Sustainable Design and Development policy.

The new policy adopts LEED-NC, which applies to new construction, as the sustainability standard measure for the design and construction of Army buildings and sets the minimum performance rating level at LEED silver starting with the fiscal year 2008 construction program.

Moving to LEED allows the Army to adopt an industry standard for sustainable design evaluations. Requiring projects to achieve the LEED silver criteria should not entail any additional costs for new sustainable design measures above those originally required to meet the SPiRiT criteria.

Army project delivery teams will use LEED during project programming to set performance goals and consider budget impacts, during design to determine and track sustainable features, and to confirm the results at building beneficial occupancy. Project delivery teams will continue to ensure that appropriate documentation is contained in specifications, plans and design

analyses, and prepare LEED scoring justification document to record results.

The teams will evaluate projects at the same points as for SPiRiT starting at project planning and 1391 scope development, again during early project design, at design completion or start of construction and, finally, at beneficial occupancy of the building. The installation director of Public Works or the reserve component equivalent, the supporting district engineer, the designer and the constructor will jointly endorse the team's LEED score and rating.

**The Army does not require that projects register with the USGBC or seek formal LEED certification of project scores by the USGBC.** However, Army project delivery teams have the option to register a project with the USGBC. Any associated fees for project registration or certification will be paid from project funds.

A building project owner seeking public recognition for the project's sustainability features may do so using the USGBC's certification process. The project is registered for a fee with the USGBC and designed to meet LEED requirements. The results are documented using the LEED Letter Templates and submitted to the USGBC for evaluation.

The USGBC reviews the project and, based on its performance, determines whether it rates certified, silver, gold or

platinum recognition. The council then issues a building plaque showing the approved certification level.

The Army also plans to adopt LEED Homes for scoring residential housing when it is released by USGBC. In the meantime, SPiRiT will continue to be used to rate all Army Family Housing new construction projects and homes built under the Residential Communities Initiative. These projects will continue to attain SPiRiT Gold.

The Army plans to adopt other USGBC LEED rating systems, such as LEED-EB for existing buildings and LEED-ND for neighborhood development, when they are developed and fielded.

The Sustainable Design and Development policy applies to all permanent vertical military construction projects on Army installations regardless of fund source. Short term facilities, such as relocatable and contingency operation facilities, as well as horizontal construction — such as ranges, roads and airfields — will continue to incorporate sustainable design and development features to the maximum extent possible.

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The holistic principles are mandatory requirements; they're not a choice.

Further, we need to insist on these huge military construction initiatives and, if there is a way, to demand doing an area development plan in lieu of the abbreviated programming packages. This would ensure more comprehensive development.

With the huge construction program facing the Army in the next five years, we have an opportunity to really transform our installations. The question is what are we transforming them into? Do we want

our installations to be big, sprawling installations with no character that our Soldiers will hate to live in, or do we demand planned communities that are sustainable and meet our master plan guiding principles to include design guidelines?

The key is not an affordability or timeline issue, but rather the embracing of comprehensive planning processes. If we just assure all the principles are packaged initially and challenge our designers to design along these guidelines, they will do it.

The Air Force and Navy have embraced this approach and are planning great communities for their bases; we can too. The

Army has several established planning courses that provide a foundation in the professional practice of master planning. See the Professional Development section for more information on these courses.

Planning is not a roadblock to good facilities, but the ultimate guiding process for superb communities.

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*Jerry Zekert is the master planning team leader at U.S. Army Corps of Engineers Headquarters. PWD*



# Afghanistan installation management struggles, overcomes initial inefficiencies

by George A. Clarke

*Editor's note: The startup of the Afghan Installation Management organization was covered in the July-August 2005 issue of Public Works Digest. This article continues the story, discussing an agency in transition.*

The U.S. Army Corps of Engineers continued to provide mentor support from May to November 2005 to the Ministry of Defense (MoD) Installation Management (IM) in its evolution into a functional arm of the Afghan National Army (ANA).

The intent was to build on the foundation laid by previous mentors. However, this proved nearly impossible due to the volatility of the MoD and the ANA in general. A "synchronization matrix" that provided a timed sequence of all the events and necessary resources required to establish a viable MoD/IM organization fell victim to the self-defeating bureaucracy that pervaded the MoD.

## Hiring workers

The basic and most essential first step to recovery was to acquire the remaining personnel needed for the IM/FEA (Facility Engineer Agency). This task turned out to be difficult and time consuming.

Specific criteria had to be met:

- The selectees must be qualified for the position.
- The work force must meet the ethnic diversity quotas established for the four main ethnic groups: Pashtun, 40 percent; Tajiks, 25 percent; Hazaras, 18 percent; and the Uzbeks, 6.5 percent.
- Former members of the Afghan Militia Forces had "veterans' preference."
- The selectees must pass the vetting from the Personnel Directorate.
- The Director of Acquisition Technology and Logistics (AT&L) had final approval.

Finding qualified engineering personnel within the quotas posed a significant problem. A large segment of the population is illiterate or agrarian by nature. The Pashtun and Tajiks are professionally trained

or educated in greater proportion than the rest of the population. The selectees were required to provide proof of their professional license or degrees. In many cases, this proof had been destroyed by the Taliban when they were in power.

The second problem was that whenever the Personnel Directorate found an unqualified person on the accession list, the entire list would be sent back to be redone, often without revealing who the unqualified personnel were. The third problem was that sometimes the list would be altered at AT&L to include the names of unqualified personnel based solely on family or tribal ties.

In July 2005, these problems were exacerbated when the Personnel Directorate staff was relieved along with the entire staff of Logistics and the director of IM/FEA. Some of the issues were later resolved with the change in staff at the Personnel Directorate, thus enabling additional workers to be brought into IM/FEA. However, the issue with AT&L remained unresolved.

## Streamlining

The staffing issue was worked in concert with a number of other initiatives. It was the key to acquiring office equipment, vehicles and dining facility equipment.

By inserting IMA/FEA requirements directly into the budget process and bypassing AT&L, the necessary computer equipment and vehicles were acquired for IM/FEA and quickly put to use. In addition, a local area network was established in November 2005, so the design work done at IM could be coordinated with all the involved departments.

Working groups were re-established in July 2005 and set about planning. Training specific to the planning mission was conducted for the staff members. Their experi-

ences had been dominated by Soviet-style decision making.

The introduction of the U.S. Army military decision making process and the subsequent course of action analysis was accepted with some trepidation. Fears were soon overcome when the system was fully adopted and supported by the leadership.

During the working group meetings it became apparent that MoD still controlled all budget processes and that no input was provided by the Major Subordinate Commands. The budget was pushed down from the MoD without consideration of the directorates' requirements.

Consequently, training was conducted in resource management, command operating budgets, strategic planning and Lean Six Sigma. The latter was used to demonstrate how inefficient the AT&L structure was in managing engineering projects and budgets and that, by eliminating AT&L from the management process project, lead time was drastically reduced.

IM was encouraged to fully participate in the design process for all construction projects initiated by the coalition partners and successfully used some of the learned planning tools. FEA representatives participated in weekly meetings with the Directorates of Public Works to discuss infrastructure issues and support operations and maintenance initiatives. They joined in supporting a highly successful program that provides trained building managers and a system by which they could report deficiencies to the DPW.

In addition, the decision was made that, to be effective, the process for budgeting and project requirements had to be streamlined within IM and within its relationship with AT&L. To establish IM as a more efficient learning organization, it must ➤



# Endangered species land management guide available

by Robert C. Lozar and James D. Westervelt

Among many other issues, installation land managers are faced with a problem that seems insurmountable: providing Soldiers the best training and testing experience possible with the installation's land resources while fulfilling the requirements of the Endangered Species Act by removing some of that land from active training use.

The primary use for the Army's military lands is for training and testing. The Department of Defense owns more than 15 million acres of land in the United States. With that amount of real estate, one might think that there is plenty terra firma upon which to train. However, as most land managers know, a good deal of that ground has restrictions placed upon it that limit use.

One of the restrictions on military infrastructure of greatest concern to many land managers is the need to provide habitat for those species that are federally listed as endangered or threatened. The husbandry of endangered species on installations is really a problem of shrinking endangered species habitat within the larger region.

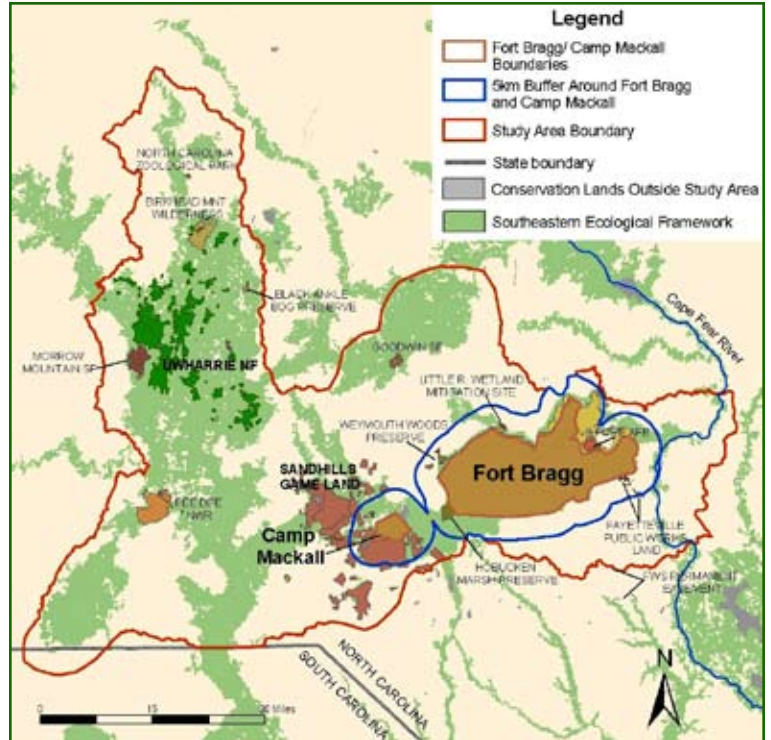
When they were originally acquired, military lands were largely remote from population centers. In the last few decades, remote lands have become desirable for development due to their remote and pristine nature.

Unfortunately, that development has contributed to the breakup of large areas of

natural habitats into fragmented remnants. Even common varieties of plants and animals find it increasingly difficult to survive.

While the exterior habitats are becoming increasingly restricted and chaotic, the Endangered Species Act requires that federal landowners like DoD provide adequate sustainable habitat for threatened and endangered species. As development increases, natural areas become more limited and fragmented, so the military installations have become island refuges for some threatened and endangered species.

Clearly, the solution for the installation is to embrace lands beyond installation boundaries. But how can this be done?



Fort Bragg is an excellent example of an installation working with regional stakeholders and interests to collaboratively seek to sustain the support of the military mission through regional preservation of threatened and endangered species habitat. Map courtesy of Engineer Research and Development Center

What tools are available to installation land managers? What are the latest technologies available to bring to bear on the issue, and what are the limits of our current knowledge?

As part of its research program, the Engineer Research and Development

(continued from previous page)

be moved from under AT&L and placed directly under the Minister of Defense.

The transition was initiated in early November 2005 by submitting a memorandum to the director of Strategy and Policy explaining the benefits for Corps commanders and the ANA and requesting a reorganization. The request was approved later that month, and the IM/FEA directorate was placed immediately under the minister.

The IM/FEA now functions as a separate agency and is emulating, where possible, the U.S. Army's highly successful Installation Management Agency.

### End goal

This evolutionary process will eventually create an Engineer Branch within the ANA and establish a training program for all engineers whether in the Corps or as members of IM/FEA. The engineers will become a highly effective force that will support the reconstruction and maintenance

of the Afghan infrastructure.

The ability to conduct humanitarian operations in the more remote areas will, over time, help stabilize the country and create a trust between the people and the ANA that was lost during the 25 years of warfare.

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Center (ERDC) recently focused on the question of threatened and endangered species habitat fragmentation. The Ecological Processes Branch of ERDC investigated what installation land managers can do to fulfill their legal responsibilities under the Endangered Species Act while safeguarding the Army's primary military training and testing mission.

One of the results of this research is a publication called "Fragmentation Analysis Guide for Installation Planners."

The guide's purpose is to offer a starting place for an installation land manager to use as a reference for current state-of-the-art information about threatened and endangered species habitat fragmentation studies and initiatives that have direct relevance to Army installation needs. The guide provides an overview of fragmentation issues and focuses on those of highest concern to Army military land managers. In addition, it provides guidance for using tools that allow managers to set aside non-installation land that can be used to alleviate some of the threatened and endangered species pressures.

### **A fragmented homeland**

Although issues concerning habitat fragmentation in exotic regions of the world are well known from reports in our news media, there are also significant issues of loss of habitat within the boundaries of the United States. This homeland fragmentation trend is affecting our military installations.

A large proportion of the native environment fragmentation is due to the residential and commercial development of land. Although unrelated development may occur in many scattered patches, the addition of numerous human-induced land changes begins to affect a natural unit's ability to function and sustain itself as it had in the past. Some people call these natural units ecosystems.

Whatever terminology we adopt, the changing of the natural land for human

development causes biodiversity within these systems to decrease and negatively affects an ecosystem's ability to sustain itself. The species that are threatened or endangered are the ones that have been most negatively affected. Their appearance is considered by some to be an indication of an unhealthy natural system on a regional scale.

Studies have shown that managing for the well-being of a specific species is not nearly as cost effective or successful as managing for the health of the ecosystem in which the species resides. However, managing lands at the regional scale requires innovative tools to deal scientifically with the great quantity of information required to cover large areas.

The tool normally adapted for regional evaluation is the Geographical Information Systems (GIS). The evaluation's theoretical basis is derived from the emerging science of landscape ecology. The fragmentation analysis guide briefly reviews the development of this discipline.

### **The guide as a resource**

As a land manager, you may wonder how one individual habitat modeling effort compares with others. The guide examines the characteristics of the more widely recognized modeling efforts and appraises how well these tools measure up for application to DoD installation managers' issues by presenting a comparative evaluation of the tools' strengths and weaknesses.

Most modeling tools will require input data. The guide reviews the specific habitat requirements of each of the Army's top threatened and endangered species in relation to the data needed to support the primary data inputs of the modeling tools. In addition, specific sections deal with data availability, its quality and how to get it.

Since the issues of fragmentation at the regional scale are beyond the extent of a particular installations' management authority, additional resources are required. Fortunately, recent national legislation has provided a means by which military instal-

lation land managers can cooperate with nearby stakeholders to identify and set aside land that is off the installation but which has the potential of relaxing the Endangered Species Act requirements on installation lands.

The best known of these legislative initiatives is called the Army Compatible Use Buffer (ACUB) Program. The guide outlines the characteristics of the program and what military installation land managers must do to participate in it.

### **The way forward**

Not all habitat fragmentation questions have been answered. In researching for the fragmentation analysis guide, ERDC identified several areas to be addressed. To make the installation manager's job easier, recommendations to the research community for greater coordination and cooperation are enumerated. Research community agreement as to a set of standard data inputs, outputs and techniques would immeasurably help land managers apply these research results in such a way that reviewing agencies would find them more obviously acceptable.

The guide also suggests that it is within an installation land manager's job description to seek the cooperation of those at higher levels of responsibility. Initiatives like the ACUB program must be region wide, and, occasionally, international cooperation is required to succeed in following the letter of the act as well as its intention.

The guide can be requested from ERDC, and it is easily available online at: <http://www.cecer.army.mil>.

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## Standing up Military Construction Centers of Standardization through industry forums, survey

by Charles Miller

The Army is undertaking a significant shift in emphasis and prioritization of resources and priorities. This shift is driven by a reassessment of the strategic and operational environments and the Army's responsibilities to provide relevant and ready land power capabilities to commanders as part of the Joint Force now and in the future.

To realize the objectives of the emphasis shift, the Army is pursuing the most comprehensive transformation of its forces since the early years of World War II. The transformation is intended to move the legacy force into a new modular, more expeditionary and more lethal entity capable of quickly responding to our nation's future threats.

A key component to this initiative is the standing up of centers of standardization and standard designs for 41 facility types. Billions of dollars in construction contracts will be up for award under the U.S. Army Corps of Engineers Military Construction (MILCON) Centers of Standardization (CoS) program.

To that end, the Corps hosted four regional Industry Day forums in Alexandria, Va., July 31; Fort Worth, Texas, Aug. 8; Omaha, Neb., Aug. 16; and Atlanta, Ga., Aug. 23. Presentations described the CoS program, workload, facility types and contracts that may be let to achieve the Army's goal and encouraged small businesses to consider proposing as prime contractors, form joint ventures, establish a consortium or mentor protégé agreement, or make other teaming arrangements.

"This was an effort to provide good opportunities for businesses of all sizes and reach out to those companies that haven't done government work before," said Ginger Gruber, a contracting officer with the Corps of Engineers in Huntsville.

In achieving the Army's objectives, the Corps is also searching for market research information by implementing an Internet-

based market research questionnaire to gather information regarding the CoS MILCON needs. This information will be provided according to the Army's Installation Management Agency's (IMA's) four continental U.S. regions: Northeast Region, Northwest Region, Southeast Region and Southwest Region. The market research Web site includes a map of the states covered by each of IMA's regions.

The market research questionnaire will be open through Sept. 4 at: [https://ebs.swf.usace.army.mil/ebs/Market\\_Research/MarketResearchSurveyForm.cfm?ProjectID=1](https://ebs.swf.usace.army.mil/ebs/Market_Research/MarketResearchSurveyForm.cfm?ProjectID=1).

The Corps will be executing projects of all kinds and sizes. It is important for industry to respond to this market survey and demonstrate any experience relative to each of the facility types. The results of the survey will help the government determine industry's experience and capability to execute the requirements.

Because this is a nationwide survey, interested parties only need to complete this survey one time to be included in the research. The acquisition strategies will potentially include both set-aside projects and unrestricted projects.

The targeted industry groups for this survey are traditional construction firms, architect-engineer firms and contractors that provide non-traditional construction methods such as prefabricated, pre-engineered, panelized, tilt-up and permanent modular construction.



Attendees arrive and sign in at the Fort Worth, Texas, industry forum. Photo by Edward Rivera

This program will be managed by eight centers of standardization. The scope and reach of individual contracts have not yet been determined. All buildings are to be considered permanent and shall have a life span of about 25 years.

The program as a whole is not restricted and is open to both large and small business participation.

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# Lewis and Clark classroom facility at Fort Leavenworth to be completed this year

by Eric Cramer

State-of-the-art features will make the classrooms of the new Lewis and Clark Center one of the premier military learning centers in the world, according to experts from the U.S. Army Command and General Staff College (CGSC) in Fort Leavenworth, Kan.

Construction of the facility was 76 percent done as of June, with anticipated completion in December. U.S. Army Corps of Engineers project manager Christine Hendzlik said the project is on budget and on schedule.

The new facility incorporates state-of-the-art design and construction methods, Hendzlik said, with steel framing designed to be stronger than other structures and innovative classroom design to allow CGSC students a more flexible learning experience. The design also allows for the upgrading of classrooms in the future.

Bill Gross, project manager for CGSC, said the classroom construction uses a unique system. Technology set for use in the Lewis and Clark building is first tested in a model classroom in the CGSC's Eisenhower Building.

Once used in the Eisenhower Building, the school moves the concepts to an under-construction test classroom in the Lewis and Clark Center. If it works there, it is then planned for the 96 classrooms in the center.

"The whole idea is to catch things early, to bring it in here and, once it is proven, expand it to the other 96 classrooms," Gross said in the test classroom. "When you have nearly 100 classrooms, every dollar you spend is multiplied by 100."

Currently the classrooms are nearing completion.

Lynn Rolf, director of educational technology for the CGSC, is an expert on the design and explained many of its features.

"We work in what we call 'staff groups' of 16," Rolf said. "The staff groups are



David Manka, project manager for the Lewis and Clark Classroom Facility at Fort Leavenworth, Kan., explains details of the building's structure using a section of sample wall built by the contractor. The facility's brick exterior masks its structural steel, giving it architecture similar to historic structures at Fort Leavenworth. Photo by Eric Cramer

split into smaller groups of four officers. If we give the small groups an assignment, they can move the desks to reconfigure the classroom. Each small group will have its own white board and full access to its computers. The computers also have access to the full battle-command network, so these officers are seeing some of the collaborative tools they'll see after graduation."

He demonstrated how two desks can pivot together to create a single module for four officers. Each classroom is 30-by-30 feet in size, and one wall of each is removable, allowing two classes to work together, Rolf said.

Innovations in the classroom don't end with computers. All of the room's functions can be controlled through a single, notebook-sized remote control.

"On a typical day, say the first class is history. The students are here, but the instructor hasn't arrived yet. The students can be watching the day's news on the television screens at the front of the room,"

Rolf said. When the instructor arrives, he can, with a touch on the remote, switch from the current events to documentary video on a player concealed in a service closet at the rear of the room.

Cameras permanently installed in the front, rear and ceiling of each room allow video-conferencing. The ceiling camera focuses on a fixed area of the instructor's desk, where the instructor can place a book, map or photograph that can then be digitally displayed on the monitors at the front of the classroom.

"What we're trying to do is provide real-time, just-in-time relevant information for the students to discuss," Rolf said.

Some innovations, such as large video screens in the classrooms, are obvious. Others are more subtle, Gross said.

"Those are cable trays," he said, indicating mesh troughs above an unfinished ceiling. "When they pull cables for computers or communications now, they just drape them above the ceiling or run them through conduits. These trays make it easier to get to the cables to repair them or replace them when they need it. They're underneath the raised floors in the classrooms too, and you can run new cable a lot faster than in an old-fashioned classroom."

Interested parties from several colleges and universities have toured the Lewis and Clark construction site seeking ideas.

"We're trying to set the standard for classroom design," Rolf said.

"Everyone who has visited here has left saying, 'How much does it cost?' 'How can I get it?'" Rolf said. The computers and assorted electronic equipment for each classroom cost about \$78,000. ➤



# New facilities under construction at Camp Carroll

by Steven Hoover

The ground was broken for a \$10.1 million project that includes a new bowling center, casual dining facility, a swimming pool and a multi-purpose field upgrade at Camp Carroll, Waegwan, South Korea, May 4.

Personnel from the U.S. Army Corps of Engineers Far East District, various Area IV Support Activity organizations and construction contractor Samkye Construction Company, Ltd., cut the ribbon and dug the first ceremonial shovel of earth.

"This is significant," said Col. Donald J. Hendrix, then Area IV Support Activity commander. "When you look around at the changes at Camp Carroll you can get a feel for it ... great things continue to happen at Camp Carroll."

The new bowling center will have 12 lanes, compared to four lanes at the current facility, two game rooms and a casual dining facility with both indoor and outdoor seating. Total cost for the project is \$5.2 million.

The renovation of Storey Field into a multi-purpose venue, costing about \$2.7 million, will add a synthetic turf system featuring a baseball and softball field, dugouts and a combination football and soccer field.

The new pool will include six 25-meter lanes, a bathhouse, slide and a sand volleyball court. The pool's depth will range from 3.5 to 12 feet. The cost for this part of the project is \$2.2 million.

"This project is one more tangible step in the transformation of Camp Carroll into an assignment of choice in Korea and Armywide," said Lt. Col. John F. Loeffstedt, the Corps' deputy commander in Korea.

Loeffstedt went on to say that when viewed in conjunction with the soon-to-be-finished lodge, completed Crown Jewel Fitness Center, numerous barracks upgrade projects either completed or ongoing, the result will be a Camp Carroll where Soldiers can work, live and recreate in some of the finest facilities the Army has to offer.

"The completion of this project will be a great step forward along the path of

planned and ongoing quality-of-life construction projects at Camp Carroll," said Kevin Jung, director of Camp Carroll's Directorate of Public Works, "at a time when we see ever-expanding need for a

modern facility infrastructure."

The entire project, paid for by non-appropriated funds (NAF), is expected to be completed in April. NAF dollars are generated through local Morale Welfare and Recreation programs, outside sources such as Army and Air Force Exchange Service and Army Recreation machines and donations.

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A combined bowling center and casual restaurant is under construction at Camp Carroll in Korea. The facility is expected to open in June 2007. Illustration courtesy of Thomas Jung Davis Associates

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"It's hard to estimate because the computers aren't purchased yet. We're not going to buy computers and have them sit around on a shelf," Rolf said. "When we buy, we're getting the newest available."

The innovative design of the Lewis and Clark Center extends to more than its classroom design. Its structure uses a proprietary welded framework called "Sideplate."

Dave Manka, resident engineer for the

Fort Leavenworth Field Office for the U.S. Army Corps of Engineers, said the Sideplate technology prevents collapse.

"It's been used before in earthquake zones, but this is the first time it's been used for reasons of building security," he said. "It's designed so that, if there's a failure in one area, the rest of the structure will support itself."

Installing the Sideplate system is somewhat labor intensive.

"On some of these welds, it can take

a person all day long to finish one weld," Manka said.

The \$106 million construction project is on schedule and set for completion in December. The Lewis and Clark Center will replace Bell Hall, a 1958 classroom structure slated for removal in 2008.

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## ECONPACK software offers chance to assist military construction process

by Will Moore

Military construction procedures can be daunting. One of the major challenges is the Economic Analysis required by Congress for projects over \$2 million. The Economic Analysis is a high visibility document that involves weighing alternative construction possibilities — such as whether to renovate, lease or build new — to determine the most cost-effective solution based on a 25-year life cycle.

ECONPACK economic analysis software package can assist. The Huntsville Engineering and Support Center acquired the ECONPACK project in 1985 and has been the assigned responsibility agent and development center since. The package is the result of combining a program called ECONS, which was developed in the 1970s for economic analysis, with an input package called Prompter.

Stephen Gibson, an information technology specialist at Huntsville, has been involved with ECONPACK since its creation. Gibson and Betty Fletcher, a military construction analyst also at Huntsville, are currently coordinating the development of a Java version that will run both in Web browsers and as a standalone package.

Computer Sciences Corporation is responsible for much of the programming involved. Management Technology Associates, Inc., provides documentation and training support, quality assurance and a help desk.

ECONPACK is primarily used for military construction, but the package is generic enough for any economic analysis.

"I have used it to look at what kind of computer equipment to buy," Gibson said. "It was written to be generic, because economic analyses are done for many things."

The program's versatility has made it the standard economic analysis program for the Department of Defense and has led to more than a thousand users from military construction contractors to White House staffers.

One of ECONPACK's greatest virtues is its user friendliness. Kevin Burluson, a master planner with Redstone Arsenal Garrison in Huntsville, Ala., regularly uses the package. He said it is straight forward and did not take long to learn.

If using a new program seems intimidating, there is a three-and-a-half day training course that can help. The Prospect Courses are generally offered once or twice a year depending on the number of people who register. They are available to anyone who works with military construction economic analyses.

Workshops are also offered that provide on-site training for agencies that have several people who need to learn the software. The courses cover economic theory related to the program and how to use the software.

Donna Smigel is an economist working at U.S. Army Corps of Engineers Headquarters and is ECONPACK's proponent. She establishes policy about what goes into economic analyses. Smigel has reviewed all the economic analyses for Army military construction, but Huntsville will assume that duty in a few months. Smigel, Fletcher and Gibson teach the courses.

Representatives from agencies including NASA, the Army Reserves and the Navy have attended the training sessions. The training is available to anyone who works with military construction economic analyses.

Smigel said the courses generally get high approval, but they can seem too long or too short depending on the participant's familiarity with ECONPACK. Burluson, who took a course shortly after he began



Instructors Betty Fletcher, left, Donna Smigel and Stephen Gibson pose together while teaching an ECONPACK course. Photo by Will Moore

using the program, said the course was very helpful for learning the software format and what to expect from it.

Smigel is proud her team is able to train the people who need it, but she pointed out that this task can be difficult because of high turnover. She is also proud of ECONPACK's adaptability and that the software incorporates users' requests.

"Bottom line, this is the customer's program, not ours," she said.

Changing technologies and the threat of becoming obsolete are some of ECONPACK's biggest obstacles.

"With the top-notch group in Huntsville keeping abreast of changing technologies, this is not a major concern," Smigel said.

The wide array of agencies that use the package also creates challenges.

"We have to make things specific to them, but it's also a plus to be able to support different agencies," Gibson said. "I forget the obstacles sometimes, because it has been such a successful program."

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# Advanced NEPA desktop reference now available online

by Amanda Blakey

The U.S. Army Environmental Center released version 3.0 of its NEPA (National Environmental Policy Act) Desktop Reference compact disc. Version 3.0 is a more robust and comprehensive reference tool to support Army NEPA practitioners than version 2.0.

This enhanced version was developed based on input from some of the several hundred customers who used version 2.0 in the last year. Some of the new features are: 132 NEPA-related documents, a built-in search engine and PDF viewer, two independent tables of contents, a tutorial and a 289-word glossary.

Version 3.0's search engine and two tables of contents help customers find the documents they need. The search engine thoroughly screens every document, including the glossary, and provides a preview pane of the selected result. One click on the previewed document brings up the full version.

Two tables of contents provide a choice of how to search for information. One table groups documents by category (laws/regulations, technical/guidance or executive orders), and the other by subject.

Subject headings not only include documents related to applying NEPA but also those subjects often included in a NEPA analysis, such as cumulative effects, cultural resources, built environment and transportation, environmental justice,

natural resources and noise.

The CD also has two features to help sustain its longevity as a valid reference tool. First, almost all of the 50 Internet sites included as technical references are maintained on the environmental center's Web site. Outdated URLs that would make the CD obsolete are easily updated. A click on a menu item in the CD connects users with the NEPA reference links. Second, a link to the environmental center Web site provides "late updates" on NEPA-related subjects as they occur.

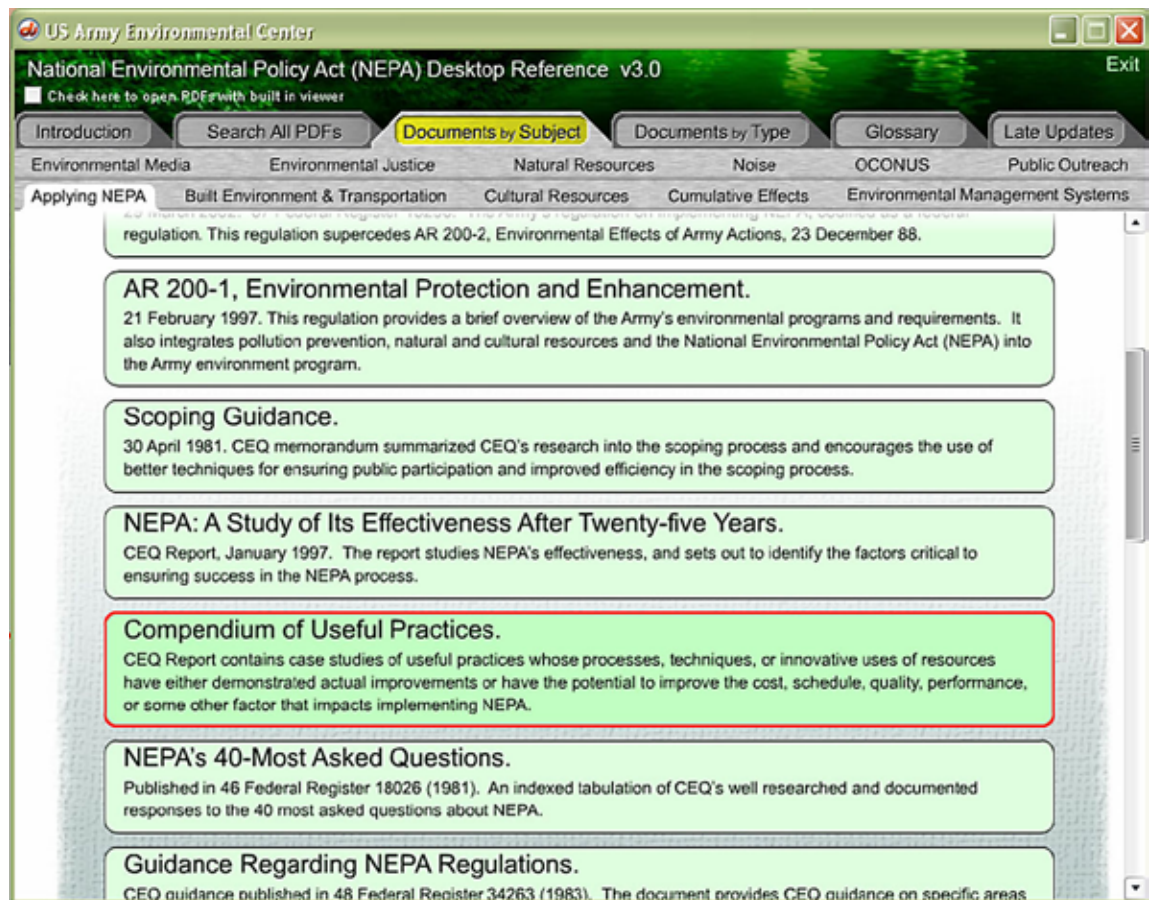
The 289-word glossary is fully referenced and includes not only NEPA-specific terms but also a range of key words and phrases in subject areas commonly included

in NEPA analyses. The glossary also has over 350 internal hyperlinks — NEPA terminology used within a definition is hyperlinked to its own definition. In addition, the glossary includes several pages of Army-unique acronyms.

Those interested in obtaining a copy of the CD should go to the U.S. Army Environmental Center's Web site, <http://aec.army.mil/usaec/nepa/index.html>, and click on "order form."

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NEPA Desktop Reference Version 3.0.



## West Point graduation tests know-how of its DPW

by Martha Hinote

**P**ublic Works means many things to those who are involved in the repair and upgrade of buildings, utilities, roads and grounds on Army bases around the world. It means maintenance activities, such as checking, calibrating, painting and testing. It means repairing and replacing broken or out-of-date structures and utility delivery systems, and it means building and renovating for future needs.

At the U.S. Military Academy (USMA), West Point, N.Y., Public Works offers several special challenges that confront and stretch the technical and creative expertise of more than 500 civilian employees and the multitude of contractor personnel of the Directorate of Public Works (DPW).

USMA is not only the oldest active Army base in the United States, but by its nature and mission, it also provides opportunities to build, maintain and repair the facilities and infrastructure used daily by 4,000 cadets and by the faculty, staff and

their families who mentor and guide them. In addition, USMA's facilities are used and appreciated by more than three million visitors each year.

Many of the challenges involve large-scale, high-profile, special events that provide the cadets with a high-quality and complete educational experience. The largest and most visible event occurs every spring when about 900 cadets graduate and become newly commissioned second lieutenants.

To prepare, DPW begins several weeks in advance to plan and perform the many small tasks that meld together so that USMA buildings, roads and grounds are ready for what, to the graduates and their families, is a once-in-a-lifetime event.

"The most challenging part of graduation preparations is the coordinating of many tradesmen and contractor activities to see that the preparations are done in the right sequence, ensuring that all tasks are completed with quality and on time," said Rick Vanasco, chief of the General Support Branch of DPW's Operation and Maintenance Division.

The primary site for the commencement exercise is Michie Stadium, the home of the Army Black Knights football team.

"Since the weather conditions in the Hudson Valley can vary greatly in May, we must always keep in mind and prepare an alternate, inside location so that we are ready for a last-minute change in location," Vanasco said.



*Much preparation precedes the moment when President Bush hands out diplomas at the U.S. Military Academy graduation. Photo by Spc. Benjamin Gruver, the Pointer View*

The graduation preparations include painting walls, steps, the stage backdrop, portals and walkways; hanging flags and tarps; moving flags, stanchions and materials to and from the storage areas to the graduation site; and installing the platform, the USMA crest on the stage backdrop and handrails.

"Before we can do any setup work on the Michie Stadium field, we coordinate with an out-of-town contractor to supply and install turf protection on the relatively new stadium turf," Vanasco said.

The most challenging task for DPW is the coordination of the facilities needs of each group involved in the graduation exercises.

"When the president comes, as he did this past May, there are sometimes differing needs between the national press and security officials, causing the need to re-do some of our efforts," said Don Michaud, chief of Operations and Maintenance Division.

"Each year, we paint footprints on the platform to indicate to the dignitaries on the platform who needs to stand where to offer the best position for both security ➤



*Directorate of Public Works employee trims a tree at West Point's Trophy Point in preparation for graduation events. Photo by Kathy Eastwood, the Pointer View*



# Snow fence protects security mission at Fort Greely

by Sara Fishburn

The Army can't control the amount of snow falling on Fort Greely, Alaska, but thanks to a knowledgeable staff member, they have developed a clever way to contain it.

Snow drifts piling up around the Missile Defense Complex (MDC), located deep in the Alaska wilderness, forced the Fort Greely Garrison to spend nearly \$1 million in unbudgeted snow removal costs during the 2004-05 snow season.

"In looking for ways to save money and minimize damage, I remembered my childhood days in upstate New York and the miles of snow fence along the New York State Thruway," said Jim Verney, a senior military analyst at Fort Greely.

The Federal Highway Administration's Strategic Highway Research Program and Alaska Department of Transportation studies confirmed Verney's



The snow fencing sculpts blowing snow into snow banks behind the fence for storage or removal. During the 2005-06 snow season, the fences saved more than \$600,000 over the previous winter. Photo by Michael Sisneros

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concerns and superb press coverage," Michaud explained. "One year we had to repaint the footprints seven times before all concerns were satisfied. Compared to that year, 2006 was easy."

All DPW divisions are involved in preparation for graduation. Supply makes sure that materials are available in a timely manner so the trades people can do their job efficiently. The project managers and

contractor officer representatives in the Business Operations/Integration Division and Engineering Plans and Services Division see that the contractor work sites and staging areas are clean and secure for graduation week activities. They also coordinate for last minute contracting requirements.

Land Maintenance, which includes both the Roads Section and the Grounds Section, makes certain that the landscape of USMA reflects the pride and history of the


reservation. The Electric Shop sees that the power requirements for lighting and sound systems are met. Meanwhile, the Environmental Management Division serves as an important stand-by resource to handle emergency environmental issues.

"Preparation for graduation is a major endeavor and involves a substantial expenditure of funds and manpower," said Matthew Talaber, who serves as USMA's first civilian DPW. "On the average, we commit over 900 man-hours to prepare for this major event."

All agree that the result is well worth the effort. When all the work is done, DPW personnel take pride that USMA's facilities are ready and emergency situations can be handled with little impact on the graduates or visitors.

After graduation has concluded and the materials, flags and platform have been taken down and stored, DPW can relax, but only for a short time. There are only about 30 days to get ready for Reception Day, called R-day, when a new class of cadets begin the adventure and join the history and pride of the "Long Gray Line."

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Debris is cleared and landscape prepared for commencement exercises at West Point. Photo by Kathy Eastwood, the Pointer View



(continued from previous page)

thoughts that snow fences could be the solution to Fort Greely's high snow removal costs.

The problem surfaced when heavy snow during the 2004-05 winter combined with high winds and sub-zero temperatures to blanket the Missile Defense Complex with snow drifts towering more than six feet high. Left to the forces of nature, the drifts spread over a wide area and would cost \$300 a ton to remove.

The labor-intensive snow removal operations continued around the clock for weeks, and the bills soared to \$950,000, while costs to repair damage to the security fencing totaled \$78,321.

"We knew the Army couldn't continue to absorb these costs," said Fort Greely Commander Lt. Col. Robert E. Cornelius. The Fort Greely Garrison had assumed the mission of maintaining the remote MDC site as part of a military installation restructuring plan.

The missile site had all the conditions in which snow fencing is effective: vast expanses of open area, high winds from a predominant direction and, of course, snow. Studies showed that well-designed snow fencing would sculpt the blowing snow into snow banks behind the fence for storage or removal at a later date.

After several briefings and decision papers prepared by Verney, the garrison obtained approvals to begin building the snow fencing. A task force consisting of last year's snow removal crews, roads and grounds personnel from the garrison Department of Public Works and 49th Missile Defense Battalion security personnel identified and prioritized the locations for the fences.

After reviewing various snow fence designs, they selected fencing similar to those used in Montana and North Dakota where open plains and fierce winds resemble conditions at Fort Greely. The size of



High snow removal costs at Fort Greely, Alaska, inspired senior military analyst Jim Verney (pictured) to recommend the construction of snow fences. The wooden slat fences were built during the summer of 2005 to protect facilities and ease snow removal operations. Photo by Michael Sisneros

the fence was calculated based on annual projected snowfall, and wind speed and direction for the area.

The 100th Missile Brigade, the 49th's higher headquarters, provided funding for the project. Materials were ordered, and Chugach/Alutiq, the garrison's base operations support contractor, began building and installing snow fences in high impact areas.

About 2,500 yards of snow fences were built in the open areas of the MDC in 2005. The fence panels are 10 feet tall and 10 feet wide, and constructed of wooden slats. The design allows for flexibility of placement and facilitates maintenance and repair.

Cost of the fencing was \$225,000, and it is expected to last about 25 years. This past winter's snow removal costs were dramatically reduced to \$340,605, of which \$260,000 was a commercial equipment rental bill. This brought the total savings for the 2005-06 snow season to \$676,491. Over the long haul, the snow fences have

the potential to save the government millions.

"It's a tremendous success story for the Army," said Allan Carroll, Public Works Division chief for the Installation Management Agency, Pacific Region Office. "We really need this type of proactive analysis, action and cost avoidance." Carroll commended Verney and the garrison staff on the snow fencing project during a visit to Fort Greely.

"It's gratifying to know that we have such a capable team at Fort Greely," Carroll said. "They were able to solve a major problem and realize a dramatic savings for the Army and the American taxpayer without sacrificing the security mission."

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Sara Fishburn is the assistant public affairs officer, Installation Management Agency Pacific Region Public Affairs Office. 



# Project engineer learns not to take 'yes' for an answer

by Norris Jones

“They might say ‘yes,’ but that might not really be what they mean because some Iraqi contractors are too proud to admit they simply don’t understand our lingo,” explains Ghassem Khosrownia, a project engineer with the U.S. Army Corps of Engineers Gulf Region Central District.

Simplifying the process so that Iraqi contractors know exactly what they need to do to succeed has been one of Khosrownia’s main focuses.

“The heart of the whole thing,” he said, “is getting them started in the right direction, sharing and working with them and the communities they’re impacting.”

Khosrownia is serving at Camp Taji north of Baghdad, a base with 12,000 Iraqi soldiers.

“I realized early on that we needed to re-tool our means and methods once the contracts were awarded — basically to say the same thing, but in a simpler way.”

At the beginning of the contract, he coaches the contractors to get ready for a pre-construction conference. He gives them samples of documents, sometimes in Arabic, and explains that they will need to be able to make a presentation on what they know of the project and how they plan to accomplish it on time, within budget and with the quality expected.

“They need a challenge,” continued



*Ghassem Khosrownia is a project engineer with the Corps, Gulf Region Central District.*

Khosrownia, whose stateside job is as a regional specialist with the Corps’ Sacramento District working in structural engineering, seismic design and force protection measures. “If you give them something difficult to do, they will try harder. We’re now asking the contractors on smaller projects to provide a layout of the existing building as well as a layout of the same facility as it will look when they’re finished. That way, we start with the end-state in mind.”

Though some of the contractors are not capable of providing a computer printout, Khosrownia believes that the hand sketches are better than no drawings at all.

“Every one of our meetings is set up as

a classroom where we interact by learning and sharing,” he said. “We start by talking briefly about the vision for the particular contract, spend time understanding it and share how the concept will become a reality. We end the meeting reiterating the same philosophy — that we are here to help, and when they succeed and the Iraqi people are benefited, we’re all winners.”

Khosrownia is especially proud of projects such as the water distribution networks where families are getting clean water in their homes for the first time ever.

“It’s hard to believe that places like this exist in the once second-largest oil producing country of the region,” he said.

He likes to ask the contractors motivational questions such as: would you send your own children to this badly neglected school; are you willing to let your own parents walk in this dark, muddy street; would you live in this community without a working sewerage system. It makes them think, he explained, and some become more creative in finding solutions, going above and beyond what is required.

Khosrownia is learning Arabic. He says studying the language provides him a better understanding of the culture and it definitely helps in communications.

He knows something about culture challenges. He’s a first-generation immigrant, having earned his U.S. citizenship two decades ago.

“I’m grateful for what America represents and am proudly serving in Iraq because I strongly believe everyone has an obligation to do their part,” he said. “Were it not for the sacrifices of past generations, we would not have the liberties we enjoy today.”

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*Ghassem Khosrownia worked with Iraqi contractors on this addition to the Taji Girls’ School, a new 1,350-square-meter, two-story structure that will benefit 700 high school students. Photo by Norris Jones*



# Distinctive bridge stands the test of time at Rock Island Arsenal

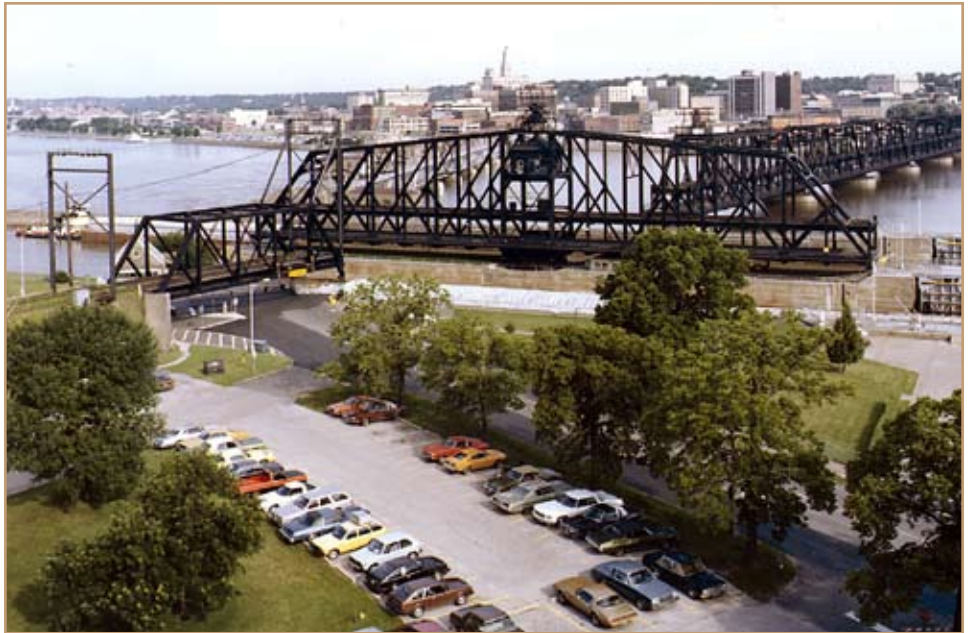
by Valerie Buckingham

**M**ore than 10,000 vehicles cross the Government Bridge at Rock Island Arsenal, Ill., daily. The bridge has been around for 110 years. Because of continual preventative maintenance, it is still just as important and works just as well as modern bridges.

The bridge links the arsenal with Rock Island, Ill., and Davenport, Iowa. Many local residents use the bridge to commute between Illinois and Iowa. Although people don't like to hear that the bridge is closed for maintenance, Mike Dunne, Government Bridge supervisor, said it is necessary for many reasons.

"I know it's an inconvenience to the millions of people who use that bridge, but if we didn't have the bridge, think of the inconvenience it would be, not only to vehicle traffic, but rail traffic and navigation. That's the economy of our country," Dunne said.

In early March, winter maintenance to rebuild the swing span end lift mechanism on the bridge was completed. This mechanism provides support to each end of the bridge when it is closed. While the bridge is being closed, the end lift mechanism raises the ends of the bridge to meet the roadway.



*The Government Bridge, built in 1896, is a double-decker bridge with railroad tracks above and vehicular roadway below. Its swing span that can rotate 360 degrees for river traffic is a unique engineering accomplishment. Photo courtesy of U.S. Army Garrison, Rock Island Arsenal*

This maintenance is done during two different timeframes because only one side of the bridge could be repaired at a time, Dunne said. After repairs are complete on one side, the bridge must be swung 180 degrees to do the other side.

The last time the end lift mechanisms

were replaced was about 25 years ago, and Dunne doesn't foresee any major problems in the future.

"We've jumped most hurdles. There's always potential for problems, but there's nothing we can see," he said.

Continual maintenance has helped prevent

structural and mechanical failures for most of the bridge's history, he said. Sometimes, however, parts wear out or are no longer available, and there are improvements in technology.

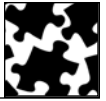
"We have been extremely fortunate over the years to have a manufactur- ➤



*Rick Simpson, Government Bridge groundsperson, wipes off dirt from the swing span lift mechanism. Photo by Valerie Buckingham*



*Luke Jackson, Government Bridge operator, lubricates the swing lift mechanism. Each mechanical part of the Government Bridge gets lubricated weekly. Photo by Valerie Buckingham*



# Air base dorm takes off in Arctic

by JoAnne Castagna

To the world, Greenland was for many years extremely remote, a barely habitable area of the Arctic. Today, the United States has a fully operational air base at Thule, Greenland, made possible by the U.S. Army Corps of Engineers, which constructed several of Thule's facilities, often under extreme Arctic conditions. The United States has maintained a military presence in Greenland for over half a century.

Thule Air Base is located in a coastal valley in northwest Greenland, above the Arctic Circle between northeastern Canada and Europe, and is a province of Denmark. The air base is home to the U.S. Air Force, U.S. and Danish contractors and Greenlandic personnel. Existing housing has been considered substandard, and lodging for visitors has been limited.

To improve housing and lodging conditions, the Corps designed and is constructing a three-story dormitory that will withstand the harsh Arctic climate. When



The Thule dormitory was enclosed Oct. 1, in time to allow indoor work during the harsh Arctic winter. Photo by Sterrett Daniels

completed, the building will have 72 rooms for junior and senior noncommissioned officer visitors.

The project is in the center of the air base, and its bright red and blue exterior

stands out against the Arctic snow-covered landscape. The steel superstructure has an insulated metal panel system exterior and a pitched standing metal roof, and it stands on concrete footings. ➤

*(continued from previous page)*

ing facility and the caliber of craftsmen at our disposal right here on Rock Island Arsenal," Dunne said. "They have, more than once, stepped up to the challenge of producing the unique components for this one-of-a-kind structure."

And one-of-a-kind it is. The Government Bridge, with its vehicle and rail decks and pedestrian walkways, is the only swing bridge in the country that can turn a full 360 degrees in either direction.

Dunne, who has been working at the bridge for more than 25 years, said he knows everyone doesn't share his enthusiasm for the bridge, but it's not just a job to him.

"We are the caretakers of something historic that's unique to our community and Rock Island Arsenal. Most folks have come to depend on that bridge for their travel," Dunne said.

Through the years, repairs and improvements have been made to the bridge, but years ago planners and engineers saw a need for specific improvements to ensure longer functioning capabilities of the bridge. Therefore, over the past eight years, the bridge has kept its operational characteristics and historical appearance while undergoing a transformation to extend its lifespan.

The bridge has received new paint, electrical upgrades, an emergency brake system, new traffic control devices, pedestrian hand railings on both sides, replacement of concrete walkways, replacement of the original pneumatic lifting and rail latch cylinders with hydraulics, conversion from the original DC drive system to a variable frequency drive, and replacement of the original ring assembly.

"The focus has always been not only on maintaining but improving," Dunne said.

Although these are not the last of the repairs, others will not be as extensive as what's been experienced over these last few years, he said.

The bridge is manned 24 hours a day for 10 months of the year. Dunne encourages his bridge employees to take ownership of the bridge and begin each shift with a general inspection, walk-through and information exchange between shifts to ensure there are no problems or concerns.

"That vigilance has paid off in the past in prevention," Dunne said. "We are here to provide service and continual safe operation of this bridge."

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**PWD**



*(continued from previous page)*

A number of rooms will be divided into four-bedroom modules with individual bathrooms, walk-in closets and a shared social space. Housekeeping areas and laundry rooms will be located on each floor. There will also be a common area in the center of each floor with a kitchen that has large windows overlooking the base, providing occupants with a place to relax and socialize.

Construction is being performed by MT Hojgaard, a Danish firm, with supervision by the Corps. Construction began in March 2005 and will be completed ahead of schedule this summer.

“The team is completing the project one winter season ahead of schedule, is staying within budget and providing a quality new landmark facility for American servicemen and women at Thule Air Base,” said Paul Kara, the Corps’ project engineer.

Kara has been involved in several construction projects at Thule over a 24-year period and is familiar with its working conditions.

The building’s interior mechanical, electrical, plumbing and fire protection systems

are all designed to withstand the extreme sub-zero temperatures. The walls are constructed with a typical metal stud and gypsum board assembly.

Construction at Thule can be a challenge, considering the severe weather and limited daylight. The weather during the winter is too severe to work outdoors. Temperatures range from minus 30 to minus 40 degrees Fahrenheit. Because of Thule’s proximity to the North Pole, it has 24 hours of sunlight from May through August and 24 hours of darkness from November through February. These factors limit outside construction to a three-month timeframe — June to mid-September.

The exterior must be enclosed within this window of time. Once the building shell is completed, interior work can continue uninterrupted during the winter months. Kara’s team worked 12-hour days during the summer months, and they worked inside throughout the long winter months, which contributed to the project being ahead of schedule.

Greenland is locked in by ice nine months out of the year. During the summer months, which hover in the 40-degree range, the island’s frozen shipping

lanes can be broken up. Supply ships are allowed in, and the team receives its building supplies.

Because of the limited construction time, most of the building materials are prefabricated elsewhere. Prefabricating the parts helps the workers to rapidly perform the construction. Some of the materials that were prefabricated for the dorm include the concrete foundations, structural steel and insulated metal wall and roof panels.

One of the most significant differences in constructing in the Arctic region is the buildings’ unique foundations. The land is primarily composed of permafrost, permanently frozen ground below the earth’s surface from six feet in some areas to 1,600 feet in others.

Because of this terrain, building foundations need to be elevated. Buildings sit on concrete supports or require air corridors to separate them from the ground with one meter of clearance. Heat generated from them will melt the permafrost, and the building could sink if not elevated.

Kara said that engineers who are working on projects with limited construction time due to the elements should consider:

- minimizing construction delays by resolving contractor requests for information as soon as possible;
- thoroughly reviewing contract plans and specifications prior to construction; and
- resolving contractor issues promptly by being flexible and available.

Anders Fogh Rasmussen, Denmark’s prime minister, recently toured the dormitory.

“He was very impressed with the way the dorm is being constructed, especially how the building is being highly insulated, because this will lead to expected savings on fuel consumption,” said Christian Levinsen, project manager for MT Hojgaard.

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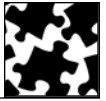
*JoAnne Castagna is a technical writer with the U.S. Army Corps of Engineers, New York District.*

**PWD**



*Contractors inspect installation of flooring system metal decking. Photo by Sterrett Daniels, U.S. Army Corps of Engineers, New York District*





# Corps, Japanese government move mountain

by Sheri Hronek

With the help of the U.S. Army Corps of Engineers' Omaha District and the Transportation Systems Center of Expertise, the Japanese government and the Corps's Japan District are moving a mountain — literally — to extend land for a replacement airfield at the Marine Corps Air Station in Iwakuni, Japan.

The Corps is working with the Japanese government to ensure the new airfield and support facilities meet the requirements of both U.S. Marine Corps and Japanese Maritime Self-Defense Force missions. As the host nation, the Japanese government is funding the project.

A multidisciplinary team representing airspace and geometrics, geotechnical, and navigation aid and electrical expertise at the Omaha District created the criteria package, including technical guidance for the final contract drawings and specifications.

## Moving a mountain

According to airfield pavement engineer Rick Donovan, the project has several challenges. In addition to those normally encountered on a 10-year, \$3-billion project, designers must work with a site that has not yet been completely formed and assure the stability of the land and airfield pavements. Communicating between two languages and cultures adds another dimension.

Project manager Brad Jones, Donovan and members of the Omaha design team visited the site in 2002 to see how the Japanese were moving fill material from Mount Atago, east of the new airfield site.

"It was really a neat project for a couple of geotech engineers like Rick and me," Jones said. "They are basically building land where there was previously water."

When complete, the process will have lowered the 325.79-foot mountain by nearly 132 feet and created about 533 acres of additional land space for the new airfield and infrastructure.

The Japanese have used this technique before, Donovan said, because they don't have much shoreline suitable for building.

"The Osaka airport was built in a similar manner upon hydraulically-placed fill," he said.

Because of the concern with settlement, the impact on pavements and the question of plain or reinforced concrete, the Japanese government built a large test section on site.

"Eight lanes of pavement were constructed to evaluate a different alternative for reinforcement and joint load trans-



Soil from Mount Atago is loaded onto barges for transport to the land reclamation site for the new airfield at Iwakuni, Japan. Photo courtesy of U.S. Army Corps of Engineers, Omaha District

fer devices," Donovan said. "We will be involved in reviewing results and providing comments to the Japan District on the feasibility of what they're proposing."

## Communication

Modern conveniences and a Japanese translation firm in Tokyo "paved" the way for good communications between the two countries and cultures. Due to the 14-hour time difference, most communication from Omaha to Tokyo took place via e-mail and required a one-day turnaround for answers. Phone calls had to be arranged in advance, with the Omaha team staying late and the Japan District staff getting up early.

"We had to send our live CADD (computer-aided design and drafting) files to the translation firm so they could introduce translated text," Jones said. "We relied on the Japan District for the quality of the Japanese translation.

"They all worked hard and really did a good job for us," Jones continued. "We had some tight deadlines, and they really came through. They deserve a lot of credit."

Construction on the runways and infrastructure will begin in 2007 with completion targeted for 2009. When the airfield is completed, it will be the only U.S. government-controlled, deep-water port and heavy-lift airfield in the Pacific Ocean.

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Sheri Hronek is a contract writer with the U.S. Army Corps of Engineers, Omaha District. PWD

## Chief of engineers to retire

The secretary of the Army, in consultation with the chief of staff of the Army, has agreed to submit the request for retirement of Lt. Gen. Carl A. Strock, chief of engineers and commander, U.S. Army Corps of Engineers, to the secretary of Defense for approval. Strock took command of the Corps July 1, 2004. He made his request based on family and personal reasons, which the secretary of the Army honors and supports.

Strock will be part of the advisory board convened to propose his successor,

which will require approvals of the Secretary of Defense, the White House and confirmation of the Senate. Strock will continue to serve until his successor takes command, which could take as long as six months.

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From U.S. Army and Corps of Engineers news sources released Aug. 10. PWD



## Career program serves employees, Army, nation

by Lt. Gen. Carl A. Strock

The Army civilian Career Program 18 (CP18) is a great Army-wide program with more than 15,000 professionals in 49 job series and occupations, including architects, engineers, hydrologists, archeologists, park rangers and environmental specialists.

As the chief of engineers, I am the program's functional chief. My job is to be the program champion to the Army staff for all phases of civilian career development for everyone in the career field, from a new intern at a Department of Public Works to the most senior engineers and managers within Army engineering activities.

It is not just a professional obligation, it is a personal interest. The contributions of those in the CP18 program are important across the Army, especially now as we address a dramatic increase in our workload. Along with our ongoing support to the Global War on Terror, we are meeting the construction demands resulting from the Army Modular Force, global repositioning and the decisions of Base Realignment and Closure 2005.

A highly trained and knowledgeable workforce is essential to successfully accomplish all of our work. The Army has addressed the issue by instituting several changes to improve civilian training and development:



Lt. Gen. Carl A. Strock gives a briefing at the Pentagon. Photo by Helene C. Stikkel

One, the Civilian Education System (CES) is transforming the core civilian leadership curriculum. Changes include making it more Web accessible, providing a stronger base of knowledge about the Army and strengthening leadership skills and abilities. The new Basic, Intermediate and Advanced Leadership Courses will combine online and classroom instruction to provide civilian employees the tools needed to successfully function in the Army's new operational environment. The Army Management Staff College at Fort Belvoir, Va., will be the CES provider, with the new courses scheduled to roll out in January 2007.

Two, the Facilities Engineering Career Field is being implemented Armywide to increase acquisition management knowledge for all civilian employees involved with buying services and products related to the design, construction and maintenance of facilities. The Level I and II courses are offered online through the Defense Acquisition University ([www.dau.mil](http://www.dau.mil)). The Level III course is scheduled for availability later this year.

Three, CP18 continues to pursue its fair share of funding through the Army Civilian Training Education and Development System. I am pleased to note that even with current funding constraints, CP18 obtained and allocated almost \$800,000 in fiscal year 2006 for mission essential technical training, long-term university training and developmental assignments.

Improving the training and development for the members of CP18 will help strengthen the Army's capability to meet its challenges. With the assistance of Don Basham, my functional chief's representative, and many other dedicated professionals, I will continue to work for more training and development opportunities and will keep you updated on our progress.

Thank you for your interest in CP18, and thank you for all you do every day on behalf of the nation and armed forces.

Lt. Gen. Carl A. Strock is chief of engineers and commanding general of the U.S. Army Corps of Engineers. **PWD**

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on the web

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**Public Works Digest,**

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<http://www.ima.army.mil/sites/pw/digest.asp>



# Facilities engineering career field to become acquisition workforce: what does it mean to you?

by John W. Wehmanen and Michael Ostrom

Plans to assimilate the facilities engineering career field into the acquisition workforce continue. Those who work virtually anywhere in the life cycle of acquisition of military facilities need to understand how acquisition laws and rules affect facility operations.

Whether your position deals with acquisition, maintenance or disposal of real property or facilities, or any task in between, that position may be assimilated into the acquisition workforce. About 18,000 U.S. Army Corps of Engineers, Installation Management Agency and Assistant Chief of Staff for Installation Management civilian positions from fields such as engineering, industrial hygiene, planning and real estate will soon be screened for accession into the acquisition, technology and logistics (AT&L) workforce under the 2002 Defense Acquisition Workforce Improvement Act (DAWIA) II legislation.

If your position meets the definition, you will become part of the AT&L workforce in its facilities engineer career field. Your position will be coded in applicable management databases, and you will be told your rights and responsibilities as a member.

New members will join more than 46,000 civilian employees now in the AT&L workforce. USACE contracting personnel are longtime members. Along with the other services and the Department of Defense, an integrated DoD AT&L workforce will form.

The actual number of positions to be affected is still being determined, but the decision process will be based on a position classification description written to include personnel from all services. Its definitions of acquisition and facilities engineering will differ from existing Army career programs. DoD is creating a new paradigm, so there will be surprises.

Affected individuals must look at both sides and then adapt.

## Let's look

Members of the AT&L workforce are eligible for career enhancing training, developmental experiences and other assistance beyond that from their ACTEDS (Army Civilian Training Education Development System) career program.

- The Acquisition Tuition Assistance Program provides funding for 12-24 semester hours required for Army Acquisition Corps membership, undergraduate degree and graduate degree programs.
- The Acquisition Career Development Plan offers the information and tools necessary to develop the progression of individual careers.
- The Acquisition Career Record Brief provides a one-page snapshot of completed training, education, job experience, awards, acquisition status and current position information.
- The Individual Development Plan, by contrast, is a five-year plan that outlines future opportunities required to meet career goals. These documents help you chart your career course.
- Individuals who must attain mandatory DAWIA educational requirements may apply for the Acquisition Tuition Assistance Program, a non-competitive, need-based program. Individuals may attend the institution of their choice within their local commuting area and normally complete courses during non-duty hours.
- The Competitive Development Group — a three-year program that offers board selected applicants expanded training, leadership, experiential and career development opportunities — is designed to develop future Army acquisition leaders.
- Another benefit is access to the Civilian Operational Experience Program (COEP). COEP will assist in the “greening” of AT&L members on the mission of Army war fighters by giving exposure to training opportunities, courses, educational materials and useful Web sites.

- Members may have priority access to all kinds of courses through the Defense Acquisition University (DAU). Headquartered at Fort Belvoir, Va., with 11 outlying region headquarters or campuses, DAU offers a broad spectrum of resident and Web-based courses and continuous learning media.
- The Senior Service College Program offers enhanced opportunity to gain advanced leadership training and experience specifically designed for senior leadership positions. You can apply for this through the ACTEDS program, but AT&L membership offers a second avenue and better your odds.

With many ways to make AT&L opportunities work, how does an employee get started? Through the supervisor. The Supervisor Outreach Program is revitalizing the role of AT&L leadership. AT&L managers are charged with becoming front-line change agents within the workforce.

To some, this will look like a chance at promotion in a bigger job pool. Others might see more competition for the next promotion. It is important to know that AT&L members are expected to improve their core acquisition, functional and leadership competencies throughout their careers through education, training and experience. That is not much different than what is now faced every day.

## The bottom line

By late fiscal year 2007, the facilities engineering career field will assimilate into the AT&L workforce. The number of positions that will be selected is not yet known. Assimilation will be into a single DoD-wide body with an integrated management structure to make policy decisions and oversee career development of the DoD AT&L workforce.

The careerist who wants to get ahead in the newly defined and expanded career field will have greater opportunities for career development than ever before. It is time now to get started. ➤



# Installation, engineering training offered by Professional Development Support Center

by Gary Andrew

As the Army undergoes rapid change, the demand for training becomes paramount. New systems, organizations, realignments and modularization drive new performance requirements.

The U.S. Army Corps of Engineers Professional Development Support Center (PDSC), in Huntsville, Ala., remains your number one source for quality installation support and engineering training that is current with the latest policy and programs. Using a talented adjunct faculty of practicing professionals, the PDSC offers the highest possible quality and relevant training for the performance demands placed on employees.

"The instructor made learning fun and very interesting," reported a student in our popular Directorate of Public Works Quality Assurance Course. "I've gone through two other QAE classes elsewhere and this one was the best. I understood the process and materials more and will be able to use what was taught in my daily job duties. I've really enjoyed this week and have actually learned something useful. Thank you!"

For complete catalog information and registration procedures, visit: <http://pdsc.usace.army.mil>. There you will find course descriptions, prerequisites and information on Continuing Education Units for par-

ticular PROSPECT courses.

The PDSC faculty can tailor most courses to meet an installation's needs and bring that course directly to your installation or activity at a reduced cost over regular classroom tuitions. Contact your installation support learning advisors Betty Batts, (256) 895-7409; Beverly Carr, (256) 895-7432; or Donna Gravette, (256) 895-7429, for information.

Gary Andrew is the director of the U.S. Army Corps of Engineers Professional Development Support Center, Huntsville, Ala. **PWD**

# New Advanced Master Planning course embraces planning process

by Jerry Zekert

For almost 20 years, the Real Property Master Planning class has served as the foundation for the Army planning community in learning about the process of master planning. Many who have participated in the course appreciated the comprehensive overview of the master planning process, planning considerations and unique Army needs that must be integrated into the holistic process.

The Advanced Master Planning course has been established as a venue for more tenured planners to gain a better under-

standing of the comprehensive planning process, planning considerations to include the National Environmental Policy Act, sustainability, critical infrastructure assurance/force protection and to learn the planning language and planning patterns needed to make great plans. The class is framed around the established practices of area development planning in a studio environment.

Most recent students participated in a field trip to downtown Huntsville where they saw how these planning patterns translate into the built environment. They were able to translate these concepts into completing a comprehensive area development plan that was superb in meeting not only mission needs, but sustainability and force protection planning standards, grounded by proven planning patterns for development.

Students also referenced established sources from professional planning including Christopher Alexander's book "A Pattern Language: Towns, Buildings, Construction" as well as other resources. The

author and Mark Gillem, AIA, AICP, Ph.D., University of Oregon, taught the class.

Samples of student feedback include:

*"Excellent coverage of planning principles as it relates to Army mission requirements!"*

*"The practical exercise was great; it gave us a working knowledge of how much detail is required and the level of effort needed to complete an ADP."*

*"The discussion of planning patterns was very insightful and beneficial."*

The next class is scheduled for Aug. 14-18, 2007, in Huntsville, Ala. If there is additional demand, other classes will be scheduled. Please contact Jerry Zekert, (202) 761-7525, or Betty Batts, (256) 895-7407, if interested.

POC is Jerry Zekert, (202) 761-7525, e-mail: [jerry.zekert@usace.army.mil](mailto:jerry.zekert@usace.army.mil).

Jerry Zekert is the master planning team leader at U.S. Army Corps of Engineers Headquarters. **PWD**

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John Wehmanen works in the Facilities Policy Division, Office of the Assistant Chief of Staff for Installation Management. Michael Ostrom is deputy chief, Facilities Policy Division. **PWD**



# Course offerings for the planning community

by Jerry Zekert

As 2007 approaches, the Army's master planning community should start working closely with supervisors to program training as part of the Individual Development Plan (IDP). The planning community has many venues available to it.

## Master planning courses for 2007

**Course 075, Real Property Master Planning** – This 36-hour course provides an introductory overview of real property master planning. Through lectures, hands-on training, a field trip and exciting guest speakers, students are given an insight on planning and its principles and how the Army uses this process to plan and develop its installations. There are two sessions scheduled for fiscal year 2007 and a possible third if demand develops: Dec. 4-8 in Portland, Ore., and March 13-17 in Norfolk, Va.

**Course 952, Advanced Master Planning** – This is a 36-hour course for experienced planners. Through hands-on training, a field trip and automated tools, students obtain a broad understanding of planning principles as they pertain to area development planning and learn how to integrate urban planning principles, such as sustainability and mix-use development, into planning great communities. The course is framed around a college studio environment, and students are challenged using current automated tools such as Photoshop and other imaging processes to enhance the illustration of findings. There is one session scheduled for FY 2007: Aug. 5-12 in Huntsville, Ala.

Call Betty Batts, (256) 895-7407; Beverly Carr, (256) 895-7432; or Jerry Zekert (202) 761-752, for more information on these courses.

## Professional planning venues

**Installation Management Symposium, Master Planning Tract** – The Installation Management Institute (IMI) is a unique Army installation management workshop

where installation personnel from various functional areas can come together and obtain training in various installation management areas. A master planning tract is sponsored annually to provide insight on various comprehensive planning issues facing installations. Currently, the tract includes an interactive hands-on exercise and a class field trip, supplemented by class instruction. The IMI is scheduled for Jan. 7-14 in Atlanta.

Contact Greg Brewer, (703) 601-2541, or Jerry Zekert, (202) 761-7525, for more information.

**Federal Planning Division APA Workshop, Army Planning Community of Practice Symposium** – The Federal Planning Division (FPD) of the American Planning Association hosts an annual workshop in conjunction with the American Planning Association Conference. It is scheduled for April 11-13 in Philadelphia. The U.S. Army Corps of Engineers will host the Army Planning Community of Practice meeting April 9-10 in conjunction with the FPD workshop.

Contact Jim Maguire, FPD chairman, (817) 543-1100, e-mail: JMaguire@grwinc.com or Jerry Zekert, 202-761-7525 for information

**American Planning Association (APA) Conference** – APA is the professional planning society. It sponsors an annual conference at which the planning community comes together to learn the newest trends and celebrate success in planning. The conference attendees represent city, county and regional planning and consulting planning professionals from around the world. The 2007 conference is scheduled for April 14-18 in Philadelphia. This conference is a unique professional planning opportunity that all planners should attend at least one time in their careers.

Please contact Jerry Zekert, Army APA liaison, at (202) 761-7525, e-mail: jerry.c.zekert@usace.army.mil, or go to [www.planning.org](http://www.planning.org) for more information. **PWD**

# CP18 program managers' workshop scheduled

by Edmond G. Gauvreau

The 2006 version of the Army Career Program 18 Managers Workshop is scheduled for Oct. 31 through Nov. 2 at the Mobile Convention Center in Mobile, Ala. The meeting will be held in conjunction with the Society of American Military Engineers (SAME) Regional Conference and Training Workshop being sponsored by the South Atlantic/South Central Chapters of SAME.

Registration for the CP18 workshop is available through the conference Web site at <http://www.2006samemobile.com/home.html>.

The CP18 Policy Board will meet on the morning of Oct. 31. The workshop will start that afternoon and will finish at lunchtime on Nov. 2.

By paying the conference fee, attendees will be able to participate in both the educational and social functions of the SAME conference. There will be sufficient opportunities for CP18 participants to attend SAME workshops.

In the wake of last year's successful workshop on intern development, your suggestions are sought for this year's agenda. Please contact Ed Gauvreau, (202) 761-0936, DSN 763-0936, e-mail: [ed.gauvreau@us.army.mil](mailto:ed.gauvreau@us.army.mil).

*Ed Gauvreau works within the Installation Support Community of Practice at Headquarters, U.S. Army Corps of Engineers.* **PWD**



## Miriam Ray handles key elements in IMA's Public Works Division

by Alexandra Stakhiv

**M**iriam Ray joined the Installation Management Agency's Public Works Division last September, bringing with her almost 20 years of Directorate of Public Works (DPW) experience at all levels.

Armed with an engineering degree from the University of Miami, a newly married Ray began her career as an Army DPW intern in 1987 in Heidelberg, Germany. She feels fortunate to have had rotations in just about every DPW division working primarily in business operations and engineering systems, she said.

Having a husband in the Army means being reassigned every few years, and by the early '90s, Ray was working at Fort Knox, Ky., and then Fort Rucker, Ala., as the chief of the Engineering Resource Management Division.

She joined the U.S. Army Corps of Engineers in 1995 taking a position with the U.S. Army Center for Public Works, where she supported DPW work management and later the Geographical Information System (GIS). After a brief stint at Fort Lee, Va., it was back to Germany and the Europe Region in 2002 and then IMA in 2005.

"All of the experience that I gained working at installations and the U.S. Army Corps of Engineers now comes together in my work at the Headquarters, IMA," Ray said. "I've seen it from many different sides, and I think I have a good appreciation of the challenges that DPWs must face on a day-to-day basis. I honestly love the public works business and the Soldiers we support. It doesn't get much better than this."

IMA's Public Works Division comprises several teams in which all the members have a DPW background, Ray explained. In a multi-functional organization, they can cross cover just about anything that has to do with the DPW business. Not one of the

staff is a single-track kind of person, she said.

In the Master Planning Branch, Ray's official duties deal mostly with real property and real estate actions. However, she also supports public works sustainment allocations, budget execution and systems automation, for which she handles all the IFS (Integrated Facilities System) material.

"I love systems, and I've worked with them for so long that they just seem to follow me wherever I go," Ray said. "When I first got here, systems were not handled by the Master Planning Branch. It's something I picked up along the way. That's what we do in our division — we work together and take advantage of the expertise each one of us brings to the team."

Requests come from both the top and the bottom.

"We support the ACSIM (Assistant Chief of Staff for Installation Management) staff in implementing current policies," Ray noted. "They have so many things going on right now, especially in the real property arena. That whole world is being turned on its head, if you will, with many new OSD (Office of the Secretary of Defense) requirements. The ACSIM is our base upfront with OSD in getting policy, and we aim to provide the best guidance to our installations in the implementation of that policy."

"At the same time, we get questions/issues that come from the bottom up, from the DPWs. We're kind of a melting pot in that we respond to both," she said.

According to Ray, the current buzz words in real property are Real Property Inventory Reporting or RPIR (pronounced



Miriam Ray. Photo by Alexandra Stakhiv

ripper). This new requirement is based on an OSD document coming through the ACSIM to Army installations to report on things they previously did not report in their quarterly inventory, such as the utilization of facilities.

"These are high level, very important requirements that we need to support; it is part of the president's management agenda metric," said Ray. "There are 23 critical data elements and probably 100-plus elements all together. Not all are new, but now they have a much higher level of visibility. We're trying to package it and give garrisons the right guidance to get us there."

The new requirement will take affect in fiscal year 2007.

"Right now we're waiting for some systems changes for FY 2006 reporting requirements to help us capture these things in an automated way," said Ray, who will implement the program for IMA. Ray promised to write an article for ▶



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the Public Works Digest explaining these requirements when the timeline has been set.

“I want the DPWs to know how important this is, since they will be living with it for a long time,” she concluded.

Managing the sustainment piece of the budget also takes up a significant amount of her time. This means determining what is needed to “bare bones” operate in these days of decreasing budgets.

“We’re trying to get a better handle on what it takes to operate our installations aside from all the projects,” Ray said.

Ray got involved in managing the sustainment dollars because of her background in resource managing for engineers.

“So much of our dollars are based on inventory,” she explained. “In other words, how many buildings you have is directly related to how much money you’re going to get to run them.”

As a result, she studies OSD models, such as the facilities sustainment model, that generate requirements.

“We take that base amount and make current year adjustments. Models are good, but they are not perfect, and sometimes the original data source has an error that we need to adjust for,” said Ray. “Don (LaRocque, chief of IMA’s Public Works Division) and the project folks will say we have special needs here, and then we have to reallocate the dollars.”

The numbers may not be what the garrisons want to hear, but the numbers are always defensible and based on sound logic, she added.

“We need to be cognizant of putting the money where it needs to go to help the DPW get through all the unit moves hap-

*“All of the experience that I gained working at installations and the U.S. Army Corps of Engineers now comes together in my work at the Headquarters, IMA.”*

— Miriam Ray, Installation Management Agency

pening at the garrison,” said Ray. “It’s like a big puzzle. We are a hands-on division when it comes to managing DPW programs. Don really takes an active role and doesn’t leave anything to chance. Whatever they get is not because there was any salami-slicing going on.”

Ray also leads the IMA Public Works GFEB (General Fund Enterprise Business System) effort. GFEB is a new core financial management system for administration of the Army’s general funds. GFEB will integrate the management of real property inventory with the associated financial costs and provide seven core financial functions: general ledger management; payments management; revenue management; funds management; cost management; property, plant and equipment; and reporting.

GFEB Release 1.1 has just been completed, and the next 18 months will be spent defining the work management processes. Ray will be working with Phil Columbus of ACSIM on this phase.

“I will be reaching out to our garrison folks to get them involved,” said Ray. “We need their help in refining everything they do locally in IFS today and things that they don’t do in IFS but have a need to do. This is an opportunity to fix some of the things that haven’t been defined well or automated in the past.”

How will it work? Groups of garrison subject matter experts will be brought to

Northern Virginia as needed to roll up their sleeves and define or “blueprint” the core Public Works facilities management processes.

“If we don’t invest up front and get the right people to talk the processes, it’s not going to work,” Ray said. “We’ve been very fortunate in getting great support so far. The Northwest Region was wonderful in giving up some of their key people for long periods of time because they saw how important this was to the Army. We’re hoping the same thing will happen for this phase.

“Six months is a long-term investment, and we realize that it’s not always possible to send the ones who are hardest to part with,” she said. “Nevertheless, we have to figure out a way to do it, because we want that one person who really knows the business — even if it’s only for a week.

“We’ll try to do some of the cleanup work remotely or by phone and just bring them in for the really intense stuff, but nothing beats one-on-one,” she said.

Ray lives in Williamsburg, Va., with her husband and her two teenage boys. You may reach her at (703) 602-5382 or e-mail: miriam.ray@hqda.army.mil.

Alexandra Stakhiv, the former editor of the Public Works Digest, provides contract support to the publication. **PWD**



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