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In this issue:

Annual Report Summaries

Army activates IMCOM

see page 32

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On the cover:
The new Installation Management Command flag is unfurled during the activation ceremony Oct. 24 at the Pentagon by Lt. Gen. Robert Wilson (right), the new IMCOM commander, with the assistance of flag bearer Sgt. Dustin Jay Devine (left) of the 3rd U.S. Infantry Regiment (Old Guard). Photo by Stephen Oertwig, Installation Management Command

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Annual Report Summaries

3-4 2006 a remarkable year for Army installation management *by Lt. Gen. Robert Wilson*
5 Corps' Military Program intensifies in 2006 *by Lt. Gen. Carl A. Strock*
6-7 Corps has dynamic installation support year in 2006 *by Pete Almquist*
8-10 Installation Support Center of Expertise provides support to Army Transformation *by Mirko Rakigjija*
10-11 Managing relocatable buildings critical task in meeting stationing initiatives *by Mike Dean, Bill Allen and Dave Ullrich*
12-14 ERDC offers innovation, expertise for sustainable installations *by Dana Finney*
14 Fort Bragg initiatives VTCs with CERL for information exchange *by Dana Finney*
15-17 Army barracks program concentrates on quality *by the ACSIM Unaccompanied Personnel Housing team*
18-21 Fiscal year 2006: a volatile year in the energy markets *by Scott McCain and John Crunkilton*
21-22 PREP has banner year, exceeds past perfromance *by Angie Stoyas*
22-23 Corps' Baltimore District completes banner military construction year *by Christopher Augsburger*

Installation Successes

24-25 Fort Huachuca incorporates 'bright ideas' into energy conservation *reprinted from the Huachuca Scout*
25 End-of-year project ensures Fort Wainwright's power plant ready for winter *by Debra Valine*
26-27 Fort Lewis demos technology to recycle lead from 'deconstructed' building materials *by Brendalyn Carpenter*
27 Fort Lewis gets the lead out of old barracks *by Spc. Leah R. Burton*
28 Relocation eliminates unneeded structures at no cost to Fort Huachuca *by Debra Valine*
29 Fort Belvoir welcomes new concept in installation living: town center *by Melina Rodriguez*
30-31 Tobyhanna gets green — up on the roof *by Jacqueline Boucher*
31 Huntsville's Facilities Reduction Program raised the bar for waste diversion in 2006 *by Debra Valine*

Installation Management

32-33 Army activates IMCOM to improve support to Soldiers *by Ned Christensen*
33-34 Fort Benning faces military construction challenges with help from the Corps *by Sarah McCleary*
34-35 ERDC launches Center for the Application of Sustainable Innovations *by William D. Goran*

Environmental Achievements

35 DoD watershed protocal gains acceptance *by Susan Shelvis*
36-37 Programmatic compliance accomplished for 35,000 Army historic properties *by Sarah Killinger*
37 DoD issues final rule on Restoration Advisory Boards *by Beverly D. VanCleef*

Professional Development

38 CP-18 achieves success by helping employees develop professionally in 2006 *by Lt. Gen. Carl A. Strock*
39 DoD presents half of its 2005 Fire and Emergency Service Awards to Army *by Charlie Butler*
40-41 Public works program manager recaps program activities at training forum *by Mary Beth Thompson*
41 Sixth annual Installation Management Institute set for Atlanta in January

Who's Retiring

42-43 Installation management community sees key retirements

2006 a remarkable year for Army installation management

by Lt. Gen. Robert Wilson

"Installations as Flagships" — it's about Soldier and family readiness. Installations are key to Army readiness, and the public works community provides tremendous support to the Army to make Soldier and family readiness possible. Our public works community is responsible for the life-cycle management of our installation real property and infrastructure.

Since the last *Public Works Digest*, the Army activated the Installation Management Command (IMCOM), and as IMCOM commander, it is my privilege to again provide a note for the *Public Works Digest*. The theme of this edition is a review of 2006.

The Army's real property totals more than 14 million acres of land, containing more than 103,000 structures and comprising more than 697 million square feet of building space. This real property has a plant replacement value of more than $251 billion. What brings life to our facilities is the reality that Soldiers and families live, work, train and play on Army installations everyday.

Our public works community made extraordinary efforts developing and refining the requirements to address Base Realignment and Closure (BRAC) 2005, Global Defense Posture Realignment (GDPR) and Army Transformation requirements. The Army is transforming to a U.S.-based expeditionary force with more than 50,000 Soldiers returning from overseas and approximately one-third of the Army moving by the end of fiscal year 2011. The facility needs for rebasing the Army are monumental.

I know that all garrisons have been decisively engaged in developing construction requirements for the Army's FY 2008-13 Military Construction (MILCON) program. When we locked the FY 2008-13 program, the Army validated and funded more than $37 billion in MILCON to include all BRAC requirements. FY 2006 was a busy year throughout the public works community, developing and synchronizing construction requirements to support the significant unit changes associated with BRAC, GDPR and Army Transformation. Noteworthy were master planning efforts undertaken to match facilities to units. This was done in concert with executing routine support and life-cycle management of our installations and facilities. Several key accomplishments and milestones merit recognition in the areas of energy and utilities management, family and single Soldier housing, and construction.

Lt. Gen. Robert Wilson

The Army's Energy Program continues to make progress in improving our utility systems. Last September, seven additional utility distribution systems were privatized bringing the Army's total privatized systems to 116, which dramatically leads the Department of Defense. The new utilities privatization contracts have a total value of nearly $600 million, with cost avoidance to the Army of more than $75 million. Additionally, the Army signed its first Municipal Services Agreement between Fort Gordon, Ga., and the City of Augusta, Ga., for water and wastewater treatment plant services, resulting in cost avoidance of more than $6 million.

The Energy Savings Performance Contract (ESPC) program started moving again after a congressional program pause. This is an important tool now that the Army is required to reduce energy consumption by two percent every year for the next 10 years. An illustrative ESPC project is the recently approved Fort Hood, Texas, contract that provides a contractor investment value of nearly $13 million and is projected to save more than 57 million Btu annually.

The Army also had nine award winners in the Annual Secretary of the Army Energy and Water Management Award program. Combined, the awardees reduced the Army's energy consumption by more than 188,000 million Btu on energy for a cost avoidance of almost $2 million. In addition, awardees reduced Army water consumption by 176 million gallons. The Army also received Federal recognition as a result of the Fort Knox, Ky., ground-coupled heat pumps initiative that received a Federal Energy and Water Management Award. This initiative provided ground-coupled heat pumps to service more than 800,000 square feet of the Disney Barracks Complex, reducing natural gas consumption by 102,000 million Btu.

The Army has continued to make improvements to the Army Energy and Water Reporting System, which includes a new Energy Managers' Database module that captures data for the ESPC, the Utility Energy Services Contract, best management practices and renewable energy sources. It also captures installation-specific information (personnel, utility companies serving the installation and Residential Community Initiative housing status). These are but a few noteworthy examples of the accomplishments by Army energy and utility managers.

Garrisons provide vital support to Soldiers and their families, most evident in the housing we provide married and single Soldiers. In 2006, the Army invested $235 million to fix deficiencies in training barracks, improvements that will affect 46,000 Soldiers. Installations continue to work the ➤

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Permanent Party Barracks Improvement Program which was initiated and funded in 2005.

The greatest facility investment the Army made in 2006 was the investment of nearly $800 million in the Barracks Modernization Program (Military Construction, Army) to construct "1+1" barracks. This investment will provide new barracks for more than 6,000 Soldiers. Army leadership also approved three privatization projects to provide single noncommissioned officers' and officers' on-post housing at Fort Bliss, Texas; Fort Stewart, Ga.; and Fort Bragg, N.C. The IMCOM also completed the Centralized Barracks Management pilot program with the 4th Infantry Division at Fort Hood and subsequently expanded the pilot program to include all of Fort Hood. Metrics were developed for this initiative through the Lean Six Sigma process to monitor the progress of the pilot program.

In the family housing arena, the Army invested more than $260 million to privatize an additional 2,008 homes on seven installations — Fort Riley, Kan.; Fort Benning, Ga.; Fort Rucker, Ala.; Fort Leavenworth, Kan.; Fort Gordon, Ga.; Picatinny Arsenal, N.J.; and Carlisle Barracks, Pa. This investment leveraged more than $1.76 billion in partner investment during the initial development period.

The Army has revitalized off-post housing referral services. The Housing Services Office (HSO) provides housing services for the approximately two-thirds of married Soldiers and families living in the local communities surrounding Army installations worldwide. Army Housing recently completed the development and deployment of a new manual for HSO personnel responsible for off-post housing assistance.

A paratrooper from the 173rd Airborne Brigade goes about his duties in Iraq. Photo courtesy of Southern European Task Force Public Affairs

The Army also sponsored Soldier Home Ownership and Installation Housing Industry Forums at Fort Riley; Fort Drum, N.Y.; and Fort Wainwright, Alaska. The Soldier forums were joint efforts involving communities, businesses and the government. The Fort Riley event was sponsored by the Military Affairs Committee of Junction City, Kan., and the Manhattan, Kan., Chamber of Commerce with advisory and planning support provided by Fort Riley and the Office of the Assistant Chief of Staff for Installation Management. The Housing Industry Forum held in Watertown, N.Y., was attended by congressional leaders and focused on housing development opportunities in the Fort Drum area. These events generated a great deal of interest and movement to provide housing opportunities for Soldiers and their families.

A Soldier from the 210th Military Police Company is welcomed home after a 15-month deployment. U.S. Army photo

The Army's 2006 Military Construction Program included 137 projects totaling more than $1.7 billion. A key highlight is that the Army awarded all 2006 BRAC projects. The public works community continues to support deployed forces in theater and awarded several construction projects valued at more than $230 million in Iraq and Afghanistan. During 2006, the Army also awarded non-appropriated-funded construction projects totaling $66 million for seven child development centers.

In the construction planning and programming area, there were two noteworthy initiatives. First, the Army adopted the policy to transition to Leadership in Energy and Environmental Design for New Construction at the "silver" level. This is a clear signal the Army is committed to sustainable facilities. Second, the Army adopted MILCON Transformation as the construction strategy for new construction. The Army's public works community has been engaged with the U.S. Army Corps of Engineers refining and fielding the MILCON Transformation strategy that will result in facilities being constructed 30 percent faster, saving 15 percent in costs. This strategy will have long-lasting effects on life-cycle management of Army facilities.

The Army's public works community provides the foundation for Army installations. Last year was pivotal as we began the Herculean task of recasting the Army's installation footprint in support of BRAC, restationing from overseas bases and Army transformation. This coming year will be just as eventful and will offer more opportunities to improve our installations and the support we provide our Soldiers and their families.

Lt. Gen.Robert Wilson is the Assistant Chief of Staff for Installation Management and commander, Installation Management Command. **PWD**

Corps' Military Program intensifies in 2006

by Lt. Gen. Carl A. Strock

The U.S. Army Corps of Engineers' Military Program lived the Army's new campaign theme, *Army Strong*, this past year. The Corps' Military Program met many challenges, turned them into opportunities and emerged strong.

Along with our military customers, we faced mission challenges and will continue to face them, not only in fiscal year 2007 but in the years to come. These include the effects of Army Transformation, Global Defense Posture Realignment, the Global War on Terror (GWOT), Base Realignment and Closure (BRAC), and reorganization and funding issues.

We continue to experience increased pressure on time and resources within the continental United States generated by the effects of Hurricanes Katrina, Rita and Wilma. Thousands of Corps employees and billions of dollars are dedicated to the recovery effort. And other economic and growth factors in the private sector have taken their toll on the construction bidding climate.

We continue to cope with volatile market conditions and major increases in costs. The construction industry is balancing competing priorities and demands along with high fuel prices and delivery costs, and shortages in some materials, labor and other resources.

Lt. Gen. Carl A. Strock
Photo by F.T. Eyre

Despite these challenges, the Corps successfully executed the Military Programs mission. We awarded a total of 298 military construction (MILCON) projects for Department of Defense, Army and Air Force customers with a program amount of $4.9 billion. The Army MILCON portion of the program was 153 projects for a total of $2.3 billion, a significant increase from FY 2005. The Army BRAC program consisted of 11 projects for a total of $700 million. For the Air Force, we awarded 99 projects worth $1.4 billion, and we awarded 35 projects for our DoD customers worth $470 million. Many of these projects had to be awarded over the program amount and/or with reduced scope because of market conditions.

Work progresses on the 1st Brigade Barracks at Fort Bragg, N.C.
Photo by Jonas Jordan

BRAC 2005 execution got off to a great start with 100 percent of the FY 2006 construction program of $700 million awarded at full scope and within budget. Incorporating the new (MILCON) Transformation principles into our acquisition approach contributed to success with the BRAC program. MILCON Transformation opens the way to using performance-based criteria. It allows a wider range of construction approaches and expands use of pre-engineered solutions. It sets cost and time limits on contractors, which encourages creative solutions while demanding requisite quality through the application of the Energy Policy Act of 2005 and Leadership in Energy and Environmental Design "silver" performance requirements. Using MILCON Transformation principles opened the process to a broader market of contractors and, for these BRAC projects, helped keep costs down.

We also executed more than $1.9 billion in operations and maintenance requirements in direct support of Army installations, $959 million in environmental requirements, and provided $187.5 million in real estate support through the Directorate of Military Programs. Support to the GWOT efforts continues to be a high priority. Total support has encompassed more than 5,580 projects in Iraq and Afghanistan amounting to more than $10 billion.

We met the challenges that FY 2006 presented and ended the robust year successfully thanks to hard work on the part of Corps employees as well as our customers and the contractors who supported Corps endeavors. FY 2007 will be even larger in terms of the number of projects and value of the programs to execute and will offer its own challenges and opportunities. Our ability to fulfill this vital role for the nation depends on each of you. Thank you for the work you do every day. Essayons!

Lt. Gen. Carl A. Strock is the commander and chief of engineers, U.S. Army Corps of Engineers.
PWD

Corps has dynamic installation support year in 2006

by Pete Almquist

The U.S. Army Corps of Engineers has just completed its third year of a highly productive partnership with the U.S. Army's Installation Management Agency (IMA), now the Installation Management Command (IMCOM) since the Oct. 24 command activation. This partnership helps ensure that our Soldiers, their families and civilian employees have the best facilities possible in which to live, work and train. This objective has been no small task to accomplish given the shortage of funds for Base Operations Support (BOS) and Sustainment, Restoration and Modernization (SRM) while the Army continues to transform and fight the Global War on Terror (GWOT).

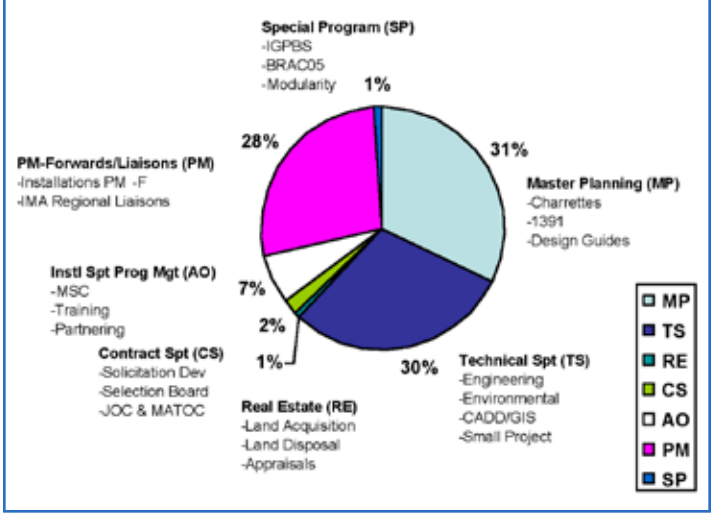
This article highlights the **Direct Funded Reimbursable Program**, the **reimbursable support for DoD installations**, the **Directorate of Public Works (DPW) Installation Support Program of the Year** and the **Installation Professional of the Year**, and it discusses the **Corps' Northwestern Division's liaison (LNO) to IMCOM's Northwest Region**.

Highlights of fiscal year 2006 $8.2 million IMA-financed Installation Support Program

The Installation Support Direct-Funded Program provides Corps LNOs to IMCOM regions, Corps' project managers (PM)-forwards at key Army installations and Checkbook Funding for non-reimbursable support. Mutually beneficial **LNO**s are located at each of the IMCOM region headquarters. High-value **PM-forwards** are provided to more than 20 key Army installations.

Critical **Installation Support Checkbook** services for DPWs include tools such as Furniture Wizard, which helps determine furnishings requirements; Engineering Knowledge On-Line (EKO), a web-portal that helps disseminate knowledge and support; the highly respected bi-monthly *Public Works Digest*; high-payback utility-rate intervention support from the Installation Support Center of Expertise; planning charrette support for critical military construction (MILCON) project development; master planning updates; installation design guide updates; condition inspection technical support; structural inspections; scope of work surveys for SRM project development; facility utilization studies; Geographical Information System mapping support; environmental support; land acquisition and real estate support; relocatables building support for Global Defense Posture Realignment (GDPR) and Army Modular Force initiatives; and development and acquisition of responsive DPW support contracts.

USACE/IMA Installation Support Program
Total FY06 ($8.2M)



A Corps South Atlantic Division-sponsored **Installation Support Workshop** brought together key Army, Air Force and Department of Defense (DoD) leaders to jointly discuss Corps support missions.

Reimbursable installation support work in FY 2006

- End-of-year Corps of Engineers Financial Management System reports indicate a total of about **$2.2 billion dollars** accomplished using operations and maintenance (O&M) reimbursable funds from a variety of DoD organizations during FY 2006. See chart on page 7.
- $2.2 billion O&M reimbursable work breaks out as: **Army, 71 percent; Air Force, 16 percent; and DoD, 13 percent**.
- The total does **not** include $337 million in reimbursable O&M-funded work accomplished by the Corps' Gulf Region Division and Transatlantic Program Center, or O&M-funded work accomplished by the Corps' Engineering Research and Development Center.
- **Huntsville Engineering and Support Center and North** Atlantic Division led the Corps in the amount of O&M-funded reimbursable work accomplished in FY 2006. Huntsville's Installation Support Center of Expertise provided critical support for programs such as centralized demolition, master planning, utilities rate intervention, furnishings acquisition, requirements determination, energy-savings performance contracts and a variety of others that support DPWs.
- This **reimbursable O&M workload represents DoD customers who have choices in selecting service providers**, and the Corps is very proud of the partnerships that these workload figures represent.

2005 DPW Installation Support Program of the Year

IMCOM selected the Corps' Savannah District for this prestigious award for work performed over the FY 2005 evaluation year. This award recognizes the Savannah District — in support of the Fort Stewart, Ga., and the Fort Bragg, N.C., DPWs — for outstanding assistance provided in accomplishing the installation

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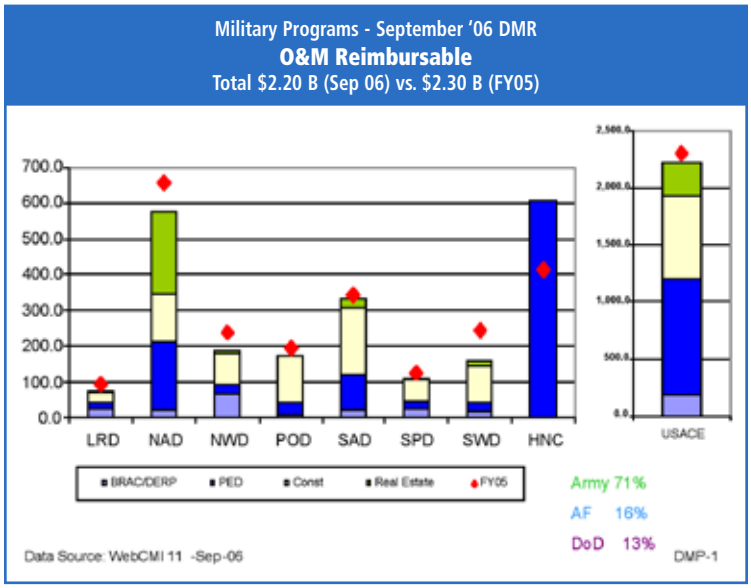

SRM, environmental, military construction Army and master planning missions. Savannah District's work won praise from both installation commanders.

"The Savannah District provided the quality oversight needed to give our Soldiers the best," said Col. Al Aycock, the former Fort Bragg garrison commander.

"The Savannah District's accomplishments have enabled the Directorate of Public Works to maintain the highest possible standards of installation services," said Col. John Kidd, the Fort Stewart garrison commander.

Savannah District employees are justifiably proud of their accomplishments and customer-oriented "can-do" attitude that has enhanced readiness and greatly improved the quality of life for the Soldiers, families and civilians at both posts. The award was presented at the Installation Symposium in Kansas City in the spring.

Installation Support Professional of the Year – 2006

John Grigg, of Huntsville Engineering Center, is the second recipient of this award. Grigg's hard work, partnering, innovation, dedication, responsiveness and engineering knowledge have served the Army well over his long and successful career.

Grigg has been the force in developing and fielding EKO, a premier information tool that both enhances the communication within the installation support community of practice and facilitates management of various program initiatives. He spearheaded the installation Access Control Points Security Program and led a large, multi-organizational team in the successful procurement and installation of security equipment at more than 350 Army installations worldwide.

Grigg is an avid supporter of the Army's installation management community.

Corps' Northwestern Division LNO to IMCOM Northwest Region moves on

Tor Brunso was one of the original seven LNOs selected to represent the Corps at IMCOM region headquarters. Brunso was the go-between for the Corps' Northwestern Division and IMCOM's Northwest Region (NWR). Brunso left this summer to be the deputy engineer for U.S. Forces Command, but his numerous accomplishments in shaping the role and mission of all LNOs and helping facilitate mutual success in the important NWR remain.

He provided program management support for all Army facility management requirements touching the NWR. This included support for planning, programming and executing major construction, facility repair and modernization, real estate actions and support to environmental projects. He worked with three Corps divisions to provide consistent, high-quality service to 20 Army installations.

One example of Brunso's accomplishments was the development of an automated furniture cost-estimating tool. The development of this tool required coordination across multiple organizations. Its use has spread quickly throughout the Army and DoD. The furniture tool has produced cost savings and improved occupant satisfaction in newly completed or renovated facilities.

Randy Robinson, the director of the NWR, recognized Brunso's many accomplishments and contributions.

"Tor has been instrumental in the NWR's success in supporting the Army's transformation, alerting us to information of critical nature and accomplishing a myriad of other efforts," Robinson said.

Thomas Hodgini, chief of the Public Works Division, NWR, echoed those sentiments.

"We are fortunate to have him on our team," Hodgini said. "Through his efforts, the Northwest Region has enjoyed unparalleled success in partnership to meet the challenges inherent in implementing the facilities portion of the Army Campaign Plan."

The Corps has high performing LNOs at the other IMCOM regions, working hard to make the partnership more effective for Soldiers and their families.

In closing

Forecasts for FY 2007 predict another very challenging year as SRM funding remains tight, Army Base Realignment and Closure and GDPR initiatives move from planning to execution, Army Modular Force changes continue, MILCON Transformation begins an accelerated implementation and the nation continues its GWOT. The Corps will strive to improve support for IMCOM. Full partnerships with all federal and private sector participants are **KEY** to mutual future success.

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Pete Almquist is a senior staff engineer in the installation support community of practice at U.S. Army Corps of Engineers headquarters. PWD

Installation Support Center of Expertise provides support to Army Transformation

by Mirko Rakigjija

The U.S. Army Engineering and Support Center in Huntsville (HNC) is the Corps of Engineers' Installation Support Center of Expertise (ISCX). HNC's charter includes programs that are national, worldwide or broad in scope; require integrated facilities or systems that cross geographical boundaries; require a centralized management structure; or require commonality, standardization, multiple-site adaptation or technology transfer.

The ISCX mission **is to support headquarters and field organizations in a variety of public works areas, such as facility planning and programming for Army Transformation and BRAC, ranges and training land, facility demolition, utilities procurement, energy services, installation physical security and barracks and office furniture and furnishings.**

HNC partners with Corps districts and other organizations, thereby creating synergies in providing timely, cost effective and consistent installation support. This support ranges from programmatic in nature for large, geographically dispersed programs that involve centralized planning and management with decentralized execution to partnering in executing challenging state-of-the-art projects. The ISCX is committed to outstanding mission and quality-of-life support to military installations.

Huntsville Center **links business practices and innovative processes in support of DoD Installations. This support ranges from programmatic for large programs to partnering in executing challenging projects.**

Samples of the type of support provided by the ISCX are:

Army Stationing Facilities Support (ASFS) — ASFS provides Installation Management Command (IMCOM) with centralized programmatic support in the execution of master planning and military construction (MILCON) programming. ASFS is leading and coordinating the execution of more than 90 brigade-level facilities requirements analyses (RA) and planning charrettes (PC). These actions support Army plans to move more than 140,000 personnel over the next five years to support Army Transformation and Base Realignment and Closure (BRAC) stationing initiatives. Support includes managing program resources, normalizing costs associated with the execution of RAs and PCs, ensuring consistency of products and performing quality assurance of services and deliverables provided by Corps districts and contractors.

ASFS provided discrete planning products as tasked by the Installation Management Command, including infrastructure assessments at four installations, preparation of area development guides at six installations and development of specific-facility-types analyses. ASFS provided 1,056 economic analyses for relocatable facilities at 39 installations, including lease/buy analyses and source-of-funding determination for relocatable buildings support to Corps districts and to installations, putting together relocatable facility request packages.

ASFS supports Headquarters, U.S. Army Corps of Engineers' execution of MILCON Transformation by coordinating and integrating facility planning, programming and acquisition planning support. MILCON Transformation is the deputy assistant secretary of the Army for installations and housing (DASA, I&H) directive to revise the MILCON acquisition and construction processes. The goal is to provide cost-effective facilities in a timely manner to support our Soldiers and their families. ASFS leads the HNC Center of Standardization (COS) efforts for 15 facility types. Each COS is the Army's lifecycle manager for its assigned facility types.

Ranges and Training Land Program (RTLP) — RTLP provides program management and engineering support to the Army's Range Modernization Program, which consists of more than 200 projects throughout the world. Support includes establishing engineering criteria and standard designs, initial planning and site selection, facilitating planning charrettes and preparing MILCON programming documentation (DD Forms 1391) for Army G-3-funded training ranges. ISCX provides programmatic oversight and technical support to Corps districts responsible for design and construction of range projects.

The new range planning process includes a multi-disciplinary [Army Training Support Center, RTLP-MCX (Mandatory Center for Expertise), Ordnance and Explosives Center of Expertise, Program Execution Office simulations, training and instrumentation, and Army Environmental Command] technical team assessment process in the planning charrettes. Project assessments evaluate the executability of the project from the following functional areas: training capability, surface danger zone capability, constructability and standard design compliance, National Environmental Policy Act supporting documentation and issues, telecommunications infrastructure and unexploded ordnance. These requirements, together with roles and responsibilities, the revised project development process and integration of RTLP programmatic support activities, have been incorporated in Army Regulation 350-19 and an Engineer Range Regulation to be published in fiscal year 2007.

Facilities Reduction/Demolition Program (FRP) — FRP supports the ➤

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Army's operations and maintenance- and Army Family Housing-funded demolition program. HNC provides centralized planning and management with decentralized execution by installations and Corps districts. FRP tracks the demolition of facilities funded as part of Military Construction, Army (MCA) and reviews future MCA projects to ensure "one-for-one" are viable candidates for demolition. (Editor's note: The articles on pages 28 and 31 are examples of the FRP.) Through efficient planning, budgeting, coordination, management and value engineering assessments in FY 2006, FRP removed 613 excess buildings — 2.38 million square feet — at a net average cost of $9.10 per square foot.

The national indefinite delivery-indefinite quantity demolition contract uses an improved acquisition strategy with standardized contract language to ensure employment of industry best practices, thus improving recycling and waste stream reduction. Use of this contract achieved a $14 million cost savings for the Army. Awarding contracts at considerably lower cost than previous Army norms can be attributed to better demolition practices. Lead-based paint and asbestos need not be abated to renovation standards prior to demolition. Crushing concrete and brick and using them on site as engineer fill substantially reduces demolition costs.

The web-based FRP Best Practices Toolbox, https://eko.usace.army.mil/frp-toolbox/index.cfm, provides a standardized regionally sensitive cost estimating tool, economically feasible waste stream diversion percentages, recommended best demolition practices from lessons learned and easy access to an electronic technical library.

ISCX has developed and uses an Installation Status Report (ISR), Real Property Planning and Analysis System (RPLANS) and Integrated Facilities System (IFS) data query/comparison approach that enhances the garrison's ability to make more informed decisions on long- and short-range facilities planning.

Utility rate interventions — In a joint effort with the U.S. Army Regulatory Law Office, the Commercial Utilities (CU) program ensures that the cost of utilities services remains fair and reasonable for Army installations. This program has achieved $65.5 million in cost avoidance for the Army since 1999. During FY 2006, ISCX initiated six rate intervention and negotiation proceedings. Due to the complexity and issues involved, all cases are still before their respective public service commissions for final ruling.

Industry publications and available information on state commission websites indicate that, during FY 2007, about 10 utility rate increases can be expected. These rate increases can be attributed to higher interest rates, fuel costs, expiration of electric rate caps imposed in conjunction with electric industry deregulation, increased security and environmental requirements, upgrade and replacement of aging infrastructure, and utility company mergers.

Utility rate surveys — In support of and funded by IMCOM, 42 installation utility surveys identified $12.7 million in savings. IMCOM has funded an additional 28 utility rate reviews and surveys of installation utility systems. These savings primarily result from installations now using the correct tariff schedules, taking advantage of demand side management actions and installation of energy management control systems.

Utilities metering — By October 2012, all federal buildings are to be metered for efficient use of energy to the maximum extent practicable. HNC supported the Assistant Chief of Staff for Installation Management (ACSIM) in developing an Army Metering Implementation Plan that has been approved by the ACSIM and DASA, I&H and submitted to the Office of the Secretary of Defense Sept. 6. The plan includes program and data management execution, an acquisition strategy, reporting, an implementation schedule and metering priorities. Detailed program planning has begun toward execution in FY 2008-2012.

Energy Savings Performance Contract (ESPC) — ESPC is a major tool used to achieve energy savings. Contractors provide the financing and perform energy-related infrastructure improvements, and the government repays the contractors from the resultant energy cost savings over a period of up to 25 years. Our energy contractors have invested more than $418 million in 70 energy-related infrastructure projects at 30 Army installations.

Energy Engineering Analysis Program (EEAP) — EEAP is the management of the identification, scoping, development and scheduling of energy saving projects at Army installations, a newly assigned mission from IMCOM. Coordination with the ESPC program will provide insight on what kind of energy infrastructure upgrade projects are most appropriate for third-party financing. Coordination with the CU program will bring insights into offsetting expected rate increases. Coordination with the Utilities Metering program will allow for identifying meter locations concurrently with EEAP assessment activities.

Resource Efficiency Managers (REM) — ISCX contracts for and provides oversight by REMs who increase the effectiveness of installations' energy programs by reducing energy and water costs through the development of cost-effective programs and practices. The program is designed to be self-sustaining in that the savings generated more than offset the costs.

Installation Physical Security — From its start as the Access Control Points Equipment Program, this program has expanded to include Automation of Installation Entry (AIE) and support to the Integrated Commercial Off-the-Shelf Intrusion Detection System. The Installation Physical Security Team (IPST) leverages technical centers and worldwide presence to assess installations' physical and electronic security postures, develop projects to bring installations into compliance with Army standards and then efficiently implement the resulting approved projects. To date, the IPST has purchased and deployed $80 million of mobile security equipment, surveyed ➤

Managing relocatable buildings critical task in meeting stationing initiatives

by Mike Dean, Bill Allen and Dave Ullrich

To keep pace with the comprehensive transformation of Army installations into "Flagships of Readiness," the Army has employed relocatable buildings as interim facility solutions over the past four years. The management of relocatable buildings has become a critical task to meet key Army stationing initiatives timelines. Relocatable buildings serve as barracks, administrative, medical, supply, headquarters, dining and maintenance facilities.

Army relocatable building fiscal year 2006 summary: In FY 2006, the Army started to show a downward trend in the use of relocatable buildings after a large influx in FY 2004 and FY 2005. Over the past four years, the Army authorized the acquisition of 3,500 buildings totaling nearly 10 million square feet at a cost just under $900 million. In FY 2006, the Army approved an additional 3 million square feet of needed space in 1,063 relocatable buildings to support the Army's critical missions at a total cost of $258 million.

The Army's use of relocatable buildings such as these is on a downward trend.

Current installations with inventories over 450,000 square feet of relocatable buildings are Forts Bliss and Hood, Texas; Bragg, N.C.; Drum, N.Y.; Lewis, Wash.; Riley, Kan.; and Stewart, Ga. Authorizations for these inventories will expire in one to six years. ➤

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more than 300 installations worldwide and completed projects totaling $78 million at 50 installations. Work has begun on the AIE program, which is to be implemented at 55 installations by the end of FY 2009 at a total cost of $171 million.

Furniture — ISCX manages the procurement and delivery of furniture and furnishings for new and renovated barracks Armywide in support of IMCOM. ISCX procured furniture for 32,436 Soldier living spaces in FY 2006, which resulted in $14 million in programmatic savings. The program uses standardized and efficient processes, including electronic ordering. Savings were used to provide more than 4,500 spaces of critical replacement furnishings in support of Soldiers returning from overseas assignments and medical hold and other needed barracks furnishings. A new mission for FY 2006 is provision of office furniture for new MILCON facilities. ISCX managed designs and procurements for furniture for more than 100 buildings in late FY 2006.

The ISCX links business practices and innovative processes in its partnership with Corps districts and other organizations in providing comprehensive and cost-effective support to DoD installations. Through centralized management with decentralized execution, ISCX leverages program management, engineering, contracting and legal matrix expertise imbedded in its virtual project delivery teams.

The men and women of ISCX value their accomplishments and take pride in their contributions to the mission and quality of life of service members and to military installations, and look forward to continued service in meeting an evolving array of challenges.

Huntsville Center provides quality, efficient and consistent services through:

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- **Continuous improvement**

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Mirko Rakigjija, now retired from government service, was director of the Installation Support Center of Expertise. PWD

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Management challenge and the most common mistakes: Authority to use relocatable buildings restricts their use to temporary requirements. Relocatable buildings are acquired as equipment rather than real property. As such, obtaining them follows special fiscal rules established in Office of Management and Budget Circular A-11 and Defense Finance and Accounting Service Manual 37-100-07, which sets the statutory limits for "operations and maintenance, Army" (OMA) and "other procurement, Army" equipment procurement.

Army policy allows their use only as a last resort to meet urgent facility requirements. Existing facilities must be fully utilized first. The stringent tests to qualify for relocatable buildings preclude the long-term retention of such facilities as a substitute for military construction (MILCON).

This is the primary concern for Congress. Relocatable buildings are not sustainable long term. No Sustainment, Restoration and Modernization (SRM) resources are programmed to support the buildings. These buildings must be managed and then removed when the authorization period expires. Each relocatable building has a set authorized period of use after which the asset must be removed to either fulfill a new mission on the same or different installation or disposed through the installation Defense Reutilization Marketing Office. However, each new use of the relocatable building requires a new authorization.

The past year showed some of the common and avoidable errors in managing relocatable buildings:

1. Locally approved leases for more than one year or contracts containing options to go beyond one year cannot be authorized at the installation level. The Army has not delegated authority to approve leases for longer than one year or where the lease is greater than $100,000. In these circumstances, Department of the Army approval is required. Repeatedly renewing a one-year lease, approved at the local level, to fulfill a long-term requirement is not authorized and opens the installation to adverse fiscal determination.
2. The ability to use SRM funds to maintain relocatable buildings is limited. The Army is not programming SRM funds for relocatable building sustainment. Limited real property Base Operations Services are being resourced. This fiscal burden on installations further encourages relocatable building removal as soon as practical.
3. Construction projects to support site preparations for relocatable buildings must follow established policy for OMA and MILCON real property construction projects. When determining the scope of work for a construction project to support site preparations for relocatable buildings, the interdependence of the multiple sites needs to be taken into account. Splitting projects or other measures avoiding strict compliance with Army Regulations (AR) 420-10 and 415-15, and Department of Army Pamphlet 420-11 for relocatable building site preparation are not allowed.
4. Converting relocatable buildings into real property without approval is not authorized. The conversion of relocatable buildings leased or purchased as personal property requires approval of the Department of the Army and formal congressional notification before the conversion can proceed.

Relocatables should be the last resort for interim facility requirements. Installations must try to meet facility requirements with other space management actions, such as consolidation, relocation, etc., before reverting to relocatables.

Legal review: All relocatable actions are subject to legal review by the Army and the Department of Defense general counsels. Previous reviews have provided additional guidance for the method to assess and approve new relocatable building requests. This remains an evolving policy area. Future scrutiny will place heavy emphasis on the request justification, economic analysis and site preparation explanations as part of the legal review.

Management of leases: The predominant leased relocatable inventory supports U.S. Army Training and Doctrine Command missions with trainee barracks, classrooms, arms rooms and administrative headquarters. Most of these leases will expire by the end of FY 2007, with some as early as April. These inventories are at Forts Benning and Gordon, Ga.; Eustis and Lee, Va.; Huachuca, Ariz.; Jackson, S.C.; Sill, Okla.; and Leonard Wood, Mo. Requests for additional relocatable purchases or leases must meet stringent qualification requirements and justification resulting from economic analysis, in accordance with AR 420-18 and the Interim Change dated Oct. 21, 2004.

Achieving success: The Army leadership has committed to the changes to transform the Army installations into Flagships of Readiness. Relocatable buildings provide a short-term solution to meet quickly changing requirements to achieve the Army Campaign Plan objectives while not creating the conditions for "World War II wood of the 21st century." However, use of relocatables must follow strict rules for approval, use and source of funds.

The Army is moving in the right direction for managing relocatable buildings. The authority to approve relocatable buildings will get tighter. The opportunity to manage the existing large relocatable inventories will move to the forefront in the years ahead.

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Mike Dean, Bill Allen and Dave Ullrich work in the Facilities Policy Division at the Office of the Assistant Chief of Staff for Installation Management.
PWD

ERDC offers innovation, expertise for sustainable installations

by Dana Finney

Through Military Construction (MILCON) Transformation, the Army aims to achieve very proactive and admirable goals as it turns installations into "Flagships for the Future Modular Force." Achieving these ambitious objectives demands a growing reliance on innovation, technology, informed decisions and strategic planning.

The U.S. Army Engineer Research and Development Center (ERDC) provides research products and services that help the Army meet its transformation goals. ERDC's Construction Engineering Research Laboratory (CERL) is uniquely focused on sustainable military installations. CERL's two business areas are environmental quality (EQ) and infrastructure.

To meet installation EQ challenges, CERL's research and development (R&D) is directed toward military range management, threatened and endangered species (TES), environmental monitoring and assessment, cultural resources management, and military munitions. Infrastructure R&D includes energy, materials, corrosion and moisture control, infrastructure renewal and maintenance, sustainable installations, and theater assessment.

In addition to R&D, CERL can bring its expertise to the field on a reimbursable basis. The lab maintains extensive partnerships with academia, other government agencies and industry, which can bring added value to the services provided at installations. Following are some examples of ERDC's installation support activities over the past year.

Threatened and endangered species

Many environmental factors pose a threat to readiness due to restrictions on activities that may result from legislation, public pressure and other external forces. Training constraints can be imposed by TES habitat, denuded lands that produce an unrealistic training experience, erosion damage that limits access to ranges and creates hazards, noise complaints, heavy dust, cultural resources and others.

At Fort Hood, Texas, two endangered birds — the black-capped vireo and the golden-cheek warbler — had triggered restrictions on 20,841 hectares (51,500 acres) of training land as of 2002. CERL conducted studies to determine training impacts on the species, with the scientific results accepted by the U.S. Fish and Wildlife Service (FWS) and other stakeholders. In addition, Fort Hood personnel launched sound wildlife management practices that, combined with the study results, have greatly increased populations of both birds. As a result, today more than 17,000 hectares (42,000 acres) at Fort Hood have been returned to training use.

Innovative coating systems will be used to prevent further corrosion on an inlet pipe to a tank bath at Fort Bragg, N.C. Photo courtesy of the U.S. Army Engineer Research and Development Center

At other sites, CERL has been actively pursuing regional activities to help keep species-at-risk from being listed under the Endangered Species Act. A Memorandum of Agreement (MOA) signed by the Army and multiple other agencies seeks to unite efforts inside and outside the fence line at Fort Benning, Ga., to improve the gopher tortoise's viability in the southeastern United States. Already listed as "threatened" in the western portion of its range, a federal listing in the remainder of the tortoise's range would present serious restrictions on maneuver training at some of the Defense Department's (DoD) most important installations. In addition to the MOA, CERL is working with Fort Benning to study the efficacy of relocating tortoises on the installation.

ERDC's Environmental Laboratory (EL) is collaborating with CERL and the DoD Legacy Program to investigate the status of the endangered gray bat and help conserve the species' habitat. Gray bats occur on seven Army installations in the east, including Forts Leonard Wood, Mo.; Knox, Ky.; and Campbell, Ky. In 2005-06, the Army worked with FWS, other federal and state agencies, and private conservation organizations to undertake a rangewide survey of important gray bat winter hibernating caves, which occur primarily outside the fence line.

In addition, the DoD Legacy program provided funding for conservation improvements and protection of cave sites in several states. Recent surveys have shown stable to increasing populations throughout the gray bat's range, and Army conservation actions will contribute significantly to recovery of the species. EL is also experimenting with thermal infrared imagery to obtain better population data from maternal caves, which will improve the accuracy of future monitoring efforts.

Other EQ initiatives

CERL's training land management R&D has produced protocols, tools and guidance for design, siting and maintenance of new

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ranges from an environmental standpoint. These products have been transferred and are available from the Huntsville Engineering and Support Center and the Army Environmental Command.

An important technology for blast noise assessment was launched last year: the Noise Tool for the Range Managers Tool Kit. In addition, CERL completed acoustic signature measurements at Aberdeen Proving Ground, Md., of a new U.S. Marine Corps (USMC) 30 mm chain gun. This effort was requested to support ongoing development of the USMC Expeditionary Fighting Vehicle. The purpose was to develop an acoustic source model for use in the BNOISE2™ noise impact assessment software. The ERDC BNOISE2™ software is used DoDwide for noise management and actions related to the National Environmental Policy Act.

A new challenge for CERL involves mitigation of invasive species at installations. These species create problems for training lands and natural resources. Examples are: Scotch broom at Fort Lewis, Wash., grows higher than the laser weapons systems on vehicles, hindering visibility; and the fire ant at Fort Hood invades black-capped vireo and golden-cheek warbler nests and eats the hatchlings. Invasive species must be managed in ways that do not create undesirable effects on the rest of the ecosystem.

Corrosion and moisture control

Technology and processes to mitigate corrosion comprise a major program within CERL's infrastructure business area. Funding from the Office of the Secretary of Defense under the Corrosion Prevention and Control Program, with matching funds from the U. S. Army Installation Management Command, includes provisions to demonstrate and validate new or emerging technologies at installations.

Acoustic sensors installed above ground at Fort Hood can identify water leaks in below-ground pipes by detecting their sounds. The fort estimates it loses some $120,000 annually in water leaking from corroded pipes. The acoustic sensors, from which data can be collected remotely up to 6,600 feet away, avoid the high cost of having to manually find possible leaks and dig to pinpoint them. Fort Hood may avoid $3.2 million in lost water over the life of the sensors.

Training impact studies and sound management strategies at Fort Hood remove range use restrictions on thousands of acres, which were in place because of endangered birds like the black-capped vireo and the golden-cheeked warbler. Photos courtesy of the U.S. Army Engineer Research and Development Center

At Fort Bragg, N.C., a badly corroded inlet pipe to the grit settling chamber serving the Central Vehicle Wash Facility (CVWF) would have eventually caused delays in cleaning maneuver vehicles as they returned from training. This, in turn, would have increased the potential for concentration cell corrosion on the vehicles' undersides, which typically come back to the cantonment area caked with mud. CERL is field-testing the use of smart fluorescent and self-healing coatings to protect CVWF components from their inherently harsh environment.

Fluorescent coatings fluoresce under ultraviolet light inspection to reveal areas that have developed problems, including pits as small as one-tenth millimeter. Self-healing coatings, which are made by incorporating microcapsules that contain film formers and corrosion inhibitors, are added to the smart fluorescent compound. When the coating is scratched, microcapsules break and release the inhibitors and film formers, which protect the underlying steel and repair the damage.

Roadmap for BIM implementation

The Corps of Engineers has directed its districts to implement *Building Information Modeling (BIM)* technology to support both its MILCON Transformation and civil works projects. A BIM is a digital representation of physical and functional characteristics of a facility; as such, it serves as a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life cycle.

BIM technology can potentially increase the speed, reduce cost and improve quality-of-facility planning, design, construction, and operations and maintenance (O&M). Specifically it will: increase reuse of design work (reducing re-design effort); improve the speed and accuracy of transmitted information used in e-commerce; avoid costs of inadequate interoperability; enable automation of design, cost estimating, submittal checking and construction work; and support operations and maintenance activities.

In fiscal year 2006, at the Corps' request, CERL, the DoD CADD/GIS (Computer-Aided Design and Drafting/Geographical Information System) Center and Corps districts produced a technical report, ERDC-TR-06-01, *Building Information Modeling (BIM)*. The report details a roadmap for Corps districts to become proficient in BIM use. By 2008, all eight Centers of Standardization must be productive in BIM, with the rest of the districts to follow by 2010. Also by 2010, the Corps must be 90-percent compliant with the National BIM Standard (NBIMS). By 2012, NBIMS will be used for all projects as part of contract advertisement, award and submittals. Approaching 2020, NBIMS data will be leveraged for ➤

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substantial reduction in cost and time of constructed facilities as life-cycle tasks become automated.

To facilitate use of BIMs, CERL is also working with industry and other partners to develop a standard called "Construction Operations Building Information Exchange" or COBIE. This standard will allow information to be captured easily during design and construction in a commonly used format — a spreadsheet, which will then be loaded into BIM through an interface. This process will eliminate the boxes of paper that are currently delivered at the end of the project and replace them with document files and data that can also be directly loaded into Computerized Maintenance Management Systems. COBIE's development is being funded by NASA and the White House Office of Science and Technology.

CERL's energy support is helping installations implement direct digital control systems with interoperability. Photo courtesy of the U.S. Army Engineer Research and Development Center

Energy program

Over the past three years, Fort Hood has become the first Army installation to use a truly interoperable heating, ventilation and air-conditioning control strategy. The Directorate of Public Works is managing direct digital controls through a postwide, web-based system that uses an industry standard communications protocol and LONWORKS® technology, including an open-systems approach developed by CERL and numerous partners. This open-systems approach is specified in Unified Facilities Guide Specifications 13801 and 15951. Within the next five years, Fort Hood expects to have most of its large facilities integrated and to start expanding the system to include utilities such as water and electric distribution.

Fort Bragg commissioned CERL to complete a centralization study that will enable a similar control strategy and form the basis for an energy master plan to serve existing buildings and the huge MILCON program for the next five years. (See sidebar below.)

For more information about CERL's installation support activities, please contact the ERDC Public Affairs Office at (217) 373-6714 or dana.finney@us.army.mil.

Dana Finney is a public affairs specialist at the U.S. Army Engineer Research and Development Center's Construction Engineering Research Laboratory in Champaign, Ill. PWD

Fort Bragg initiates VTCs with CERL for information exchange

by Dana Finney

After Dr. Gay Kendall visited the Construction Engineering Research Laboratory (CERL) in Champaign, Ill., she thought, "Wouldn't it be great if we could communicate once a month or so and increase the flow of information about their work and how it can help Fort Bragg?"

Kendall is Bragg's resident science advisor from the Research, Development and Engineering Command's Field Assistance in Science and Technology program. She proposed that key personnel from the installation's Directorate of Public Works (DPW) link via video-teleconference (VTC) with experts at CERL in a free exchange of ideas related to specific topics.

"Everyone here (at Fort Bragg) is interested in trying new things to solve problems — looking at new technology and placing issues on the table where we can find solutions," she said. "Also, we're a large enough installation that we can take some risks that smaller sites can't, and then they look to us for new ways to do things."

Along with Military Construction (MILCON) Transformation, DPWs are facing huge new challenges at the same time that day-to-day business must proceed. Fort Bragg will execute a $2 billion MILCON program over the next five years as U.S. Forces Command headquarters and a fourth new brigade combat team join the 82nd Airborne Division.

The first VTC between CERL and Fort Bragg's DPW focused on corrosion, with CERL enlisting research scientists involved in the Department of Defense/Installation Management Command-funded Corrosion Prevention and Control Program. The following two VTCs were dedicated to energy issues, including a discussion of utility monitoring and control systems.

"Our energy manager seized on this opportunity to participate," Kendall said. "With an annual cost of $50 million for heating and cooling, if we can use CERL's help to lower that cost by even a few percent, we're making real progress."

Fort Hood, Texas, joined the third VTC, and other installations may be invited to the forum in the future.

POC is Annette Stumpf at the Construction Engineering Research Laboratory, (217) 373-4492, e-mail: annette.stumpf@us.army.mil. PWD

Army barracks program concentrates on quality

by the ACSIM Unaccompanied Personnel Housing team

As planners and programmers deal with the multitude of priorities, the Army's barracks team focuses on providing the highest quality support for Soldiers worldwide. Programmers and functional managers within the Office of the Assistant Chief of Staff for Installation Management (OACSIM) Unaccompanied Personnel Housing (UPH) branch strive to manage numerous initiatives to ensure Soldiers are provided the highest quality facility and professional support.

The UPH team continuously prioritizes resources to meet the Army's needs and the Soldiers' wants. Focus on all barracks-related fronts includes: the Permanent Party Whole Barracks Renewal program, the Training Barracks Modernization program, Barracks Facilities Standards, Army Furnishings, Centralized Barracks Management, ultimately resulting in the publication and dissemination of the annual Army Barracks Strategic Plan.

To detail what has transpired and is programmed, the following information tells the Army barracks story.

Permanent party barracks — Since the mid-1990s, the Army has funded or executed more than $8.5 billion in modernization funding to transition from World War II-, Korean- and Vietnam-era facilities into modernized complexes supporting the Army of the 21st century. The Whole Barracks Renewal Program encompasses the Barracks Modernization Program using Military Construction Army (MCA) funding and the Barracks Upgrade Program (BUP) using Operations and Maintenance Army (OMA) funding. These initiatives have received continuous focus from both Army and congressional leadership.

As the program comes to fruition, initiatives affecting this program include Army Transformation and Base Realignment and Closure 2005 (BRAC), and the Army's buy-out of the program has shifted from fiscal year 2009 to FY 2011, with an end-state beneficial occupancy date of FY 2013. To date, as of the FY 2007 presidential budget position, the Army has successfully transitioned more than 122,900 Soldiers of the initial requirement of 136,000 Soldiers into quality housing facilities.

This barracks complex at Fort Lewis, Wash., is an example of the focus on quality in Soldier housing. Photo courtesy of the Office of the Chief of Staff for Installation Management

Current Military Construction (MILCON) program funding included in the Program Objective Memorandum (POM) for 2008-13 is more than $5.2 billion of new construction in support of Army initiatives, which includes the remainder of the Barracks Modernization Program. Combined, these will support the Army of the 21st Century with quality housing for single Soldiers, in the ranks of private through sergeant in the United States, and private through staff sergeant outside the United States, well into the future.

An additional effort repaired health, life and safety concerns for about 40,000 Soldiers in FY 2005. The Army funded $252 million in Barracks Improvement Program projects to bring the quality of current facilities, regardless of configuration, to a common living standard.

Now the focus will be to sustain the inventory. With attentive leadership, programming and management of facilities sustainment funding, the inventory will remain high quality for the Soldiers of the future.

Program manager for the Army's permanent party barracks is Jerry Pederson, (703) 601-2487, DSN 329-2487, e-mail: gerald.pederson@hqda.army.mil.

Trainee barracks — With the Barracks Modernization Program nearing completion for permanent party barracks by 2011, the Army is shifting gears to focus on its training base inventory. Training barracks have deteriorated because of under-funded sustainment, coupled with aged and poorly configured facilities. These conditions affect training efficiency, reducing the amount of time available for teaching warrior tasks and battle drills.

To augment the inadequate inventory at some installations, relocatable facilities have been purchased or leased to provide additional barracks, classroom and administrative space.

Viewing the success of the barracks modernization program, the Army initiated the Training Barracks Modernization Program, resulting in about $4 billion through a combination of OMA and MILCON funding. Much like the permanent party BUP (OMA-funded), the Training Barracks Upgrade Program (TBUP) will modernize existing training barracks and associated administrative spaces, including starships and rolling pin barracks. This TBUP funding will begin in FY 2007 with about $100 million annually. ➤

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While modernizing facilities will ensure longer life for much of the current inventory, the MCA portion will focus on construction of battalion-sized training complexes for basic training and advanced individual training (AIT), providing barracks spaces for 1,200 trainees plus administrative space for company operations, battalion headquarters, dining facilities and a running track. Although basic training will remain in open-bay, gang-latrine configuration, AIT barracks will house two Soldiers per room sharing one bathroom, or "2 + 0."

The Army invested $562 million in MILCON in FY 2006 and 2007 and has more than $1.699 billion in POM 2008-13 towards the modernization effort. As other Army initiatives are completed, additional funding will be addressed in POM 2010-15. To ensure the current inventory provides a safe and healthy training environment, the Army also funded $235 million in Trainee Barracks Improvement Program funds in FY 2006. This program has 100 percent of contract awards completed, and maintenance projects have begun in earnest.

Program manager for the Army's trainee/other barracks is Matt Kirmse, (703) 601-0708, DSN 329-0708, e-mail: matthew.kirmse@hqda.army.mil.

Operational Readiness Training Complex (ORTC) — As the Army relies heavily on its Reserve and National Guard components, annual training and mobilization facilities are also receiving attention. Many of the facilities for this mission are currently World War II wood construction and will be demolished as the Army replaces them. In the interim, installations with newer barracks facilities still face shortages or inefficiencies with other critical mission facilities such as dining, company administrative and vehicle maintenance facilities.

The ORTC facilities' configuration has also been re-designed. ORTCs will provide barracks spaces for 752 Soldiers — 672 enlisted and 80 senior enlisted or officers, administrative spaces for company, battalion and brigade, battalion headquarters, as well as dining and vehicle maintenance facilities.

In 2005, the Army funded $70 million to build the barracks portion of the ORTCs at Forts Riley, Kan.; Carson, Colo.; and Bliss, Texas. In additional, about $372 million for ORTC facilities is included in the POM 2008-13 for the years 2010-2013.

Program manager for the Army's ORTC facilities is Matt Kirmse, (703) 601-0708, DSN 329-0708, e-mail: matthew.kirmse@hqda.army.mil.

The Army furnishings program is centrally funded and managed by the Office of the Assistant Chief of Staff for Installation Management. Photo courtesy of the Office of the Chief of Staff for Installation Management

Army Furnishings Program — Initial Issue Furnishings (IIF), part of the Barracks Modernization Program, is centrally funded and managed by the UPH team at OACSIM. This program provides newly constructed or centrally funded renovated barracks facilities with new, quality standardized furnishings for single Soldiers. The UPH team coordinates and establishes priority funding for furnishings requirements, considering project beneficial occupancy dates and availability of funds. This process is closely coordinated with the U.S. Army Engineering and Support Center (CEHNC), Huntsville, Ala. This IIF team procures furnishings and monitors the process from contract award to installation.

The well-being of single Soldiers depends largely on the quality of the interior design of their living quarters and community areas. Quality interior designs are achieved through teamwork involving the installation furnishings manager, the installation master planner, the IIF program manager, CEHNC and Corps of Engineers' district designers.

OACSIM will begin management and funding of an IIF program for all administrative furniture for newly constructed MCA projects. Installation Management Command is charged with developing, programming and funding all replacement furnishings for barracks and administrative facilities. In 2006, the Army funded about $23 million in barracks IIF furnishings and about $55 million for IIF administrative furnishings for the 2006 construction requirements.

Program managers for the Army's Furnishings Program are Barbara Koerner, (703) 601-3584 DSN 329-3584, e-mail: barbara.koerner@hqda.army.mil; and Gabriele Shelley, (703) 601-2512, DSN 329-2512, e-mail: gabriele.shelley@hqda.army.mil.

Centralized Barracks Management (CBM) program — The secretary of the Army approved a Holistic Barracks Strategy that overhauls the permanent party barracks management environment to include focus on assignments, terminations, maintenance management and a commitment to modernization of these functions. CBM is a key component of the strategy. A plan is underway for worldwide implementation of CBM to provide management of gar- ➤

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rison resources to ensure high quality of life for single Soldiers.

To test the effectiveness of this concept on a large scale with a war-fighting and deploying unit, the OACSIM funded a pilot program that served about 6,000 Soldiers of the 4th Infantry Division at Fort Hood, Texas. The pilot program tested the transition from traditional unit-controlled barracks management to a civilian blend of a government and contractor workforce under the garrison commander's Directorate of Public Works. Success at unit level provided the opportunity to shift focus to the entire garrison during FY 2007, and the lessons learned at Fort Hood are useful in the development of Armywide implementation.

The CBM will be developed around:

- Focusing on sustainment maintenance funding;
- Creating an installation champion for barracks issues to improve overall accountability;
- Assigning and terminating rooms while focusing efforts to achieve and maintain unit integrity at the brigade level or lower;
- Identifying, tracking, ordering and planning requirements for sustainment maintenance and repair;
- Executing accountability of damage collection for non-fair wear and tear;
- Controlling certificates of non-availability issuance to maximize utilization;
- Championing utilization to lower unnecessary housing costs Armywide.

It is anticipated that CBM will be implemented in FY 2007.

Program manager for CBM is Todd Hunter, (703) 601-3578, DSN 329-3578, e-mail: todd.hunter@hqda.army.mil.

Army barracks standards — The Army has entered a new era with several initiatives affecting facility designs and construction requirements. These initiatives include: Army Modular Force (AMF), Global Defense Posture Realignment (GDPR), BRAC and MILCON Transformation. In FY 2006, the Army successfully awarded 100 percent of BRAC contracts, all under the approved program amount.

AMF re-organized how the Army fights, so facilities need to reflect this change. GDPR, BRAC and AMF projects created the catalyst for quick change to meet construction timelines, and MILCON Transformation enabled the Army to provide more economical and quicker turnaround facilities. The MILCON Transformation concept reduces the acquisition process paperwork using a standardized Request for Proposal (RFP) process. It adopts industry construction standards allowing greater flexibility in construction materials and type of construction, and provides the tools to respond to market conditions and labor rates, allowing the Army to reduce costs, speed construction, open bidder competition and focus on providing the best facility for the Soldiers' needs.

Early results have shown promise and yielded some lessons learned that will be incorporated in the next RFP along with any changes to Army facility standards and standard designs.

Program manager for the Army's barracks standards plan is Charles Huffman, (703) 601-2504, DSN 329-2504, e-mail: charles.huffman@hqda.army.mil.

Army Barracks Strategic Plan — Since 2002, the Army has reported the progress of its comprehensive barracks programs via the publication and dissemination of the Barracks Master Plan (BMP). Past BMPs articulated the history of the program and identified the most recently programmed new construction or modernization of barracks.

In 2007, the BMP will transform into the Barracks Strategic Plan (BSP). The successes of the BMP will be used in combination with all barracks programs and processes that modernize and maintain the barracks inventory. The BSP will report the current and projected status for planning, programming and execution of the Barracks Modernization Program, ORTCs, trainee barracks and the Holistic Barracks Strategy.

Previous editions of the BMP are currently available online. Plans are to publish the 2007 BSP on the OACSIM website by third quarter FY 2007. For more information, go to: http://www.hqda.army.mil/acsimweb/homepage.shtml.

Program manager for the Army's Strategic Master Plan is George Lloyd, (703) 601-2511, DSN 329-2511, e-mail: george.lloyd@hqda.army.mil.

The Army of the future will face numerous challenges while helping to ensure freedom for the country, as well as providing valuable assistance to allies when called upon. The responsibility to ensure adequate and sufficient facilities and programs to meet the needs of Soldiers while in garrisons rests with many, and the Army's UPH team stands up to its part of the challenge.

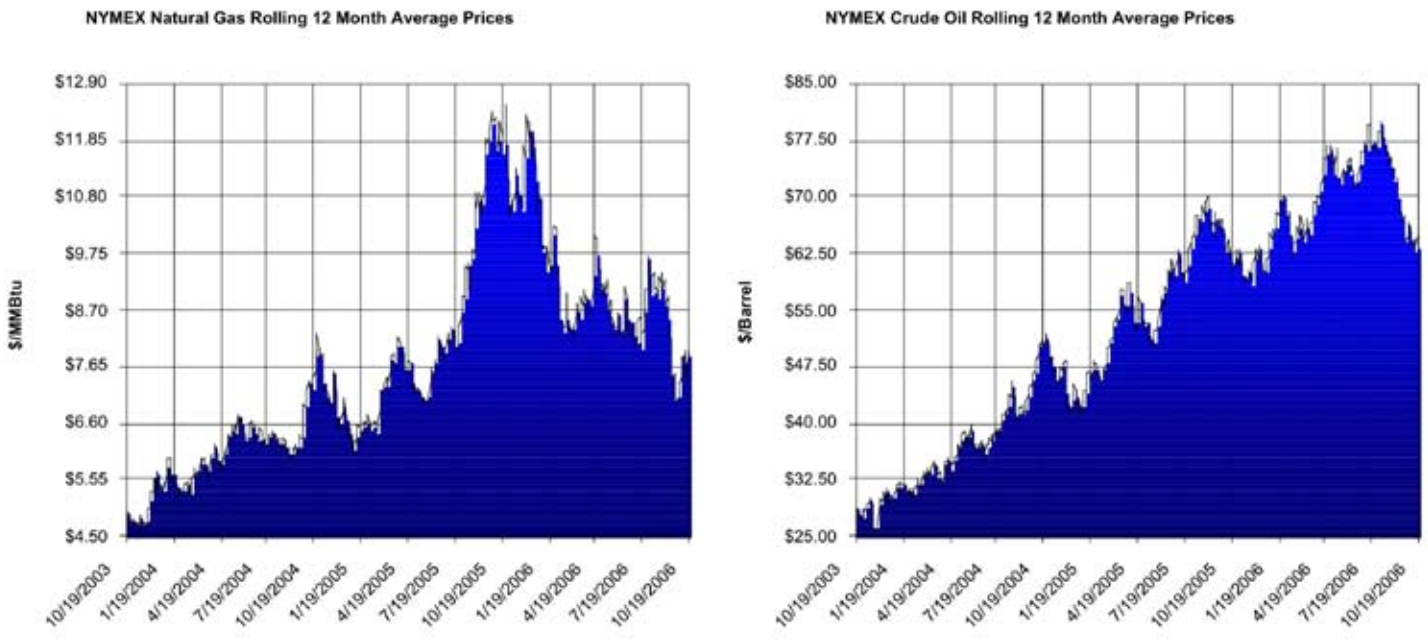
POC is Suzanne Harrison, chief of the Unaccompanied Personnel Housing Branch in the Office of the Assistant Chief of Staff for Installation Management, (703) 601-2498, DSN 329-2498, e-mail: suzanne.harrison@hqda.army.mil. **PWD**

Fiscal year 2006: a volatile year in the energy markets

by Scott McCain and John Crunkilton

Over the past year, energy captured national attention in a number of ways. Sweeping energy legislation, weather-related disasters, growing global energy demand, and geopolitical tensions have combined to change how we think about energy. Consumers noticed, and painfully remembered, the historically high energy prices and the adverse effect they had on homes and businesses as shown in Figure 1.

Figure 1: Historical NYMEX prices



Source: Reuters and Booz Allen Analysis

In the midst of one of the United States' most active and destructive hurricane seasons, the president signed into law the long anticipated Energy Policy Act of 2005. This omnibus piece of legislation was designed to address, among other things, rising natural gas prices, enhancing the Federal Energy Regulatory Commission's power market authority, encouraging the consumption of a host of renewable energy sources aimed at reducing the country's dependence on foreign-produced crude oil and protecting the environment.

Several factors drive costs

After the introduction of the Energy Policy Act of 2005, Hurricanes Katrina and Rita passed through the Gulf of Mexico causing unprecedented damage to the nation's largest single source of natural gas and oil supply and significantly damaging a large portion of the nation's oil refineries. This event ignited energy prices. In a matter of a few short days, natural gas prices along the Gulf Coast almost reached the $20 per dekatherm level as nearly 90 percent of the Gulf's natural gas production was shut-in. In fact, nearly 20 percent of the Gulf's production was permanently lost.

Following the hurricanes and during the time of repair and recovery operations in the Gulf, geopolitical events drove oil prices higher as the world was concerned that demand would outpace supply. Civil unrest in Nigeria led to the interruption of a large portion of the oil production delivery infrastructure and forced one of the world's largest producers, Shell Oil, to evacuate the region. This event was followed by similar attacks from local insurgents against Iraq's fragile infrastructure resulting in Iraq being unable to produce additional crude oil. Adding to the already tense geopolitical situation, Iran revealed its nuclear aspirations and the world community responded with the possibility of economic sanctions. Currently, Iran is one of the top Organization of the Petroleum Exporting Countries (OPEC) producers of crude oil, and the possibility of losing their supply to the world market further provided support for rising prices.

Rising world crude oil prices further inflamed a growing problem at home as domestic natural gas prices continued to move higher during the October, November and December time period. This is a direct result of the globalization of natural gas and all energy products. Figure 2 shows natural gas prices mirror the price direction of crude oil. Historically, natural gas prices have a .75 correlation to crude oil prices as evidenced by the period Feb. 8 through ➤

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Aug. 31, 2005. After hurricanes Katrina and Rita, natural gas prices were greater than a one-to-one correlation to crude oil as the market was concerned that there would be supply shortages during the winter. When the winter of 2005-06 was much warmer than normal, prices returned to more historical levels and have actually been below the historical correlation of .75, because the natural gas supply situation is very positive with natural gas storage levels anticipated to enter the current winter season in record high territory.

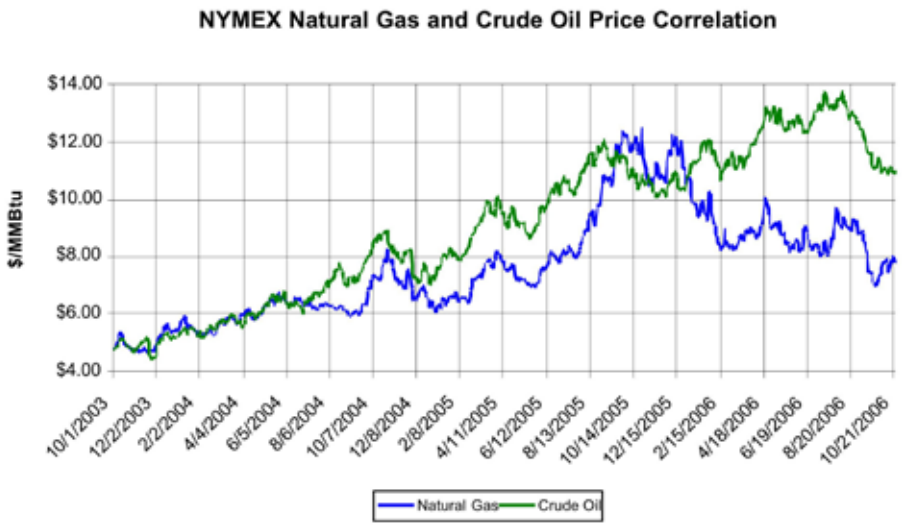
After the initial damage reports from the Gulf had been digested, natural gas prices reversed their upward trend as supply concerns waned prior to the start of the winter heating season. The alarm was sounded for the possibility of yet another hurricane with Wilma threatening to pass through the Gulf of Mexico and with good reason. Hurricane Wilma was the most intense storm recorded in the Atlantic basin and represented only the third Category 5 hurricane to form in the month of October. Luckily for producers, the threat was brief as the storm did not follow the path of Katrina and Rita.

While the industry's focus was on the extensive repairs required to reestablish the flow of energy from the Gulf region, there was a growing concern that the necessary underground inventories of natural gas to meet the country's heating demand would not be met. This concern was highlighted further by the first-ever-recorded storage withdrawal during the traditional injection season to meet the country's cooling demand in response to the extended above-normal weather. This event sounded the alarm that storage would not be full for winter, repairs in the Gulf would not be completed in time, and, as a result, natural gas prices would increase by a minimum of 50 percent. As if this bad news was not enough, private and government forecasters began predicting the arrival of a colder-than-normal 2005-06 winter.

This dire forecast partially became a reality as the weather in November and the first two weeks of December did experience below average temperatures; but as the country approached the traditional holiday season, the weather patterns shifted and temperatures that were significantly above-normal arrived and, to the surprise of many experts, remained. This sudden temperature shift provided price relief to consumers across the country. From this point on, natural gas prices began to decline down from their record highs aided by the mild weather. Figure 3 compares the actual heating degree days (HDDs) to normal HDDs.

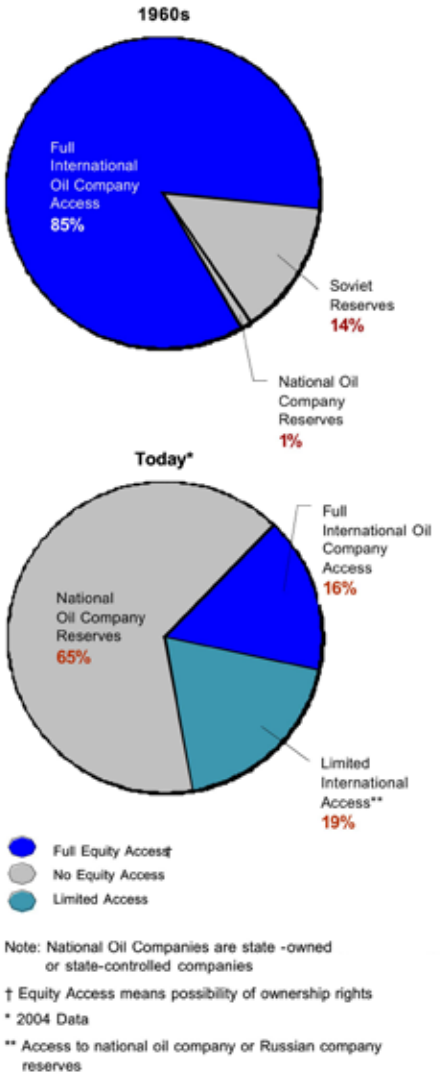
The 2006 natural gas storage injection season, beginning April 1, started with record levels of inventories as the lack of winter reduced heating demand across the country and thus the need for storage withdrawals. The long-term supply concerns did not abate, but were pushed into the future, which provided an overwhelming financial incentive for storage operators to inject supplies into storage at a record pace. Aggressive injection activity combined with the lack of any hurricane activity or above-normal weather provided the ➤

Figure 2: Price correlation



Source: Reuters and Booz Allen Analysis

Figure 3: Heating degree days



Source: Reuters and Booz Allen Analysis

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perfect set of circumstances for the industry to eclipse the record-ending storage inventory level of 3.48 billion cubic feet set in 1990.

The market, as evidenced by the New York Mercantile Exchange (NYMEX), still holds natural gas futures prices at a premium to the current month. Since January, the NYMEX natural gas futures for the winter months (November through March) averaged more than $4 per dekatherm higher than the current month. So while the market was willing to lower the current price of natural gas, it continued to price the out months at high levels. The market is looking for an event to justify the high prices and only lowers the price for the current month. To date, there has not been an event to support the higher future prices.

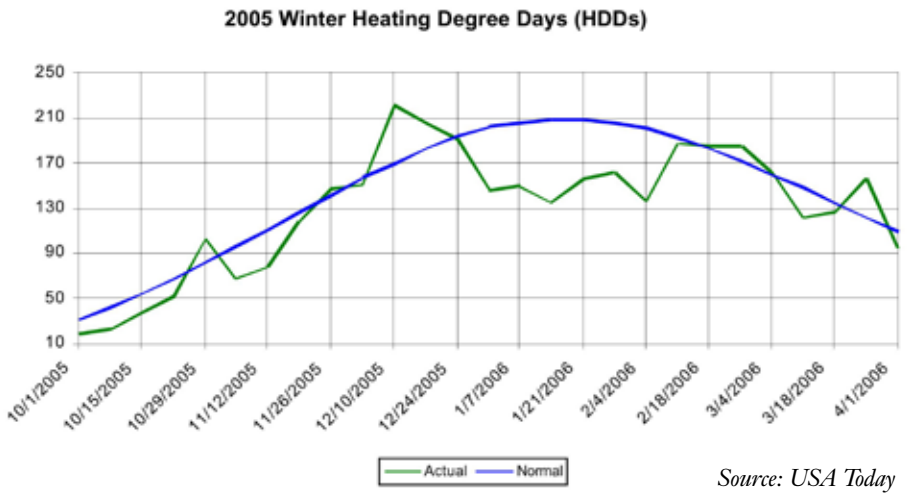
Another concern raised during this year of turmoil was the rise of the state-controlled, national oil companies as illustrated in Figure 4. Producing countries around the world have long relied on the large international oil companies (IOC), like ExxonMobil, Shell Oil and British Petroleum to develop their plentiful reserves; but the rise in energy prices has ignited a round of resource nationalization that has left the IOCs scrambling. After ExxonMobil reported their record $36 billion in earnings, it was noted that 65 percent of their income was derived from operations abroad. A trend that may be in jeopardy based on the nationalization efforts of the major producing countries around the world.

As national oil companies develop their reserves without the assistance of IOCs, or countries such as Venezuela ask the IOCs to leave, there is concern that the crude oil price and supply could be controlled by countries that are not friendly with the United States. As demonstrated in Figure 2, when crude oil prices rise, the price of natural gas also has a tendency to rise in conjunction with oil prices. If oil prices are not being controlled by pure market forces and continue to stay at the current elevated levels or move into new record territory because of supply constraints, it would be expected that natural gas and other utility energy commodities would follow the rise as well.

Looking forward, natural gas fundamentals — storage, weather, supply and demand — will remain positive and put pressure on prices to continue a decline for the 2006-07 winter. The record natural gas storage levels will easily be sufficient to fill demand during the winter and it is expected the ending storage level will be near to last year's level of 1.6 trillion cubic feet. Weather forecasts are for a warmer than normal winter across much of the country. However, the long-range forecast for last year was not accurate, and this year's long-range hurricane forecast has also not been accurate. Given the storage levels, the winter would need to be much colder than normal to adversely effect the fundamental situation.

The crude oil pricing scenario in the future is much different. OPEC has stated it desires to cut production levels by one million barrels per day. While it is uncertain if other member countries will comply, Saudi Arabia is able to make this cut itself. OPEC has been stating it wants to see prices stay at the $60 per barrel price point, and, in the past, OPEC has been successful in establishing price floors. It is more likely that prices will remain in the high $50- to low $60-dollar price range with opportunities to spike higher if additional geopolitical unrest occurs.

Figure 4: Global Oil



Source: USA Today

What this means for Army installations

Installations should anticipate continued price volatility in the energy market. An example of this volatility is the cooler than normal weather in October that sent natural gas prices 14 percent higher in the first few days. The market will react to any negative event with a quick price spike even with positive fundamentals. However, it is anticipated that the 2006-07 winter natural gas prices will be closer to prices paid in fiscal year 2005. If the long-term forecast of a warmer-than-normal winter is accurate, expect the lowest prices of the winter to occur in February and March as suppliers must use storage gas, and the market supply will be higher than demand.

Installations should be monitoring power costs. Many electric utilities have not fully recovered their fuel supply costs from 2005 and are petitioning their utility commissions for higher rates. Installations should ensure they are involved in rate cases that will raise their power costs. When a rate increase is proposed, an installation should contact the Regulatory Law and Intellectual Property Office, U.S. Army Legal Services Agency. This office is responsible for assisting the chief of engineers and the deputy Army power procurement officer on utility regulatory matters and for providing representation on behalf of the Department of the Army before federal and state regulatory bodies in all ➤

PREP has banner year, exceeds past performance

by Angie Stoyas

For the sixth consecutive year, the Special Missions Office, Power Reliability Enhancement Program (PREP) has exceeded its past performance in virtually every activity undertaken. At the time of this update, nine Technical Manuals (TMs) have been published, three of which are new and six updated. In addition, significant technology transfer has occurred through the Institute of Electrical and Electronic Engineers (IEEE) and the National Fire Protection Association (NFPA), establishing our PREP, and thus the U.S. Army Corps of Engineers, standards as a leading-edge contributor in the area of utility systems reliability and critical operations power systems.

At the heart of all PREP does is an unwavering dedication to serving its Command, Control, Communications, Computer, Intelligence, Surveillance, Reconnaissance (C4ISR) customers. Striving to serve them better and to more comprehensively meet their needs are its highest priorities, whether for the development of a new reliability centered maintenance (RCM) program for Raven Rock, Pa., Military Complex (RRMC), a power quality survey at the National Military Command Center (NMCC) or the publishing of electrical and mechanical reliability data in the form of a Corps TM. This focus provides the initiative to drive technical guidance innovation, cross-departmental cooperation among services and Department of Defense agencies, and the highest standard of quality.

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cases and hearings relating to communications, transportation, electricity, gas, water and sewer.

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From left to right, the Power Reliability Enhancement Program team includes: Peter Cascio, Chris Thompson, Angie Stoyas, Peyton Hale, Ronald Mundt, Simon Bowes and Hai Ngo. Photo by Virginia Williams

A good example of PREP's creative innovation is the publishing of TM 5-602-1, *Utility Systems Terrorism Countermeasures for C4ISR Facilities*, and TM 5-601, *Supervisory Control and Data Acquisition (SCADA) Systems for C4ISR Facilities*.

Interest in PREP's data collection efforts and results remains strong as evidenced by telephone requests from various agencies and services. Accordingly, PREP published the data it collected and analyzed in the early 1990s in the new TM 5-698-5, *Survey of Reliability and Availability Information for Power Distribution, Power Generation, and Heating, Ventilating and Air Conditioning (HVAC) Components for Commercial, Industrial and Utility Installations*, dated July 22, 2006. This data was also published in the NFPA's *Electrical Equipment Committee 70B 2006 Recommended Practice*.

To further illustrate the influence PREP has had on the private sector, an article appeared in the August 2006 edition of *EC&M Magazine* with the title "NFPA 70B Grows Stronger." Written by Thomas H. Bishop, P.E., the article documents the reliability data, RCM, commissioning and SCADA maintenance practices PREP developed.

PREP has also succeeded in spearheading an effort to get the IEEE Gold Book revised and updated. As a result, we expect the PREP data from TM 5-698-5 to be published in the 2007 edition of the IEEE Gold Book.

The new Code Making Panel 20 created for the 2008 National Electric Code revision cycle is responsible for proposals and comments related to critical operations power systems and the development of a new article covering this topic. At the panel's January 2006 meeting, PREP was successful in incorporating many of its utility reliability and commissioning concepts in the new proposed article.

As the leading engineering organization in the area of power reliability nationally, PREP has increased awareness by manufacturers, contractors and government agencies on power reliability concerns. During this fiscal year, PREP developed TM 5-698-6, a reliability data collection to further define how data should be collected for availability studies; TM 5-698-4, a failure modes and effects criticality analysis to help determine reliability-centered maintenance concepts, and TM 5-698-2, an updated reliability-centered maintenance to reflect additional knowledge gained during the analysis that was done for RRMC.

PREP has again successfully specified, procured and accepted several SCADA systems and simulators for evaluation. This work continues to enhance PREP's ability to provide guidance to NMCC sites on C4ISR SCADA operation and procurement. A new project will be kicked off early this fiscal year.

PREP team engineers have participated in reliability collection efforts and in reliability analysis techniques, conducting at least one reliability/availability study ➤

Corps' Baltimore District completes banner military construction year

by Christopher Augsburger

The U.S. Army Corps of Engineers, Baltimore District experienced an active 2006, completing notable projects in support of its 23 military installations.

The Corps and its partners cut the ribbon on a new Defense Threat Reduction Center at Fort Belvoir, Va., in January 2006. The center is the new headquarters for the Defense Threat Reduction Agency, a Department of Defense combat support agency. Photo courtesy of Centex Construction

Defense Threat Reduction Agency

The district opened 2006 alongside its customers and partners as they cut the ribbon for the Defense Threat Reduction Center at Fort Belvoir, Va., in January. The center is the new headquarters for the Defense Threat Reduction Agency (DTRA), a Department of Defense combat support agency.

Built by the Baltimore District, the new center accommodates 1,500 employees and consolidates DTRA resources in the national capital region into a single, more secure facility. Construction began March 14, 2003, on the $75-million, 328,000-square-foot building with an adjacent 1,000-space parking garage. The building meshes private offices and cubicles in an open-office design and features maximum natural light, an efficient floor plan and flexibility for future changes.

The facility houses a conference center with flexible seating that provides enough space for up to 150 people. The facility's force protection construction criteria included vehicle stand-off distance, blast resistant walls and windows, special structural reinforcing and protected air intakes. Specially designed spaces house a worldwide operations center and a collaboration center that supports both military and civil authorities by using the best ➤

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in-house to familiarize themselves with the computer software and the process. The metrics for reliability analysis techniques are getting stabilized and standardized, so PREP engineers now have the capability to provide quality control on reliability studies conducted by contractors.

This year, the PREP team completed an in-depth power quality survey at the Pentagon NMCC that identified harmonic and grounding issues and solutions. A four-man team conducted "live power" evaluations over eight weeks, resulting in an excellent report with quality verifiable data prepared by one of our senior intern engineers.

The Pentagon survey also provided training to PREP engineers in the deployment of new power line monitoring equipment that was acquired last year. PREP continues to be one of the few engineering organizations that conducts "live power" measurements (up to 480 volts).

PREP has successfully completed the National Security Agency (NSA), Fort Meade, Md., Campus Concept Design Project with Peyton Hale as project manager. Project engineer Tuan Duong submitted the final report to the NSA in June. Contractors Washington Group International of Princeton, N.J., and Alion Science & Technology performed an outstanding study with many valuable recommendations that will enhance the power reliability for that facility.

Continuously improving our performance and setting new records in mission-related activities such as technical guidance development and reliability metrics is important, but just as critical as the results themselves is the way in which they are achieved. Putting customers first, rewarding employees on the basis of their individual merits and mission-related activities, contributing to national engineering capabilities, documenting knowledge that will assist in establishing proven reliability metrics and long-term engineering value creation are the concepts that have shaped PREP's unique culture as an important part of the Special Missions Office and the U.S. Army Corps of Engineers.

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science, technology and operational personnel and concepts to counter weapons of mass destruction threats.

Baltimore District also handled the building's interior design, which entailed $10 million in furnishings.

The Freedom Inn

Baltimore District participated in the official opening of a modern, 21,000-square-foot dining facility in May. The design and construction of the $10-million Freedom Inn Dining Facility at Fort Meade, Md., represents a tremendous step forward in military construction. New Army protocols and state-of-the-art design criteria for all future dining facilities construction, such as the ability to serve more than 800 diners in a 90-minute period, were used for the first time on the Freedom Inn.

The Freedom Inn offers Soldiers and civilians buffet-style dining in five dining areas, including a veranda. The facility also contains a separate kitchen, two food preparation areas and an office area. The successful completion of the Freedom Inn stands as the benchmark by which future dining facilities will be measured.

Implosion of Tencza Terrace

On June 4, Baltimore District, in partnership with the Engineering and Support Center in Huntsville, Ala., Bhate Associates of Birmingham, Ala., and Controlled Demolitions Inc., of Phoenix, Md., imploded Tencza Terrace, a residential building on the campus of Fort Myer, Va. The Corps traditionally removes buildings by mechanical demolition, such as a wrecking ball and crane, but decided to implode Tencza Terrace since the cost of implosion was $100,000 less than a mechanical demolition.

The Old Guard Vehicle Maintenance Facility

Baltimore District cut the ribbon on The Old Guard Vehicle Maintenance Facility at Fort Myer, in October. This new facility was built in a configuration adapted to The Old Guard ceremonial and contingency missions, making it a more efficient working space.

The structure is a 27,000-square-foot, two-story maintenance facility with drive-through vehicle bays on the lower level and administrative and training facilities on the second floor. The total cost was about $9 million dollars. The Soldiers who work in this facility are part of a team that conducts sensitive and complex operations in support of the national capital region. The military funeral ceremonies The Old Guard conducts honor our fallen comrades and their families.

The design and construction of the 21,000-square-foot, $10-million dining facility at Fort Meade, Md., represents a tremendous step forward in military construction, offering Soldiers and civilians buffet-style dining in five dining areas, including a veranda. Photo by Travis Edwards, Fort Meade Public Affairs Office

Fort Detrick Dining Facility

The district helped ceremoniously open a new dining facility in October at Fort Detrick, Md., part of the Unaccompanied Enlisted Personnel Housing Project, Phase 2 (UEPH 2). UEPH 2 includes: two barracks buildings, a company operations building and the dining facility. The dining facility cost is about $3.4 million out of $16 million for all of UEPH 2.

Designed by Baltimore District and built by Coakley Williams Construction, this dining facility is a standard Army design for a 150- to 200-person dining facility adapted to Fort Detrick and updated to meet current Army food service standards with the latest equipment and modern services.

The facility consists of a carryout area, full kitchen, seating area and serving area, which are open to the entire post. The new facility's carryout capability will cut contract costs. The design allows 90 percent of the building to be shut down when operating carry out, therefore cutting down on labor costs for wait staff and dishwashers.

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Fort Huachuca incorporates 'bright ideas' into energy conservation

Reprinted from The Fort Huachuca Scout

Whether cooling offices and homes amid the unrelenting Arizona summer or running the electronic devices needed to get work done, energy powers activities on Fort Huachuca, Ariz. The office charged with identifying, implementing and managing innovative energy and water-efficient technologies is the fort's Energy and Water Management Office.

The Energy and Water Management Office invests in projects that promote efficiency, improve the working and residential quality of life on the fort and provide a good return on investment to taxpayers. Fort Huachuca possesses excellent natural and renewable energy resources. Its solar resources are among the best in the United States. Wind, which is also solar driven, is in moderate supply relative to solar capabilities, but the potential is there. There have also been some indications of low-level geothermal energy on the post's East Range and in the canyons in the Huachuca Mountains.

According to Energy and Water Conservation office reports, the fort has been out in front of the Department of Defense (DoD) in harnessing solar energy. It has been more than 25 years since a 2,000 square-foot solar system for the indoor pool and a 900 square-foot solar domestic hot water system were installed at Barnes Field House, in 1980 and 1981 respectively. In 1982, a three-phase, five-kilowatt photovoltaic (PV) system, which converts solar energy into electricity, was installed on Holman Guest House.

Daylighting in Barnes Field House at Fort Huachuca conserves energy by reducing the need for artificial light. Photo courtesy of Bill Stein

Since then, the projects have really taken off. In 1992, six PV-powered marquee signs were installed at the main and east gates, and, in 1994 and 1995, the first PV-powered street and parking lot lights were installed at the Noncommissioned Officers Academy and Alchesay Barracks. The Thrift Shop building was outfitted in 1996 with a 30-kilowatt PV system of about 100 panels producing direct current electricity that is converted to alternating current electricity by five inverters on the back of the building. Later that same year, a 384 square-foot, ground-mounted solar domestic hot water system was installed in front of Koch Barracks in Prosser Village, which provides about half of the barracks' hot water.

Photovoltaic panels on its roof provide a source of renewable energy for the Fort Huachuca Thrift Shop. Photo courtesy of Bill Stein

A daylighting system that keeps the lights turned off when sufficient natural light is available was installed in 1998 at Fort Huachuca's Libby Army Airfield Hangar #1. In 2001, two 2,300 square-foot Solarwall transpired-air solar collectors were installed on Hangars #1 and #3. The Solarwall is a windowless wall that pulls air in through slots. The air is heated and then distributed throughout the building with a fan in the winter. In the summer, the air is pulled early in the morning to help cool the hangars. Libby Army Airfield is home to the second and third such Solarwalls to be installed in the Army.

DoD has taken a keen interest in the fort's alternative and renewable energy potential. In 1997, Riley Barracks received one of the DoD-sponsored, 200-kilowatt fuel cells that produce electricity, space heating, and hot water for the building. DoD chose Fort Huachuca for a Dish-Stirling solar thermal electric generator, which concentrates sunlight into the receiver of a heat engine to produce 10 kilowatts of electricity. Installed in 1996 at the Joint Interoperability Test Command, the developmental prototype is the only one in DoD and one of about a dozen in the world.

Records from the Energy and Water Management Office show that the fort's electricity demand has declined by 7 percent since 1994. While this percentage may sound small, one must consider that when nothing is done to reduce electricity use, demand typically climbs 3 percent a year as new electronic devices are plugged in. To overcome that annual growth and even reduce overall demand during the past decade takes a team effort and smart projects.

Over the past decade, projects totaling more than $4 million that focus on energy conservation and renewables have been completed, resulting in $600,000 in annual energy savings. The primary vehicle for the fort's energy conservation projects ➤

End-of-year project ensures Fort Wainwright's power plant ready for winter

by Debra Valine

The end of the fiscal year may not be the best time to get tasked with a rush project, but through teamwork and cooperation, it's not impossible to make it happen.

Fort Wainwright, Alaska, needed large scale maintenance on its switchgear and breaker system at the power plant and a backup power source for the plant before winter began. The Installation Management Command (IMCOM) contacted the Engineering and Support Center in Huntsville, Ala., to manage the project.

Work started on the $409,000 project in June. The deadline to have the maintenance completed was Oct. 1 — before winter set in — a critical deadline, because one of the steam turbine generators is scheduled to be out of service this winter, leaving the post with the possibility of an electricity shortage.

"The project went smoothly," said Pat Driscoll, the chief of Utilities for Public Works at Fort Wainwright. "The Huntsville Center was wonderful to work with; I was impressed with the professionalism displayed by John (Trudell) and Mark (Allen)."

The power plant was operational before, during and after the repairs.

"This maintenance provides us with the reliability to get through the upcoming harsh weather conditions." Driscoll said.

Partners in the project included IMCOM; Fort Richardson, Alaska, Directorate of Public Works; Fort Wainwright Directorate of Public Works; the Engineering and Support Center – Huntsville, Ala.; Golden Valley Electric Association (GVEA); and contractor partner Ameresco Solutions, Inc., of Charlotte, N.C.

"Everybody pulled together to make it happen," said John Trudell, project manager with the Facilities Repair and Renewal program, Project Management Directorate, at Huntsville Center. "The reason this effort has been accomplished is that everyone working on the project executed his part very quickly and competently. If it weren't for every one of these people, we could not have met the deadline. Contracting did their part to get the contracts and mods out. Resource Management obligated and approved funds. The Engineering Directorate's Electrical Branch wrote the scope of work and provided technical expertise. GVEA and Ameresco mobilized their forces and accomplished a great deal in a short time."

"I wish all military construction could run as efficiently as your section (Huntsville Center) accomplishes the business at hand," said Allan Lucht, director of Public Works, U.S. Army Garrison, Alaska, in an e-mail to Trudell.

"Testing and commissioning took place the week of Sept. 18 so that the switchgear and backup power source will be in full operation by the deadline," Trudell said. "If one of the breakers had failed, it could have caused a domino effect and loss of power for the whole system. Fort Wainwright could not function if that happened in the middle of the winter."

Maintenance had not been done on the full switchgear in a number of years, Trudell said. The switchgear that needed repair provides power to the entire installation.

"If it doesn't work, it needs to be repaired quickly," Trudell said. Maintenance and repairs had been made only as necessary to keep the system operational.

"These breakers and relays had been originally built in the 1950s, so we had to make sure they operated properly and that Fort Wainwright had extra breakers on hand in case they needed them," Trudell said. "We rebuilt the ones in the plant and got some spares of the same vintage from Eielson Air Force Base (Alaska)."

Golden Valley Electric Association, the local utility company, was an integral part of this effort, moving quickly to put in an emergency transformer and feeder to provide backup power for the post, Trudell said.

With this maintenance completed and tested, the power plant at Fort Wainwright is ready for winter.

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has been the Energy Savings Performance Contract (ESPC). The fort contracts with a vendor that buys and installs upfront suitable technologies while the fort pays for the goods and services on a yearly basis, partly out of the dollars saved from energy efficiency gains.

Over the past decade, the Energy and Water Management Office has been awarded one presidential, eight federal and four Army-level awards for its efforts in water conservation, renewable energy and energy efficiency.

There is always more that can be done. The Energy and Water Management Office hopes to get more daylighting and Solarwall projects started, continue to utilize PV systems on buildings with large roof areas, like Riley Barracks and Greely Hall, and improve water efficiency postwide. There are also plans to install a 600-kilowatt, commercial-scale wind turbine on the West Range under the Army's Energy Conservation Investment Program, plus a 50-kilowatt, multiple vertical-axis wind turbine and a solar heating and cooling system at the South Central Plant under the ESPC contract.

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Fort Lewis demos technology to recycle lead from 'deconstructed' building materials

by Brendalyn Carpenter

In September, Fort Lewis, Wash., was the first test site to conduct a demonstration of new technology to recycle lead from lead-based-paint (LBP)-coated wood salvaged during building deconstruction. By removing the hazardous material, the wood was made suitable and safe for resale to the public or for reuse at the fort.

"When dealing with LBP, you have a couple of options," said Ken Smith, Fort Lewis Public Works' waste management program manager. "One is to encapsulate or cover it with another layer of paint, or send it off to a landfill that can accommodate it," he said.

Neither method is preferred as Army installations look toward more sustainable solutions to managing the construction and demolition debris that will be generated by the removal of the Army's excess buildings over the next 15 years.

The U.S. Army Corps of Engineers' Construction Engineering Research Laboratory (CERL) is evaluating various options for reuse, reclamation, disposal and treatment of materials resulting from demolition of old military buildings. In a partnership with Fort Lewis, the Environmental Protection Agency and the Corps' Seattle District, CERL demonstrated this innovative system developed by ARI Technologies, Inc.

The equipment comprises a transportable thermal unit that heats the lead-containing wood shavings — generated by planing the boards to mechanically remove the layer of LBP — to 1,500 degrees Fahrenheit to separate the wood from the LBP and capture the recovered lead to recycle it (e.g., for manufacture of batteries).

The oven is preheated using propane, but once the lead and wood are introduced, the wood shavings provide the energy necessary to sustain the process.

ARI Technologies teamed with MCS Environmental, the contractor for the deconstruction project on Fort Lewis, to pull 16,000 lineal feet of lumber and send it to an off-site mill for planing. From that, ARI Technologies recovered 6,000 pounds of sawdust and paint shavings that were used in testing the new system.

Nick Bostwick, waste technician with ARI Technologies, examines the material discharged from the primary combustion chamber. Photo by Brendalyn Carpenter.

The emphasis on this new technology is in creating a sustainable process that will keep toxic lead out of landfills, said Dale Timmons, ARI Technologies' president.

"Test results confirm that by using the new technology, the 6,000 pounds of sawdust was converted into a 30-percent-lead-concentrated product weighing 180 pounds," Timmons said. Total volume was reduced 97 percent, not including the lumber that was recovered for future reuse. "So if you take into account the overall program, the total volume reduction of waste is well over 99 percent," he said.

"A primary goal for the system was to contain all materials within — that is, have no fugitive emissions — and we satisfied that requirement," said Rich Lampo, CERL materials engineer. "I would call that a great success," he said.

According to ARI Technologies, samples taken of the air around the work space were tested and found to be below levels of detection. Emissions from the processing system were also well below regulatory standards, ranging from less than one to two-billionths of a gram per cubic meter of air.

The company is using the test results from Fort Lewis to enhance the system.

"We're getting ready to do a second test at Fort Chaffee, Ark., in November, and we plan to incorporate some design modifications based on what we learned at Fort Lewis. At this point, the future use of this technology looks promising," Lampo said.

The demonstration at Fort Lewis was a congressionally funded project to evaluate ARI's prototype thermal processing system. The lead-containing shavings and scraps used in the system were generated from boards deconstructed from a World War II barracks removal project at North Fort Lewis.

Fort Lewis Public Works staff are now eyeing the possibility of reusing the recovered wood.

"MCS Environmental, the contractor that now owns the wood, was recently awarded a new contract for converting an old chapel into a new environmental education and conference center, so they could potentially use that wood on the new chapel project," Smith said.

Huge environmental and economic advantages accrue from deconstructing old buildings and recycling the materials. Fort Lewis alone has more than 100 buildings slated for removal over the next few years. Implemented nationwide, a successful building deconstruction effort will:

- reclaim millions of board feet of high-quality, old-growth lumber;
- keep thousands of tons of leachable lead out of landfills;
- help extend the lifespan of existing landfills, both on- and off-post; ➤

Fort Lewis gets the lead out of old barracks

by Spc. Leah R. Burton

Many of the old buildings at Fort Lewis, Wash., were painted with lead-based paint during a time when the harmful effects of lead were not fully understood. As local contractor MCS Environmental's employees recover usable building materials from 12 World War II barracks on North Fort Lewis, much of what they are encountering is wood painted with lead-based paint, which presents possible liability issues for selling.

"The Corps of Engineers has been very proactive in recognizing that there are a lot of very useful building materials inside your old barracks," said Matt Schultz, MCS Environmental project manager. "It's all previous building material. There are external marketplaces for those materials."

As an example, Schultz cited the post's EcoPark, where wood scrap is periodically reduced by wood chippers into mulch.

The contractors initially work to get the materials off the building intact, after which they take them to a central processing area on site, where they remove nails and staples.

"Once that's done, we stack it in piles, and it's ready to be sent off to the recycling marketplace," Schultz said.

According to the Environmental Protection Agency's web site at www.epa.gov, chipping wood with lead-based paint may produce lead dust that can be inhaled or tracked into homes on people's shoes contributing to potential health problems, such as brain and nervous system damage in children, complications in pregnancy, and high blood pressure and muscle and joint pain in adults.

For several years, the Corps has been using woodworking devices to plane off the lead-based paint and a thin veneer of underlying wood to produce a clean, reusable, high-quality wood product. The planing process, however, leaves the hazardous waste of lead-contaminated wood shavings, said Tom Napier, research architect from the Corps' Construction Engineering Research Laboratory (CERL).

Contractors removing building materials from World War II barracks like this one on North Fort Lewis encounter lead-based paint contamination. Photo by Spc. Leah R. Burton

"If those shavings go to landfills, they can still leach into the groundwater," Napier said.

CERL contracted local firm ARI Technologies, Inc., to design and construct a recovery kiln. The kiln processes the paint and wood shavings into an ash rich with lead compounds. This ash can then be sent to a smelter that can process it into metallic lead, which is still a useful product. (See related article on page 26.)

"We've found that there is some prime-quality wood that otherwise would have been destined to landfills, because it has a little bit of paint on it," said Rich Lampo, CERL materials engineer.

"It's old-growth Douglas fir. We think it's just not right to destroy that wood material just because of the paint," Napier said.

While the purpose of the deconstruction project is to recover usable building materials, the project presented an opportunity for CERL and ARI Technologies, Inc., to conduct the first full-scale test of the experimental process.

The process of recycling the lead and the wood will help to achieve the Installation Sustainability Program's goal of net zero solid waste by the year 2025, said Mike Roberts of the Directorate of Public Works' Environmental and Natural Resources Division, Toxic Substances Management Program. If the current testing proves the process successful, it could significantly affect the future of building demolition and deconstruction Armywide.

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Spc. Leah R. Burton is with I Corps Public Affairs. The article was reprinted with permission from the Northwest Guardian. PWD

(continued from previous page)

- reduce the volume of lead-tainted materials by more than 97 percent;
- recycle the lead from lead-based paint into new products;
- reduce the chances of contaminating groundwater with lead from landfills;
- and potentially save taxpayers $100 to $400 million in waste disposal costs.

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Relocation eliminates unneeded structures at no cost to Fort Huachuca

by Debra Valine

A public, sealed-bid sale of unneeded structures at Fort Huachuca, Ariz., Aug. 25 and 26 resulted in the removal of seven unneeded structures from the fort's real property inventory at no cost to the installation.

"It worked out very well," said Paul Kays, the installation facilities and space utilization officer with Fort Huachuca's Directorate of Public Works (DPW). "I was very well pleased with the way everything went. All the major buildings we wanted to get rid of, we got rid of. The sale helped us meet our goals for reducing some of the old structures."

Fort Huachuca DPW worked with the U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville, Ala., (Huntsville Center) and the Corps' Los Angeles District on the sale. Huntsville Center's Facilities Reduction Program (FRP), part of the Installation Support Center of Expertise, helps installations find the most cost-effective and environmentally friendly way to remove unneeded or unwanted structures.

Using a centrally funded, locally executed process, the Huntsville Center provided the funds, and the on-site engineer organized the sale.

"The original budget request to remove these facilities using conventional methods was $156,000," said Michael Norton, the FRP program manager. "It would cost us $6 - $7 per square foot to remove those buildings. We looked at it in our Best Practices Toolbox (https://frptoolbox.erdc.usace.army.mil/frptoolbox/index.cfm), and the answer was to allow the public to bid on them. This is just another way to save money and the environment."

FRP estimated the cost using conventional methods would be $77,500. The Installation Management Command's sustainability policy requires that facility removal be accomplished in a way that reduces the negative impact on the environment. The Army Environmental Center requires that 50 percent by weight of all demolition debris be diverted from the landfill. By removing the structures from Fort Huachuca via relocation, the project resulted in 100 percent diversion of material.

"We tried a process here that went very well," said Nancy Mehaffie, the project manager from the Los Angeles District. "We sold the buildings, so it was a success.

Nancy Mehaffie, right, Corps of Engineers project manager at Fort Huachuca, Ariz., and successful bidder, Russell Jennings, owner of the Tombstone RV Resort, discuss the buildings available for sale Aug. 25-26 at Fort Huachuca. Jennings bought a double-wide trailer to convert into motel rooms. Courtesy photo.

"The people who showed up here were very enthusiastic," Mehaffie said. "One guy bought four or five buildings. He plans to share them with his neighbors. He just asked them to help him remove and divide the buildings."

The bidders were also enthusiastic about the prices they paid for the buildings, she said.

"One of the buildings sold is a trailer that is being moved to Tombstone where it will be used in a recreational vehicle park," Mehaffie said. "We thought that one would be hard to get rid of because of its age. It turned out the bidder got it for $10, and he will pay to have it hauled off. It will work out well for him."

"The installation and the Corps of Engineers did a very good job orchestrating the auction, advertising included outstanding coverage and the television ad was excellent," said Tom Richter, one of the purchasers. "The purchasers had a wonderful relationship with the coordinators who were flexible."

Mehaffie said some of the people told her they are looking forward to more buildings being auctioned.

"We still have some to get rid of — as people move out of them," she said.

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Showcase your story

Would you like to see your installation, agency, program or project showcased in the

Public Works Digest?

Submit a story to the Digest by sending it to: mary.b.thompson@usace.army.mil

Fort Belvoir welcomes new concept in installation living: town center

by Melina Rodriguez

Colonial reenactments, the singing of the "Star-Spangled Banner" and a town crier began the celebration of an unusual ribbon cutting ceremony to mark the grand opening in August of the Fort Belvoir, Va., Town Center. The town center is the first of its kind, and so the theme of the day was "history in the making."

"We are here today creating the first town center in all of the Department of Defense," said Keith Eastin, assistant secretary of the Army for installations and environment. "The people of Fort Belvoir can get together and feel that they are neighbors."

The town center incorporates residential housing and 11 Army and Air Force Exchange Service (AAFES) retail shops in a main street-type atmosphere. It includes a coffee shop, a military rental store, a health store, a shoppette, a dry cleaner, a furniture store, a barber shop, a day spa, a clock shop and several other retail outlets. The space above the name-brand retail shops contains 25 residential units open to military members of all ranks and their families. And there is a welcome center for Soldiers and their families.

"I've got the greatest job in the Army as the installation commander," Col. Brian Lauritzen said at the ceremony. "I've been told that while on the installation I'm always on the job, so now I can go shopping, get a spa treatment ... and a cup of coffee, and I'm still on the job."

"The new town center is the first mixed-use development incorporating AAFES retail into the Residential Communities Initiative," said Casey Nolan, the project director. "The concept was to integrate the new housing with retail tenants and the Clark Pinnacle Welcome Center."

Clark Pinnacle's development team came together with the architect, Torti Gallas, to create the "main street" atmosphere. They envisioned having a mixed-use element to bring the community together, said Nolan. Mixed-use town centers are a common practice in the private market.

The new Fort Belvoir Town Center's retail shops opened in August, completing the project. Photo by Marny Malin, Belvoir Eagle

The residential units were completed in October 2005, and 24 of the 25 homes were leased within two weeks to enlisted and officer families. The welcome center was completed in January. The opening of the retail shops in August represented the completion of the town center project.

"This is a historic moment," said Chaplain (Lt. Col.) Bart Physioc. "This is a model for installations around the world, a gathering place for the community that draws Fort Belvoir closer together."

Community members who attended the ceremony were also enthusiastic.

"This is very convenient to shop, and I just got a job at the Starbucks," said Patty Le Geer, who walked to the celebration from her home in Herryford Village with her two sons Daniel, 3, and Alexander, 4. "I think it's great. You can bring the kids out for a stroll... and it's three blocks away."

"In one area, the community can come together," said Linda Stone, retired Army civilian, who brought her granddaughter, Anna Lewis, 2, to the celebration. "They really created a family atmosphere."

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Tobyhanna gets green — up on the roof

by Jacqueline Boucher

Tobyhanna Army Depot, Pa., environmentalists believe they are the first to plant a garden on the roof of a Department of Defense building. Funding from a Joint Services Initiative allowed depot officials to install a vegetative — "green"— roof on one wing of the headquarters building this summer. A green roof, as the name implies, is a roof covered in plants.

"Whoever thought your roofer would one day be a botanist?" said Randy Didier, Environmental Management Division (EMD) chief.

Workers covered the 14,141 square-foot roof space with about 1,500 pre-planted modules — recycled black plastic trays measuring four feet long, two feet wide and four inches deep that contained 16 plants each.

"We asked for sedum perennials because they are drought and flood resistant, retain water and have shallow root systems," said Mike Parrent, pollution prevention program manager, Industrial Risk Management Directorate. "Sedum is a low-maintenance shrub that does well in this climate."

The green roof technology offers a flexible and modular design that can be adjusted and rearranged after installation. The modular system can be installed on any new or existing roof surface in good condition with structural capacity. Modules can be moved to deal with a maintenance issue and then put back in place.

"Anytime you can save the government money and cut back on energy consumption, especially in this day and age, it's a plus," Didier said. "Research suggests we can expect up to a 30-percent reduction in energy costs down the road."

Reports also claim a green roof will extend the life of the existing rubber roof covering. Didier indicated the rubber roof is reported to last up to three times longer than the stone ballast it replaced.

"Ultraviolet rays break down the rubber and sealants on ballast-type roofs," said Don Rusnak, engineering technician for the Public Works Directorate. The green roof modules should provide better protection once the plants spread out and cover the area, he said.

The environmental staff will monitor the savings and health of the roof for a full year, ensure the plants remain viable and then analyze the results before proposing future roof replacements.

"We will be comparing the green roof to another wing of the building," Parrent said. "If this works as expected, the technology will be incorporated into the depot's master plan."

Shortly after the project was completed, Didier noticed a marked difference in temperature from the green roof and the control roof. At the time, he estimated it was 80 degrees on the green roof and close to 120 on the rock ballast roof, the control roof.

"When you're walking up there, it's comfortable, cooler," he said.

Soil and dense vegetation cover have a great insulation value, according to the Maryland Department of the Environment web site. Working together, the two elements enhance the energy efficiency of a building and reduce noise. The vegetation cover protects the roof from direct sun exposure and prevents the roof surface from heating up. The growing media, plants and layers of trapped air serve as sound insulators.

EMD personnel worked closely with the Public Works Directorate's Engineering Division, which manages all depot facilities to include one million square feet of flat roofs.

"We wanted their input as soon as we started considering the idea of the vegetative roof," Didier said. "If we could, we'd put green roofs wherever possible, but we have to make sure the roofs can hold the additional weight and provide a short payback period."

Standard practice at the depot is to perform a structural analysis on any building to ensure the roof can handle added weight.

As the sedum plants grow, they will spread out and cover the entire module. The plants are drought resistant, flood resistant and able to stand up to high winds. Photo by Steve Grzezdzinski

However, since parts of the selected building were designed to accept a third floor, it was the logical choice for this green roof demonstration project.

There was no question the roof would have enough load capacity to support the vegetative roof, according to Ed Kovaleski, Engineering Division chief, and it offered the opportunity to use the other wing as a control, because the features are similar.

Installation work performed on the building was also not intrusive to the mission and took relatively few steps to ready the roof, Rusnak said.

The Joint Services Initiative provides funding for projects that would save money, positively affect the environment and be transferable across the services. This demonstration project is part of a plan to improve the energy performance of buildings, reduce storm water runoff, extend roof life and contribute to a healthier environment. ➤

Huntsville's Facilities Reduction Program raised the bar for waste diversion in 2006

by Debra Valine

The Facilities Reduction Program (FRP) at the U.S. Army Corps of Engineers, Engineering and Support Center in Huntsville, Ala., saw many successes in 2006. One project in particular exceeded the Army's standard for diversion of waste from landfill by more than 40 percent.

The FRP, part of the Installation Support Center of Expertise, has several options available for installations that need to remove unneeded structures. A Best Practices Toolbox that provides information on those options is located on the Internet at: https://eko.usace.army.mil/frp-toolbox/index.cfm. The toolbox provides a demolition cost estimating tool, solid waste diversion estimated quantities by the five major categories — wood; metal; masonry, asphalt, concrete and stone; land clearing debris; and other — mandated by the Office of the Assistant Chief of Staff for Installation Management (OACSIM) and best practices. Anyone with access to Army Knowledge Online can access the site.

Removing the structures is the primary focus, but each project is approached with environmental considerations in place. The Installation Management Command Sustainability Policy requires that facility removal be accomplished in such a fashion as to reduce the negative impact on the environment. OACSIM requires that 50 percent by weight of all demolition debris be diverted from the landfill.

Huntsville Center achieved 90 percent diversion through reuse or recycling on a very successful project at Fort Myer, Va.

Fort Myer success story

In June, Huntsville Center worked with the Installation Management Command, the Fort Myer Directorate of Public Works, the Corps of Engineers' Baltimore District, and Bhate Associates of Birmingham, Ala., to implode the 12-story Tencza Terrace housing, Building 501.

Originally, $3.1 million was requested for demolition of Building 501. The actual demolition cost after Huntsville Center's assistance was $1,760,000 — a savings of $1,340,000 and at least a month of time compared to traditional demolition methods.

"It's rare to implode a building on an Army installation," said Morgan Ruther, a civil engineer with the Huntsville Center. "Implosion is only cost effective on taller buildings. Buildings up to five stories can generally be taken down by conventional methods at less cost."

Ninety percent of the materials in the building were either recycled or reused, including windows, sheetrock, doors, cabinets, piping, fixtures, metal, and the concrete and steel rubble that remained after the building was imploded. Most of the materials that normally would have gone to a landfill were recycled or reused, said Michael Norton, the FRP program manager.

The chart shows the types of materials recycled and the percentages of each.

BUILDING 501, TENCZA TERRACE, FORT MYER, VA.

Materials	Wt (Tons)	Percent
Total Materials Recycled	15,551.80	91.1%
Dry Wall	62	0.4%
Aluminum	9	0.1%
Copper	3.7	0.0%
Miscellaneous metals	45.5	0.3%
Rebar	500	2.9%
Concrete	14,917.00	87.4%
Cabinets and Doors	10	0.1%
Lead	0.1	0.0%
Electrical items	2	0.0%
Miscellaneous materials	2.5	0.0%
Total Material Disposed	1,512.80	8.9%
Asbestos tile	120	0.7%
Construction Debris	1,392.80	8.2%
Total	17,064.60	100.0%

"The Army waste diversion standard is 50 percent by weight," Norton said. "That is important because the diversion standard is by weight, not volume. We exceeded that goal."

By December, the waste diversion estimates for all FRP fiscal year 2006 Operations and Maintenance, Army- and Army Family Housing-funded projects as well as FY 2007 Military Construction, Army-funded projects will be posted on the FRP Team Page on the Engineering Knowledge Online web site, Norton said.

"This will help installations and other Corps of Engineers districts determine what they need to do to achieve the 50 percent diversion standard established by the ACSIM policy that goes into effect in the second quarter of FY 2007."

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The depot submitted three proposals to the Joint Services Initiative and was given the green light to install the roof and to begin using a fuel cell generator. The fuel cell generator proposal involves replacing a diesel backup generator with a fuel cell generator that will serve as the division's source of backup power.

"Our green roof idea was number one on the funding list," Parrent said. "It'll be nice to look back on this one day and realize our work had a positive impact on the planet."

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Army activates IMCOM to improve support to Soldiers

by Ned Christensen

The Army activated the Installation Management Command (IMCOM) Oct. 24 to consolidate and strengthen installation support services to Soldiers and their families through the full authority of command. Lt. Gen. Robert Wilson assumed the IMCOM command at a Pentagon ceremony hosted by Lt. Gen. James Campbell, director of the Army staff.

The new command places the former Installation Management Agency (IMA), the former Community and Family Support Center (CFSC) and the former Army Environmental Center (AEC) under a single command as a direct reporting unit.

"Today we take the next step in the evolution of Army installation management … in order to create a more efficient, effective and agile organization to ensure the best Army in the world is supported by the best installations in the world," Wilson said.

In keynote remarks, Campbell drew a parallel between the IMCOM and the new Army advertising slogan, *Army Strong*. He defined "strong" as the ability to stand up for oneself, while "Army Strong" is the ability to stand up for everyone else.

"In my mind, the Installation Management Command shows that it is Army Strong each and every day," Campbell said, "with the strength to make an installation a community; a set of quarters a home; and complete strangers, friends.

"[IMCOM has the strength] to ease separation and connect the Soldier on point with a family at home; the strength to genuinely care for the loved ones back home so that the young Soldier facing life and death can focus on the mission at hand."

As IMCOM commander, Wilson is dual-hatted as the Army's Assistant Chief of Staff for Installation Management, reporting directly to the Army Chief of Staff. Brig. Gen. John A. Macdonald, former IMA director, became IMCOM's deputy commander.

Under IMCOM, CFSC is renamed the Family and Morale, Welfare and Recreation Command and becomes a subordinate command of IMCOM, led by Brig. Gen. Belinda Pinckney, with its own flag. The AEC is now the Army Environmental Command — also a subordinate command, led by Col. Michael O'Keefe, with its own flag.

The new Installation Management Command flag is unfurled during the activation ceremony Oct. 24 at the Pentagon by Lt. Gen. Robert Wilson (right), the new IMCOM commander, with the assistance of flag bearer Sgt. Dustin Jay Devine (left) of the 3rd U.S. Infantry Regiment (Old Guard). Photo by Stephen Oertwig, Installation Management Command

The flag casings and uncasings were a symbolic focal point of the activation ceremony, and the three gold and red flags, standing together in a rank, seemed to further underscore the unity of purpose inherent in the new organization.

"The Army has never been in greater need of installations as 'Flagships of Readiness' than it is now," Wilson said, citing the construction, personnel and equipment realignments required to support Base Realignment and Closure, Army Modular Force and Global Defense Posture Realignment. He said BRAC alone accounts for more than 1,200 actions that affect the IMCOM mission.

The Army announced the establishment of IMCOM as a direct reporting unit in August. This initiative is part of Army efforts to reorganize its commands and specified headquarters to obtain the most agile command and control structures to support the expeditionary, modular force.

The full authority of command is vital to effectively direct the vast resources necessary to support troop deployments while meeting the needs of their families, Army officials said in announcing the decision to form IMCOM. Consolidating the installation management structure under IMCOM optimizes resources, protects the environment and enhances the well-being of the Army community. IMCOM will provide fast, efficient and agile support to commanders in the performance of their tactical and strategic missions.

The new command, currently headquartered in Virginia and Maryland, will relocate in 2010 to Fort Sam Houston, Texas, in accordance with requirements of the 2005 Base Realignment and Closure (BRAC) round. The deputy commanding general will locate in Texas, while the commanding general and ACSIM functions will remain at the Pentagon.

The new command also will consolidate the four Installation Management Agency regions within the continental United States into two as required by BRAC. The Western Region will stand up in November at Fort Sam Houston, with consolida- ➤

Fort Benning faces military construction challenges with help from the Corps

by Sarah McCleary

A flood of Soldiers relocating to Fort Benning, Ga., is driving the demand for new facilities on and off the installation. The Armor School, out of Fort Knox, Ky., is moving to Fort Benning as part of the Base Realignment and Closure (BRAC) program. Forming the second largest military installation in the United States Army, Fort Benning will no longer be known as the *Home of the Infantry*, but as the *Home of the Armored Infantry* and a *Maneuver Center of Excellence*.

"The combination of these two schools will create the largest training installation in the United States Army," said Col. Mark Held, Savannah District commander, U.S. Army Corps of Engineers. "But the addition of 14,000 Soldiers and their families means an increased demand for facilities on the installation and, ultimately, a major test for engineers."

Responsible for 18 installations in the Southern United States, Savannah District has a $4 billion budget to use for master planning, design and construction.

"With $400 million already under contract this year and $2.1 billion to spend over the next five years, the construction budget for Benning exceeds all other Army installations in our district," Held said.

The Corps is already working on a consolidated health clinic, shoot houses, a combined arms collective training facility, a digital multi-purpose range complex, an infantry platoon battle course and a barracks complex. Thirty-five more projects are expected in the next two years. The Corps is using the principles of Military Construction (MILCON) Transformation as it converts Fort Benning to a 21st century state-of-the-art training facility.

"The sheer volume and magnitude of the Corps' workload will make Fort Benning and the West Georgia area a premier destination for contractors and suppliers in the Southeast," said George Condoyiannis, area engineer at Fort Benning.

Relocation of the Armor School to Fort Benning, Ga., increases the demand for facilities like this barracks under construction. Photo by Jonas Jordan

It all adds up to a challenge for the Savannah District.

"The Corps has engaged in MILCON Transformation in order to meet the needs of our normal military construction program and the ever increasing workload attributed to BRAC over the next five years," Held said. "And no area will grow as quickly as Fort Benning."

The Corps is committed to improving its business processes to ensure its installations meet the needs of the Army in the future, he said.

"We are doing that by standardizing facilities and decreasing construction timelines while gaining momentum and value through regional strategies and continuous build," Held explained.

First, the Corps refined the acquisition process, using the MILCON Transformation Request for Proposal (MT RFP) system. Performance-oriented criteria for the project are given to potential contractors rather than prescriptive requirements from the Corps design team. This allows competing contractors to give the Corps their best value for a project.

"The Corps of Engineers has gotten away from sealed bid proposals in favor of MT RFP that lets industry tell us how to do it better and lets us adopt their best business practices," Held said. "The new process helps us cut costs and build facilities faster while maintaining quality."

Of course, the number of Soldiers moving in requires that the infrastructure surrounding Fort Benning grow as well, and this could be a real test for MILCON Transformation.

"Although our system is better and faster, the pool of available contractors and skilled labor will be a challenge due to other commitments in the area," Held said.

Fort Benning is located on the I-85 corridor and is already seeing rapid growth as witnessed by the recent groundbreaking ceremony for a new Kia automobile manufacturing plant just 25 miles north of the post. The increase in the number of Soldiers and their families will create a need for housing, schools, churches and big-box stores off-post as well. This will cause all of those industries to compete for resources.

In order to meet this growing demand and attract construction resources for the road ahead, the Corps is fostering an environment of partnership and mutual trust with their contractors at Fort Benning, according to Condoyiannis. In addition, the Corps is answering the call for quick construction by using industry standards ➤

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tion taking place over the next few years. The Eastern Region will locate at Fort Eustis, Va., in 2010.

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From an Installation Management Command news release dated Oct. 24, 2006. PWD

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for building and not limiting the type of construction to that traditionally used on military installations. The strict specifications and codes that previously bound the Corps of Engineers no longer apply.

"Industry is helping us meet these challenges and the needs of the Soldiers who will use our facilities," Held said. "We are engaging the Armor Center and the Infantry Center to tell us how to incorporate their best ideas into our designs and construction as well."

As it moves into the bulk of the five-year BRAC construction cycle, the Corps of Engineers will migrate into Centers of Standardization in order to gain lessons learned and efficiencies from continuous-build principles. Eight centers of standardization will be responsible for the development and execution of certain facilities. Savannah District has the lead and is actively engaged in six standard designs, according to Held. Savannah standardizes command and control facilities for division and corps headquarters, brigade headquarters, battalion headquarters, company operations facilities, tactical equipment maintenance facilities and brigade operations complexes. By continuously building these facilities using standard designs, the process is refined, effectively lowering expense and time spent on each project.

These new practices build on the Corps' approach to military construction.

"The changes will significantly alter the way we conduct business," said Condoyiannis.

Of the 35 projects planned in the next two years, four are much-needed barracks complexes for Soldiers moving on-post. Several training complexes, Soldier support centers and headquarters facilities are also among the ambitious list of projects.

"There is no greater challenge for Savannah District than to ensure the Maneuver Center of Excellence provides Soldiers today and tomorrow with the finest facilities in the world," Held said. "And that is our number one priority."

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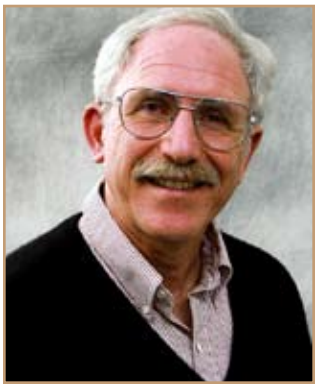
ERDC launches Center for the Application of Sustainable Innovations

by William D. Goran

The Army has committed to an innovative and comprehensive new strategy for the environment – *Sustain the Mission, Secure the Future*. Endorsed by the secretary of the Army and the chief of staff, this strategy provides a long-range vision that enables the Army to meet its mission today and into the future. At the heart of this vision is the notion of sustainability and the triple bottom line which links the Army **mission**, stakeholders in Army activities and facilities (**community**) and the **environment**. This Army strategy is consistent with similar strategies, guidance and initiatives at the Department of Defense (DoD) and federal levels.

To help achieve these ambitious Army and Defense strategies, the U.S. Army Corps of Engineers Engineer Research and Development Center (ERDC) created a new center, hosted at the ERDC Construction Engineering Research Lab in Champaign, Ill. This Center for the Application of Sustainable Innovations (CASI) will function as the hub of a network, linking expertise in ERDC with numerous center partners, to include the Center for Sustainable Design at the University of Illinois, the National Defense Center for Environmental Excellence, the National Renewable Energy Laboratory, the Corps of Engineers Huntsville Installation Center of Expertise and many others.



William D. Goran
Photo by Sandra Batz

Center functions

Providing expertise in sustainable planning and design: Expertise, databases, knowledge and analysis tools will be applied to help the Army and DoD achieve and enhance sustainable approaches to regional and master planning, facility design, and facility operation, maintenance and deconstruction. Capabilities will include formal and informal demonstrations; the expertise to provide planning and design guidance; and web assets to link with a community of experts, consult databases and interact with smart "lessons learned" environments.

CASI will also assist Army and Defense in measuring progress towards achieving sustainable planning and design goals, such as reduced energy consumption, reduced life-cycle costs, improvements in planning efficiencies and improvements in stake-

➤

DoD watershed protocol gains acceptance

by Susan Shelvis

An Army-developed protocol to help installations determine their impacts to surface and drinking water sources has seen wide use within and beyond the Defense Department (DoD) in the year since its release. *The DoD Installation Watershed Impact Assessment Protocol: A Water Resources Management Guide* is designed to enable DoD installations to transition from environmental compliance to sustainability in the protection of water resources.

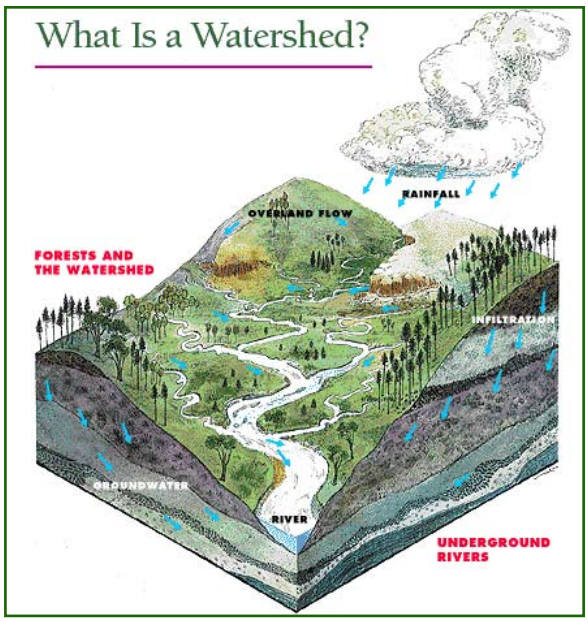
The protocol is currently in use at Fort Meade, Md., and Fort Stewart and Hunter Army Airfield, Ga. Successes include: the protocol being used to demonstrate DoD stewardship during Chesapeake Bay coordination efforts between DoD and Maryland; the Air Force Air Combat Command using the protocol to perform 16 Total Maximum Daily Load (TMDL) evaluations; and regulators from Maryland and Virginia reviewing copies for future partnership opportunities among DoD, the Environmental Protection Agency (EPA) and state agencies.

The protocol was developed in response to EPA and state regulators acceleration of the implementation of the 1992 TMDL regulations and movement toward watershed-based permitting. Managing water resources through a watershed-management approach is aimed at assessing the cumulative current and potential impacts to water resources from multiple activities rather than solely on a point-source basis. In addition, initiatives and executive orders are directing DoD installations to apply a watershed protection approach to military activities and site management. This emphasis on watershed protection drives the requirement for DoD installations to evaluate the impacts of their activities on the quality and quantity of water entering a watershed.

The protocol's objective is to provide DoD installation personnel with a multidisciplinary approach to assessing and prioritizing impacts of installation activities on a watershed and, if necessary, provide them with instructions for developing a cost-effective management plan to mitigate those effects. The protocol considers current and potential impacts from surrounding land-use owners, specifically what pollutant loads may be draining from the property, and emphasizes the use of low-impact development projects, partnership opportunities, integration of existing geographical information and environmental management systems, and future site master planning efforts.

The protocol is available to Defense Department staff and contractors via the Defense Environmental Information Exchange at www.denix.osd.mil/denix/DOD/Library/Water/CWA/SubjectAreas/Watershed/watershed.html.

For more information, call the Army Environmental Hotline at 1-800-872-3845.



Graphic from the Government of Berks County, Pa., web site

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holder engagement and satisfaction.

Facilitating sustainable strategy implementation: CASI will provide direct assistance to Army and DoD organizations as they plan to implement sustainable strategies. Assistance will include systems and materials analysis across the triple bottom line, Lean Six Sigma analysis, action plans, metrics and monitoring progress.

Providing a sustainable knowledge environment: Individuals, communities of practice and diverse organizations will need knowledge assets to foster a learning sustainability ethic and practice. The center and partners will provide capabilities for collaboration, learning and analysis tools, databases and the transfer of sustainability technologies.

Customer and partner engagement

Board of advisors: To ensure the center targets capabilities that most effectively serve Army and DoD users, a stakeholder "board" composed of Army, other services and Defense personnel will guide center plans, review center activities and progress, help secure resources and help target services to key objectives. The center director and the center partners' forum chair will regularly report to this board.

Partners' forum: This forum will help ensure that the center provides the most innovative and effective capabilities to the Army, the other services and DoD, that activities are fully coordinated across the center provider network and that partnership arrangements are clear and well coordinated.

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William D. Goran serves as the Construction Engineering Research Lab technical director and strategic program planner in addition to his role as director of the Center for the Application of Sustainable Innovations. PWD

Programmatic compliance accomplished for 35,000 Army historic properties

by Sarah Killinger

With a single action, the Army's historic preservation compliance requirements are fulfilled for 35,000 buildings. On Aug. 18, the Advisory Council on Historic Preservation issued three program comments that cover National Historic Preservation Act (NHPA) Section 106 compliance for 35,000 World War II- and Cold War-era properties in the Army, as well as 10,000 more across the Department of Defense.

The covered properties are Cold War-era (1946-74) unaccompanied personnel housing, World War II- and Cold War-era (1939-74) ammunition storage facilities, and World War II- and Cold War-era (1939-74) Army ammunition plants and production facilities. Installations can now implement actions affecting these properties without having to undergo the standard Section 106 consultation process.

Much of the Army's existing real property inventory was constructed during World War II and the Cold War to house, equip and train an unprecedented number of troops. These buildings and structures are mainly utilitarian and standardized in design and were often built to fulfill a temporary need, particularly during World War II, with no expectations that the buildings would still be standing 50 years later. However, the 50-year anniversaries of World War II and the Korean War have come and gone, and a growing number of these buildings now qualify under the National Historic Preservation Act for consideration as historic properties. This translates into heavier compliance responsibilities for cultural resource managers at installations and increased project costs due to delays for consultation and treatment of properties.

The Cold War saw a significant spike in construction of unaccompanied personnel housing, much of which requires upgrading and modernization, activities that can now proceed without further historic preservation consultation. Photo by R. Christopher Goodwin and Associates

An alternative exists, however. The implementing regulations for Section 106 of the NHPA, Title 36 of the Code of Federal Regulations, Part 800, allow the development of "program comments," which are one-time actions that fulfill Section 106 compliance responsibilities for a category of properties. The Army previously received a program comment in 2004 for Capehart and Wherry Army family housing, which covered 19,000 Army family housing buildings built between 1949 and 1962. The consultation and mitigation efforts for the program comments are centrally managed by Headquarters, Department of the Army, freeing installations from the Section 106 compliance process.

The three program comments issued in August cover all properties: designed or used as unaccompanied personnel housing (real property category group 72) from 1946 to 1974; designed or used as ammunition storage facilities (real property category group 42) from 1939 to 1974; designed or used as ammunition production facilities (real property category group 226) from 1939 to 1974; and all properties built between 1939 and 1974 on installations called "Army ammunition plants." These properties are affected daily by actions stemming from the Base Realignment and Closure process, the Barracks Upgrade Program, Army Materiel Command initiatives and other installation actions.

More than 20,000 World War II- and Cold War-era Army ammunition storage facilities — like this one at Tooele Army Depot, Utah — are a major compliance responsibility. Photo courtesy of U.S. Army Chemical Materials Agency

Installations can now proceed with renovation, demolition, mothballing, deconstruction and salvage, and transfer, sale or lease out of federal ownership for these properties without need for further Section 106 consultation or compliance activities. Other compliance responsibilities, such as those for the National Environmental Policy Act, are unchanged. Headquarters, Department of the Army is centrally funding and managing the treatment measures required by the program comments, which include historic contexts and documentation of example property types.

The recent program comments cover some of the largest categories of properties from the World War II and Cold War eras; the Army has more than 22,000 ammunition storage facilities alone from the time period. The standardized quality of the properties' designs makes them particularly appropriate for the program-comment process, because the properties can be considered holistically on a national scale, rather than individually by installation. The design of an earth-covered storage igloo has more to do with the nature and physics of the ammunition stored within than with regional conditions or influences. Studying both ammunition storage ➤

DoD issues final rule on Restoration Advisory Boards

by Beverly D. VanCleef

It has been a long-standing policy of the Department of Defense (DoD) to provide opportunities for public involvement in DoD's environmental restoration activities. History has shown that efforts are enhanced when input from local communities is sought early and throughout the environmental restoration process.

One means of facilitating public involvement is through use of Restoration Advisory Boards (RABs). Guidelines for RABs were jointly issued by DoD and the Environmental Protection Agency back in 1994. More recently, on May 12 of this year, DoD formally finalized a RAB rule. This rule was published in the Federal Register, 71 FR 27610, and will be codified into 32 Code of Federal Regulations 202. For complete details, see the final rule at: http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/06-4246.pdf.

Highlights of the RAB rule are:

The rule applies to Defense Environmental Restoration Program (DERP) activities, including Military Munitions Response Program activities at installations. Installations are defined within the rule to include active and closing DoD installations and formerly used defense sites.

Under this rule, a RAB should be established where there is sufficient and sustained community interest and any of the following apply:

- Installation closure involves transfer of DoD property to the community.
- At least 50 local citizens petition for creation of a RAB.
- Federal, state, tribal or local government representatives request formation of a RAB.
- The installation determines a need for a RAB.

RAB membership will, at a minimum, include representatives of DoD and the community. Community RAB members should live or work in the affected community or be affected by the installation's environmental restoration program. Potential members are nominated by a selection panel composed of community members. The installation commander accepts or rejects the list of RAB nominees on the basis of whether the list fairly represents the local community.

RABs are to be co-chaired by a DoD installation representative and a community representative. The co-chairs direct and manage RAB operations. Meetings are to be open to the public, announced via a notice in a local newspaper of general circulation, and held at a reasonable time and at a place reasonably accessible. Interested persons are to be permitted to attend and given time on the agenda to speak to the RAB. Meeting minutes are to be certified by the RAB co-chairs and kept in the information repository for the site. If the RAB minutes reflect decision-making, copies also are placed in the administrative record.

The community co-chair and community RAB members serve voluntarily and will not be compensated by DoD for their participation. Subject to availability of funding, the installations can provide administrative support to establish and operate a RAB. Eligible expenses include costs of:

- RAB establishment;
- membership selection;
- relevant, site-specific training;
- meeting announcements;
- meeting facilities;
- meeting facilitators and translators;
- preparation of minutes; and
- mailing list maintenance and materials distribution.

The RAB may be adjourned by the installation commander when:

- a record of decision has been signed for all DERP sites on the installation;
- response completions have been achieved for all sites and no further restoration decisions are required;
- all remedies are in place;
- the RAB achieved the desired goal as defined by the RAB operating procedures;
- there is no longer sufficient, sustained community interest; or
- the installation has been transferred out of DoD control.

The rule also contains provisions for dissolution and reestablishment of the RAB when necessary.

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Beverly D. VanCleef is a regulatory specialist with the Northwest Division of the U.S. Army Corps of Engineers. PWD

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and ammunition production facilities at the same time also provides an excellent opportunity to study the ammunition process as a whole, with each property type providing information for the other.

With the issuance of these three program comments, and the earlier Capehart-Wherry program comment, the Army has now fulfilled Section 106 compliance requirements for about 54,000 buildings, or about one-third of the Army's real property inventory. This allows installations to reallocate scarce funds and staff to other significant historic properties and needs.

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Sarah Killinger is a historic preservation specialist with the U.S. Army Environmental Command. PWD

CP-18 achieves success by helping employees develop professionally in 2006

by Lt. Gen. Carl A. Strock

As we close the book on 2006, a review of the accomplishments of Career Program 18, engineers and scientists – resources and construction, continues to answer the questions I raised in my last article, "What can CP-18 do for you?"

First, the CP-18 Competitive Professional Development (CPD) program funded more than 200 separate training opportunities over the past year. This training included local leadership development programs, Department of the Army leadership, Office of Personnel Management leadership and management program and U.S. Army Corps of Engineers technical courses at the Engineer's Professional Development Support Center in Huntsville and at universities across the country.

CPD funds currently assist more than 30 CP-18 professionals to gain graduate degrees in fields ranging from geotechnical engineering to public administration. Through their efforts and perseverance, these Army employees will improve themselves and their organizations with the skills and knowledge to move the Army forward to meet current and future missions. These employees are preparing for professional advancement, looking to become the future civilian leaders of the Army.

Second, the CP-18 Leadership Development Program (LDP) graduated 136 participants from its three-year program of coursework and mentorship with a six-month developmental assignment outside their geographic and functional areas. This past year, four LDP participants completed developmental assignments at Corps Headquarters in Washington, D.C. Their assignments included: developing procedures for Army participation in stability and reconstruction operations; reviewing regional watershed projects for compliance with local and national requirements; working within regional integration teams on both military and civil works programs; and serving as an action officer on the command staff group. All of these employees

Lt. Gen. Carl A. Strock
Photo by F.T. Eyre

demonstrated exemplary performance in their assignments and will add tremendous value to their home organizations upon their return.

Third, more than 20 CP-18 employees participated in various Army and Department of Defense senior leadership programs. These programs include the Defense Leadership and Management Program, the Army War College, the Industrial College of the Armed Forces, the Federal Executive Institute and the Harvard Senior Executive Fellows Program. All of these programs are geared toward preparing future civilian managers and executives to assume leadership roles in our constantly changing environment.

Looking ahead, the Army is launching the Civilian Education System (CES) in FY 2007 to create a new leadership curriculum for Army civilians similar to military leadership development. CES consists of four courses: "Introductory" is geared toward new Army civilian employees; "Basic" is for employees who are assuming direct supervision and management of employees; "Intermediate" is for employees who have direct and/or indirect supervision of employees; and "Advanced" is for employees who have indirect supervisory duties and overarching management and leadership responsibilities.

The Basic, Intermediate and Advanced Courses replace Leadership Education and Development, Organizational Leadership for Executives, and Sustaining Base Leadership and Management respectively. In addition, the courses Personnel Management for Executives (PME) I and II are being discontinued as of December, and the materials covered by PME I and II will be integrated within the Basic, Intermediate and Advanced Courses.

These courses are currently undergoing beta testing in limited sessions to validate their content. Full implementation of these courses will occur later in FY 2007. The Introductory Course to be offered through 2007 will replace the current Intern Leadership Development Course (ILDC) in 2008. Additional details for enrollment will be forthcoming from your Human Resources office, this column and on the Engineering Knowledge Online portal.

I've frequently shared my views on my own career — that when I focused on what I was doing on any given day and did it to the best of my ability, the system would recognize that and give me greater responsibilities. Along those same lines, you need to continue to seek ideas on your own career development in the months ahead. The effort you place on developing your career and strengthening your skills will help us achieve our ultimate goal — to provide outstanding service in support of the war fighter, the Army and the nation.

Thank you for your daily contributions, and keep up the great work. Essayons!

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

DoD presents half of its 2005 Fire and Emergency Service Awards to Army

by Charlie Butler

The Army took 50 percent of the Department of Defense (DoD) Fire and Emergency Services Awards for 2005. The awardees — announced in Dallas, Texas, Sept. 15 — included these four Army winners:

Aaron Z. Hunter, a civilian firefighter at Fort Leonard Wood, Mo., **was named the DoD Civilian Firefighter of the Year for 2005**. His quick and decisive actions in providing timely extrication and expert medical care saved the life of a Soldier involved in a tactical vehicle accident. During a river trip with his family, Hunter came upon a capsized boat, plunged into the water and retrieved two victims and carried them to the shore, saving their lives.

Aaron Z. Hunter, DoD Civilian Firefighter of the Year, participates in rope rescue training.

Fort Bliss, Texas, was named the DoD Large Fire Department of the Year for 2005. Located at the premier Army Strategic Mobility Platform and Air Defense Artillery Training Area, Fort Bliss Fire and Emergency Services serves a community of 132,541 Soldiers, family members and civilians who live, work and train there. Using a fire training simulator, they trained more than 24,000 Soldiers, civilians, contractors and students in public safety and fire prevention, and they provided cardiopulmonary resuscitation to family members of deploying Soldiers.

Billy Cannedy, fire chief at Fort Bliss, proudly holds the trophy representing the DoD Large Fire Department of the Year.

Fort Gordon, Ga., was named the DoD Small Fire Department of the Year for 2005. Located at the home of the U.S. Army Signal Center whose mission encompasses training, doctrine, force integration and mobilization, the Fort Gordon Fire and Emergency Services Department is a comprehensive and professional fire and emergency services organization serving 18,000 Soldiers, family members and civilians who live, work and train there. The firefighters responded to Graniteville, S.C., for a hazardous materials mutual aid request following a train derailment. Breached rail cars released 90 tons of chlorine killing nine people and sending 260 to local area hospitals. The Fort Gordon department provided entry teams into the "hot zone," resulting in the safe and successful rescue of three children and three adults.

Lester Porter, fire chief at Fort Gordon, the DoD Small Fire Department of the Year, reviews a checklist in preparation for an emergency response.

Fort Lewis, Wash., won the DoD Fire Prevention Program of the Year for 2005. Located at the home of I Corps — "America's Corps," Fort Lewis Fire and Emergency Services provide fire prevention services to more than 174,000 Soldiers, family members and civilians and more than 23 million square feet of facilities. All eight fire prevention personnel are certified at the Fire Inspector III level. Their expertise and diligent efforts directly contributed to a 60 percent reduction in fire loss from previous years. Their precise, cradle-to-grave construction review ensured fire- and life-safety compliance for four new barracks projects, avoiding contract modifications and cost overruns.

James Sorensen, assistant chief for fire prevention, Fort Lewis, proudly holds the trophy representing the DoD Fire Prevention Program of the Year.

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Charlie Butler is a fire protection specialist with the Installation Management Command. PWD

Public works program manager recaps program activities at training forum

by Mary Beth Thompson

Don LaRocque summarized the fiscal year 2006 Army public works program at the Public Works Training Workshop Nov. 2 in Mobile, Ala. LaRocque, public works program manager for the Installation Management Command (IMCOM), discussed Sustainment, Restoration and Modernization (SRM) and FY 2006 accomplishments, among other subjects.

He led with the definitions of sustainment, restoration and modernization.

- **Sustainment** keeps facilities in serviceable condition over their life. It largely consists of service order work that the Directorates of Public Works (DPW) do everyday and single-component repair projects.
- **Restoration** brings a facility that has deteriorated back to adequate condition. It also includes repairs of storm or fire damage.
- **Modernization** brings a facility to current Army standards regardless of its condition. It usually occurs when the facility has a capacity change. An example is the Barracks Upgrade Program, through which all Army barracks have been renovated to the "1+1" standard. It also includes minor construction work to meet installation needs.

Funding is generated through the facilities sustainment model and also for specific modernization initiatives that have been established and championed by the Assistant Chief of Staff for Installation Management (ACSIM), like the Barracks Modernization Program.

In response to a question about funding for SRM on joint bases, LaRocque said that the source of funding depends on what was negotiated between the services involved. The result is spelled out in the memorandum of understanding.

In FY 2003 and 2004, a substantial amount of sustainment funding was diverted to base support. In FY 2005 and 2006, the Army protected sustainment dollars, but some money was redirected to restoration. In FY 2006, an additional $340 million was received for interim facility one-time costs and $130 million for relocatable buildings, which improved the fiscal picture. More than $1 billion went into interim facilities in FY 2005 and 2006, and more than half of that went into restoring existing buildings. The other half went into relocatable buildings.

Don LaRocque addresses the Public Works Training Workshop in Mobile, Ala. Photo by Mary Beth Thompson

"In two and one-half years, we have re-stationed 60,000 Soldiers and stood up 10 new brigades," LaRocque said. He described that as an unheard-of accomplishment, even though there is still some work to do.

The negative result from the diversion of sustainment dollars is that the backlog costs rose to huge proportions. The good news is that the backlog is being reduced by the subsequent improvement in funding.

He commented that everyone has done a great job on flagship projects, which involve work done in facilities left vacant by deployment of troops. The deployment provides a window of opportunity to complete SRM work. There are 297 such projects and $185 million for FY 2007.

During discussion, LaRocque made the point that sustainment of relocatable buildings should come from DPW funds. Relocatable buildings are unit property, not real property.

"That's one of the ways we can help ourselves — by making sure we are not spending the money where we don't have to spend it," he said.

In FY 2007, restoration and modernization programs are Department of the Army priorities. The demands on SRM funding include: the Trainee Barracks Upgrade Program; Army Modular Force new mission projects; the Flagship Program; and high-visibility, high-cost, opportunity restoration projects.

LaRocque described "opportunity projects" as work that does not have to be done but makes sense to do in connection with other work that must be done. He gave the example of Infantry Hall at Fort Benning, Ga.

"We can move the Armor School into Fort Benning, into Infantry Hall, as it is," he said. "Yes, it's an admin building. But, we should take the opportunity as they're building all that new infrastructure for the Armor School to take Infantry Hall and restore it to a good condition — that's ➤

Barry Bartley, construction program manager, responds to a question during the Public Works Training Workshop Nov. 2. Photo by Mary Beth Thompson

Sixth annual Installation Management Institute set for Atlanta in January

The Office of the Assistant Chief of Staff for Installation Management (OACSIM) will sponsor the sixth annual Installation Management Institute (IMI) Jan. 8 -12 in Atlanta at the Hilton Atlanta Hotel. The IMI will be held concurrently with the Installation Status Report, Army Stationing and Installation Plan and Real Property Planning and Analysis System centralized training.

The purpose of the IMI is to offer centralized training that provides installation, Army National Guard and Installation Management Command (IMCOM) regional workforces with the latest information and instruction needed to accomplish their installation management missions.

The IMI will consist of a plenary session on Monday morning and eight training tracks throughout the week.

Each concurrent training track is designed to address the knowledge and skills required to effectively accomplish missions within each functional area. The tracks are:

Track #1, Plans, Analysis & Integration Office (PAIO)

Track #2, Directorate of Public Works business operations

Track #3, Master planning

Track #4, Real property management and real estate processes

Track #5, Geographic Information Systems

Track #6, Army sustainability

Track #7, Competitive sourcing

Track #8, Logistics management

Detailed descriptions and training prerequisites are provided at the registration web site.

Registration process: To register for IMI, visit the OACSIM web site, http://www.hqda.army.mil/acsim/homepage.shtml. Clicking on "2007 Installation Management Institute Registration is Now Open," located under the "Hot Topics" section of the page will take you directly to the online registration site.

At the registration site, click the log-in button. The conference code of 20042153 should already be showing, and you will be taken to the general information page of the IMI web site. There, you may view information about the hotel and available courses or register by clicking on the buttons at the top right.

It is important to read the entire general information page because there is information at the bottom that will need to be downloaded prior to registering. There is also a link on the general information page to the PAIO training track registration site for use only if you are registering to attend the PAIO training track.

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From Installation Management Command news sources. PWD

CALL FOR ARTICLES

The January/February 2007 issue of the

Public Works Digest

will feature

Master Planning and Military Construction - the New Landscape

Deadline is Dec. 21
Submit articles to
mary.b.thompson@usace.army.mil

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an opportunity project. That's a smart investment of SRM dollars. This is like a flagship project. The best time to do it is before they move in, not after they move in."

The Military Construction (MILCON) for FY 2006 was a massive, unprecedented accomplishment, LaRocque said. Some of the other-than-MILCON accomplishments in FY 2006 were:

- Awarded $235 million in projects;
- Hired 35 new CP-18 interns;
- Developed master planning products — Standardized Project Requirements Analysis, Planning Charrettes, Site Selections Analysis, Scopes of Work and the Master Planning Technical Manual;
- Cut another 2.3 million square feet of facilities in the facilities reduction program;
- Completed Unaccompanied Personnel Housing report; and
- Privatized seven more utilities.

"We're doing great work and it's catching up with us," LaRocque said.

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Mary Beth Thompson is the editor of the Public Works Digest. PWD

Installation management community sees key retirements

The installation support community is fortunate to have a large body of institutional knowledge resident in its seasoned workforce. But every year, especially at this time of year, key people retire and move on to the next stage of their lives.

The *Digest* was able to capture 14 significant retirements that have just occurred or are about to occur, collectively adding up to more than 500 years of federal service.

Even though these retirements represent a significant loss of that store of institutional knowledge, each person is wished well by the community as he pursues "what's next."

Name: **Don Basham**
Title, organization: chief, Engineering and Construction, U.S. Army Corps of Engineers
Years of service: 38 1/2
Retirement date: Nov. 10
What's next: "I have absolutely positively nothing planned but to move back to Kentucky spend time with my wife, two daughters, son-in law and new grandbaby," Basham said. "If I wanted to work longer I would stay with the Corps. I can't think of a better job than being the chief engineer for one of the largest engineering and construction firms in the world. Not bad for a country boy from Kentucky."


Don Basham

Name: **Albert Bertini**
Title, organization: civil engineer/ program manager, U.S. Army Corps of Engineers
Years of service: 33 years, 4 months
Retirement date: Jan. 3
What's next: "Work on my 'extensive' honey-do list, get a part-time job, travel with my wife and help others," Bertini said.


Albert Bertini

Name: **Hugh Exton**
Title, organization: director, Southwest Region, U.S. Army Installation Management Command
Years of service: 39 1/2
Retirement date: Oct. 31
What's next: "I have no immediate plans for the future except to spend more time with wife, kids and grandkids; lower my golf handicap to single digits; raise my tennis rating to 4.5/5.0; go on a golf vacation with a college classmate; go back to Hawaii to see if I remember how to surf; learn to cook, speak Spanish and play the piano; visit Australia, Singapore, Hong Kong and the tennis championships at Wimbledon; renovate my house; and work part time, if necessary, to pay for all this," Exton said.


Hugh Exton

Name: **Hank Gignilliat**
Title, organization: senior energy engineer and national program manager, Energy Conservation Investment Program, Office of the Assistant Chief of Staff for Installation Management
Years of service: 37
Retirement date: Sept. 30
What's next: After the appropriate time working down the "honey-do's," Gignilliat plans to spend some time visiting with family in the region and catching up on his reading of modern epics, according to his friends at the Office of the Assistant Chief of Staff for Installation Management. It remains to be seen whether he will join the ranks of the recently retired and return to walk the halls as a "dreaded" consultant or contractor.


Hank Gignilliat

Name: **Harry Jones**
Title, organization: acting chief, Programs Review and Analysis and Business Process Integration Branch, U.S. Army Corps of Engineers
Years of service: 42
Retirement date: Jan. 3
What's next: "Enjoy some time off and take care of a lot of little odd jobs around home, plus my hobbies — fishing, ham radio and golf," Jones said.


Harry Jones

Name: **Jim Lovo**
Title, organization: Installation Support Community of Practice team leader, U.S. Army Corps of Engineers
Years of service: 32
Retirement date: Jan. 3
What's next: "First, St. Moritz for skiing, then clean out the basement, then see where the spirit — and boredom — lead me," Lovo said. "I believe in relying on serendipity to lead you where you should go."


Jim Lovo

Name: **Joseph Plunkett**
Title, organization: director, Southeast Region, U.S. Army Installation Management Command
Years of service: more than 35
Retirement date: Dec. 31


Joseph Plunkett

What's next: "Immediate plans are to spend more time with family and become more active in the community," Plunkett said.

Name: **Mirko Rakigjija**
Title, organization: director, Installation Support Center of Expertise, U.S. Army Corps of Engineers
Years of service: 33
Retirement date: Nov. 1
What's next: Rakigjija is working for an engineering consulting firm in Huntsville, Ala., his friends at the Installation Support Center of Expertise reported.


Mirko Rakigjija

Name: **Mike Rice**
Title, organization: program manager, Programming Administration and Execution (PAX) information technology system, U.S. Army Corps of Engineers
Years of service: 35
Retirement date: Oct. 3
What's next: "I will be traveling to volunteer at the Elephant Sanctuary, the Performing Animal Welfare Society, Chimp Haven, the Center for Captive Chimpanzee and Orangutan Care, Best Friends, and locally, Hedgesville Hounds and Friends of Homeless Animals," Rice said. "My wife and I transport cats and dogs for them, foster animals needing a temporary home, assist in fund raising events, etc. I'll also be volunteering with Habitat for Humanity. That should keep me busy for a while."


Mike Rice

Name: **Stan Shelton**
Title, organization: chief, Plans Division, U.S. Army Installation Management Command
Years of service: 37
Retirement date: February
What's next: "I will spend more time at the beach and with my family," Shelton said. "I will finally take advantage of all the wonderful cultural and entertainment opportunities of this great metropolitan area. I may take up golf again after all these years."


Stan Shelton

Name: **Stan Sokoloski**
Title, organization: director, Pacific Region, U.S. Army Installation Management Command
Years of service: 39
Retirement date: Jan 3
What's next: Following retirement, Sokoloski will be looking at other professional opportunities, performing community service, traveling and spending more time with his family, according to his friends at the Installation Management Command Pacific Region.


Stan Sokoloski

Name: **Dave Stauss**
Title, organization: chief, Real Property Management Branch, Southeast Region, U.S. Army Installation Management Command
Years of service: 34
Retirement date: Sept. 30
What's next: Stauss's friends at the Installation Management Command Southeast Region reported that his diverse interests include parasailing, inline skating, sailing, a community marching band and restoring his home in Grant Park, a historic section of Atlanta, Ga.


Dave Stauss

Name: **Ray Stoudenmire**
Title, organization: chief, Operations and Maintenance Branch, Public Works Division, Southeast Region, U.S. Army Installation Management Command
Years of service: 30 years, one month
Retirement date: June 1
What's next: Stoudenmire's future plans include: real estate appraisal — he is currently taking classes, golf, tennis and spending time with his grandson, his friends at the Installation Management Command Southeast Region said.


Ray Stoudenmire

Name: **Al Young**
Title, organization: DoD engineering & construction support team leader, U.S. Army Corps of Engineers
Years of service: 39
Retirement date: Jan. 3
What's next: "Work on the 'honey-do' list and help my sons find a life — then get myself a new life!" Young exclaimed. PWD


Al Young

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