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In this issue:

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Outside view of the modular auto maintenance facility at the Fort Stewart motor pool.

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LETTER FROM THE EDITOR

With 2005, we enter into our 17th year of publication and service to the Army. When we first launched the Public Works Digest in 1988, we hoped to provide technical information and innovative ideas on public works business for Army Directors of Engineering and Housing. We succeeded in that and then some as we came to include policy changes, new regulations, professional development features, installation successes and so much more. Conceived as a quarterly publication, the Digest is now published six times a year. Over the years, we have defined set themes such as Environment, Housing, Energy, Facilities Engineering, and the Annual Report, but we have also covered current hot topics such as Sustainable Design and Development, New Technologies, and Privatization and Outsourcing.

This issue of the Digest delves into the world of Construction Alternatives and Modularity, topics currently on the lips of all DPWs as we bring together our fighting force. The ACSIM's LTC Paul Mason and USACE's Claude Matsui explain how installations are changing to meet the Transformation of our Army. Their three informative articles serve as a good introduction to the Modularity articles by IMA's Don LaRocque, USACE's Jim Lovo and the ACSIM's Troy Collins. Together they outline how we are using inventive solutions to meet our facility needs for a better price than in the past and how we are continually looking for new ways to do our job better in order to support the needs of today's army.

As we implement the Army Campaign Plan, we will also be integrating into it the families of our Soldiers and the services we provide them. To face these unprecedented challenges, installations are doing what they can to find faster and less expensive construction alternatives to meet the demand for facility increases and prepare for deployed/deploying Soldiers. Fort Hood tells us about their Super Preventive Maintenance program for Soldiers returning from Iraq, while Fort Campbell faces the need for more space for four new Units of Action with modular facilities. Fort Lewis is reshaping itself to accommodate thousands of new Soldiers with relocatable buildings and repairing or renovating existing barracks and facilities. Alaska is putting up relocatable buildings to be used as barracks at Forts Richardson and Wainwright, and Fort Pickett is expanding its maneuver training areas. At Fort Stewart, they are rapidly constructing barracks and other space needed using modular buildings.

Of special note is the article about the annual Association of the United States Army (AUSA) conference and exposition provided by CERL's Dana Finney. Highlighted are presentations on Privatization, the Residential Communities Initiative (RCI), BRAC 2005 and training ranges during the Installations Forum and the panel on "Building Our Flagships." In the latter, IMA Director MG Ronald Johnson, former ACSIM MG Larry Lust and Chief of Engineers LTG Carl Strock discussed Common Levels of Support, barracks modernization, and Soldier retention.

I am looking forward to the Professional Housing Managers Association conference to be held in Denver at the end of January. They have set up an interesting agenda that includes speakers from all the services and private industry. Look for key highlights in the next issue of the Digest, which is appropriately enough, the Housing issue. The deadline for the call for articles is February 25.

Until next time…

Alexandra K. Stakhiv

Alexandra K. Stakhiv, Editor, *Public Works Digest* PWD

The following three articles depict where Modularity fits in the Army's overarching Transformation, what we can expect to see in the facilities and infrastructure venue of Transformation, and how Installation roles have changed with the Current Force and leading into the Future Force. These articles serve as a platform for other Modularity specific articles contained elsewhere in this edition. The first article is on awareness of how installations are visibly changing to meet Transformation and an overview of installation strategies to support it. The second explores what Transformation is and how it's affecting how we manage facilities and installations from a topical perspective. The last article summarizse some of the key activities needed to support Transformation, where we are and what we're doing.

Installations: changing to meet Transformation

by LTC Paul Mason and Claude Matsui

When was the last time you were on an installation? Did you notice anything different? The commissary was where it always was the last time you saw it as was the PX and the Burger King. As usual, once you got past the security guards, you drove to the places on post you normally go to and nothing had changed.

But, like the old saying goes ... "The times, they are a changin'." Army installations are changing as well. Technological advancements and the need to become more efficient and effective demands it.

The role of installations has changed significantly. No longer merely deployment platforms and support for the well being of Soldiers and their families, installations now provide continuous support from the home station to foxhole and back. What has also changed is the criticality and duration of support provided to deployed forces, and the level of technology integration used. Essentially, installations are "Flagships" from where we project power and sustain an expeditionary Army. These "Flagships" will use more multi-purpose, adaptive facilities that maximize the economical and functional benefits of standardization. As the Army approaches an unprecedented level of change and technology integration, installations will experience a corresponding increase in activity and change in business processes, roles, and responsibilities.

We are simultaneously and aggressively implementing facility modernization through several Army initiatives like the Focused Facility Strategy (FFS). We are also, where it makes sense, integrating installation services with the surrounding community as we develop an even stronger environment of civil-military community relations. The objective is to develop and transform into a system of installation capabilities and resources to support a CONUS-based projection of forces.

However, not all of these changes are readily visible on an installation. In fact, there are two significant factors or timelines driving installation change: Modularity and Transformation. So let's look at some changes that are more visible or maybe, some that were there all the time but too subtle to notice.

Transformation means tighter security at military installations.

Modularity – The Immediate Need

What is Modularity? We are adapting our force structure to meet current operational tempo (OPTEMPO) requirements. Centerpiece to Modularity is the necessity to increase the number of maneuver elements in our force structure where the habitual support "slice" for deploying Brigade task forces into a combined arms brigade is incorporated. Increasing the number of maneuver elements available for rotation reduces Soldier deployment OPTEMPO and improves the well-being of the Soldier and their families. So, to house, train, maintain, and sustain a growing Army capability, we must change the way installations operate, giving its appearance a new look.

The first priority remains supporting installation missions as we implement Modularity. Coupled with enhancing the Army's force projection from installations, we are rapidly proceeding with increasing our ability to support increasing force structure from 33 maneuver brigades to 43 Brigade Combat Teams (BCTs). Beginning with the 3rd Infantry Division at Fort Stewart in 2004, we started utilizing temporary or modular construction to meet the Army's accelerated implementation timelines. When permanent stationing decisions are made, we will replace these temporary facilities with permanent construction. We are completing as much construction as possible while Soldiers are deployed to reduce the disruption of construction.

There has also been significant attention focused on Soldier barracks this past year and a key factor for increasing the number of maneuver brigades under Modularity. On an individual level, barracks rooms are perhaps the most visible and personal service we provide to our Soldiers as their homes. The latest 1+1 Barracks standard provides greater space and privacy along with telephone and cable-ready receptacles. New or renovated barracks also contain higher quality furniture, more washing machines and clothes dryers, and increased parking along with greater open space and outdoor recreational facilities. Unfortunately, not all of the Army's barracks are adequate.

The Department of Defense goal is ➤

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to modernize all permanent party barracks to the 1+1 standard by 2008. Between fiscal years 1994 to 2004, the Army invested over $6 billion in the Barracks Modernization Program, which included other facilities associated with barracks such as company, battalion, and brigade headquarters, dining facilities, and other Soldier support facilities. This investment has provided over 100,000 modernized barracks spaces. Through the Whole Barracks Renewal Program and the Barracks Upgrade Program (BUP), the Army awarded 21 projects valued at over $697 million. We are also continuing plans for 25 barracks projects valued at over $736 million in 2005 and will expend approximately $4 billion more by 2008 for barracks modernization. So, the next time you find that you need to detour around a construction project, it just might be a new barracks project on your installation.

Barracks are not the only area on the installation undergoing major change. So are family housing areas. A critical aspect of supporting our Soldiers is the confidence they have when families are provided with adequate housing. The Army's goal is to eliminate all inadequate military family housing using a combination of traditional MILCON, BAH increases, and privatization. The Residential Communities Initiative (RCI) is probably the most visible change on our installations. The RCI plan includes 45 installations (grouped into 35 projects), with almost 85,000 houses -- over 92% of the AFH inventory in CONUS. As of November 2004, the Army transitioned 19 installations to privatized operations or over 49,000 homes. Projects for 11 more installations have been awarded and will transition over 15,000 homes by January 2006. The Army will leverage $573M of appropriations and obtain $7.8B of private capital to construct/renovate housing. An additional 15 installations are either in solicitation or under development involving another 20,000 homes.

Transformation - The Long View

The initial change brought about by Transformation occurred with the fielding of the Stryker Brigade Combat Team (SBCT). Suddenly, motor parks were filled with 8x8 armored fighting vehicles that looked nothing like the venerable M-113 Armored Personnel Carrier.

New ranges called Battle Area Complexes (BAX) began springing out of the ground that were primarily intended to meet the needs of the assault gun variant of the Stryker platform. Urban Operation training areas began to consider the needs of a mounted force with larger roads and complex terrain features to challenge the use of mounted weapons in an urban setting.

Increased use of containerized or palletized loads and shop sets became the norm rather than unique for SBCTs. Maintenance facilities began addressing how these shop sets and storage modules could be incorporated into the buildings and thereby improve deployment preparation times while simultaneously reducing Class VI and IX storage redundancy.

The Modularity units build on the concepts explored and adopted by the SBCTs. As the Army transitions towards the Future Force and the Future Combat System Unit of Action (FCS UA), Modularity BCT concepts will become facility requirements for the way the Army maintains, sustains, deploys, and trains.

At the same time, we will adopt evolving technologies that will be integrated into the Force through spiral insertion. Developing relevant standards and criteria capable of adapting to these technology insertions are critical to assessing facility adequacy and helping installations prepare to accommodate these new technologies. The ACSIM has established an objective for developing adaptive, multi-purpose solutions to simultaneously provide the flexibility to accommodate and stabilize the frequency of construction needed to accept technology insertion rather than single purpose, tailored facility designs. As you drive past a unit motor park, you might see turrets pivoting as Soldiers conduct training in addition to the more traditional maintenance and repair activities of a motor park … in a multi-purpose complex dedicated to a combined arms brigade.

Environmental strategies, land use and stewardship activities continue to be more fully integrated into business processes and base support services on post and in the surrounding communities. Coordination with state and local governments continues to expand. The fundamental objective will be to achieve common or mutually supportive goals. Land use and environmental considerations become less divisive as perspectives and appreciation for the benefits of close community ties outweigh the occasional disadvantages of proximity to military installations. So, perhaps seeing a local fire engine company training with a post fire company isn't so unusual after all.

What's Next?

Army installations are essential to maintaining our premier, expeditionary Army. The key mission for installations continues to be the provision of effective facilities that can train, mobilize and deploy the force, with the added roles of sustaining and reconstituting deployed forces while taking care of their families. We've made a lot of progress has been made, but we have a long way to go. Resourcing the Army's installations has never been more challenging and we are continually looking for ways to better deliver facilities that set the right conditions and capabilities to support the Army's centerpiece: The Soldier.

So, the next time you're on post, take a closer look around. You just might notice the folks huddled around their vehicles doing more than just maintenance, lights burning longer, construction sites modernizing facilities or complexes, or more interaction between local government, commercial industries, and post personnel. When you do, you are seeing "Flagship Installations" under development as they change to better support our Soldiers, their families, and our civilian work force.

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Transformation: what we can expect

by Claude Matsui

The one constant in the Army is continuous change. Understanding the process the Army uses in order to accomplish change is a key factor in understanding what Transformation means, where Modularity fits, and how facilities and infrastructure are affected. You see, Transformation is simply a window in time and establishes the boundaries for change. There have been many other labels for change such as Division 86, Army of Excellence, and Force XXI. And as those before it, Transformation will be followed by other change versions with different labels.

Unlike the past, Transformation's magnitude of impact affects every facet of the Army (See Don LaRocque's article on p. 10). Not just how it's organized and equipped, but the business processes, policies, risk assessments, and the underlying basis upon which decisions are made. Meeting the needs of a rapidly changing force while simultaneously prosecuting a war on terrorism has caused the Army to assess or measure what it does in different terms … a.k.a. investment rather than expense with the overriding consideration being risk. A key example is the accelerated conversion of all 33 maneuver combat brigades in to modular structures by FY07 and using temporary facility solutions.

The Army requires a dynamic decision making environment and has instituted changes that incorporate seven (7) basic areas of concentration called domains … **D**octrine, **O**rganization, **T**raining, **M**ateriel, **L**eader **D**evelopment and **E**ducation, **P**ersonnel, and **F**acilities or DOTMLPF. These domains represent mandatory areas of consideration and validated requirements governed under the Army Campaign Plan.

As the Army transforms, so must the way we manage and develop installation infrastructure and facilities. Integration of the Facilities domain into the Army decision process in order to influence or mitigate change impact requires an understanding of what's changing and how it affects installations.

The CSA's decision to put advanced or emerging technologies into the hands of Soldiers as they are adopted means the preponderance of future change will be less organizationally driven and more functionally driven. Over the next 2-3 decades, we will continue to use the basic combined arms composition being established by SBCTs and BCT(UA)s. The first step in the Army's transition to the Future Force began with the Stryker Brigade Combat Teams (SBCT) long before the term Future Force became common language in the Army. The deployment of the first SBCT was a "proof-of-principal" that a combined arms brigade is an effective combat multiplier.

Modularity Brigade Combat Team (Units of Action) or BCT(UA)s represents the latest step towards the Future Force (Author's Note: (See Don LaRocque's article on p. 10). Like the SBCTs that preceded it, Modularity BCT(UA)s are combined arms brigades. Additional modular brigade configurations (i.e., Aviation and Strike Brigades) for Modularity will further serve as the foundation for the Future Combat System Unit of Action or FCS UA of the Future Force.

A fundamental Future Force thrust is for more generalists versus specialists. More connectivity than independence. These fundamental precepts are based on the changing role of our National security strategies and the Army's role. Rather than implementing technological change in 15-year cycles, the Army will **spiral** Future Force technology into its Current Force structure (the SBCTs and Modularity are targeted for FY07 completion and constitute the Current Force).

Spiral technology insertions will demand changes to facility and infrastructure capability, capacity, and characteristics. Determining an acceptable level of flexibility or adaptability to accept technology is critical in determining what is needed, how long it will be needed, where it's needed, and how it relates to functions or tasks that must be performed?

Essentially, we must determine how to invest resources that minimize reaction to or the frequency of facility change. Investment strategies and priorities must now consider requirements beyond a 6-year window. That is not to say that there isn't inherent risk (likelihood of technology fruition) or expense (flexibility to encompass technology-driven change). It does mean that that capital and operating decisions need a longer view as technology fielding is based on maturation rather than time.

For example, an SBCT and BCT(UA) are both composed of six (6) battalion-sized units. They include four (4) unmanned air vehicles (UAV) with a 12-foot wingspan today. Tomorrow, the FCS UA, projected to begin fielding in FY11, will still be a brigade of 6-7 battalions but equipped with over 110 UAVs ranging in size from ➤

Usage of unmanned ground vehicles will increase.

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manpacks (say a 3-foot wing span) to almost the size of a manned helicopter (say about half the size of an OH-58D).

SBCTs or BCT(UA)s do not currently employ unmanned ground vehicles (UGVs). An FCS UA is projected to employ over 200 UGVs ranging in size from manportables to vehicle platforms just under 10 tons.

How, when, where, and with what capabilities will these technological enhancements be met as they are fielded? How can the Army minimize the impact on facilities and provide a more flexible or adaptive facility that can accommodate technology insertions like UAVs or UGVs?

As the Future Force evolves and technologies are inserted into Modularity and Stryker units, it will be critical to develop standards and criteria with capabilities and capacities to support them. These standards are used to validate and verify facility support requirements, assess facility adequacy, and identify what installations can do to accommodate new technologies. The ACSIM approved strategy is for developing adaptive, multi-purpose standards .. "where it makes sense" .. that simultaneously provides the flexibility to accommodate and stabilize the frequency of construction needed to accept technology insertion.

These factors heavily influence how and what we provide in the way of facilities and infrastructure capabilities. For example, in the logistics area, the Army is shifting from a 4-level to a 2-level maintenance and supply. In past designs, unit maintenance facilities only provided capabilities and capacities for the first two levels of maintenance. Under 2-level maintenance, the first three levels of maintenance and some of the fourth will be combined into one and performed by units. As the next generation of systems (i.e., FCS and the Future Tactical Truck System or FTTS) eliminates tasks necessary to keep equipment wartime configured, facility capabilities will shift from manual intervention to "smart" technologies.

The FCS FoS and FTTS systems will self-diagnose failures **BEFORE** they occur and **TELL** you when it will happen. Repairs will be accomplished through simply replacing the faulty component with simple tools in less than an hour. A sustainment maintenance unit or a National Maintenance Center will perform tasks that require specialized skills. When these tasks are critical to unit deployment or cannot be efficiently accomplished through supply replacement, higher echelon maintenance will come to the unit. Future unit maintenance facilities will need increased capability for higher echelon maintenance personnel to use such as overhead lift (say 35-ton in addition to unit 10-ton capacity). Why not just send the component or vehicle to the Division Support Command (DISCOM) or Corps Support Command (COSCOM) you'd ask? Under Modularity, there will no longer be a DISCOM or COSCOM.

In the training arena, the Army live training axis has been proactively engaged in developing next generation capabilities with the fielding of the First Digital Division (FDD) at Ft Hood. This effort served as the foundation to "leap ahead" in the identification, development, and implementation of enduring training facilities to support the Future Force such as Battle Area Complexes (BAX) and Combined Arms Collective Training Facilities (fighting in cities or urban operations).

However, the larger training Transformation picture requires integration of all three training domains — live, virtual, constructive (L-V-C). The first facility design affected will be where we currently park tactical vehicles. As the Army implements embedded training (ET), connectivity to conduct training will exist between parked vehicles, battle simulations, or other units through the installation backbone. Soldiers will train on their equipment with others in virtual simulators (replicas of equipment), and in constructive training (wargames and desktop staff trainers). They will be linked to those training on live-fire facilities … all fighting the same battle, on the same terrain. Advanced technologies like Land Warrior provide connectivity for the individual Soldier to participate in ET through his wearable computer and combat ensemble.

Not only will L-V-C training be conducted across the installation, but also with participants at other installations or in other countries through distributed training (DT). DT allows Soldiers to "attend" courses or achieve higher education goals virtually across TRADOC schools and centers or knowledge centers. Training with other MACOMS or with students at the Command and General Staff College or War College as well as with other services is enabled through DT. Soldiers are no longer limited by the availability and expense of "classroom seats" but use the same connectivity that's also accessible from where they live either in the barracks or from the housing area.

The same connectivity provided for ET and DT serves as the foundation for Battle Command, C4ISR, and reach operations that significantly change the role of installations. All of the technology previously cited are geared to reducing the logistical tail of units in order to reduce the time it takes to deploy a combat ready, expeditionary force. Smart vehicles generate replacement part orders and reduce the need for deploying specialized skills with the unit. Commanders gain the ability to access larger databases, knowledge centers, or centers of excellence to enhance the decision making process. The installation is the hub of all of this connectivity.

We continue to progress with developing our installations and their facilities for the 21st century Army. Impact mitigation or elimination cannot be achieved unless they are accomplished early on in the requirements identification development stages of materiel acquisition and technology maturation.

Understanding the Transformation environment and its decision processes affords an opportunity to influence change before having to react to it. And, in order to influence change, we need the ability to more accurately forecast or predict support requirements in responding to the demands of Transformation. Facilities that are flexible enough to accommodate a level of technology adoption without requiring construction solutions will be the key to determining what is an investment and what is an expense.

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Implementing Transformation

by Claude Matsui and LTC Paul Mason

In order to implement the Army's Transformation plans and priorities, it has made fundamental changes to its road map for change. Unlike the changes of the past, the magnitude of impact Transformation represents requires changes to its business processes and decision environment, not just how it's organized and equipped.

Transformation requires a dynamic decision making environment and accelerated implementation. The Army recognized this and instituted changes that incorporates seven basic areas of concentration called domains— **D**octrine, **O**rganization, **T**raining, **M**ateriel, **L**eader **D**evelopment and **E**ducation, **P**ersonnel, and **F**acilities or DOTMLPF. These domains represent mandatory areas of consideration that validate requirements for decision under the Army Campaign Plan (ACP).

As the Army transforms, so must the way we manage and develop installation infrastructure and facilities. Over the past few years, there are fundamental factors that have emerged as areas for change if we are to successfully integrate the Facilities domain into the overarching Army decision process through the next three decades: the *planning horizon* used to forecast or predict change; the method of *determining and measuring* acceptable risk; the *methodologies* used to implement Transformation *(See articles by Don LaRocque and Troy Collins on pp. 10, 12 for in depth looks).*

The "planning horizon" used to examine Transformation affects our ability to forecast and predict change and its potential impacts. It is the framework upon which risk of obsolescence can be made. For the Facilities domain, it can also define the flexibility and durability of facility designs to be used for Transformation.

Over the next 2-3 decades, we will continue to use the basic combined arms structure established by SBCTs and Modularity BCT(UA)s. What will change is the technology we will employ or adopt and how it changes the way we do things in the Army. Rather than implementing technological change in 15-year cycles, the Army will ***spiral*** *Future Force* technology into its *Current Force* structure (the Stryker and Modularity fielding are targeted for FY07 completion with the SBCTs and BCT(UA)s constituting the combat capability of the *Current Force*).

Spiral technology insertions will become the driver of facility and infrastructure capability, capacity, characteristics, and/or attributes. The need to determine what is an acceptable level of flexibility or adaptability to accept technology is the critical factor in determining *what* is needed. *How long* it will be needed? *Where* it should be sited and in what relationship to functions or tasks that must be performed?

Soldiers will receive more training in military operations in urban terrain facilities.

Determining how to minimize the impact of technological change requires a facilities planning horizon synchronized with the 10+-year technology assessment and fielding process. In some cases, the flexibility to adapt to change or the cost to maintain obsolete facilities may require replacement of facilities with capacities that exceed current requirements in order to avoid retrofit construction soon after completion.

There is inherent risk to providing the flexibility to accommodate technology-driven change. However, that risk must be weighed against the affects of repetitive or retrofit costs each time technology is adopted. Moreover, the critical warfighter aspect is the lost time it takes to implement long-lead construction solutions associated each retrofit or renovation/modernization activity. Time that is not recoverable and the risk of building for yesterdays needs. Fundamentally, facilities and infrastructure capital and operating planning decisions need a longer view.

As the next generation of systems (i.e., FCS and the Future Tactical Truck System or FTTS) shift from manual intervention to "smart" technologies with self-diagnosis of failures and predictions of when it will happen, we need to examine the technologies that could be used and how they will "talk" to maintenance and supply personnel? Who reacts to the diagnostic, prognostic, condition reporting capabilities of these vehicles? What are the facility attributes and capabilities needed to support smart vehicles?

In the training arena, integration of all three training domains— live, virtual, constructive (L-V-C) is an imperative to sustaining skills of high technology or technology intense platforms. Embedded Training (ET) and Distributed Training (DT) connectivity to conduct training across the installation backbone and Global Information Grid changes what buildings or activities need to be connected to each other either via wire, fiber optic cable, or even wireless. Training connectivity that links where we study, where we work, and where we live, 24/7.

The same connectivity is provided for Battle Command, C4ISR, and reach operations that effectively change the role of installations to providing continuous support from homestation to the foxhole and back. Unprecedented accessibility to large databases, knowledge centers, or cen- ➤

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ters of excellence with the installation as the hub of all of this connectivity.

By providing the decision environment that evaluates and develops courses of action across the DOTMLPF domains, the Army gains the ability to forecast and predict the magnitude of impact and develop near- and long-term strategies for execution. This ability, in turn, can mitigate surge or "start-up" cost by identifying those actions that can be spread across time. It also affords an opportunity to plan and budget for execution in a more deliberate and effective manner as well as identify opportunities for phased execution.

If we were to delve deeper into the policies, processes, and procedures of each DOTMLPF domain, we would begin to see how the other domains are integrated into the fabric of the Facilities domain. Several tools (e.g., Transformation Template-Installations (TT-I)) and processes (e.g., Unit Set Fielding) have been developed to implement DOTMLPF.

As an example, MILCON by title, and facilities and infrastructure by definition, has always been Materiel development and fielding considerations. In reality, as funding decrements and shortfalls reduced system development budgets, areas of consideration that were not directly related to the technical or operational capability of the system or platform were either deferred or waived as a bill payer to warfighter capability.

In order to synchronize technology (Materiel) decisions with the other DOTMLPF domains, the Army will implement Transformation using the Unit Set Fielding (USF) process. Mandatory decision and reporting points are used to integrate domains. The 84-month USF process is based, in fact, on the 5-7 year MCA cycle as the most demanding process to be integrated. The Support Facility Annex (SFA) process and technical report used to implement the Facilities aspects of Unit Set Fielding (USF) serves as the framework for assessing FCS FoS support requirements. This provides a consistent means of validating, verifying, and categorizing facility and infrastructure requirements across all 18 FCS FoS platforms. The SFA also serves as the foundation for developing the standards and criteria necessary to forecast and predict impacts due to technology insertions.

Adaptive, multi-purpose standards and criteria will be used to assess *Future Force* technologies that are *inserted* into Modularity and Stryker units. These standards and criteria will capture the technical aspects of the technology to be inserted, validate and verify facility support requirements (for use by other tools like the Transformation Template-Installation (TT-I), assess facility adequacy (i.e., Real Property Plans (RPLANS)), and identify what installations can do to accommodate new technologies. These standards and criteria will simultaneously provide the flexibility to accommodate and stabilize the frequency of construction needed to accept technology insertion. Identifying when and where it makes sense to use adaptive, multi-purpose facilities is the key to achieving a balance between mission functionality and fiscal limitations.

Installation strategies like the Focus Facility Strategy have been adjusted to reflect a longer view and preparing installations to accommodate Transformation. Adopting more multi-purpose, adaptive facility designs that maximize the functional benefits of a facility or complex is an installation investment strategy. It considers the mission relationships and activities that must be accomplished to meet deployment or functional requirements as a measure of *risk* and *investment* rather than solely on cost or expense.

Initially developed for SBCT fielding, the TT-I provides a "grass roots" identification of facility types and space allowances needed to support a given Table of Organization and Equipment (TOE) or unit structure. The TT-I evolves as a "living" document as decisions are made and equipment are modernized, re-capitalized, or re-distributed. Modified to address BCT(UA) needs, the TT-I continues to evolve as Modularity units are approved for fielding and a STRAWMAN version is under development to address FCS UA requirements.

A significant challenge for the Army is balancing priorities and available resources to implement Transformation while simultaneously prosecuting a war on terrorism. While strong Congressional support in the form of supplemental funding has been helpful, the cost of meeting wartime expenses they cannot fully meet the fiscal demands of installation management.

The transformation of installation management processes and organizations has helped to mitigate resourcing shortfalls. The Installation Management Agency (IMA) has standardized the garrison organization and divested activities with low or poor return on investment. Progress in other areas such as the Installation Design Guide and Army Baseline Services contribute to the overall efficiency of installation management. Regionalization of business practices and contracting activities have contributed to strategic investments through IMA and its major partners, the Army Contracting Agency and Network Command. MILCON strategies and execution innovation are being developed and executed by IMA and USACE.

Where Are We? And What's Next? (See Jim Lovo's article on p. 11 for a recap of other efforts to date.) From a process integration and synchronization perspective, facilities integration into DOTMLPF is actively being pursued. Representatives from the OACSIM Line of Operation 15 (Installations) Work Group under the ACP serve as members of FCS Integrated Product Teams in coordination with the FCS Lead System Integrator (LSI). Building on past prototyping efforts, facilities requirements validation and verification is now a component of the materiel development process for the FCS FoS and the Soldier as a System SoS.

Although increased funding is a significant contributor to the overall success of installation transformation, time is not a recoverable commodity. Impact mitigation or elimination cannot be achieved unless they are accomplished early on in the requirements identification stages of change in the Army. And, while integration of processes like those represented by USF across the DOTMLPF domains will assist in accommodating change, the need to effectively determine what is acceptable risk in developing investment strategies with a longer view is imperative for success.

Despite the challenges facing our installations in prosecuting a war and developing plans to accommodate a rapidly changing Army, we continue to progress with developing our installations and their facilities for the 21st century Army. We are committed to providing facilities that are commensurate with those our Soldiers are pledged to protect and defend.

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Supporting the New Army—a great time to be an engineer

by Don LaRocque

We are living in an unprecedented time. Our fighting force is stretched very thin and our Soldiers are stressed. Deployments into a hostile theater are a fact of life, are regular, and of long duration, We have activated and pressed into service most of the available Reserve Component forces—Army National Guard and Army Reserve—and as a result, their families and regular employers are also feeling the stress. Tens of thousands of Soldiers currently deployed were recently told they would have to stay deployed longer than they originally thought and that's been hard on them and hard on their families. The demand on our Army has not been this great since WWII.

The Army is meeting this challenge by Transforming Maneuver and Aviation forces, using most of the Reserve Component Forces, and soon, by Globally Repositioning Forces.

The Chief of Staff of the Army's program to transform the Army has made it more relevant and ready by going to brigade combat teams (BCTs) and increasing the Army end strength, albeit temporarily, by 30,000 Soldiers. For the Army Transformation to take place quickly and get the Army into a more fighting-capable posture, it is essential that we facilities providers stay very reactive, proactive and flexible.

Modularity is the Transformation of all of our maneuver divisions into brigade combat teams. Simply put, it's implementing the Army Campaign Plan and integrating into it the families of those Soldiers as well as the services we provide them. These additional Soldiers need facilities and, not only must we make this happen quickly, but we must do it in an affordable way. Affordability is a key factor because our monies come out of the same pot that is being used for body armor and uparmored humvees for the Soldiers who are getting shot at on a daily basis, and we do not want to diminish that effort.

Speed, affordability, quality, versatility, durability and inventiveness are the six expectations that we as the customer are looking for from the Corps of Engineers and from contractors to get through this difficult and challenging period. We have a very aggressive timeline to get this facility piece on the ground.

Which installations will be affected? Very likely the installations where we are implementing inventive and fast facilities solutions to keep the Army mobilized, trained and deployed and stationing the tens of thousands of new Soldiers coming in right now.

Don LaRocque

There are also secondary effects to Transformation. If there are 30,000 new Soldiers, it stands to reason that our training load will increase. They'll have to come up through the recruitment channels and go through basic training at our school houses. The 30,000 began to come up last year through our basic training and AIT posts, creating a huge increase in the need for just training, barracks, transportation, food service, and on and on.

At any one time, we have 150,000 Soldiers mobilizing or demobilizing through our installations. Last November/December, we went through a very large mobilization of about 70,000 troops across the country. These Soldiers were shipped out to the theater to replace the Reserve Component Soldiers coming back and demobilizing. Many of them are Medical Holdover (MEDHOLD) Soldiers who cannot be discharged immediately due to a medical condition, and we have to billet them until they're rehabilitated. To accomplish this, we had to quickly develop and implement a new set of criteria for MEDHOLD buildings. Fort Stewart was the first installation to implement these.

We all know the Army cancelled the Comanche program and instead is revitalizing its current fleet of Apaches and Blackhawks and trying to bring them up to very good condition. What is less well known is that the Army is going to reposition that fleet all over the map and put aviation battalions in places that never had them before. Once that's done, we will need hangars, parking aprons and battalion operations facilities and company operations facilities in very short order. Again, another demand for quick and affordable facility solutions.

The Integrated Global Positioning Strategy will bring up to 50,000 Soldiers back from overseas bases in Europe and Korea. The only post currently identified to receive the relocating Soldiers is Fort Carson but we know that many more will be impacted once Defense decisions are made public. This will also generate a huge demand for innovative facility solutions.

The Army is also in the process of rebalancing its mix of Active and Reserve units. This is resulting in new units appearing in places they have not been before. For example, over 1,000 quartermaster troops will be activating at Fort Lee, additional MP companies will be activating at Fort Leavenworth, etc. Conversely, Reserve Component units will be deactivating. The reverse will happen as current Active Units become Reserve Component units and get restationed. There will be no net gain to the total military end strength but because of where we're moving things, we will have additional facility needs.

One of the immediate effects of all this is a surge in the use of temporary relocatable buildings. The Modularity facility planning guidance for this effort includes maximum use of existing permanent facilities augmented by relocatable buildings. The Army has some excess facilities but they are either too old or located in the wrong places. The facility requirements that cannot be met by use of existing facilities will be met by use of temporary relocatable facilities. The expected duration of the requirement is 6 – 10 years. Individual relocatable modules costing more than $250,000 must be purchased with OPA funds, and modules costing less than $250,000 may be purchased with OMA funds.

Unaccompanied Personnel will be housed at the current PP standard for the installation. For example, 1+1 at Fort Stewart, (single man rooms), 2+2 at Fort Drum and Fort Campbell, etc. The 1+1+1 relocatable module is the acceptable permanent party standard.

Unit Operations facilities (company, battalion, brigade, headquarters) will be at 50% of the Army standard--+ 5,000 square feet/unit is acceptable. Generic administrative and supply/storage modules will be used, which will allow the most flexibility in setup, use, and eventual removal. COMSEC storage closets are not authorized, but Class V safes will be used.

Each unit will be assigned maintenance bays in existing permanent motor pools. Additional Organizational Vehicle Parking and relocatable maintenance shelters (clamshell- type facilities) may be procured to augment existing motor pools. The ➤

Army Modularity– a muscle mission requiring more flexible and more responsive facilities programs

by Jim Lovo

The Army is transforming itself while fully engaged in the Global War on Terrorism and simultaneously carrying out a myriad of other missions here at home and around the world. The math is: more missions = need for more combat units.

A key part of the Army's answer to this equation is *Modularity* – making combat units more modular in their organizational and control structures and making them more expeditionary and lethal. And create more of them. Individual combat brigades are the basic modules in Army Modularity, and Armywide, there will be an increase from about 38 to about 48 combat brigades in the force structure.

Increasing the number of combat brigades and making them more modular, integrated, networked, expeditionary, adaptable and lethal, requires facilities support – both temporary and permanent. The Modularity process for Army forces is a highly expedited process and therefore, the planning and provision of facilities to support Modularity must also be expedited since facilities are on the critical path to fielding the new and converted units.

This expedited, dynamic planning and provision of facilities will be the norm for the next few years, based on the reorganizing of the Army into Modular Units of Action, the Army Global Restationing, and the upcoming BRAC 2005.

Last spring, Don LaRocque of the Army's Installation Management Headquarters stated that Modularity will challenge all engineers – at DPWs, at Districts, and those in TO&E units. He's right; Modularity is certainly challenging all of the Engineer Regiment. To meet the missions, the Army leadership has directed very aggressive schedules to convert and create units to the new Modularity TO&E configurations. These tight schedules do not allow time to obtain facilities through the Army's traditional capital construction program — known as MILCON.

Jim Lovo

Accordingly, the Army has implemented fast track, provisional approaches at Forts Stewart, Campbell, Drum, and Hood, and is pursuing a similar strategy at Forts Richardson/Wainwright and Fort Lewis. Forts Carson and Riley also will be dealing with fast-track Modularity facility programs in FY05. These expedited, interim strategies involve varying combinations of *relocatable buildings* (personal property) and rehab of existing facilities (real property) along with some MILCON infrastructure.

Executing these temporary, expedited facilities strategies has been challenging at each location, but this has been the only feasible approach to meet the mission needs. Some installations have chosen to accomplish the relocatable building procurement, placement and OMA infrastructure work with their own forces and contracts. Others have chosen to use their local USACE district to procure and deliver both the relocatable buildings and the real property infrastructure/building rehabilitation.

Mirko Rakigjija's staff at USACE's Huntsville Engineering Center has been supporting the Installation Management Agency at the garrison, Region and Headquarter's levels with technical advice and reviews of the economic analysis for the relocatable (personal property) lease versus buy analysis. The ACSIM's facility division under leadership of Bob Sperberg has worked hard to develop policy guidance (revised policy on Relocatable Buildings issued 21 October 2004 with the interim change to Chapter 5 of AR 420-18) that addresses relocatable buildings as personal and real property, approval authorities, and the requests to meet the extended durations of use relocatables contemplated under the Modularity program. The Army Installations & Housing staff at the Secretariat has also played key roles in getting OSD and Congressional approvals on these complex and time-sensitive packages.

Understandably, there has been a collection of legal, funding, engineering, acquisition, information technology, furnishings, and management issues associated with these personal-real property temporary facility packages. It has proven essential to have a full understanding of the critical issues, the players, the processes, and the policies (e.g., bare bones facilities approach; cost-control, responsive reporting, etc.) before starting on these projects, and then take the time to check and renew these understandings as the project and team evolve on the way to getting these packages executed. Effective communication (vertical and horizontal) and teamwork are critical ingredients in obtaining approval and then delivering the projects to the Soldiers on the ground.

The Army's intent is to transition as soon as possible away from the use of relocatable buildings to provide facility support for Army Modularity. The Army ➤

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rationale is to have all units at the same standard until the temporary mission ends or permanent, adequate facilities are constructed. Unaccompanied personnel dining will be accommodated by longer meal service hours and bussing to existing dining facilities. NEPA documentation needs to be as comprehensive as the installation can make it. Annual and weekend training will not be compromised.

Modular buildings will use commercial grade materials and finishes. Examples include solid core wood or steel doors with steel doorframes and three hinges. Walls will be no less than 2x4 thick. Low-e glazing insulation will be used and vinyl covered wallboard and vinyl tile flooring.

We are using inventive solutions to meet all these facility needs for a better price than in the past and we are continually looking for new ways to do our job better in order to support the needs of today's Army. We will be expected to accomplish in 5 years that which would normally take 2 decades and at 50% or less of today's cost. It's a great time to be an engineer!

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PWD

Military construction strategies

by Troy Collins

The Army is facing unprecedented challenges that will greatly affect operational real estate and facilities. Major realignment and restationing initiatives, Army transformation, and greater end strength in our force structure create new facility requirements beyond the $3 billion the Army annually invests in modernizing its aging facilities.

To address these challenges the Army held a construction alternatives workshop in November 2004 hosted by the Society of American Military Engineers and attended by representatives from the Assistant Chief of Staff for Installation Management, the Installation Management Agency, the U.S. Army Corps of Engineers, and representatives from private industry. The workshop's objective was to open discussions on construction strategies to reduce military construction (MILCON) program timelines as well as costs for planning, design, and construction. The reduction in timelines and costs will be achieved without a reduction in quality.

Topics covered during the workshop centered on finding faster and less expensive methods and materials to meet anticipated increases in Army facility requirements. Case studies from the Fort Stewart modularity support demonstrated lessons learned and barriers encountered. Discussions included implementation of industry construction standards and performance specifications to foster innovative solutions from the design and construction community in lieu of prescriptive specifications that may limit industry's flexibility in construction approaches. Representatives all agreed a comprehensive plan addressing unified approaches for planning through execution is needed.

Since the workshop, a team has been established to develop a plan for military construction strategies. The focus areas include planning and programming, acquisition, execution, and operation and maintenance. Team members include representatives from the organizations that attended the initial workshop. The plan will pave the way to move Soldiers from temporary living and workplace facilities as soon as possible. It will also address new ways to approach military construction. The plan will be implemented starting with the 2007 MILCON program; however, every opportunity to implement sooner will be taken.

ACSIM's Dave Reed (left) addresses the Construction Alternatives Workshop.

The Army will meet new facility requirements by first using available assets. Temporary facilities will be used when immediate requirements must be satisfied. Permanent facilities will be constructed using the MILCON program.

The Army believes that innovative construction alternatives, such as modular construction, lend themselves to standard facility types. Modular construction is a method of construction that utilizes pre-engineered, factory-fabricated systems assembled on site. The majority of the construction is done in the factory; the exact opposite of conventional construction. This type of construction is being considered for permanent facility requirements and should not be confused with relocatable (temporary) modular facilities being used to provide expedient facilities.

Modularizing the forces is requiring temporary facilities to be constructed in various locations within the United States to field the new Brigade Combat Teams (Units of Action). Temporary relocatable buildings are currently being utilized or erected at Fort Stewart, Ga.; Fort Campbell, Ky.; Fort Drum, N.Y. and Fort Hood, Texas. This year the Army expects to construct similar facilities at Fort Polk, La.; Forts Richardson and Wainwright, Al.; and Fort Lewis, Wash.

Additional locations are planned in fiscal year 2006. Private industry has responded to meet these short turnarounds providing quality temporary facilities regardless of site, policy, and logistical constraints and challenges. Permanent facilities will be ➤

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wants to provide the needed capital construction via the MILCON program. However, the future MILCON program and process also will be different from the traditional MILCON process – both from a content (i.e., standards, strategies, and processes) viewpoint as well as its timing (schedule) aspects.

In fact, the Army (ACSIM, IMA, and USACE under the leadership of the Army Secretariat for Installations and Housing) are developing a strategy and implementation plan to support the major permanent restationing initiatives that the Army will execute. The initiative's objectives include providing the ability to establish, reuse/re-purpose facilities with the minimum lead-time; leverage private industry standards and practices; and reduce acquisition/life cycle costs. Target implementation is the FY07 MILCON program; however, opportunities for use on the FY06 MILCON projects will also be aggressively explored. There is a strong possibility that the FY05 Army supplemental budget request will include MILCON that must conform to this new paradigm.

Don Basham is leading the USACE's effort on this initiative and his project manager is Howard Moy. The initial plan is to be provided to HQDA in January 2005. The success of this effort will likely have profound long-term impacts on how the ACSIM/IMA/USACE/private industry team develops and executes the bulk of future MILCON programs, including permanent facilities for the Army Modularity program.

Faster, more flexible, more effective – those are some of the Army's challenges being addressed under Modularity. They also are key challenges in the facility business that put the Engineer Team on point for the Army. Our combined success will continue to play a key role in the effectiveness of the Army. Essayons!

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Fort Hood Super PM

by Michelle Lenis

In addition to celebrating the homecoming of Fort Hood's Soldiers from the Iraqi Theater, the Fort Hood Directorate of Public Works (DPW) has another private celebration of a "job well done" for their initiative and completion in Super Preventative Maintenance (PM) in facilities across the installation. The Soldiers from Iraq are returning to a total restored facility that is functional and aesthetically pleasing. This task to restore facilities to "green" condition prior to the re-deployment of the units has become the new standard for the DPW at Fort Hood.

Super PM started out as an opportunity while the 4th Infantry Division (4ID) was deployed to Iraq to perform all the necessary repairs to the barracks. The project changed to a total restoration with upgrades to the facilities when the DPW looked at the condition and needs for today's army.

Motor Pool Super PM under construction.

This project was undertaken because the barracks required extensive repairs to provide fully functional and aesthetically pleasing rooms for the returningSoldiers from the Iraqi Theater. The Super PM scope includes interior and exterior painting, exterior cleaning, roof repairs, repairs to HVAC and electrical distribution, door replacement, window /door hardware repairs, flooring replacement/repair, lavatory/toilet/shower repair, fire alarm repair, and light fixture replacement for 34 barracks at a cost of $10.134 million.

In addition, the Super PM project had to overcome unforeseen obstacles in funding, timeframe and mold growth in the facilities from buildings being shut down for long periods of time without airflow. With the rear detachment of 4ID and activation and mobilization of the National Guard and Army Reserves needing barracks space at Fort Hood for training, the timeframe to perform construction on the facilities was limited to only 30 days. Construction crews worked night and day to renovate the interior and exterior of the 34 barracks buildings before the 4ID Soldiers began returning to the post.

The Super PM initiative idea has spread beyond the barracks to the motorpools, hangars, dinning facilities and headquarters installation wide. Currently, a partnership with the 4ID occupants of two motorpools has allowed the DPW to perform a Super PM for $2.2 million. Due to the construction occurring in phase and communication with the occupants, Fort Hood DPW and the Soldiers have formed a partnership which allows the contractor to perform the Super PM that also includes increasing the administration area, upgrading to the fire suppression system, upgrading the communication, and a new HVAC system. These facilities, built in the 1960s, are currently being brought up to current standards that allow the user to properly maintain mission essential equipment and vehicles.

Barracks Super PM completed.

Currently, Fort Hood DPW has completed $15.448 million worth of Super PM projects for 65 barracks in the 4ID footprint and at North Fort Hood. There are $15.791 million on-going projects in contracting and construction phases funded with OMA dollars. These Super PM projects through the Job Order Contracts (JOC) and the Fort Worth District of the U.S. Army Corps of Engineers include barracks, motorpools, headquarters and dining facilities across the installation. Fort Hood DPW's future plans include 24 barracks, 76 motorpools and 6 hangers for $85.174 million post-wide.

The DPW has accepted the challenge in bringing Fort Hood's standard above and beyond what was ever expected. To date, millions of dollars have been spent on Super PM projects in order to secure a good homecoming for Soldiers returning from the Iraqi Theater. Fort Hood DPW's number one concern is the well-being, safety, and security of our heroes returning to, and stationed at, Fort Hood, and this is proof that DPW is doing its part to support our troops.

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programmed for construction beginning in fiscal year 2007 through 2013 to replace these temporary facilities.

Base Realignment and Closure (BRAC) is being assessed by the services in order to shed excess infrastructure that is costly to maintain. In the May 2005 timeframe, the Secretary of Defense will announce his recommendations for worldwide base realignment and closure. To meet the challenges of realignment, temporary and permanent facilities may need to be provided.

Integrated Global Presence and Basing Strategy (IGPBS) and end strength for the Army forces may also require some installations to house and train more Soldiers. A date when IGPBS will be announced is still pending but it is anticipated to be during the same timeframe as BRAC announcements.

What is the Army's bottom line for military construction strategies?

- Quality facilities that can be built faster and cheaper.
- Utilization of Army standard designs and commercial standards and practices.
- Adherence to antiterrorism/force protection requirements and energy conservation standards.
- Sustainable designs that allow maximum flexibility for future facility requirements.

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Deconstruction makes sense during historic Army Transformation

by Neal Snyder

To understand how old the concept of building recycling is, ask an archaeologist where to find the seven wonders of the ancient world. Where, you can ask, is the temple at Ephesus? The lighthouse of Alexandria? The original Mausoleum? They exist today as parts of homes, municipal buildings and warehouses -- places where people live and work. Their original purpose gone, they became more valuable in pieces rather than whole.

That's the story for more than 80 million square feet of barracks, offices, mess halls, apartments, theaters and warehouses on military installations across the United States. Instrumental in the wars of the 21st century, from World War II to the Cold War to Desert Storm, they were declared excess by the Defense Department in 1998. The Army held the keys to more than 50 million square feet, the equivalent of more than 365 warehouse shopping club buildings.

At an estimated cost of $7 to $9 per square foot, tearing down all those old structures in the traditional way and sending them to the landfill would set the Army back some $350 to $400 million -- possibly more, with the cost of new landfill space rising. Construction and demolition debris make up to 80 percent of the solid waste streams on some installations. Fort Knox, Ky., estimated that its construction landfill capacity would fill up within two years.

Meanwhile, the structures the Army was directed to trash were turning into treasure mines. Many have pine or hardwood floors. Solid beams used when barracks were thrown up for World War II are of better quality than any available new today. Cast-iron boilers draw good money on the scrap metal market. Upgrades brought in valuable, modern doors, siding, lights, double-pane windows and other fixtures. About 90 percent of a building can be recycled, according to Fort Monroe environmental scientist Peter Van Dyke. Fort Monroe recently won a state award for an installation recycling program incorporating building deconstruction, the careful removal of materials for reuse.

Even before the Army Strategy for the Environment was announced, deconstructing and recycling Army buildings made sense from the point of view of the strategy's triple bottom line: "Readiness, Community and Sustainability."

Using the intrinsic value of their excess buildings, installations across the country have found different, creative ways to meet those goals.

Potential bidders examine the contents of a surplus apartment on Fort Knox, Ky., before an auction. Photo by Neal Snyder

Staff Sgt. Donald Shively points out features of his workshop built primarily from materials harvested from deconstruction at Fort Knox, Ky. Photo by Neal Snyder.

With a program dating to 1992, Fort McCoy, Wis., has dismantled more than 325 buildings – approximately 1.4 million square feet. Most of the buildings in the program are now gone. The installation let private individuals bid for the deconstruction contract for one building at a time. In the program's heyday, it cost the installation about $3 per square foot to have the work done by a private entity, compared to about $10 per square foot to have the demolition done by a contractor, according to Bonnie Robarge-Owen, installation building deconstruction representative.

Individuals reused most of the material they salvaged, Robarge-Owen said. Some found historical items, including letters and paintings during deconstruction that would have been destroyed in a demolition. ➤

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Foundation removal was used as a training opportunity for engineer units, she added.

At Fort Knox, Ky., individuals buy the rights to take what they can from a building in a live auction. Over the past six years, Fort Knox sold the recycling rights in this way to more than 500 World War II wooden buildings and 900 brick apartment buildings.

Deconstruction kept more than 300,000 tons of material out of the landfill and extended the estimated life of the installation's landfills from two years to 20. The installation estimates its cost savings at approximately $3 million. The deconstruction program remains self sufficient, and over four years generated around $500,000 for Soldier quality of life programs.

Seven years of evolution are reflected in Fort Knox's system. The installation inserts a six-week window into the normal demolition and holds the auction in the first week. The winners have the next five weeks to complete their work, and must provide a good-faith deposit to ensure they recover a minimum of 50 percent of the building (by weight) and observe all safety guidelines. After six weeks, a demolition contractor removes what's left. By auctioning rights rather than a building, the Fort Knox way lets small entrepreneurs (including some Soldiers) take advantage of the program. Fort Gordon, Ga., and Fort Campbell, Ky., have also auctioned deconstruction rights.

Other installations form partnerships with nonprofit groups and housing agencies to either move or deconstruct homes. Fort Hood, Texas, and Austin Habitat for Humanity tried deconstructing 11 excess family housing units together in 2004. Using a small labor force from the AmeriCorps national service program, Habitat for Humanity removed more than 35 tons of materials, including sinks, light fixtures, appliances, air conditioning systems, cabinets, fencing, metal carports and water heaters.

Habitat for Humanity also benefited when Fort Monroe deconstructed seven buildings in 2004. Of the 3,500 tons of waste generated, the installation turned about 76 percent away from the landfill. Most of that went the nonprofit, Van Dyke said. Fort Monroe diverted 56 percent of its solid waste from the landfill in fiscal 2004, up from just over 7 percent in fiscal 1999, thanks largely to deconstruction, he said.

Contractors deconstruct Building 6286 on Fort Carson, Colorado. Photo by Susan Galentine.

The benefits of the deconstruction program don't stop at the installation gate. Habitat for Humanity reuses some materials and sells the rest through its "RE-store" fundraising program. Fort McCoy can point to a church built with deconstructed materials; one reserve Soldier near Fort Knox built his entire home out of material harvested on post. Another Fort Knox Soldier financed upgrades on his home through the sale of scrap metal.

"Eighty-five percent of my construction material comes from these auctions," said Raymond Fultz, a campground owner from Eastview, Ky. "If it wasn't for these auctions, I wouldn't be at the stage where I'm at in the campground."

"In the last two-and-a-half years, I've saved close to $25,000," Fultz said.

The Army carefully preserves the artifacts of its history, but the wonders of the U.S. Army have always been its deeds, not its structures. Deconstruction of unneeded buildings releases resources for the readiness of Soldiers, reduces the impact of Army transformation on the environment and builds bonds of goodwill with the communities around installations. These results can last a long, long time.

Deconstruction resources:
Public Works Technical Bulletin (PWTB) 200-1-23, Guidance for the Reduction of Demolition Waste through Reuse and Recycling, provides guidance for recovering, reusing, and recycling building materials typically disposed of as demolition waste.

PWTB 420-49-32, Selection of Methods for the Reduction, Reuse, and Recycling of Demolition Waste, provides guidance on evaluating specific project conditions and assessing the feasibility of deconstruction, reuse, and recycling methods.

Both are available on the TECHINFO Web site, http://www.hnd.usace.army.mil/techinfo/CPW/pwtb.htm

For more information, please contact the U.S. Army Environmental Center Technology Branch at (410) 436-6866.

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Fort Campbell Modularity—a story of success

by Lannie Ratliff

Army Modularity and Units of Action are now buzz words throughout posts across the country. The Army's reorganizing its divisions into Units of Action through Army Modularity has created space needs at many posts including Fort Campbell, Kentucky. Col. James F. Duttweiler, Director, Public Works Business Center at Fort Campbell, was tasked with just such an assignment. By enlisting the help of the other members of DPW and Base Contracting, Col. Duttweiler was set to assess the needs, evaluate the resources, produce and implement a plan of action, then follow through to completion a very large scope of work and an extremely aggressive schedule.

The requirement for four new UAs was established by evaluating existing facilities and determining the new facilities to be built. Sites were evaluated on several levels of criteria. The first level was land availability. Second was nearness of the proposed buildings to the Soldier's barracks. Third was utility infrastructure. Then all was coordinated with Master Planning to verify that no conflicts existed for projects planned in the near future.

When establishing the project budget, DPW requested the assistance of Chickasaw Nation Industries, an SBA 8(a) business development program participant. They felt the experiential expertise that CNI had in the arena of military modular building projects gave a realistic and objective perspective in establishing the budget for the project. CNI also provided the same expertise in scheduling the construction of the project. DPW and Base Contracting decided to capture that expertise by awarding a sole source contract to CNI for the design-build Modularity project at Fort Campbell.

A typical Modularity office interior.

The contracting officer executed a contract for the design phase of a design-build project to CNI/Flintco to officially get the project underway. Schematic design for the project performed in house by CNI was reviewed by DPW. After acceptance, the approved layouts for all the sites were further refined by consultants working with the CNI/Flintco design team. DPW took an active role in coordinating site drainage, utilities, clearing, master planning and a host of other issues impacting the project. This culminated into a preliminary scope of work.

One of the Modularity sites at Fort Campbell. The Modularity buildings are the 8 new buildings in the foreground.

The price for the scope of work was quantified on two fronts. DPW put together the government's estimate while CNI/Flintco worked an estimate for the contract. Negotiations soon followed and a fair price was agreed upon for the scope of work, which fulfilled the needs of the user. The final scope of work was then defined.

With the final scope of work in place and the price negotiated, Base Contracting executed a contract for the construction portion of the overall design-build contract with CNI.

CNI and Flintco, Inc., one of ENR's top general construction contractors, are teamed in an SBA mentor-protégé relationship. On the basis of that relationship, CNI was able to bond the work and execute the contract as prime contractor.

DPW applied for site drainage permits through consultants in place at Fort Campbell. DPW received the submittals for the project immediately upon issuing the construction contract, reviewed and returned them to CNI to begin construction.

CNI/Flintco mobilized staffing the project with a multitude of qualified field supervision and quality control personnel. Sites were cleared of trees and buildings, then graded and utilities installed. Modular buildings, manufactured offsite, were brought in, set, anchored and finished out. Arms vaults required for each site took shape following the old adage of form follows function. Each site received from three to seven concrete vaults ganged together under the protection of a pre-engineered steel building. Nestled within the metal building, the vaults are climate controlled and protected from fire.

As with many projects, changes became necessary during construction. Several of the modular building locations changed due to modifications in personnel requirements. New sites were selected and prepared to receive the buildings with very little cost to the government. Additional buildings were added on additional sites because of growing needs to fully equip more of Fort Campbell's fighting personnel.

By the end of October 2004, all of the sites in the base contract were completed and turned over to the government. The staff at Fort Campbell said this project was faster and more cost efficient because of the way it was managed by DPW. Additional sites with buildings which were added through contract modifications took the project to $34.5 million. Col. Duttweiler said this was one of the best ➤

Fort Lewis reshapes itself to accommodate troops

by Andrea Takash

With the approaching dust clouds of the cavalry in its sites, Fort Lewis, Washington, will ally with the U.S. Army Corps of Engineers to accommodate thousands of Soldiers.

The 2nd Cavalry Regiment is coming, and Seattle District, U.S. Army Corps of Engineers prepares to reshape the post, which will grow by approximately 4,700 Soldiers in April.

Fort Lewis is the fourth Army installation to undergo modularization. Fort Campbell, Fort Hood and Fort Stewart previously went through the transformation.

Fort Lewis Directorate of Public Works and Seattle District work closely together to analyze lessons learned from the other Army posts.

"We have spent the last eight months partnering with the Directorate of Public Works," said Thomas Poole, Corps program manager. "Not only is this is an important project for Fort Lewis but also the Army."

Applying the lessons learned and the needs of Fort Lewis, the Corps divided the program into three segments: relocatable buildings, repairs to barracks and the renovation of existing facilities.

The relocatable buildings consist of brigade and battalion headquarters, company operations, storage and maintenance facilities, medical hold barracks, showers and latrines. Approximately one hundred forty buildings should start arriving in March.

Before the buildings actually arrive at Fort Lewis, a Corps quality assurance representative will visit the manufacturing plant to inspect the buildings.

Thomas Poole, Corps program manager for the Fort Lewis project, plans to have everything completed by Sept. 2005.

"We learned from the Fort Stewart experience that more quality assurance of the relocatable buildings was necessary at the manufacturing plant," Poole said. The quality of life for the Soldiers is high on the priority list for both the Corps and Fort Lewis.

To house the single Soldiers of 2CR, the Corps will repair barracks on the main part of the post. Repairs consist primarily of paint and patch work.

Under the renovation portion, the Corps will restore four dining facilities and two aircraft hangars. They will also build a new concrete aircraft apron.

All three segments will have separate contracts. This concept is based on a lesson learned from the other installations.

"We learned not to put all of the contracting eggs in one basket," Poole explained.

"Dec. 17, 2004, we awarded a contract to Alutiiq Manufacturing Contractors for preconstruction services on the relocatable buildings," said Susan Sherrell, Corps contracting officer. "We plan to award the remaining contracts for construction of the relocatable buildings and the renovations of the current facilities in the January timeframe."

After the Corps awards the contracts, Poole said he anticipates starting site work for the relocatable buildings at the end of January. Renovation work will start in April.

"We should complete everything by September," Poole said. "This is ambitious, but we are confident that we can do it."

Col. Steven Perrenot, DPW director, said he is also confident in the Corps' ability.

"The Corps has been involved since day one in planning this program," Perrenot said. "This process is a three-legged stool: the Corps, DPW and the contractor. We all work together to ensure success."

The Corps and DPW also have included the chain of command of 2CR in the planning process from the very beginning.

"The Soldiers are the end-users. So, it is important that we get their feedback early on. Our dedicated liaison, Tom Olsen, meets with the unit representatives weekly," Poole said.

The units are satisfied with what they see so far. This is a great way to measure success, Poole said.

"The Army is depending on us to deliver suitable facilities; so the Soldiers can concentrate on training. We will deliver," Poole said.

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and most challenging projects ever undertaken by DPW at Fort Campbell. One DPW staff member commented that even though there were numerous challenges during the project, all were met and solved.

The Modularity project at Fort Campbell is an indication of cooperative effort between the government and industry to accomplish what appeared at first to be virtually impossible. The ability of CNI to provide the modular facilities in the compressed time frame was dependent upon the expedited processes of DPW and DOC. This project at Fort Campbell has become a model for efficient design-build construction.

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Alaska supports Modularity with relocatable buildings

by April Carter and Tom Petersen

This article follows the progress of planning and programming for the 4/25 ABN Brigade Combat Team (BCT) at Fort Richardson, Alaska (FRA), from the spring 2004 formation of an ad hoc project development team through the beginning of 2005, as plans solidified and the wait for funding began. This is an "in process review" of the approach being taken by the Army in Alaska, an approach which parallels or builds on initiatives underway at other U.S. Army installations faced with the need to create interim facilities on an expedited timeline.

Following close behind the transformation of Alaska's 172D Stryker Brigade Combat Team (SBCT) – The Army's third Stryker Brigade, currently training for its mid-2005 Iraq deployment –was added the requirement to support an Airborne Task Force unit of action (UA) for whom interim facilities need to be in place by fall 2005 at Fort Richardson.

The overall impact on stationing in U.S. Army Alaska and the overlapping lifecycles of the Stryker BCT and the ABN BCT created unprecedented challenges. One work-around, which continued to plague planners, was the need to reunite the 4-23IN BN (the lone Stryker BN stationed at FRA, some 350 miles distant from its parent Stryker Brigade HQ at FWA) with the rest of the SBCT at the earliest feasible opportunity. This challenge was resolved by moving the schedule forward from 2010 and will set a precedent when the 4-23IN BN deploys to Iraq from FRA and redeploys to FWA along with the entire Stryker Brigade.

Parallel to the critical work of the interim facility plan, a massive update to the permanent facility Master Plan, to include rigging facilities, loading and deployment facilities, consolidated airborne training area, additional living and working space, etc., was undertaken. U.S. Army Alaska Master Plan has already born the fruit of a current construction program of $80 million in 2004. This aggressive MCA program is based on SBCT requirements only.

Identification of the permanent requirements brought to light the need to provide extensive facility requirements quickly. Relocatable buildings are the interim solution to bridging this one to seven year gap until permanent facilities can be programmed and constructed.

The DPW, US Army Alaska, Master Planning approached their task aggressively by simultaneously researching precedent projects to capture lessons learned (such as similar relocatable projects at Forts Hood, Drum and Stewart) while initiating a thorough analysis of available potential sites. Already in the midst of a long-range MCA construction program, optimal expansion sites were largely part of a footprint for future projects. Siting criteria required access to local services, training and deployment facilities and had to support unit cohesion. "Lessons learned "from the recently occupied Fort Stewart project were extremely helpful in giving FRA planners a benchmark from which to adapt the modular building projects to Alaska requirements.

The Master Planning Team included, along with the core of government employees, planners, schedulers and project managers from Salish and Kootenai Technologies (SKT), Inc (comprising the majority of the Master Planning permanent staff), as well as environmentalists and GPS technicians stationed on site from the Center for Environmental Management of Military Lands (CEMML), at Colorado State University (CSU). This diverse and talented team was energized quickly and continues to work together as programming tasks continue.

The strong command interest in this project is exemplified by the decision to designate the USAG-AK Deputy Commander as the head of the project devel- ➤

Fort Richardson	Relocatable Buildings	Renovations to Existing
Barracks	456 Spaces in 76 buildings	1,458 Spaces in 12 buildings
Laundry	19 with 2 washer and dryer units each (one washer and dryer for every 12 Soldiers).	0
BDE HQ	0	1
BN HQ	2 in 6 buildings	4
CO HQ	8 in 16 buildings	22
Arms Rooms	8 in one or two buildings	22
Vehicle Maintenance	0	1 - 59,000 SF building
Dining	1 seating area	1 renovated kitchen and 1 new dishwashing area
Deployment	35,000 SF in 8 buildings	1
		Estimated Total Cost for all work $100M

Fort Wainwright	Relocatable Buildings	Renovations to Existing
Barracks	336 spaces in 56 buildings	300 spaces in 2 buildings
Laundry	19 with 2 washer and dryer units each (one washer and dryer for every 12 Soldiers).	0
CO HQ	8	0
Arms Rooms	8	0
		Estimated Total Cost for all work $50M

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opment team. LTC Al Feistner provided a critical link between the planners and the chain of command. Changes came fast and communication was crucial to managing the continually evolving project.

Even before including the Alaska District in the growing project development team, the first outside federal agency contacted was the GSA Federal Supply Service Northwest Arctic Region. Linda Melton, Director of Business Development, responded immediately, briefed the team members and began providing leads on services and GSA listed vendors who could be responsive to providing, delivering and installing manufactured housing and accomplishing site preparation. She assisted in links to potential vendors throughout the US and through those vendors provided DPW the means to produce an almost all inclusive cost estimate for the relocatable buildings.

Manufacturers of modular buildings within Alaska were identified but were generally considered to be too limited in their production capacity to accommodate the requirements of this project. Through agreements with other U.S. manufacturers, the Alaska vendors are able to participate in these projects through their Alaska Native Corporation 8(a) status. This ensured a speedy contracting period and that local Alaska companies shared in some of the project dollars being spent. GSA encouraged good faith due diligence based upon telephone calls to approved GSA vendors without any obligation or commitment.

Under the leadership of SKT Project Manager Daniel Formoso, taking the lead for Master Planning, these requirements were translated into various siting options, which were refined and ultimately approved by the Commander, U.S. Army, Alaska. By November, 2004, a formal working partnership with the Alaska District Corps of Engineers had laid out the requirements and initial estimates for this huge effort.

Daniel worked hard to obtain command buy-in to a complex, and continually changing, series of sites and timelines, which met the anticipated needs of units. The series of sites included four per- ➤

It all began with Brostrom Park

by Tom Petersen

The current flurry surrounding the Army's attempts to create interim facilities for the Army's Units of Action is in many ways unprecedented. The search for expeditious alternatives to the MCA process, however, has precedent in a Corps of Engineers success story which took place at the former Fort Ord, California, in 1985. The restationing of the 7th Infantry Division from Korea to California in the mid-eighties brought with it housing challenges which were to continue for years in the expensive community housing market on the Monterey peninsula.

Director of Engineering and Housing Colonel Fred Meurer (currently City manager for the City of Monterey) accepted a challenge from the Army Chief of Staff to provide additional family housing on post within a year (MCA projects were in the program and would eventually provide another 2,500 homes, but not within a year).

The mechanism for the fast-track production of housing was Section 2667 of Title 10, USC. The essential provisions allow the Secretary of a Military Department to lease lend under any terms which will promote national defense and the public's best interest. Applied to solving an acute housing shortage this meant leasing 60 acres for $1 in return for an agreement to site mobile homes and rent them to junior enlisted families for rents tied to their housing allowance.

The owner provided housing services (not housing ownership, hence no Congressional approval was required) to the Army and there was no provision for the Government to acquire the mobile homes duration or at the termination of the lease. The lease itself was managed as a real estate outlease by the Sacramento District. The Fort Ord Directorate of Engineering and Housing provided management coordination and maintained waiting lists and made tenant referrals. All maintenance on the site was, of course, accomplished by RINC employees.

Ray Roeder, of RINC Organization was awarded a contract to provide 220 single and double-wide Fleetwood mobile homes on the Fort Ord land. The first group of Army families were able to move in four months from commencement of construction. All homes were occupied by the end of the year. The project included a community center, laundromats, etc. RINC was not offered any guarantees other than that, in the absence of military tenants, he could rent to civilian tenants. The park remained at 100% occupancy (with extensive waiting lists) from the day it opened.

Barely 10 years into the 25-year lease came the first major test of the concept; Fort Ord closure was announced under Base Realignment and Closure and the transition from military to government civilian employees and, ultimately, true civilians tenants. Occupancy remained full and the park continued to flourish as a very desirable place to live. Tenants – military or civilian – vote with their feet: A fully occupied project is a successful project.

In 2004, after long-running negotiations, Roeder purchased the land from the government, completing the cycle. The park today is a successful, award-winning property. The "risk" associated with Fort Ord closure was mitigating by the quality of RINC management and their ability to move seamlessly from military to civilian rental market. Today's legacy is a neighborhood of well-maintained homes, surrounded by quality landscaping and recreational facilities. The original Fleetwood homes have been very well maintained and have stood the test of time.

What are the implications of the Brostrom project for today's challenges? The major change to 2667 law is that the outleased land must now be rented at fair market value (the $1 rental for Brostrom was intended to subsidize the cost of housing to the Army tenants). This change in philosophy reflected the evolving intent to use the outlease authority to provide a revenue or specific (in-kind) service to the installation, no longer to subsidize a specific group.

However, in light of renewed interest in barracks privatization and against the background of the elimination of Basic Allowance for Housing (BAH) out-of-pocket expenses in 2005, Title 10, US Code 2667, may very well be ready for a resurgence as another tool for today's DPW to bring to bear to provide services in a timely manner.

Fort Pickett evolution continues with expanded MATES facility

by Jerry Rogers

Fort Pickett, located in southeastern Virginia near the town of Blackstone, has historically played a key role in providing quality maneuver training areas for active, reserve and Army National Guard units. Since World War II, Fort Pickett has evolved to meet the changing missions of the Army and today, is home to the Army National Guard. With over 42,000 acres of maneuver training areas and ranges, Fort Pickett offers the best in both mounted and dismounted training for combat arms, combat support and combat service support units.

On December 9, 2003, Fort Pickett took another key step in its evolution as construction started on the $18.5 million Norfolk District-managed project to increase the size of its Maneuver Area Training Equipment Site (MATES) to over 153,000 square feet. This design-build military construction project will eliminate the need for the existing World War II vintage facilities, where much of the maintenance on equipment supported by MATES currently takes place.

MATES equipment maintenance crews continue to complete the mission, despite working in cramped, obsolete World War II facilities.

Established as the Annual Training Equipment Pool in 1961, the concept was for Guard units using Pickett as a training site to locate some of their larger equipment at the installation, rather than incurring the high cost of shipping the equipment from home station whenever training took place. With 31 full-time employees maintaining about 100 armored vehicles housed in old warehouses and two locomotive repair shops, the facilities were adequate for the mission at that time. In 1986, a MATES upgrade was completed, but even with the new spaces constructed the maintenance facilities did not meet the ➤

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manent facilities site options and seven temporary facilities site options.

The consensus goal of a 15 October 2005 completion date for site work is established independently of the receipt of the building components and is based in the e-dates of the new battalions and the anticipated arrival of new Soldiers. The schedules for site preparation and fabrication and shipping of relocatable buildings proceed independently (coming together at the critical event of site prep completion date), one of the advantages of this process. A phased BOD for the interim barracks spaces is included and is essential to address the contingency of an accelerated arrival of Soldiers.

Until more new barracks can be programmed, plan B is to either renovate old hammerhead buildings to extend their lifecycles or site relocatable buildings.

The Alaska District brought in Alutiiq, a subsidiary of the Afognak Native Corporation, and by December 2004, they had begun negotiation of a proposal to execute initial site preparation/infrastructure costs for an estimated $17M. Alutiiq has experience in delivering manufactured buildings by barge to remote sites using Alaska extensive river network and also has previous USARAK experience with their successful completion of the MOUT facilities and ranges at Fort Richardson. All team partners were comfortable with the choice of a firm experienced in the transportation and installation of relocatable buildings in Alaska. Additionally, this experience covers arctic winter construction challenges, all manner of site preparation and the tremendous importance of managing the delivery schedule of bringing supplies to Alaska over the Alaska Maritime Highway.

As the Digest goes to press, the project is awaiting the early 2005 funding of the facilities acquisition and direction to proceed with site preparation contract award.

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PWD

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increasing demands of the mission.

Today over 100 highly skilled MATES employees, with about 50 percent working out of the original WW II facilities, maintain over 600 items including Abrams tanks, self-propelled howitzers, armored and command carriers, as well as related support equipment from over 80 Army National Guard units in Pennsylvania, Virginia and West Virginia.

One of those employees, who as an Army staff sergeant in the 1980s repaired armored vehicles in one of the WW II facilities, was among the dignitaries that turned the first shovels of dirt for the MATES project. Lieutenant Colonel Tom Perkins is now the superintendent of the Fort Pickett MATES facility. He has experienced firsthand the difficulty of working out of these cramped, obsolete facilities, but he says through the years his teams have always completed its assigned mission.

"Yes, our employees are thrilled about moving soon into a spacious, modern and safer facility, but their focus has always been about the mission, regardless of the facilities, and the fact that the customer is Job No. 1," said Perkins. "It's all about 'pride of ownership' and the fact is these vehicles are ours until the units come to retrieve them."

MATES Superintendent Perkins also revealed that their mission has been made more difficult in recent months due to the high number of deployments to Afghanistan and Iraq in support of our nation's War on Terror. "We've had to restructure our specialized equipment maintenance crews to ensure all of our equipment inventory is maintained," said Perkins. But despite the juggling act, he stressed, "we continue to complete our mission."

The Guard's Project Manager for Facility Management, Bob Tabor, said this has been the easiest project he's ever had to oversee. "This is the first time we've employed the services of the Army Corps of Engineers, and we (the Guard leadership here) have been blown away with the speed, efficiency and all the disciplined design-build and other in-house expertise Norfolk District brings to this project," said Tabor.

Back in April 2003, the Fort Pickett leadership asked the district to consider this project for execution, explained Chief of Engineering Branch, Peter G. Reilly. "Realizing that a construction award had to be made by Sept. 30, the task at hand was very difficult, however, working closely with the staff at the MATES facility as well as the Guard, a Project Management Plan for success was developed assigning this project as a design-build candidate. To ensure smooth project development, our senior technical staff developed the solicitation, which took only 70 days to complete," said Reilly, who assumed the design technical lead for the project.

The expanded MATES facility, set for completion in September 2005, will increase the facility's size to over 153,000 square feet.

The expanded MATES facility project will contain four new structures and two additions to existing facilities. Key in the development process was ensuring that the project constructed was flexible enough to adapt to the ever-evolving mission of the Guard at Fort Pickett, Reilly continued. Special care and attention went into the details of mission requirements, he said, as well as the requirement to keep the project as "friendly" with the environment as possible. "Probably the one most important feature that the new facilities would have to have, was the absence of interior columns, a major drawback of the existing facilities," said Reilly.

With the new facilities absent of any interior columns, the equipment maintenance crews will be able to work more freely on all the armored vehicles, especially the Abrams tank, with its 360-degree rotating turret.

Following receipt and evaluation of contractor proposals, the actual construction contract award was made September 19, 2003. Throughout the pre-award process, the one most important reason for success of this project was the total integration of the MATES staff, the Guard staff and district team members into a highly performing team, said Reilly. "We were all about the same task, with the same goal in mind. Without the dedication of the staff at Fort Pickett, this project could never have even made it to the contracting community for execution."

That same team commitment extends to the project's Small Business (HUBZone) contractor, Purcell Construction Corp., based in Watertown, NY. "From day one, Purcell's goal was to deliver this construction project on schedule and in budget," said Corps Construction Representative, Kevin D. Arthur. "To date their performance has been exceptional. The expertise and flexibility they exhibit toward meeting the exacting standards of the project's design is commendable."

Set for completion in September 2005, the expanded MATES facility will position Fort Pickett as a key military training site in the mid-Atlantic area. "Our objective is to make Fort Pickett a 'training center of choice' for the units on the east coast, including Army National Guard-enhanced brigades located in the Carolinas, and the Stryker Brigade projected for Pennsylvania's 28th Division," said Col. Glenn Walker, National Guard Bureau.

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Editor's note: Public Affairs Officer Lt. Col. Chester C. Carter III of the Virginia Army National Guard contributed to this story. **PWD**

How the AMC relocated 'Behind the Fence' at Fort Belvoir – an alternative approach to delivering temporary office space

by Michael E. Duffy

In a perfect world, timely planning and effective decisions can make the traditional delivery of facilities a model of coordination. But when an exigency leaves an agency short on time to plan, design, build, and fit-out space for its headquarters and staff of almost 1,500, the command needs a solution that can achieve speed to occupancy. This story is an example wherein the goal of timely delivery of suitable facilities was achieved through the combined efforts of the command, the installation, the Corps, a labor union and the private sector.

The Army Materiel Command (AMC) is one of the largest commands in the U.S. Army, employing more than 50,000 permanent staff in 38 countries worldwide. Its mission is to provide the Army with all material goods necessary for defense operations, including vehicles, armament, rations, clothing and technology support. After 9/11, AMC Headquarters (with more than 1,450 military personnel, civilians and consultants on staff) was located in a 10-story leased office building on Eisenhower Avenue, just inside the Capital Beltway in Alexandria, Virginia. Because the publicly accessible building did not meet Department of Defense Force Protection requirements, the agency acted immediately with the decision to move to an on-post location at nearby Fort Belvoir. The installation commander, his staff and their team collectively saluted and moved out to meet that challenge.

In February 2002, the U.S. Army Corps of Engineers, Baltimore District issued a final scope of work to look at three to five options that would result in command elements moving into about 275,000 square feet of temporary space on Fort Belvoir for the next five, possibly 10 years. The relocation would commence in just six months. Building 1464 was identified for the executive office of AMC (including SCIF space) and the remaining staff was relocated to adjacent modular buildings. The five-phase approach included: 1) Planning (Feasibility Study, Environmental Assessment, and an Economic Analysis); 2) Design; 3) Procurement; 4) Construction; and, 5) Fit-Out.

AMC Headquarters entry. Photo courtesy of HNTB Federal Services Corporation.

HNTB performed a feasibility study and prepared design documents to relocate AMC while the Fort Belvoir Directorate of Installation Support prepared the Environmental Assessment that was completed in June 2002. Meanwhile, National Federation of Federal Employees Local 1332 and AMC agreed to provide separate space and a specific fit-out to facilitate the union's office relocation and support. Simultaneously, the relocation team evaluated and considered multiple alternatives including one-story or two-story modularity, lease-versus-purchase, and fit-out options while looking to retain up to 70 percent of their furniture for reuse in the finished space.

Based on a review of Building 1464 options, various modular solutions, and the site improvements to support approximately 250,000 square feet of modular office space, a preferred course was chosen after formal and separate presentations both of the Building 1464 and the modular unit solutions. Upon completion of the feasibility report, HNTB implemented the preferred alternative and completed the design.

That solution resulted in renovating 28,000 square feet of an existing building for 80 employees, including AMC's Commanding General, Deputy Commanding General, Chief of Staff, and support staff, who moved during the first phase of the relocation to establish a command presence and to oversee the move. The Command Group and remaining employees were subsequently accommodated in more than 200,000 square feet of temporary, modular buildings – 220 in all – located on an adjacent site. The renovated office space then became the new home to AMC's subordinate Research, Development and Engineering Command, which "stood up" simultaneously with the move. The work at 1464 by Kellogg, Brown and Root under the installation Job Order Contract and modular unit fit-out by Comark Building Systems, Inc. under contract to AMC was sequenced on a fast-track to achieve the ambitious occupancy schedule. Though exceptionally rapid, the staggered design and delivery also provided for a phased occupancy, which further reduced impacts on AMC.

Completed in less than 20 months from design notice-to-proceed, this five- to ten-year solution allows secure continuity of operations while a more traditional procurement proceeds to design and construct a permanent AMC headquarters.

Key in this success were the following elements:

- Support for the move into temporary space to address antiterrorism/force

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Military training facilities benefit from new technology engineering expertise

by Michael E. Duffy

U.S. military forces employ the most advanced weapons systems and technology in missions around the world, so it follows that design of the facilities where Soldiers train for battle should do the same. In partnership with the U.S. Army and Engineering Support Center in Huntsville, Alabama, HNTB Federal Services Corporation is focused on this mission.

At the Army's center of excellence for training ranges, Huntsville personnel constantly seek to improve range and training facilities design. "Designing training ranges is a highly complex and integrated engineering process that requires attention to every detail," said Mark Fleming, the Army's training range program manager.

Huntsville is the focal point for delivery of training ranges for the Army's aggressive transformation of training from the current force to the future force. This transformation calls for more joint and combined arms training between the Army and other branches of the service and federal agencies.

The new training facilities must replicate multiple battlefield environments, especially urban settings. The largest and most complex sites, used for dismounted aerial, armor and mechanized training, can cover 3_ square miles, cost up to $30 million to develop and take up to six years to plan, design and construct. Many sites also require support facilities, such as control towers, after-action review buildings, maintenance facilities, ammunition storage and instrumentation.

The HNTB-developed TrueViz OnTarget™ system allows the firm to not only plan and design a layout for an Army training range, but maximize its value.

The system of software applications integrates range-design procedures with technologies including databases, GIS, computer-aided design and drafting and 3-D simulation. With these resources combined in a single system, the Army is able to custom-design real-world training facilities.

HNTB has utilized this expertise and technology on armor, urban, aerial and small arms ranges for the Army. These same tools also have been adapted for other branches of the military and law enforcement agencies.

The tool's simulation features are invaluable. Loaded with data about a proposed military range's terrain, targets, trails and other factors, the software allows master gunners a video game-like perspective; they can traverse virtual hills as they seek to optimize line-of-sight and target locations. The line-of-sight features allow critical, early analysis of the range's training capabilities and provide visual verification of design that can eliminate costly adjustments and delays during construction.

"We have already benefited from utilizing TrueViz OnTarget™ on ranges at Forts Benning, Riley and Polk," Fleming said. "The system helped us save time and money, which allowed continued support for the projects."

At Fort Riley, Kansas, TrueViz ➤

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protection concerns

- Cooperation between the Agency, Fort Belvoir, and the Union
- Support from USACE, Baltimore District on the Feasibility Study and Design
- Directorate of Installation Support in leading the Environmental Assessment
- Clear programming requirements and timely decisions from AMC
- Rapid presentation and analysis of options by HNTB met with quick Army decisions
- Professional and well-phased execution of design, construction, and fit-out.

There was also extensive coordination with local officials to address impacts and alternatives associated with the move, particularly with regard to significant increases in traffic volume in an already heavily congested area. HNTB's transportation planning and design skills helped mitigate those problems.

As COL Tom Williams, Fort Belvoir's garrison commander, said, "The imperative of secure space for critical commands is not negotiable. This flexible approach delivered a first-rate temporary office facility when time was of the essence." The outstanding results not only speak to the ability of a combined government-private sector team to solve a vexing problem for an agency, but they also show how high-quality office space can be provided even under exigent and daunting circumstances in a novel and creative manner.

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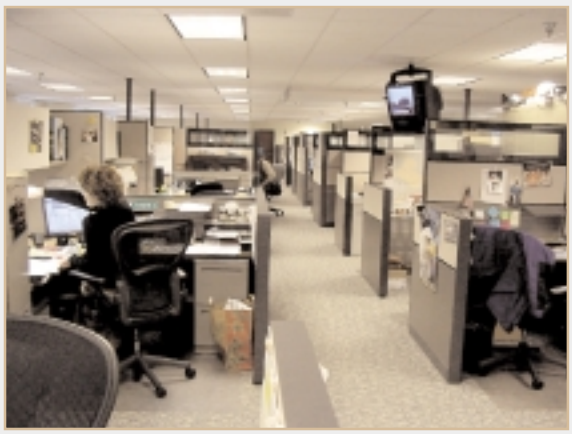

Interior office space at AMC Headquarters. Photo courtesy of HNTB Federal Services Corporation.

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Rebuilding Afghanistan — one brick at a time

by MAJ Don Ollar

The Afghanistan National Army (ANA) had little to no infrastructure prior to the U.S.-led coalition's invasion of Afghanistan. The Office of Military Cooperation – Afghanistan (OMC-A), the Afghanistan Engineer District (AED), and selected contractors are building the ANA an infrastructure throughout Afghanistan to support a military presence that ensures security and stability. The ANA infrastructure will consist of ANA brigade sites located throughout Afghanistan. I am going to tell you about one site in particular located in Kandahar.

The first goal was to have an immediate presence to supplement the coalition forces already on the ground. A HESCO (4'x 4'x 4' fabric lined, wire framework filled with dirt and rocks to provide blast protection) camp was hastily constructed to provide an area for the ANA Soldiers to conduct operations.

OMC-A then contracted a local national construction company to build a temporary camp capable of housing, feeding, and bathing 600 ANA Soldiers. Once the OMC-A temporary camp was complete, the Afghanistan Engineer District issued a Notice to Proceed (NTP) for Task Order 6 ANA Brigade, Kandahar.

The scope of work included:

- 600 ANA Soldier temporary camp similar to the OMC-A one.
- Demining 1.2 million square meters.
- Prime Power Plant.
- Water Distribution System.
- Sewage Collection System.
- Five Battalion Complexes.
- The separate HQs complexes (Brigade, Corps and Garrison).
- Dining facility.
- Ammo Supply Point.
- Reception Center.
- Helipad.
- Road network and parking areas.

The basic task order is $50,300,071 with $13,490,517 in awarded options for a total task order price of $63,790,588. The performance period for this task order is 270 days from award, and it was awarded on 27 August 2004. The NTP coincided with award.

Housing constructed by USACE for Kandahar Air Field in general. There are 162 buildings with 7 rooms per building. Each room has its own bathroom and is designed for four personnel.

The prime contractor's (Contrack International Inc) first priority was to complete the ANA temporary camp, which included:

- 16 50'x18' housing units.
- 2 32'x32' office units.
- 1 40'x40' dining facility.
- 4 shower units.
- 2 toilet units.
- 2 ablution units.
- 1 temporary well.

The units in the temporary camp were ➤

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OnTarget™ was successfully applied to the Digital Multi-Purpose Training Range (DMPTR). Last summer, 20 stakeholders from Huntsville, the Army Training and Support Center, the Installation Management Agency, the Army's Forces Command, the Kansas City District Corps of Engineers, Fort Riley Range Control and Public Works and HNTB participated in a two-day workshop to review plans for the proposed DMPTR. An initial design that involved 900,000 cubic yards of earthwork was reduced by half, saving $2 million in project costs while optimizing target layout. The complex project involved analysis of 47,000 lines of sight per iteration. The TrueViz-aided results allowed the project to be brought back to its initial schedule and budget and gain approval for design.

This example underscores how integrating technology and engineering expertise can help to deliver:

- Improved training capabilities.
- Cost savings/maximized investments.
- A framework to guide project development from planning to training operations.
- Integrated stakeholder solutions.

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manufactured by a Turkish company called Mega. The completion date for the temporary camp was 27 October 2004 or 60 days from award. Unfortunately, the materials were not on site and accounted for until 2 December. As a result, the temporary camp was not completed until 22 December 2004.

A parallel priority to temporary camp construction was demining certain areas of the permanent camp to allow construction to begin while the demining continued in other areas. The first locations for demining were for the prime power plant and the wastewater lagoons, which are a smaller part of the sewage collection system. Minetech found mostly unexploded ordnance and, on several occasions, Soviet anti-personnel mines.

Everything in a contingency environment is difficult and construction is no different. The procurement of materials, finding skilled labor, finding the proper equipment and finding heavy machinery are daily challenges for the contractor.

Further complicating these challenges was the state of disrepair of the road network in Afghanistan. It can take up to 10 hours to drive 250 miles in a car and it can take days in a tractor-trailer loaded with equipment or material. As the deadline to complete the temporary ANA camp drew closer, the contractor leased an IL 76 aircraft to deliver the first 6 of 14 housing units.

In addition to flying in materials, the contractor made adjustments to the construction schedule in order to complete the temporary camp on time. The first Afghanistan National Army battalion stationed in Kandahar was due to arrive within weeks. The contractor increased his work force and worked longer hours each day.

One of the construction activities that he accelerated was the construction of the septic tank for the temporary camp. The excavation measured 30 meters x 20 meters and was 15 meters deep. Given the depth, the contractor stepped up the excavation in order to provide a safe working environment for the workers.

To save time, the contractor chose to put the septic tank walls and top in a monolithic placement. To accomplish this, he had to have two windows in each wall to minimize the possibility of the concrete segregating as it passed through the rebar. The quality assurance representatives, Ed Freer and Dave Wells, worked with the contractor's QC staff to ensure the concrete was properly consolidated and that all work was accomplished safely.

Another accelerated activity was the water well. The contractor shifted assets from other projects in the area of operations to keep from falling further behind schedule.

The sub-contracted well drillers completed the first of seven wells in 10 days. The final well depth for the temporary camp well was 102 meters.

Even after flying in the first six buildings, the contractor was running out of materials. The additional materials needed to complete the temporary camp were en route from Turkey to Kandahar. The first set of trucks was to arrive 7 November 2004. Two days later, the contractor discovered that his materials were being detained at the border in customs. At this point, the contractor's attempts to stay on schedule had failed. He was now a week late and his materials were still not on site.

A parallel activity to the temporary camp construction was the demining and topographic survey for the permanent camp. With the demining complete, Minetech began the process of turning over all the necessary paperwork to the Mine Action Center, which coordinates the transfer of information to the United Nations to document the area as clear.

The next step for the permanent camp was to construct the rock wall and chain link fence that encircled the entire camp. The entire perimeter of the permanent camp is roughly 4,500 meters. The main gate is located along the eastern wall. The entire wall is made of rock and is approximately 1,200 meters in length.

The rock wall also extends about 190 meters from the eastern wall to the west at the northern and southern ends. Critical path activities that will parallel the wall and fence construction are the power plant, wastewater treatment facility, water treatment plant, and the dining facility. As I finish this article, the contractor is waiting for finish floor elevations for the critical path activities before excavation can start for the building foundations.

With the temporary camp complete, the contractor took his lessons learned concerning the logistics of material procurement and has made tremendous progress on the ANA permanent camp. If progress continues at this rate, the overall contract completion date is achievable.

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with POC (name, title, office) and author (name, phone, e-mail) information no later than February 25, 2005.

This article is reprinted with permission from the 25 August 2004 edition of Today's Facility Manager. With the substitution of SPiRiT for LEED, it sends a potent message to the Army. For more information on Today's Facility Manager, please visit www.TodaysFacilityManager.com.)

Why facility managers need to care about sustainability

by Paul von Paumgartten

For skeptics who doubt the relevance of environmental diligence some direction is needed. What's the point of all this sustainability stuff? Did the tree huggers finally win when we weren't looking? Actually, C-level executives (CEOs, COOs, and CFOs)--and facility managers, if they're smart--are beginning to understand that everyone wins when it comes to sustainability. They know that it's all about conserving energy, saving money, increasing productivity, and operating more efficiently, and that's good for every company, government, and organization on earth.

What's driving the movement these days isn't warnings about hardship and sacrifices predicted decades ago. What we're talking about is a solid strategy that is having a profound impact on global business. It's called sustainability, and it provides a framework for addressing a multitude of challenges.

Sustainability has no single definition, but it generally contains the idea of progress that respects the importance of the triple bottom line: that is, giving equal value to economic prosperity, environmental stewardship, and social responsibility. Too often, those three items are discussed separately, or the economic bottom line is valued more than the others. The fact is, all three are interrelated, and the way a facility manager understands how they affect his or her organization can lead to a new level of success.

The evidence of growing interest in sustainability is impressive. A survey of 1,000 CEOs from 43 countries by PricewaterhouseCoopers indicated that 79% of these CEOs believe that sustainability is vital to the profitability of any company. The reason for increased interest is clear. Sustainable practices are profitable because they can reduce risk, make business and consumers more efficient, and advance them technologically while reducing environmental and social concerns.

What many companies and their leaders recognize is that sustainability is not a fad; it's here to stay. The reality is that there are pressures on each of the three elements of the triple bottom line. But the good news is that improved technology and processes mean there are ways for facility managers to be a part of the team that addresses it.

Their most powerful tool is LEED (Leadership in Energy and Environmental Design). The U.S. Green Building Council's guide to sustainable buildings and operations provides a roadmap for smart facility managers to help their organizations save money, help the environment, and keep people healthy.

This approach addresses the pressures that companies face and helps their triple bottom line in the following ways:

Economic Issues

Pressure. From state governments dealing with massive budget cuts to manufacturing firms trying to cut expenses and stay competitive, every business and organization continues to look for ways to reduce costs. That's especially true with increasing energy bills.

Sustainable Approach. By taking a comprehensive approach to facilities, LEED addresses C-level concerns and bottom line results. It requires top-level leadership and an understanding that all facility aspects (from mechanical to maintenance) can be improved through a stronger environmental approach. In addition, LEED certified buildings have been shown to provide many economic benefits, including lower construction costs, reduced site preparation and landscaping, lower waste disposal costs, reduced operating costs, reduced maintenance costs, higher building valuation, and lower utility costs. And improved lights, building controls, windows, and other technologies make it easier than ever to achieve savings and increase productivity.

Social Issues

Pressure. A recent report by the World Economic Forum indicated that more than 70 CEOs surveyed believed that mainstream investors will have an increased interest in corporate citizenship issues. People are interested in how companies operate and treat their employees.

Sustainable Approach. Facility managers who operate their buildings sustainably tend to have a healthier, more productive environment, with better tenant and worker attraction/retention and less absenteeism. In addition, working with human resources professionals, facility managers can conduct employee education campaigns that teach employees about the impact they can have on the environment at work, in their communities, and at home.

Environmental Issues

Pressure. Whether it's prompted by the marketplace (a growing interest in emissions trading or a desire to help conserve natural resources) or law (state and federal regulations or even global Kyoto mandates) or a combination of both, companies are paying more attention to the impact of their operations on greenhouse gas emissions.

Sustainable Approach. LEED-EB (for existing buildings) and LEED-CI (commercial interiors) are the most comprehensive way a facility manager can have an impact on the environment. He or she learns about the products and procedures that can reduce a company's environmental footprint. And by tracking energy reductions, facility managers can reduce harmful emissions to meet imposed or voluntary reduction goals.

Facility managers can be part of the team that provides solutions. Whether ➤

Modular construction helps fight Global War on Terrorism

by Jim Cunningham

Bringing together a fighting force is more than ordering Company C to pack-up-and-move-out. Creating the most effective fighting force means choosing the right units with the right equipment and training, and bringing them together at the right time to function as a cohesive organization. This is the basic concept behind Army modularity - and the Corps of Engineers is deeply involved in support of modularity, according to Dwight Beranek, Deputy Director of Military Programs at Headquarters, U.S. Army Corps of Engineers.

For the Corps, "modularity" has two distinct but interrelated meanings.

To bring various units together to form this efficient fighting force, Army leaders first should identify which units have the skill necessary to face the enemy at hand. The units needed may not be located together but should come together to create the organization most needed by the war fighting commanders. These individual "modular" units, which might include combat engineers, join other units to form a cohesive force.

Motor pool site at Fort Stewart.

To allow these modular units to train together, the Army needs a place to bring them together in one location. For the Corps, this begins the other definition of modularity.

At Fort Stewart, Georgia, the Savannah District oversees the rapid construction of barracks, administrative headquarters and other space needed for the "modular" Army to prepare for deployments. In 142 days of near round-the-clock activity, construction workers will clear forest land, install underground utilities and piece together enough modular buildings to house and command more than 800 troops.

"We are engaged with Savannah with short-term impacts on some of the reconfiguration of the Army and need to use temporary or semi-permanent construction in a hurry in order to respond to the remodularization of the Army," Beranek said.

The buildings, constructed by Clark Design/ Build LLC of Georgia, fit together to form three private rooms with a shared bath and a shared kitchenette, according to Judy Milton, Savannah's lead architect on the project. Similar modular buildings piece together to form brigade or company headquarters, maintenance and other facilities. As the needs of the Army change, the construction can be changed at a much lower cost than traditional construction.

This modular project costs $73.6 million compared to an estimated cost of $140 million for traditional construction. Plus the project can be finished, ready to house troops in weeks instead of years, according to Tim Corley, the project manager.

Aerial view of the modular barracks at Fort Stewart from July 2004.

Modular construction, like this project at Fort Stewart, may be used elsewhere in the Army to fill gaps in construction due to the rapid changes needed to fight the Global War on Terrorism. The speed of construction makes the design highly responsive to the needs of the Army, Beranek said.

"Because now that you have more brigades you have more brigade headquarters," Beranek said. "You're going to need more administrative facilities. You also have to think of the way the Army is being reorganized and put into place" another factor - restationing of troops returning from overseas-either from temporary deployments or from draw-downs of forces stationed in other countries.

Modularity allows the Army to become a flexible, expeditionary force. The Corps' new modular construction allows the Army to accommodate that force.

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achieved through market demand or regulatory pressures, sustainability's growing track record of creating superior value and growth assures its widespread acceptance. Ultimately, facility managers need to embrace sustainability for these four reasons:

- Your boss probably has embraced it-or will soon.
- You'll save money for your company or organization.
- You'll provide a more productive and efficient workspace.
- You, your co-workers, and your families will live healthier lives.

Those positive results, and the triple bottom line of enhanced economical, environmental, and societal benefits make sustainability a sound corporate governance practice that has far reaching consequences. And the companies, organizations, and governments that integrate sustainability into their values and vision will reap the benefits for years to come. PWD

Forum offers Army leadership insight: installations relevant and ready

by Dana Finney

Keen interest in military installations by government and industry was apparent in the 400-plus attendees at the 2004 Institute for Land Warfare Installations Forum in Washington, D.C., in October. Part of the Association of the United States Army (AUSA) Annual Meeting, the forum was hosted by the Assistant Secretary of the Army for Installations and Environment (ASA[I&E]).

The Honorable Geoffrey Prosch, Acting ASA(I&E) opened the session, emphasizing that the state of installations sends a powerful message about caring for Soldiers and their families. "The Army has transformed its installations – we transformed to support our Army at war," he said.

Prosch noted that the Installation Management Agency's (IMA) development of the Army Installation Design Standards is already having an impact on providing high quality, equitable facilities. "IMA is letting us fund the standards from one bank."

Speaking next with an "Installation Transformation Update" was Joseph Whitaker, Deputy Assistant Secretary of the Army for Installations and Housing. For Military Construction priorities in the FY06-11 program, barracks construction remains at the top for Active Army sites, with $2.8 billion targeted toward 81 projects last year. Operation and Maintenance (O&M) funding was mainly focused on sustainability and force protection.

"We also have a major emphasis on training ranges and transformation," said Whitaker. "Ten installations are in the process of bringing on new Units of Action, so building modular construction has also been a top priority. We have 1,400 to 5,400 new Soldiers arriving and last year we moved a Stryker brigade from Fort Polk to Fort Lewis."

He noted that modular buildings are intended to be temporary housing. Decisions about stationing made in Base Realignment and Closure (BRAC 05) will determine where permanent construction will be located to support Brigade Combat Teams.

Other facilities management tools are working to stem the flow of funds to non-value added purposes for use in addressing more critical needs. Infrastructure reduction efforts saw the transfer of 161,159 acres of BRAC land from FY03 to FY04. "With help from the Corps of Engineers and the environmental community, we were able to get this real estate off the books," he said. "We're also focusing on transferring excess non-BRAC properties, especially old ammunition plants."

Honorable Geoffrey Prosch introduces former Deputy Undersecretary of the Army for Installations and Environment Raymond DuBois.

The "1 for 1" MILCON demolition program resulted in removing 3.6 million square feet of old buildings while the Facility Reduction Program eliminated 2.8 million square feet. "We will continue to eliminate excess infrastructure as a means to control growth of the inventory and to fund sustainment at a level that keeps essential facilities in mission-capable condition," Mr. Whitaker said.

Two more initiatives to meet this goal are Enhanced Use Leasing (EUL) and Reserve Center Real Property Exchanges. EUL allows the Army to leverage available, non-excess property by leasing to the private sector for cash or in-kind payment. Real Property Exchanges involve a fair market value trade of real estate between the Reserve base and the private sector to provide the Army with an area where it can conduct critical training activities. Ten exchanges valued at $39 million have been completed while 23 more totaling $165 million are in progress.

Raymond Fatz, Deputy Assistant Secretary of the Army for Environment, Safety, and Operational Health outlined a new Army Environmental Strategy in his presentation "Sustain the Mission – Secure the Future." Fatz's comments may be found in the November-December 2004 issue of Public Works Digest, pages 23-24.

"Creating Flagships through Privatization" was presented by William Armbruster, Deputy Assistant Secretary of the Army for Privatization and Partnerships. "We are using privatization to transform our installations while we're fighting the global war on terrorism," he began. "This effort follows the President's Management Agenda which has a goal of privatizing military housing to improve all aspects of installations, including historical properties."

The Residential Communities Initiative (RCI) continued to forge ahead in FY04.

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Over the past five years, Army's private sector partners have built over 2,000 new residences at the first four privatized sites. Contrasted against only 800 new family housing units built under MILCON at those four sites during the 20 years preceding the RCI program. The Army's investment of $277 million in RCI for these 13 projects has leveraged $4.1 billion in private financing, for a leverage of 15:1.

"For the RCI projects that have been transferred, 73% of the subcontract work has gone to the local community," Armbruster said. "We currently have occupancy rates close to 94% for these transferred houses."

Another privatization effort involves Army-owned lodging. More than 80% of those properties need either major renovation or replacement at an estimated cost of $1 billion. Under the Privatization of Army Lodging (PAL) program, the Army is seeking partnerships with private entities under the same legislative authorities that enabled RCI. PAL will revitalize installation transient lodging through private sector expertise, creativity, innovation, and capital. "Congress has removed the cap on investment which now makes this enterprise more attractive to the private sector," he said.

Utilities privatization also continued in FY04. To date, in the United States, 186 of 351 existing utility systems have been evaluated, with 100 privatized and 86 found to be more economical to keep in the Army inventory. Ninety-five additional systems are currently under assessment. All 128 utilities in Japan and Korea were exempted from privatization while 226 of the 589 systems in Europe have been transferred to private providers.

IMA Director MG Ronald Johnson (left) chats with IMA Deputy Director Phil Sakowitz.

A possible future privatization initiative may target Unaccompanied Personnel Housing. A task force has just completed a study that included six sites (Forts Stewart, Lewis, Leonard Wood, Hood, Detrick, and the Presidio of Monterey) examining 15 different scenarios. Study results and recommendations have been briefed to Army leadership.

Raymond DuBois, then-Deputy Undersecretary of Defense for Installations and Environment, addressed the forum, noting that the Department of Defense currently has $660 billion in real property. "BRAC 2005 is needed to help our installations become more relevant and joint," he said. "It will enhance our capability by co-locating units for better training and deployment opportunities. Every second, every hour saved in deployment time helps us ensure speed and surprise. Every dollar saved on excess facilities translates to new weapons and systems capability on the battlefield…The $8 million to be saved by losing 20% of excess capacity buys a great deal of combat power.

Chief of Engineers LTG Carl Strock discusses link between facilities and retention.

"We have more bases than we need in places where we don't need them," he continued. "Troops should be located where they are wanted and needed, where they will be movable and flexible – where quality overrides quantity. Strategies must be kept in sync with firepower and must give us greater freedom to manage our installations."

BRAC05 decisions will be driven by "military value" and as with previous BRACs, DoD will retain assets that cannot be easily recovered, including surge capacity, he said. The goal is to maximize joint use of bases, combining and co-locating assets to create joint training facilities. As noted by Craig College, Deputy Assistant Secretary of the Army for Infrastructure Analysis, "The goal of jointness is not to just have different uniforms at a site, but to relocate different units so they can train more often with their sister Services with whom they go to battle. Unlike previous BRACs, the planning groups are manned by very senior representatives performing much more powerful analyses with the Services working together." The new global posture for the U.S. will also inform BRAC decisions, he said. ➤

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"We need to free up investment capital to support our Soldiers," Dubois concluded. "It is our sacred duty to ensure that those Soldiers at the pointy end of the spear have all they need to come home." (DuBois closed by announcing his resignation as DUSD[I&E]. His successor as of Nov 1, 2004 is Honorable Philip Grone.)

The second half of the Installation Forum, titled "Building Our Flagships," featured a panel of three military leaders: MG Larry Lust, Assistant Chief of Staff for Installation Management (ACSIM); LTG Carl Strock, Chief of Engineers and Commander, U.S. Army Corps of Engineers (USACE); and MG Ronald Johnson, Director, IMA.

According to MG Lust, "We have a C1 Army living and working in C3 conditions. We want to achieve 100% sustainment by 2008, focusing our investment to raise the quality to C2."

Toward this goal, ACSIM has: provided 5,000 Soldiers with new or renovated barracks, including new furniture; privatized, build or renovated 16,000 housing units; and demolished 56 million square feet of excess facilities (total between FY96-03). Barracks modernization was done to the extent possible while Soldiers were deployed. Also during the past year, ACSIM mobilized/demobilized some 350,000 Soldiers to support the Global War on Terrorism, while providing expanded operating hours, staffing, and family support services.

LTG Strock said," We know there is a direct link between facilities and retention. If a Soldier is constantly looking over his shoulder to worry about what's going on at home, he or she can't concentrate on the mission."

USACE supports ACSIM and IMA in planning and constructing facilities to meet the IDS. Planning activities include helping improve installation Master Planning and define facility requirements through design charrettes. The USACE Districts also are helping to plan and build ranges to support training for the modular, expeditionary force. In addition, combatant commanders have direct access to the Corps's facilities and engineering expertise both in-theater and through reachback. "Last year we stood up provisional offices in Iraq and Afghanistan, and have had over 1,300 Corps volunteers deploying to help the reconstruction," said Strock.

MG Johnson discussed IMA's new business processes within the Common Levels of Support (CLS) to provide quality, consistent, predictable service delivery across Army installations worldwide. "We looked at 54 services with 373 components to truly define what the requirements are, scoring each component and deciding which ones are 'must-do' and which ones we won't necessarily do anymore," he said. The goal is to make CLS a tool to articulate funding shortfalls in detail.

Of the 373 Service Support Programs (SSPs), IMA identified 224 that must be funded, while 127 are discretionary. These SSPs were then prioritized according to direct, indirect, and peripheral impact on mission. The shortfall for required SSPs was $400K while unfunded requirements for all 54 services totaled $1,105M.

IMA also completed an important budget action in validating and verifying its FY05 costs. Action plans were refined for implementing modularity, rotation and reset and these plans will continue to be adjusted as BRAC restationing decisions are made, with an effort to minimize impacts on Soldiers and families.

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Army Environmental Reporting Online

The mandatory reporting of environmental information to the Army, Defense Department and Congress is becoming easier and less redundant as the Army upgrades its Web-based reporting tools.

The latest step took place in November 2004 with the activation of Army Environmental Reporting Online, the new online portal to the Army Environmental Database (AEDB).

An AERO account is being created for every user of one or more Army environmental reporting systems. Reporting systems accessible through AERO include AEDB - Restoration, AEDB - Compliance Cleanup, AEDB - Environmental Quality (due March 2005), Environmental Performance Assessment System, Environmental Program Requirements (EPR) report, Environmental Quality Report (EQR), Environmental Restoration Information System (ERIS), ERIS Range, Reimbursable Programs Tracking System (RPTS) and the National Environmental Policy Act Online Repository.

Other highlights include:

- Access to Toxic Release Inventory data
- Single sign-on capability — Once set up, authorized users need only sign in to AERO to work with all their systems.
- Expanded AEDB reports
- Reports viewable at any organizational level from Army to installation
- Reporting calendar
- Electronic library

Users of Army reporting systems who have not received access to AERO should contact the USAEC Help Desk at (410) 436-1244. **PWD**

Fire destroys aircraft hangar at Fort Wainwright

by James R. Sams

An early morning fire destroyed a 1943-vintage hangar at Wainwright Army Air Field Fort Wainwright, Alaska. Five military personnel escaped without injuries and, along with Fire Department personnel, saved two UH-60 aircraft and a tow vehicle.

At about 1 a.m. on Aug. 13, three Medevac team members from the 68th Medical Company were awakened by the Radio Telephone Operator, who said she smelled smoke. Light smoke was found within the area of the second floor lean-to (northeast) section of the two-story, heavy-timber constructed, corrugated steel covered, bow truss roofed structure.

During the evacuation process, the RTO dialed 911. The four occupants exited the facility via an internal, central north side stairway, down to the hangar floor where they met a fifth member, who had been awakened by the ringing of the fire evacuation alarm system.

Fire had quickly spread throughout the unprotected open (east/west) attic space created by the old flat ceiling/roof assembly and a later (1950's era) installed newly created roof with wooden rafters from the old hangar bow-trussed eave line down to the lean-to shed roof eave line of the flat roof/ceiling assemble.

During the mid 1980s, large holes were cut into the attic from the hangar floor side (approximately 4 feet high by 12 feet long) above the ceiling of the second floor to provide more heat circulation to the attic space in an attempt to limit the glaciations of ice at the eaves. With heat and flames rolling out of these holes, the fire progressed westward and gained intensity, setting off the heat-activated floor deluge systems. Dumping approximately 6,000 gallons per minute on what was, in effect, no fire, the 240,000-gallon deluge/sprinkler water supply reservoir was quickly emptied to no avail.

Incident Command Post determined that the blaze above was of such a size and intensity that it should be left to burn and consume all of the structure and its contents. Fire units remained on the scene for approximately 12 hours. On-scene fire investigators coordinated with the Fort Wainwright Criminal Investigation Detachment (CID) agents, taking statements from the occupants. Meanwhile, the Fort Wainwright Fire Department investigators joined forces with the Fairbanks Fire Investigation Team to look for the cause.

Company C, 1/207th Aviation Combat Support Battalion, Alaska Army National Guard and the 68th Medical Company were the units occupying the facility at the time of the fire. The building and contents were a total loss-- from office equipment and supplies to maintenance supplies, tools, spare parts and equipment, to personal one-of-kind, items within individual workspaces.

In the end, an electrical lighting circuit short above and within the unprotected attic space was determined to be the cause of this $49,000,000 plus structural fire.

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