

FOUNDATIONS OF
2009 **readiness**

JOURNAL OF THE ARMY NATIONAL GUARD INSTALLATIONS DIVISION



*The Army Aviation Support Facility at
Buckley Air Force Base in Colorado*

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FOUNDATIONS OF READINESS

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elcome to the first issue of *Foundations of Readiness*, the Journal of the Army National Guard (ARNG) Installations Division.

The ARNG has an active role in the protection

of our Nation. Currently, over 62,000 National Guard troops are mobilized and deployed overseas, mainly in Iraq and Afghanistan. The ARNG, with 358,000 soldiers, makes up 36 percent of the total Army, but it owns only 22 percent of the Army facilities inventory, including installations.

The Installations Division builds, maintains and operates the installations that form the foundation of the ARNG. This includes training facilities, readiness centers and maintenance facilities. The bulk of our installations are older 20th century facilities, with an average age of 41 years old, and 24 percent are over 70 years old. Bringing these facilities up to code and making them energy efficient is a constant challenge. Our inventory of installations also includes modern facilities built with the most innovative, sustainable building techniques, and some beautiful 19th

century historical structures. The historical structures are part of our heritage and need to be preserved, but the primary mission of the ARNG Installations Division is to build and maintain installations that meet the training needs and the strategic goals of the Army as a whole, to ensure our Nation's readiness. In the first part of this magazine you will find stories about the construction projects carried out to fulfill that mission.

We have our biggest military construction budget this year of over \$1 billion. We are on track to complete our FY09 projects with an execution rate of 95 percent or better. In addition, the projects tasked to the ARNG by the Base Closure and Realignment Commission (BRAC) will be completed at 100 percent for this year and the following year. We are the only component to execute our BRAC programs at 100 percent for the last three years.

To maintain our high execution rate and to compete more efficiently for an increased share of funding, we have taken a three-pronged approach. First, we have increased our engagement with the office of Assistant Chief of Staff for Installations Management (ACSIM) by assigning some of our Title-10 AGR soldiers to key positions in ACSIM. Second, we have increased our interaction with the Adjutants General Association and the National Guard Association in their engagement with Congress. Third, we have streamlined our business processes by cutting bureaucracy and

implementing new, efficient tools, such as a Web-based inventory tracking and project management system.

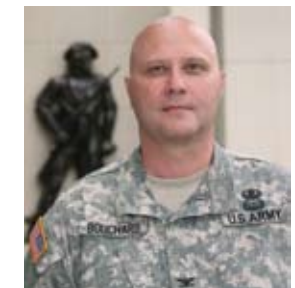
A centerpiece of our organization is our robust training program. In addition to our annual Conference and University training venue, we offer centralized training opportunities in master planning, military construction programming, electronic security systems and installation status reporting. Our most innovative training program, Construction and Facilities Management Officer (CFMO) Certification, was developed with help from our Facilities Engineer Advisory Committee (FEAC). Over the course of 14 months, students complete seven one-week sessions that roughly follow the cycle of a construction project—from planning and budgeting, construction, maintenance and services, to disposal. So far we have certified over 20 CFMOs representing 18 States.

All of our new construction projects and major renovations meet the LEED Silver requirements. However, simply meeting those requirements is not enough. We need to take our commitment to the next level, to LEED Gold. In the second part of this magazine, you'll learn how the ARNG is taking the government directive of sustainability one step further. You will be able to read about a building made out of recycled tires and an aviation facility lit almost entirely from natural sunlight. You'll find innovative wind and solar projects that supply not only the ARNG instal-

lations with renewable energy, but the surrounding communities as well.

The ARNG is the only dual-role military component, with a strong heritage as citizen-soldiers. In the third section of the magazine, you'll find stories about an organization strongly anchored in the communities it serves, and about Guard members carrying on the legacy of our 373-year old organization.

I thank you for your interest in the ARNG Installations Division, and I hope you enjoy our magazine!



COL MICHAEL J. BOUCHARD
DIVISION CHIEF
ARMY NATIONAL GUARD INSTALLATIONS DIVISION



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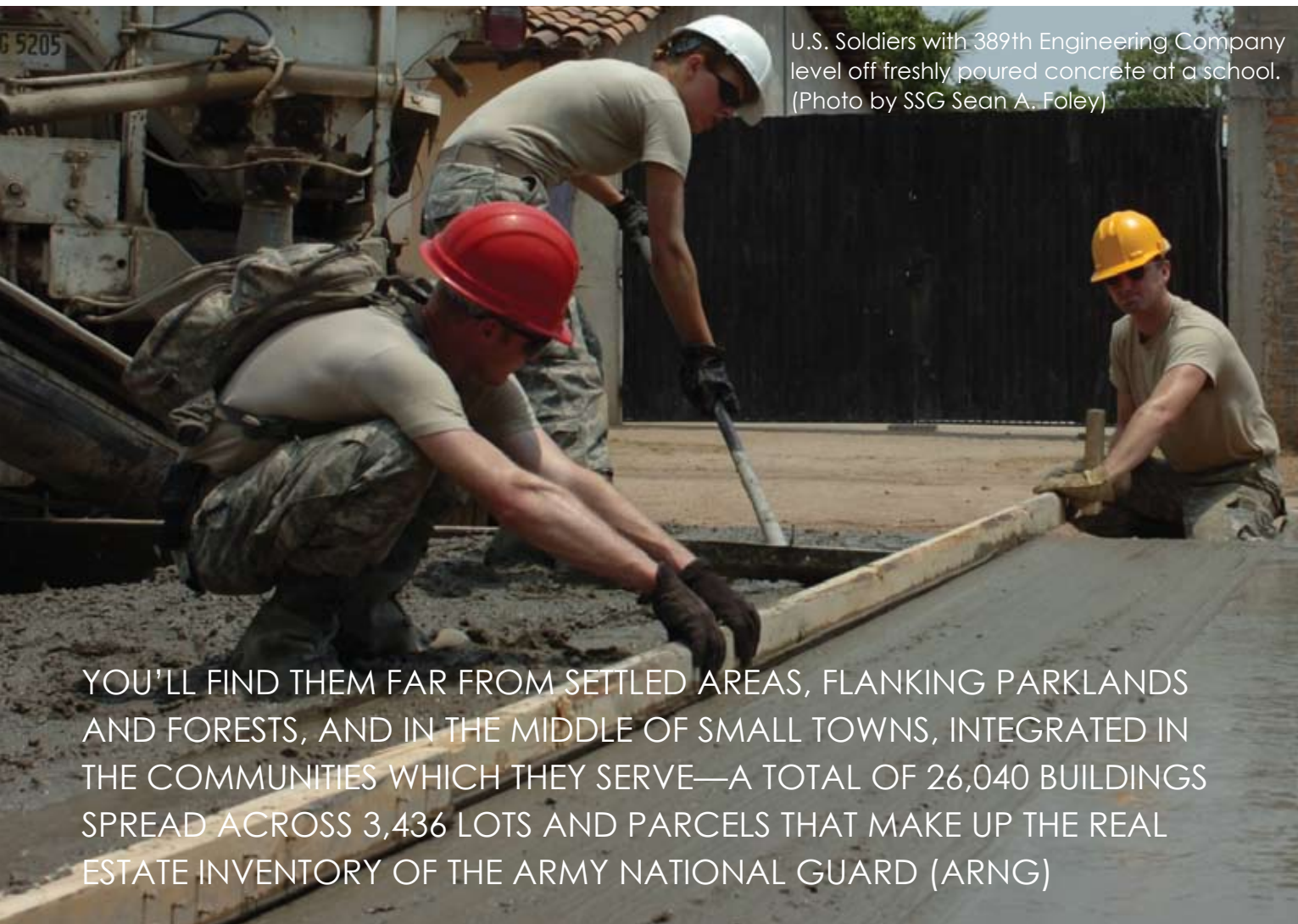


build

BY ENFORCING STRICT MILESTONES, THE ARMY NATIONAL GUARD
PUSHES ITS MILCON EXECUTION RATE CLOSE TO 100 PERCENT

BUILDING THE GUARD OF **THE FUTURE**

Two U.S. Army Soldiers from the 120th Engineer Battalion,
Oklahoma National Guard, work on the roof of a building.
(USMC photo by LCpl Andrew D. Young)



U.S. Soldiers with 389th Engineering Company level off freshly poured concrete at a school. (Photo by SSG Sean A. Foley)

YOU'LL FIND THEM FAR FROM SETTLED AREAS, FLANKING PARKLANDS AND FORESTS, AND IN THE MIDDLE OF SMALL TOWNS, INTEGRATED IN THE COMMUNITIES WHICH THEY SERVE—A TOTAL OF 26,040 BUILDINGS SPREAD ACROSS 3,436 LOTS AND PARCELS THAT MAKE UP THE REAL ESTATE INVENTORY OF THE ARMY NATIONAL GUARD (ARNG)

These buildings are more than just clusters of barracks, armories and storage facilities. They are the hearts from where relief efforts are coordinated in times of disaster, and where our Nation's readiness is secured. They are places of training, strategizing and mobilizing. We don't notice them, but when there is local or national emergency, we're grateful for their existence.

These are buildings with a purpose, and rarely do we think of them as beautiful or innovative. That is until we come across 19th century armories included in the Nation-

al Register of Historic Places, or see diffused light seep through the translucent wall panels of the Army Aviation Support Facility at Buckley Air Force Base in Colorado, lighting the facility almost entirely by natural light. Or until we see how rainwater collected on the plant-covered roof of the new Joint Forces Headquarters under construction in Raleigh, North Carolina is used to irrigate the grounds surrounding the building, or how interlaced tires filled with compacted earth provide a barrier to summer heat in the Arizona National Guard's ECObuilding in Phoenix.

From small barracks to large joint forces headquarters, these buildings need to be constructed, sustained, and, when they've served their purpose, disposed of. This is where the ARNG Installations Division (ARI) comes in. ARI programs, budgets and distributes funds to the states for construction, maintenance and disposal, and ensures that these federal funds are properly used. This is done through

two programs: Military Construction (MILCON) and Sustainment Restoration Modernization (SRM). The MILCON program plans and constructs or renovates Congressionally appropriated facilities or unforeseen large emergency requirements to accommodate a force that has grown from 300,000 to 358,000 Soldiers over the last two decades, while SRM updates, restores and sustains an inventory of installations where the average facility is over 40 years old.

"The most important thing this office does is acquire and distribute funds, and ensure that those funds are used in the way they were intended. Federal dollars come tied to federal requirements, and we make sure those requirements are met. Our job might be difficult, but the people who execute the projects have the hardest job. There's not enough funding so they have to be innovative," COL Michael Bouchard, Division Chief of ARI, said.

To make sure these funds are sustained from year to year, it's crucial that projects execute on time and on budget. The three most important tasks of ARI are acquiring funds, distributing funds and enforcing the proper use of the funds. Keeping up the execution rate is an integral part of all these tasks. Where a regular execution rate is 70-80 percent, ARI managed to push theirs to 98.4 percent in 2008. For the Base Closure and Realignment Commission (BRAC) projects tasked to the ARNG, that figure was 100 percent in 2008, and will likely reach 100 percent again this year.

"Four or five years ago the execution rate was around 70 percent," said Ken Parks, Branch Chief of ARI's Real Estate Branch. "To improve this rate the Chief of Installations established a number of milestones. The 30 percent of the projects that failed to execute often did so because of land issues. Now, before a project gets on the Future Year Defense Program (FYDP), the land must be secured. The state either has to own the land, or have a commitment from the land owner to be able to purchase or lease the land," Parks said.

The FYDP is the list of all programmed projects for a period of six fiscal years. To keep their place on the list, projects must meet a set of milestones, including a secured land deal, a completed environmental assessment, and a conceptual design coded as 35 percent complete.

Because ARNG is a joint state-federal mission, it falls on the states to provide the land for most types of projects, Parks explained, "The states have the responsibility of identifying the land. Before a project is awarded we make sure there is a sufficient legal interest in the property, meaning the federal tax dollars are protected by ensuring a

lease term of at least 25 years."

Because the ARNG doesn't generally construct on federal land and readiness centers must be within commuting distance of the Guard members that do their weekend duty there, the ARNG faces some very unique challenges.

"It's hard to place a readiness center in a built-up area and still meet anti-terrorism and force protection requirements. There's the issue of encroachment, and more recent concerns of terrorism. In some areas the property prices are so high you'd spend all your MILCON money on land. We need anywhere from five to 50 acres, and preferably a 50- to a 100-year lease," LTC Sherrell Crow, Branch Chief of ARI's Construction Branch, explained.

In addition to imposing tougher restrictions on the projects it distributes funds to, ARI, under COL Bouchard's lead, has introduced a number of practices aimed at increasing efficiency and cutting bureaucracy. These actions include an improved real estate inventory tracking and project management system, an automated MILCON programming and budgeting system, the establishment of MILCON milestones, the publishing of monthly

"OUR JOB MIGHT BE DIFFICULT, BUT THE PEOPLE WHO EXECUTE THE PROJECTS HAVE THE HARDEST JOB. THERE'S NOT ENOUGH FUNDING SO THEY HAVE TO BE INNOVATIVE."
— COL MICHAEL BOUCHARD

newsletters, and the institutionalization of a Construction Facility Management Officer (CFMO) certification course (see articles about the CFMO certification course and the real estate inventory tracking and project management system on pages 18 and 20, respectively).

Redrawing the map

Another change meant redrawing the map, to group states with similar challenges together in seven regions, and put one project manager in charge of each region. Where there used to be five project managers in charge of seven regions, there is now a manager for each region, and one project manager on the national level. "We've redrawn our map and put project managers in charge of each region that know their regional challenges—expansive clays, permafrost, and earthquakes," Bouchard said. "This small change has afforded the ARI project managers an opportunity to build stronger interpersonal relationships with the

states and the ability to visit more than one state while traveling to conduct design reviews or site visits.”

“It is important to increase our relationships with the states,” Crow expanded on Bouchard’s point. “Staff continuity is important. A habitual relationship creates a better stream of communication and helps to streamline our plan review processes, reducing our preparation time to execute funding.”

ARI has also cut down on the number of reviews for each project, in order to reduce the overall bureaucracy. Where there used to be five reviews—at 10, 35, 65, 95, and 100 percent completion of the project—there are now only three reviews for most projects, at 35, 95 and 100 percent completion. “Our plan review time has shown a marked reduction from 30 days per review to less than 15 days per review. In some cases ARI staff will complete an on-board review in order to reduce additional time,” Crow explained.

Ready, execute

The efforts to train personnel, cut down on bureaucracy, and increase efficiency has one main goal—to keep the execution rate as close to 100 percent as possible. After a project has been vetted and funded, it moves into execu-

The 130,000 square-foot Charleston Readiness Center in Charleston, South Carolina will be completed in late 2009. The Charleston Readiness Center will serve as the headquarters of the South Carolina National Guard’s 218th Maneuver Enhancement Brigade and house about 300 soldiers.



tion, guided by ARI’s Design and Construction branches.

Even with the new guidelines in place, projects sometimes fail to execute, and oftentimes the culprit is land. ARI oversaw 68 projects in FY08. Of those projects, two failed to execute on time, and in both cases it was due to land issues. The office has 72 projects scheduled to execute in FY09. Of these, Crow estimates four or five won’t execute on time. “What often happens is that a state gets a congressional add, and the proper project planning is not accomplished,” Crow said.

“IT’S HARD TO PLACE A READINESS CENTER IN A BUILT-UP AREA AND STILL MEET ANTI-TERRORISM AND FORCE PROTECTION REQUIREMENTS. THERE’S THE ISSUE OF ENCROACHMENT, AND MORE RECENT CONCERNS OF TERRORISM. WE NEED ANYWHERE FROM FIVE TO 50 ACRES, AND PREFERABLY A 50- TO A 100-YEAR LEASE.”
— LTC SHERRELL CROW

Congressional adds are construction projects pushed through the approval process in Congress on the initiative of a congressional member. In some cases, these projects fall outside of the FYDP, meaning they haven’t been through the same vetting process as the projects on the list, but most are fairly small projects, ranging in size between \$1.5 and \$20 million. In FY09 there were 25 congressio-

nal adds, adding up to \$179.8 million in total. “Adds don’t conform with COL Bouchard’s milestones,” Parks said. “They’re beyond our control. They’re good for the states, but often hard to execute.”

“Most adds are very small. From a state’s perspective they’re good; the states don’t have to wait five years for something urgent,” Crow added. “On the other hand, sometimes the states fail to properly manage these projects. Sometimes the states can’t find the money to cover their part, and sometimes there are environmental issues. We can overcome design challenges, but not the land deal and the National Environmental Policy Act (NEPA) evaluation. You have to have the land you’re going to build on. Oftentimes, this is the hardest part. It might take years of state bureaucracy to be successful in the year of execution. Then there’s the environmental process. You need to check the historical use of the property. For example, if there once was a gas station on the property, or an ammunition burial site, and the land hasn’t been properly cleared, it brings challenges that are hard to overcome. This process can take anywhere between three to five years.”

“Our branch does not weigh in on what should be built. We look only at what can be executed within the proposed time,” Crow said of his branch’s work. “We ensure success by pushing projects out one year on the list if they haven’t met our three requirements by fiscal year minus two: a land deal, a completed environmental evaluation and 35 percent of the design,” he said.

The year a project gets on the FYDP is considered “minus five,” meaning it is five years from estimated appropriation, and the year of appropriation is “year zero.” Crow and his branch enter the process at “FY minus two,” three years into the project appropriation process.

The construction branch of ARI reviews all plans, validates cost, checks the project schedule and budget, and approves all change orders of a project, to make sure the state is being fiscally responsible. If a project exceeds its budget either by more than 25 percent or by \$2 million, ARI must go to Congress for a formal project reprogramming.

ARI continuously looks for new building and design practices that can make a project run more efficiently. One such construction model is Design-Build, an acquisition strategy that combines the procurement of design and construction services in a single contract.

In the traditional model, Design-Bid-Build, the starting point is a programming document—a DD 1390. After a solicitation, the services of an architect-engineer is competitively procured to produce the plans from the programming



Top: The average age of the Army National Guard’s facilities is over 40 years old. The facilities in the foreground of this aerial photo of Ft. Indiantown Gap, Pennsylvania are WWII vintage facilities. The green metal roofs were installed to protect and preserve the wood barracks. Middle: The interior of a barracks in need of renovation at Ft. Indiantown Gap. Bottom: Barrack exterior at Ft. Indiantown Gap.

document. Construction services are put out for competitive bid only after the design is complete.

With Design-Build, the planning and design phases happen in tandem. A Request for Proposal Performance Specification document is produced by an architect-engineer and this document replaces the DD 1390. Instead of giving a specific plan, the document focuses on performance—instead of asking for a bid on 75 light bulbs for a space, the performance specification specifies how much light is required for each workspace. The selected design-builder then completes the entire project.

Since more work is placed on the shoulders of the selected Design-Builder, this method can be more expensive. It is also critical to choose the right Design-Builder. “It’s crucial to check past performance, not experience. Ask questions such as ‘Has the proposed team worked together before?’, ‘Do they have a teaming agreement?’, ‘Do they understand my program?’ and ‘Have they done a similar project in the past?’” Al Schweizer of the Maryland Army National Guard told an audience of CFMOs.



New Hampshire Army National Guard’s Army Aviation Support Facility was completed in 2004 at an approximate cost of \$21 million.

Since planning and design can be done simultaneously, Design-Build can shave around six months off a project, depending on its size. During the design phase, utility work can be started at the site and materials and supplies can be procured and stockpiled, saving mobilization time. “It’s

not a panacea, but it can bring you to execution quicker,” Crow said.

Elvin Shields, Branch Chief of ARI’s Design Branch, sees the advantages to the method, such as speed and efficiency, but he also sees the potential shortfall for local communities. “Since Design-Build relies on a general contractor, it makes our jobs more simple,” he said. “With this model, you obligate the funds more quickly. The contractor doesn’t have to wait for 24 months for the design to be completed, before he can get started. That means the move-in date can be moved up 12 to 18 months. But it also keeps us out of the loop. With Design-Build we have to give the contractor more control. The contractor brings his own team and that cuts out the local architects and engineers. Design-Bid-Build favors local businesses, and provides opportunities for small companies that are struggling.”

Only around 15 to 20 percent of the ARNG’s construction projects are Design-Build. “Around 85 percent of all Active Army and Navy construction projects use Design-Build, but their designs are standard. Their process is fast and furious; they don’t spend too much time on design. Their construction projects are pure Design-Build, while ours are a hybrid version—we want to see the design before it is executed. We build in communities; they build on bases. We don’t want our buildings to stick out like sore thumbs, we want them to blend in. We’re a community-based organization. We build next to hospitals, high schools, and in the middle of residential communities,” Shields said.

“And we have issues with land,” he continued. “Unlike Active Army projects, which are built on federal land, the ARNG relies on the states to come up with the land. Our projects are in competition with projects to build new high schools, hospital wings, and commercial developments. If the state can’t meet the asking price for the land, we have to look elsewhere.”

Because of the structure of the ARNG as a state-federal mission, there are no ways around these obstacles, but even if there were, Shields would not want to circumvent the conditions that make the organization unique. “The Active Army runs a construction program; we run a grant program. We can’t touch the construction side. The Army issues national contracts to build barracks in ten states. We can’t do national contracts. Each state issues its own contracts. Whatever we build, we have to have the community involved. We’re a service organization. If we forget that and allow the ARNG to operate like the Active Army, we’ll regret it. There’s a place for Design-Build, but it’s not the answer to everything,” he said.

Shields’ branch develops design guidance criteria and assists states with technical problems. The branch puts together guidelines and publishes them in a design guide every two years. These guidelines are based on industry standards, Department of Defense and federal requirements. Among these guidelines is the ARNG Green Building program, which mandates the use of sustainable building methods. “The ARNG Green Building program was inserted into our design and construction criteria in 2001 as Sustainable Design and Development mandated by the Army for all MILCON projects,” Shields said. “This included the design, construction, and operation of buildings to reduce negative impacts on the environment, improve the health and comfort of the building occupants, and reduce operating costs, while improving building performance. The Department of the Army and National Guard Bureau, Installations Division sustainable design and development goal for all projects is a U. S. Green Building Council LEED Silver rating.” (For more on LEED and ARNG’s sustainability efforts, see page 24.)

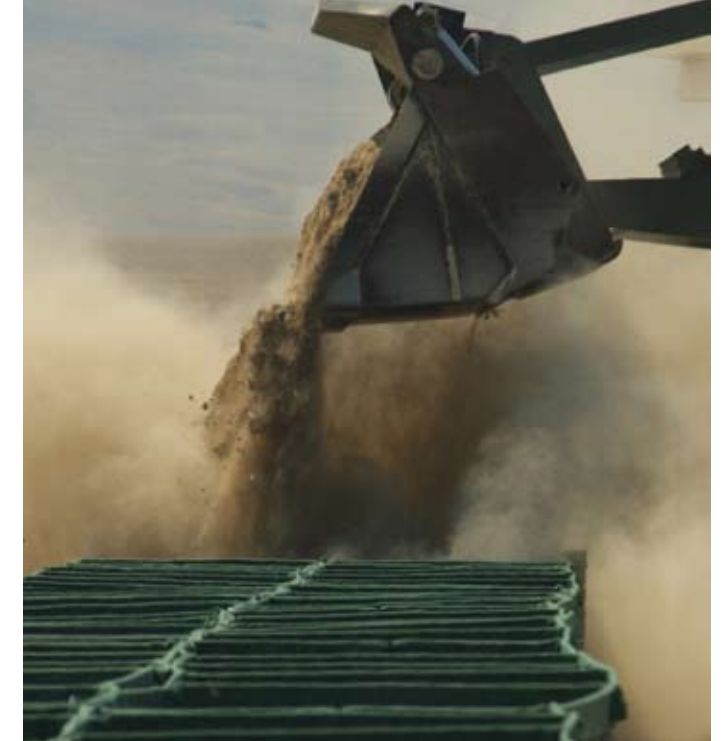
“States call us to ask about a certain roof, for example, and our architects and engineers make recommendations based on their research. We’re doing what we can to facilitate the states’ jobs by offering help with master planning, workshops, and training in the form of the CFMO certification course and the university, but it’s the State CFMO and USPFO staffs that actually executes the design architect-engineer and construction contracts and administer the projects to a successful completion,” Shields emphasized.

Keeping it up

A construction project with a price tag over \$750,000 is a MILCON project; a construction project under \$750,000

“OUR MILCON PROGRAM IS NOT CONDUCIVE TO DOING SMALL PROJECTS. THE TOTAL MILCON FUNDING IN RECENT YEARS HAS INCREASED, BUT SINCE EACH STATE CAN ONLY SUBMIT TWO PROJECTS TO THE INFRASTRUCTURE REQUIREMENTS PLAN THE AVERAGE PROJECT COST HAS ALSO INCREASED. WE NEED TO CHANGE THE MILCON PROGRAM SO THAT STATES HAVE MORE OPTIONS, SUCH AS BUNDLING SMALLER PROJECTS.”

— LTC MICHAEL TOMPKINS



To make it onto the FYDP—the list that ranks all proposed construction projects larger than \$750,000 in order of priority—projects must meet a set of milestones, including a secured land deal, a completed environmental assessment, and a conceptual design coded as 35 percent complete.

normally falls under SRM. Many of the states’ construction needs involve small, fairly inexpensive projects, but funding these smaller projects can be problematic.

“Our MILCON program is not conducive to doing small projects,” said LTC Michael Tompkins, Branch Chief of ARI’s Facility Management Branch. “A State Adjutant General (TAG) can only submit two projects to the Infrastructure Requirements Plan (IRP) each year. The total MILCON funding in recent years has increased, but since each state can only submit two projects to the IRP the average project cost has also increased. He or she is not going to use his or her silver bullets on a small project. We need to change the MILCON program so that states have more options, such as bundling smaller projects.”

The ARNG will receive approximately \$580 million next year for sustainment of installations (QRPA), and \$215 million for operations (QDPW), which includes utilities, salaries, building leases and electric security. Unfortunately, QDPW costs will probably require over \$275 million in funding, which means states will need to migrate approximately \$60 million, or more, from other accounts to cover this shortfall. States are allowed to migrate ten percent of the annual maintenance funds (QRPA) they receive to other programs to fund small construction projects, or to cover the QDPW shortfall. They are allowed to migrate an



The Massachusetts National Guard's Field Maintenance Shop in Framingham was completed in August 2005. The \$7 million, 26,600 square-foot shop was constructed as a replacement for the existing undersized and obsolete facility located at the site. The shop currently employs 18 technicians and provides maintenance support for over 15 units in the Massachusetts National Guard.

additional five percent of the maintenance funds towards energy reduction construction projects.

When Tompkins arrived at ARI in 2005, 25 to 33 percent of the sustainment money was used to construct new buildings. "We started with an information campaign to educate states on the rules of a fairly complicated system," he said. "We set out to teach them how to properly define their projects, to teach them when a project falls under modernization, sustainment, or new construction. There were risks involved with doing things the way they had been. Instead of sustaining their existing inventory they were constructing new buildings and adding square footage, which they then had to keep up. The congressional intent is to spend this sustainment funding on sustainment of existing facilities. I was concerned that sustainment funding would be reduced if we didn't use the funding for its intended purpose. Now, all sustainment money is spent the way it was intended."

The money allocated to each state for sustainment is proportionate to the state's real property inventory. Tompkins said states should have a keen interest in maintaining these inventory records. This data is crucial for the state to receive its fair share of sustainment funding.

Since the ARNG is a joint state-federal mission, states

contribute 50 percent of the upkeep of armories, but training sites are considered a strictly federal mission, and the maintenance comes out of federal funds. One of the most significant obstacles that the National Guard faces in sustaining its armories is getting the states to provide their matching share. Another significant problem is the lack of QDPW funding. "We are adequately funded to maintain our buildings, but the operational piece is inadequately funded," Tompkins acknowledged.

SIMPLY BEING IN NEED OF RENOVATION IS NOT ENOUGH FOR A PROJECT TO RECEIVE FUNDING. BASES OF DIMINISHING IMPORTANCE, PERHAPS BECAUSE OF A DEMOGRAPHIC SHIFT, HAVE TO STAND ASIDE FOR PROJECTS MORE IN LINE WITH THE OVERARCHING GOALS OF THE ARMY.

States manage the operational funds as they see fit, and if they want to save on something to be able to spend more on something else, it's their decision. "When you're insufficiently funded, it becomes a question of 'Where do



The North Carolina Army National Guard's newly opened Field Maintenance Shop was designed to meet the Sustainable Buildings Industry Council Small Commercial Buildings program standards. It includes a geothermal heating and cooling system, water-reducing facilities, occupancy sensor lighting systems and tank-less water heaters. The green design sets a foundation for further pollution prevention efforts. (Courtesy of North Carolina Army National Guard)

you want to take the risks?'. We don't get involved in these decisions. We monitor at an aggregate level," Tompkins summed up.

Stretching the funds

The ARNG makes up 36 percent of the Army, it owns 22 percent of the Army inventory, and it receives 10 percent of the military construction funding. The budget allocated to the ARNG for maintenance is proportionally even smaller.

In 2009, ARI received a budget of \$1.5 billion, excluding BRAC projects. Of that, \$883 million was for MILCON projects and emerging requirements, and \$666 million for SRM. An additional \$266 million was allocated to ARNG MILCON projects as part of the American Recovery Reinvestment Act (ARRA) of 2009, also known as the stimulus package. This money will be used to fund smaller projects in 52 states and territories, prioritizing areas such as energy reduction and quality of life. Roughly \$200 million of the total \$266 million is earmarked for energy projects.

The budget allocated to the ARNG for construction and maintenance is not likely to increase, but rather decrease, in coming years. "As the deficit gets bigger, the amount of interest gets bigger. The mandatory spending

stays the same, while both the defense and non-defense discretionary spending gets smaller," said Joseph Calcara, Deputy Assistant Secretary of the Army (Installations and Housing).

With limited funds, LTC Dale Oldham, Branch Chief of ARI's Resource Management Branch, and his staff have to make some tough decisions on what to include in the FYDP. The projects receive points according to a detailed priority rating system. The nine different categories of the rating system include: support of force modernization; support of joint use; health and safety or environmental issues; equitable distribution of projects; replacement of facilities in poor condition; TAG/DARNG priority; project cost growth containment; prompt execution; and force structure allowance goals. Most importantly, however, the project must make strategic sense for the Army.

"We ask, 'What is the risk if we don't do this project?'" Oldham said. LTC Daniel Townsend, Branch Chief of ARI's Strategic Plans & Education Branch, expanded, "The armories are the face of the Guard, and the state of the armories matter when it comes to recruitment. Some of these armories are covered with asbestos and lead paint. We face the questions of whether it's easier to fix up the



Above and opposite page: Soldiers from the 153rd Engineering Battalion, North Dakota Army National Guard, install rafters at a school. (Photo by Staff Sgt. Jason T. Bailey)

buildings, or tear them down and build new ones.”

Simply being in need of renovation is not enough, and bases of diminishing importance, perhaps because of a demographic shift, have to stand aside for projects more

“THE SMALL COMMUNITIES ARE WHAT MAKE THIS ORGANIZATION GREAT. THAT’S WHERE YOU FIND THE VALUE SYSTEM THAT MAKES UP THE CORE OF THE NATIONAL GUARD.”

— ACTING DDARNG MG RAYMOND CARPENTER

in line with the overarching goals of the Army. Explaining why some projects make the list—while others don’t—is not an easy task. “Governors call, wondering why there are no new projects in their states. States send pictures of decrepit buildings. Some of these buildings don’t meet

code. There are no women’s locker rooms in buildings built before the 1960s and female Guard members have to change in converted closets,” Oldham said.

To secure funding for a project, Oldham and his staff must be able to explain to Congress why it is needed. “States don’t always do a very good job at communicating why they need a specific project,” Oldham noted. “We need more ammunition to support their requests and push their projects through. We’re the interpreters of their wishes. Congress will ask ‘Why is this important?’ and we need to have an answer.”

With a proportionally small budget, ARI stretches available funds as far as they can go, and wishes it had a bit more to maintain its inventory and meet the needs of a modern Guard. “We have 22 percent of the Army inventory. There are significant shortfalls. Give us at least enough to bring inventory up to quality and to sustain this inventory to accommodate our mission as an operational force,” Oldham said.

As bases close, opportunities open

The last few years’ budgets have been the largest the ARNG has ever received, because of BRAC. Throughout five rounds of base closings, ARNG has carried out 64 BRAC projects. “BRAC has been good for the Guard,” Crow of the Construction Branch acknowledged.

In some cases BRAC has been good for the Guard in more ways than just providing job opportunities: as active military installations have closed, new land has become available for lease. Converting existing facilities can often be a cost-efficient way to meet the Guard’s needs. “The additional active component facilities may not be needed, but Guard readiness centers are still needed. Instead of building from the ground up we can alter existing facilities,” Crow said.

For cash-strapped states, BRAC has provided a welcome relief, even if the program wasn’t structured that way from the start. “This round of BRAC provided an opportunity for states to construct on existing federal property or on lands they already own,” the Real Estate Branch’s Ken Parks said. “Since BRAC is a federal initiative, 100 percent of the construction money is federal. But only the last of the five rounds of BRAC has a language favorable to the National Guard which allows us to consolidate construction projects with other components while reducing our number of older, outdated facilities.”

For now, the relief that BRAC brought may be over. “The official party line is that there will be no new BRAC round,” Calcara told an audience of CFMOs at a conference in Indianapolis in June.

Building the future Guard

Made up of citizen-soldiers, the National Guard is the only dual-role military component. States answer to their governors, rather than National Guard headquarters. This duality creates some unique challenges.

When it comes to installations, these challenges include scarcity of suitable land, limited funds, and an aging inventory of installations that includes facilities that have become obsolete because of demographic shifts or encroachment. Because the states provide the land for many types of projects, and because the Guard needs to be close to the communities it serves, it doesn’t always have a lot of land to choose from, and it often has to settle for land that was perhaps not its first choice.

Acting Director of ARNG MG Raymond Carpenter said he often hears the criticism that the National Guard is in



too many communities. “The small communities are what make this organization great. That’s where you find the value system that makes up the core of the National Guard,” he said.

Despite these challenges, ARI manages to run a successful program that meets the basic installations needs of the Guard, using the funds available.

“The Army National Guard is a very cost-efficient organization,” Bouchard said. Because states provide land and share the funding for construction and facilities operations for Guard facilities, the Federal government saves money. “The Army National Guard is an inexpensive means of providing powerful military ground force surge capability to meet unanticipated contingencies and home land defense missions,” Bouchard expanded. “Our Guard Soldiers located in facilities, in the communities, across our nation, rapidly respond to natural disasters and other state emergencies. The Guard also provides a significant economic stimulus package by creating jobs and supporting businesses throughout small town America. The Guard offers Soldiers the opportunity to serve their state and nation while remaining geographically close to their families, home towns and civilian employers. The Guard is America.” ■

BACK TO SCHOOL

AN IMPORTANT PART OF THE ARMY NATIONAL GUARD'S INSTALLATIONS DIVISION'S STRATEGY TO INCREASE EFFICIENCY—AND REDUCE WASTE—IS THE CERTIFICATION OF CONSTRUCTION FACILITY MANAGEMENT OFFICERS (CFMOS) AND TRAINING OF THEIR SUPPORT STAFF

Since 2004, the Army National Guard's Installations Division (ARI) has been sponsoring a CFMO certification course for CFMOs and their deputies. Over the course of 14 months, students complete seven one-week sessions that roughly follow the cycle of a construction project—from planning and funding, to construction and completion.

Each class is one week, or 40 hours, and covers fiscal law; planning, programming and real property; design and project management; facilities management; and contracting and resource management. Many of the classes start with three days of lectures, and close with two days of case

studies. The classes focus on the rules of the federal government, since each of the 54 states and territories has its own set of rules, and teaching the varying laws of each state or territory would be nearly impossible. This is where the case studies come in.

"This is where the participants learn from the mistakes of others. Most people say this is the most interesting part," said LTC Timothy Amoroso, Strategic Planner in ARI's Strategic Plans & Education Branch (ARI-SP). "Even though we compete for the same dollars, we help each other. We don't let each other fail."



Over the course of 14 months, students complete seven one-week sessions that roughly follow the cycle of a construction project—from planning and funding, to construction and completion.

Oftentimes, CFMOs get the job first, and then they go through the training. To ensure continuity, ARI stresses the importance of certifying not just the CFMO, but also his or her deputy. There's no requirement to take the course. As requirements change, graduates may need to take a class or two over. The course educates 35 to 40 people at a time, and ARI has no problems filling the slots.

The course was an initiative by the Iowa National Guard, and it was developed by BG (Ret.) Dave Rogers and Marcie Burbank of the Iowa National Guard, in cooperation with the Facility Engineer Advisory Council (FEAC). Iowa ran the course from 2004 until 2007, when it passed the program over to ARI-SP. "After the responsibility was handed over to ARI-SP, we focused on institutionalizing the course, and making it a perennial program that won't die with the departure of the people that developed it," said ARI-SP's Branch Chief, LTC Daniel Townsend.

Developing and managing a program like the certification course is a huge administrative task. Why would Iowa take it upon itself to educate the whole CFMO community, and not just its own personnel? "Their action is inherent in the National Guard. We're a team- and family-oriented organization. We look after one another. If one benefits, we all benefit," Townsend explained.

The next step is to get the course recognized by the National Guard Professional Education Center (PEC). In order for the CFMO certification course to be accredited and course completion included on participants' official records, PEC must approve the course. This, however, is a time-consuming process, according to Townsend: "To properly certify the program, facilitators must be certified trainers. We're fighting against time and personnel resources."

ARI also coordinates and provides instructors for CFMO University, an annual, one-week training venue that offers in excess of 70 different classes and runs for two consecutive weeks. The university is open to all members of the CFMO community and draws roughly five hundred participants each week.

So what are the advantages of certifying these officers, for the organization as a whole, and for the states?

"The advantage on a macro level is that an educated staff will work more efficiently, and that in turn will reduce waste," Townsend said. "Increased efficiency in business practices means greater savings. For CFMOs, it shortens the learning curve, so that they can hit the ground running. In the construction business, time is money. Whereas the goal in the private sector is to produce profit, the goal in the

public sector is to save money. This course allows CFMOs to shorten the cycle time and increase their execution rate. It teaches them to ask the right questions of their staff, of ARI staff, and of contractors." ■



The course educates 35 to 40 people at a time, and ARI has no problems filling the slots.

TRACKING PROJECTS AND INVENTORY WITH PRIDEWEB

IN FEBRUARY, 2009 THE ARMY NATIONAL GUARD'S INSTALLATIONS DIVISION (ARI) UNVEILED PRIDEWEB, A COMPLETE REVAMP OF ITS REAL ESTATE TRACKING AND PROJECT MANAGEMENT SYSTEM, AND PART OF THE DIVISION'S OVERALL STRATEGY TO IMPROVE EFFICIENCY

ARI had been using a version of PRIDE (Planning Resource Infrastructure Development and Evaluation) since 1998, but in 11 years of use, the system had not been upgraded and it was desperately lagging behind. The Division needed a system that could track real estate inventory, to comply with Executive Order 13327, which makes all Department of Defense agencies accountable for their assets. It also had to meet the target of being Real Property Inventory Requirements (RPIR) compliant by 2008.

It fell upon MAJ Daymone Simmons, Real Property Inventory Manager and System Engineer in ARI's Real Estate Branch, to come up with a solution that would meet both the government requirements and the needs of ARI and state offices. "We didn't just want a system that meets our needs today. We wanted a system we can grow into," Simmons explained.

The old PRIDE was based on client server, and one of the most common complaints with the system was speed. To meet the RPIR requirements, the system needed to be Web-based, which would also bring it up to speed. However, the money allocated for PRIDE maintenance could not be used for development. Instead of upgrading the old system, Simmons used the money to buy a new, off-the-shelf system, which was then modified to meet ARI's specific needs. By modifying an off-the-shelf system, rather than building a system from scratch, ARI got away with a cost of only \$907,000, compared to the \$3 to \$5 million it could have cost to custom-build a system. ARI bought the

system from Tririga, and it was then customized by IBM to comply with RPIR and to meet the specific needs of ARI.

Buying an off-the-shelf system also meant that the development phase could be drastically shortened. "Normally, it takes two to three years to develop a system like this one. We did it in nine months," Simmons said.

The project was started in January of 2008, and the



MAJ Daymone Simmons receives *ComputerWorld's* award as one of the winners in the magazine's Honors Program 2009. Every year, the magazine picks 100 winners in various categories out of more than 50,000 entries.

new system was deployed a year later. On February 1, 2009, the data from the old client server-based PRIDE was migrated to the new Web-based PRIDEWeb. The new PRIDEWeb integrates several key functions into one system, including land asset maintenance and project management. There are smart sections where the users can enter filters and queries to fetch multiple records. The records fetched from the database can be exported in a multiple of formats, such as Microsoft Excel, CSV, PDF, and HTML. The system can also extract data from a Microsoft Excel file. This extracted data is subject to the same set of validations that the system performs when a user enters data on the data entry screen. This functionality takes away the need for external databases for creating summarized reports and other ad hoc reporting needs. In the end, the Army National Guard was the only military branch to meet the RPIR requirement. In addition to RPIR, the application also complies with NGB business processes, Business Enterprise Architecture (BEA) and Chief Financial Officer's Act (CFOA). The reception from states has been overwhelmingly positive, with several requests from states that want to switch from their own project management systems to PRIDEWeb. ARI offers Webinar training sessions every other week, and training on location in state offices. PRIDEWeb training is also part of the curriculum at the annual CFMO University.

The new system has made ARI's job of tracking real estate inventory easier. "The increased speed, the interaction time—meaning the time it takes to enter data—and the overall usability of the system encourages people to update their real estate inventory. Data is only as good as the input. By making it easier to input data, PRIDEWeb is increasing data fidelity," said Ken Parks, Branch Chief of ARI's Real Estate Branch. ARI's Division Chief, COL Michael Bouchard, agrees, "New IT capabilities help with the business process. PRIDEWeb has cut redundancy and made the business process more efficient," he said.

The system has also been recognized outside the National Guard bureau. PRIDEWeb was one of the winners in *ComputerWorld's* Honors Program 2009. Every year, the magazine picks 100 winners in various categories out of more than 50,000 entries.

"PRIDEWeb is the most comprehensive, state-of-the-art facility management system across the DoD components. It will support facility management processes and workflows from the National Guard Bureau, all the way down to the 54 states and territories. It introduces an intuitive application process and a scalable technology that accommodates growth as the application user's needs change. The flexibility of the software will allow us to meet the needs of essentially 54 different businesses," Simmons summed up. ■

By modifying an off-the-shelf system, rather than building a system from scratch, ARI got away with a cost of only \$907,000, compared to the \$3 to \$5 million it could have cost to custom-build a system.



GOING FOR GOLD

MONTANA'S ARMY NATIONAL GUARD FACILITIES MANAGEMENT OFFICE WINS FRED AARON AWARD FOR EXCELLENCE IN FACILITIES PROGRAMS

In recognition of its hard work and dedication, the Montana Army National Guard Construction and Facilities Management Office received the 2009 Fred Aaron Award for excellence in facilities programs—the first such award for Montana. The award was presented at the annual Construction and Facilities Management conference in Indianapolis, Indiana in June, and was accepted by Montana's Construction and Facilities Management Officer (CFMO), MAJ James Hesterberg. *Foundations of Readiness* had a chance to speak with Hesterberg and congratulate him, and his team of 40 employees, on the award.

► **Foundations of Readiness:** The Fred Aaron Award, issued by National Guard Bureau's Army Installations division, recognizes the best-performing facilities program in the nation. This year, your facilities program won that award. How did you beat 53 states and territories to the top award?

► **Hesterberg:** From what I have seen, there are a lot of states with excellent facilities programs. I didn't consider that we were competing or trying to beat any of them, but rather I tried to learn from them and just make our program better in order to best support our Soldiers.

► **Foundations of Readiness:** Facilities programs are measured by a point system, up to 1000 points. Montana's facilities program scored 712 points in 2008. In which areas did your office score the best, and in which areas are there still room for improvement?

► **Hesterberg:** I looked at our 2008 report card and referred to it throughout the year, as a reminder of the areas

where I wanted to improve. I also gave a copy to each of my branch chiefs so that they could also see what was being measured in their lane. This year they all definitely rose to the challenge as every area received the highest marks.

► **Foundations of Readiness:** Your office also received the Most Improved Construction Facility Management Office in Region VI (made up of Alaska, Idaho, Montana, North Dakota, Oregon, South Dakota, Washington and Wyoming; there are seven regions in total) and the Best Installation Program in the Facilities Engineering Advisory Council (FEAC) in Region VI awards. What were the jury's reasons for choosing your office for these awards?

► **Hesterberg:** Those awards are based on the overall score card. Each state CFMO is notified of his or her individual state's score, but only NGB-ARI knows what each state scored and where they all rank. We had a lot of room to improve from last year, and we did just that, so we earned the most improved award for the region. That



The construction of a new Armed Forces Reserve Center in Missoula, Montana is nearing completion. The facility will house three Montana Army National Guard units and a US Army Reserve unit.



Maintenance of the sewer and water infrastructure at Fort William Henry Harrison, Montana. The system was originally constructed in 1942 and services the entire training site and Joint Force Headquarters.

accomplishment, in turn, set us up for being the best-rated program in the region.

► **Foundations of Readiness:** You're one of only four majors in the Army National Guard to hold the position of CFMO. What qualities does a CFMO need to be successful?

► **Hesterberg:** Obviously a background in facilities management is essential. I completed my Bachelors of Science in Construction Engineering and I am two courses away from completing my Masters in Facility Management. Beyond that, it is necessary to continue to learn from peers in other states. The FEAC CFMO certification program is an excellent resource for this. In general, the CFMO community is a very collegial group. They are all willing to share lessons learned to ensure we all share success. The most important thing is to have a staff that is very proficient, and to provide them with every opportunity for additional training and responsibilities.

► **Foundations of Readiness:** Your inventory of facilities in Montana totals around 2,000,000 square feet. What challenges do you face as CFMO when it comes to maintaining these facilities, and planning and constructing future facilities around the state?

► **Hesterberg:** One of our greatest challenges is due to the sheer geographic size of the State of Montana, and the long distances we have to travel to reach all of our facilities. This results in a lot of time on the road for our project

managers and maintenance staff.

► **Foundations of Readiness:** Are there any projects that you are particularly proud of?

► **Hesterberg:** Right now we have a significant maintenance project underway at Fort William Henry Harrison. Our underground sewer and water infrastructure was originally constructed in 1942 and over time it has begun to deteriorate. This system services our entire training site and Joint Force Headquarters. Although it is all underground and not a very visible project, this is a crucial infrastructure system that requires maintenance to continue to function without fail. We are also currently at about 50 percent complete with the construction of a new Armed Forces Reserve Center in Missoula, Montana which will be home to three Montana Army National Guard units and a US Army Reserve unit.

► **Foundations of Readiness:** What are your goals as CFMO of Montana's Army National Guard?

► **Hesterberg:** My number one goal is to continue to have a program that provides the best possible facilities for our Soldiers. These facilities should enhance their training opportunities, and not be a distraction. Despite the recognition of this award, I feel that we still have plenty of opportunities to improve. We will continue to participate in as much training as possible, as students or as instructors as the opportunities arise. To sum it up in one word: "Essayons." ■

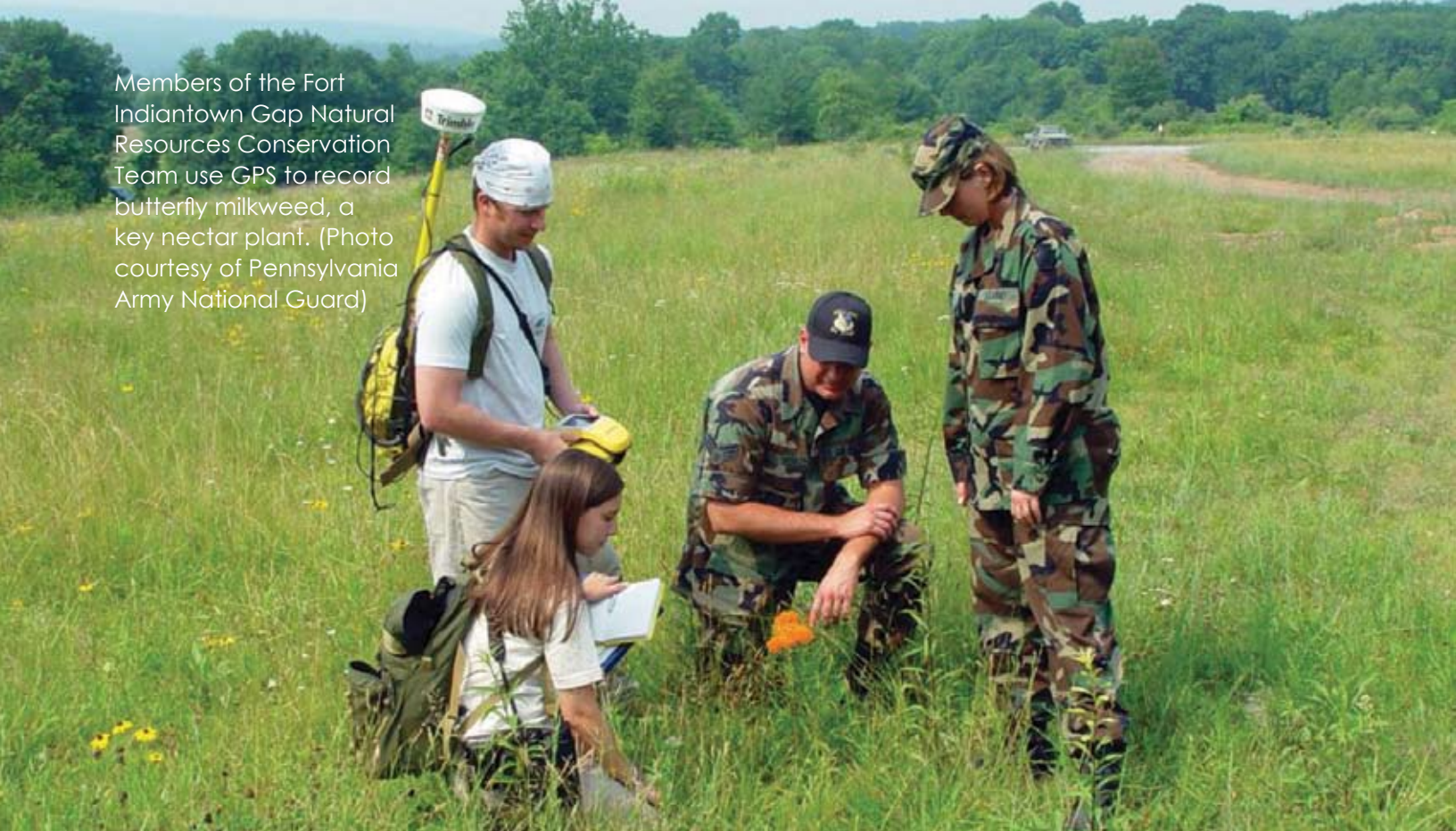


sustain

GOING GREEN

BY BUILDING SUSTAINABLY, THE ARMY NATIONAL GUARD IS
REDUCING THE IMPACT IT HAS ON THE ENVIRONMENT,
AND SETTING AN EXAMPLE FOR OTHERS TO FOLLOW

Members of the Fort Indiantown Gap Natural Resources Conservation Team use GPS to record butterfly milkweed, a key nectar plant. (Photo courtesy of Pennsylvania Army National Guard)



IN NEW MEXICO, HIGH-VOLUME, LOW-PRESSURE PAINT GUNS REDUCE HAZARDOUS PAINT WASTE BY MORE THAN HALF AT AN ARMY NATIONAL GUARD PAINT BOOTH—ONE OF THE FEW PAINT BOOTHS IN THE STATE CERTIFIED UNDER THE CLEAN AIR ACT



t Camp Ripley in Minnesota, soldiers attending training generate a mere one and a half pounds of waste per day—compared to the national average of four pounds of waste per American, per day. At Camp Blanding in Florida, red-cockaded

woodpeckers, a Federally-listed Endangered Species, peek out of roosting areas created by the Florida Army National Guard. At Camp Navajo in Arizona, the grounds are almost cleared of explosives after the Arizona Army National Guard cleaned up 6,100 tons of TNT (Trinitrotoluene) by composting the excavated soil with vegetables, straw, wood chips and manure—an unusual and cost-ef-

fective method that reduced TNT concentrations from more than 5,000 parts per million to under 10 parts per million in just 11 days.

These initiatives are all part of the Army National Guard's (ARNG) sustainability efforts—which include protecting our natural resources, such as wetlands, floodplains, endangered species' habitats, and historic and cultural sites—and represent ARNG's commitment to environmental stewardship and sustainable practices. ARNG units must comply with federal and state environmental laws and regulations and with the President's Executive Orders, such as Executive Order 13423, which sets government goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, and water conservation. ARNG's Installations Division (ARI) is responsible for the sustainable buildings and energy efficiency portions of this Executive Order.

Taking the LEED

ARNG's commitment to sustainability also means all new construction projects and all major renovations must meet strict sustainability guidelines, and be done in a way that minimizes the impact on the environment. "All of our new construction projects and major renovations are LEED Silver certified," said Army National Guard Installations Division Chief COL Michael Bouchard, referring to the rating system developed by the U.S. Green Building Council. Leadership in Energy and Environmental Design (LEED) provides a suite of standards for environmentally sustainable construction. Depending on how many sustainable solutions they incorporate, buildings can earn up to 100 possible base points, plus an additional six points for Innovation in Design and four points for Regional Priority, placing them in one of the four levels of certification—Certified (40-49 points), Silver (50-59 points), Gold (60-79 points) and Platinum (80 points and above). Sustainable building materials and energy-efficient heating, ventilating, and air-conditioning (HVAC) systems make up the bulk of the points, but simple solutions such as bike racks and electrical outlets for hybrid cars earn points as well. "But simply meeting the requirements is not enough for us," he continued. "We're looking to take our commitment to the next level, to LEED Gold. It's the right thing to do—as Soldiers, and as citizens."

The organization officially started implementing LEED in 2009, but sustainability was embraced by the organization long before it became a government requirement. "By the time LEED became a requirement, we were already doing it," said Elvin Shields, Branch Chief of ARI's Design Branch. "When Greenbuild started, people thought 'This is just another fad,' but things are catching on. Green is good," he said, referring to the world's largest conference and expo dedicated to green building.

A primary goal of LEED is to make buildings healthier. Data shows people are more productive in LEED facilities; they take less sick days and stay in their jobs longer. Building sustainably is a bit more expensive than traditional building methods—estimates vary between two to 10 percent more expensive, depending on what certification level is sought—but this up-front investment saves money in the long run through lower energy and water bills, less employee sick time, and higher employee productivity.

With LEED a requirement, not an option, ARNG has no choice but to build sustainably. Even with defense cuts, sustainability will be prioritized. "The Vice Chief of Staff of

the Army has taken the lead in development of a Sustainability Campaign Plan for distribution to all commands in the very near future. The Sustainability Campaign Plan (SCP) will identify sustainability requirements for all Army commands—including the ARNG. The SCP will also designate specific sustainability responsibilities for Army functional areas, including Installations, Environment, Logistics and Training, along with requirements for identifying funding to execute these responsibilities," said LTC Joseph Knott, Sustainability Team Leader in NGB's Environmental Programs Division.

To educate its Construction and Facility Management Officers (CFMOs), energy managers, engineers, and other personnel involved in construction of facilities, ARI, on the initiative of MAJ Jason Hamby in ARI's Strategic Planning Branch, has conducted four-day workshops around the country, with around 50 participants per workshop. The workshops teach sustainable design, construction, and facility operations, focusing on the topics *LEED for New Construction* and *LEED for Existing Buildings: Operations and Maintenance*. "The workshops span all areas, from LEED design concepts to cost management. We teach ways to minimize energy use in existing buildings, while improving the experience of the people that use the facilities on a daily basis," said Josh Radoff, one of the trainers for the workshops and Principal of YRG Sustainability Consultants and a LEED Accredited Professional.

An important part of the workshop is helping participants find out what sorts of incentives exist in their area, including utility incentives and tax credits. As part of the workshops, the class takes field trips to LEED facilities, to give participants ideas for solutions they can apply to their own facilities. "Oftentimes you can achieve energy savings of 20 to 30 percent by simply doing a walkthrough and an audit of a facility. By identifying HVAC equipment that doesn't work properly and by making sure that set-points are set correctly you can make huge improvements in energy consumption. And by repairing equipment that is not working correctly you also improve the air quality. Simple solutions such as installing low-flow faucets can result in huge reductions in water consumption," Radoff said.

Radoff said there is a good understanding amongst the participants of sustainable concepts. "They pick up these concepts very quickly. They're very engaged students and eager to apply the solutions we teach to their own construction projects," he said.

Only a small percentage of the real estate inventory is

new construction. The big change for ARNG, and for the environment, is going to come from making existing buildings more energy-efficient. “The first item that needs to be addressed on a building retrofit is with the envelope,” said CW3 Christopher Swihart, Utility Operations and Maintenance Technician in ARI’s Facility Management Branch. “This means looking for ways that heat enters or escapes from the building exterior and reducing that heat transfer. This includes more efficient windows and doors, as well as sealing leaks in the foundation and attics of a building. With greenhouse gas emissions getting more visibility, many

tion by 55 percent by 2010, and by 65 percent by 2015,” Swihart said.

The ARNG Headquarters is not just preaching sustainability. Around 1,300 people work at the ARNG Readiness Center in Arlington, Virginia. When the Base Realignment and Closure (BRAC) 2005 law included a requirement to relocate around 1,180 Guard personnel from Crystal City, Virginia to the Arlington Hall location, construction began of an additional building. It was a natural choice to incorporate as many sustainable solutions as possible in the \$110 million LEED Silver project.



When the Base Realignment and Closure (BRAC) 2005 law included a requirement to relocate around 1,180 Guard personnel to the Arlington Hall location, construction began of an additional building. It was a natural choice to incorporate as many sustainable solutions as possible in the \$110 million LEED Silver project.

buildings are using solar heating for hot water as well as partially heating a building. Another means to increase efficiency is with ground source heat pumps. This system has piping put in the ground to use the earth’s temperature to heat and cool a building. The main energy draw is for pumps to circulate fluids through the piping to a heat exchanger along with a fan to circulate air through a building. Green roofs are becoming very popular now as well. Green roofs use plants and soil as a barrier between the exterior temperatures and the interior of a building. Not only does this save on heating and cooling but also saves with water run-off from buildings.”

The Energy Policy Act of 2005 requires metering of electricity in all federal buildings by 2012. Again, ARNG is looking to get a head start: starting in 2011, all new construction and major renovations carried out by ARNG must have advanced metering. “The goal is Zero Carbon Buildings by 2030. We’re aiming to reduce energy consump-

The new building, just south of the existing ARNG Readiness Center, will cover 250,000 square feet and combine both below grade floor spaces, referred to as the plaza levels, and above grade tower space to maximize the useable areas of the site. The roof of the lower plaza podium level will form a green roof, which will be a hallmark of the project. More than 75 percent of the overall roof area of the plaza podium will be covered with vegetation. This green area will accommodate small, flowering trees, hedges and grass varieties. The intention is to preserve the green park-like feeling that now exists at Arlington Hall. The interiors will incorporate sustainable design features and materials such as storage and collection of recyclables, certified wood, specified low-emitting materials and furniture certified by GREENGUARD Environmental Institute.

The HVAC system for the facility was designed for maximum energy, operating, and maintenance efficiency. The key element of the HVAC system will be a central cool-

ing and heating plant located in a mechanical penthouse on top of the new building. The plant will include high-efficiency water-cooled water chillers and high-efficiency hot water boilers. The chillers will be specified with LEED-compliant “green” refrigerants and the boilers will use natural gas as the fuel source. The cooling towers serving the chillers will be of the induced-draft type to maximize energy efficiency. Similarly, the variable primary pumping systems that serve the chillers and boilers will be provided with variable frequency drives (VFDs) to maximize energy efficiency. Together, these solutions add up to energy cost



savings of 24 percent, compared to a base-line building. For the new building at Arlington Hall, that means annual savings of close to \$77,000.

The plumbing system will incorporate sustainable solutions such as waterless urinals, men’s toilets with automatic sensors, women’s toilets (dual flush) with valves to promote water conservation, and low-flow aerators in all sinks to achieve water use reduction goals. The lighting system will include automated time controls and occupancy sensors for office areas. Where automation is not possible, dual level switching or dimming systems will be provided.

Creating a buffer

A major component of the sustainability effort is to preserve military training lands. As MAJ Jason Hamby, Sustainability Planner in ARI’s Strategic Planning Branch tells it, the ARNG’s sustainability initiative started out of necessity. In the early part of this decade, the Active Army, and ARNG, faced concerns of encroachment as development crept closer to bases.

“A base is an economic driver. Communities spring up

around formerly remote bases, slowly creeping closer to the base until they are right against the fence line. Then incompatibility issues arise. In many places, people were complaining about noise and dust. There were concerns about accidents; worries about kids getting hurt. We had to curtail training in several places and restrict night operations because of ambient light from the surrounding communities. To maintain readiness, we must have land to maneuver, for live fire, testing and other operations,” Hamby said.

Moving the affected bases were out of the question—it would be like moving a city. Instead, the question became how to control urban sprawl. Through the Army Compatible Use Buffer Program (ACUB), the Active Army and ARNG partnered with local governments, non-governmental organizations—particularly the Nature Conservancy—and private landowners to stop incompatible growth around bases.

“We seek to have land designated for compatible uses,” Hamby continued. “Light industrial use, for example, is good. Parkland is desired. We secure deals by conservation easements and sometimes purchase rights.” Securing these deals is not always so easy, however. “People have an emotional attachment to the land. They’re protective of their land, and we’re looking for conservation easements that continue in perpetuity.”

“We’re embracing sustainability because we need to do so,” Hamby said. “We’re never going to have more land, and we use the land intensely. Heavy vehicles, for example, can cause erosion. We have to take care of our land and we have to build sustainably. Energy use is intensive and consumes a large part of our budget. So a major part of our sustainability effort is directed toward reducing energy use, implementing alternative energy measures, and building facilities and equipment that use less energy. A lot of what has been done in the past is unsustainable, but we are well on our way to correcting that now.”

The future is green

Throughout our Nation’s history, ARNG has protected America. Now, there’s a new challenge: to protect our country from ourselves, from our modern ways of living. By taking Executive Orders and environmental regulations one step further, ARNG is answering that challenge. By building sustainably, ARNG is not just reducing the impact it has on the environment, but also setting an example for others to follow. Just as the organization has answered past calls, this challenge, too, is one that it endeavors to meet. ■

UNDER THE ARIZONA SUN

A 10KW wind turbine spins in the Arizona sky.

THROUGH INNOVATIVE TECHNOLOGIES AND TIGHT MONITORING OF USE, THE ARIZONA ARMY NATIONAL GUARD MANAGES TO REDUCE ITS ENERGY CONSUMPTION



urrowed into the ground, the Arizona National Guard's ECO-building in Phoenix uses earth's natural insulation to heat and cool the 5,200 square-foot office building. Walls of interlaced tires filled with compacted earth provide a

barrier to summer heat, and a landscaped atrium at its core fills the building with natural light. Rain water is collected and stored in cisterns on the roof, and gray and black water is recycled on-site. On the grounds, an 18-kilowatt photovoltaic array and three 500-watt wind turbines provide the building with natural energy—making it completely self-sustained—and a 10-ton solar absorption chiller allows

thermal collectors to power the air-conditioning. Inside, the temperature is a comfortable 75 degrees, controlled centrally through an energy control system that monitors a total of 38 Army National Guard buildings across the state of Arizona.

The ECObuilding is just one of many examples of how innovative thinking and alternative energy sources has managed to reduce the environmental impact of Army National Guard buildings around Arizona. *Foundations of Readiness* had a chance to speak with Jeff Seaton, the Arizona Army National Guard's Energy Manager with more than 35 years of hands-on experience in the energy industry, about the pioneering projects that have made his state a model for energy conservation.

► **Foundations of Readiness:** One of your biggest achievements is BACnet (Building Automation Control Network), a system for monitoring and controlling HVAC, lighting and

other building systems. Can you tell us how the system works, and how it reduces energy consumption?

► **Seaton:** BACnet allows us to set back temperatures eight to 10 degrees to reduce energy consumption during periods of no occupancy. Night setbacks have been proven to reduce cost and consumption by more than 20 percent. During the scheduled occupancy times, buildings are monitored and temperatures are held at preset temperatures, only allowing occupants up to two degrees of control for variable personal comfort. BACnet also monitors lighting levels and indoor air quality (CO2 levels). Fresh air is brought into buildings to keep CO2 levels below thresholds, while using cool outside air, if conditions are right, to help cool our buildings. We also incorporate complex control sequences using plate and frame heat exchangers and cooling towers to reduce energy consumption. BACnet is used extensively to troubleshoot occupant complaints and HVAC system problems in our facilities. Many complaints and problems found can be repaired using resets, adjustments and changes to control strategies to get building systems back on track. Troubleshooting an HVAC problem

idea of exactly what repair parts are needed. We manage over 120 buildings; 38 of those buildings—over 1.5 million square feet—are on our BACnet. These buildings can be located as far as three hundred miles apart.

► **Foundations of Readiness:** Could you give us a rough dollar figure for how much BACnet has saved the Arizona Army National Guard since you started using the system?

► **Seaton:** Possibly the biggest benefit—and the most difficult to document—is the time saved by quickly getting systems back up and working by using remote troubleshooting and resetting of HVAC and lighting systems. This means we can avoid the cost of technicians spending many travel hours to get to a location. We estimate these savings at over \$90,000 per year for the past 10 years. Electricity and natural gas savings are estimated at about \$140,000 per year. To answer your question, we estimate a cost avoidance of more than \$2.3 million over the past 10 years.

► **Foundations of Readiness:** And what was the cost of developing and installing the system?

► **Seaton:** To date we have just over \$3 million invested in our system. Keep in mind that we have saved quite a bit by maintaining the system with in-house labor. In fact, our own staff does many of the new installs and all upgrades to the system.

► **Foundations of Readiness:** Your office has also been leading the way in implementing systems that use solar energy. Can you tell us a little about these projects?

► **Seaton:** Our solar achievements include both photovoltaic (PV) arrays and wind turbines, which produce reliable green energy grid-tied to several facilities—reducing the amount of energy we have to purchase from utility providers. We have also installed active daylighting systems in all of our aircraft hangars and warehouses, as well as in a few administrative buildings. Many of our renewable projects were funded by special grants and programs. These grants and rebate programs allowed us to implement renewable projects with very limited project funding. A great example is our ECObuilding, with two types of solar photovoltaic panels and a solar absorption chiller. State-wide, our PV sites generate a combined 90 KW of renewable energy a year.



An 18-kilowatt photovoltaic array and three 500-watt wind turbines provide the Arizona National Guard's ECObuilding in Phoenix with natural energy—making the building completely self-sustained.

before a technician is dispatched reduces troubleshooting time in the field, and usually gives a technician a good

► **Foundations of Readiness:** Again, in terms of savings, how much does 90 KW of renewable energy save the Arizona Army National Guard every year?

► **Seaton:** About \$38,000 per year in demand and kilowatt hour charges.

► **Foundations of Readiness:** You mentioned that many of your projects were funded by special grants, but in general, how long does it take for a photovoltaic farm to pay for itself?

► **Seaton:** Typically, in the past, photovoltaic projects had a payback time of 20-25 years, depending on the price of electricity. Now, with utility rebates, electricity prices going up, and costs of solar PV panels going down, we're looking at around 10 years for a PV project to pay for itself.

► **Foundations of Readiness:** Your office has received the Governor's Award for Energy Excellence almost every year, and you have received the Secretary of the Army Energy and Water Management Award six times over the past decade, most recently in 2007 for the retro-commissioning and optimization of the Western Army Aviation Training Site, which significantly reduced operational costs and energy consumption, saving the Army \$133,200 that year. In 2005, you were chosen by the Federal Energy Management Program to be on a national campaign poster as one of their "Energy Champions." Has this type of recognition made it easier for you to find funding for your projects and to take your ideas even further?

► **Seaton:** Being successful has been a double-edged sword. Since we have done so well in past years, we are often passed over for new project funding. Instead those funds go to states and agencies that are either just starting their programs, or haven't done many projects in the past. It is also becoming more difficult for us to develop new energy projects that have great paybacks. All the "low hanging fruit" has been picked! It just makes it more of a challenge for me, and that's what I really like about my job.

► **Foundations of Readiness:** How has your office managed to become so successful?

► **Seaton:** My staff and I keep abreast of emerging technologies related to energy conservation. All members of the AZ FMO Energy Team are well-trained and experienced. I've



Arizona's photovoltaic farms generate a combined 90 KW of renewable energy a year.

been the chairman and leader of the Army National Guard Energy Working Group since its inception 12 years ago. I also assist Department of Defense, the National Guard Bureau, as well as state and local government agencies with various training and presentations to share my knowledge and experience. In my spare time, I also speak at national and local energy conferences and energy project workshops around the country. I have found that networking and sharing ideas and success stories (and not-so-successful projects) with other energy managers around the country has been the base for a successful energy program. My staff and I attend many conferences and meetings each year to grow our network of contacts, and to share our knowledge.

► **Foundations of Readiness:** What are the key factors for a successful energy conservation program?

► **Seaton:** Target the low-cost, no-cost ideas first. Awareness is the biggest issue. Make your building occupants accountable. Make them turn off the lights and keep their AC temperature settings at 75-77 degrees in the summer and 68-72 in the winter months. Set back building temperatures at the end of each business day, and especially over holidays and weekends. Get building occupancy schedules! Assign energy monitors in every building to ensure compliance and keep schedules current. Use utility bill data to track all utilities and audit buildings that indicate high consumption. Sustainability and energy are getting a lot of press lately. Use that to your advantage. Get your management's buy-in to invest operating capital in good energy projects. But above all, get started: waiting is not an option! ■

PAINTING IT GREEN

THE MICHIGAN ARMY NATIONAL GUARD WINS THE SECRETARY OF THE ARMY ENVIRONMENTAL AWARD FOR POLLUTION PREVENTION AT ITS COMBINED SUPPORT MAINTENANCE SHOP

As the Michigan Army National Guard's (MIARNG) only re-painting facility, the Combined Support Maintenance Shop (CSMS) at the Joint Force Headquarters in Lansing paints 12 to 15 military vehicles or pieces of equipment each month. Concerned with the shop's environmental impact, the CSMS and the MIARNG Environmental Division started to look for ways to slash waste associated with both the painting and the paint-stripping processes at the shop. The solution they came up with earned them the 2008 Secretary of the Army Environmental Award for pollution prevention in recognition of their efforts to bring sustainability and environmentally conscious practices into the shop's day-to-day operations.

"We had an opportunity to use some of the new products and technology that's out there and work it into the shop," said Thomas Pavlik, environmental quality specialist with the MIARNG Environmental Division. "We're not only looking at stuff that's 'green', but we're also looking for something more cost effective. Typically what's green and what's cost effective go hand-in-hand when viewed over the entire life-cycle."

Striking that balance between cost efficiency and environmental responsibility initiated a complete overhaul of the CSMS painting processes. Among the first changes were the introduction of non-toxic paints and paint-stripping processes and the implementation of specialized training regimes. Military vehicles require a special type of paint known as Chemical Agent Resistant Coating paint, or CARC paint. The decision was made to switch from a solvent-based CARC paint to a water-based alternative that contains less hazardous materials and produces virtually no air pollution or dangers to worker health and safety.

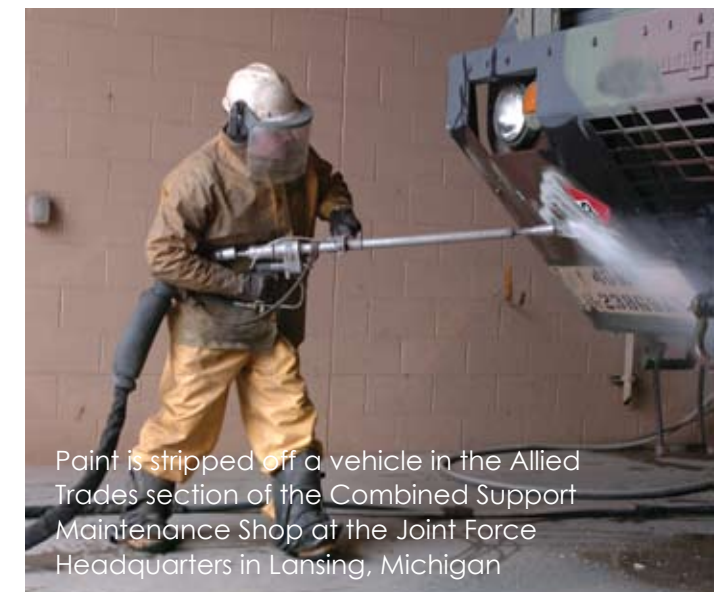
In addition to the water-based paint, Allied Trades Supervisor CW4 Richard Wilder and his team were able to switch to a new paint stripping method. In the past, a combination of chemical stripping, sanding and sand blasting was used to remove old paint from equipment before new paint could be applied. The process was costly, in terms

of time, health considerations, and waste disposal costs of potentially hazardous sand and paint chips.

Once again, water-based technology made all the difference. The CSMS implemented a new paint-stripping technology, the Closed Loop Advanced Water-jet System (CLAWS), where high-pressure water jets remove the old paint. The waste water containing the paint remnants is then recycled through a wastewater system where it's filtered and separated. This cuts the waste generated to only two to three pounds per vehicle.

The costs of running the shop have been impacted dramatically by this new process. Where disposal once could run into the thousands of dollars, the CSMS now spends less than \$1000 annually. Compared to more conventional sand blasting methods which can generate tons of waste per year, the shop now only produces and disposes of 200 to 400 pounds of paint residue annually, and instead of disposals fees of \$5000 a year it now spends around \$500.

"Preventing pollution through improved material management practices and technology is a big part of making our operations more sustainable," Pavlik said. ■



Paint is stripped off a vehicle in the Allied Trades section of the Combined Support Maintenance Shop at the Joint Force Headquarters in Lansing, Michigan



AFTER RECEIVING A U.S. AIR FORCE HONOR AWARD FOR SUSTAINABLE DESIGN IN 2008, THE COLORADO ARMY NATIONAL GUARD'S ARMY AVIATION SUPPORT FACILITY AT BUCKLEY AIR FORCE BASE IN COLORADO WINS AN HONOR AWARD FOR INTERIOR DESIGN IN 2009

BLUE SKIES, GREEN DESIGN

The Army Aviation Support Facility supports maintenance and operations of the Colorado Army National Guard Aviation Command's Chinook and Blackhawk helicopters. The buildings were placed to make maximum use of natural light, and to not disturb prairie dogs and burrowing owl habitats.



n 24 acres of prairie land skirted by the Rockies, on Buckley Air Force Base in Aurora, Colorado, sits the Colorado Army National Guard (COARNG) Army Aviation Support Facility (AASF)—an aesthetically stunning, contemporary structure

of large sheets of glass encased by aluminum and natural- and terracotta-colored cement blocks that effortlessly blends into the surroundings.

However, the AASF is more than just a striking piece of design. The building, completed in 2006 at a final cost of \$32 million, is also a completely sustainable facility. It is largely constructed with recycled or locally-made materials, heated with a highly energy-efficient HVAC system, and lit extensively with natural daylight. This facility was one of the earliest Army National Guard projects to earn a LEED Silver certification by the U.S. Green Building Council.

Last year the building received nation-wide recognition when the U.S. Air Force (USAF) awarded it an Honor Award for Sustainable Design for its energy efficiency, innovation, and use of sustainable materials. USAF recognizes exceptional facilities through its Design and Construction Awards program. Out of close to 100 nomi-

nations each year, it selects around 20 award winners, and out of those, it picks a handful of Honor Award winners—the highest level of recognition. This year, the building received an USAF Honor Award for Interior Design.

The facility houses the COARNG's Army Aviation Support Facility, which supports the maintenance and operations of six CH-47 Chinook helicopters and 16 UH-60 Blackhawk helicopters. The building is occupied by around 70 full-time maintenance technicians, operations personnel and pilots. It includes spaces for aircraft maintenance, aircraft operations, flight operations, allied shops, administration, classrooms and a helicopter maintenance base. The 111,000 square-foot facility was designed by CH2M Hill in collaboration with Coover-Clark & Associ-

ates. CH2M Hill is a full-service engineering, procurement, construction and operations firm, and Coover-Clark is a Denver-based commercial architecture and design firm.

CH2M Hill and Coover-Clark faced the challenge of creating a comfortable, workable facility that included as many sustainable solutions as possible, while staying within the budget. The CH2M Hill/Coover-Clark team visited several similar facilities in other states to learn what worked—and didn't work—at those sites. "Their old facility was antiquated and inadequate," said Brian Duggan of Coover-Clark. "There were a lot of trailers. We decided to take a campus approach in designing the main hangar facility and a metal storage building."

First, they completed an environmental survey, to



A stained concrete floor with an inlay of flight vectors and compass graphics greets visitors in the lobby.

make sure the buildings would not disturb the prairie dog habitats on the grounds, and the burrowing owls that nest in prairie dog burrows. Then they oriented the buildings to optimize sunlight on the airfield and came up with a design that makes maximum use of natural light.

“Solar access became a signature focus of our design early in the process,” said Ed Pieterick, a LEED-certified architect at CH2M Hill and the project leader. “With over 300 solar days a year, there aren’t many places in the United States with better access to sunlight. Orienting the building to capture daylight and solar heat, and organizing the rooms within the building to take advantage of the daylight, provided early direction for the design team. Over 90 percent of the floor area gets daylight throughout the day.” Forty-eight skylights provide the hangar space with bright daylight, and just underneath the roof, a 620-foot light shelf reflects low-angle winter light deep into the structure. Diffused light seeps through translucent wall panels, and as a result the facility is lit almost entirely by natural light. Sensors signal the artificial lighting system when needed. “In the design process, we ensured that more than 90 percent of occupied spaces in the AASF would have daylight access. This will help save more than \$10,000 in energy costs per year, with the added benefit of making work environments more comfortable,” said Carol Coover-Clark, president and owner of Coover-Clark & Associates.

Lighting, of course, is only part of the total energy consumption. To keep consumption as low as possible, me-

chanical and electrical systems were chosen for their high efficiency, as well as their ability to handle the extremes of the local climate. Together these solutions—the use of daylighting, the energy-efficient HVAC system, and the choice of building materials—mean the building consumes 42 percent less energy than a comparable, traditional building, saving the COARNG nearly \$60,000 annually.

Then there was the choice of building materials. The clean, contemporary façade of the main building features a combination of energy-efficient, locally-made split-face concrete blocks in a natural color, and glazed terracotta-colored blocks. The stone-like texture of the split-face blocks anchors the building in its natural surroundings, and the glazed blocks reflect the existing buildings on the base. An aluminum composite material covers the eaves and wraps the curved roof of the hangar, which was inspired by aircraft blades. Split-face block, metal and glass are repeated as materials for the walls and soaring ceilings throughout much of the facility. In all, 20 percent of building materials were derived from recycled components, and 93 percent of construction waste was diverted from landfills.

Inside, the stained concrete floor in the lobby features an inlay of flight vectors and compass graphics. In Army Aviation, each aircraft is named after a Native American tribe. This theme is extended throughout the building, in the form of Native American art and decorative elements.

Around the building, cobblestone-lined dry creek beds channel rainwater from the building’s roof to land-

scaped areas with mainly native plants. By using natural xeriscaping (landscaping that reduces or eliminates the need for supplemental irrigation), roof runoff rather than potable water, and drought-tolerant plants, the COARNG is able to save up to 85 percent on irrigation.

In the bathrooms, ultra-low-flow shower heads and sink faucets spout a combination of air and water, giving an illusion of a heavier water stream, and the urinals are completely waterless. These simple solutions have cut indoor water consumption in half. “We need to build buildings that help users make wise choices regarding energy use,” said Colorado’s Construction and Facility Management Officer, COL Deborah Roberts. “A lot of this is equipping building systems to change people’s behavior.” Roberts said that the Army provides about two percent more for programming LEED Silver design, depending on the type of facility, material availability, and other factors. This additional investment often pays for itself within a relatively short period of time as a result of reduced operating costs, especially when it comes to utility costs.

As is often the case, the design team worked with a limited budget and it had to make some hard decisions on what solutions to include in the final design. “The project was initially under-funded,” said Pieterick. “However, with exceptional support from Chief Warrant Officer Bob Fleming at the National Guard Bureau and the Colorado Army National Guard project team we were able to complete our funding early in the design process, so that the momentum gained during the preliminary design was not lost going into development. Bob Fleming participated in the design to help us understand the Army National Guard’s goals. He also helped forge some of the space saving measures that were so instrumental in freeing up budget for energy saving innovations and daylighting solutions that might otherwise have been out of reach. Also, the COARNG Project Manager, Bob Datson, is an excellent team leader and his unwavering attention to the goals agreed upon in our team chartering meeting made this project a success.”

At the end of the day, a beautiful design is only successful if it fills its purpose. In the AASF, well-lit work areas and consolidated work stations make for a good work environment for the people that use the facility on a daily basis. Duggan said one of the main challenges he and his team faced when designing the facility was to make it workable for a regular staff of about 70, yet able to handle the 350 guardsmen who come in for training one weekend a month. “We had to handle the capacity, but we didn’t want the full-




Forty-eight skylights provide the facility with daylight, and just underneath the roof, a 620-foot light shelf reflects low-angle winter light deep into the structure.

time employees to be swimming in empty space.” Duggan and his team solved this dilemma with modular classrooms that can be sectioned off or opened up as necessary, conference rooms of different sizes and flexible locker rooms.

The building is appreciated by the people who use it daily, and its design is recognized far past Buckley Air Force Base. “Our new world-class [facility] at Buckley is recognized by people within and outside of the industry as a facility that exceeds the standards with its clean, contemporary and rich appearance,” said Mark Schoenrock, chief of contracting for the United States Property and Fiscal Office in Colorado. “Every day, our soldiers benefit from the customized and well-thought-out design,” he said. “It’s warm, interesting and comfortable,” Roberts agreed.

“The Army Aviation Support Facility was created with sustainability in mind, but the final product far surpasses mere efficiency,” said LTG Clyde A. Vaughn, Director of the Army National Guard. “It is aesthetically stunning, and it blends effortlessly with its native environment.” ■

The logo for 'operate' is displayed in white lowercase letters on a dark red rectangular background. The letter 'o' contains a white circle with a diagonal slash through it, resembling a power symbol.A photograph showing two soldiers in camouflage uniforms standing in shallow water, talking to a shirtless man. In the background, a child is sitting on a concrete pier. The scene is set on a beach with waves crashing against a pier.

SERVING THE ONLY DUAL-ROLE MILITARY BRANCH , MEMBERS OF THE NATIONAL GUARD SHOW THAT THEY ARE NOT JUST SOLDIERS, BUT ALSO MEMBERS OF THEIR COMMUNITIES

THE GUARD AT WORK

Soldiers from the Florida Army National Guard's 3rd Battalion, 20th Special Forces Group, talk to a resident swimming in the flooded section of the White Street Fishing Pier in Key West, Florida, on Sept. 9, 2008, after Hurricane Ike hit the state. (Photo by Air Force Tech. Sgt. Thomas Kielbasa)



OHIO

OHIO NATIONAL GUARD COMPLETES ITS THIRD ARMORY LOCATED WITHIN A LOCAL COMMUNITY CENTER

Completed in September 2008, Marysville Training and Community Center is the Ohio National Guard's third armory located within a local community center. The \$8.2 million facility replaces three armories—the old Marysville, which was sold many years ago, and the Delaware and Bellefontaine Armories, which were still in use at the time of construction—and accommodates more than 300 Ohio National Guard soldiers. The armory was constructed in cooperation with the Union County Family YWCA, located adjacent to the property, and includes many spaces shared with the YMCA. These spaces include classrooms and an assembly hall large enough to accommodate large basketball or volleyball events, or banquet events for up to 350 people.



HAWAII

A CROSS-AGENCY ARMED FORCES RESERVE CENTER IN HILO

On June 19, 2009 Hawaii Governor Linda Lingle, flanked by Hawaii Adjutant General MG Robert Lee and Hawaii County Mayor William Kenoj, broke the ground of a \$50 million Armed Forces Reserve Center on Keaukaha Military Reservation in Hilo, Hawaii. The Base Realignment and Closure Act (BRAC) 2005 project is a joint project between the Hawaii Army National Guard, the US Army Reserve and Hawaii Office of Veterans Services. Construction Facility Management Officer LTC Marjean Stubbert says the cross-agency partnership will strengthen relationships and emergency response capabilities in the Hilo area. The center meets the LEED Silver requirements and features photovoltaic panels to reduce—though not completely eliminate—the Hawaii Army National Guard's dependence on the grid.

KANSAS

NEW FACILITY PROVIDES SPACE FOR SOLDIERS AND STUDENTS

For the first time in Kansas history, a Kansas Army National Guard armory has been constructed on a state university campus. The armory, on the campus of Pittsburg State University, is the new home of the 772nd Mobility Augmentation Company and houses a more secure bullpen for storing vehicles, a weapons training simulator and offices. The facility also serves as a student recreation center. CPT Drew Polen, commander of the 772nd, said, "We in the 772nd MAC are incredibly proud and appreciative that we could be the first unit in the state of Kansas to utilize such an incredible facility." Attending the dedication ceremony on Sept. 27, 2009, Kansas Governor Kathleen Sebelius said, "It's a win, win, win, for all the organizations. This is a great asset to the Kansas Army National Guard, the university and the students."



SOUTH CAROLINA

BUILT LIKE A CITADEL, THE CHARLESTON READINESS CENTER FITS RIGHT IN ON THE CAMPUS OF SOUTH CAROLINA'S MILITARY COLLEGE

Situated on one of Charleston's highest elevations on the campus of The Citadel, the military college of South Carolina, and resting on a foundation of 70-foot pilings driven into the bedrock to ensure its survival in the event of an earthquake, hurricane or flood, the South Carolina National Guard's new seven-story, 130,000 square-foot Charleston Readiness Center will look just like a citadel when completed in late 2009. The Charleston Readiness Center will serve as the headquarters of the South Carolina National Guard's 218th Maneuver Enhancement Brigade and house about 300 soldiers on the first, second and third floors of the building. The school's Athletic and Education Departments will occupy the fourth, fifth and sixth floors of the building. It will also use a portion of the first floor for entrance gates, ticket booths and concessions stands to serve visitors to the adjoining football stadium, Johnson-Hagood Stadium.



NEW MEXICO

PHOTOVOLTAIC SOLAR FARM TO REDUCE ENERGY COST

The New Mexico Army National Guard is building a 54 KW photovoltaic solar farm at its Santa Fe headquarters. The photovoltaic system will be connected to the grid of the electrical power provider, Public Service Company of New Mexico (PNM), with an inverter at PNM's electrical transformer. The energy generated by the solar farm will drastically lower the amount of electricity the New Mexico National Guard has to buy from PNM. In all, thirty modules will be built on the site and a dual tracking system will allow the solar panels to move in two dimensions for maximum energy generation.

WYOMING

LARGEST WYOMING MILITARY CONSTRUCTION PROJECT TO-DATE ON TRACK FOR 2010 COMPLETION

Two new high-profile buildings—the single largest building project in dollars and square footage undertaken by the Wyoming Military Department to date—are on schedule to be completed by 2010. Both projects, located on F.E. Warren Air Force Base in Cheyenne, are part of the 2005 Base Realignment and Closure Act (BRAC). The first building, a new Joint Force Readiness Center (JFRC) for the Wyoming Military Department, will be home to Army and Air National Guard and state agency administrative offices. The JFRC is the larger of the two buildings, at approximately 144,000 square feet. The second project, a new 103,000 square-foot Army Aviation Support Facility (AASF), will replace 60-year-old World War II hangars brought to Cheyenne in pieces by rail and reassembled on site at the Cheyenne Municipal Airport. The old hangars and support buildings became obsolete when the Army National Guard replaced UH-1 Huey helicopters with newer and larger UH-60 Blackhawks. Both the JFRC and the AASF are LEED Silver certified. The buildings will utilize geothermal heating and cooling as much as possible, and they were positioned to maximize the use of natural light. Light shelves will direct sunlight to darker areas, and the buildings will feature solutions for energy reduction such as high-efficiency lighting fixtures, maximum insulation and double-paned windows, and water-saving devices such as low-flow toilets.



MICHIGAN

PHASE ONE OF THE JOINT FORCES READINESS CENTER COMPLETED

Despite sub-zero temperatures and a nearly record-breaking snowfall, the Michigan National Guard and the Department of Military and Veteran's Affairs moved into the newly renovated Reserve Forces Support Center (RFSC), part of the Joint Forces Readiness Center (JFRC), in January, 2009. The 128,400 square-foot RFSC also houses the 46th Military Police Command, state and federal Human Resource Offices, RRC, the USPFO, Facilities Management Office, Department of Homeland Security, Department of Military Support, State Finance Office, Environmental Office, Safety and Occupational Health, Distance Learning, Visual Information, and USMC Reserves. Roughly 90 percent of the materials used were recycled, and the facility has increased insulation in the walls and decking to conserve energy. The RFSC was the largest project to-date for the Michigan National Guard. "It is the most difficult move we have ever done when you consider the various locations and the number of people," said COL Dwight Mickelson of the Facilities Management Office. "But we were on time and within budget." Phase two of the project—the warehouse and supply function for the USPFO (United States Property and Fiscal Office), Recruiting and Retention Command (RRC), the USMC (United States Marine Corps), and other units—began in the summer of 2009 and will be completed in one year.

Navajo families return to Indian Camp and erect a teepee facing the sacred San Francisco Peaks.



ARIZONA ARMY NATIONAL GUARD INSTALLATION, CAMP NAVAJO, WINS SECRETARY OF THE ARMY AWARD FOR CULTURAL RESOURCE MANAGEMENT

Article courtesy of *The Navajo Times*



Camp Navajo Garrison Training Center and the Arizona Army National Guard have a richer understanding of their own history thanks to the Arizona Army National Guard Cultural Resources Management Program and Camp Navajo oral history project.

Stories of Native American workers at Camp Navajo, Ariz., will be a part of the installation historical record forever.

A reunion

The reunion, attended by about 150 former residents of what they called “Indian Camp,” was the brainchild of Suzanne Griset of Phoenix-based SWCA Environmental Consultants and Dave Larsen, cultural resources manager for the Arizona Army National Guard.

Two years ago the National Guard commissioned them to write a historical report on the ordnance depot and Indian Village before the training range was expanded to include that area.

Although the history was fairly recent, not a lot of data had been collected on Indian Village, as it was known outside of the camp. As Griset wrote her 2006 report, she and Larsen decided more work needed to be done on this fascinating, all-but-but forgotten chapter of history. “We could see that it was a time-sensitive project, because a lot of the people who worked here have passed away,” Larsen said.

Griset put a notice in the local newspapers inviting former residents to come back to Indian Village and share their memories. Larsen would give them a little tour of their old haunts, what little was left of them, and then they would gather under a shade tent where their houses used to be, look at old photographs, and hopefully fill in the gaps for the historians.

Griset was overwhelmed by the response and how much information the event generated. “We had the basic

picture, but there were a lot of little details that got filled in,” she said. “We now know, for example, who lived in which house. We wanted to put the people back into Indian Village, and I think we were successful.”

Fond memories

Griset was expecting that kind of thing. What surprised her was how fondly the former residents remembered growing up in a strange, isolated military camp where the explosion of old munitions and the rattle of supply trains formed the soundtrack of their childhood. “Many people said this was their home, even more than the reservation,” she said. “One woman remembered crying when the depot closed and the family moved back to Cameron. She missed the trees and the cool summers, the smell of the pines.”

For a young boy, confirmed Fred Etsitty, now 60, Indian Village was paradise. The kids would sneak over the fence to the depot and roll down the munitions bunkers, or play follow-the-leader up the steep, slippery sides of the cinder pit. “We were all Tom Sawyers and Huck Finns,” he said.

The Navajo Ordnance Depot was established about 12 miles west of Flagstaff in the spring of 1942. Belmont was the ideal location for such a place, close to the railroad that fed the ports of San Francisco and far enough inland to be out of range of Japanese bombers should they reach the coast.

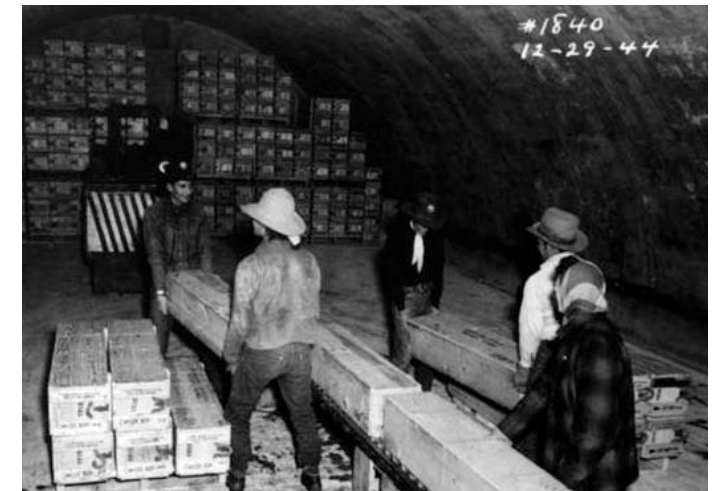
But where to get the labor for such an undertaking? Every healthy white man in the area had been drafted. LTC E.B. Myrick, the depot’s commanding officer, turned his eyes to the nearby Navajo and Hopi reservations where, according to the Army documents, there were many able-bodied men available.

Recruiting Diné

Myrick approached a Navajo friend, Julius Begay, for help. Begay’s daughter, Margaret Sanderson of Tuba City, remembers how her dad recruited the Navajo laborers who built the depot. “That year, July of 1942, we had a meeting at a powwow,” Sanderson said. “COL Myrick asked my dad if he could get some Navajo workers for him.”

The Navajos had all heard about the bombing of Pearl Harbor the previous December, and Begay knew he could appeal to their patriotism and get all the labor Myrick needed, Sanderson said. “He told COL Myrick to get him a couple of big old Army trucks, and he would have them full of Navajos,” she recalled.

Begay went along to translate as the trucks rumbled



Top: Navajo women preparing bombs for shipping. Middle: Navajo ammunition handlers stacking ammunition in an igloo. Bottom: Navajo ammunition handlers moving bombs from trucks to igloos.

door-to-door on the reservation. “He explained to them exactly what was going to happen, and told the men they could come with him if they wanted to work,” Sanderson said. “They grabbed whatever bedding they had and jumped on the truck.”

At that time, there were no quarters for the workers, not even tents. They spread out their blankets under the trees and commenced to clear the forest and build a major military installation on 28,000 acres of land. Incredibly, it was done in six months.

In August of that year, Begay brought his wife and daughters to Bellemont and set them up in an old ranch house on the property. That became the cookhouse.

“We cleaned it up, knocked down one wall, put in two stoves and cooked for the workers in shifts, 24 hours a day,” Sanderson recalled. “Even us little girls (Sanderson was 11 at the time) had to make sandwiches and pack sack lunches for the men day and night. We had that going for a whole year.”



Assistant Secretary of the Army, Environmental, Safety and Occupational Health Addison D. Davis, IV (middle of middle row) awards Camp Navajo the Secretary of the Army Award for Cultural Resource Management. Fred Etsitty, to the right of Davis, is the son of a former ammunition handler. Etsitty and his three sisters (same row) and brother (bottom row, holding plaque) grew up on Camp Navajo. The San Francisco Peaks, known to the Navajo as sacred, can be seen in the background.

Eventually, Hopi workers were hired too, although the Navajos remained the majority with about three-quarters of the population. On Oct. 29, the first baby was born at the Navajo Camp, as it came to be called. He was named after the colonel—Wilfred Myrick Begay.

By December 1942—a year after Pearl Harbor—the depot was ready to accept its first shipment of arms.

Family friendly

As fall approached at the 7,000-foot-high camp, it became apparent that the workers were going to need more shelter. NOD was also suffering from a 20 percent turnover rate as workers missed their families and walked off the job—generally without “giving any notice,” Myrick complained in a report to his superiors.

Myrick realized that if he was going to keep his workforce, he needed to make them comfortable enough that they would be encouraged to bring their families along. Wanting them to feel at home, he had several rows

of traditional wood-and-earth hogans constructed on a grassy meadow.

In true military style, they were lined up in formation, tight as a parade-ground platoon. But when it rained, the meadow became a marsh and the hogans were almost uninhabitable. The second, more permanent “Indian Camp” was constructed on higher ground and included both hogans and different types of tents.

George Lomayesva, Hopi, lived with his parents in a tent in this second camp, which was finished in September 1942. “It was awful that first winter,” he recalled. “The snow was so high, we were almost walking through tunnels to get anywhere.” The tents were heated with wood stoves, and fires were a continual problem, according to Lomayesva.

However, the strategy of keeping workers with their families worked, and the absenteeism rate dropped drastically. Many of the wives also took jobs at the depot, and it didn’t take the Army types long to recognize that the small, slender hands of the women were perfectly suited for packing small munitions.

As the population of Native workers increased, cabins from a Civilian Conservation Corps camp in Flagstaff were brought to Bellemont and erected at two separate camps, one for Hopis and one for Navajos. These were later supplemented with 20 newly constructed duplexes, 10 in each camp. Rent for the units was deducted from the workers’ paychecks.

Another building was divided into apartments for white and Hispanic workers, according to Oscar Doctor, who worked at the camp along with his father and two brothers. “They segregated us,” he said. “I don’t know why.”

Communal life

There were some clashes between Navajos and Hopis, mostly youths whose parents were at work, according to the Army records, but Lomayesva said he doesn’t recall any tribalism at the camp. “There was a well-worn path between Navajo Camp and Hopi Camp, and we would go over there all the time for dances and parties,” he said.

What disputes there were usually fell along religious lines, according to Etsitty. “The Christians, traditional believers and Native American Church people didn’t like each other,” he recalled.

Eventually, a clinic, kindergarten, recreation hall and church were built, and after a while the Native workers petitioned the Army to let Hubert Richardson of Cameron, Ariz., a trader they trusted, establish a trading post at the

camp. The Navajos constructed a traditional sweat lodge, and a laundry was added later.

The older kids were bused to schools in Flagstaff, which gave them a broader window on the world, according to Lomayesva. “It took about an hour for the school bus to get to Flagstaff, because of all the stops,” he said. “You wouldn’t believe how many people lived in these woods.”

On the bus, the Hopi boy was joined by the children of Basque shepherders, Anglo ranchers and Mexican cowhands. In the classrooms of Flagstaff, the rural children met the townies, many of whom were the offspring of wealthy professionals—including future Arizona governor and Interior secretary Bruce Babbitt. “I’m really grateful for those years going to school in Flagstaff, because they taught me to deal with every type of person,” Lomayesva said.

Organized recreational activities included a Boy Scout troop, a ladies’ sewing club and the occasional movie, but the children still had plenty of time to catch horned toads and watch the trains going in and out, former residents recalled.

Three wars

As the need for the war machine ebbed and flowed over the years, so did the population at Bellemont, but between storing new ordnance and dismantling the old, the camp kept going. In the 1950s, the aging CCC structures were replaced with modern prefab buildings with gas heaters and indoor plumbing. Indian Village was born.

The Korean Conflict came and went, and then Vietnam. The depot was deactivated in 1971 and most of the workers laid off. The Native families scattered in all directions, but a Native American Church ceremony continued to be held annually at the site until 1979.

Many of the children who grew up in Indian Village entered the military, according to Etsitty. “That was all we knew from the time we were small,” explained Don Mitchell, another product of the village.

And many hadn’t seen each other again until last week’s reunion. They looked each other over and made guesses. “You’re Raymond’s sister, aren’t you?” “Weren’t you in my brother’s class?”

Hugs of recognition were exchanged along with the stories, and the Natives agreed they had all been a part of a strange but significant chapter in Arizona history. “I’m glad someone is finally getting our stories,” Doctor said. “We were a part of three wars, as much as the veterans were. This place deserves to be recognized.” ■

THE MINNESOTA MODEL

WHAT IT IS AND WHY YOU SHOULD ADOPT IT

“IN MINNESOTA WE HAVE THREE MAIN MISSIONS: FEDERAL, STATE, AND COMMUNITY,” SAYS MG LARRY SHELLITO, THE STATE’S ADJUTANT GENERAL. AND ITS COMMUNITY MISSION COULD NOT BE MORE VISIBLE



ut of 63 Army National Guard Readiness Centers (RC) in the state, 10 are a special hybrid Minnesotans call training and community centers (TACC). These are readiness centers/multi-purpose complexes designed, financed, built and shared by federal, state and local government entities. The Minnesota Army National Guard (MNARNG) has a tradition of forging relationships with local residents. Not surprisingly, MNARNG also has the best recruiting record in the nation.

TACCs typically combine Guard-only space, community-only space and space shared by the two. The MNARNG and the community enter into agreements for the use and operation of the facility based on the needs of each party. Generally, on the 30 days per year when citizen-soldiers drill at the facility, the Guard has exclusive use of its dedicated area as well as the shared portion. On all other days, the community (a city, county, and/or school district) has exclusive use of its dedicated area and the shared portion. While TACCs are designed first and foremost for the

use of the National Guard, financed largely by the federal government via National Guard Bureau (NGB), and built to NGB criteria, local government entities are encouraged to enhance or add to the basic structure, so that it will also satisfy the community’s needs. Shellito explains, “We’re not prescriptive of what the community must build. We say, ‘Here’s what the national level will give us, and if you want to add on to that, we’re willing to share it with you.’ And they build whatever they want, and it becomes a synergistic environment.”

Positive impacts

Indeed, TACCs benefit the Guard largely because they benefit the community. In the TACC, the community is given a social center and a core it otherwise might not have had, with amenities and activities for families, local businesses, high schools, senior citizens, preschoolers and trade associations, to name a few. “There was nothing for any of us in town before this center,” recalls Theresa McDonough, an elderly woman who power-walks daily with other seniors on the gym/drill floor of the Rosemount National Guard TACC. There are economic advantages for local residents as well: they pay taxes for one facility rather than two, and benefit from the Guard’s investment in their towns and cities.

Local residents’ appreciation for the TACCs and their contact with citizen-soldiers increases their positive re-



A slumber party at Inver Grove Heights Training and Community Center. Out of Minnesota’s 63 readiness centers, 10 are a special hybrid Minnesotans call Training and Community Centers, designed, financed, built and shared by federal, state and local government entities. (Photo by Tom Vesely)

gard for the Guard. “We have day-to-day contact with the Guard; it’s helped the community embrace the soldiers and support them as people and support this building,” says Maureen Asleson, rental coordinator for the Rosemount TACC. Tom Vesely, architectural supervisor for the state’s Department of Military Affairs, sums it up: “The Minnesota Model is saying, in a nutshell, we want to be joined with the community so that they’re comfortable with us and we’re comfortable with them. It’s just a good use of public dollars.” Through the TACCs, the community may participate in Guard events, like Humvee rides for children at a town festival, or rituals, like soldiers’ homecomings. “To see the 34th [Red Bull Infantry Division] pulling up in three Greyhound buses and the grounds just lined with people welcoming them home—it was just real emotional; so they’ve been like family, one and the same,” says Mary Pat Black, former manager of the Brooklyn Park Community Activity Center.

This contact with ARNG soldiers also educates young people about the Guard. Maria Weber has been bringing her four- and two-year-old tots to the Rosemount gym/drill hall for the last four years. She says, “Opening up the kids to know that the National Guard service exists...although they don’t have many questions, it starts a conversation. I think it’s good to bring exposure that way.” Former Adjutant General MG Gene Andreotti is of a similar mind: “These

kids are going to be taxpayers; we want to make sure they understand what the military is about. These facilities turn out to be info-centers of the National Guard and other military organizations.”

Senior citizens who frequent the TACCs are particularly staunch supporters of the Guard. Helen Olson, another senior who walks daily in the Rosemount gym/drill hall, says, “It’s kind of like a privilege, because we get to use their facility and we get to see them all the time; we know when they’re packing up and leaving, and sometimes they come in here and tell us they’re getting ready to leave and where they’re going. It’s a friendly atmosphere.” Maureen Asleson observes: “A lot of men and women who have served in earlier wars strike up conversations with the young soldiers and it’s wonderful to be a witness to that. Sometimes we just sit back and watch them because the seniors are so proud of what they did, and they’re so proud that there’s someone else taking on that uniform.”

And those seniors can influence their grandchildren. Shellito notes, “These grandmothers are very protective of our training facility and guess what? Those grandmothers have grandsons and granddaughters, and the image they have of the Guard and military is very positive because on a day-to-day basis they meet these young men and women who treat them very nicely.” Former state CSM Bob Boone carries the thought further: “At Christmas time,” he says,

“every high school senior is being asked by their grandparents, ‘Where are you going, what are you going to do, and how are you going to pay for your education?’ and if they were to say ‘the National Guard’—grand!”

The community’s positive attitude toward the Guard explains the MNARNG’s off-the-charts recruiting record. LTC Jacob Kulzer, the state’s recruiting battalion commander, reports that the MNARNG has exceeded its NGB-assigned recruiting mission for the past eight years, reaching 170 percent in 2008. That year, the MNARNG had the highest productivity per recruiter of any state in the nation; it recruited 302 soldiers for Army Active Duty—in addition to 1800 soldiers for the Guard. Kulzer believes there’s a definite correlation between the TACCs and high recruitment levels. “The multi-use facilities are an essential part of that success because of the accessibility to the community of the facility and our recruiters,” he says. “The more comfortable the community is with your organization, the more well-known you are, the higher the likelihood for recruitment.” Shellito also believes that community relations and successful recruiting are tied together. “We want to be part of the community because that’s our base for recruiting,” he says.

There are other ways in which TACCs benefit the Guard. Because the community often operates the TACCs, the Guard is free to focus on the mission. Soldiers are more willing to transfer to a town with a thriving Guard presence; those who make a home there are presumably more likely to stay in the Guard. TACCs arguably also provide the Guard better economic value than single-use RCs. By having the community share in the cost of the basic package as well as enhancements, the Guard not only pays less but gets a better building.

Of course, there are drawbacks to any model, and Minnesota’s is no exception. Adding key players to the design process sometimes creates friction. It also demands more time, effort, and people skills to maintain the carefully cultivated relationships between the Guard and the community, to coordinate competing activities at the facilities, and to manage the expectations of multiple users. And bringing additional traffic into Guard facilities by the public adds wear and tear, necessitating more cleaning and energy use. But MG John Trost, former Assistant Adjutant General, feels the pros outweigh the cons. “The opportunities that the multi-use facility creates far exceed the increase in challenges that comes along with it,” he says. Vesely asks, “Do you want to look at the glass as half-full or half-empty?”



Many Training and Community Centers feature enhancements—paid for by the community—such as ice arenas, aquatic parks, banquet halls and exhibition space. Above, the ice skating rink at Rosemount Training and Community Center. Opposite page: Monticello Training and Community Center’s senior center and a gymnasium. (Photos by Tom Vesely)

The traditional model

To get a sense of how TACCs work, it helps to compare them with a traditional armory, or RC. Traditionally, the federal government (through NGB) pays for 75 percent and the state 25 percent of the construction of an RC. The state contributes the land, and the Guard owns the building. (When an RC is built on federal land, the federal government pays for and owns the building 100 percent.) In most states, to come up with the 25 percent, the Guard must go to the state legislature and get a fiscal year appropriation, which can take considerable time and effort. The Guard manages the facility and pays for all operational and maintenance repair costs for the RC with SRM (Sustainment Restoration Modernization) funds appropriated by NGB.

Physically, traditional RCs are often isolated from the community. “When you put a big fence and gate and security guards in front, it’s not very inviting,” Shellito says. “How do we get people to come in and use the facility? In the old days maybe you would rent out the drill floor for

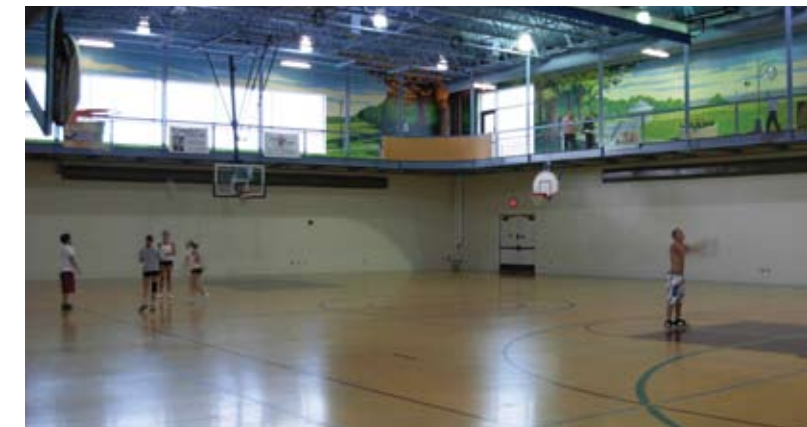
dances but that was rare.” The traditional RC is generally a military-only building with a regulation drill hall, classrooms, offices, weapons vault, supply/storage area, and kitchen. The layout of these rooms holds few surprises. “Until not too long ago, you could blindfold me inside, because each armory was laid out the same way—everything in the same place,” says BG (Ret.) John Cox, a former Assistant Adjutant General instrumental in the establishment of more than one TACC. The Long Prairie Armory, built in 1920, is typical of the traditional style.

The Minnesota Model

Minnesota adds a financial wrinkle to the traditional model. Here, the NGB still pays 75 percent for the standard package, but the state’s 25 percent share is split between the state and the community, making the formula 75 percent federal, 12.5 percent state, and 12.5 percent local. As with the traditional model, the state donates the land to the Guard. This package is what Vesely calls the “base model.” Most importantly, the Guard and the community then have the option of paying for enhancements to the base model. If the enhancements benefit both the community and the Guard, they split the cost 50-50. Such enhancements include enlarging the height and width of the drill floor into a full-fledged gymnasium with accommodations for basketball, volleyball and running tracks; installing air conditioning; and aesthetic improvements like using glazed

blocks instead of concrete for hallway walls, and carpeting or vinyl instead of concrete for floors. If the enhancements benefit only the community, it pays for them 100 percent. These enhancements can include ice arenas (seemingly in every building in the state!), aquatic parks, banquet halls, exhibition space—the possibilities are limitless.

Financing the project under the Minnesota Model differs from the traditional process as well. Here, the state and local shares in the TACC are generated through the sale of bonds by the Minnesota State Army Building Commission (MSABC), a statutory public corporation to which the state or local community deeds the property. The statute provides for the levy of a local tax and a lease payment from the state to the MSABC to service the bond debt. As long as the Guard stays within a \$15 million bonding cap, the process can move along relatively quickly. “The beauty of the Commission is we don’t have to get into that negotiation process where we have to go to the legislature, ask permission, and deal with changing administrations,” Shellito explains. Vesely feels this way of financing apoliticizes the process and speeds it up. Until the bonds are paid off, the MSABC owns the TACC and is responsible for





At Monticello Training and Community Center, the recruiting office is right next door to a climbing wall and across from the center's swimming pool. (Photo by Tom Vesely)

normal utility costs. When the bonds are paid off, the building reverts to the MNARNG, which then pays utilities. The community usually leases its space from the Guard and often recoups those funds by subletting the shared space for the community's use. Other operational costs are either shared by the Guard and the community or paid in full by the community. In most cases, the community manages the facility and the facility use calendar, freeing the National Guard units from those responsibilities. Maintenance costs usually remain the responsibility of the MNARNG.

Physically, the TACC is much more a part of the community. Sites are located in demographic hot spots with strong growth patterns and then, within those locales, near high schools and other well-populated venues. "It's completely different than just sitting on five to ten acres in the country with a big fence around the facility, and no one knows who you are or what you do," says COL (Ret.) Wayne Johnson, a former CFMO. "You still need to have a strong recruiting staff and programs that are attractive to recruits, but you're not some aliens they're not used to having coffee with at the corner store." The style of these buildings is more tailored to local architectural schemes.

The TACC's layout invites interaction between the Guard and the community. Often the Guard-only or shared section is front and center. The Cambridge Armed Forces

Reserve and Community Center is designed so that the shared space (e.g., gym/drill floor) is in the forefront, with the military-only space off to the side.

At the Monticello Community Center, the Guard-only portion sits between the community-dedicated and shared areas. "It's like a downtown area, and the National Guard is smack dab in the middle. It's a beautiful building, gorgeously designed, and here we are in the middle of the excitement," says Vesely. "For the Guard, that's good because we're looked at as a member of the community in good standing; to be situated in the middle of this community is just wonderful."

The layout of the Rosemount TACC makes the community aware of the Guard's presence. Shellito recalls, "At Rosemount, as I'm walking out in uniform, the bride and groom are coming in for a wedding reception. The entire wedding party has been forced to go through and say, 'This is a nice building; this is good; this is cost effective.'" The Rosemount TACC sometimes has National Guard soldiers and toddlers sharing the gym/drill floor at the same time. At the Montevideo TACC, the RC is literally attached to a high school, and classroom space in the RC is placed so that it is accessible from the school side of the building. "We can have kids walk off the school buses and into our training center. It's part of their high school!" Andreotti says.

Why Minnesota?

Why did the Minnesota Model take hold in this state and not in so many others? It appears there was more than one impetus. The Ortonville National Guard Armory, built in 1924, planted the seed. While the building contained no shared spaces, it did house both house both community components (with the City Hall on one side, and the Fire Hall on the other) and the MNARNG (in the middle). Shellito notes that the idea of sharing the cost of facilities gained favor in the 1990s, when economic times were tight and the MNARNG had to do a lot of building and needed a faster turnaround time. Johnson thinks the state's tradition of partnering with the community was spurred by the establishment of the building commission and the financing of armories through bond sales. But the modern Minnesota TACC probably originated with Andreotti, then deputy commander for maintenance at the 133rd Airlift Wing, who spearheaded construction of the Brooklyn Park Community Activity Center in 1986. His interest evolved from his participation in the school district in which he lived, and he strongly believed public facilities should be available to people. "I didn't like the word 'armory,'" Andreotti recalls. "It had an old connotation that had no reference to the communities and young people we were trying to get to join the National Guard. When I came there were always budget challenges with federal, state, and local government, and I thought, 'Why don't we construct a building in partnership?'"

A tradition of community relations

The Guard-community partnership of the TACC cements an already well-established relationship, as the MNARNG has long placed a premium on fostering strong community ties. The state's *Beyond the Yellow Ribbon* (BTYR) program, developed under Shellito, was a model for the nation. Also known as deployment cycle support, the program assists ARNG soldiers around deployment and demobilization and their families throughout the deployment cycle, hooking them up with social service agencies, employers, colleges, family readiness groups, Family Assistance Centers, medical personnel, and clergy throughout the state. Some BTYR events in Minnesota are so large that the TACCs can't hold them, and they're held at college and municipal auditoriums.

Camp Ripley also offers a full menu of community-oriented programs: rifle hunting for disabled veterans, bow and arrow deer hunting for licensed civilians, a Boy Scout jamboree; briefings for local residents on training and recruitment impacts on their neighborhoods, and a major



Top: Inver Grove Heights Training and Community Center. Above: Brooklyn Park Training and Community Center. At these centers, the community is given a social center it might otherwise not have had, with amenities for families, local businesses, schools and senior citizens. (Photos by Tom Vesely)

environmental and wildlife program/university studies center that students of all ages can participate in. Shellito is particularly jazzed about the *Serve Our Troops* program, which organized a February 2009 send-off to 1000 deploying troops, serving dinner to the soldiers, their families, and up to 700 invited centers of influence throughout the state. "We've gone from the days of having a couple of legislators in the building in the 1970s to now, where congresspersons close their legislative sessions during the day to come to the [Serve Our Troops] event and return to the capital to finish their work that night," Shellito says. Throughout Minnesota, TACCs draw communities close and help MNARNG fulfill its three-pronged mission: to serve the country, the state, and the community. ■

HOW MINNESOTA DID IT AND HOW YOU CAN, TOO

THE MINNESOTA ARMY NATIONAL GUARD (MNARNG) KEEPS ITS COMMUNITY MISSION FRONT AND CENTER IN THE MONTHS AND YEARS LEADING UP TO THE CONSTRUCTION OF A TRAINING AND COMMUNITY CENTER (TACC). BY FOLLOWING THESE COMMUNITY-RELATIONS LESSONS LEARNED, YOU'LL BE WELL ON YOUR WAY TOWARD ADOPTING THE MINNESOTA MODEL AS YOUR OWN

►► Make TACCs a priority

In Minnesota, adjutants general have been very pro-TACC. Former CFMO COL (Ret.) Wayne Johnson says, “There has to be a commitment from the TAG and that’s pretty much where it starts. If that’s the Command philosophy, we’re going to make these relationships work.”

►► Lay the groundwork

The MNARNG has worked hard to manage its reputation and make sure that it’s a stellar performer and valued member of the community. In addition to their citizen-soldier duties, GEN John Trost, the former Adjutant General, says, “The key is to make sure that your unit representatives are involved in the communities all the time, whether it be as a member of the Lions Club, Chamber of Commerce, or some other type of organization—but being involved with the community so that when it comes time to do something like this, you’re not a stranger.”

►► Find a consensus builder/communicator to interact with local government entities and/or state congressional delegation

Experience has shown that it’s important to have someone—whether in or out of the Guard—who knows the key

individuals in the community and can work with diverse groups within it. “You can’t have someone thinking that because they’re an LTC they can tell people what’s going to happen,” says Johnson. “It’s much more of a consensus-building operation than it is ‘because I said so.’” State CSM Bob Boone suggests finding someone who’s held leadership positions both in town and in the Guard. “He or she has to have the interest and ability to communicate their vision and back it up with demographic facts showing their town or community could support a military facility,” he says. Sometime it’s a former Guard member who sees the benefit of having a TACC in the community. Tom Vesely, MNARNG’s Architectural Supervisor, observes, “If they have connections with local and state government, all the better.”

►► Sell the community on your plan

More than one MNARNG member stressed that the TACC must present a win-win situation for both the community and the Guard. “When it’s win-win, you can leverage it to all of your needs. Helping city fathers understand how this can in fact be a good deal for the community, what are some of the capabilities you can bring, how and with whom you can partner, and helping them see what the possibilities are will enable you to move forward,” Trost says. But before

you make your pitch to the county board or city council, advises Andreotti, make a business plan. “We had a business plan; we showed them what the National Guard brings to the community from the safety and financial standpoints,” he recalls. “We’ve got X full-time people who are going to work here and Y soldiers who train here and bring an economic impact.” MG Larry Shellito, the State’s Adjutant General, shares a similar opinion. “We kept track of the number of dollars invested by us in payroll, purchasing, and so forth within the community. For instance, there were 270 people assigned to the Inver Grove Heights TACC in 2008 and that community got close to \$2.35 million in additional economic impact. That’s how we get them interested in getting training centers in their community.” He suggests telling the community that the National Guard is a good business to have in its midst, because most of the TACC’s budget comes from the federal government.

►► Pick the right demographic and site

The MNARNG has become skilled at locating demographic hotspots. Shellito explains, “If we’re interested in a community, we go talk to them. We do a market analysis, focusing on well-populated areas, fast-growing suburbs, untapped markets with thriving high schools and demographics.” Vesely found that the more politically active a community is, the better the chances it will not only obtain a TACC but that the TACC will succeed. “The Cambridge community helped us find temporary rental space and did what they could politically in the state and beyond, talking to their congresspeople to get the project going,” he says. Sites are also chosen with care. Trost recalls, “When we were talking about the location possibilities of the Cambridge Armed Forces Reserve and Community Center, we were first shown some ground in an industrial complex. We made mention to the city planners and city manager that we preferred to be in a high-traffic area, very visible every day to all of Cambridge. The position we settled on is right across the street from a junior college, facilitating the recruiting piece.” Doing your homework at the front end is crucial.

►► Find out more

The MNARNG takes pride in showing other state National Guards its joint-use facilities and would enjoy telling you about them. For more information, contact Tom Vesely at tom.vesely@mn.ngb.army.mil or (320) 616-2614, or Terry Palmer at terrence.palmer@mn.ngb.army.mil or (651) 268-8948.



Monticello Training and Community Center’s climbing wall. (Photo by Tom Vesely)

All facilities constructed on Jackson Barracks after Hurricane Katrina were designed to carefully blend in with the architecture of the original garrison structures, listed in the National Register of Historic Places. This picture shows one of the three new billeting facilities.



SILVER LININGS

AFTER THE STORM, LOUISIANA REBUILDS AT A RECORD SPEED



As he watched the water rise outside his office window—ultimately reaching ten feet high—Deputy Construction Facility Management Officer (CFMO) LTC Bill Aldridge of the Louisiana Army National Guard (LANG) realized that this was no ordinary

storm. Aldridge had been following the reports of Hurricane Katrina's approach and his state's unit had anticipated flooding by setting up a staging area at LANG's headquarters, Jackson Barracks, to launch boats and high-water vehicles for rescue operations—but no one expected the deluge that burst through the surrounding levees four days later, on August 29, 2005.

Aldridge lost his home, his car, and all of his personal possessions. But that didn't deter him from his citizen-soldier duty. When the storm destroyed most of the facilities



Ribbon cutting day for the 205th Engineering Battalion's new Readiness Center in Bogalusa, Louisiana. The old readiness center sustained significant damage from Hurricane Katrina.

at Jackson Barracks, he relocated operations to the Superdome, maintaining a critical emergency generator to keep it from going under, and working alongside thousands of other National Guard members. Once the situation was relatively under control, about a week and a half later, he turned his attention to LANG's installations. Jackson Barracks, a 100-acre historic garrison in New Orleans' lower

9th ward and the headquarters of LANG, had taken the biggest hit—over 200 of its structures were either destroyed or rendered unusable. Around the state, an additional 225 installations needed repair.

Meanwhile, Louisiana's then-CFMO, COL Doug Mouton, who also lost his home to Katrina, was busy leading a 2,500-person engineering brigade that had dispersed throughout the state. Aldridge realized he was up against the challenge of a lifetime—a challenge that would involve hundreds of millions of dollars, federal bureaucracy, new laws, and, perhaps most important, courage. Aldridge, Mouton, Assistant Adjutant General MG Hunt Downer, their staff and business partners managed to achieve the impossible—the largest public works project in the history of the Guard, completed in record time.

August 2005: Assessing the damage

Within days after the storm made landfall, Bill Pulket, a facilities management engineer in the National Guard Bureau's (NGB) Installations Division, was on the phone with Aldridge, asking what LANG needed and



Dusk falls on the first readiness center to reopen after Hurricane Katrina, in Covington, Louisiana. This facility serves a vertical line company for the 205th Engineering Battalion.

whether he should come down. Mouton recalls: "Bill Pulket was down here in his combat boots day two or three after Katrina."

In fact, Pulket flew in to Alexandria, Louisiana on September 8 and spent an entire month on the ground with Aldridge and Suzanne Bradford, the plans and programming branch chief for the state Military Department. Pulket's

presence was a comfort to Aldridge, who affectionately dubbed him “the Pulkinator.”

With the headquarters at Jackson Barracks destroyed, Aldridge staged himself, Pulket and Bradford at billeting at a LANG base in Carville, Louisiana about 70 miles west of New Orleans, where they would clock 15- to 18-hour days. They developed a damage assessment plan and immediately hired 24 people from Jacobs Engineering Group, a multinational engineering and construction firm. They then organized 15 assessment teams—including themselves, other members of Aldridge’s staff, additional NGB personnel, as well as architects and licensed civil/structural, mechanical and electrical engineers from Jacobs—which LANG airlifted by helicopter to the affected areas. In the course of two and a half weeks, the teams assessed 214 structures at 30 locations throughout the state.

ALDRIDGE, MOUTON, ASSISTANT ADJUTANT GENERAL MG HUNT DOWNER, THEIR STAFF AND BUSINESS PARTNERS MANAGED TO ACHIEVE THE IMPOSSIBLE—THE LARGEST PUBLIC WORKS PROJECT IN THE HISTORY OF THE GUARD, COMPLETED IN RECORD TIME

Meanwhile, over 4,000 full-time employees and M-Day soldiers from Jackson Barracks (including Aldridge and his family) were moved to billeting at Camp Beauregard in Pineville, Louisiana about 220 miles northwest

of New Orleans, or to the Carville installation, where they would live for the next two and a half months until accommodations became available there and at an installation east of Baton Rouge.

LTC Danny Bordelon, then an operations officer in a hurricane response team, says that he was at a briefing with then GEN Glenn Curtis, director of the Joint Staff for Louisiana’s Joint Forces Headquarters (JFHQ), when an intel officer told Curtis another hurricane was approaching the Gulf.

It proved true. Twenty-eight days after Katrina, on Friday, September 23, with New Orleans finally pumped out, Rita’s pre-landfall storm surge poured through breaches in the patched-up Industrial Canal levee, reflooding Jackson Barracks with up to eight feet of water in some spots. While LANG lost no structures in this storm, it caused extensive wind and water damage to many of the state’s 79 training sites and readiness centers.

The morning after, Bordelon took a Kiowa helicopter to do damage assessments. “It’s the end of the day, and the pilot and I are in the chopper,” he says. “I’m marking all the highways and closed natural gas pipelines on a map of Louisiana. The whole damage assessment is on that one sheet of paper. It’s pretty windy and it’s open on both sides, I look down to see something, and the map isn’t there. I’m thinking, I’ve got to tell Doug Mouton on the ground the entire damage assessment is gone.” “Gone? What do you



Historic battlement towers on Jackson Barracks were carefully restored after sustaining significant damage and now serve as ‘VIP’ quarters.

mean gone?” Mouton later asked. “I think it’s somewhere near the Atchafalaya Basin,” Bordelon replied.

Luckily, Bordelon was able to tell Mouton all he needed to know: the state highways from the Texas/Louisiana coast to Delcambre in the southeast part of the state were impassable, three towns were erased, and few telephone poles were left standing.

Meanwhile, Mouton, Bordelon, and Jacobs project manager Don Allen were working under primitive condi-

tions. “We had no building to work out of, no electricity, no water,” Bordelon recalls. “So we worked this program out of the back of a Suburban and a table at a coffee shop. We were working by Blackberry and a fax plugged into the car’s cigarette lighter.”

September 2005: Sourcing the money

As the field data came in throughout September and October, Aldridge, Pulket, and Bradford organized the data,



Just like the towers on the left, these historic drainage gutters on Jackson Barracks were carefully restored after sustaining much damage.

determining which structures needed repair or replacement, where to rebuild, how big to make the facilities, what it would cost, and where they would find the money to pay for it all. LANG had some SRM dollars it could try to access. SRM (Sustainment Restoration Modernization) funds are appropriated by Congress for state National Guards and include money for repairs; furniture, fixtures, and equipment; and new construction projects under \$750,000. SRM funds were especially critical at this stage, Aldridge

says. “The only way we could return the Guard to work quickly was through the use of SRM, because it funded the immediate and interim facility repair projects I needed to house them.”

Finding MILCON money was more difficult. MILCON funds are Congressional appropriations for new military construction administered by NGB to state National Guards. Bill Pulket was invaluable in communicating the magnitude of the situation to NGB.

“Normally across the U.S. and territories, acts of nature account for the loss of one or two facilities a year,” Bill Pulket explains, “so they aren’t included in the normal budget cycle.”

LANG had already been appropriated its MILCON and SRM funds for the year. There was only one way to go—a special Congressional appropriation. Suzanne Bradford led the way in translating the damage assessments into MILCON and SRM programming documents, and Pulket’s office in turn translated those documents into a budget. From that he crafted two supplemental appropriation bills. The total request: 13 MILCON appropriations, five of them for Jackson Barracks, at a cost of \$480 million; and two SRM appropriations, at roughly \$36 million, for facilities repair projects statewide. Following the Department of Defense’s timetable, Pulket’s office submitted the first supplemental to Congress the last week of October, just two short months after Hurricane Katrina made landfall.

November 2005: Master planning

In November, while waiting for the appropriations, LANG leadership tackled the big question: how could they strategically reset the facilities so they would never again be so vulnerable to disaster?

“The driver was operations,” recalls Mouton (who by now had disengaged from his engineering brigade and was back in full CFMO mode). “A CFMO team needs to know what scenarios the TAG [adjutant general] and commanders intend to follow to support the mission in an emergency. The next logical step is to overlay what the facilities support requirements are for those contingency plans, and once you understand those, decide how you’re going to create redundancy.” At first blush, it might have seemed a no-brainer to move the Joint Force Headquarters away from Jackson Barracks, which ran from sea level to 12 feet below.

But there was a strong pull to keep the headquarters at the historic Jackson Barracks. Named after Andrew Jackson, who fought the Battle of New Orleans and

became America's seventh president, this was a garrison in continuous operation since the 1800s with a rich history of stationing soldiers through at least eight wars, battles, and conflicts. It was also on the National Register of Historic Places, with the largest collection of antebellum homes in the United States, and, until Katrina, a military museum (in an old powder magazine) that housed an extensive collection of artifacts from every American war. It was also imperative that first responders base themselves in the vulnerable areas of the state, like the lower 9th ward. But perhaps most important, Jackson Barracks represented LANG. As MG Downer asked, "What message would we have sent had we abandoned this post and not put anything back in? We can't ask the people across the country to give us money for our citizens to rebuild if we as a government entity aren't willing to rebuild alongside them." Another consideration was the installation's 650 full-time employees and \$100 million-a-year impact on jobs and small business in the surrounding area.

After getting TAG MG Bennett Landreneau's requirements for LANG's federal, state, and local missions, the team worked with a master planning company to outline three possible courses of action (COAs) for reestablishing Jackson Barracks, which they presented to Governor,

Kathleen Blanco, MG Landreneau, and the senior leadership of LANG. When the TAG came up with a hybrid, the team rolled that into a master stationing plan for Jackson Barracks.

"We took

a leadership role and told the governor and the TAG, we'll show you it's safe to rebuild in New Orleans," Downer recalls. The team got consensus from the governor and TAG down. Aldridge says that the support was a key to LANG's success. "Getting everyone to agree on the stationing plan and getting the buy-in and support from the senior leadership avoided a whole lot of finger pointing and bickering that could have happened," Aldridge says. "Once the senior leadership said, 'this is how we're going

to reset', people down the chain of command could accept their decision."

In the end they struck a balance, splitting the Joint Force Headquarters between Jackson Barracks and Camp Beauregard, with some backup capability in Carville. Camp Beauregard would become an operational cache including a Joint Operations Center, J-4, half of J-6, J-8, logistics, half of the CFMO shop, and half of the medi-



cal command. The primary and administrative functions would remain at Jackson Barracks, with sensitive critical infrastructure, half of J-6, weapons vault, and administrative space on the second floors, and supply rooms and drill halls on the first floors. They would preserve the barracks' historic fabric—by replicating its beautiful Greek-Revival-style buildings with their symmetrical façades, entry porches, columns, and pedimented gables—while modernizing, for example, by building foundations to the Army Corps of

Engineers' new standard for flood plain elevations and rebuilding the gatehouse and fencing with antiterrorism force protections (ATFP), explains LTC Tommy Ryan, a Jackson Barracks historian.

The team spent the next two to three months refining the Jackson Barracks master plan with the assistance of Jacobs, getting final approval in March 2006. From March to September the team developed updated functional, sta-



December 2005: Risk tracking

During the first week of December, Aldridge held an Interactive Planning and Programming Charrette. Participating was a cross-functional team that included Aldridge, Bradford, NGB personnel, LANG senior executive leadership, J-6, the state contracting office, JAG, the state office of Facility Planning & Control, the state fire marshal, LANG environmental personnel, and user groups who were go-



Opposite page: The entrance foyer of the 2225th Multi-Role Bridge Company's Readiness Center in Marrero, Louisiana. All facility entrances feature an inlay of the Louisiana state seal. Above left: Governor Bobby Jindal, Mayor of Alexandria Jacques Roy and TAG Bennett C. Landreneau cut the ribbon at the opening of the new Joint Forces Headquarters. Above right: The 1083rd Transportation Company's new Readiness Center in Reserve, Louisiana. Bottom: The sun sets on the 2225th Multi-Role Bridge Company's Readiness Center in Marrero, Louisiana.

tioning, and landscaping plans to replace the pre-Katrina statewide master plan. The new master plan won an award from the American Planning Association in 2007.

ing to be living in the buildings. The group identified and eliminated the show stoppers and determined where they were willing to take risks. They created a checklist that

presented all the potential risks associated with executing every project and they met weekly, tracking each risk until it was a closed item. Aldridge says this risk management process was a key driver of success for the entire project: “We never accepted or even hinted about failure. We were always adamant that we were going to succeed. Our ability to focus on the big targets, staying focused on the risk and mitigating that risk allowed us to pull off the program execution.”

An accident in June 2007 almost derailed the project. Aldridge and Jerry Wong, an engineer and attorney who would ultimately become the Jacobs program director for all the Katrina MILCON projects and with whom Aldridge would work intensively on procurement, were driving in an SUV when it was struck in the rear in a chain-reaction and flipped, totaling the car. Between the two of them, there was a huge amount of institutional knowledge which would have been devastating to the effort to lose. A self-described Rainman, Aldridge is a facts and figures machine—the perfect Deputy CFMO (and, since July 2008, CFMO). “He keeps a lot of numbers in his head and knows the breakdowns and details really well without having to refer to notes. Sometimes it’s hard to keep up with him!” Jerry Wong says. Luckily both emerged from the accident unscathed, and Aldridge says the event was a wake-up call to his subordinates.

December 2005: Use it or lose it

On December 29th, there was good news and bad news. Congress appropriated the first supplemental, which included \$278 million in MILCON funds and about \$18 million of SRM funds. There was just one catch: LANG had to execute the money (i.e., projects designed, and construction contracts awarded) by September 30th, 2006—in nine months—or lose it. “It was great that Congress appropriated the money,” Aldridge recalls, “but I got a knot in my throat. It was like they were saying ‘here’s your money, I’ve set you up for failure’, because I didn’t get the time I needed to execute the funding.”

Mouton describes the moment: “Once we realized we had the funds and the short time frame in December, we had a wonderful dilemma: how do we get there from here?”

The cross-functional team looked at the options—or rather, *the* option. All construction contracting in Louisiana at the time was done through the Design-Bid-Build method, a delivery vehicle in which design and construction functions are performed by separate companies. It had been the traditional way of doing business

since the state’s inception in 1812.

The method had its problems. Ken Johnson, deputy program director for Jacobs and liaison to LTC Bordelon, describes the Design-Bid-Build process like this: the owner hires and oversees an architect, then hires and oversees a construction firm; then the architect oversees the contractor, keeping him on a short leash, which creates tension between the architect and contractor, often leading to long delays.

“For each project,” Mouton says, “we mapped out everything—how long the carpeting processes would take, what agencies had to see what, how long would it take to draw the plans, how long it would take to execute contracts, statutory requirements for advertisements—and we developed a master schedule following every policy, every statute, every regulation that was on the books—the status quo.”

“THE ATTITUDE WAS, OKAY GUYS, YOU’VE GOT TO TAKE THE STUFF OFF YOUR COLLAR AND WORK TOGETHER BECAUSE WE HAVE A VERY NARROW WINDOW OF MONTHS OR WE LOSE THE MONEY,” — KEN JOHNSON, JACOBS ENGINEERING GROUP

At that point, Mouton says, it wasn’t rocket science. “We realized the schedule was the driver, so we judiciously started squeezing everything as much as we could, and we saw that even if we were overly ambitious, Design-Bid-Build still wouldn’t get us to 30 September.” That was the ‘Aha’ moment when the group came to a collective decision: Design-Build.

In Design-Build a single entity (a builder or an architect) is responsible for both design and construction. This contracting method shortens the delivery schedule by overlapping the design and construction phases of a project and minimizes potential conflicts between architect and builder. According to the Design-Build Institute of America, Design-Build is legal, to varying degrees, in all but three states. In Louisiana before Katrina, there had been one failed attempt to legislate the delivery system, and, except for one or two unique instances, it was under a state-wide moratorium.

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January 2006: Let’s write our own law

In January 2006, Mouton and Aldridge crafted the language

for their own Design-Build law with help from Pulket’s office. Then Aldridge, Mouton, and Jerry Wong took their Design-Build show on the road, selling it to the groups of architects, contractors, and engineers who would be bound by the law, were it to pass. In the meantime, MG Downer—a former Louisiana state representative and speaker of the House who’d handled legislation for various construction companies in the past—lobbied the state legislature to call a special session and provide sponsors for the bill.

There was a catch, the team realized. If they were to wait for the Design-Build legislation to pass, and it didn’t pass, it’d be too late to procure contracts under Design-

in January, Aldridge conducted another charrette. He explains, “We wanted to give the A & E firms the best start possible, so we executed a Planning and Design Charrette to take that project and catapult it forward.” Future building occupants and Jacobs technical experts were brought in, and the team worked out the space planning for every project, ending up with 10 percent designs that Jerry Wong included in the procurement package for the Design-Build A & E firms, giving them 45 days to bring the design to 35 percent. All the while, Aldridge and Wong were looking at the whole process from the macro view to make sure they were legally and conceptually on the right path.



Louisiana Army National Guard inspectors put the new electrical infrastructure through the paces during commissioning. Hurricane Katrina completely destroyed all utilities on Jackson Barracks.

Bid-Build, and they wouldn’t make the 30 September 2006 deadline, and subsequently they’d lose the MILCON and SRM money. So Aldridge and Jerry Wong concocted two parallel strategies: procure the contracts now with one group of Architect and Engineer (A & E) firms under the Design-Bid-Build method and have them produce 35 percent designs, and then if the Design-Build legislation passed, convert the A & Es’ plans into bridging documents to use as part of a procurement for A & Es employing Design-Build.

But before Aldridge could solicit bids from A & E firms, he had to convince the state’s Facility Planning and Control (FP&C) office to let him set up an emergency architectural selection board. Then, during the last two weeks

February 2006: A victory for Design-Build

The Design-Build legislation passed on February 19, giving LANG the exclusive right to employ Design-Build for Katrina- and Rita-related projects. Since the bill’s passage, Louisiana has granted approval to New Orleans to use Design-Build and, based on LANG’s success with it, is looking at allowing the delivery vehicle for projects throughout the state. In October and November of 2007, Aldridge and Wong went back to those trade associations. “We said, ‘Okay, where are the speed bumps? What would you like to see changed?’ and we amended the Design-Build law based on their feedback,” Aldridge says.

Within weeks the Design-Bid-Build firms completed the 35 percent designs. But there was another major hurdle to

clear before NGB would allow LANG to solicit bids from the Design-Build firms: onerous state and federal environmental laws impacting every property they wanted to build on. “We had flooded oil tanks, diesel tanks, mercury, batteries, lead paint that all had to be tested to comply with the National Environmental Protection Act [NEPA] and state environmental laws,” says Bordelon. Contributing to the environmental challenges was the cultural and archeological sensitivity of Jackson Barracks, which were not only recognized as historic but were also built on Native American burial grounds. LANG’s environmental section had to

having to wrap everything up to go and see him. This really kept us moving forward,” Ken Johnson says. “If documents needed to go up to National Guard Bureau, we hand-carried them or Fed-Ex’d them overnight. If we went there, they pushed aside everything else that was on their plate and met with us that day. If they normally had two months to perform a review, now they had two weeks.” This ended up shortening the NEPA compliance process from 18 months to four.

But it wasn’t only the NGB that went out of its way to help. Johnson says every organization they dealt with that



The 139th Regional Support Group's new Readiness Center, located on Jackson Barracks. The facility was designed with elements of Greek revival architecture to blend in with the original structures in the Jackson Barracks Historic District.

consult with the Tribe of Nations, state archeologists, and federal and state preservationists and document their compliance with exacting protocols to preserve artifacts and remains as well as the historic garrison structures. As a result of its experience, LANG is now a recognized leader in cultural and natural resource preservation.

To its great credit, NGB went out of its way to shorten the time involved in complying with the environmental laws, as it did in reviewing documents and architectural designs. “At the end of 2005 and all through 2006, Pulket from NGB came down numerous times for a week at a time and reviewed documents here in our state instead of us

normally would go down its own track with its own processes and timetables did whatever it took to help LANG rebuild. “We basically threw a lot of those old rules and habits out the window. The way the NGB worked with us, the legislature, the environmental people, the historical preservationists, the Native American tribes, the general contracting associations, still blows me away. The attitude was, ‘Okay guys, you’ve got to take the stuff off your collar and work together because we have a very narrow window of months or we lose the money’,” Johnson recalls.

Armed with NGB’s OK, LANG was free to terminate the original A & E contracts, take their 35 percent designs, turn

them into bridging documents, or Requests for Proposal (RFPs), select the best Design-Bid proposals, and pay the new A & Es to take the 35 percent designs to 100 percent. And they would stick to three principles. They would stagger the distribution of the procurement packages over a three- to four-month period so as not to flood the market with more jobs than there were A & Es to take on. They would bar any A & Es who had worked on the 35 percent designs from drawing a 100 percent design for the same building, so as not to give them an unfair advantage. And they would honor Governor Blanco’s mandate that they



Top and above: The new AASF#1 (Army Aviation Support Facility) was relocated to Hammond, Louisiana, 60 miles north of the flood-prone lakefront airport in New Orleans. The new 135-acre flight facility includes the AASF, 244th Air Assault Battalion, and a FMS (Field Maintenance Shop).

select only Louisiana-based Design-Build companies, to stimulate the storm-ravaged local economy.

Throughout the spring and summer the Design-Build procurement process would go forward, with Jerry Wong managing the development of 1,000-page procurement packages, advertising, and training Guard and Jacobs per-

sonnel to sit on A & E technical review and selection committees. The Design-Build procurement process would last seven months, instead of what could have taken up to two years with Design-Bid-Build.

Congress appropriated the second supplemental mid-June, containing \$202 million in MILCON funds and \$18 million in SRM monies. This time it was a five-year appropriation with a three-year authorization renewable in two one-year extensions. Combined with the earlier supplemental, there were 13 MILCON appropriations in all, totaling \$480 million, plus a total of \$36 million in SRM funds. To put the MILCON appropriation in perspective, in a normal year MILCON appropriations range between \$200 million and \$250 million for all 54 states and territories combined, Bill Pulket says. The appropriations just for Louisiana were double that—for just one year.

August 2006: End game

Then, in August, with time running out, the dreaded “Doomsday Scenario” came to pass. For the infrastructure project and some of the billeting at Jackson Barracks, proposals came in from Design-Build firms that exceeded the money appropriated for the projects. Aldridge had to act fast. “I had to quickly go back to all the Design-Build firms that had submitted bids on the RFPs and give them just a couple of days to turn around a new proposal,” he remembers.

By September 1—with one month to spare—Aldridge and his team had awarded all of the MILCON and SRM projects: over \$460 million in MILCON contracts, and \$36 million in SRM contracts. In fact, the MILCON projects came in under the Congressional appropriation with \$24 million left over. The 16 MILCON projects included the divided JFHQ, two Field Maintenance Shops, seven Readiness Centers, a Consolidated Maintenance Facility, and Army Aviation Support Facility (AASF), and billeting, gatehouse, and new infrastructure at Jackson Barracks.

Where it stands now

At the time of this writing (September, 2009), the repair and reconstruction effort is 90 percent completed, with 13 of the 16 MILCON projects and all of the SRM projects projects nearing completion. All projects came in under budget with no excessive delays. Aldridge expects that up to 120 soldiers and Military Department employees who were displaced from Jackson Barracks will be able to return in the fall of 2009, and that the last MILCON project should wrap by the end of the year. ■



UTAH

FIRST PHASE COMPLETED OF A NEW TOTAL ARMY SCHOOL SYSTEM FACILITY

The first phase of the Total Army School System (TASS) at Camp Williams in Riverton, Utah was completed in January, 2009. The 80,000 square-foot facility is the headquarters of the Army National Guard's 640th Regional Training Institute and consists of a 53,713 square-foot administration building and a 24,000 square-foot barrack. The TASS is a composite school system comprised of the Active Army, Army National Guard and Army Reserve institutional training systems. TASS provides standard training courses to America's Army, focusing on three main areas: standards, efficiencies and resources.

MASSACHUSETTS

A NEW FIELD MAINTENANCE SHOP TO MEET AN INCREASED WORKLOAD

The Massachusetts Army National Guard has constructed a new Field Maintenance Shop (FMS) on Camp Curtis Guild in Reading to replace the undersized existing FMS at the site. Construction began in September 2006 and the facility was officially opened in June of 2008. As the Army transformed to a Two Level Maintenance System, Field Maintenance tasks and subsequent level of authorizations were expanded. The \$17.2 million, 65,000 square-foot FMS was designed to meet these new demands and increased workload.



FLORIDA

A NEW JOINT OPERATIONS CENTER TRAINING FACILITY

The construction of Florida Army National Guard's new Joint Operations Center Training Facility (JOCTF) at Camp Blanding, a component of the Regional Training Institute (RTI), is projected to be completed in December, 2010. The JOCTF will be used to train regional personnel, as well as soldiers from other states, on how to respond to national, state, or local disasters. When completed, the RTI campus will total 307,908 square feet.



ARNG INSTALLATIONS

ACROSS THE UNITED STATES, A TOTAL 27,192 STRUCTURES IN 3,142 LOCATIONS

The Army National Guard (ARNG) maintains facilities in all 50 states, three territories, and the District of Columbia. The number of facility locations total 3,142, and there are 27,192 structures on those facilities. There is no standard facility, as all structures are tailored to the unique needs of the units using the facilities. The 3,142 facilities are made up of 2,890 Readiness Centers, 43 Armed Forces Reserve Centers (AFRC), 728 Field Maintenance Shops (FMS), 130 Combined Support Maintenance Shops (CSMS), 54 Maneuver Area Training Equipment Sites (MATES), 61 Unit Training Equipment Sites (UTES), and 88 Army Aviation Support Facilities (AASF). Together, these facilities total over 156 million square feet.



ARNG INSTALLATIONS DIVISION

From left: Deputy Division Chief Hallet Brazelton, Division Chief COL Michael Bouchard, Branch Chief of Strategic Plans and Education LTC Adrian Nagel, Branch Chief of Resource Management LTC Dale Oldham and Branch Chief of Construction LTC Sherrell Crow. Missing are Branch Chief of Real Estate Ken Parks, Branch Chief of Design Elvin Shields and Branch Chief of Facilities Management LTC Michael Tompkins.

