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US Army Corps of Engineers® Far East District

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On the cover



Construction on an 8-story barracks at Camp Carroll using the down slab form system and form uplifting robot, a new technology that provides a safer and more efficient way to mold concrete walls and floors. (FED file photos)





Col. Bryan S. Green

Dear friends of the Far East District,

As temperatures are heating up, so is the work at the Far East District. We are expecting up to 16,000 construction workers at U.S. Army Garrison Humphreys, working on the dozens of facilities we are building there.

Across the peninsula work is being done to build or upgrade facilities for U.S. Forces in Korea. It's a major task – about \$15 billion worth of construction – but one which we are well on track to completing.

Each new building we construct is Leadership in Energy and Environmental Design (LEED) Silver Certifiable, and we are working on a way to get those buildings certified. Making sure that our partners and stakeholders get the most energy efficient buildings possible is something we strive for on a daily basis. We are determined to both provide the best available facilities to support our national security but also ensure that extra energy resources aren't wasted once the buildings are operational.

While we spend the majority of our time doing projects for others, on June 20 we were able to celebrate the start of construction of our new headquarters! We expect to move into the facility in late 2016, but aren't waiting until then to shift down south. In the coming months members of our Construction Division will be making the move to Humphreys and we will start changing the location of some jobs from Seoul to Pyeongtaek as we get vacancies.

We also celebrated our 57th anniversary this summer. On June 3, 1957, the Office of the Chief of Engineers directed that the U.S. Army Engineer District Far East "is established with headquarters in Korea, under the jurisdiction of the Division Engineer, U.S. Army Engineering Division, Pacific Ocean" on July 1, 1957. We've gone from a \$17.5 million workload in 1957 to nearly \$373 million in contracts issued in Fiscal Year 2013. Our district's personnel numbers have grown and contracted numerous times during the past 57 years, but the one thing that always will remain the same is a commitment to providing the best design and construction support to our U.S. military forces.

Our history is important, and with the work we are doing as part of the Korea Relocation Program, we are making history. In the future, people will look back at this program, one of the largest in the Corps of Engineers history, see the work we have done, in concert with our U.S. and Korean military partners on the peninsula, and hopefully be in awe in what everyone has accomplished in a relatively short length of time.

In this quarter's East Gate Edition, we are focusing on individual projects as well as giving you a look at the district itself. We will continue to balance sharing with you what we are doing with who we are, and what we can do.



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web site at

www.pof.usace.army.mil



Commander's Corner

Building Strong in Korea!

BRYAN S. GREEN Colonel, U.S. Army Commanding



By Stephen Satkowski

FED Public Affairs

District marks history as it breaks ground on new headquarters building

onstruction on the future United States Army Corps of Engineers Far East District headquarters building began as ground was ceremonially broken June 20 on land adjacent to U.S. Army Garrison Humphreys.

The building will offer a central location for district employees to provide the day to day administrative, construction and engineering services in the Republic of Korea.

"I think it's historic that we have broken ground on a brand new headquarters building that will be completed around the time the district celebrates its 60th birthday," said Col. Bryan S. Green, district engineer and commander.

Brig. Gen. Kang Chang-koo, Director General of Program Management, Ministry of National Defense United States Forces Korea Relocation Office, said the teamwork between the district and MURO since the Land Partnership and Yongsan Relocation Plan agreements were signed in 2004 has been excellent.

"Many challenges, big and small, lie ahead of us, but I'm not worried because we as a team are strong enough to accomplish the mission," said Kang. "Thanks to our partnership the Yongsan Relocation Plan is now [well underway]."

At the ceremony a three-person shovel, used in construction in the mid- to late-20th century in Korea, symbolized the close partnership between the Far East District and new facility, United States Forces Korea Base Relocation its Korean partners. Project Management Office, and Korea Land and Housing Corporation joined Green to mark the occasion and help "One of the first pictures taken in district history in bury a time capsule, which will be opened at the building's 1957 was of three Koreans from [contracting firm] Daelim ribbon cutting. [Industrial] operating a three-person shovel," said Green. "We used a piece of the past to bury a guest book filled

Representatives from Daelim, which will build the





Col. Bryan S. Green (center), commander of U.S. Army Corps of Engineers Far East District is joined by Republic of Korea Brig. Gen. Kang Changkoo (left), Director General of Program Management, Ministry of National Defense USFK Relocation Office and Republic of Korea Lt. Col. Cho Nam-ya (right) of the MND-Defense Intelligence Agency as they use a three-man shovel to bury a time capsule which will be opened at the district ribbon cutting ceremony. (Photo by Stephen Satkowski)

"Many challenges, big and small, lie ahead of us, but I'm not worried because we as a team are strong enough to accomplish the mission. Thanks to our partnership the Yongsan Relocation Plan is now [well underway]."

- Brig. Gen. Kang Chang-koo, Director General of Program Management, MND USFK Relocation Office -

> with messages to welcome the future residents of the building," said Green.

> The building is scheduled to be completed by the end of 2016.

> A note to the future ... Col. Bryan S. Green wrote this note to the future commander, Col. Stephen Bales, in the groundbreaking ceremony questbook, which will be unveiled at the new district headquarters ribbon cutting. Right now the book is buried in a time capsule on the site. (Photo by Stephen Satkowski)



District provides healthy water to customers for nearly 50 years

By Stephen Satkowski **FED** Public Affairs

nelter, water, oxygen, food and sleep are the ive basic survival needs of human beings. The Far East District provides two of those five needs as they supply not only shelter, but also an adequate and dependable supply of clean water to servicemembers in the republic of Korea.

The district maintains 149 active wells across 25 U.S. military installa-

tions on the Korean peninsula. These wells provide approximately six million gallons of water per day and range in depth from 40 to 1,050 feet. O Chinsok, chief of the water well services section, said taking care of all these wells is not for the faint at heart.

"Our job is year-round. Our team is out there in the heart of summer and the dead of winter making sure United States Forces Korea has an ample and



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healthy water supply," he said.

The water well section, which includes environmental and civil engineers and geologists, dug its first well in Korea in 1967 at the Joint Security Area along the Demilitarized Zone.

Maintaining wells that are nearly 50 years old can be a tricky job said Shin Hyun-jun, environmental section geologist.

> "After some time the water wells can be contaminated," he said. "That's why we do preventative maintenance. We'll replace pumps and piping if needed and we'll check for mold and bacteria and sanitize the wells."

The district develops about one new water well each year.

"Each new well must be able to produce 50 gallons of water per minute," said O.

Due to environmental or health hazards not every installation in Korea can get their water from wells. However, it is beneficial because it makes United States Forces Korea more self sufficient and a better steward of taxpayer's money.

"It's smart to depend on your own water supply in case there is a problem with the city water outside the installation." said Shin. "Also. since we are providing our own

Members of the Far East District water well services section perform pump installation at U.S. Army Garrison Humphreys. (FED file photo)

water we don't have to pay the city,"

Wells on the installations are connected to water treatment plants where the water is treated for use. The water well services section, geotechnical and environmental engineering branch carries out this mission in both armistice and mobilization conditions.

Members of the Far East District water well services section perform water well drilling at U.S Army Garrison Humphreys. (FED file photo)

How do you know where to dig a well?

Geologists at the Far East District determine the best location to drill a well based on field studies of specific rock types and major fracture zones in the earth. These zones provide pathways of groundwater in bedrock.

Once a location is picked the water well services team will drill a small hole into the earth to see if the area produces enough water for a permanent well to be constructed.

"We insert a pump into the hole and start pumping at various rates and monitor groundwater levels at each rate," said Shin Hyun-jun, environmental section geologist. "Monitoring groundwater level changes in other neighboring wells will also occur to make sure the well is not producing water from another well.

After determining the amount of water it can produce they will test the water for contagions.

"If groundwater is the source of drinking water, groundwater will be sampled and tested to identify its quality," said Shin.

If it's concluded the area can produce a sufficient and healthy water supply then a permanent water well will be constructed.



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Camp Carroll facility includes unique construction method

By Stephen Satkowski FED Public Affairs

new, safer, quicker and cleaner way to mold concrete walls and floors is being used on Far East District construction projects.

A new barracks at Camp Carroll will be the first in FED to use a new metal form system called down slab to mold concrete walls and floors. Traditionally, in Korea, plywood is the preferred material.

"This one is unique. The way the form system is dismantled makes this safer and cleaner than plywood or other forms," said Jared McCormick, project engineer at the southern resident office. "When you strip the formwork (the mold that shapes the concrete) with the metal form, you have less safety hazards to worry about," said McCormick.

The shoring for the floor slab formwork has built in jacks. Once the concrete obtains the desired strength to slab, formwork is lowered by the jacks. The formwork is lowered to just above

the workers heads for an easier and safer dismantling.

"Normally the workers will have to use ladders or scaffolding to climb up to strip the plywood formwork," said Mc-Cormick. "This is both messy and dangerous when working that high up while using things like hammers and chisels to loosen up and remove the slab formwork."

The system is not only safer it also helps quicken the construction process.

"This form of formwork is most cost effective when used on repetitive features like this eight-story barracks," said McCormick.

To go along with the formwork, a self operating machine, which operates through a vent duct in the building during construction, is used to lift the formwork from one level to the next.

"It releases form grease that keeps the concrete from sticking to the panels," said McCormick. "You don't need a rigger for strappings and connections to a crane. There's no large loads suspended in the air providing a safer work environment."

Form oil essentially helps prevent the concrete from bonding to the form work so that it is easier and safer to dismantle.

As a result of the new formwork the construction project workers are safer, time is saved and the end product will be that much better.

"This is going to be a higher quality finish. The formwork looks better and is easier to use," said McCormick.

Other benefits include less construction waste as well as increased labor productivity over the entire course of the project.

Three-hundred-and-two Soldiers from the 501st Sustainment Brigade are scheduled to move in to the barracks when it's finished. The district is working with Samsung Construction & Trading to complete the facility by the fall of 2015.



Construction on an 8-story barracks at Camp Carroll using the down slab form system and form uplifting robot, a new technology that provides a safer and more efficient way to mold concrete walls and floors. (FED file photos)



By Jason Chudy FED Public Affairs

family housing will enable our service members to bring S Army Chief of Engineers Lt. Gen. Thomas Bostick recently spoke to correspondents at the some of their families to Korea that they might not have Washington Foreign Press Center about U.S. been before, in what we call accompanied tours." Army Corps of Engineers operations in the Asia/Pacific To ensure that the construction and relocation is

region. complete, the Far East District has more than 500 U.S. and Korean civilians, and about a dozen uniformed Army The May 22 event included reporters from Korea, Japan, Vietnam and India, and Bostick spoke about the personnel, working on the approximately \$15 billion worth importance of the Corps of Engineers mission in the region. of projects throughout the peninsula.

The large percentage of civilians in an Army command "We execute different missions - military construction, host-nation funded construction, foreign military sales, isn't something unique to Korea, Bostick said, but reprehumanitarian assistance sentative of the Corps

and disaster preparedness and response projects – in 22 countries in the Asia-Pacific region, including the Republic of Korea, Japan, India, China and Vietnam to name a few." he said.

"When completed, the Army Corps of Engineers will have overseen construction of 655 new and renovated facilities. This is the largest single activity in scope and scale that we currently have underway when it comes to military construction."

Focusing on the Republic of Korea, he touched in more detail

largely a civilian organization with deep expertise in trainabout the importance of the mission here, as well as its size. ing and engineering services." "In the Republic of Korea, the corps is administering

two large programs: The Yongsan Relocation Plan – also called YRP – and the Land Partnership Plan – LPP," he said. "When completed, the two programs will enable the return of land to the Republic of Korea and the relocation of approximately 12,000 U.S. service members to U.S. Army Garrison Humphreys from U.S. Army Garrison Yongsan and from multiple locations north of Seoul.

"When completed, the Army Corps of Engineers will have overseen construction of 655 new and renovated facilities," Bostick said. "This is the largest single activity in scope and scale that we currently have underway when it comes to military construction."

Not only will these facilities provide for a more centered and robust U.S. military footprint on the peninsula, but the facilities themselves will be more conducive to the entire U.S. military and civilian community's quality of life.

"In addition, the corps is executing construction and supporting construction of modern facilities in which the U.S. forces will work, train, and live," Bostick said. "New

Lt. Gen. Thomas Bostick provides update on Asia/Pacific region

- Lt. Gen. Thomas Bostick -

of Engineers as a whole.

"Most people think it's a military organization; it is a military organization with a lot of civilians," he said. "There are only 700 Soldiers in the Corps of Engineers that wear the uniform, but 33,000 civilians. So [we are a]

The longevity of this mainly civilian force allows for a very well-trained and dynamic workforce.

"Our capabilities run the gamut from engineering, construction and science - and it's broad and deep," Bostick said. "Much of our expertise is dedicated to the civil and the military infrastructure development and sustainment, but we also do a lot of work in research and development. We have seven laboratories all across the country, and some of our scientists and engineers are world-renowned in some of the areas that they work in."

Answering a question from a Korean reporter during the last half of the briefing, Bostick expressed his condolences on the sinking of the Sewol ferry, in which more than 300 Koreans died.

"My thoughts and prayers go out to those that have lost loved ones and to the Republic of Korea," he said.

A full transcript of Bostick's briefing can be viewed at: http://fpc.state.gov/226476.htm.



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Building Strong in Korea!

Ground broken for new 2ID headquarters in Humphreys expansion

A groundbreaking ceremony for the new 2nd Infantry Division headquarters building was held at U.S. Army Garrison Humphreys on April 7. Mai, Gen. Thomas Vandal, 2nd Infantry Division commander: Col. Bryan S. Green, U.S. Army Corps of Engineers Far East District commander, and other distinguished quests attended the event. The project includes an operations center, network operations center, and the 2nd Infantry Division parade field. (Photo courtesy of the 2nd Infantry Division)

미2사단 본부시설공사 기공

Groundbreaking Ceremony of CY13 RØKFC IN 21D HEADQUARTERS FACILITY, USAG HUMPH

By Stephen Satkowski FED Public Affairs

new building is changing the Camp Henry skyline at U.S. Army Garrison Daegu. A 10-story barracks for enlisted Soldiers will be the tallest in all of Area IV when it's completed in the fall.

"The lack of space on Camp Henry made it difficult to build the standard design so it was necessary to make some design modifications to fit the number of required units," said Benny Apuya, southern resident office quality assurance representative.

Due to changing personnel and difficult terrain on-site the project had its share of challenges.

"The project sits on an old river bed so pile driving was very difficult due to big rocks on the subsoil," said Apuya.

"Thanks to everyone's efforts we are back on track," said Apuya. "We are coordinating with our stakeholders and the project is running smoothly."

Each room will consist of a shared bathroom and kitchen and each Soldier will have an individual bedroom with a spacious closet said Elisa Beck, southern resident office deputy resident engineer.

plishing the projects goals.

"This project's success is in great part due to Benny Apuya and Lim

The 10-story barracks on Camp Henry in U.S. Army Garrison Daegu will be the tallest structure in all of Area IV when completed in the fall. (Photo courtesy of FINE Construction)

미2사단 본부시설공사 기공식 reaking Ceremony of CY13 ROKFC IN-KIND A13R103, 2ID HEADQUARTERS FACILITY, USAG HUMPHRE 014.4.7 Designer / Tideall architecture engineers planners consutants Construction Manager / 🕅 🏧 Contractor / DARES



A new 'skyline' emerges over **Camp Henry**

These initial obstacles put the project behind schedule for a time.

She also said the close partnership between Apuya and his counterpart with the contracting firm Fine Construction played a key role in accomKyung-wook, quality control representative for Fine Construction, as they both adhered to our safety and quality standards and schedule," said Beck. "Their teamwork has ensured the highest standards of construction have been followed."

Apuya said he accomplishes his goals by following tools he learned while serving the Army.

"Be professional in what you do, know your job and your responsibility, and do your to the best of your best ability and respect others," said Apuya.

Two-hundred-ninety-eight Soldiers from the 19th Expeditionary Sustainment Command will begin calling the barracks home in November of this year.



Construction Division Quarterly Report

By Sam Adkins FED Construction

he third quarter has been another busy one for Construction Division. We started off the quarter with a strength of 182 personnel spread throughout Korea. Of those 182, 94 or 52 percent were located at U.S. Army Garrison Humphreys.

We conclude the quarter with a strength of 192 people. Of this number, 112 or 58 percent are at USAG Humphreys. As readily seen, Construction Division's growth is centered at the Pyeongtaek area. This will continue in the future. In fact, the division will be moving to USAG Humphreys from the Far East District compound later this year.

As far as work load was concerned, we started the quarter with 222 active contracts. At the end of the quarter we had 205 active contracts. Fifty three percent of these current active contracts are at Humphreys. At Humphreys this quarter, three contracts received notices to proceed in May. These were the downtown exchange and commissary, the downtown business area, and a vehicle maintenance facility - the installation maintenance park which includes our district's motor pool.

Groundbreakings occurred at several sites during this quarter. A ground breaking was conducted at Humphreys for the 2nd Infantry Division Headquarters facility on April 7. We had ground breaking ceremonies at Kunsan Air Base on May 13 for two projects: the Security Force Facilityand the Communication Squadron Facility.



Distinguished visitor tours continued uninterrupted during the quarter. The Republic of Korea Ambassador to the United States, Ahn Ho-young visited construction sites at Humphreys on April 2. Lloyd Caldwell, U.S. Army Corps of Engineers director of military programs was at the district and Humphreys on April 8.

Lt. Gen. Robert Ferrell, the Army chief information officer, was at Humphreys on April 15. Michael McAndrew, Office of the Deputy Under Secretary of Defense (Installations and Environment) facilities investment and management directorate chief returned to Humphreys on June 4 and visited Kunsan Air Base the next day.

Construction work continued across the peninsula during the quarter. Excavation work was completed on the U.S. Forces Korea operations facility, where some 410,000 cubic meters of material was excavated. A quality assurance/construction surveillance forum was held at Humphreys with the Program Management Consortium on April 16.

During the quarter, personnel took advantage of training opportunities. Travel training was given for personnel at Humphreys and Osan on April 2. Leadership training was conducted on the district's Seoul compound on May 9. This training was also conducted at Daegu and Osan.

Greg Reiff from Humphreys took part in the Acquisition leadership Chal-

lenge in Atlanta in May. Chad Mcleod attended the Civilian Education System advanced course in June, as well as Charles Johnson and Mia Dukuly attended the intermediate course in June.

Next quarter, Construction Division will be extremely busy. This is the height of the construction season in Korea and we expect to have great success.

New projects will be coming "out of the ground," and we are looking to complete several key projects, including a child development center at Humphreys, a dormitory at Osan Air Base, and another facility at U.S. Army Garrison Daegu.

On the training side, we will conduct two Proponent-Sponsored Engineering Corps Training courses at Humphreys next quarter. One will be the general construction quality verification course and one will be fire protection basic course.

Both of these courses are filled to capacity with a mix of project engineers, quality assurance personnel, and engineers. We also expect to hire additional personnel, most of which will work at Humphreys. We are also looking to move the Construction Division headquarters, quality assurance branch, and construction surveillance branch to Humphreys next quarter.





New Humphreys "Downtown"

Construction start: Late 2014 Expected Completion Date: Early 2016

The future Humphreys "downtown" area, which includes an exchange, commissary, bowling center and chapel among its 11 buildings and parking structure, will begin construction later this year. Completion is expected in early 2016.



Medical and Dental Complex

Construction start: November 2012 Expected Completion Date: Early 2016

The completed medical campus will be able to support 65,000 eligible beneficiaries and 5,000 annual inpatient admissions. Construction is about 20 percent complete.



DoDDS schools and EDIS

Construction start: June 2013 Expected Completion Date: mid-2015

Department of Defense Dependent Schools Middle and Elementary Schools and Educational and Developmental Intervention Services facility. The middle school will support 1,100 students. The elementary school will support 875 students

Child Development Center

0.8 8 8 9.8 8 9

Construction start: December 2012 Expected Completion Date: July 2014

The Child Development Center near the new housing towers is nearly complete. The prefinal inspection was in early July and completion is expected in mid-July.

ARMY

rmy projects make up the vast majority of work for the Far East District, particularly with the Yongsan Relocation and Land Partnership Plans. Although the work at U.S. Army Garrison Humphreys gets the majority of attention, the district has Army projects all across the peninsula. Work at Rodriguez Range, located northeast of U.S. Army Garrison Red Cloud, includes various projects to improve the facility. At the southern end of the peninsula, work on U.S. Army Garrison Daegu's Camp Walker includes building renovations on S-348 and upgrading heating, ventilation and air conditioning on building B-205. Work at Walker also includes repairs and upgrades to the health clinic, with this project still being in the design phase. New housing and a middle and high school are also

planned for the camp. At the garrison's Camp Henry, design work has started on an electrical distribution system upgrade and the replacement of two buildings' roofs. Construction of a barracks and dining facility is about 78 percent complete, and work on an electrical substation there is about 51 percent complete.

ar East District work for the Air Force is centered at Osan and Kunsan Air Bases, with operational and quality of life facilities in design and under construction. At Osan, work on the replacement elementary school has begun, with the project being about 10 percent complete. Work on a 277-person senior noncommissioned officer dorm is about 93 percent

complete. An aircraft corrosion control facility recently started and is about three percent complete. Projects under design at Osan range from a military working dog kennel facility and to the Korea Air Operations Center. At Kunsan, on Korea's southwest coast, the medical clinic replacement project is about 27 percent complete. Renovation on dormitory 339 is about 80 percent complete. A munitions maintenance facility is about eight percent complete and the new aircraft arming and de-arming pad is about three percent complete. Design work at the base includes new transient aircraft parking and a new commercial vehicle gate.







Project Update Spring 2014

Far East District



MARINE CORPS

ork continues on the aircraft revetments for the U.S. Marine Corps at Yechon. The project is the removal and replacement of deteriorated metal bins on 44 revetments in the designated combat aircraft loading area. The district and Ministry of National Defense - Defense Installations Agency have been working on this project since December 2013, with an estimated construction completion date in late 2015. Work is about 25 percent complete. The district's Programs and Project Management Division staff is responsible for overseeing work with the Marine Corps on the peninsula. A project in Pohang to replace the bulk fuel transfer pipeline recently started, with the project still in the design phase.

ork on the U.S. Naval Forces Korea headquarters in Busan is progressing, with the facility being about 18 percent complete. Ground was broken for the facility on Aug. 29, 2013, and marked the beginning of the facility, which will house U.S. Navy personnel now working at U.S. Army Garrison Yongsan in Seoul. Another project there, which provides power to ships visiting the base, is also about 18 percent complete. Over at Fleet Activities Chinhae, the Fleet and Family Town Center is about 98 percent complete. The new 40,400 sq. ft. facility will consolidate community support and service functions into one building with a Fleet and Family Service Center, classrooms, a uniform shop, computer lab, Liberty Lounge, post office, barber shop, and Army and Air Force Exchange Service, and Defense Commissary Agency shops. The FFTC will also feature a training auditorium theater showing movies on a wide screen with surround sound audio.

Korea Relocation Program U.S. Army Garrison Humphreys 46 By the Numbers Original acreage Percentage of completion 1210 for the entire program Up 4 percent in the past quarter! New total acreage buildings under Angeles construction or planned. International Airport is 103 acres smaller The number of buildings being

More than 40 miles of water piping has been installed and tested in the new land. Another 40 miles of new roads will be built. Total miles of cabling installed is

demolished is

Billion total value

million cubic meters of engineered soil in place, raising the land by about 8 1/2 feet, providing protection from a potential flood.

17.6

Enough soil is in place to fill the old Yankee Stadium 5 times.

Student tour opens eyes to life as an engineer

By Stephen Satkowski FED Public Affairs

Los

eventh- and eighth-grade students from Camp stuff down," said Aspen Stafford, seventh-grade student at Casey elementary school on U.S. Army Garrison Casey elementary. "I learned that they do far more - civil Red Cloud toured the Far East District compound engineering, technological engineering - they work a lot Friday, May 16, to see what a day in the life of an engineer more with science than I thought." is all about. District engineers gave students an overview in The field trip gave the students an opportunity to ask geotechnical, environmental and sustainability in engineerquestions from real-life engineers and see how their classing, as well as a tour of the materials testing laboratory and room experience applies to jobs in the real world. surveying technology.

"Everyone always asks what I need algebra for?" said "My favorite part was surveying. I really like program-Valentina Ortega, Casey elementary school math teacher. ming and I like the thought of programming without being "Why do I need to know these variables, polynomials and inside stuck to a computer," said Collyn Lindley, eighthall these quadratic equations? Here they're seeing why they grade student at Casey elementary school. "They showed need it in real life." us engineers also make maps. The gadgets they used were The day concluded with the Far East District commandinteresting and maps are kind of fun." er, Col. Bryan S. Green, answering questions and providing The variety of jobs on the district compound gave the depth to what his life is like as the commander of the district.

students a perspective on the many career paths future engineers can choose.

"Engineering, I thought, they just build stuff and tear

compound May 16. (Photo by Stephen Satkowski)



Continued on Page 24

Students test engineering skills in earthquake challenge

By Stephen Satkowski

FED Public Affairs

hake, rattle and roll. No, it's not the Elvis Presley song, it's the way Far East District engineers graded students during an earthquake tower challenge at Seoul American Middle School.

"We are trying to introduce the students to engineering principles," said Doug Bliss, chief of the geotechnical and environmental engineering branch. "In this case they're doing dynamic loading of towers. They're learning engineering at a rudimentary level."

The students' towers were built out of straw, paper clips, string and straight pins and tested to see how much shaking the structures could withstand.

"These basic principles can be used for actual construc-

tion and can build into later careers and building actual structures," said Bliss.

Students had the opportunity to test their structures and go back to the drawing board and re-design their towers, learning from their mistakes if their towers collapsed.

"I learned that symmetry helped make our building structurally sound," said Jack Dillon, eight-grade student at Seoul American Middle School. "You can't have one side be stronger than the other, so it all needs to be in sync."

"The foundation failed because we didn't have enough paper clips so it fell over," said Eric Byrd, eighth- grade student at Seoul American Middle School.

Student Steven Masley said getting out of the classroom

Students at Seoul American Middle School react as Doug Bliss (left), chief of the geotechnical and environmental engineering branch, and Son Ha (center), engineering division design branch chief, test the stability of a student made tower at Seoul American Middle School May 19. (Photo by Stephen Satkowski)

and receiving hands-on experience from professional engiearly so perhaps they'll have more opportunities to compete neers was both educational and exciting. in the global marketplace for jobs," said Bliss. "The teachers "It's not about who wins, it's about having fun," said and students are hungry for real life examples which we can Masley. give them because we do it every day."

Sparking an interest in engineering at a young age can "They are being exposed to things scientists, chemists also help stem the slide of students who reject the field in and geologists do," said Bliss. "That exposure might help college. In the 1970's 40 percent of the world's scientists and them to decide to choose this for a career." engineers resided in the U.S. Today that number has shrunk The tower competition is part of STEMed, a science, to about 15 percent. technology, engineering and mathematics educational part-

According to the U.S. Department of Labor, only five percent of U.S. workers are employed in fields related to science and engineering, yet they are responsible for more than 50 percent of our sustained economic

"These days the workforce is very techni-



nership between the U.S. Army Corps of Engineers headquarters and Department of Defense Dependent Schools.



Building a bridge to an exciting engineering future

By Stephen Satkowski FED Public Affairs

he U.S. Army Corps of Engineers Far East District and Seoul American Middle School partnered for the second consecutive year to hold a toothpick bridge design competition.

Joined by Osan American Middle School students, the competition aims to encourage progress in the science, technology, engineering and mathematics (STEM) field.

"What I find with my students in the STEM field is that they don't know where to start and they get stuck in the middle and can't see the end," said Sheva Wilkins, applied technology teacher at Seoul American Middle School. "I'm

Kim Min-sung (front left), Kara Ohler, Jeremy Sumpter and Austin Barberree, pose with Far East District engineers as they accept their certificates for winning this year's toothpick bridge competition for best overall design. (Photo by Stephen Satkowski)

helping them along the way.

Wilkins, who organized the competition, said projects such as these can at first seem daunting, but they help the students gain awareness of STEM related fields.

"And once they get it they are so excited. At first they complain about it, but when they are bringing those bridges in they are excited," said Wilkins. "So I think that it really does spur in them that they can do it."

For the students it was a fun experience and an exciting way to learn about the engineering field.

Kim Min-sung, Kara Ohler, Austin Barberree, and Jer-"I've done it three years in a row and I definitely want to keep doing it because every time I get better and better," said emy Sumpter won this year's competition for best overall Maggie Johnson, a seventh grade student at Osan American design. Middle School. "It's really interesting to see how far you can Osan American Middle School teacher Thomas Carlin go with toothpicks and glue." said he was grateful his students had the option to compete

"I like building things and working with others so I this year and felt the competition was educational for evenjoyed this project," said Kim Min-sung, also an Osan ervone. American Middle School seventh-grader.

District engineers judged the students on best architectural design, strongest bridge, most efficient and best overall design.



"If you don't win anything at least it's a learning experience. That's what we're here for," said Carlin.

US Army Corps of Engineers builds on Air Force's vision

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By Airman 1st Class Ashley J. Thum 51st Fighter Wing Public Affairs

SAN AIR BASE, Republic of Korea - With a heritage that dates back to construction of the Washington Monument, Panama Canal and the Pentagon, the U.S. Army Corps of Engineers Central Resident Office has a lot to live up to.

The team of 20 doesn't let that intimidate them as they strive to enhance the base's infrastructure and give substance to the plans their Air Force partners have for the future.

"We're working on six host nation-funded projects right now," said Jamie Hagio, USACE CRO resident engineer. "There's always a new challenge - it's never the same thing every day."

Among the construction currently underway is an eight-lane second runway.

"The concrete paving is about 55 percent complete," said U.S. Army Maj. Brian Becker, USACE CRO project engineer. "We're also working on installing drainage systems around the area."

The runway is being paved at a pace of about 1,200 feet per day using a sophisticated machine known as a slip form paver that creates cookie cutter-like sections of concrete. Three-man teams must follow the paver along each side to drag burlap across the concrete's surface, creating the exact texture needed for aircraft to take off and land.

"Depending on the section, the concrete is between 12 and 18 inches thick, with the touchdown area being the thickest," Becker said. "If the texture or thickness is incorrect even on an infinitesimal level, the section has to be re-done."

Jamie Hagio, U.S. Army Corps of Engineers Central Resident Office resident engineer, discusses the construction progress of a new senior NCO dormitory on Osan Air Base, Republic of Korea, June 5, 2014. The facility is one of several projects managed by the USACE to enhance mission readiness and quality of life on base. (U.S. Air Force photo/Airman 1st Class Ashley J. Thum)

Lee Joon-seok, SK Engineering and Construction Co. "The school will house students in kindergarten Ltd. quality control chief, said the relationship between through fifth grade and is a \$30 million endeavor," Hagio members of the runway project could best be described as said. friendship.

"It's the best example of teamwork," Lee said.

A 277 room dormitory for senior NCOs - scheduled for completion near the end of 2014 - is also on the resident office's project list.

Kim Jung-ok, Republic of Korea Ministry of National Defense-Defense Installation Agency project engineer, said the structure has progressed well thanks to open communication between all parties involved.

Hagio served as an engineering officer in the U.S. Army for more than six years before his time with USACE, and "I am very satisfied with the work environment at said he's lucky to have had the experience of working in the Osan," Kim said. "It's better than other places I've been. ROK with the high volume of construction for eight years. The best team is here."

"I love having tangible proof of the effort we put into Service members aren't the only ones who benefit a project," Hagio said. "I believe building facilities for from USACE projects, though. Near the main gate, a new our military contributes to our readiness and enhances our elementary school has begun to take shape as construction ability to fight tonight. It's great to support the warfighter." workers build rebar forms to lay the concrete foundation.

Ground broken for Consolidated **Communication Facility at Kunsan**

"We're working on six host nation-funded projects right now. There's always a new challenge - it's never the same thing every day."

- Jamie Hagio, resident engineer of the Far East District Central Resident Office –

> Becker said he enjoys the unique opportunities that come from working on an air base, but that one of the most gratifying aspects of his career is leaving a legacy.

"After a job is complete, you have the satisfaction of knowing that project will last for decades," Becker said. "Someday my kids could land on this runway that I helped build. A lot of pride goes into building enduring features of the base."

> Lt. Col. Julie A. D'Annunzio, U.S. Army Corps of Engineers Far East District deputy commander (third from right) and distinguished guests take part in a ceremonial groundbreaking for the consolidated communications squadron facility May 13 at Kunsan Air Base. (Photo by Stephen Satkowski)

Student tour opens eyes to life as an engineer

Continued from Page 17

"I love this job because every day is different," said Green. "We have it all in the [U.S. Army] Corps of Engineers Far East District: chemical labs, geotechnical labs, asbestos labs, GIS (geographical information systems) experts who make our maps and do the surveys. "It is one of the coolest

things to wake up every morning and have a new challenge to go solve," said Green.

"It made me think a little deeper into what career path I'm going to choose," said Lindley. "It definitely broadened my perspective."

The presentation was part of the U.S. Army Corps of Engineers and the Department of Defense Schools Korea District education partnership agreement signed on March 7, 2013, at Seoul American High School. The partnership centers on support for the science, technology, engineering, and mathematics initiative.

Aspen Stafford, seventh-grade student at Camp Casey elementary, looks through a microscope as Kim Kyon-ho, U.S. Army Corps of Engineers Far East District environmental branch chemist. explains how to identify the cancer causing mineral asbestos. Stafford was part of a group of students who toured the district compound May 16 to help get a better appreciation of what life is like as an engineer. (Photo by Stephen Satkowski)

Ground broken for Consolidated Security Forces Squadron Facility at Kunsan

Lt. Col. Julie A. D'Annunzio, U.S. Army Corps of Engineers Far East District deputy commander (third from left) and Andy Rajala, U.S. Army Corps of Engineers Far East District Kunsan Resident Office resident engineer (far left), take part in a ceremonial groundbreaking for the consolidated security forces squadron facility May 13 at Kunsan Air Base. (Photo by Stephen Satkowski)

- April 1984: Construction of medical facility/dental clinic at Osan Air Base began.

- 2006: Construction of transient lodging expansion at Camp Humphreys began.

- 2012: Construction of the new Operations and Aircraft Maintenance Unit Facility at Osan Air Base began.

- May 1985: Freedom Chapel at Camp Humphreys opened.

- 1986: Yongsan Bowling Center opened.

- 2000: Construction of Camp Humphreys Family Housing began.

- 2011: Fire station at Fleet Activities Chinhae opened.

- June 1987: Health and Dental Clinic at Camp Humphreys opened.
- 1988: Yongsan commissary completed.

This spring in FED History

- 1987: FED received a \$25,000 award for energy conservation from the 501st Support Group.

- 1997: FED Hydrology and Construction Section won Federal Organizational Excellence award.

- 2003: Construction of Whole Barracks Renewal Project at Camp Carroll began.

- 2009: Talon Cafe Dining Facility at Camp Humphreys opened.

- 2012: Construction of new barracks and tactical equipment maintenance facility at Camp Carroll began.

Col. Bryan S. Green

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