

Figure 1

Preparing Engineers to Tackle Mission Challenges

“CH2M HILL has provided extensive instruction in CONUS and OCONUS on Master Planning tenets throughout the CENTCOM AOR. Their team’s efforts have been commended by the Commanding General and the men and women of the 235th CEF. Each class of CEMC course students has selected the Master Planning module as one of the top two blocks of instruction that provides relevant real world experiences for deploying troops. CH2M HILL is a valuable extension of the ARCENT G7 Operational Engineer team and we cannot do what we do to support troops in OIF and OEF without them.”—MAJ Timika Wilson, ARCENT G7 Chief, Plans and Programming

By Mrs. Erika McGinley and Mr. Rob Coker

Engineers deploying to the U.S. Central Command (CENTCOM) area of responsibility (AOR) rely

heavily on pre-deployment training along with on-the-job training to learn the tools essential to accomplish their mission.

Although tactics, techniques, and procedures change, the basic mission of these engineers remains the same: to enable and sustain the training and warfighting missions of the units they support. These are daunting tasks, especially in the ever-

changing threat conditions and austere environments of the AOR. To counter these changing threats and improve regional stability, it is essential that deploying engineers, whether in uniform, in support of the U.S. Army Corps of Engineers (USACE), or contractors executing construction, understand the engineering environment they will soon enter.

The “engineering environment” includes more than the physical battle space. Congressional mandates on contingency construction, environmental compliance, “colors” of money, and host nation regulations are examples of additional tools engineers must understand and then use effectively while deployed. Several agencies have recognized this need and have recently established just-in-time training courses to prepare engineers who will enter the CENTCOM AOR. Army Central (ARCENT), USACE, Air Force Central (AFCENT), along with the Society of American Military Engineers (SAME) courses provide “boots on the ground” perspective of the contingency engineering environment. As a result of CH2M HILL’s Master Planning work in the AOR, several members of the company’s Government Facilities and Infrastructure Business Group have had the privilege to support these training initiatives.

Each training course outlines the background and importance of a master plan and includes instruction in master planning as a first step in identifying the engineering environment. The need for master planning in the CENTCOM AOR stems from a 2004 directive from the House and Senate Appropriations Committees to the Department of Defense to prepare comprehensive, detailed master plans for changing infrastructure requirements at U.S. military facilities in each of the overseas regional commands.

Master planning starts the project life cycle by identifying operational requirements. In Iraq and Afghanistan, planning occurs at the tactical level through local Facility Engineer Teams (FET) and at the operational level through Multi-National Corps-Iraq (MNC-I) in Iraq or U.S. Forces Afghanistan in Afghanistan. These operational plans support the strategic plans within the Global Defense Posture. Project requests are approved by CENTCOM and supported through the component commands of ARCENT or AFCENT. Once approved and prioritized by CENTCOM, projects are submitted for final approval to Congress. The projects are line items in the budget and once signed by the President, become law.

In summary, the purpose of a base camp master plan (BCMP) is:

- To serve as a tool to enhance decision-making and improve mission efficiency.
- To coordinate and prioritize competing real property assets and to distribute limited resources in a way that best supports the mission.
- To provide zoning for the installation and footprints for Major Command tenants.
- To provide a validated and synchronized road map (project list) for future development.

- To propose projects to meet short- and long-range plans and to provide documentation for funding approval.

The master planning process is similar to the Military Decision Making Process (MDMP). (Figure 1 on facing page). Like the MDMP, the master planning process analyzes mission requirements (data evaluation) and develops courses of action (concept development). As an approved course of action results in an operations order, an approved planning concept results in a BCMP document. Furthermore, as an operations order has defined paragraphs and annexes, a BCMP also has defined chapters and appendices. The master planning training emphasizes the importance of longer term outlooks and orients its participants to the components and process of preparing a BCMP.

Key CENTCOM governing regulations are identified, most notably the CENTCOM “Sand Book,” USCENTCOM Regulation 415-1, 17 December 2007. Discussion topics include real-world examples of operations and planning contexts at various bases in the AOR such as explosive and antiterrorism/force protection constraints, land use, infrastructure systems, airfield planning, environmental awareness, and project programming timelines.

Since the BCMP serves as the basis for subsequent project programming, development, and execution it is included in the recent pre-deployment training. One of the more recent training initiatives is the USACE-ARCENT Contingency Engineer Management Course (CEMC). Prior to the CEMC, both ARCENT and USACE were aware of a significant training shortfall provided to personnel deploying to the CENTCOM AOR in support of overseas contingency operations. As a result, each agency was developing separate contingency engineering training.



A master plan can provide phased plans to replace initial construction with higher density relocatable buildings. When the threat situation allows, constructing two-story structures further increases density, freeing valuable real estate for other functions. (All photos and graphics courtesy of the authors)

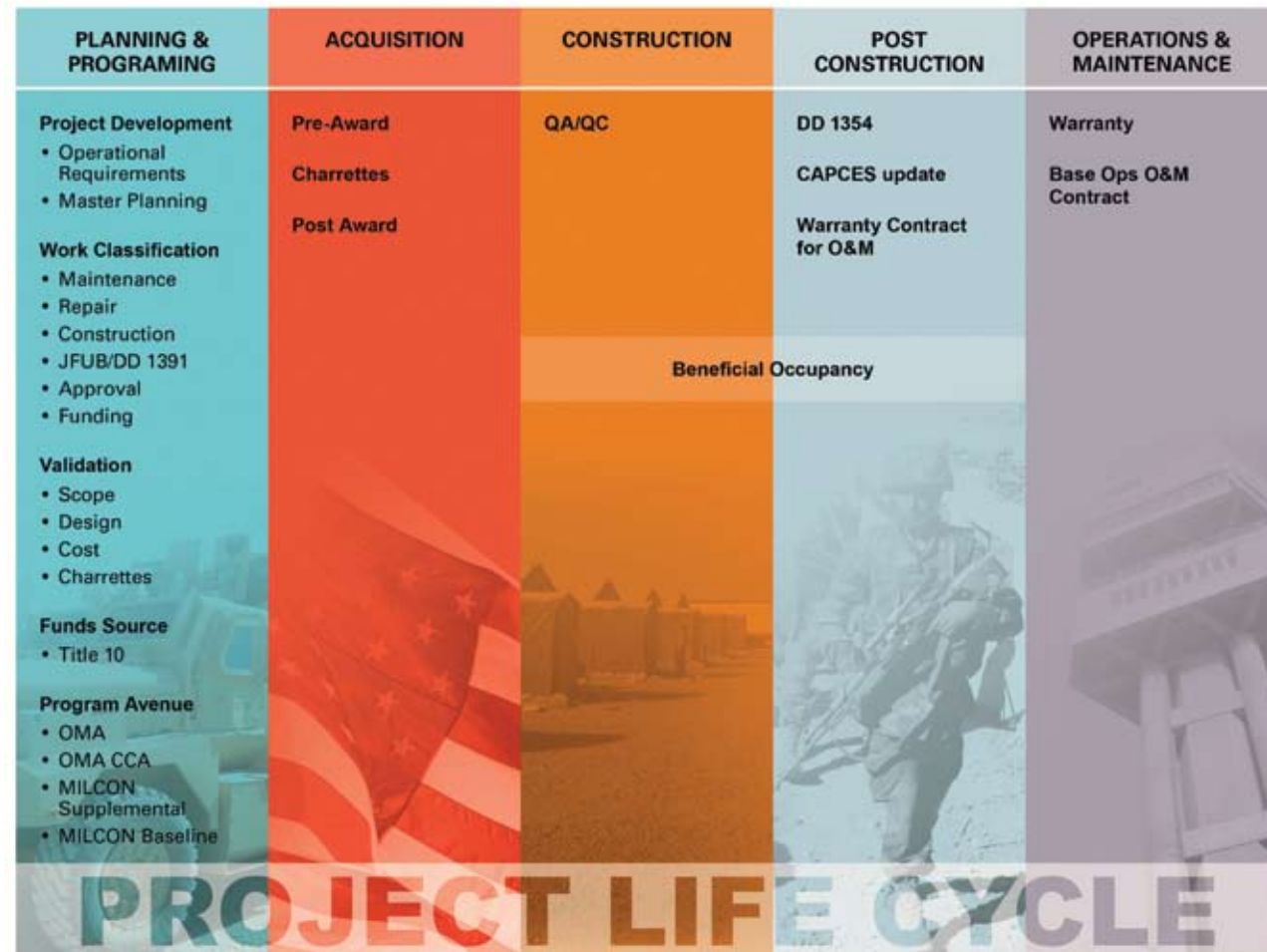


Figure 2

The CEMC consolidates the efforts of ARCENT and USACE into a cohesive training opportunity. Although ARCENT and USACE are Army-centric organizations, the course is intended for all mid- and senior-level engineers, regardless of branch of service. The week-long course is normally taught at the Readiness Support Center in Mobile, Alabama, although the instructors have traveled to take the training to other locations.

The CEMC does not replicate U.S. Army Engineer School, Joint Engineer Operations Course, Service Department, or USACE PROSPECT training, and is not construction management. It is specifically focused on Contingency Engineering and non-Sapper/Combat engineering. Through coordination with in-theater commands and instruction based on lessons-learned, the training follows the phases of the project life cycle to prepare mid- and senior-level engineer leaders for upcoming deployments. Transitioning a project from a planning concept in a BCMP to execution on site is a challenging task. Figure 2 above illustrates the project life cycle, the centerpiece of the CEMC curriculum. At the CEMC, three days are dedicated to instruction on ushering a project from the planning step through the remaining steps in the project life cycle.

CH2M HILL Military Master Planners have had the privilege of assisting in other training initiatives as well. Since 2007,

the SAME has provided a free distance learning professional development course open to military engineers deploying to contingency theaters around the world. The course, titled "Project Management in the CENTCOM AOR," functions as a virtual classroom with a web-based seminar. As part of this course CH2M HILL provides an overview block of instruction specifically citing master planning examples and lessons learned in the AOR.

In June 2008 and April 2009, instruction was provided to deploying FETs from the Maryland Air National Guard in preparation for their assignments in Afghanistan.

In December 2008 and March 2009, AFCENT sponsored a three-day Expeditionary Engineering training curriculum at the Air Force Institute of Technology at Wright-Patterson Air Force Base, Ohio. The course was for deploying junior Air Force officers and included a module on overseas master planning.

In April 2009, a CH2M HILL planner presented West Point cadets with a presentation on "Master Planning in the CENTCOM AOR."

The BCMP allows the echelons of command to begin base development with the end state in mind. As development follows a methodical process, efficiencies are gained in project execution while mitigating impacts to the operational missions

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of the base. Although the challenges of developing a master plan in the AOR are numerous, they are far outweighed by the satisfaction of a base becoming more efficient by following its master plan.

Engineer planners, usually in the form of FETs, are critical to assisting the base leadership in developing a long-term vision. Even these FETs are often over-burdened with daily tenant unit requests and find little time to focus on master planning. However, joint instruction on master planning and the project life cycle provided prior to deployment will better prepare these engineer planners for success.

AE

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Airfield planning is an important part of the base camp master plan for any base with fixed and/or rotary wing operations. Adhering to imaginary airfield surface criteria, such as the ones illustrated, prevents facilities from being constructed in no-build airfield clearance zones and ensures safety for airfield operations and other surrounding land uses.