

# DRAFT

## WHITE PAPER

### Use of Standard Designs for US Army Facilities

#### **I. BACKGROUND**

The Army is pursuing the most comprehensive transformation of its forces since the early years of World War II. This is being done at a time when funding is limited due to ongoing war fighting. A key component to meeting the performance, schedule, and cost control demands of this transformation, is moving away from acquiring facilities one at a time. USACE has turned to the standing up of Centers of Standardization and standard designs for 41 facility types as described below.

In addition to standardized designs, the Army is open to using non-traditional construction methods, such as Pre-Fabricated, Pre-Engineered, Panelized, Tilt-up, and Permanent Modular construction. This Construction Program will consist of the following facility types: Physical Fitness Facility, Outdoor Sports Facility, Child Development Center – Infant/Toddlers, Child Development Center – School Age, Youth Activity Center, Consolidated Fire, Safety & Security Facility, Fire Station, Army Community Service Center, Bowling Center, Hazardous Material Storage Facility, Close Combat Tactical Trainer, Military Operations Urban Terrain Facility, Training Ranges, Battle Command Training Center, Training Support Center, Army Reserve Center, Operational Readiness Training Complex (ORTC), General Instruction Building, Classroom, Enlisted Personnel Dining Facility, Military Entrance Processing Station, Family Housing, Information Systems Facility, Criminal Investigation Facility, Religious Facility, Access Control Points, Aviation – Vertical Construction, 4-Star HQ Facility, National Guard Armory, Company Operations Facility, Tactical Equipment Maintenance Facility, Brigade Operations Complex, Brigade/Battalion HQ: Admin, Command and Control Army & Corps HQ: Admin/Ops, Deployment Facility, Unaccompanied Enlisted Personnel Housing (Barracks), Basic Combat Training Complex (BCT) / One Station Unit Trainee (OSUT), Advanced Individual Training Complex (AIT), General Purpose Warehouse, Central Issue Warehouse, Hospitals, and Medical Facilities (health clinics, dental clinics, and medical clinics) to support the Centers of Standardization Army MILCON requirements. All buildings are to be considered permanent and shall have a life span of approximately 25 years.

#### **II. BENEFITS OF STANDARDIZED DESIGNS**

USACE is viewing standardized designs from the ability to set the design of a facility across the entire Army and then only accommodate unique regional or site conditions as needed. The number of like facilities can be adjusted to accommodate size requirements. In this manner (like the “big box” retail stores and lodging chains), the Army not only saves on design costs for new facilities, but as contractors gain experience with constructing a certain type of facility, their costs will also be less for each new facility. Using design-build (adapt-build for standardized designs) multi-year, multi-facility contracts will assure these cost reductions. In addition, having consistent facilities for like functions should have operational and training benefits, as personnel move between facilities.

#### **III. PROBLEMS OF STANDARDIZED DESIGNS**

If in fact the Army was able to hold facilities designs for many years, this approach might work. In practice there are many factors that will keep this from happening. They include:

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- a. Continuing changes in functional concept – As has been seen for many facilities in the past, concepts change over time and as experience is gained. Hospitals have changed from centralized nurses stations with full service capabilities to local specialized stations and back repeatedly, with considerable design and remodeling penalties. Open teaching concepts resulted in open classrooms and complete educational facilities being built to accommodate them. When a concept goes out of favor, the facilities left remain inefficient for years.
- b. Evolving designs and configuration management – While “big box” retailers and lodging providers appear to be putting up the same facilities everywhere, they are in fact undergoing continuous change. Improvements and adjustments based on operations, use, and new innovations are continuously being incorporated into the facilities, with considerable design and configuration control functions being performed. For a program the size of the Army transformation, with numerous bases involving 41 facility types already identified, accommodating facility evolution is a major undertaking that may override the cost and schedule benefits envisioned.
- c. Human factors (quality of life) considerations – People can become bored with their surroundings and welcome change. Many people join the Army for the promise of such regular changes. As facilities become homogenous, the human impact may be negative.
- d. Contract management and responsibilities – Under the present plans, facility type contracts will be regionally awarded by Centers of Standardization for the entire Army. This may result in 41 or more contractors working at a base, all contractually reporting to different Centers around the Country. While a local site/civil contractor will be responsible for coordination, access, earth movement, and some utilities connections (others provided for by utility providers), that contractor has no contractual authority over the facilities contractors. As design changes and change conditions take place, the contractual problems increase, especially with performance based individual contracts. Coordinating the impacts and actions of 42 or more entities may be impossible for a USACE resident engineer, with no authority over anyone, and Districts with only limited task order authority.
- e. Accommodating differing user needs - While the facilities may be standard, the users (despite military training and requirements) will differ. If involved during construction they may want input, that if rejected will later hamper their acceptance of the final facilities and increase their efforts to eventually make changes.

## **IV. CONCLUSIONS**

USACE has a real need for changing how they acquire new facilities. Standardized designs offer an opportunity for maintaining quality while potentially reducing costs and schedules. Potential problems arise from a too aggressive approach. A reasonable alternative would be to establish standardized functional, operational, and technical standards and criteria and general concept designs through the Centers of Standardization, but allow District awards of design-build contracts for optimized base or regional multi- or single-facility work. Such a compromise would gain most of the benefits envisioned, while addressing the potential problems.