



DEPARTMENT OF THE ARMY
ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

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MEMORANDUM FOR

Commander, United States Army Corps of Engineers (CEMP), 441 G Street NW,
Washington, DC 20314
Commander, Installation Management Command, 2405 Gun Shed Road, Fort Sam
Houston, TX 78234

SUBJECT: Revised Army Standard for Operational Readiness Training Complex

1. The enclosed revision to the Army Standard for Operational Readiness Training Complex (ORTC) supersedes ORTC standards signed on 16 Feb 06. Only the Assistant Chief of Staff for Installation Management has authority to approve exceptions to this standard. Waivers from the Army Standard must be approved in accordance with AR 420-1.
2. The Army Standard is mandatory for Military Construction, Army projects in the FY14 program and beyond. Designs based on the Army Standard and the Army Standard Design Criteria will be developed consistent with MILCON Business Process.
3. Installation Status Report-Infrastructure and Real Property Planning and Analysis System methodologies will be updated to reflect the revised standard in coordination with the POCs listed below.
4. EPDF Facility Design Team (FDT) co-chairs are: LTC Timothy J. O'Neil, DCS G-37, TRC, Timothy.J.ONeil@conus.army.mil, 703-614-0505, and Mr. Charles J. Huffman, OACSIM, DAIM-ISH, Charles.J.Huffman.civ@mail.mil, 571-256-9744. The ORTC USACE Center of Standardization FDT representatives from Louisville District are: Mr. Doug Pohl, Doug.Pohl@usace.army.mil, 502-315-6233, and Ms. Melissa C. Hill, Melissa.C.Hill@usace.army.mil, 502-315-6232.

Encl
As


MICHAEL FERRITER
Lieutenant General, GS
Assistant Chief of Staff
for Installation Management

The Army Standard for Operational Readiness Training Complexes (ORTCs)

Criteria for ORTCs was developed to support Reserve Component Home Station Training (Annual and Weekend Transient Training), Active Component training when away from home station, and Mobilization/Demobilization. The criteria includes mandatory requirements, functional relationships, and associated spaces necessary for new ORTCs. Historic, renovation and revitalization projects shall reasonably attempt to follow these Army Standards.

Item	Mandatory Criteria																
Gross Area of Facilities	<p>GSF (Gross Square Feet) Deviation: Facility constructed gross area shall not exceed 105% of space allocation set forth in this document to accommodate site, construction, or environmental factors.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Barracks</td> <td style="width: 50%;">Varies by number of Soldiers</td> </tr> <tr> <td>Officers Qtrs (Sr Ldrs Qtrs)</td> <td>Varies by number of Senior Leaders</td> </tr> <tr> <td>Company Headquarters</td> <td>3,300 GSF (per Company)</td> </tr> <tr> <td>Battalion Headquarters</td> <td>7,400 GSF (per Battalion)</td> </tr> <tr> <td>Brigade Headquarters</td> <td>10,300 GSF (per Brigade)</td> </tr> <tr> <td>Vehicle Maintenance Shop</td> <td>10,200 GSF (per Battalion)</td> </tr> <tr> <td>Small Dining Facility</td> <td>18,000 GSF (feeds one Battalion)</td> </tr> <tr> <td>Large Dining Facility</td> <td>21,300 GSF (feeds two Battalion)</td> </tr> </table> <ul style="list-style-type: none"> • Construction requirement is based on population and whether installation has existing facilities on hand that can serve in lieu of constructing new facilities. Facility consolidation is encouraged where feasible to reduce overall Installation footprint. • Where multiple functions are included in one building, the GSF is limited to a maximum of each functional requirement added. See guidance section for additional information. 	Barracks	Varies by number of Soldiers	Officers Qtrs (Sr Ldrs Qtrs)	Varies by number of Senior Leaders	Company Headquarters	3,300 GSF (per Company)	Battalion Headquarters	7,400 GSF (per Battalion)	Brigade Headquarters	10,300 GSF (per Brigade)	Vehicle Maintenance Shop	10,200 GSF (per Battalion)	Small Dining Facility	18,000 GSF (feeds one Battalion)	Large Dining Facility	21,300 GSF (feeds two Battalion)
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Accessibility	<p>Dining Facilities – Administrative areas, Staff Restrooms and approaches to public entrances shall comply with Architectural Barriers Act (ABA). While kitchen and serving equipment shall not be required to be accessible, the pathways through these equipment and serving areas shall be accessible.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Barracks</td> <td style="width: 50%;">Not Applicable</td> </tr> <tr> <td>Officers Qtrs (Sr Ldrs Qtrs)</td> <td>Not Applicable</td> </tr> <tr> <td>Vehicle Maintenance Shop</td> <td>Not Applicable</td> </tr> <tr> <td>Company Headquarters</td> <td>Not Applicable</td> </tr> <tr> <td>Battalion Headquarters</td> <td>ABA Accessible</td> </tr> <tr> <td>Brigade Headquarters</td> <td>ABA Accessible</td> </tr> </table>	Barracks	Not Applicable	Officers Qtrs (Sr Ldrs Qtrs)	Not Applicable	Vehicle Maintenance Shop	Not Applicable	Company Headquarters	Not Applicable	Battalion Headquarters	ABA Accessible	Brigade Headquarters	ABA Accessible				
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Energy and Sustainability	Facilities shall be designed to meet energy and sustainable design requirements as established by Federal Law and Department of the Army policy.												
Antiterrorism / Force Protection	Facilities and sites shall meet all requirements in UFC 4-010-01, <i>DoD Minimum Antiterrorism Standards for Buildings</i>												
Telephone and Data Outlets	Telecommunications infrastructure shall meet Installation Information Infrastructure Architecture (I3A) and American National Standards Institute/Telecommunications Industry Association/Electronic Industries Alliance (ANSI/TIA/EIA) 568 and 569 requirements.												
Private Operated Vehicle (POV) Parking	<table border="0"> <tr> <td>Barracks</td> <td>No POV Requirement</td> </tr> <tr> <td>Officers Qtrs (Sr Ldrs Qtrs)</td> <td>Minimal POV Rqmt, see Guidance below</td> </tr> <tr> <td>Company Headquarters</td> <td>No POV Requirement</td> </tr> <tr> <td>Battalion Headquarters</td> <td>No POV Requirement</td> </tr> <tr> <td>Brigade Headquarters</td> <td>No POV Requirement</td> </tr> <tr> <td>Vehicle Maintenance Shop</td> <td>No POV Requirement</td> </tr> </table> <p>Dining Facility – Provide POV parking where Dining Facility is staffed by other than transient troop Food Service Personnel as indicated in DFAC below.</p>	Barracks	No POV Requirement	Officers Qtrs (Sr Ldrs Qtrs)	Minimal POV Rqmt, see Guidance below	Company Headquarters	No POV Requirement	Battalion Headquarters	No POV Requirement	Brigade Headquarters	No POV Requirement	Vehicle Maintenance Shop	No POV Requirement
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Vehicle Maintenance Shop	No POV Requirement												
Elevator	Provide elevator system for buildings over two stories having minimum car depth of 7.5 ft and minimum 2500 lb capacity for freight.												
Classroom Training	Where training requires classroom environment, provide seating at briefing tables for 60 persons per Company.												

TRANSIENT TRAINING BARRACKS (F72114)

Item	Mandatory Criteria
Sleeping Area	<p><u>Minimum:</u> Comply with AR 420-1, Table 3-10 for minimum standards of acceptable space and privacy.</p> <p><u>Maximum:</u></p> <ul style="list-style-type: none"> • E1-E6 – 90 NSF living area per Soldier, open bay, central latrine/shower. • E7-E8, WO1- CW3, O1- O3 – 125 NSF living area per Soldier, not more than two per room, shared bath. • E9, CW4, CW5, and O4 and above – 250 NSF living area per Soldier, private room, private bath.

Company Storage	Provide minimum 500 NSF space per company for storage, admin, weapons storage, conferencing, etc.
Laundry	Provide shared laundries, one per floor, with a minimum one washer per 10 PN and one dryer per 8 PN within the facility, based on the maximum sleeping capacity.
Restrooms, Showers, and Water Coolers	Provide minimum number of toilets, sinks, showers and electric water coolers in accordance with UFC 3-420-01 <i>Plumbing Systems</i> as indicated for Army UEPH facilities.
Janitor Closet	Provide a minimum 30 NSF janitor closet with mop sink per floor.

TRANSIENT TRAINING OFFICERS' QUARTERS (SR LEADERS QTRS) (F72412)

Item	Mandatory Criteria
Sleeping Area	<p><u>Minimum:</u> Comply with AR 420-1, Table 3-10 for minimum standards of acceptable space and privacy.</p> <p><u>Maximum:</u></p> <ul style="list-style-type: none"> • E7-E8, WO1-CW3, O1-O3 – 125 NSF living area per Soldier, not more than two per room, shared bath. • E9, CW4, CW5, and O4 and above – 250 NSF living area per Soldier, private room, private bath.
Common Area	Provide minimum 800 NSF for use as common space as a conference room, break room, storage, or office space.
Laundry	Provide shared laundries, one per floor, with a minimum of one washer per 10 PN and one dryer per 8 persons within the facility, based on the maximum sleeping capacity.
Janitor Closet	Provide a minimum 30 NSF janitor closet with mop sink per floor.

TRANSIENT TRAINING VEHICLE MAINTENANCE SHOP (F21406)

Item	Mandatory Criteria
Vehicle Maintenance	<ul style="list-style-type: none"> • Provide two 32'x64' drive thru service bays with minimum 24 ft wide overhead doors. • Provide one maintenance pit, minimum 48 ft x 3.5 ft. • Provide space for maintenance workbenches within service bays which shall also be used as weapons cleaning tables. • Provide a minimum interior bay clearance and overhead door height of 20 ft.
Battalion Warehouse	Provide minimum 2000 SF battalion warehouse with covered loading dock and forklift ramp.
Air Compressor	Provide minimum 50 NSF room for an air compressor.
Tool / POL Room	Provide minimum 500 NSF room for tool storage, weapons cleaning supplies, and POL (Petroleum, Oil and Lubricants).
SATS	Accommodate two (2) SATS (Standard Automotive Tool Set) outside the tool room including power and data connectivity and weather protection at doors.
Private Office	Provide one private office, minimum 110 NSF.
Restrooms	Provide minimum number of toilets, sinks, and electric water coolers in accordance with the International Plumbing Code.
Janitor Closet	Provide minimum 30 NSF janitor closet with mop sink.
PROGRAMMING OPTION Overhead Crane	As an Installation's option, provide one overhead bridge crane, capable of supporting 10-tons, integrated into the building structure to operate over the entire maintenance bay area.

TRANSIENT TRAINING COMPANY HEADQUARTERS (F14186)

Item	Mandatory Criteria
Administrative Area	Provide each company area with an open office administration area for at least 4 persons at minimum 48 NSF for each workspace, and a conference room to seat minimum 10 at a table.

Private Offices	Provide each company area with separate minimum 110 NSF offices for Commander, Executive Officer, and First Sergeant.
Janitor Closet	Provide minimum 30 NSF janitor closet with mop sink per company.
Restrooms	Provide minimum number of toilets, sinks, and electric water coolers in each Company area in accordance with the International Plumbing Code.
Weapons Vault	Provide each company area with a weapons vault constructed IAW AR 190-11, including IDS. Modular vault system is acceptable IAW UL 608 Class "M" vault. Include day gate.
Company Storage	Provide each company area with one company storage, NBC (Nuclear, Biological, Chemical) storage, COMMO storage, and Supply Officer space, overall minimum 450 NSF.

TRANSIENT TRAINING BATTALION HEADQUARTERS (F14184)

Item	Mandatory Criteria
Open Admin Area	Provide an open office administration area for minimum 20 persons, each provided a minimum of 48 NSF of working area.
Conference Room	Provide conference room with minimum 16 persons seating at a conference table with video conferencing capability.
Private Offices	Provide minimum 110 NSF private offices for CO, XO, CSM, staff section leaders (S1, S2, S3, S4, S6) & chaplain.
Storage	Provide separate storage rooms for medical supplies and general storage at a minimum 80 NSF each.
Mail Distribution	Provide a minimum 110 NSF mail distribution room.
Janitor Closet	Provide minimum 30 NSF janitor closet with mop sink
Restrooms	Provide minimum number of toilets, sinks, and electric water coolers in accordance with the International Plumbing Code.

TRANSIENT TRAINING BRIGADE HEADQUARTERS (F14187)

Item	Mandatory Criteria
Open Admin Area	Provide an open office administration area for minimum 48 persons, each provided a minimum 48 NSF of working area.
VTC Room	Provide a Brigade Video Teleconference (VTC) Room that seats minimum 16 persons at conference table and includes video teleconferencing capability.
Private Offices	Provide minimum 110 NSF private offices for CO, XO, CSM, staff section leaders (S1, S2, S3, S4, S6) surgeon & chaplain.
Storage	Provide minimum 150 NSF for admin storage, and a minimum 100 NSF conference room storage.
Mail Distribution	Provide minimum 110 NSF mail distribution room.
Janitor Closet	Provide minimum 30 NSF janitor closet with mop sink.
Restrooms	Provide minimum number of toilets, sinks, and electric water coolers in accordance with the International Plumbing Code.
PROGRAMMING OPTION Secure Communications Room	Provide secure communications room to accommodate Secret Internet Protocol Router Network (SIPRNET).

TRANSIENT TRAINING DINING FACILITY (F72212)

Item	Mandatory Criteria
Dining Facility	<p><u>Dining Facility (DFAC)</u>: Two alternate Dining Facilities (DFAC) are available with capacities based on 95% utilization factor:</p> <ul style="list-style-type: none"> • Small DFAC: One Battalion serving capacity within 90 minutes. • Large DFAC: Two Battalion serving capacity within 90 minutes. • Construct a Large DFAC where a two battalion capacity requirement exists in lieu of constructing two Small DFACs.

Patron Seating Requirements	<u>Patron Seating Minimum Requirements:</u> Small DFAC 236 Seats Large DFAC 472 Seats
Private Operated Vehicle (POV) Parking / Service Deliveries	Provide sufficient access for turnaround/backing space for tractor trailer (WB-62) traffic for food service deliveries. <u>Staff Parking Minimum Requirements:</u> Small DFAC 42 Spaces Large DFAC 64 Spaces
Entrances / Exits	<ul style="list-style-type: none"> • Provide hand wash stations immediately inside the entrances. • Provide direct access from dish drop-off to facility exits.
Field Feeding	Provide an area accessible from dock for field feeding preparation and storage.
Materials Receiving Area	<ul style="list-style-type: none"> • Provide two dock spaces (each sized for a WB-62 trailer) with one dock leveler at 46 inches above grade. Provide dock bumpers and truck restraints at each dock • Provide can wash directly accessible from the loading dock.
Administrative Areas	<ul style="list-style-type: none"> • Provide 110 minimum NSF office for Dining Facility Manager with unobstructed visual monitoring of food preparation areas ensuring privacy for closed door counseling sessions. • Provide a semi-private 160 minimum NSF office that serves System Manager and Administrative Clerk with unobstructed visual monitoring of food preparation areas.
Dining Areas	Provide 15 NSF for each patron. Each major dining space shall include infrastructure for classroom use (data and power outlets for laptop and ceiling mounted projector), folding panel partitions, and projection surface.
Restrooms	Provide minimum number of toilets, sinks, and electric water coolers in accordance with the International Plumbing Code. Provide separate restrooms for Patrons and Service employees as well as gender specific restrooms for both.
Locker / Break Room	<u>Minimum Locker Requirements:</u> Small DFAC 42 Lockers Large DFAC 64 Lockers
Refrigerated Storage	Provide walk-in cooler and freezer floors at same elevation as kitchen floor.

Dry Food Storage	Provide one desk location adjacent to entry door in storage space.
Dishwashing	Provide tray drop off and dishwasher.
Receiving & Staging Area	<ul style="list-style-type: none"> • Exterior area adjacent to the loading dock shall accommodate two front loaded trash dumpsters, a front loaded recycling dumpster, a front loaded cardboard dumpster, two grease recycling barrels, and underground grease interceptor. • Dock area shall be constructed of rigid concrete pavement to withstand tractor trailer traffic and truck maneuvering and providing proper drainage.
Mechanical System	<ul style="list-style-type: none"> • Where required by local and/or state requirements a solid interceptor can be provided prior to the grease interceptor. • The grease interceptor shall be provided for collecting and containing grease from waste drain line flows emanating from kitchen food preparation and dishwashing and pot/can wash areas. The grease interceptor shall be located outside of facility in a location that is accessible to a vacuum grease collection truck. <p><u>Dining Facility Grease Interceptor Sizes:</u> Small DFAC 2,000 gallons Large DFAC 3,000 gallons</p>
Communications System	The facility shall have a building-wide, zoned paging/intercom system with announcement and music (plug-in) capabilities from the Administrative Office. This paging/intercom system can be integrated with building mass notification system.

GUIDANCE

1. General Design Philosophy: The Operational Readiness Training Complex (ORTC) Army Standard provides parameters for basic, austere, sustainable and durable facilities to accommodate transient training functions. Facility requirements are predicated on current force structure alignments. ORTC facilities are organized in battalion level complexes. A Brigade level complex is composed of six (6) individual battalion sets. Each battalion set can accommodate a population of 848 (intended) to 1568 (surge capacity) persons with a brigade accommodating an overall BCT/UA population of 5088 (intended) to 9480 (surge capacity) persons.
2. Standard Design (SD) for ORTC: The ORTC Standard Design includes drawings and detailed requirements that implement this Army Standard for new construction, available on the internet on the following website:
<http://mrsi.usace.army.mil/cos/louisville/SitePages/ortc.aspx>.
3. ORTC Complex – A battalion level ORTC includes all the buildings listed below arranged in a single contiguous complex meeting the “Mandatory Criteria” listed above. The complex may be constructed in one phase or in multiple phases over many years. Existing buildings, hardstand, roads and infrastructure may be used to meet the functional requirements. The Installation may choose to only construct some of these facility types as determined by training requirements and troop throughput. Also, installations are encouraged to supplement new construction with renovation of existing buildings to meet functional requirements.
4. Facility Category Codes: The ORTC complex does not have a specific category code. Individual buildings within the complex are assigned category codes. These category codes and building titles are determined by Army Pamphlet 415-28. The following facility types make up a battalion level ORTC with the exception of the Brigade Headquarters which is required only at the brigade level.

Facility Category Code	Title from AR 415-28	Buildings required for Battalion level ORTC
72114	Enlisted Barracks, Transient Training	Four-2 story or two-4 story bldgs. See note 1.
72412	Officers Quarters, Transient Training	One Bldg for senior leaders' quarters.
72212	Dining Facility, Transient Training	One Small DFAC. See note 2.
21406	Vehicle Maintenance Shop, Transient Training	One Bldg
14184	Battalion Headquarters Bldg, Transient Training	One Bldg
14186	Company Headquarters Bldg, Transient Training	One Bldg
14187	Brigade Headquarters Bldg, Transient Training	One per 6 Battalions. See Note 3.

Note 1: Barracks may also be 3-stories, maintaining the basic footprint.

Note 2: The Large and Small DFACS have the same category code. A Large DFAC may be used in lieu of two Small DFACs when 2 battalions are planned.

Note 3: Provide one Brigade HQ after four battalions have been built.

5. Barracks Options:

- a. Installations are encouraged to program and construct barracks facilities first.
- b. The SD barracks is designed to accommodate 160 persons in 8 open bay sleeping areas and 8 senior leaders in 2+2 rooms.
- c. The SD also provides options allowing the open bays to be used for company level functions including classrooms, administration, storage, and serving prepackaged meals. These functions are implemented by simply programming furniture packages for the specific need (no hard wall changes are required). Furniture options are flexible and may be converted as needed.

6. General Design Considerations:

- a. Facility designs must meet essential transient training mission requirements. Transient training missions require a minimum of 3 days to a maximum of 90 days with 3 weeks being the most frequent duration.
- b. Consolidate building types whenever possible. Examples: (1) Co-locate Battalion and Brigade HQ, (2) Co-locate Vehicle Maintenance and Company HQ.

- c. Use multi-story designs whenever possible. Examples: Use two-4 story barracks in lieu of four-2 story barracks. If multiple battalions are planned for the installation, use one-4 story Officer Quarters in lieu of two-2 story Officer Quarters.
- d. If multiple battalions are planned for the installation, use one Large DFAC in lieu of two Small DFACs.
- e. Facilities must be of durable construction to withstand the rigors of frequent training rotations by different units.
- f. Durable prefabricated components and modular construction are encouraged.
- g. Facilities must be designed to meet energy and sustainable design requirements to reduce O&M costs.
- h. Facilities must incorporate natural lighting to conserve energy and improve comfort and morale.
- i. Showers are required for barracks only. Other ORTC facilities do not need showers since every soldier will have an assigned sleeping area on the installation.
- j. Maximize use of low cost, low maintenance, durable exterior finishes.
- k. Select low cost, low maintenance, durable interior finishes with neutral colors to reduce visual clutter.

7. Site Design Considerations:

- a. The Installation shall determine the total number of POV parking spaces required. At a minimum, in addition to the mandatory DFAC parking, POV parking should also be provided for a minimum of 25% of the Officers' Quarters (Senior Leaders' Quarters) sleeping capacity.
- b. Landscape the site with materials indigenous to the area, eliminating requirements for irrigation and minimizing maintenance.
- c. Utilize underground utility and telecommunications distribution where feasible.

8. Tactical Vehicle Parking:

- a. The Installation shall determine where and how to accommodate a 33,000 sy tactical vehicle parking area for the anticipated training throughput. A concrete hardstand within the complex is preferable. As a minimum, the parking area may be provided as gravel having a density to accommodate the heaviest anticipated vehicle. The parking area may be split into smaller lots when available site area is limited.

- b. If a gravel tactical vehicle parking area is provided, include concrete pads constructed for vehicle maintenance, sized and designed to accommodate the largest vehicles expected for training, also providing for safe use of jack stands and creepers. The number of such pads shall be determined by the Installation based on expected throughput for training units. Training units must develop a plan to comply with environmental considerations when parking and maintaining vehicles on such a gravel parking area.
 - c. The Installation may include security fencing around the tactical vehicle parking area. Since the training units are not assigned to the Installation, this AS does not have a mandatory requirement for fencing but posting dedicated guards may be needed as executed in the field. This is per AR 190-51, 3-5, d. *The motor pool will be protected by a perimeter fence or dedicated guards,* and then e.(2) for security risk 1, Exception (a), *Vehicles actively employed in tactical exercises and field operations, undergoing test and evaluation, or pending turn-in through property disposal channels.*
 - d. The Installation may include lighting for the tactical vehicle parking area for safe operation of vehicle and personnel movement. This AS does not have a mandatory requirement for lighting since vehicle and personnel movement occurs in the field without lighting.
9. Renovation: Renovated facilities shall meet minimum functional requirements as indicated below. A new facility must be provided if renovation criteria cannot be met.
- a. Assure that minimum requirements for seismic issues, fire protection, life safety, sustainable design can be met with the buildings intended for renovation.
 - b. Seismic mitigation must occur if renovation cost is greater than 30% of the building's replacement value as determined by the Installation.
 - c. Fire Protection/Life Safety upgrades are required if renovation cost is greater than 50% of the building's replacement value as determine by the Installation.
 - d. Silver rating from GBCI is required for the FY13 program and beyond when the renovation provides significant opportunities for substantial improvement in the sustainable design elements of the building, including energy efficiency, or any renovation that exceeds \$7.5m.
 - e. ATFP upgrades (setbacks) are required if renovation cost is greater than 50% of the building's replacement value as determine by the Installation.

10. Barracks Design Considerations:

- a. Minimum functional requirements for renovation:
 - i. Comply with AR 420-1, Table 3-10 for minimum standards of acceptable space and privacy.
 - ii. Minimum 1 toilet, 1 shower, and 1 sink per 5 soldiers in the same bldg as the sleeping quarters.
 - iii. Minimum 1 elevator for barracks over 2 stories.
 - iv. Minimum 1 washer per 10 PN and minimum 1 dryer per 8 PN in the same bldg as the sleeping quarters.
 - v. Minimum 400 SF Company Storage used for functions such as Arms Storage, Equipment Storage, etc. within the sleeping quarters building or adjacent building.

11. Officers Quarters (Senior Leaders Quarters) Design Considerations:

- a. Construct an Officers Quarters (Senior Leaders Quarters) when a battalion level set is built-out. Prior to build-out, senior leaders may be housed in existing facilities or in the barracks.
- b. Minimum functional requirements for renovation:
 - i. Comply with AR 420-1, Table 3-10 for minimum standards of acceptable space and privacy.
 - ii. Minimum 1 toilet, 1 shower, and 1 sink per 2 senior leaders.
 - iii. Minimum 1 washer per 10 PN and minimum 1 dryer per 8 PN in the same bldg as the sleeping quarters.

12. Vehicle Maintenance Shop Design Considerations:

- a. Construct a VMS when a battalion level set is built-out.
- b. A VMS is for transient training, focusing on minor maintenance and repair work, not intended to provide the amenities found in a TEMF such as specialized storage.
- c. Locate the VMS within the tactical vehicle parking area to accommodate the drive through bays, and within the fence line if a fence is included.
- d. Provide concrete apron in front and behind the VMS to approximately 45 ft from the building for vehicle maneuvering and maintenance.
- e. Charge batteries in the Installation's existing facilities.
- f. Store POL, other than that in the Tool Storage, and hazardous material in the training units' mil-vans.

- g. Minimum functional requirements for renovation:
 - i. Two 32'x64' drive through service bays.
 - ii. One 48-foot long x 3'-6" wide concrete maintenance pit.
 - iii. One 2000 SF Warehouse Storage space, not required to be contiguous with the VMS.
 - iv. Space for maintenance workbenches within the service bays to also be used for weapons cleaning.
 - v. One Tool Storage area with access to SATS.
 - vi. One office space.

13. Company Headquarters Design Considerations:

- a. A Company Headquarters building is not required until a battalion level set is built-out. Use the company storage space in the barracks core area until a Company Headquarters is constructed.
- b. One module is provided for each company up to 6 companies to accommodate a battalion.
- c. When tactical vehicle parking is provided, locate the Company Headquarters for direct access to the parking area. If a fence is provided around the tactical vehicle parking, position the back of the Company Headquarters within the fence line and the front, outside the fence line.
- d. TA50 lay down may occur on any paved or graveled open area.
- e. Minimum functional requirements for renovation:
 - i. 750 SF Company Storage.
 - ii. One 400 SF weapons vault.
 - iii. Three enclosed offices.
 - iv. One open office space for 4 workstations.
 - v. One conference room to seat 10 PN.

14. Battalion Headquarters Design Considerations:

- a. Construct a Battalion Headquarters when a battalion level set is built-out.
- b. Minimum functional requirements for renovation:
 - i. Nine enclosed offices.
 - ii. One open office space for 20 workstations.
 - iii. One video conference room to seat 16 PN.
 - iv. One mail distribution room.

15. Brigade Headquarters Design Considerations:

- a. Construct a Brigade Headquarters upon completion of the fourth battalion set or later, as determined by the Installation.
- b. The Installation may include a Secure Communications Room to accommodate SIPRNET use, depending on expected training requirements. Size the room to accommodate one SIPRNET racks and two persons at a briefing table to access the SIPRNET, therefore not requiring secure communications lines to run to individual offices.
- c. Minimum functional requirements for renovation:
 - i. Ten enclosed offices.
 - ii. One open office space for 48 workstations.
 - iii. One video teleconference room to seat 16 PN.
 - iv. One Mail Distribution Room.

16. Dining Facility Design Considerations:

- a. Construct a Dining Facility when a battalion level set is built-out. When an independent dining facility is not justified, consider dual use spaces such as open barracks bays or classrooms for field feeding. Enclosed dining area should be planned using 15 net square feet per seat. Three feeding times per meal should be used for large requirements.
- b. Design the dining areas in the DFAC to also be used for classroom training. Include folding panel partitions to allow DFAC personnel to prepare meals without disturbing the classroom activities.
- c. The Installation will determine the minimum functional requirements for renovation based on compliance with TB MED 530, building codes, and industrial standards.