

# **CENTER OF STANDARDIZATION FOR NON-PERMANENT FACILITIES CATALOG**



**U.S. Army Corps of Engineers  
Middle East District**

# CENTER OF STANDARDIZATION FOR NONPERMANENT FACILITIES

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Established on 3 January 2012, the Center of Standardization for Non-Permanent Facilities is an Army's Design Agent for Temporary and Semi-Permanent Facilities world-wide. CoS responsibilities include evaluating UFC compliance for all Non-Permanent Facilities; and maintaining a catalog of Non-Permanent Designs, Facility Standards, and functional interior spaces. The CoS offers a wide variety of completed design options that are adaptable, scalable and modular for flexibility based on the location and purpose.

## POINT OF CONTACT

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## OUR VISION

Eliminate the auge - If you've seen one FOB you've seen one FOB. We are dedicated to eliminating the custom design paradigm of designing a unique facility to perform a single mission.

## OUR MISSION

To ensure UFC compliance of all non-permanent facilities and the safety of existing facilities in support of military operations, while meeting current and future contingency operational needs.

We maintain a library of non-permanent facility standards for use worldwide and create designs based upon these stadtards which can be customized for specific user needs at additional cost.

## OUR GUIDING PRINCIPLES

- Maximize use of local materials and methods
- Minimize use of heavy equipment
- Avoid use of fire sprinklers
- Maintain troop constructability
- Minimize maintenance inventory
- Eliminate load bearing interior walls

## SERVICES WE OFFER

- Functional space analysis to match customer needs to facility standards
- Ballistically protected facilites
- Facility envelope designs available in a range of materials
- Base camp layouts utilizing standard building designs
- Full construction estimates and itemized material listings for each facility and compound design
- Custom designs based on CoS standard designs
- Full color 3D printed models of designs
- High resolution 3D rendering/animation
- Compliance reviews to ensure life safety in accordance with UFC 1-201-01
- Consultation and inspections for existing facilities per UFC 1-201-02

## TYPES OF DESIGNS

### Off-the-Shelf (OTS) Designs

CoS for non-permanent facilities collects 1% of the Construction PA prior to sending designs for oversite, requests for information, and quality assurance.

### Assembly Designs / OTS Design

#### Modifications

Design modifications are at cost, typically range is between \$50k-\$500k.

#### Site Adaptation of Designs

At cost of geographical district, CoS, or other entity.

## HOW TO USE THIS CATALOG

All facilities are designed to be scalable with the flexibility to either be lengthened or shortened by the standard "bay" length, and are based o the same size to meet all mission requirements.

### 1. Decide Which Type of Construction Level

- Initial: Occupied for 6 Months (tents, containers and fabric structures)
- Temporary: 5 Years (Low cost, expedient and local material)
- Semi-Permanent: 25 Years (Enduring presence, similar to permanent)

### 2. Considerations in Selecting a Design

- What local material is available? (wood, concrete, CMU, sil rich in clay, etc.)
- What is the time frame you need this constructed?

### 3. Select Your Design

#### • Select an Envelope

Select an envelope based on the parameters (i.e., available materials, duration of facility need). CoS offers a variety of exterior for <25 year operations, single story, 2 story, or warehouse space.

#### • Select an Interior Layout

Choose from one of our many ready to use designs, or build your own layout from our pre-designed assemblies.

**Rough Order of Magnitude (ROM):**  
**= (Envelope Cost + Assembly Cost)\***  
**Area Cost Factor\* 1% (CoS Oversite)**

## CoS FOR NON-PERMANENT FACILITIES

Standard Designs Available for Execution, Any Layout in Any Envelope



**MUTE**  
Multi Use Tall Envelope  
Single story metal frame

**CUBE**  
Common Uniform Building Envelope  
Single story panelized modular facility

**SAFE**  
Standard Adaptive Facility Envelope  
Single or two story structure with integral ballistic protection

**TERRA HUT**  
Tactically Earthen Rapidly Raised Assembly Hut  
Single story constructed with onsite soil

**SAWS**  
Standard Adaptive Wood Structure  
Single or two story wood structure

**FACE**  
Four Area CMU Envelope  
Single story CMU envelope with direct fire protection

**Weather Shelter**  
Single story Hangar or Warehouse with metal  
and concrete construction

### INTERIOR LAYOUT READY FOR USE

Medical	Operations
Troop Medical Center	Administration
ROLE - 1	Armory
ROLE - 2	HQ
ROLE - 2 +	Logistics
Blood Storage	Aircraft
	Warehouse
Services	Life Support
Laundry	Weather Shelter
MWR	Tactical Operations Center
Barber Shop	Joint Operations Center
Exchange	
Post Office	
Religious Facility	
Fire Station	
Security	
ECP	
Search House	
Physical Fitness Center	
Tactical Equipment Maintenance Facility (TEMF)	

**Reduced Design Cost**  
CoS Standard Design: 1% of PA  
Compared to -  
New Design: 6-10% of PA

\*All CoS facility standard designs are compliant with the latest version of UFC 1-201-01, Non-Permanent Facilities in Support of Military Operations

## ENVELOPES SUMMARY - MASONRY STRUCTURES

\*Area Cost Factor = 1.0

	<b>TERRA HUT</b> <i>Option 1</i>	<b>TERRA HUT</b> <i>Option 2</i>	<b>FACE</b>	<b>SAFE</b>
<b>Occupied Duration</b>	Up to 25 Years	Up to 25 Years	Up to 25 Years	Up to 25 Years
<b>Construction Material</b>	Compressed Earth Block Structure	Compressed Earth Block Structure	CMU	Concrete Framing w/ CMU infill
<b>Default Dimensions</b>	3 Bay, 8m x 14.7m 118.3m <sup>2</sup>	14 Bay, 12.9m x 34.3m 442.5m <sup>2</sup>	14 Bay, 12.9m x 34.3m 34.3m 442.5m <sup>2</sup>	14 Bay, 12.9m x 34.3m 442.5m <sup>2</sup>
<b>Stories</b>	Single	Single	Single	Single/Two Story
<b>R Value</b>	Wall 20; Roof 40	Wall 20; Roof 40	Wall 20; Roof 40	Wall 21; Roof 40
<b>Roof Options</b>	Thatch, wood truss, metal truss, protected	Wood truss, metal truss, protected	Wood truss or metal truss	Protected roof with or without parapet

### TERRA HUT (Option 1)



### TERRA HUT (Option 2)



### FACE



### SAFE



## ENVELOPES SUMMARY - WOODEN STRUCTURES

\*Area Cost Factor = 1.0

	CUBE	CUBE Tower	CUBE Wide	SAWS
<b>Occupied Duration</b>	Up to 5 Years	Up to 5 Years	Up to 5 Years	Up to 25 Years
<b>Default Dimensions</b>	1 Bay, 7.3m x 4.9m 35.77m <sup>2</sup>	1 Bay, 4.9m x 4.9m 24m <sup>2</sup>	2 Bay, 12.2m x 7.3m 89.2m <sup>2</sup>	14 Bay, 12.9m x 34.3m 442.5m <sup>2</sup>
<b>Stories</b>	Single	3-4 Story	Single	Two Story
<b>R Value</b>	Wall 20; Roof 40	Wall 20; Roof 40	Wall 20; Roof 40	Wall 20; Roof 40
<b>Additional Information</b>	Original CUBE design	Currently under design, for watch tower purposes	Currently under design, for more space than CUBE, but occupied duration not as long as SAWS	Only wooden envelope designed to semi-permanent. Concrete foundation

**CUBE**



**CUBE Tower**



**CUBE Wide**



**SAWS**



## ENVELOPES SUMMARY - METAL STRUCTURES

\*Area Cost Factor = 1.0

	MUTE 4	MUTE 6	Weather Shelter Hangar	Weather Shelter Warehouse
<b>Occupied Duration</b>	Up to 25 Years	Up to 25 Years	Up to 25 Years	Up to 25 Years
<b>Default Dimensions</b>	30 Bay, 12.4m x 90.5m 1122.2m <sup>2</sup>	30 Bay, 12.4m x 90.5m 1122.2m <sup>2</sup>	961m <sup>2</sup> , 26m x 38.3m	961m <sup>2</sup> , 26m x 38.3m
<b>Eave Height</b>	4m	6m	9.35m	9.35m, can be shortened
<b>R Value</b>	Wall 20; Roof 40	Wall 20; Roof 40	Wall 20; Roof 40	Wall 20; Roof 40
<b>Additional Information</b>	Metal building primary use is warehouse -eave height complies with fire code	Metal building primary use is nonwarehouse uses, for ex- Vehicle maintenance	Hangar space for aircraft, has large hangar door and office space	Warehouse or vehicle maintenance space. Eave height can be shortened to comply with fire code

## MUTE 4



**Tactical Equipment Maintenance Facility (TEMF)**



**Weather Shelter Hangar**



**Weather Shelter Warehouse**



## COST OF SERVICES / USE OF STANDARD DESIGNS

### Design Standards Review

CoS performs at no cost

### UFC Compliance Review

CoS performs at cost

### Use of Standard CoS Design

CoS Receives 1% of Construction PA

Construction oversight if needed

Contracting at Cost

### Site Adaptation of CoS Design

At cost by Geographical District, CoS, or other entity

CoS review of Site Adaptations at cost

No Cost

At Cost

1% of PA

## CoS NONPERMANENT DESIGN BUILDER

Utilize our easy to use Design Builder, which is an excel file that provides pricing, a design preview, and a detailed description based on your selections. The database can be accessed at-

<http://mrsi.erdc.dren.mil.cos.tam.aspx>

### Non-Permanent Design Menu

#### Facility Envelope Type

##### Single Bay Envelope

Common Uniform Building Envelope (CUBE)

##### Single Story Envelopes

Four Area CMU Envelope (FACE)

Multi Use Tall Envelope (MUTE)

Standard Adaptive Facility Envelope (SAFE1) Single Story

Tactical Earthern Rapidly Raised Assembly Hut (TERRA HUT)

##### Two Story Options

Standard Adaptive Wood Structure (SAWS) Two Story

Standard Adaptive Facility Envelope (SAFE) Two Story

#### Off the Shelf Designs

Blank Floor Plan

Housing, 14 Bay, 48 PN with Lstrine shower

Housing, 14 bay, 56 PN full floor open

Low Density Barracks, 14 Bay, 24PN

Low Density Barracks, 14 Bay, 32Bay, 12PN

Operations Center, 14 Bay, Full Floor

Operations Center, 14 Bay, Full Floor, Option 2

Headquarters, 14 Bay, Full Floor, 41PN

Dining Facility, 500 PN, 14 Bay, 72PN

Dining Facility, 224PN, 14 Bay, Full Floor Seating

Joint Operations Center, 14 Bay, Full Floor

Joint Operations Center, 14 Bay, Option 2

Fitness Center, 14 Bay

Mosque, 14 bay, full floor

Lstrine/Shower, 240 PN, 14 Bay, Full Floor

Laundry, 300 PN, 14 Bay, Full Floor

Role 2+ Medical Facility, 22 Bay, Full Floor

Role 1 Medical Facility, 14 Bay, Full Floor

Fire Station Admin Facility

#### Roof Type

#### Proposed Location

Metal Truss

Wood Truss

#### Labor Execution

Troop Labor

Contractor

#### Interior Layout

#### Design Preview

#### Design Selection Criteria

**Roof Type:** Metal Truss

**Proposed Loca:** Crete

**Labor** Troop Labor

**Interior Layout Detail** Open Office Area with 3 Conference Rooms

**Stories** Single Story

**Dimensions** 14 Bay, 9.8m x 34.3m, 442.5 m<sup>2</sup>

**R-value** Wall 20; Roof 40

**Construction Material** CMU



**Design Title**  
*Operations Center, 14 Bay, Full Floor*

High Order of Magnitude (ROM)	
ACF	1.13
\$Unit	\$1,808
Size (M2)	442.5
<b>ROM Breakdown</b>	
Roof	\$113,000
Envelope	\$412,450
Interior	\$274,703
<b>Total Facility</b>	\$800,153
<b>CoS Oversite (1)</b>	\$8,002
<b>Total ROM</b>	<b>\$808,155</b>

NOTE: This ROM does not include any FF&E, site work or utility connections. Area Cost Factors are based on 2018 PAX Newsletter

**Description**  
a "Bay" consists of a 24x15 section. The default FACE Envelope consists of 14 Bays. The facilities can be stretched or shortened modularly per "bay" width

**Construction Material** Load Bearing CMU

**Occupancy** semi-permanent facility to be occupied no more than 25 years

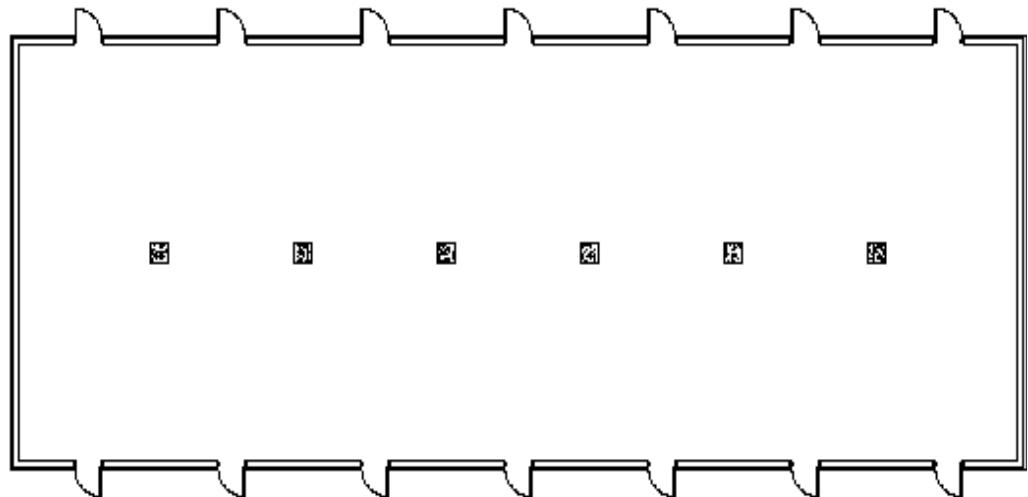
## ENVELOPES

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The building envelope, which includes the walls, windows, roof, and foundation, forms the primary thermal barrier between the interior and exterior environments, or the “shell”.

## ENVELOPES - SAFE 1 (SINGLE STORY)

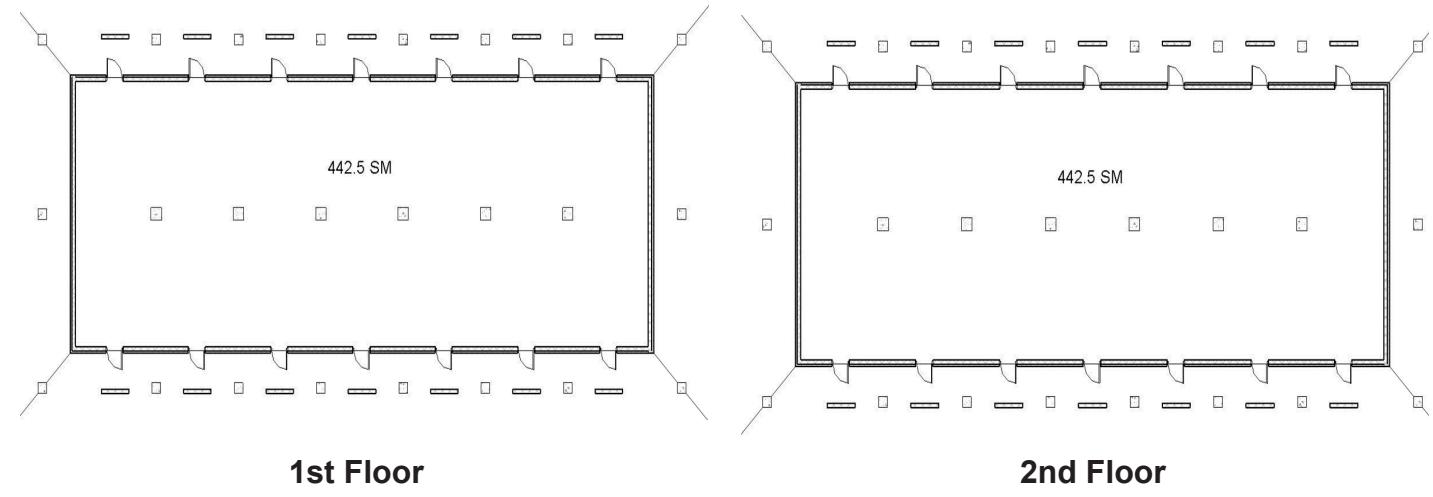
Standard Adaptive Facility Envelope



Description	
Occupied Duration	Up to 25 years
Construction Material	Concrete Framing w/ CMU infill
Default Dimensions	14 Bay, 9.8m x 34.3m, 442.5 m <sup>2</sup>
Stories	Single
R-value	Wall - 21; Roof 40

## ENVELOPES - SAFE (TWO STORY)

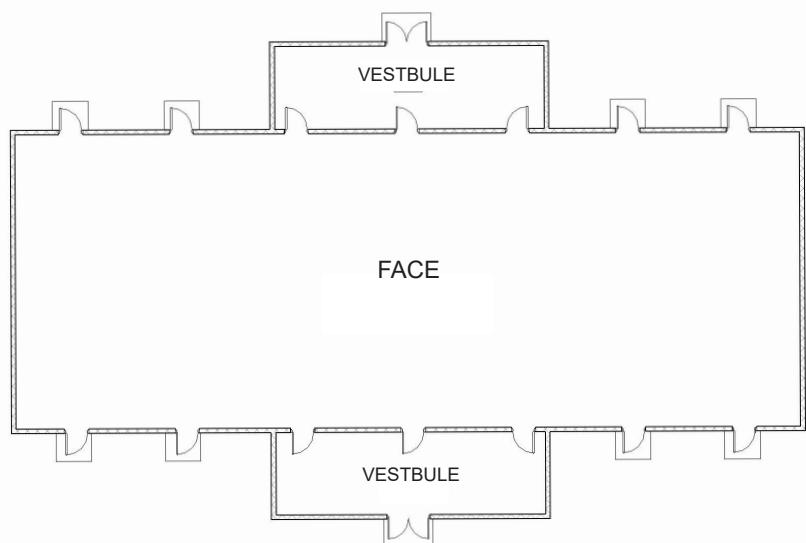
Standard Adaptive Facility Envelope



Description	
Occupied Duration	Up to 25 years
Construction Material	Concrete Framing w/ CMU infill
Default Dimensions	14 Bay, 9.8m x 34.3m, 442.5 m <sup>2</sup>
Stories	Two
R-value	Wall - 21; Roof 40

## ENVELOPES - FACE

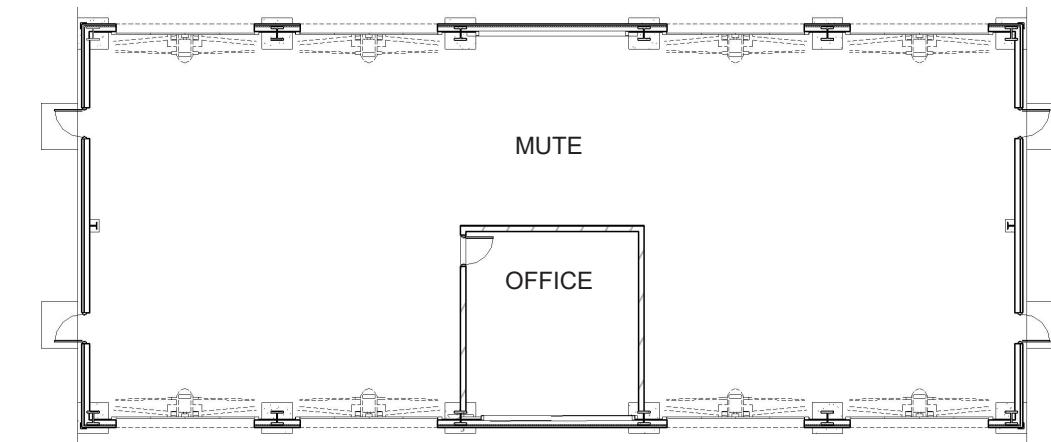
### Face Area CMU Envelope



Description	
Occupied Duration	Up to 25 years
Construction Material	CMU
Default Dimensions	14 Bay, 9.8m x 34.3m, 442.5m <sup>2</sup>
Stories	Single
R-value	Wall - 20; Roof 40

## ENVELOPES - MUTE

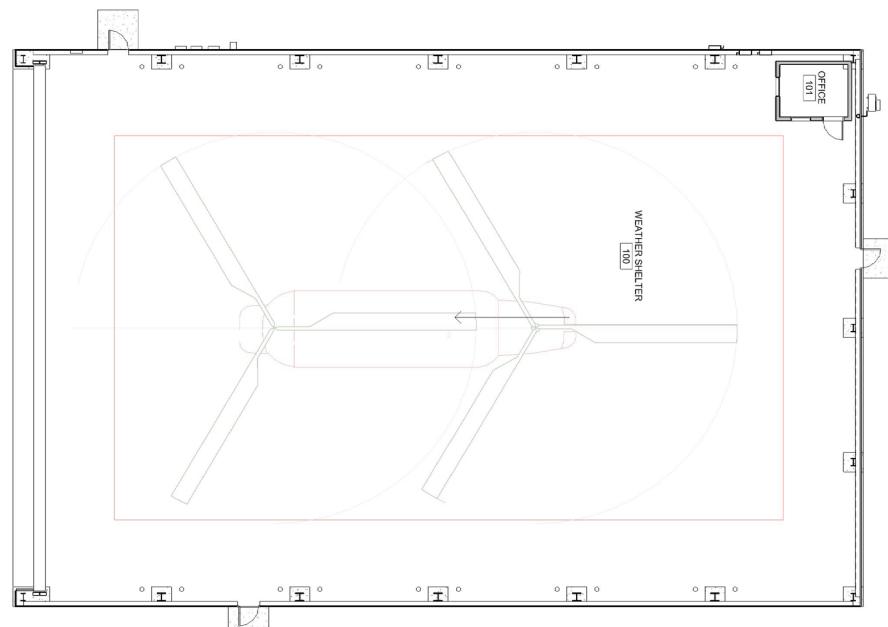
### Multi Use Tall Envelope



<b>MUTE 4</b>	4m eave height for warehouse (complies with 12' high stacking max)
<b>MUTE 6</b>	6m eave height for non-warehouse use (e.g. vehicle maintenance)

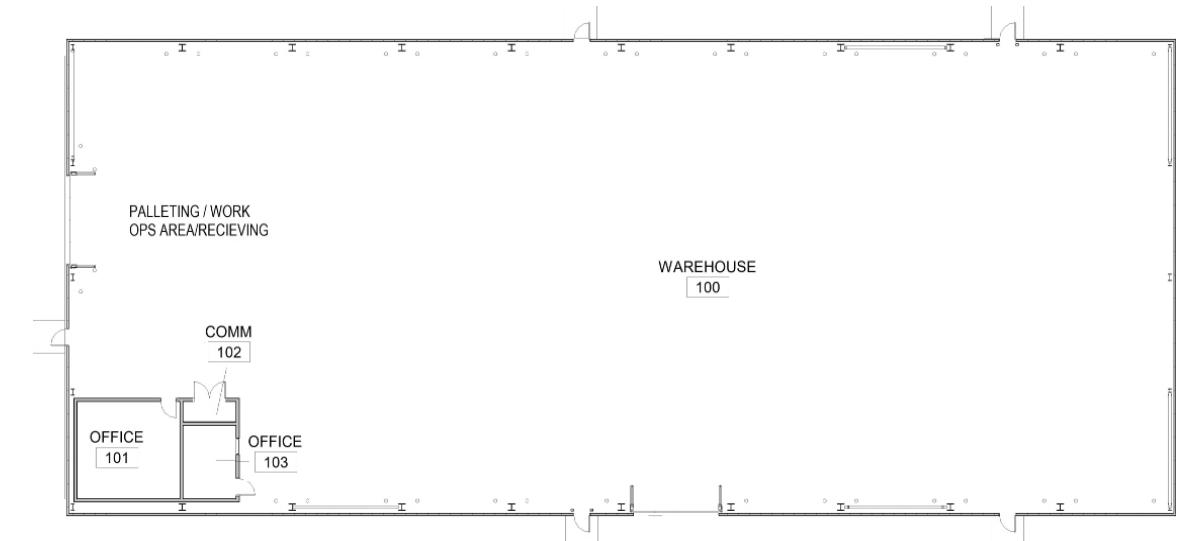
Description	
Occupied Duration	Up to 25 years
Construction Material	Metal
Default Dimensions	5 Bay, 12.8m x 30.5m, 390m <sup>2</sup>
Stories	Single
R-value	Wall - 20; Roof 40

## ENVELOPES - Weather Shelter (Hangar Version)



Description	
Construction Material	Metal with Concrete Columns
Size	26m x 38.3m, 961m <sup>2</sup>
Details	Weather shelter for CH-47 Chinook Helicopter with officer space

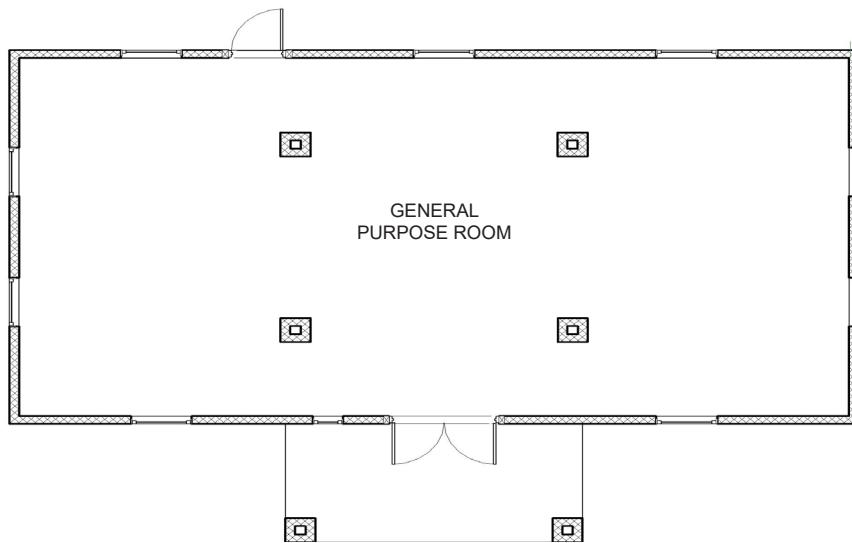
## ENVELOPES - Weather Shelter (Warehouse Version)



Description	
Construction Material	Metal with Concrete Columns
Size	26m x 38.3m, 961m <sup>2</sup>
Details	One-story version for use as non-hangar space/warehouse

## ENVELOPES - TERRA HUT (Option 1)

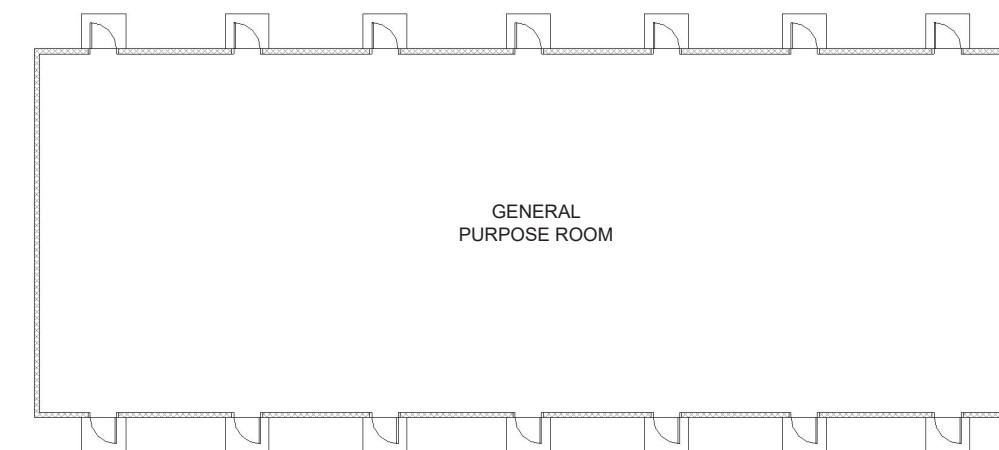
Tactically Earthen Rapidly Raised Assembly Hut  
Protective Roof, other options available upon request.



Description	
Occupied Duration	Up to 25 years
Construction Material	Compressed Earth Block Structure with protective roof
Default Dimensions	3 Bay, 8m x 14.7m, 118.3m <sup>2</sup>
Stories	Single
R-value	Wall - 20; Roof 40

## ENVELOPES - TERRA HUT (Option 2)

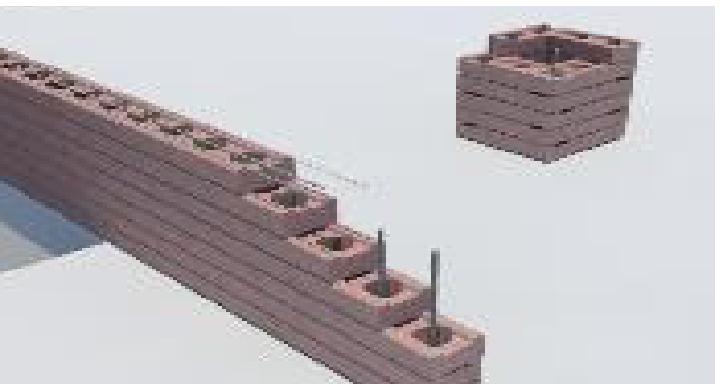
Tactically Earthen Rapidly Raised Assembly Hut  
Other roof types available upon request.



Description	
Occupied Duration	Up to 25 years
Construction Material	Compressed Earth Block Structure with Wood Roof Frame
Default Dimensions	14 Bay, 12.9m x 34.3m, 442.5m <sup>2</sup>
Stories	Single
R-value	Wall - 20; Roof 40

## TERRA HUT CONSTRUCTION PROCESS

### Tactically Earthen Rapidly Raised Assembly Hut



Description	
Brick Material	Onsite soils, min. 15% clay, 30% sand, 7% cement
Brick Production Rate	Machine makes 240 bricks+/hr, to be cured for 6 days
Bricks needed for 3-bay TERRA Hut (Option 1)	Non-Protected - 2,720 bricks, non-hardened, 3,825 lbs. of cement (11 hours of continuous brick making)
Bricks needed for 3-bay TERRA Hut SAFE protective roof	Protected - 6,000 bricks, hardened, 8,438 lbs. of cement (25 hours of continuous brick making)
Bricks needed for 14-bay TERRA SAFE (Option 2)	Non-Protected - 12,700 bricks, non-hardened, 17,900 lbs. of cement (53 hours of continuous brick making)

31 COURSES  
(TOTAL)

2 COURSES

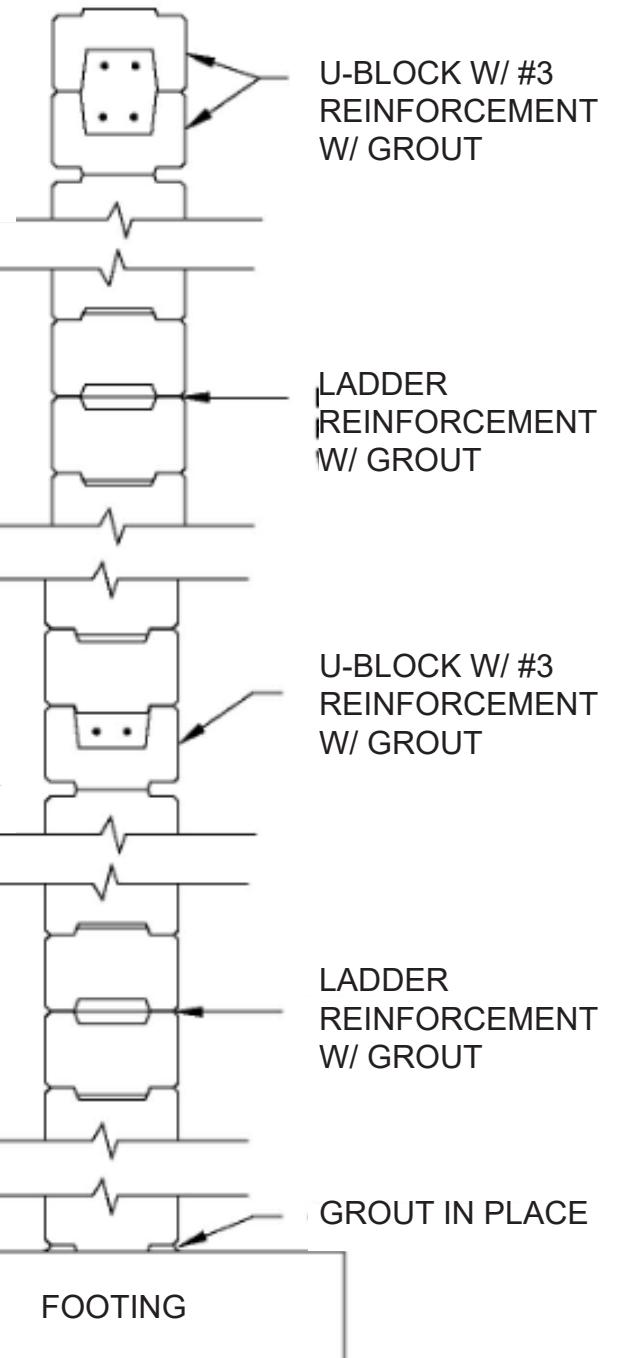
14 COURSES

7 COURSES

1 COURSES

14 COURSES

7 COURSES



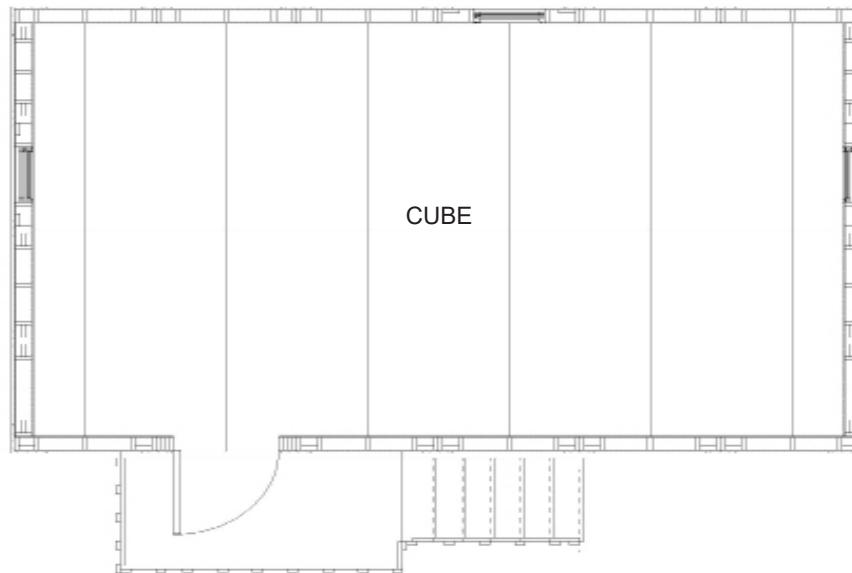
**TYPICAL WALL SECTION  
(NTS)**

**Equipment Needed:** Dwell Earth Block Machine

## ENVELOPE - CUBE

Common Uniform Building Envelope

Patented 19 May 2020 Patent #10655350

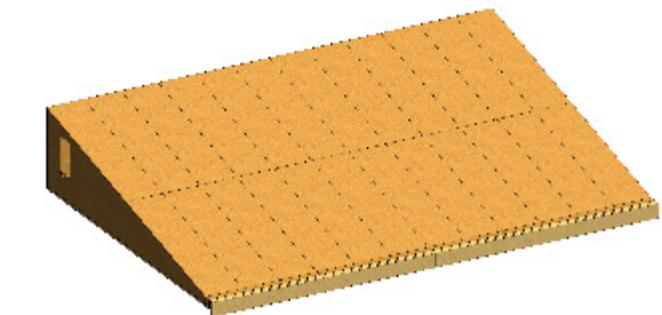


Description	
Occupied Duration	Up to 5 years
Construction Material	Panelized Wood
Default Dimensions	1 Bay, 7.3m x 4.9m, 35.77m <sup>2</sup>
Stories	Single
R-value	Wall - 20; Roof 40
Ceiling Height	2.4m

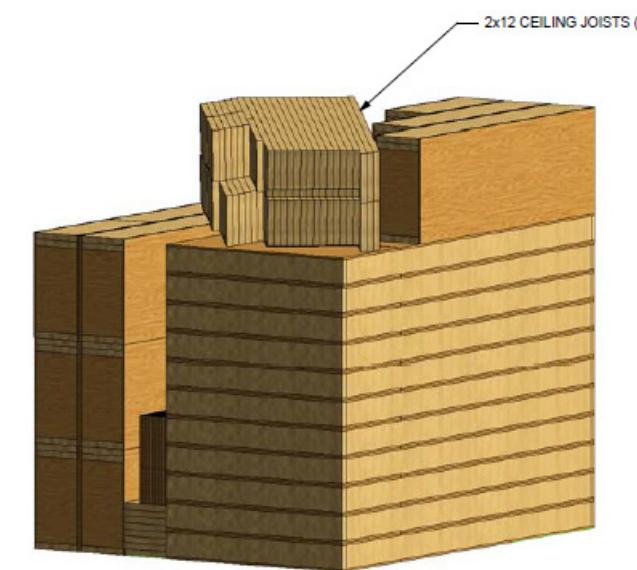
## CUBE NEW ROOF OPTIONS

Common Uniform Building Envelope

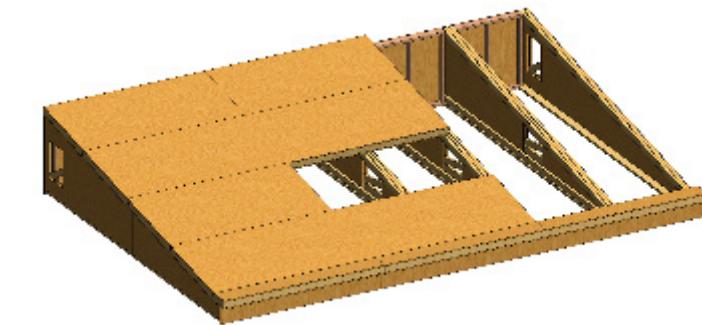
- Lighter than the previous truss roof
- Less complicated fabrication
- Easier to install



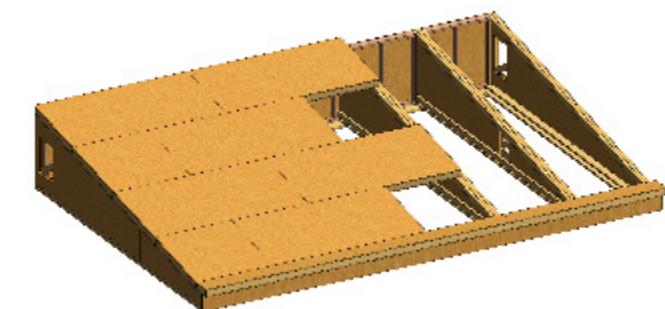
Truss Assembly Roof



PALLET 2 - FRONT ISO



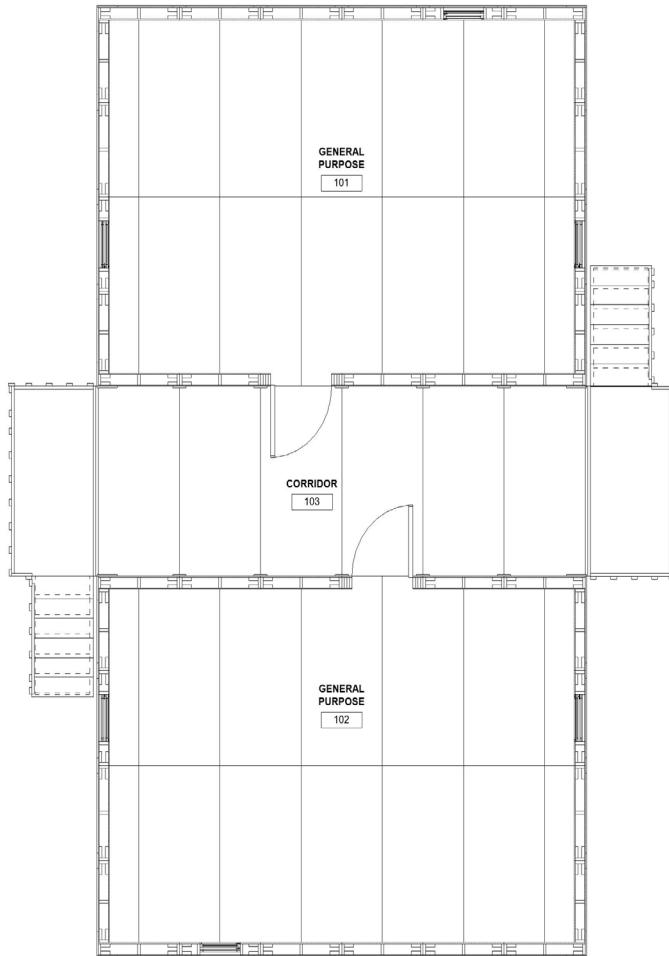
16' Truss Assembly



16' Spliced Truss Panel

## ENVELOPE - CUBE WIDE

### Common Uniform Building Envelope

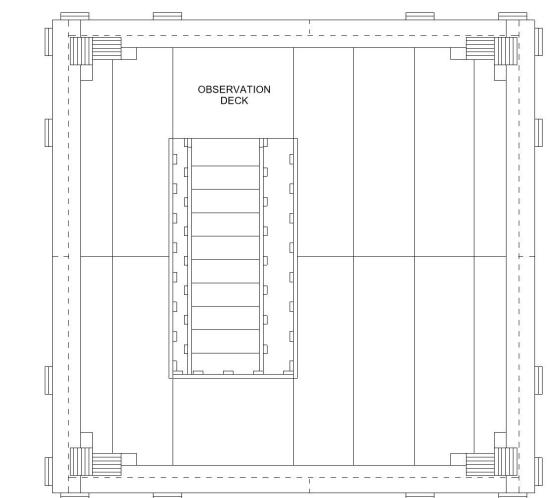


## ENVELOPE - CUBE TOWER

### Common Uniform Building Envelope



CUBE Tower Viewing Deck  
Observation Distance = 6+ Miles/ 9.6+ Kilometers

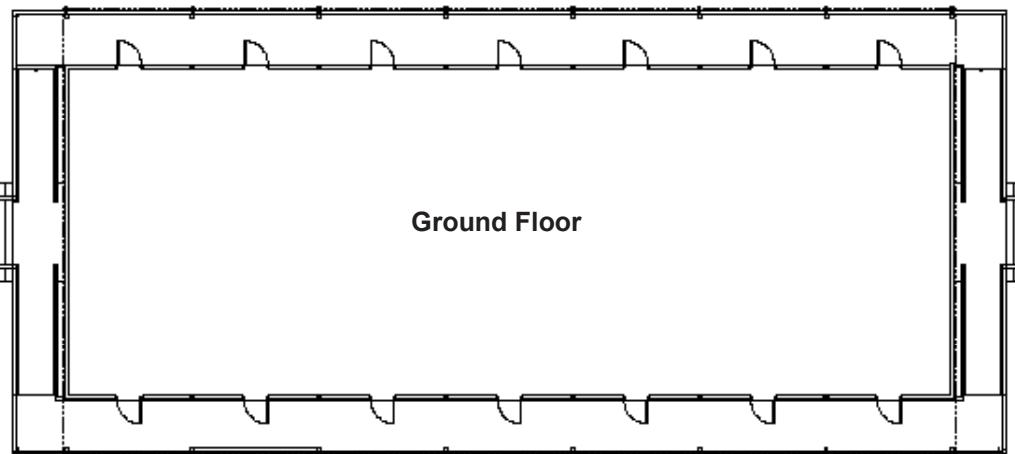


Description	
Occupied Duration	Up to 5 years
Construction Material	Panelized Wood
Default Dimensions	1 Bay, 12.2m x 7.3m, 89.2m <sup>2</sup>
Stories	Single
R-value	Wall - 20; Roof 40
Additional Information	Maintains many CUBE components. Similar to SAWS, but does not have a concrete foundation.

Description	
Occupied Duration	Up to 5 years
Construction Material	Panelized Wood
Default Dimensions	1 Bay, 4.9m x 4.9m, 24m <sup>2</sup>
Stories	Single
R-value	Wall - 20; Roof 40
Additional Information	Maintains as many original CUBE parts as possible. Cab on top floor can be 16' - no outer walkway, or 10' to 8' for an outer walkway

## ENVELOPES - SAWS 1

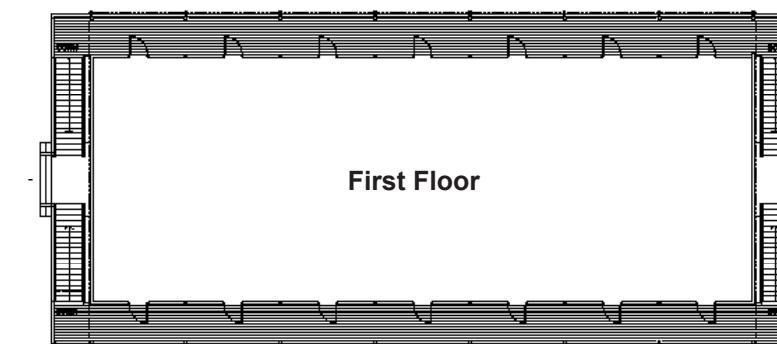
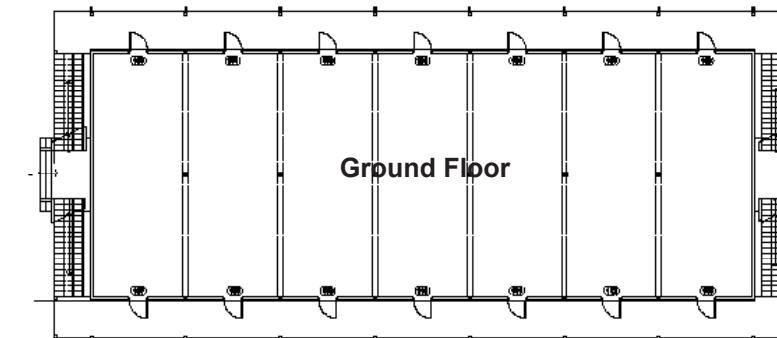
### Standard Adaptive Wood Structure



Description	
Occupied Duration	Up to 25 years
Construction Material	Wood
Default Dimensions	14 Bay, 9.8m x 34.3m, 442.5m <sup>2</sup>
Stories	Single
R-value	Wall - 20; Roof 40

## ENVELOPES - SAWS (TWO STORY)

### Standard Adaptive Wood Structure



Description	
Occupied Duration	Up to 25 years
Construction Material	Wood
Default Dimensions	14 Bay, 9.8m x 34.3m, 442.5m <sup>2</sup>
Stories	Two
R-value	Wall - 20; Roof 40

## OFF-THE-SHELF DESIGNS

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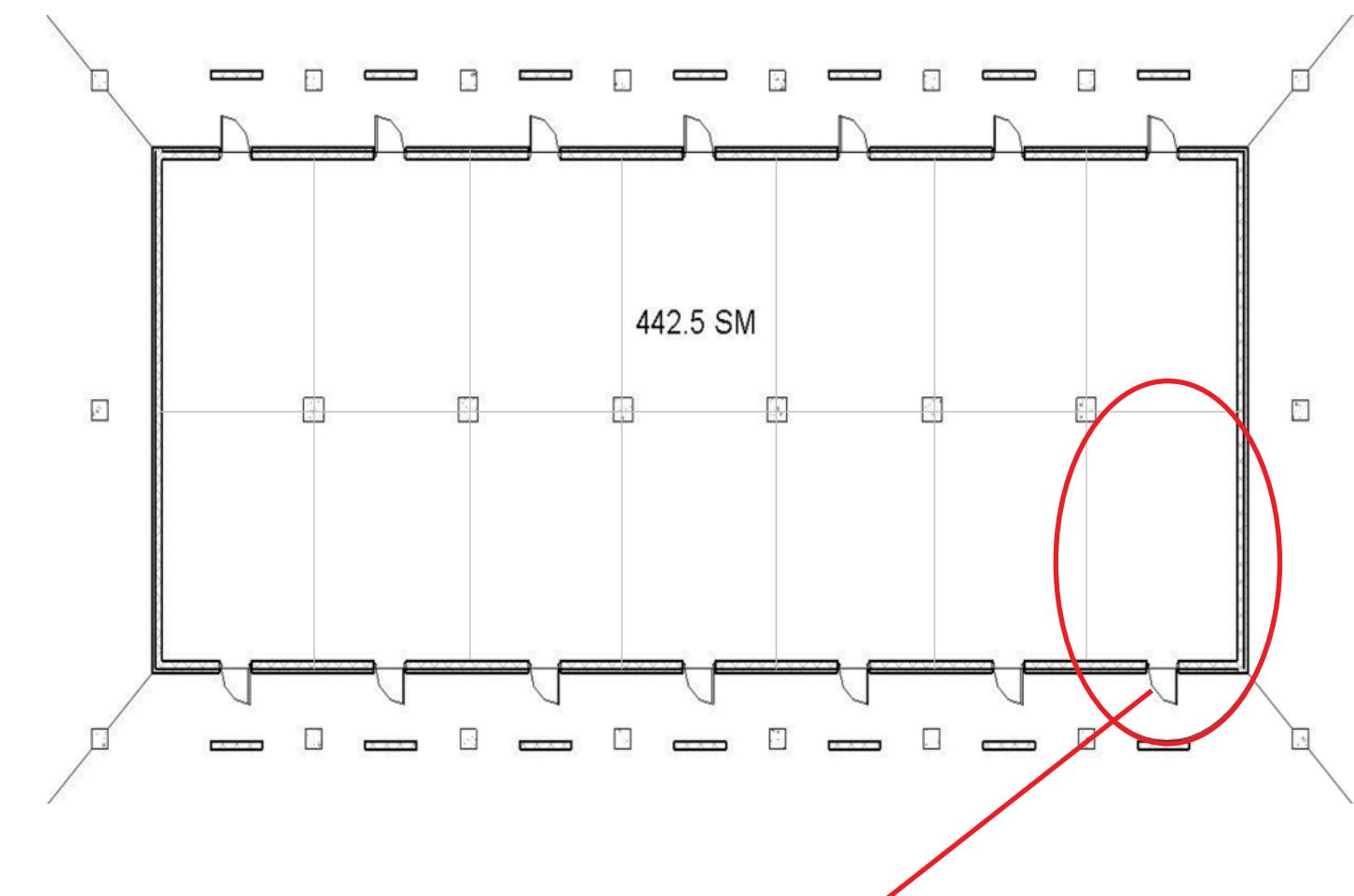
Off-the-Shelf Designs is the interior layouts which include; barracks, weapons storage, dining facilities, operations centers, headquarters, etc.

## OFF-THE-SHELF DESIGN OPTIONS

Other options available by request.

	Designs	# of Options
1	Billeting	2
2	Low Density Barracks	2
3	Headquarters	1
4	Laundry	1
5	Operations Center	2
6	Admin	2
7	DFAC Facility	2
8	Fire Station	1
9	Fitness Facility	1
10	Joint Operations Center	2
11	Latrine	2
12	Religious	2
13	Medical Facility	5
14	Tactical Equipment Maintenance Facility (TEMF)	1
15	Weather Shelter	2
16	CUBE Lounge Area	2
17	CUBE Joint Operations Center	1

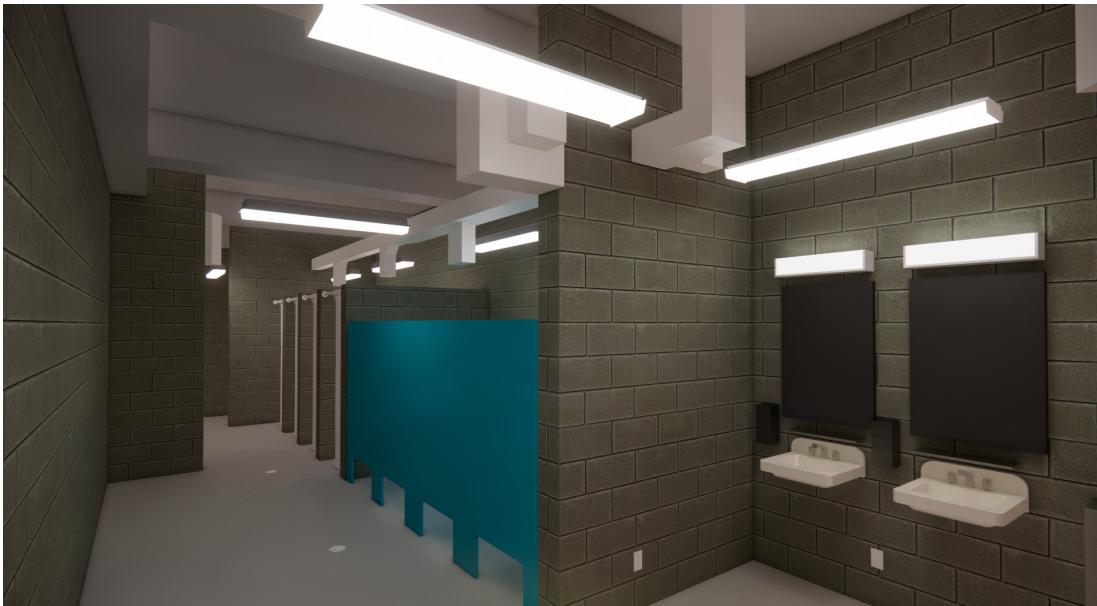
## STANDARD BAY EXAMPLES



A "Bay" = 7.3m x 4.9m (35.77m<sup>2</sup>)  
Standard Envelopes have 14 Bays

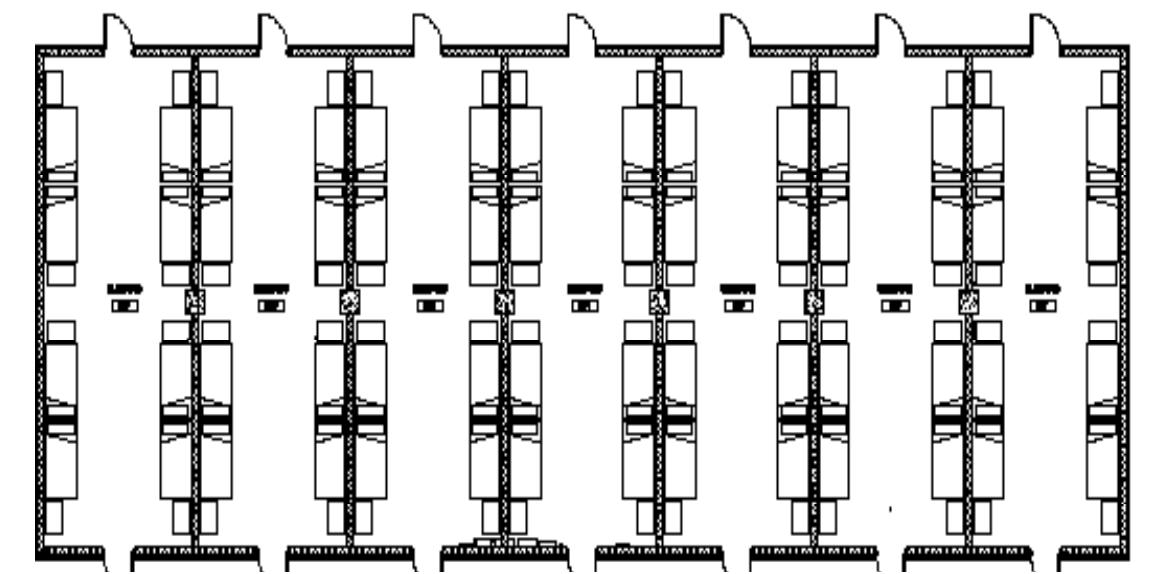
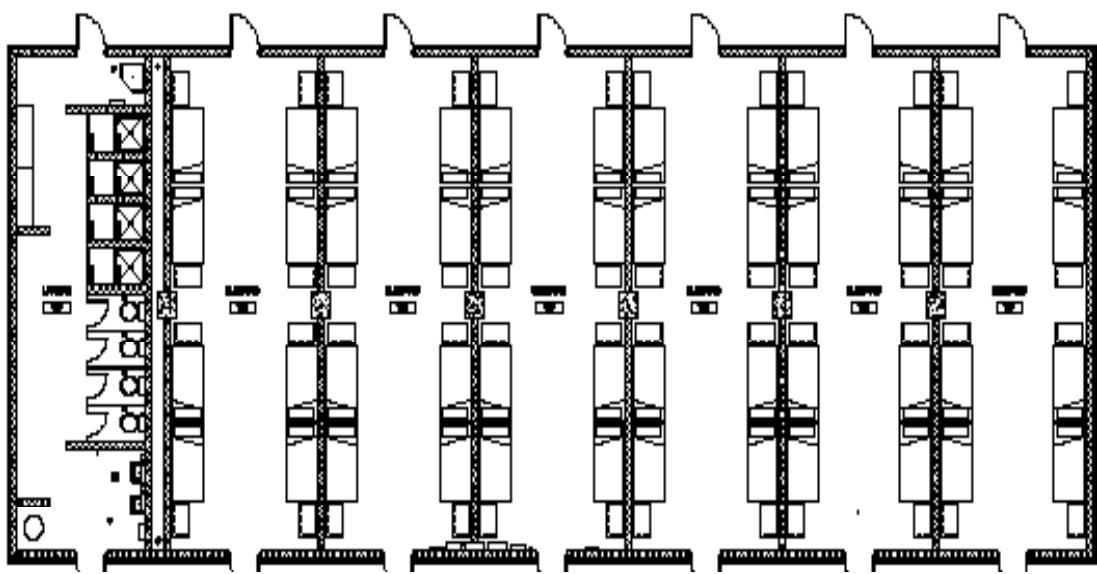
## **BILLETING (OPTION 1)**

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## **BILLETING (OPTION 2)**

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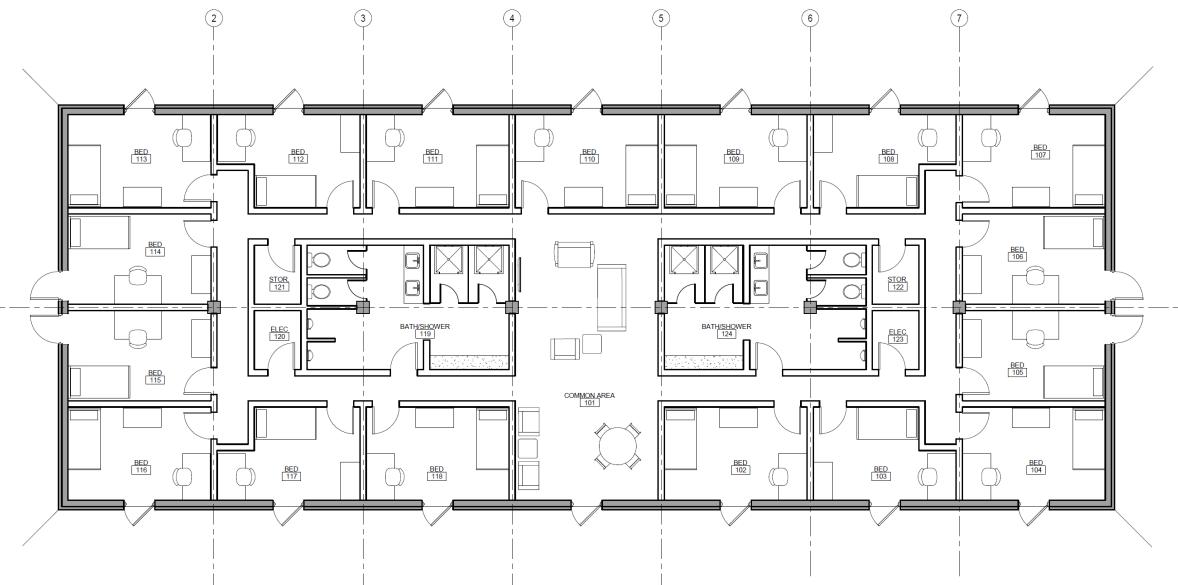
Description	
Size	48 PN
Details	Semi-open billeting w/ Latrine & Showers

Description	
Size	56 PN
Details	Semi-open billeting

## LOW DENSITY BARRACKS (OPTION 1)

Dry Facility Room

Area: 14.66m<sup>2</sup>

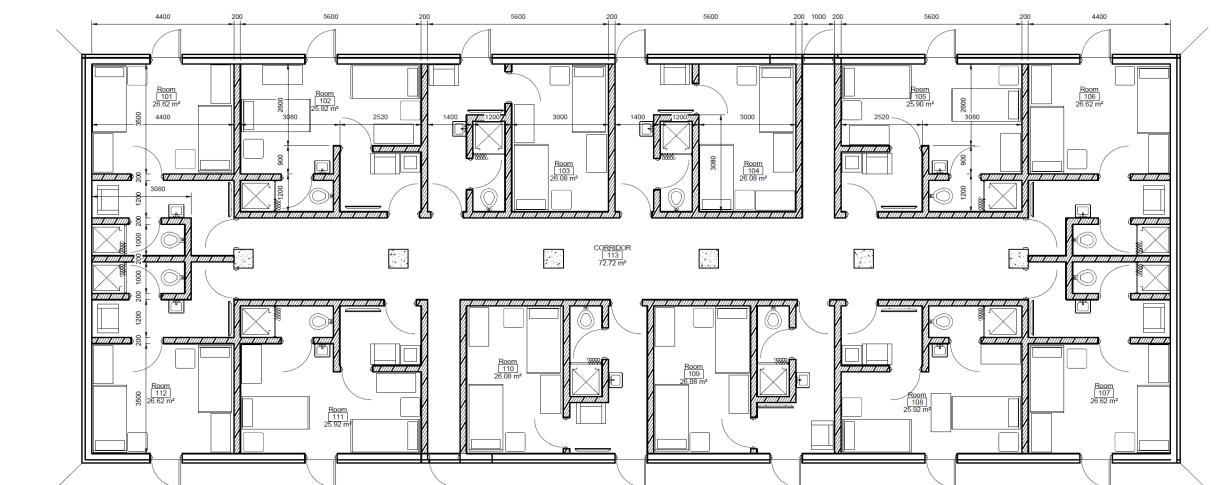
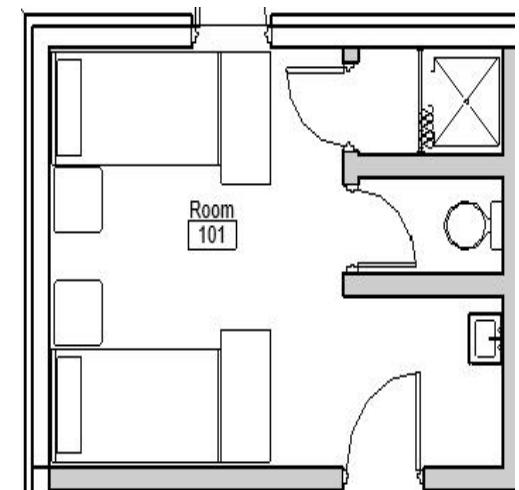


Description	
Size	38 PN
Details	19 Rooms, 2 Beds per Room, with Office Area

## LOW DENSITY BARRACKS (OPTION 2)

Room with Bathrooms

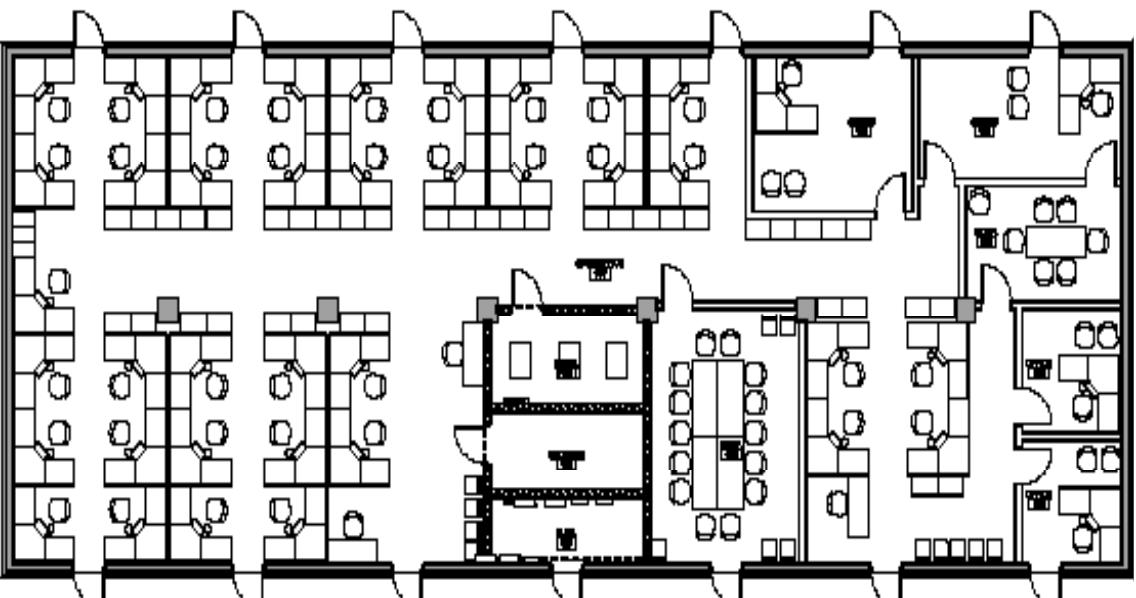
Area: 17.26m<sup>2</sup>



Description	
Size	22 PN
Details	11 Rooms, 2 Beds per Room, with Office Area & Bathrooms

## HEADQUARTERS

---

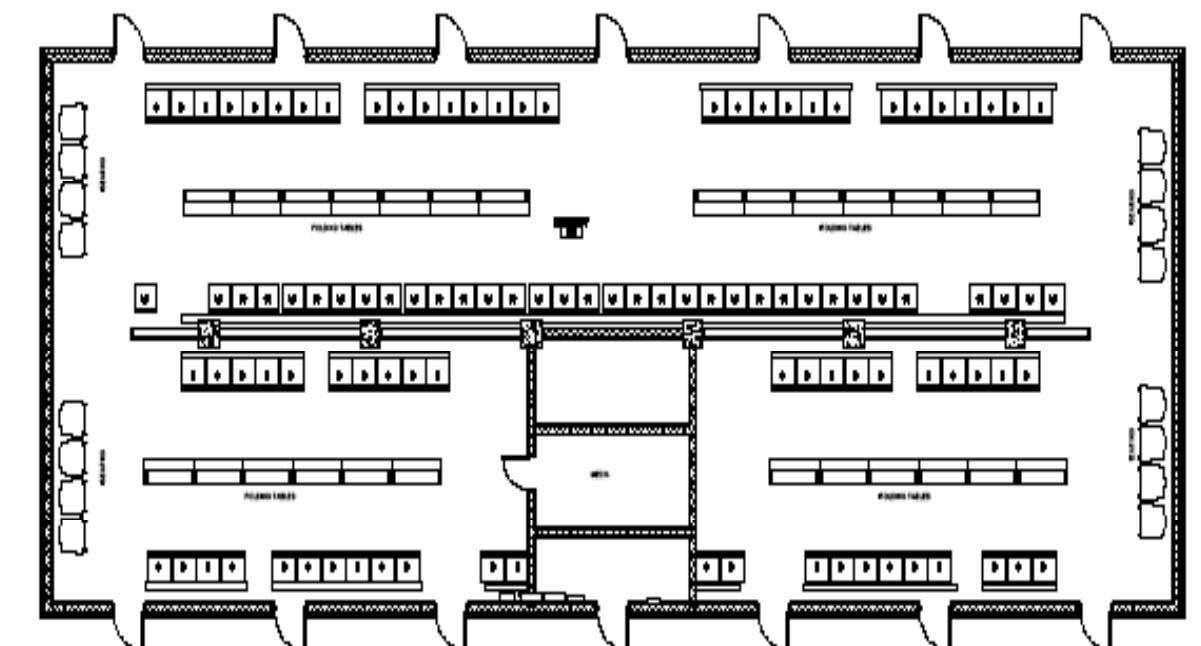


Description	
Size	44 PN
Details	Open Area Seating, 4 offices, and multiple conference spaces

## LAUNDRY

---

14 Bay, Open Area

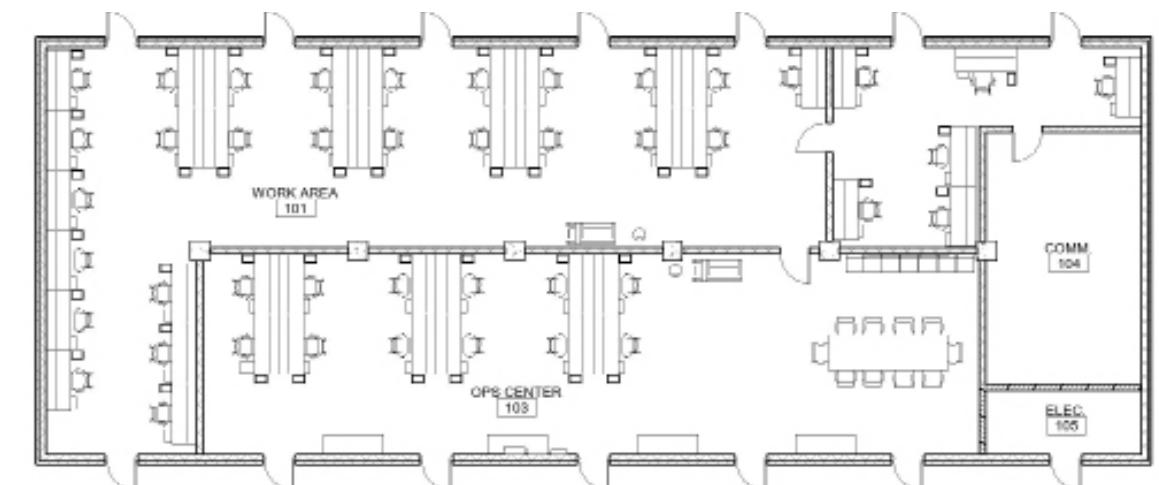
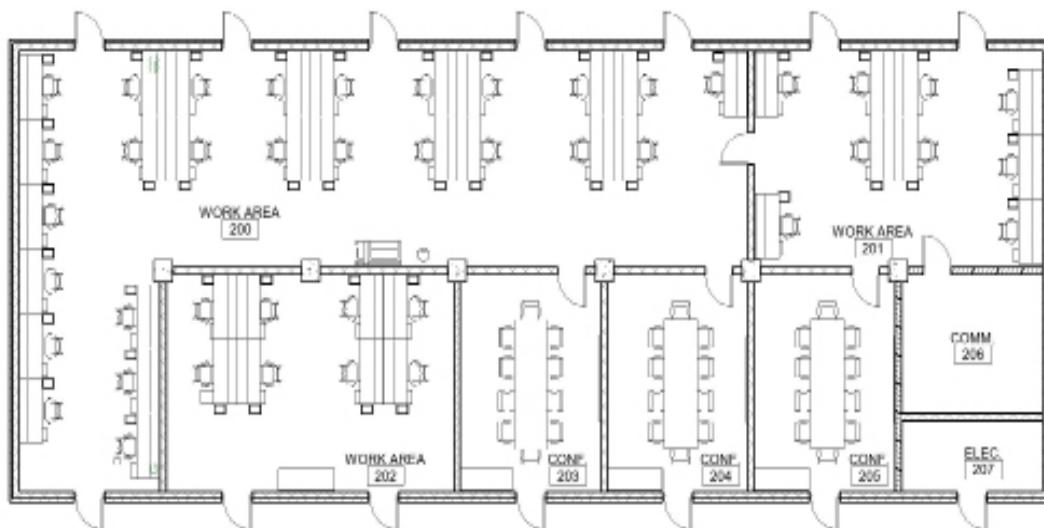


Description	
Size	900 PN
Details	Open Laundry

## **OPERATIONS CENTER (OPTION 1)**



## **OPERATIONS CENTER (OPTION 2)**

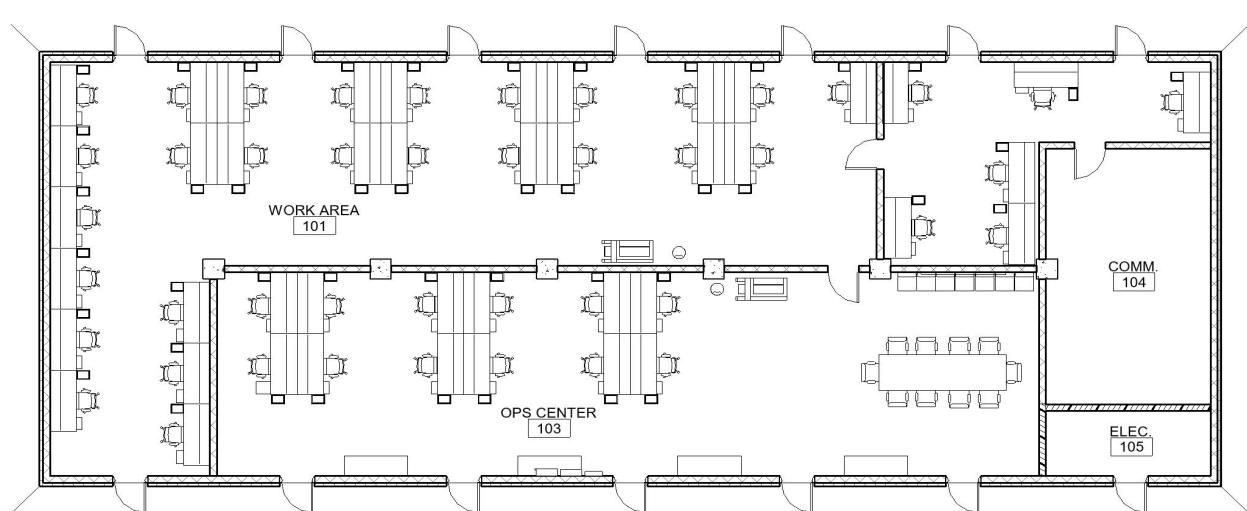


Description	
Size	43 PN
Details	Open office area with 3 conference rooms

Description	
Size	44 PN
Details	Open office area with conference space

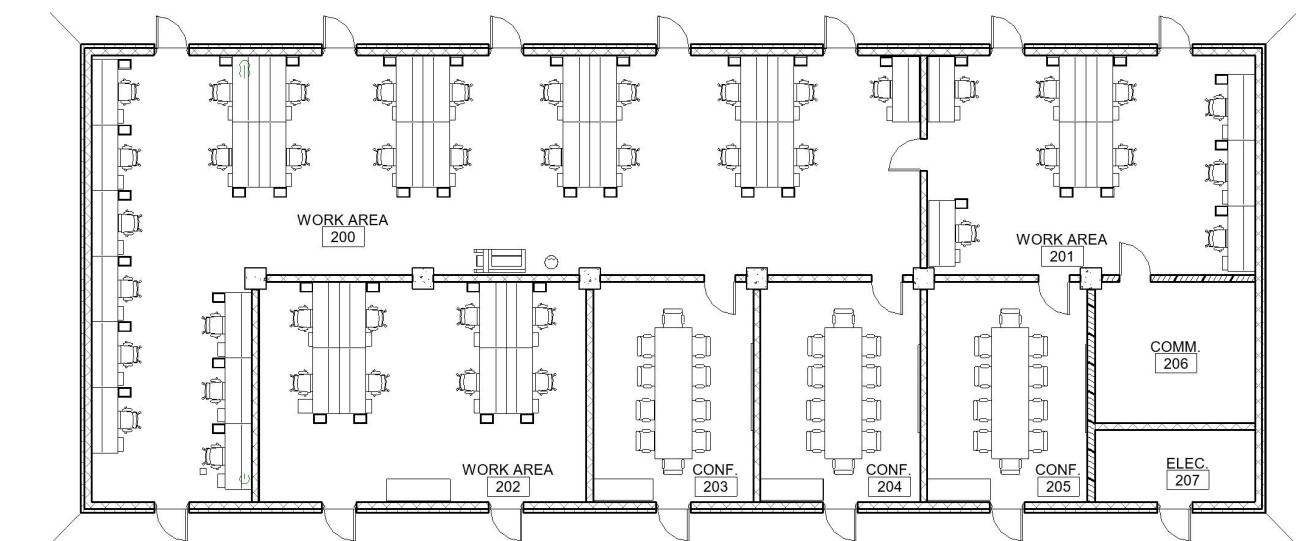
## **ADMIN (OPTION 1)**

CUBE Admin layout available upon request.



Description	
Size	43 PN
Details	Desks for 43 PN, space for one conference table

## **ADMIN (OPTION 2)**



Description	
Size	43 PN
Details	Desk for 43 PN, three separate conference rooms

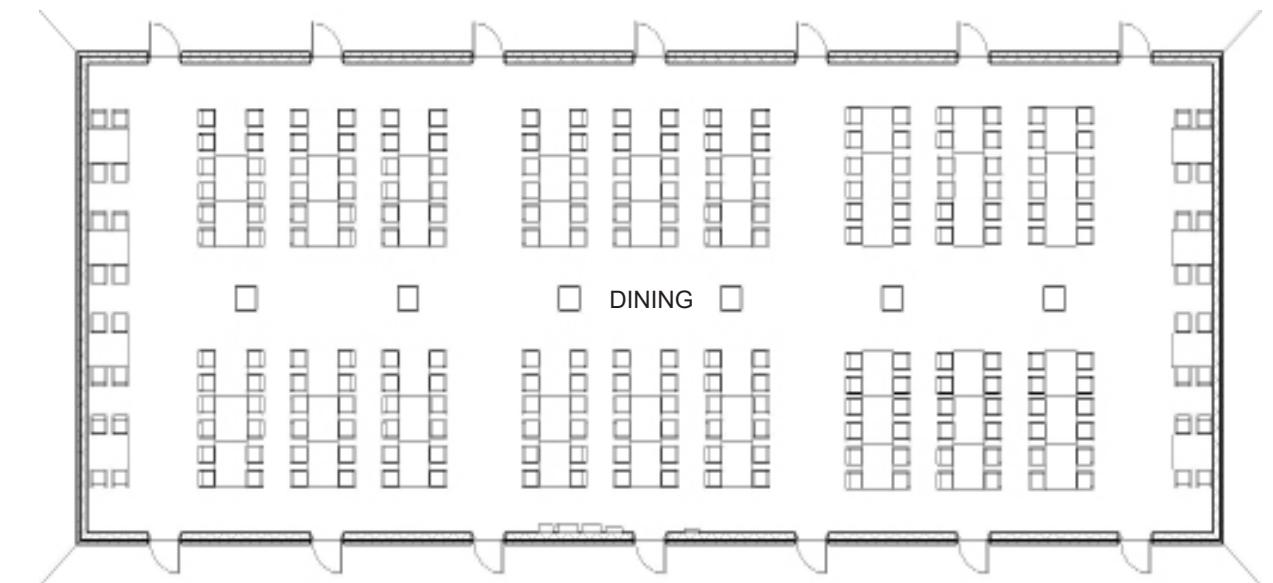
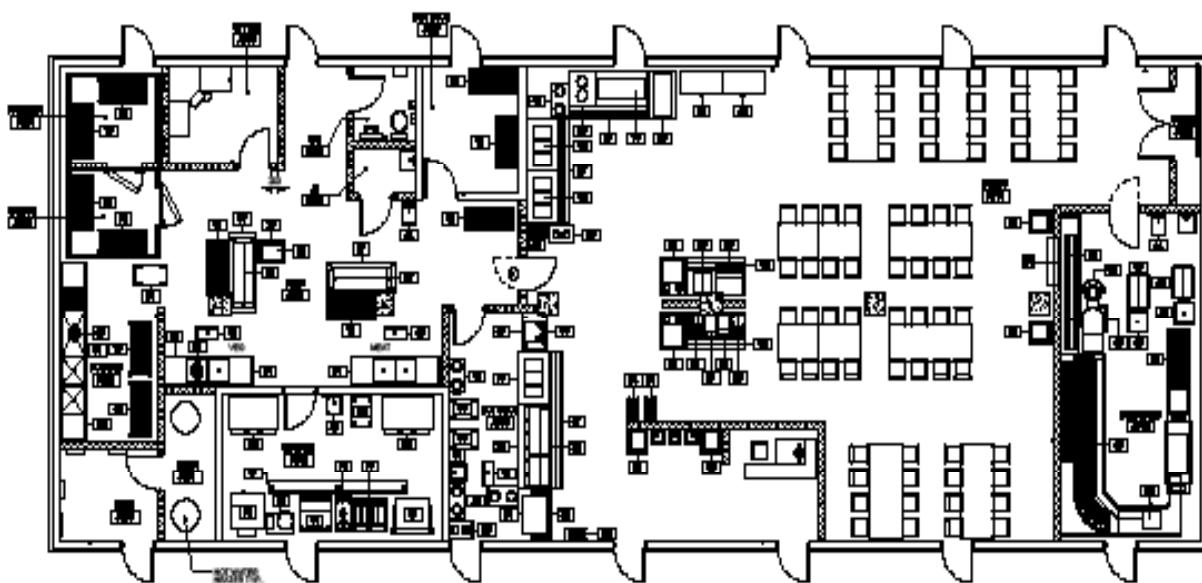
## DINING FACILITY (OPTION 1)

Open floor with kitchen, 72 seats



## DINING FACILITY (OPTION 2)

Open seating



Description	
Size	500 PN Kitchen
Details	Open seating with kitchen & serving space

Description	
Size	224 PN Kitchen
Details	Open seating

# FIRE STATION

## Fire Station Apparatus Bay

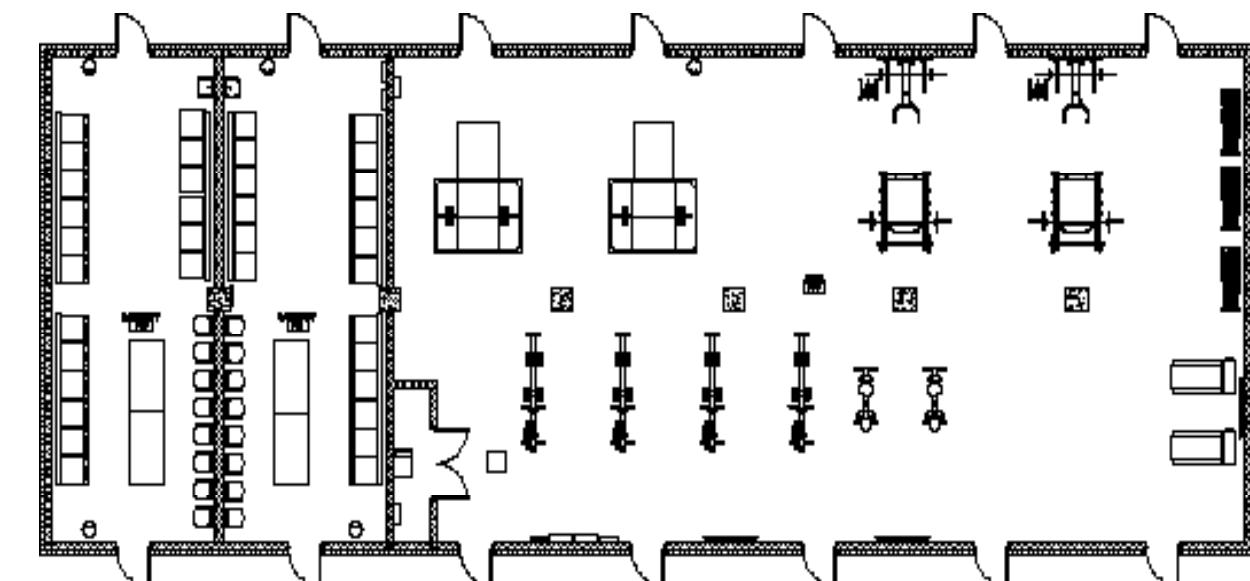
**\*Fire Station Complex Also Available**



Description	
Size	395m2
Details	3 Apparatus Bays, Gear Room, Medical, Laundry

## FITNESS FACILITY

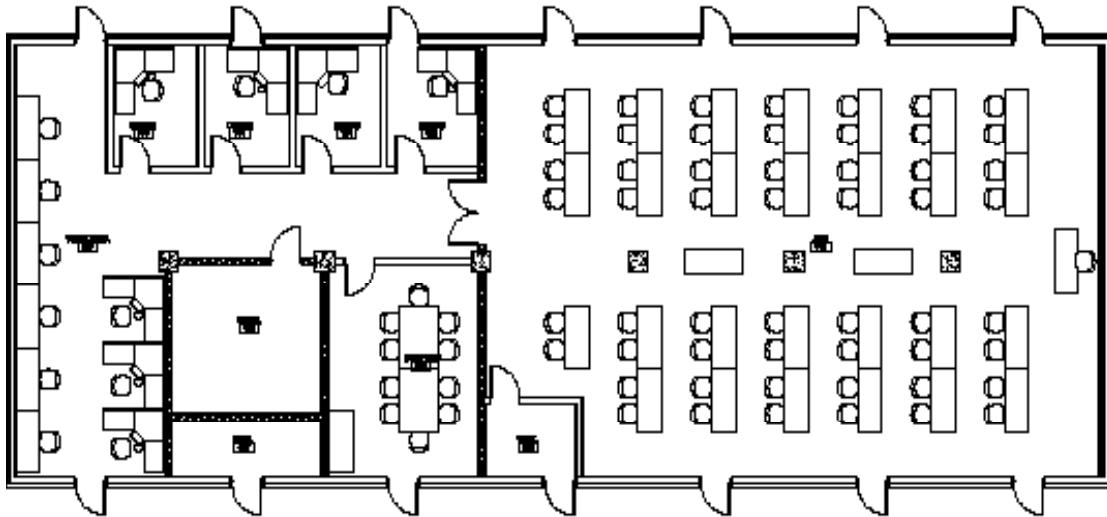
**Other options available upon request.**



Description	
Size	442.5m <sup>2</sup>
Details	Various interior options based upon user needs and population

## JOINT OPERATIONS CENTER (OPTION 1)

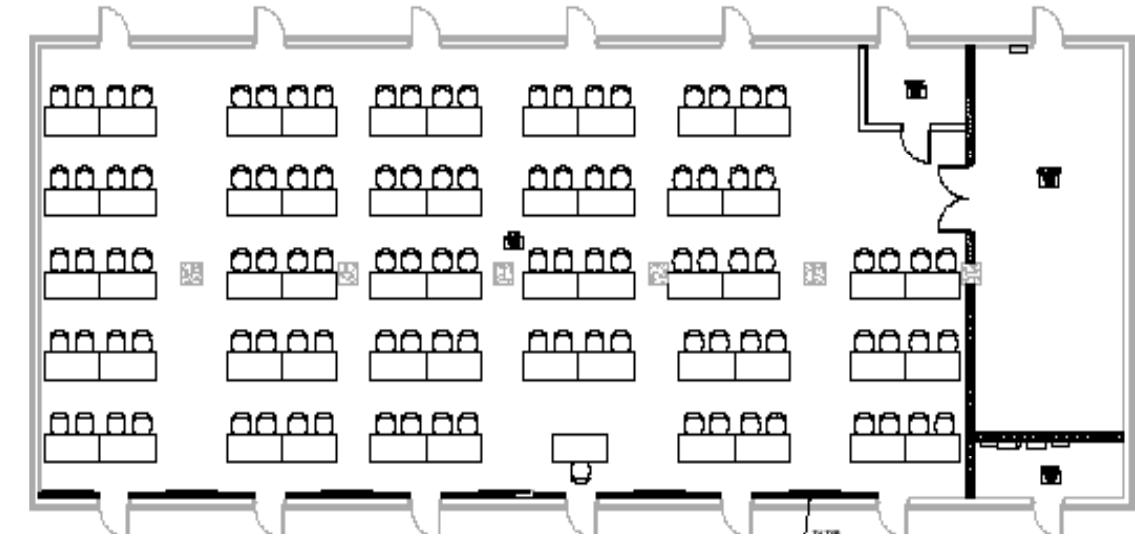
Option 1: Open seating w/ offices and conference rooms



Description	
Size	107 PN
Details	Open seating with offices and conference rooms

## JOINT OPERATIONS CENTER (OPTION 2)

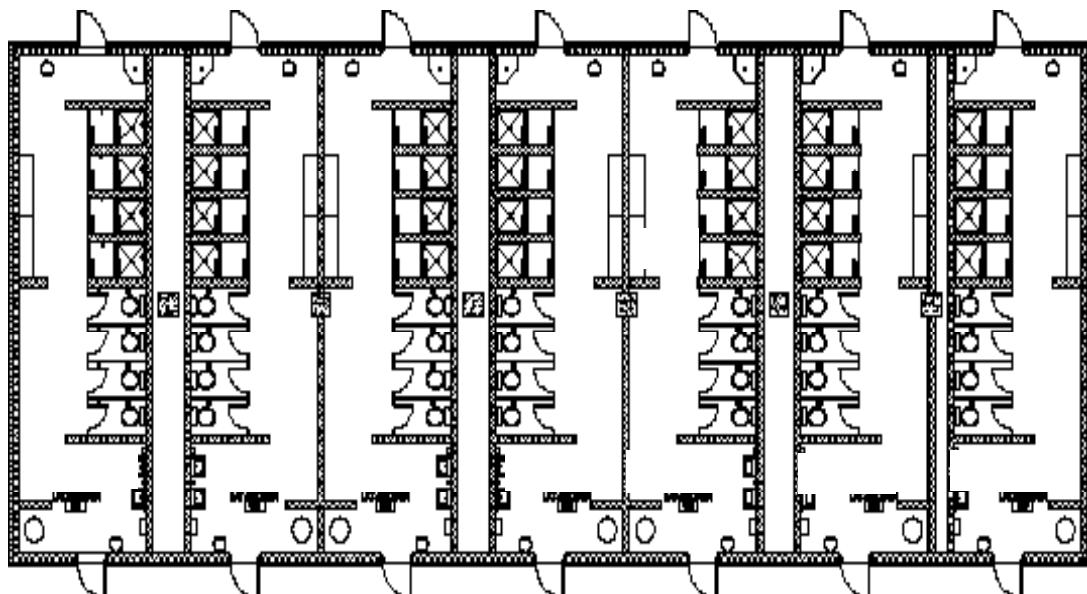
Option 2: Open seating



Description	
Size	109 PN
Details	Open seating

## LATRINE (OPTION 1)

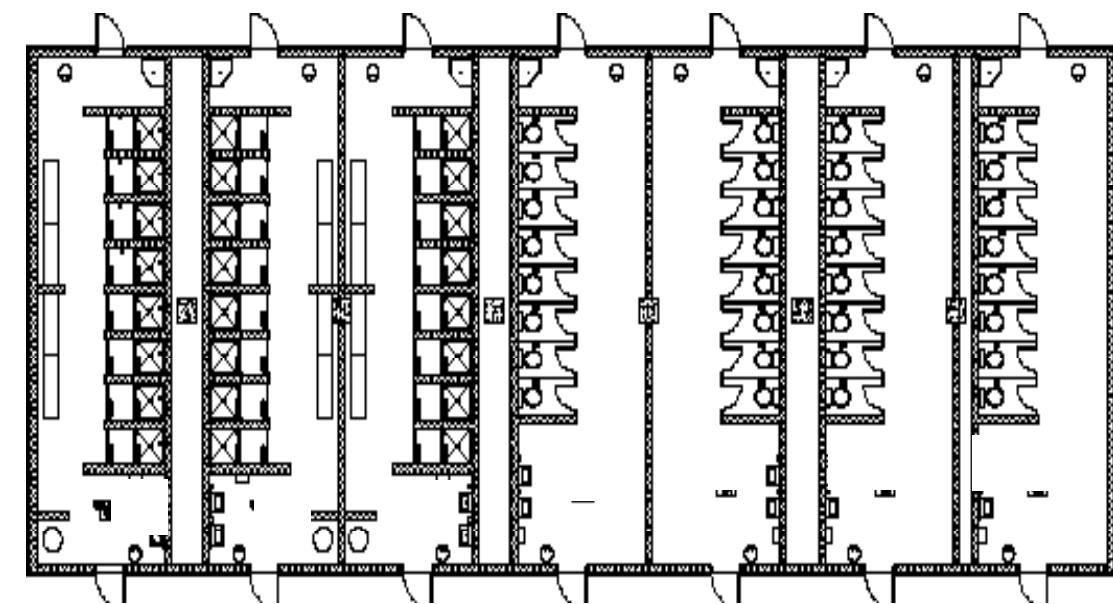
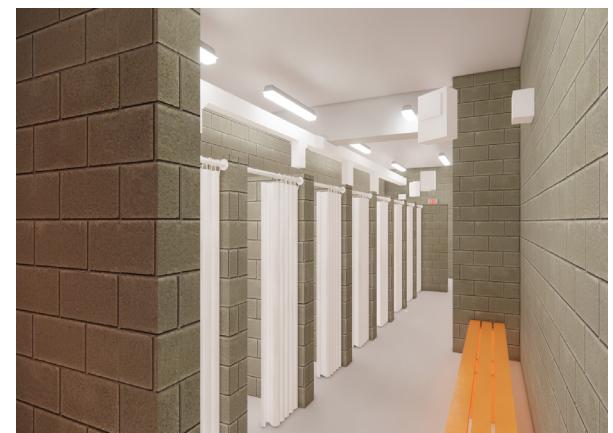
Option 1: 7 Latrine/Shower Combined Spaces



Description	
Size	240 PN
Details	7 separate latrine areas, inclusive of showers, toilets, and wash areas

## LATRINE (OPTION 2)

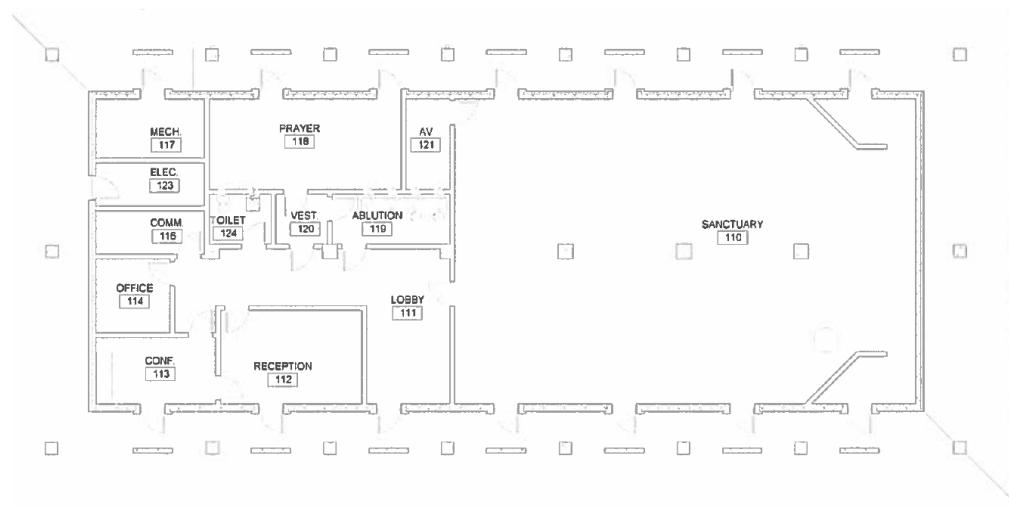
Option 2: 7 Latrine/Shower Combined Spaces



Description	
Size	240 PN
Details	7 separate latrine areas, inclusive of showers, toilets, and wash areas

## RELIGIOUS FACILITY (OPTION 1)

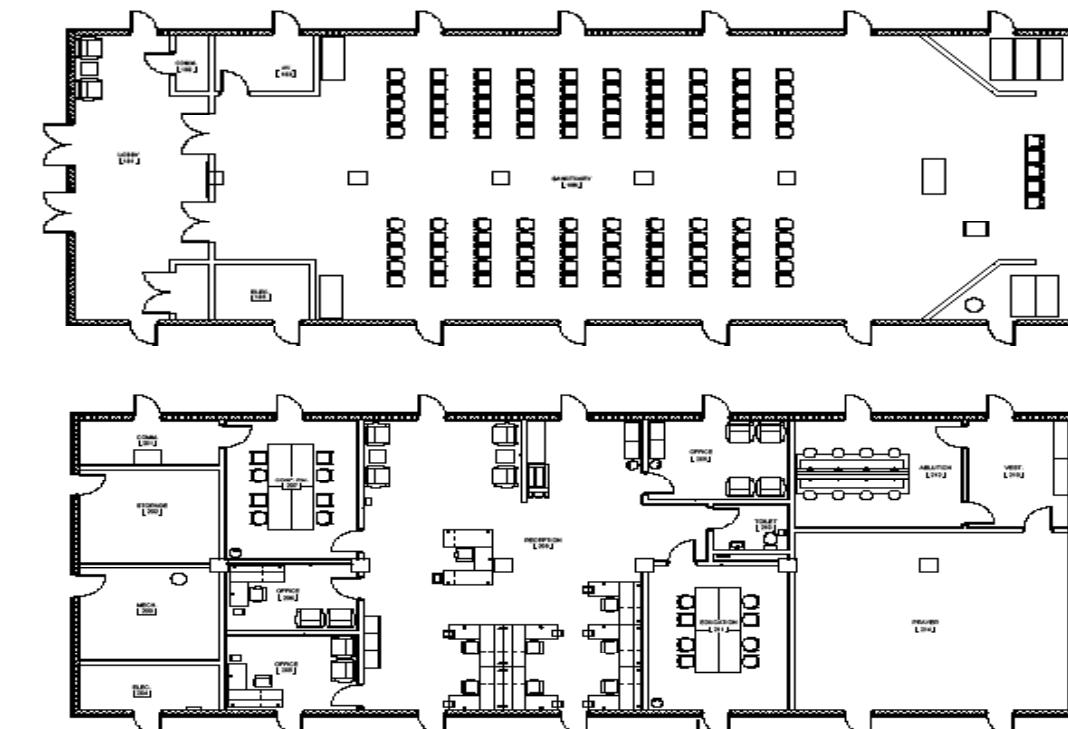
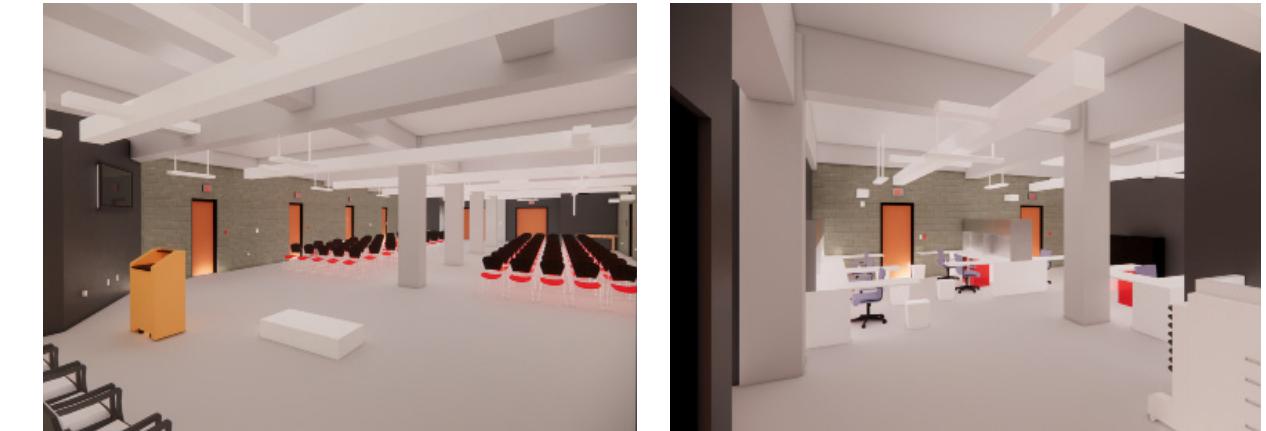
Option 1: 14 Bay, 1 Floor, Open sanctuary with offices



Description	
Size	442.5m <sup>2</sup>
Details	Open sanctuary with offices, restrooms, prayer room, and conference room

## RELIGIOUS FACILITY (OPTION 2)

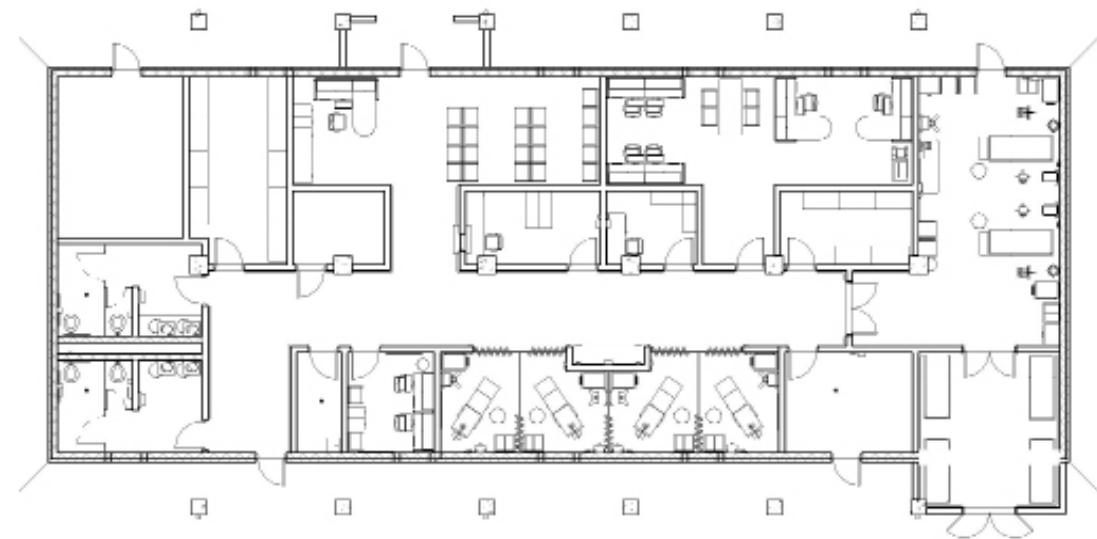
Option 2: 14 Bay, 2 Floor, Open sanctuary with offices



Description	
Size	850m <sup>2</sup>
Details	Open seating sanctuary on ground floor and offices/classrooms/storage/prayer on 1st floor

## MEDICAL FACILITY (OPTION 1)

Option 1: Role 1 Medical Facility



Description	
Size	442.5m <sup>2</sup>
Details	Trauma Room, Exam Rooms, Pharmacy, Utilities, Laboratory

## MEDICAL FACILITY (OPTION 2)

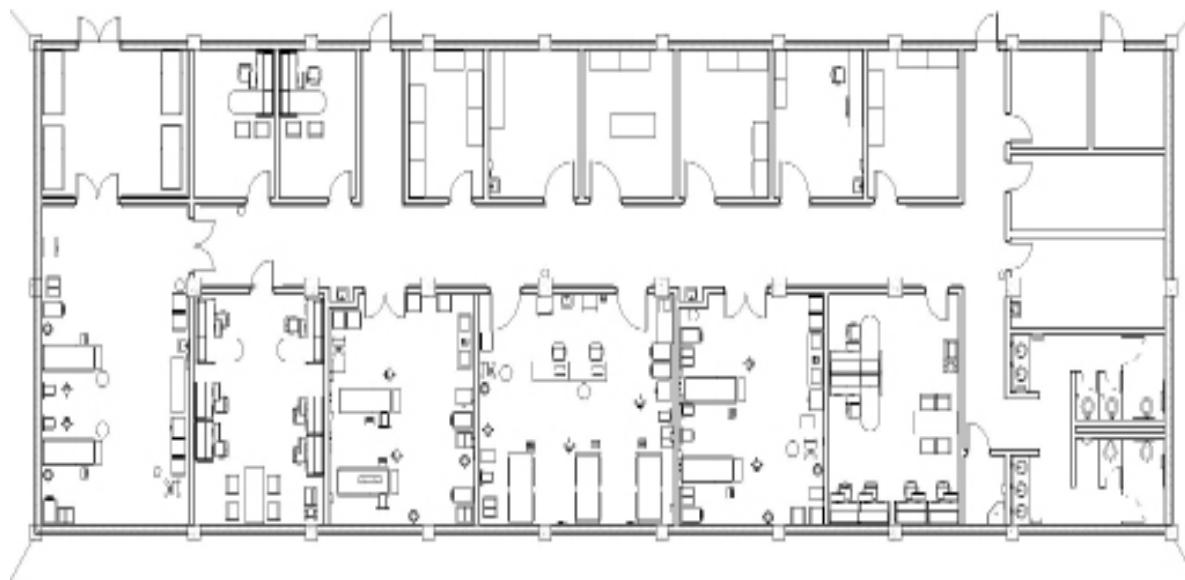
Option 2: Role 2 Medical Facility



Description	
Size	850m <sup>2</sup>
Details	Trauma, Exam Rooms, X-Ray, Physical Therapy, Dental, Optometry

## MEDICAL FACILITY (OPTION 3)

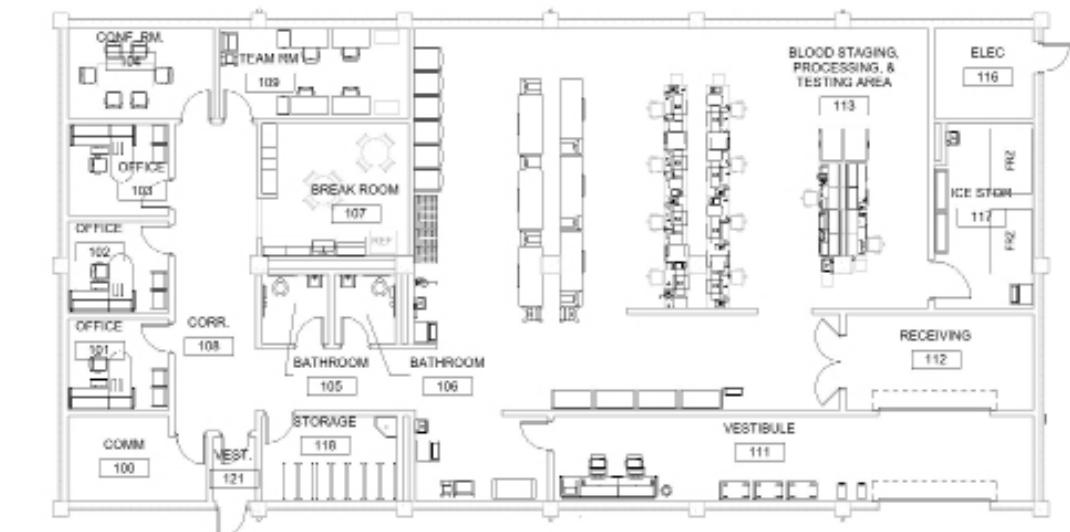
Option 3: Role 2+ Medical Facility



Description	
Size	665m <sup>2</sup>
Details	Trauma Room, Exam Rooms, Operating Room, Recovery, Utilities, Laboratory

## MEDICAL FACILITY (OPTION 4)

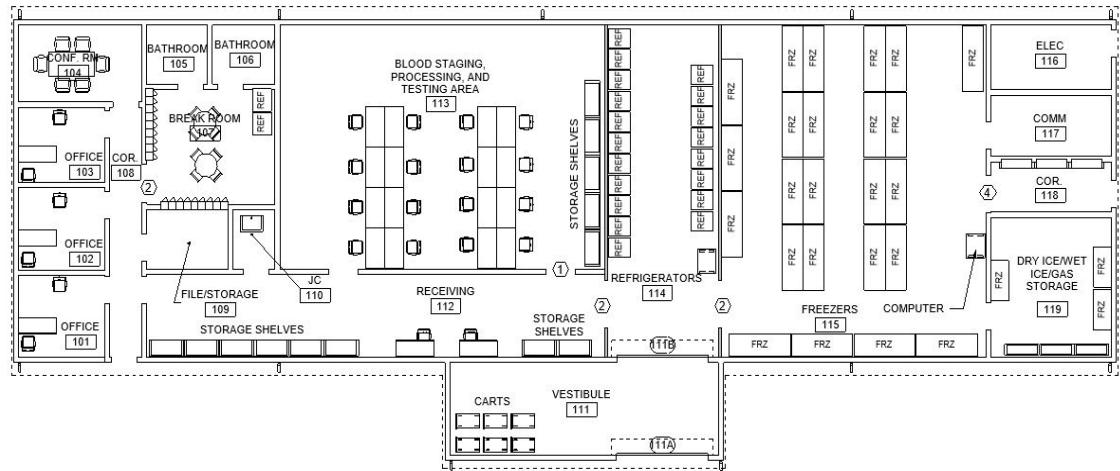
Option 4: Expeditionary Blood Transshipment (EBT)



Description	
Size	550m <sup>2</sup>
Details	Trauma Room, Exam Rooms, Operating Room, Recovery, Utilities, Laboratory

## MEDICAL FACILITY (OPTION 5) - FACE ONLY

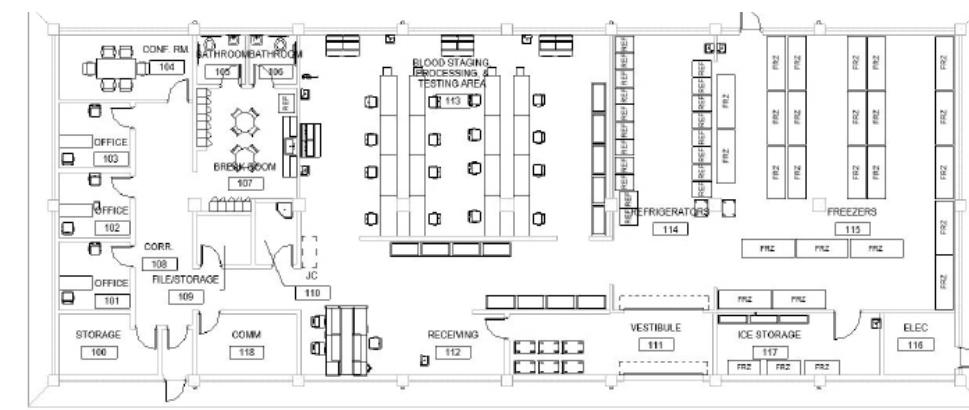
Option 5: Armed Services Whole Blood Processing Laboratory



Description	
Size	570m <sup>2</sup>
Details	Developed in coordination with HFPA and JMSLA white paper. Includes separate office spaces, conference room, blood processing, testing and storage.

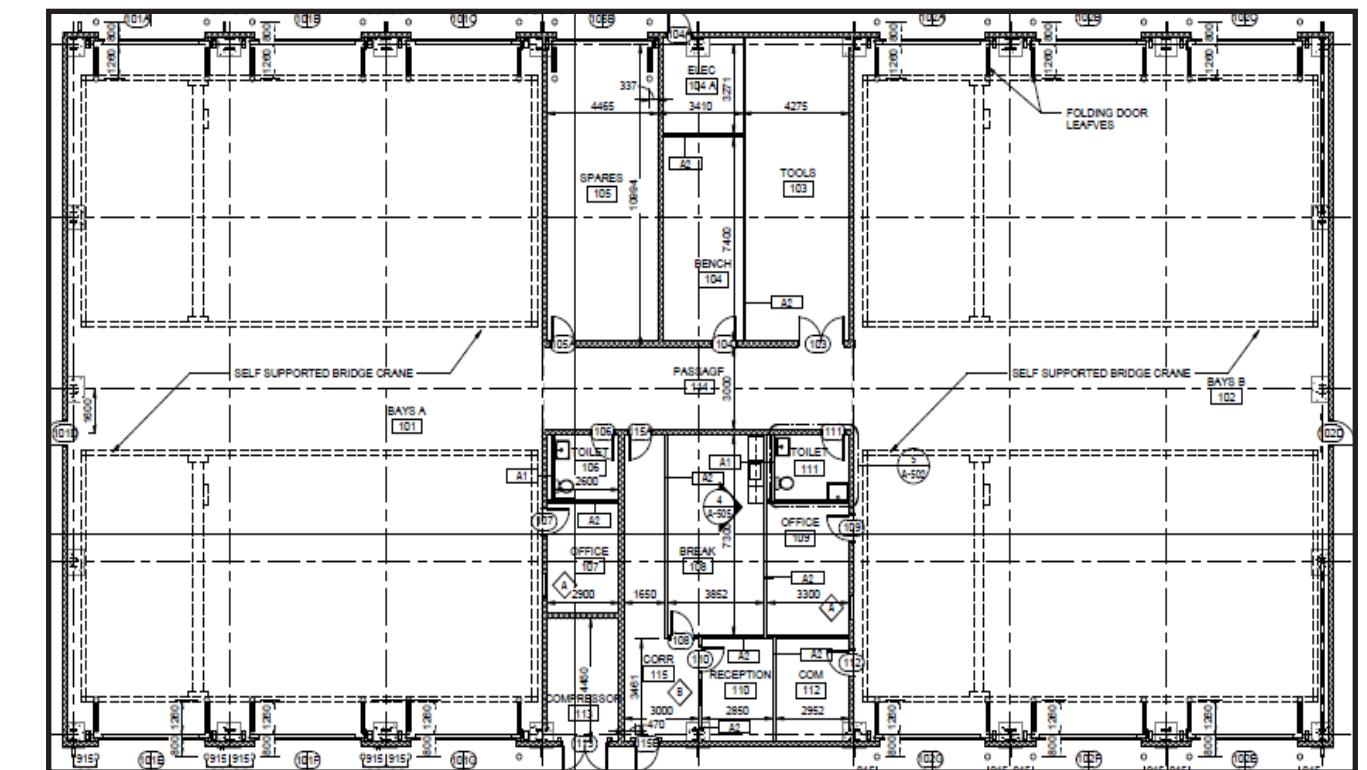
## MEDICAL FACILITY (OPTION 5) - SAFE 1 ONLY

Option 5: Armed Services Whole Blood Processing Laboratory



Description	
Size	668m <sup>2</sup>
Details	Developed in coordination with HFPA and JMSLA white paper. Includes separate office spaces, conference room, blood processing, testing and storage.

## TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF)

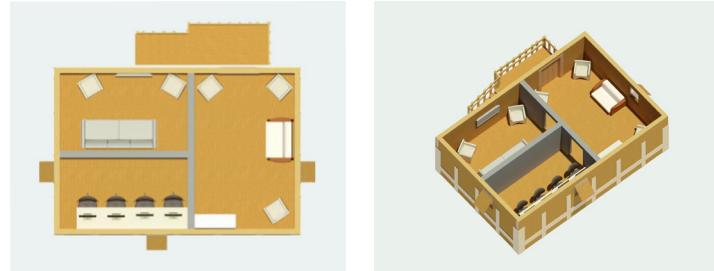


Description	
Size	1,300m <sup>2</sup>
Details	Two separate working bays, offices, restrooms, break room and tools storage

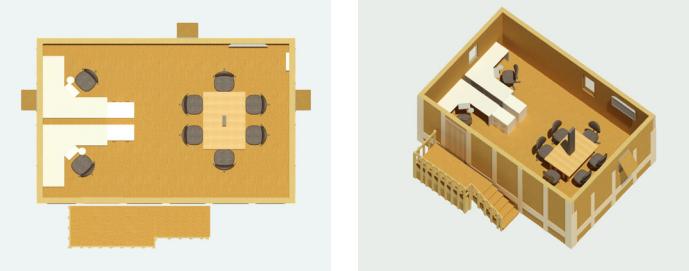
## OFF-THE-SHELF CUBE DESIGNS

Other designs include billeting, phone room, DFAC, etc.  
Several other options are available upon request.

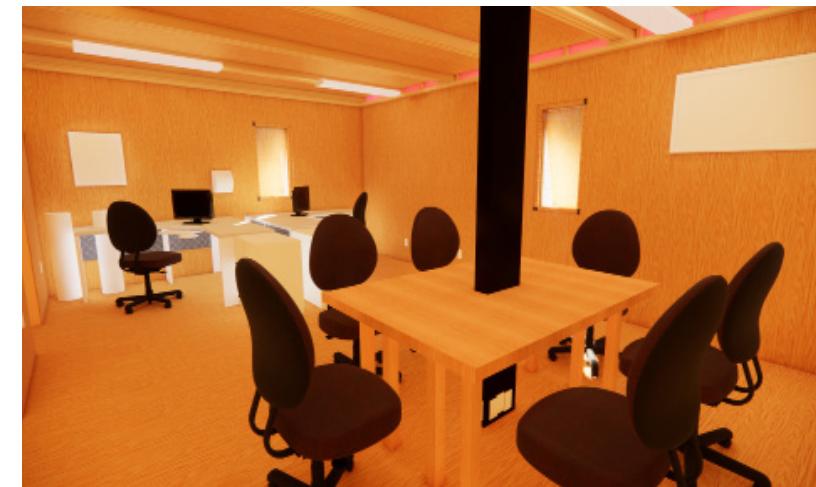
Lounge Area- Option 1



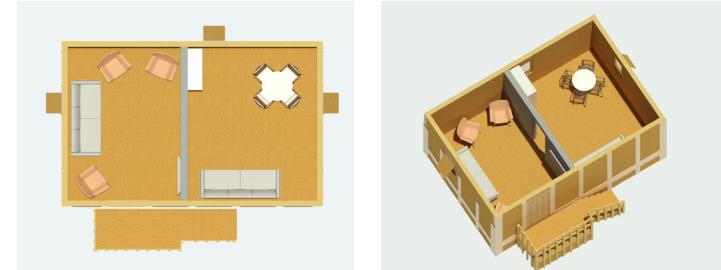
Tactical Operations Center



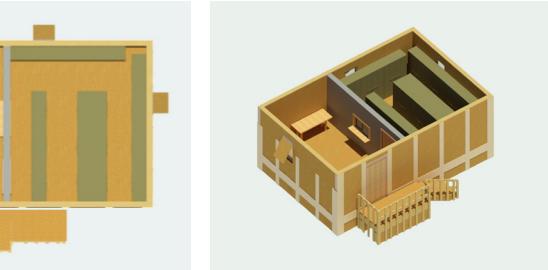
Tactical Operations Center



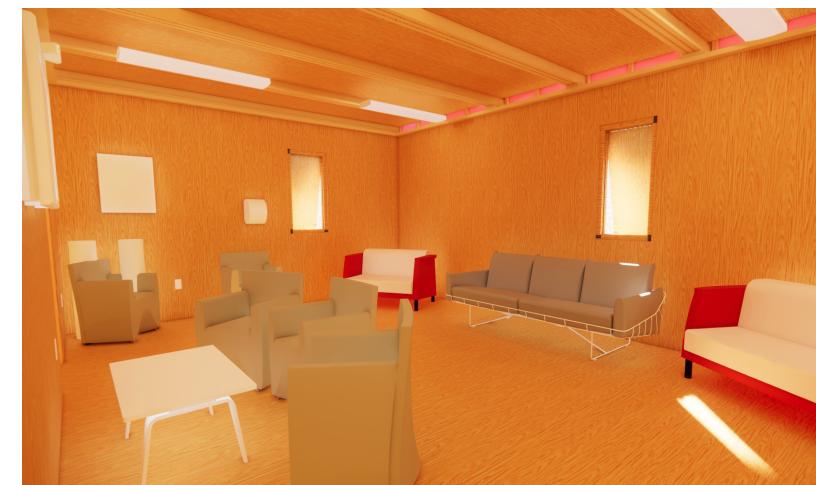
Lounge Area- Option 2



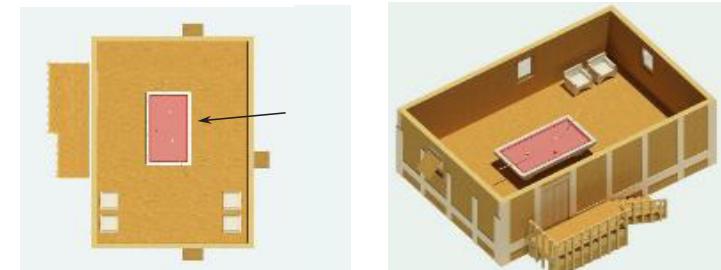
Weapon Storage



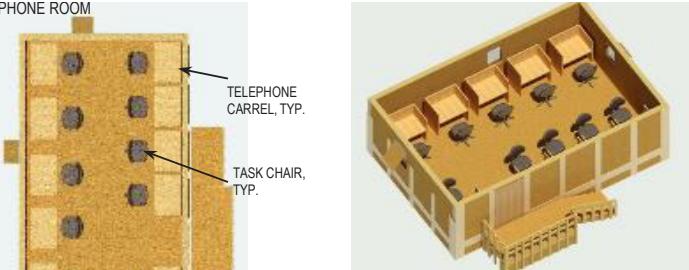
Lounge Area- Option 2



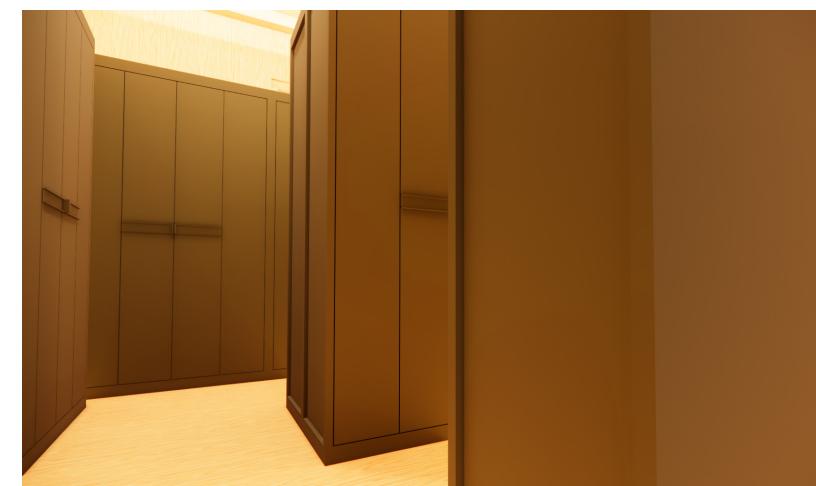
Lounge Area- Option 3



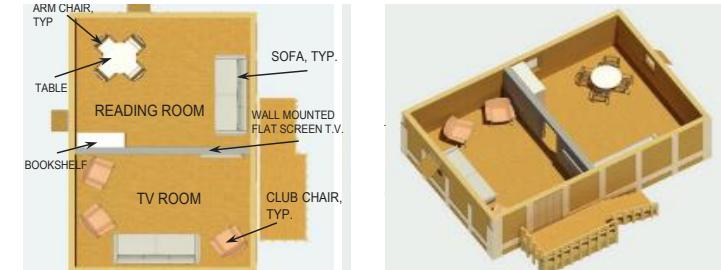
Phone Room



Weapons Storage



Lounge Area- Option 4

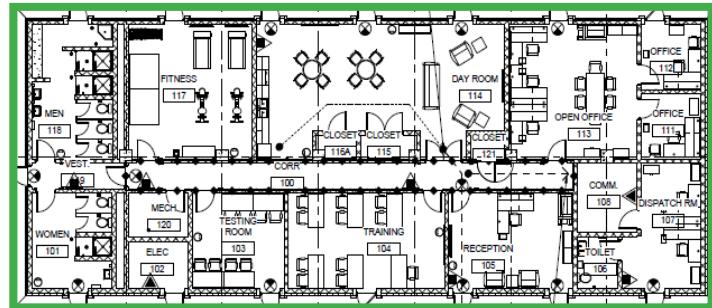


CUBE Designs	
1	Tactical Operations Center
2	Lounge Area Option 1
3-4-5	Lounge Area Option 2-3-4
6	Phone Room
7	Weapons Storage
8	DFAC

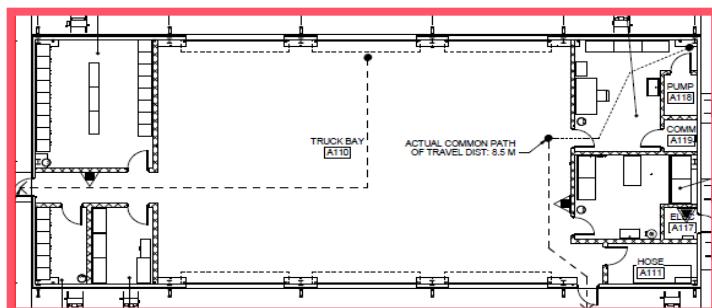
## OFF-THE-SHELF DESIGNS

Fire Station Complex  
Training Area, Fitness, Offices, Dispatch, Barracks, Truck Bay

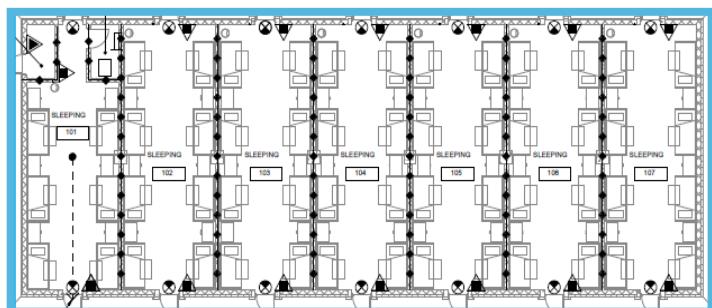
Administrative Building (442.5m<sup>2</sup>)



Apparatus Bay (374m<sup>2</sup>)



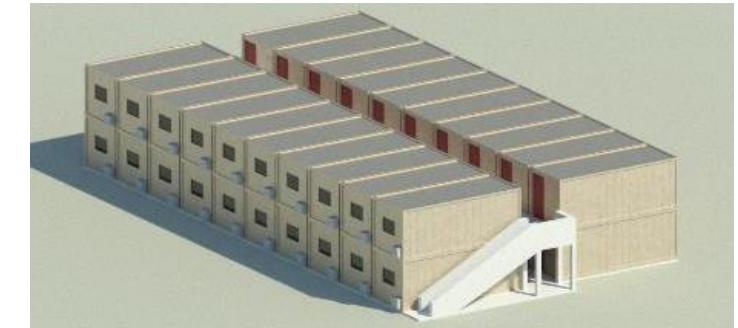
Barracks (442.5m<sup>2</sup>)



## RELOCATABLE BUILDINGS UNITS, WORLDWIDE

Relocatable Building (RLB), prefabricated structures manufactured to be deployable (transportable over public roads), erected, disassembled, stored.

- Dimensions: 7' 8" (2300 mm) W x 19' 5" (5900 mm) L x 7' 8" (2300 mm) H
- Insulation: Walls and floor R-20; Roof R-40
- Expected Life: 15 years, can be re-deployed up to 3 times
- Systems: Included Mechanical, Electrical, and Communication systems
- Warrant: 1, 5, 10, or 15 year options
- Assembly: Can be performed by untrained personnel
- Compliance: UFC 1-201-01 Non-Permanent DoD Facilities in Support of Military Operations are Semi-Permanent
- See UFGS 13 34 23.12 10 available at [https://wbdg.org/ffc/dod/ufgs\\_13\\_34\\_23.12\\_10.pdf](https://wbdg.org/ffc/dod/ufgs_13_34_23.12_10.pdf)



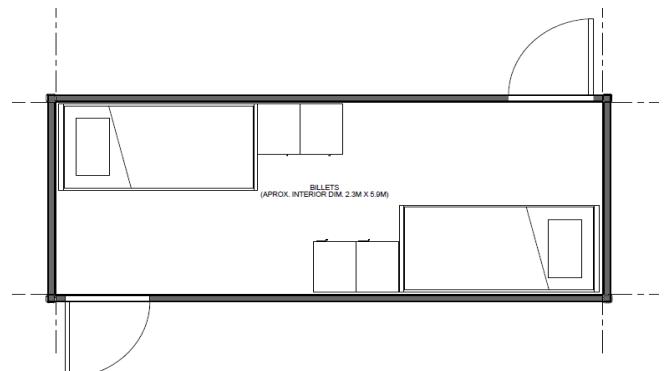
## MATOC RELOCATABLE BUILDING UNITS, CENTCOM

**RLB Type A:** Bighting or Administrative (Single 160 SF or 14.8 SM)

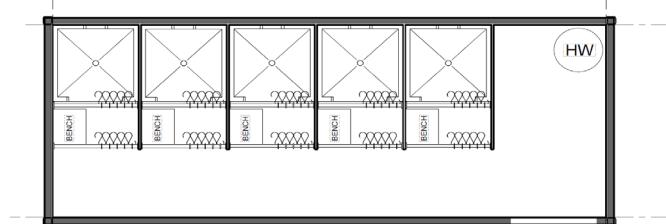
**RLB Type B:** Latrine, Shower/Shave (LSS) (Two 320 SF)

**RLB Type C:** Laundry Services (Single 160 SF or 14.8 SM)

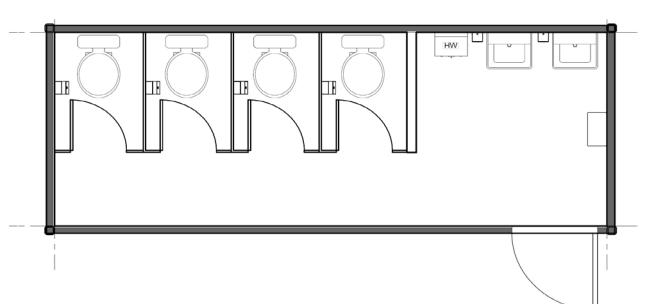
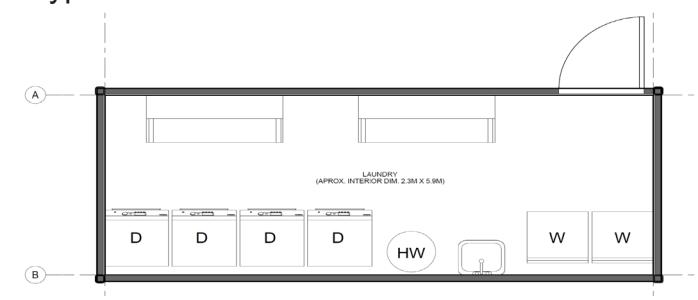
**RLB Type D/E:** Medical and Dental Clinics (Four 640 SF or 59.5 SM)  
(Type D - Risk category 2/Type E - Risk category 3)



**RLB Type F:** MWR, Religious, Open Space, Admin, Fitness, DFAC, etc. (Four 640 SF or 59.5 SM)



\*Type A & B can be stacked or connected to



## ASSEMBLIES

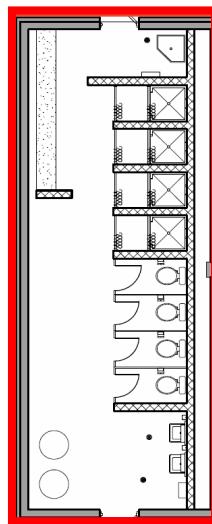
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## GENERAL OVERVIEW

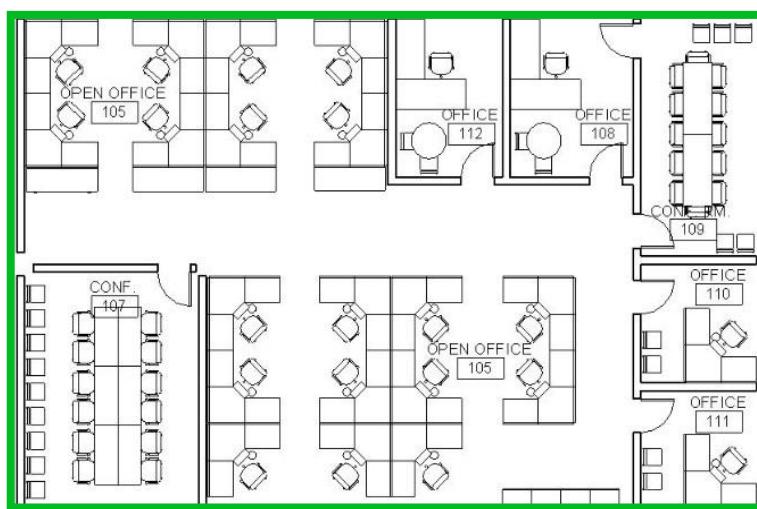
Once the Envelope has been chosen, one can customize their build by organizing off-the-shelf designs into their design. This allows for customization and flexibility.

All Envelopes are designed to be elongated or shortened by the standard "bay" length. The CoS offers a wide variety of compartmental assemblies that can be tailored to the desired requirements at a fraction of the cost/time of a new design.

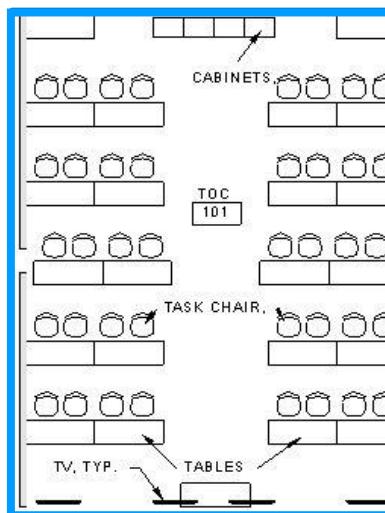
### Latrine



### Office/Cubical/Conference

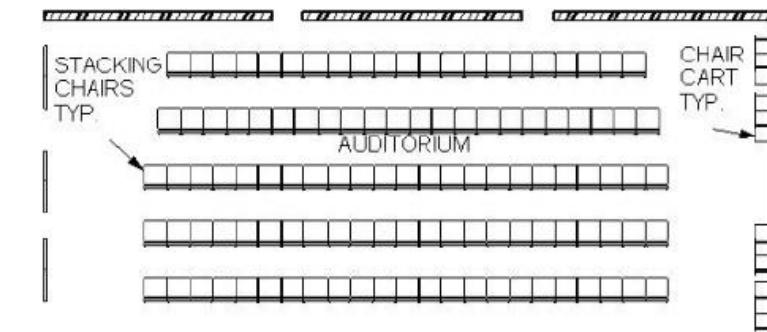


### Open Seating

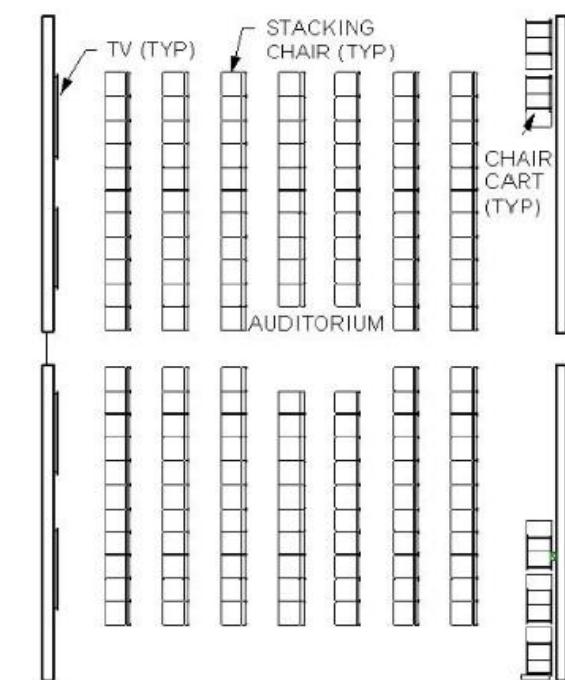


## BRIEFING / ASSEMBLY

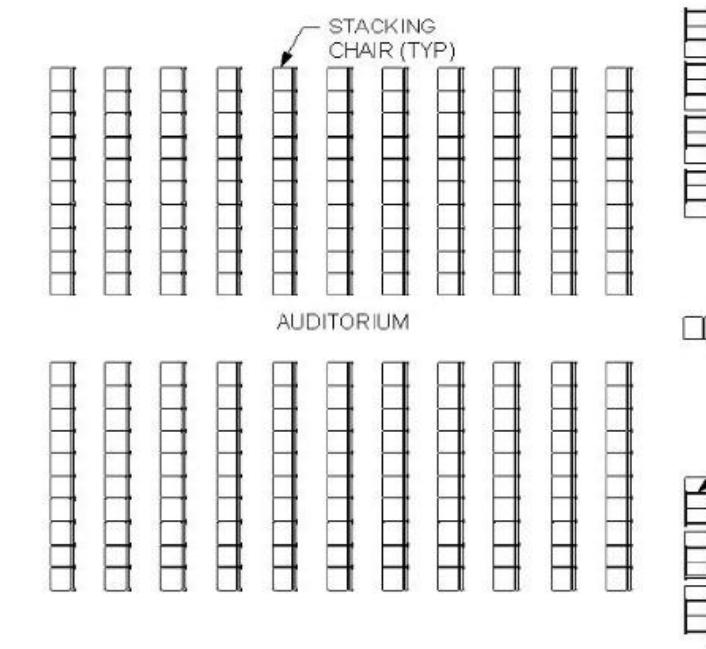
### Option 1: 112 PN



### Option 2: 150 PN

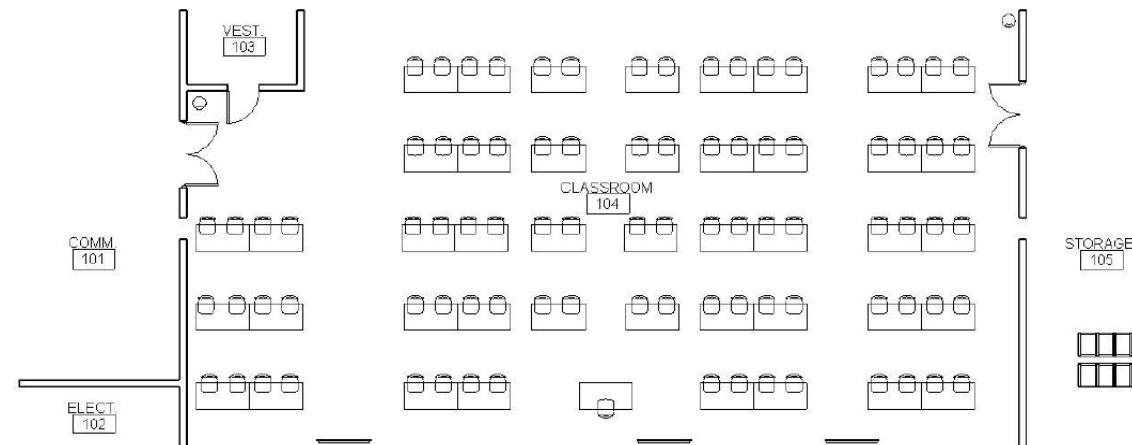


### Option 3: 220 PN



## CLASSROOM

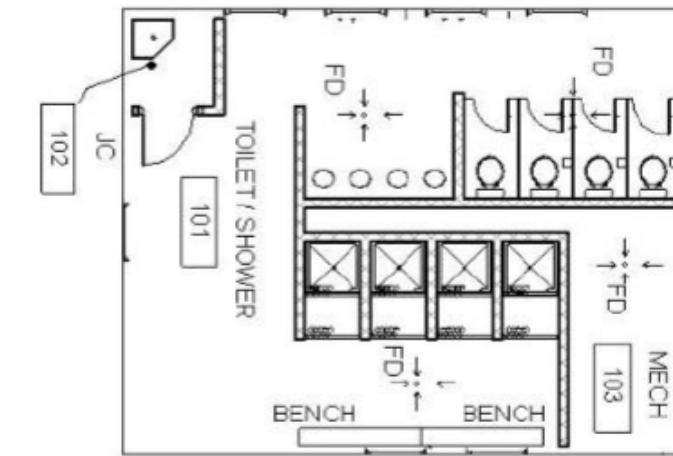
### OPTION 1



Description	
Size	88 Students / 1 Teacher
Details	Open classroom space, comm room, electrical, storage, and vestibule

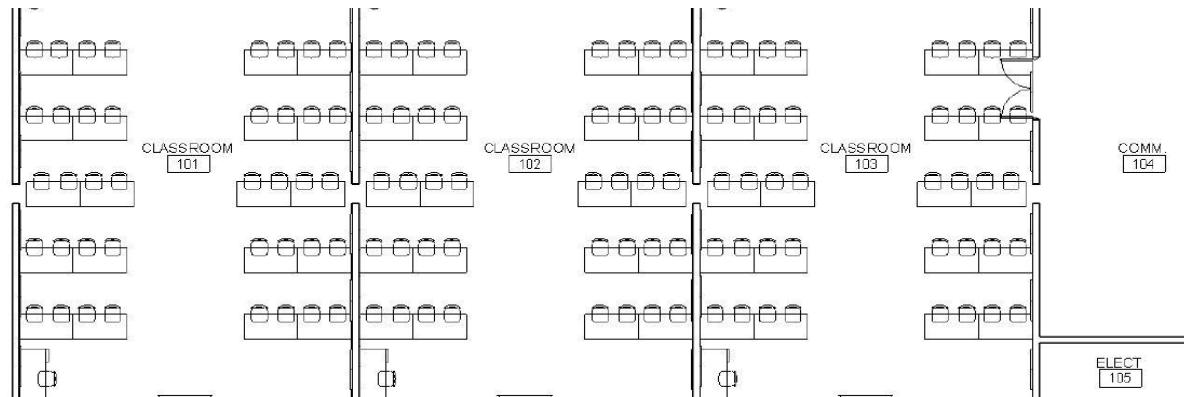
## LATRINE & SHOWER / LAUNDRY

### OPTION 1



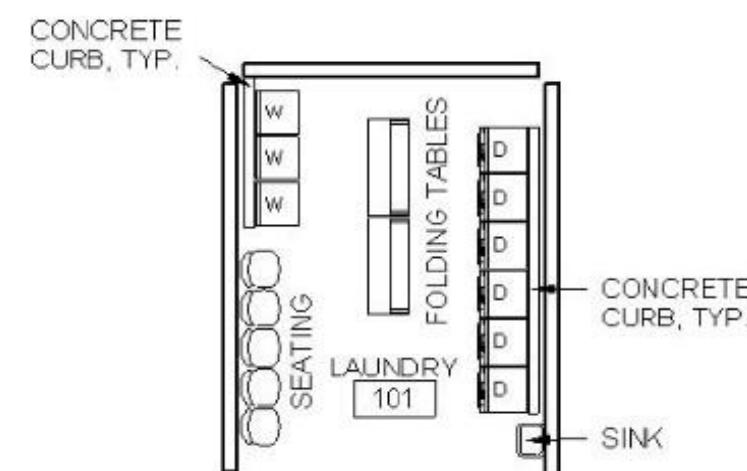
Description	
Size / Capacity	2 Bays / 5 PN
Details	Four showers, four toilets, four sinks

### OPTION 2



Description	
Size	120 Students / 3 Teachers
Details	Three separate classrooms, comm and electric room

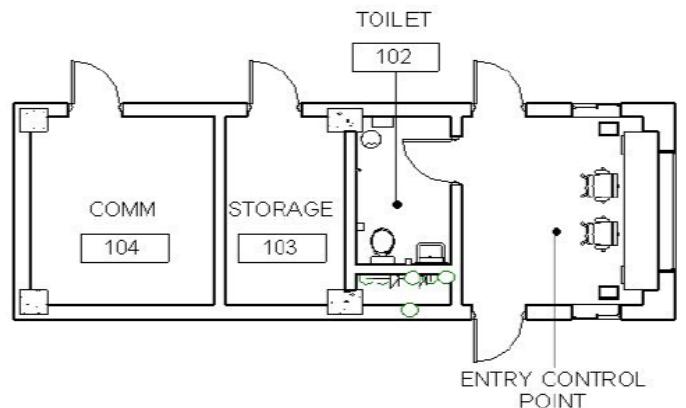
### OPTION 2



Description	
Size	1 Bay
Details	3 washing machines, seating for 5, 2 folding tables, 6 dryers, sink

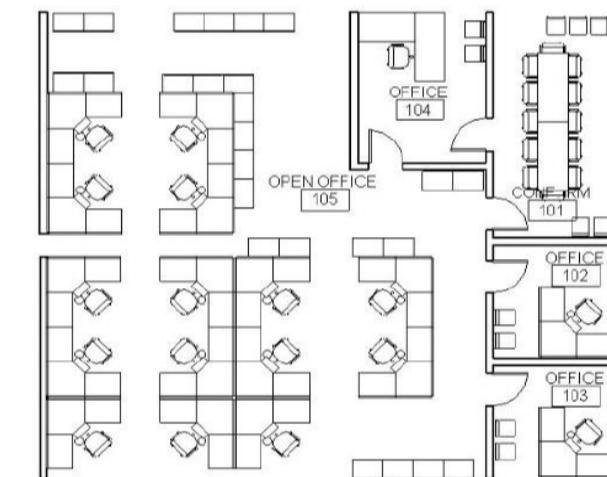
## GUARD HOUSE / HQ

### GUARD HOUSE



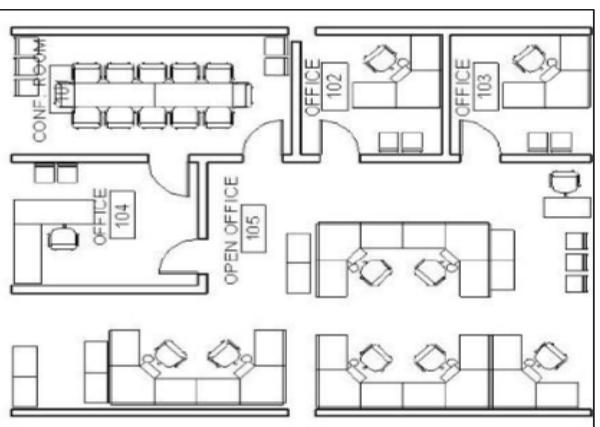
Description	
Size / Capacity	2 Bays / 2 PN
Details	Comm & storage accessible from the outside, latrine for 1 PN, entry control point room for 2 PN

### HQ OPTION 2



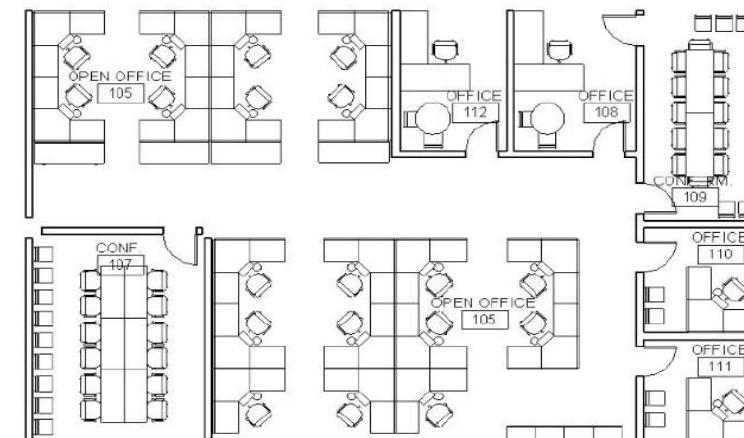
Description	
Size / Capacity	6 Bays / 18 PN
Details	Closed office for 3 PN, open office space for 15 PN. Conference space for 10-15 PN.

### HQ OPTION 1



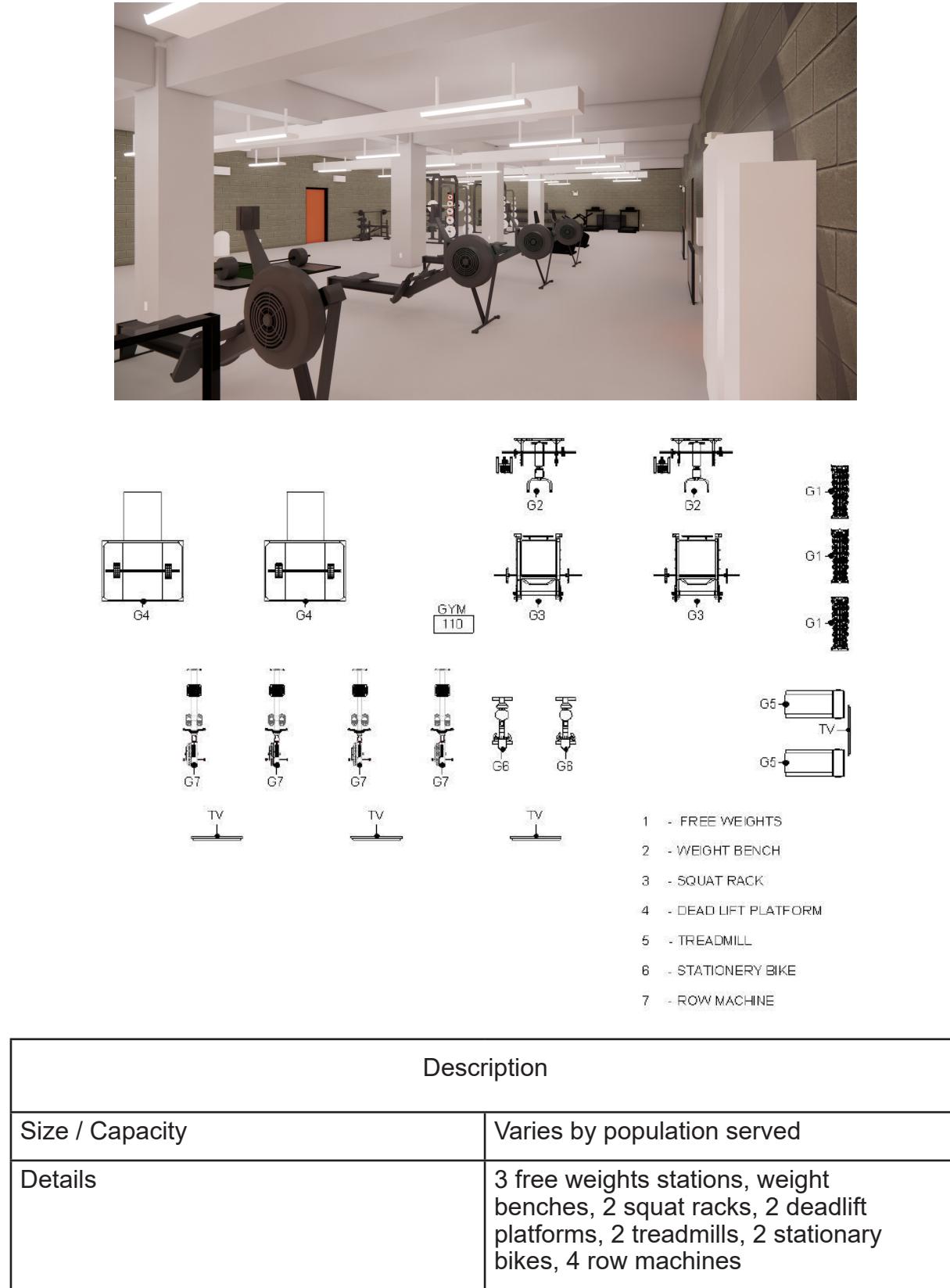
Description	
Size / Capacity	4 Bays / 11 PN
Details	Closed office for 3 PN, open office space for 8 PN. Conference space for 10-15 PN

### HQ OPTION 3



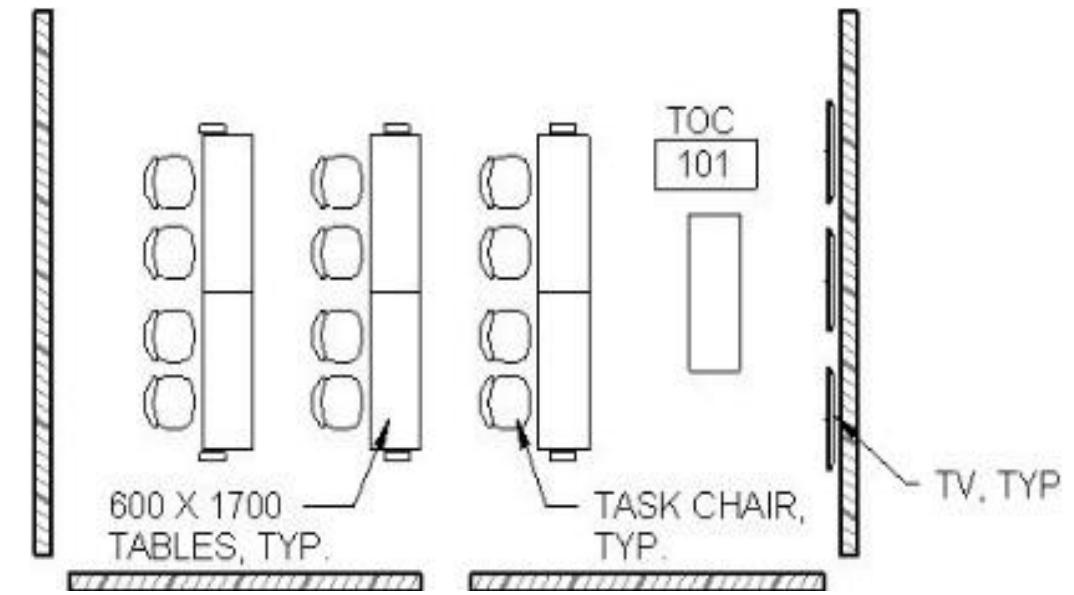
Description	
Size / Capacity	8 Bays / 23 PN
Details	Closed office for 4 PN, open office space for 19 PN. Closed space for 22-36 PN.

## FITNESS

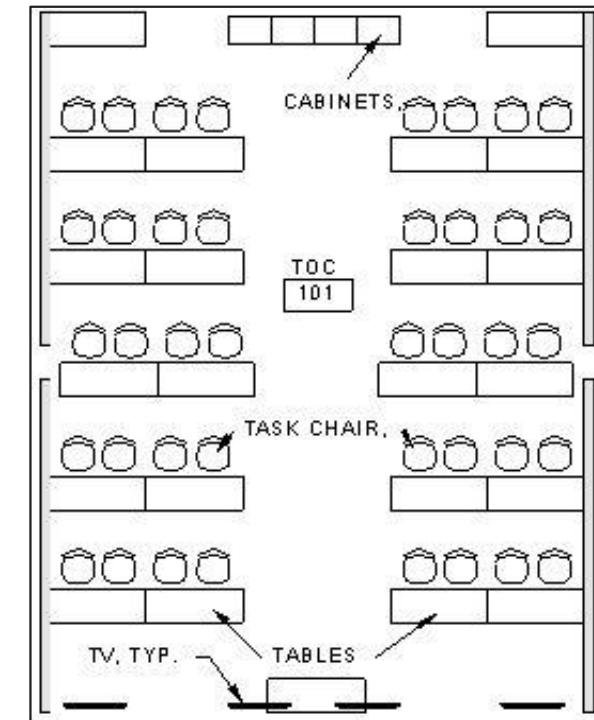


## TACTICAL OPERATIONS CENTER

### OPTION 1: 12 PN

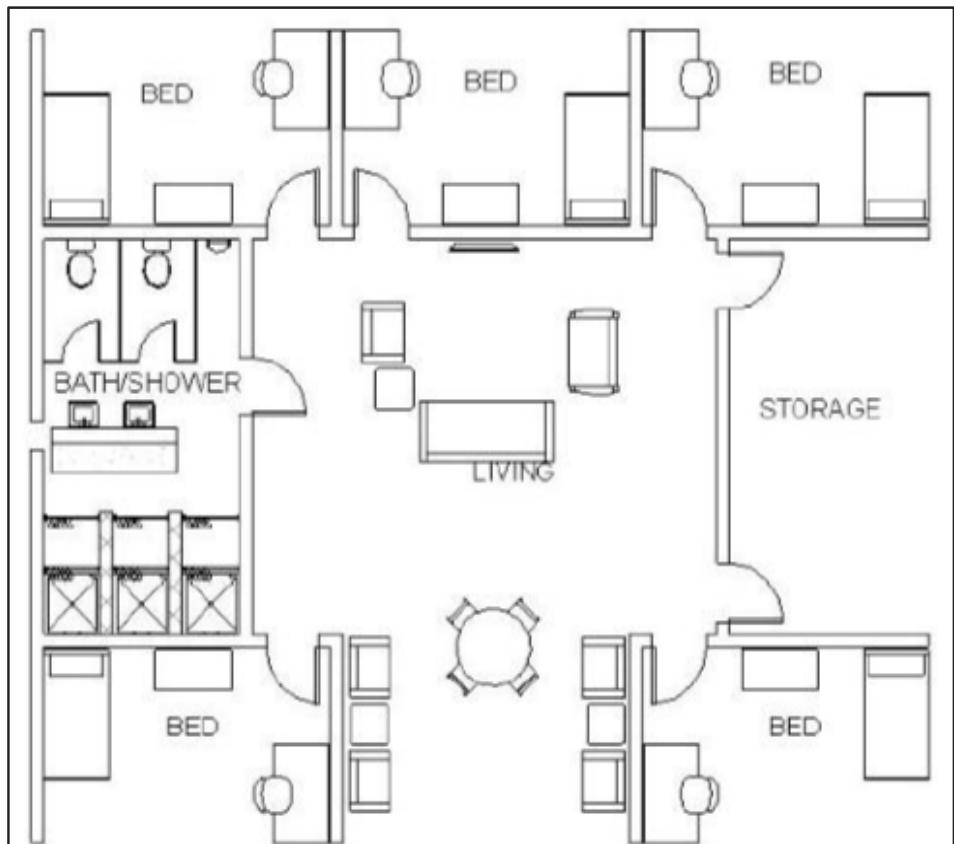


### OPTION 2: 40 PN

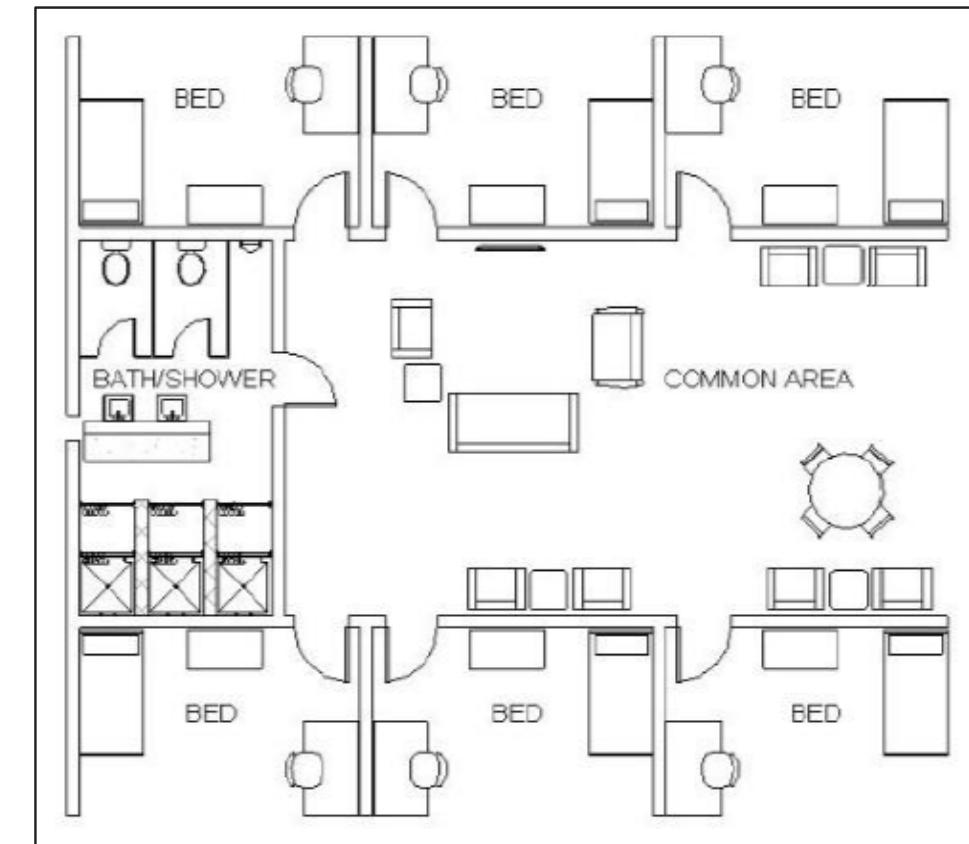


## **OFFICERS' QUARTERS**

**OPTION 1**



**OPTION 2**



Description	
Capacity	5 PN
Details	5 rooms each with bed and desk for 1 PN, storage area, common living area, 3 showers, 2 toilets

Description	
Capacity	6 PN
Details	6 rooms each with bed and desk for 1 PN, common living area, 3 showers, 2 toilets

## PROJECTS

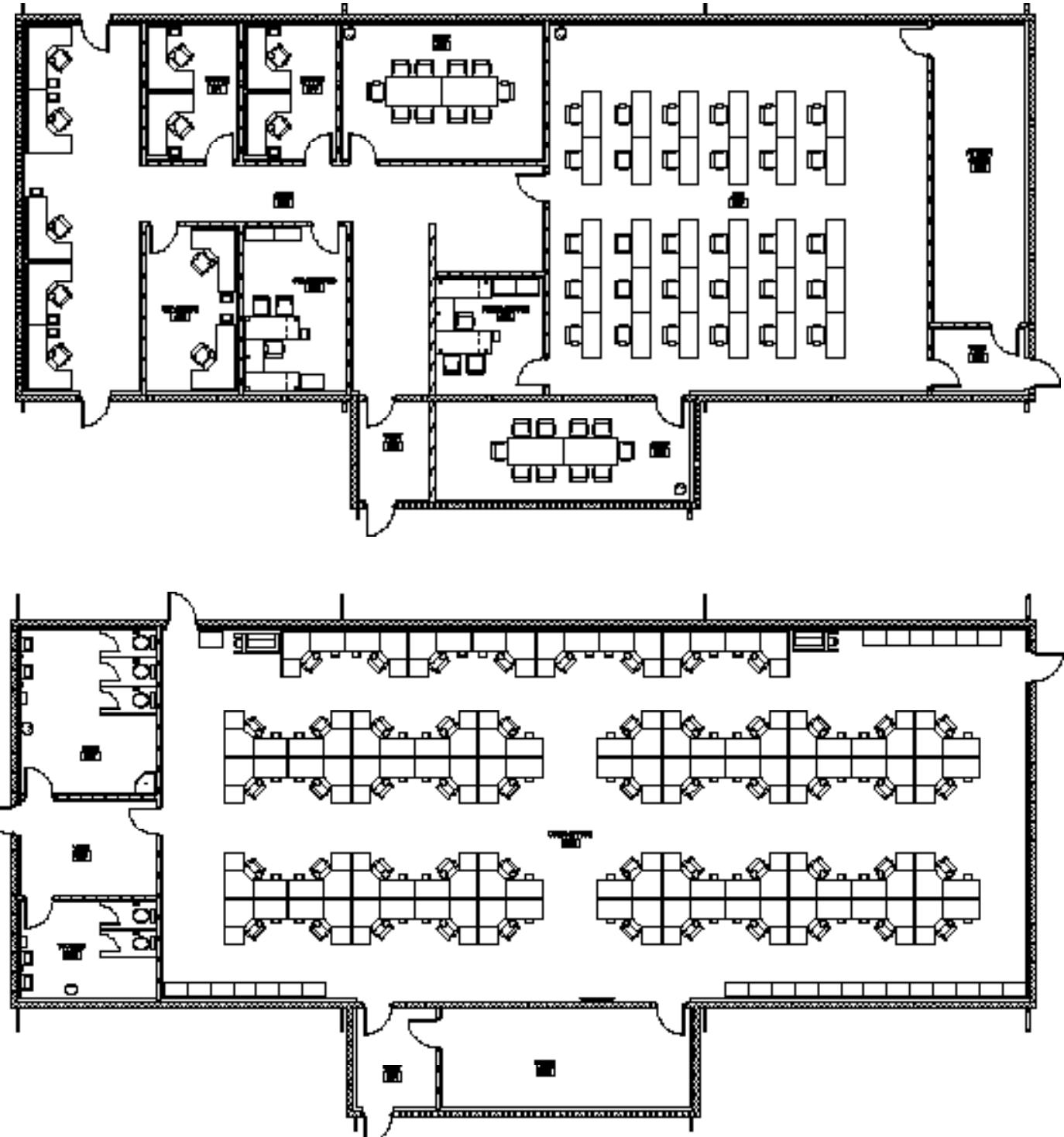
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## JOINT LOGISTICS OPERATIONS CENTER, KUWAIT (FACE)

2019

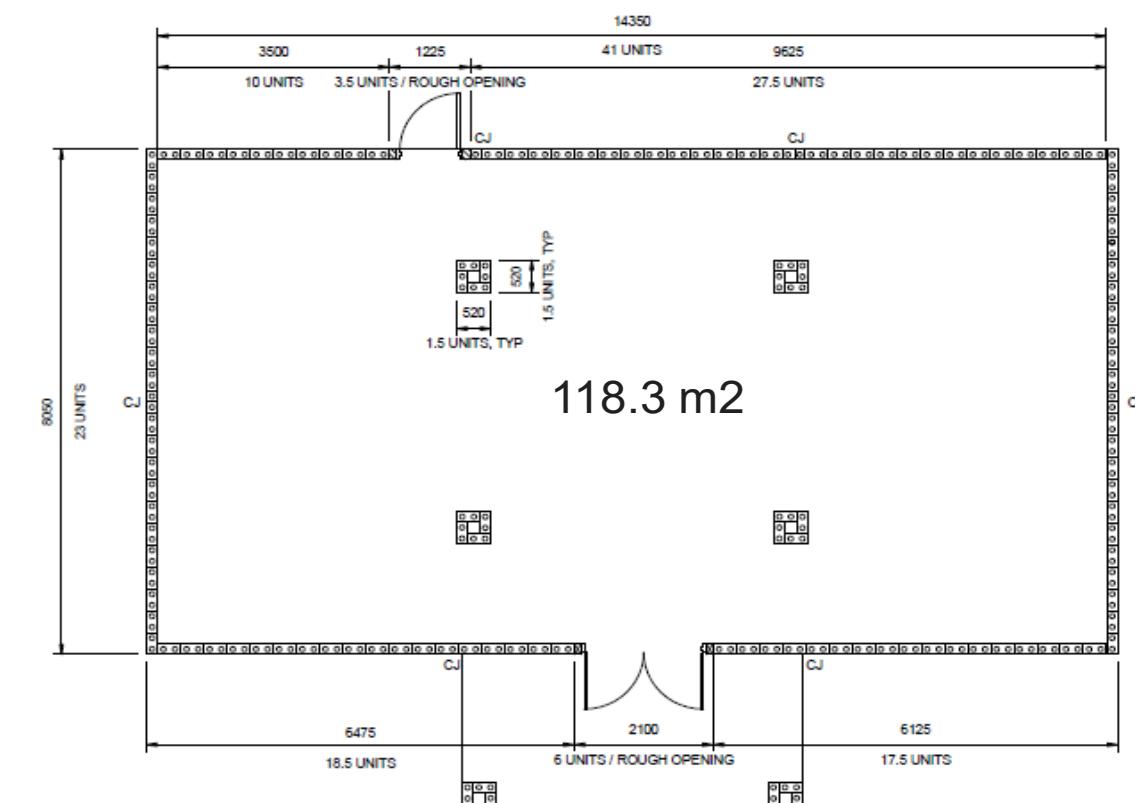


Design Type	
CoS Design	Four Area CMU Envelope (FACE)
Interior Layout	Joint Operations
Construction	
Labor Execution	Contractor
Duration	About 12 Months



## 23 TERRA HUTS, UNDISCLOSED LOCATION

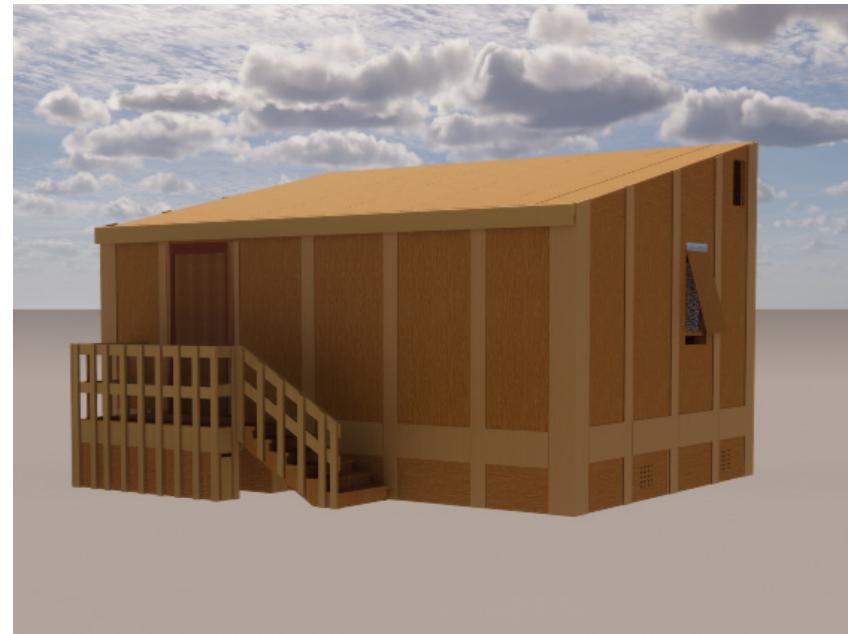
2016



Design Type	
CoS Design	TERRA Hut
Interior Layout	N/A
Construction	
Labor Execution	Troop Labor
Duration	About 6 Months

## CUBE BUILD, POLAND

2020 - \$13,000

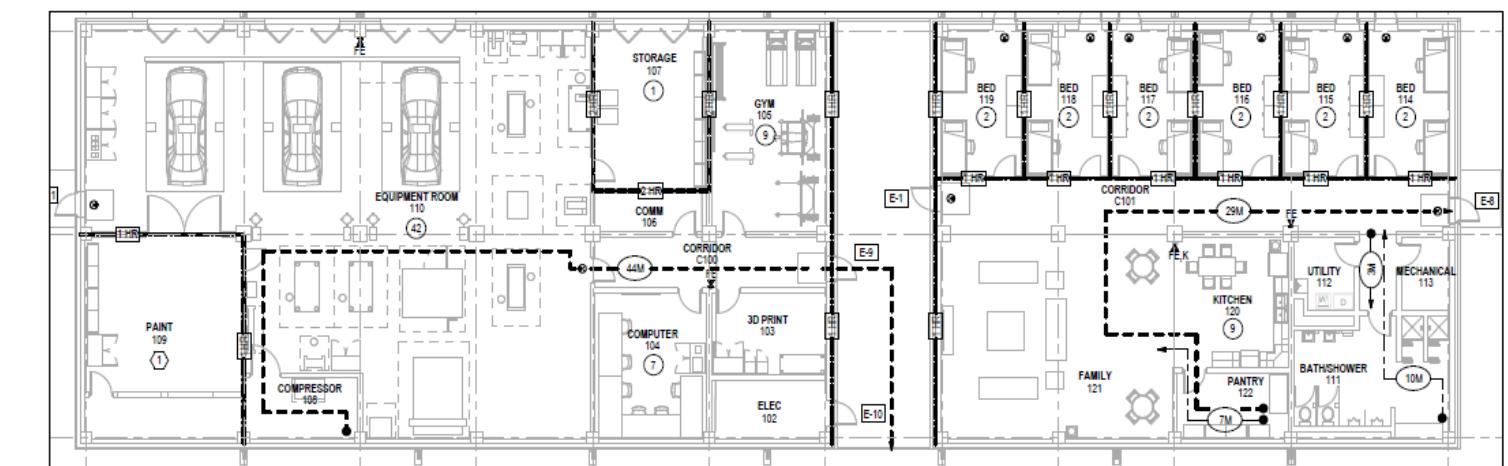
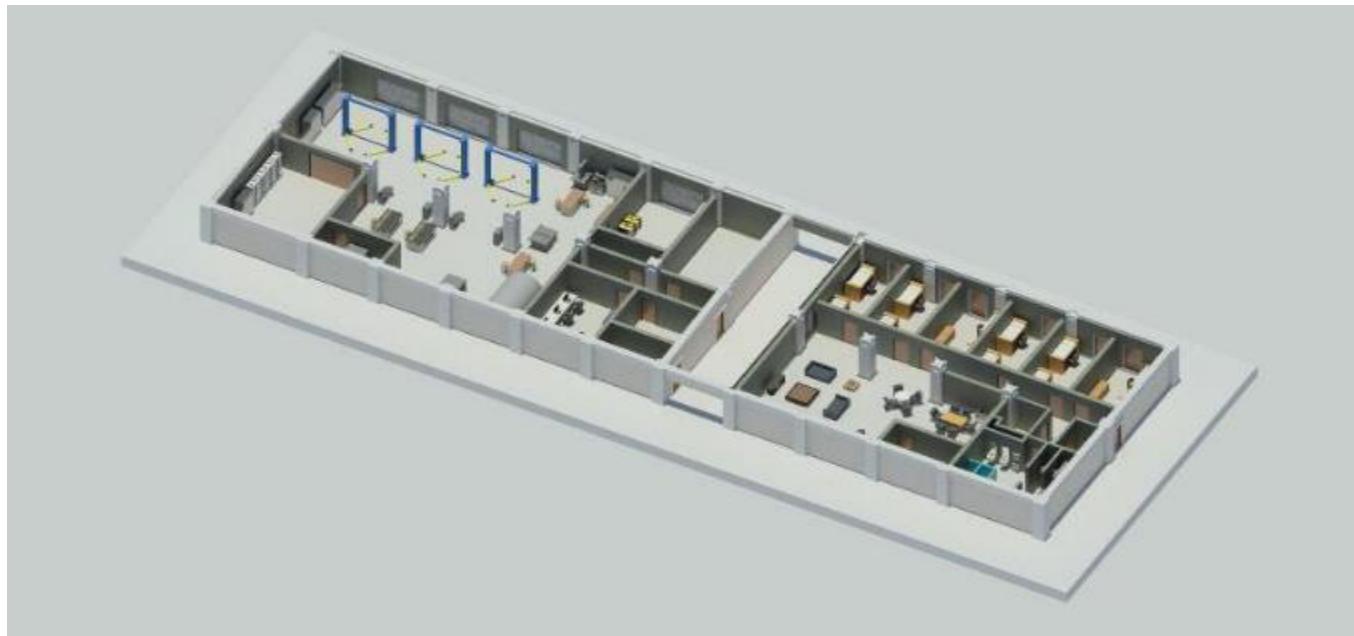


Design Type	
CoS Design	CUBE
Interior Layout	N/A
Construction	
Labor Execution	Troop Labor
Duration	48 Hours



## MACHINE SHOP, UNDISCLOSED LOCATION

2018



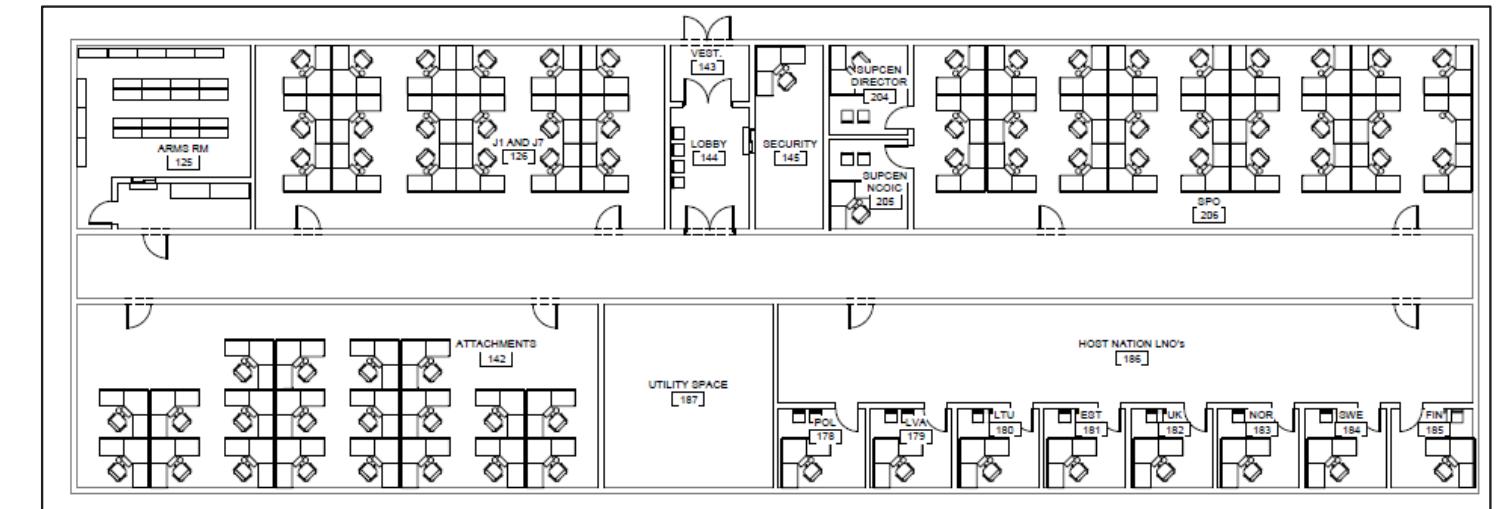
Design Type	
CoS Design	SAFE 1
Interior Layout	Customized machine shop & housing
Construction	
Labor Execution	Troop Labor
Duration	About 12 Months

## SOCEUR HQ DESIGN, UNDISCLOSED LOCATION

2018

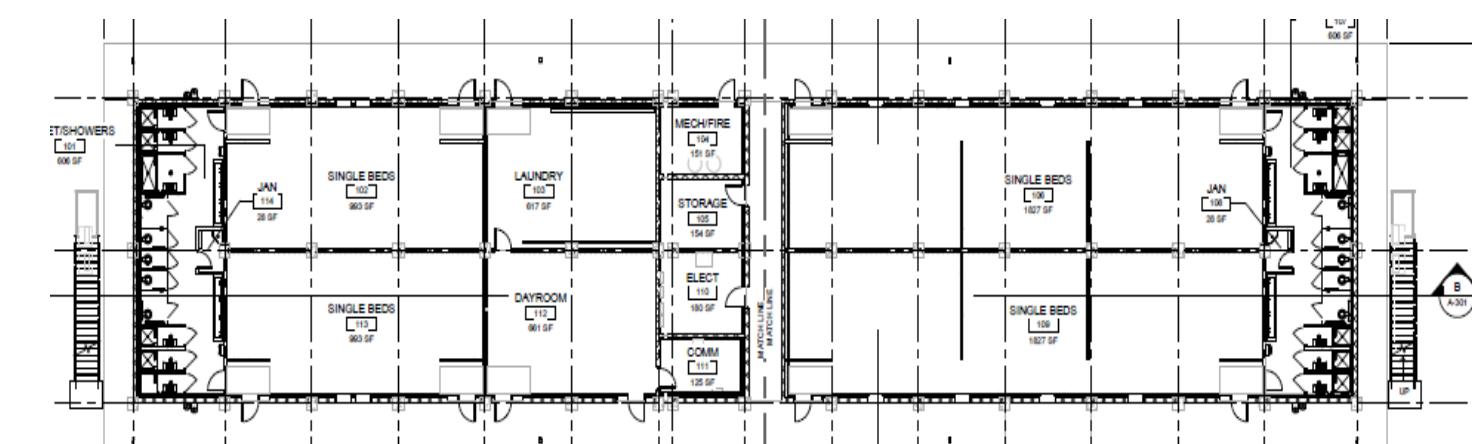
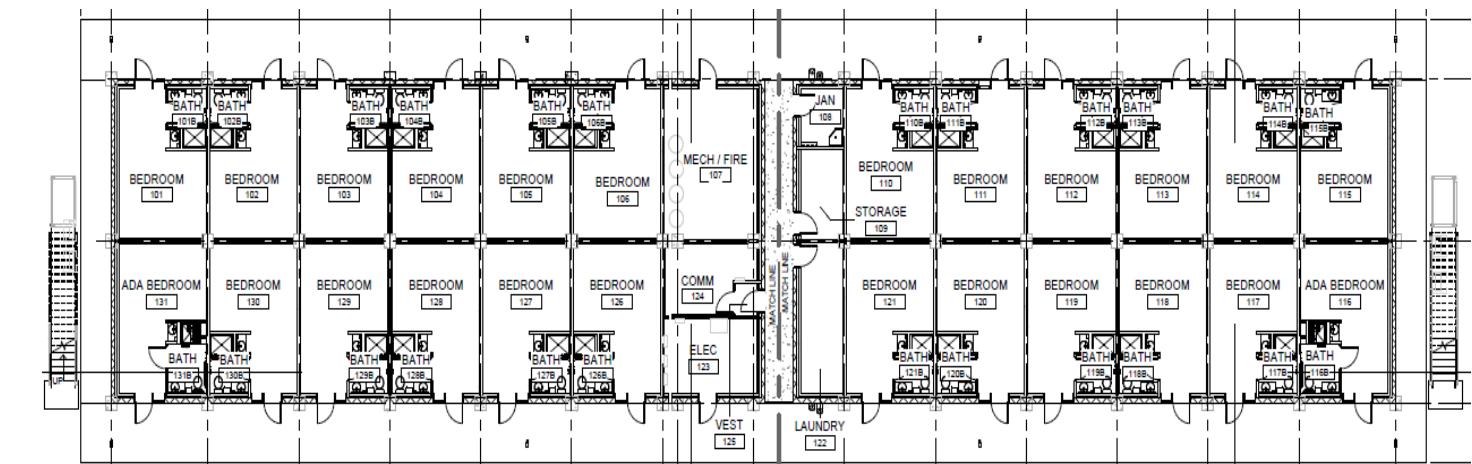


Design Type	
CoS Design	SAFE
Interior Layout	Customized headquarters layout
Construction	
Labor Execution	Contract
Duration	About 18 Months



## CAMP SANTIAGO JOINT TRAINING CENTER, PUERTO RICO

2020



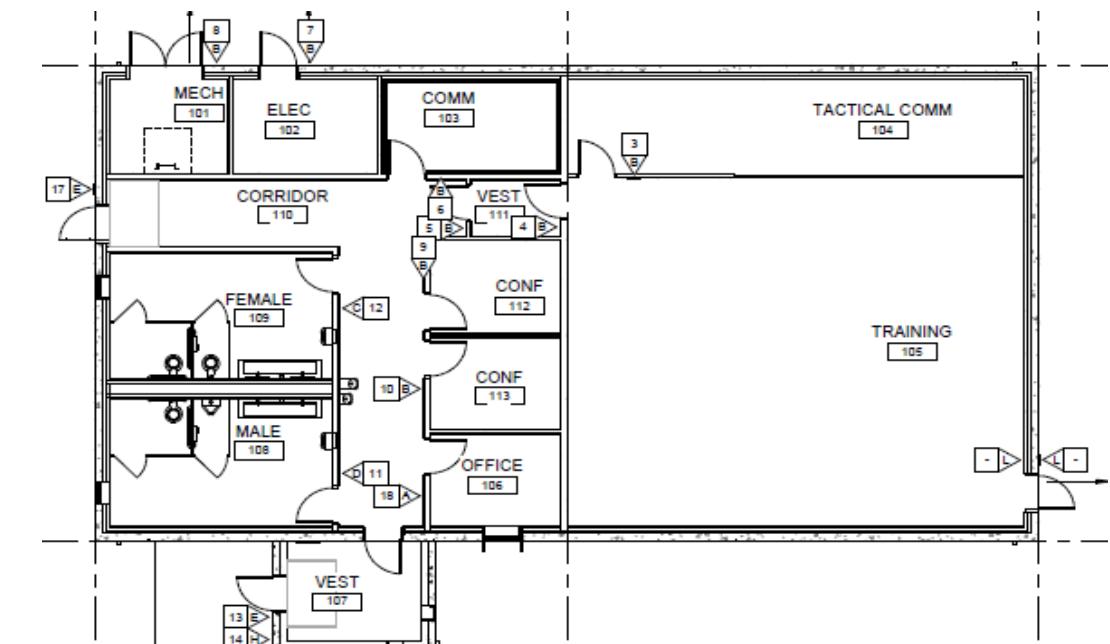
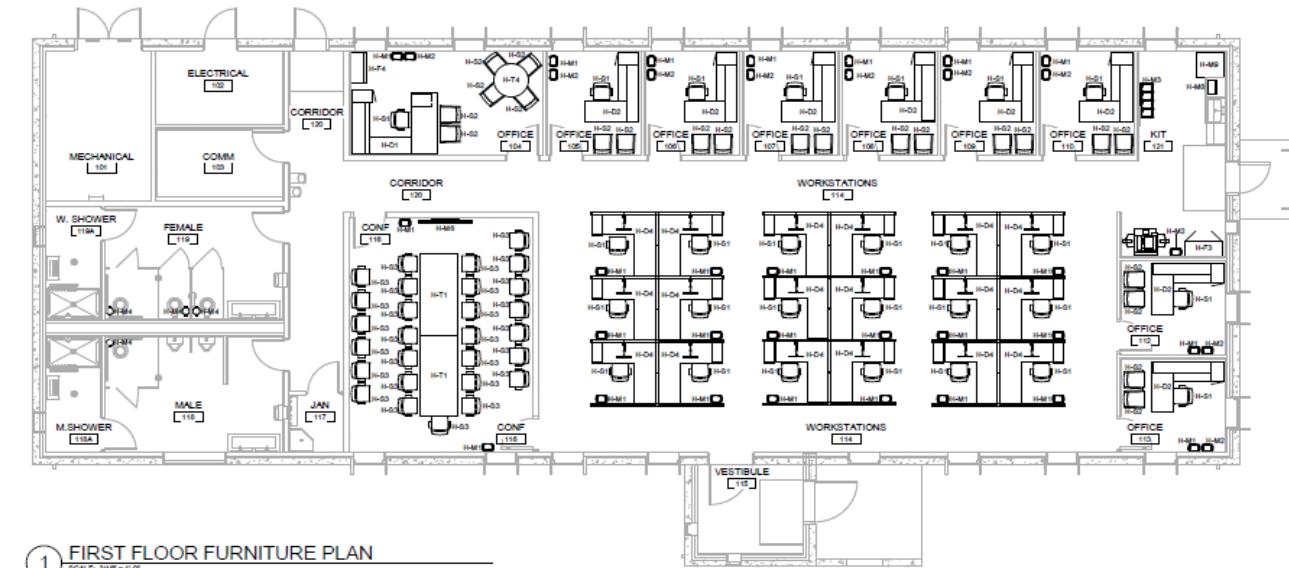
Design Type	
CoS Design	Two Story SAFE- converted to permanent construction per customer request
Interior Layout	Customized Barracks with 3 different layouts for 10 buildings total
Construction	
Labor Execution	Contract
Duration	About 24 Months

# CAMP SANTIAGO JOINT TRAINING CENTER, PUERTO RICO

2020

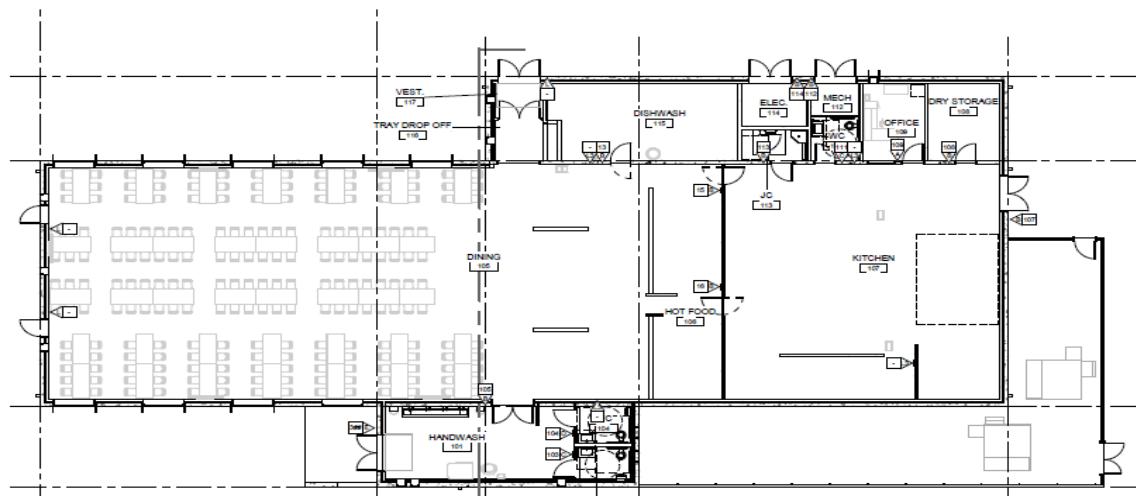


Design Type	
CoS Design	FACE, converted to permanent construction per customer request
Interior Layout	Customized Headquarters with 5 different layouts for 17 buildings total
Construction	
Labor Execution	Contract
Duration	About 24 Months



## CAMP SANTIAGO JOINT TRAINING CENTER, PUERTO RICO

2020



Design Type	
CoS Design	FACE, converted to permanent construction per customer request
Interior Layout	Customized DFAC with 2 different layouts
Construction	
Labor Execution	Contract
Duration	About 24 Months



**VIRGIN ISLAND ARMY NATIONAL GUARD,  
US VIRGIN ISLANDS**

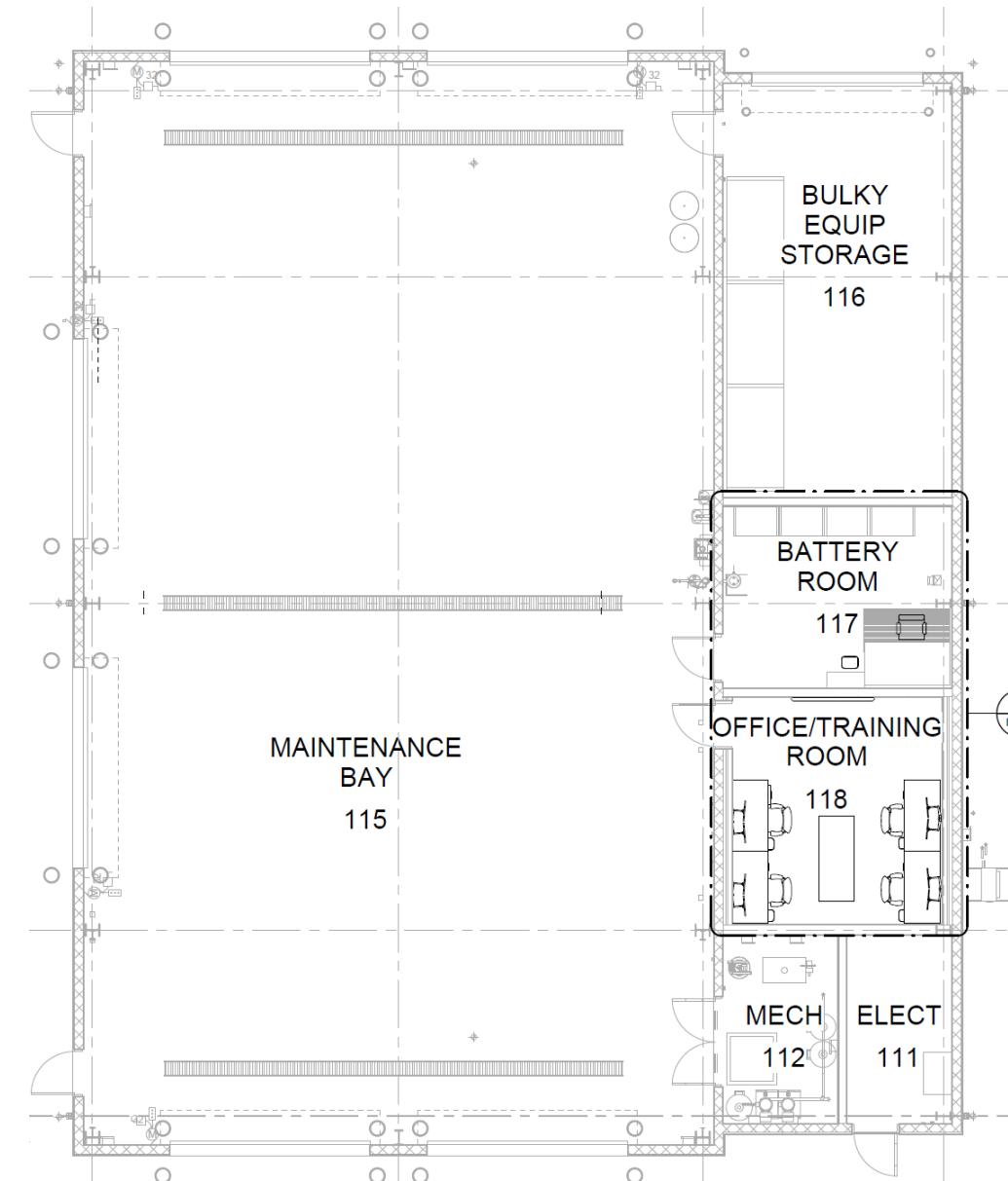
Modified MUTE for Vehicle Maintenance shop

2023



Design Type	
CoS Design	MUTE, converted to permanent construction per customer request
Interior Layout	Customized interiors
Construction	
Labor Execution	Contract
Duration	About 12 Months

**STX-St. Thomas Vehicle Maintenance Shop**



# **VIRGIN ISLAND ARMY NATIONAL GUARD, US VIRGIN ISLANDS**

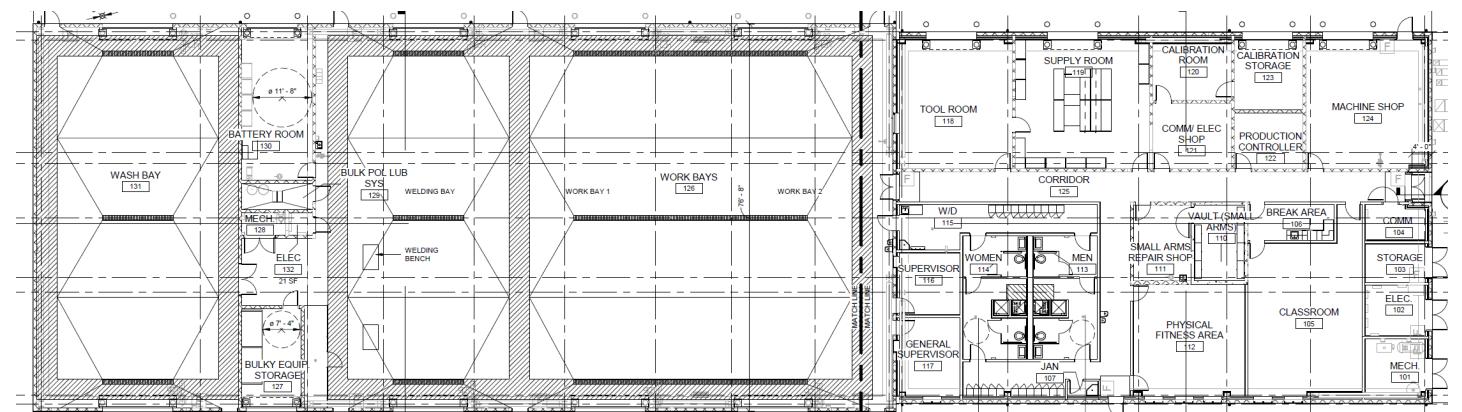
# Modified MUTE for Vehicle Maintenance shop

## 2025

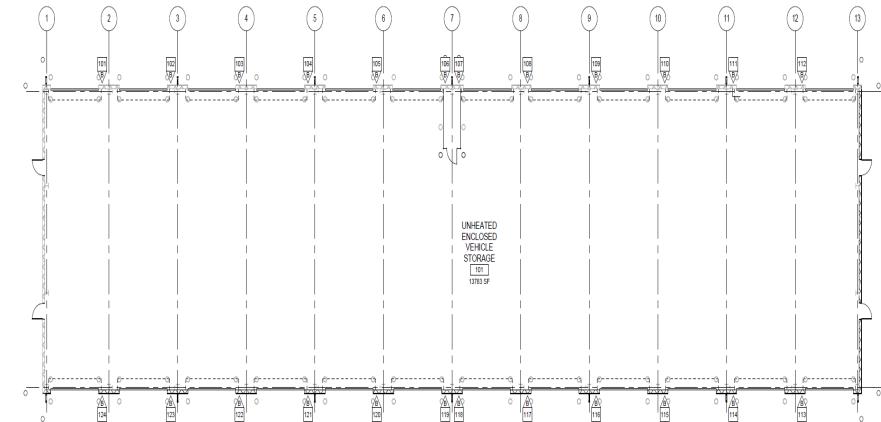


Design Type	
CoS Design	MUTE, converted to permanent construction per customer request
Interior Layout	Customized interiors
Construction	
Labor Execution	Contract
Duration	About 22 Months

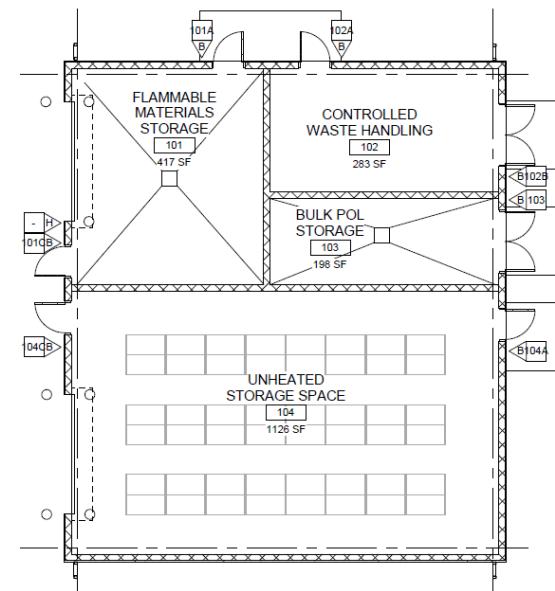
STX-St. Croix Vehicle Maintenance Shop



## STX-St. Croix-Vehicle Storage



## STX-St. Croix Enclosed Storage

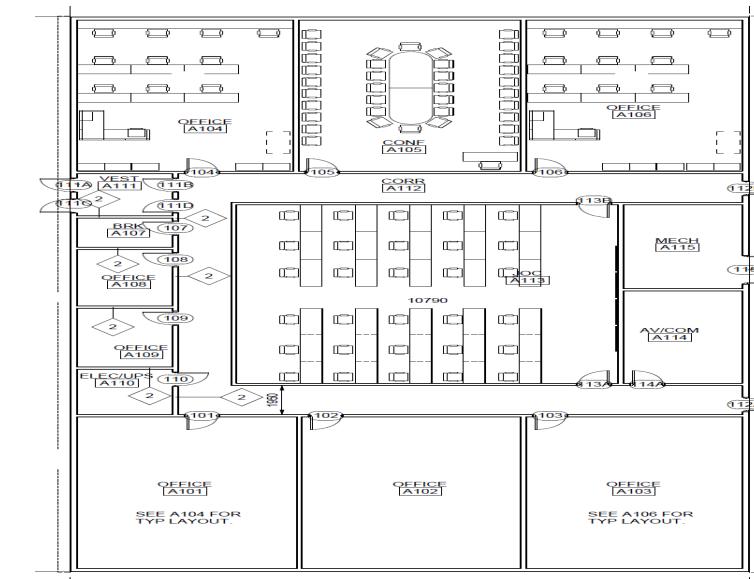
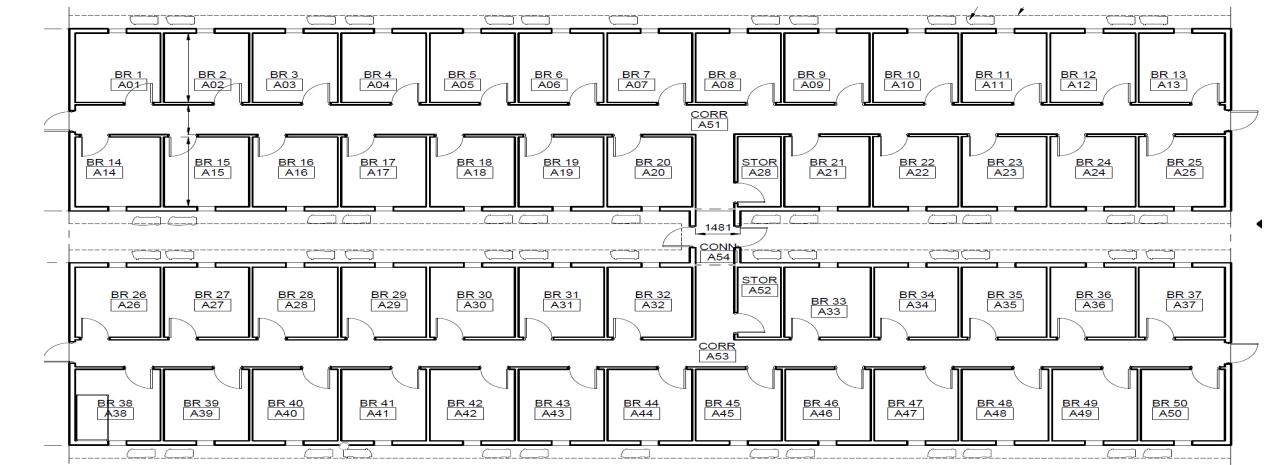


## AUTOMATED COLD FORM METAL FRAMING SYSTEM, UNDISCLOSED LOCATION

2022



Design Type	
CoS Design	New Cold Form Design
Interior Layout	Customized Barracks and Admin layouts
Construction	
Labor Execution	Troop Labor
Duration	About 18 Months



## **ADDITIONAL INFORMATION**

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## AREA COST FACTORS

PAX Newsletter, dated 5/25/2022

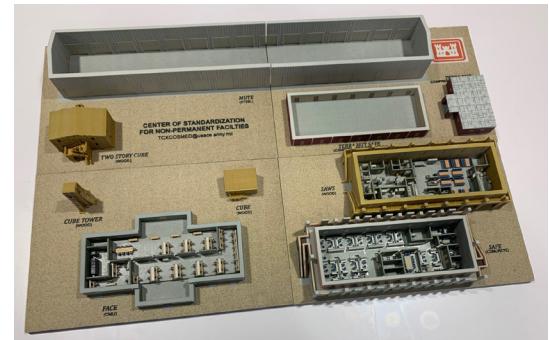
<https://www.usace.army.mil/Cost-Engineering/Area-Cost-Factors/>



0.88	Alabama	1.16	Oregon	0.97	Germany
1.95	Alaska	1.16	Pennsylvania	0.87	Greece
0.85	Arizona	1.23	Rhode Island	3.21	Greenland
0.74	Arkansas	0.97	South Carolina	1.07	Honduras
1.23	California	1.00	South Dakota	1.57	Horn of Africa
0.99	Colorado	0.86	Tennessee	0.94	Hungary
1.15	Connecticut	0.88	Texas	1.84	Iceland
1.15	Delaware	1.07	Utah	1.70	Iraq
0.86	Florida	1.01	Vermont	1.25	Israel
0.87	Georgia	0.82	Virginia	0.91	Italy
2.33	Hawaii	1.11	Washington	2.04	Japan
1.00	Idaho	1.08	Washington D.C.	1.10	Kenya
1.07	Illinois	1.05	West Virginia	1.17	Korea - South
0.98	Indiana	1.05	Wisconsin	1.12	Kosovo
1.02	Iowa	1.01	Wyoming	1.20	Kuwait
0.89	Kansas			3.59	Kwajalein
0.86	Kentucky	1.89	Afghanistan	0.86	Latvia
0.84	Louisiana	1.03	Albania	0.80	Lithuania
0.99	Maine	1.97	American Samoa	1.10	Netherlands
1.03	Maryland	1.43	Australia	3.42	Northern Marianas
1.24	Massachusetts	1.50	Azores	1.12	Oman
0.99	Michigan	1.81	Bahamas	0.82	Peru
1.09	Minnesota	1.03	Bahrain	1.22	Philippines
0.71	Mississippi	0.82	Belgium	1.01	Poland
1.00	Missouri	0.83	Bulgaria	1.38	Puerto Rico
1.12	Montana	1.12	Cambodia	1.16	Qatar
0.92	Nebraska	0.83	Chile	1.86	Romania
1.16	Nevada	0.77	Columbia	1.23	Saudi Arabia
1.07	New Hampshire	1.33	Crete	1.19	Singapore
1.26	New Jersey	0.74	Croatia	1.23	Spain
0.92	New Mexico	2.31	Cuba	1.19	Thailand
1.08	New York	2.86	Diego Garcia	1.02	Turkey
0.91	North Carolina	1.08	Egypt	1.12	U.A.E
1.11	North Dakota	1.25	El Salvador	1.19	United Kingdom
0.94	Ohio	1.01	Estonia		
0.83	Oklahoma	1.07	Georgia Republic		

## 3D PRINTING SERVICES

CoS Offers printing services of physical 3D models or all of our designs.



TERRA HUT



SAWS



Headquarter Interior



Admin w/ Latrine Interior

2 FACES - JLOC



Bunker Bulkhead Retrofit



## SQUARE FOOTAGE LIMITS FOR OCCUPANCY CATEGORIES

Per UFC 1-201-01 Chapter 3 & 4

Assembly	
Description	50 + Persons
Combustible Construction Limit	6000 sf (557 m <sup>2</sup> )
Non-combustible Construction Limit	9,500 sf (883 m <sup>2</sup> )
Story Limit	1, 2 if there are sprinklers

Business	
Description	Transaction of business other than mercantile
Combustible Construction Limit	9,000 sf (836 m <sup>2</sup> )
Non-combustible Construction Limit	23,000 sf (2,137 m <sup>2</sup> )
Story Limit	3

Industrial	
Description	Storage & Vehicle Maintenance
Combustible Construction Limit	8,500 sf (790 m <sup>2</sup> ) 1 story limit
Non-combustible Construction Limit	15,500 sf (1,440 m <sup>2</sup> ) 2 story limit
Additional	Mezzanines may only be used for storage or mechanical/electrical rooms

Residential	
Description	Sleeping accommodations not for healthcare or detention
Combustible Construction Limit	7,000 sf (650 m <sup>2</sup> ) 2 story limit
Non-combustible Construction Limit	15,000 sf (1,394 m <sup>2</sup> ) 4 story limit

Aircraft Hangars	
Protect hangar as followed if it exceeds sq(m <sup>2</sup> ) listed	Fire protection required
Single hangar over 15,000 sf (1,394 m <sup>2</sup> )	Yes
Multiple hangars, <15,000 sf per hangar, <50 ft separation	Yes
Within 100 ft of a normally occupied structure	Yes

**2025**