DESIGN CRITERIA (DC)

DRAFT
AIR FORCE GENERAL MAINTENANCE/PERIODIC INSPECTION (GM/PE) HANGAR

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DESIGN CRITERIA (DC)

UNITED STATES AIR FORCE
GENERAL MAINTENANCE/PERIODIC INSPECTION HANGAR

AIR FORCE CIVIL ENGINEER CENTER

Record of Changes (changes are indicated by **1**\ ... /**1**/)

Change No.	**Date**	**Location**
1		

FOREWORD

Design Criteria (DC) provide functional requirements (i.e., defined by users and operational needs of a particular facility type) for specific DoD Component(s), and are intended for use with unified technical requirements published in DoD Unified Facilities Criteria (UFC). DC documents are applicable only to the DoD Component(s) indicated in the title, and do not represent unified DoD requirements. Differences in functional requirements between DoD Components may exist due to differences in policies and operational needs.

All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (HNFCA), and in some instances, Bilateral Infrastructure Agreements (BIA). Therefore, the acquisition team must ensure compliance with the most stringent of the DC, the SOFA, the HNFCA, and the BIA, as applicable.

Because DC documents are coordinated with unified DoD technical requirements, they form an element of the DoD UFC system applicable to specific facility types. The UFC system is prescribed by MIL-STD 3007 and provides planning, design, construction, sustainment, restoration, and modernization criteria, and applicable to the Military Departments, Defense Agencies, and the DoD Field Activities. The UFC System also includes technical requirements and functional requirements for specific facility types, both published as UFC documents and DC documents.

DC are living documents and will be periodically reviewed, updated, and made available to users as part of the Services' responsibility for providing criteria for military construction. Headquarters, U.S. Army Corps of Engineers (HQUSACE), Naval Facilities Engineering Command (NAVFAC), and the Air Force Civil Engineer Center (AFCEC) are responsible for administration of the UFC system. Defense agencies should contact the preparing service for document interpretation and improvements. Technical content is the responsibility of the cognizant DoD working group. Recommended changes with supporting rationale should be sent to the respective service proponent office by the following electronic form: Criteria Change Request. The form is also accessible from the Internet site listed below.

DC is effective upon issuance and is distributed only in electronic media from the following source:

- Whole Building Design Guide web site http://dod.wbdg.org/.

Refer to UFC 1-200-01, *General Building Requirements*, for implementation of new issuances on projects.

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DESIGN CRITERIA (DC)

NEW SUMMARY SHEET

Document: DC X-XXX-XX F, *GENERAL MAINTENANCE/PERIODIC INSPECTION (GM/PE) HANGAR*

Superseding: None

Description:
This DC provides requirements for evaluating, planning, programming, and designing *General Maintenance/Periodic Inspection (GM/PE) Hangars*. The information in this DC applies to the design of all new construction projects, to include additions, alterations, and renovation projects in the continental United States (CONUS) and outside the continental United States (OCONUS). It also applies to the procurement of design/build services for the above-noted projects. Alteration and renovation projects should update existing facilities to meet the guidance and criteria within budgetary constraints.

Reasons for Document: This DC is the initial release to establish requirements for a *GM/PE Hangar* and defines the criteria for determining appropriately sized, flexible, cost optimized, durable, quality designed facilities on a life cycle basis to support the mission.

Impact: This DC will facilitate and standardize the design of *GM/PE Hangars* throughout the Air Force.

- It will provide more complete and consistent project requirements and will expedite the programming and design of facilities and reduce initial design cost.
- The improved performance-based criteria and coordination with the Air Force RFP Template will reduce design-build proposals.

Unification Issues: None

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CHAPTER 1 INTRODUCTION

1-1 GENERAL INFORMATION

This standard facility prototype design criteria was developed to assist AF planners in preparing and validating the 1391 requirements and to assist A-E Design Professionals with the approved project specific design requirements. It is a source of basic programming and functional information for *GM/PE Hangars*. This standard is consistent with Air Force Corporate Facility Standards (AFCFS) and Unified Facilities Criteria Documents (UFC's). This standard, in conjunction with the AFCFS, is intended to define Air Force expectations for project programming and A-E design decisions.

The standard facility prototype design program defines consistent facility requirements across the AF enterprise to expedite delivery of a facility. This Standard was designed in compliance with AFMAN 32-1084, "Facility Requirements." The objective is to deliver appropriately sized, flexible, cost optimized, durable, quality designed facilities on a life cycle basis to support the AF mission.

This standard facility prototype represents a shift in AF facility design philosophy toward maximizing the use of open office space and systems furniture. This design approach allows maximum flexibility to reconfigure the building space as mission needs change. Where offices require sound attenuation, physical, or visual separation, evaluate the use of systems furniture or demountable partition walls in lieu of full height hard wall construction. Maximizing open office space may require more systems furniture and funding must be listed on the 1391 as a FF&E cost. Comply with the latest AF policy on the centralized procurement of systems and other furniture.

1-2 GENERAL BUILDING REQUIREMENTS

Comply with UFC 1-200-01, General Building Requirements. UFC 1-200-01 provides applicability of model building codes and government unique criteria for typical design disciplines and building systems, as well as for accessibility, antiterrorism, security, high performance and sustainability requirements, and safety. Use this DC in addition to UFC 1-200-01 and the UFCs and government criteria referenced therein.

1-3 REFERENCES

Appendix A contains a list of Related Documents and references to be used in conjunction with this document. The publication date of the code or standard is not included. Use the latest available issuance of the reference.

1-4 INSTRUCTIONS

The standard facility prototype was developed by determining personnel counts, allowable/authorized space/room sizes, adjacency diagrams between the functional spaces and the overall facility space requirements. It establishes AF criteria for the facility type. Use these criteria in conjunction with other AF policy and regulations such as ETL's, AFI's, and UFC's when programming and designing this facility type. Supplement this DC with thorough review by individual Program Managers and

Operations Staff.

1-4.1 Standard Facility Prototype Tools

This standard facility prototype consists of four parts to be used by programmers and designers:

1. Design Criteria for Standard Prototype (this DC document)
2. Interactive Programming Sheet
3. Facility Building Information Modeling (BIM) Drawings
4. Supplemental RFP Data

1-4.2 Design Criteria

The design criteria consist of three primary components:

1. Notional Site
2. Composite Facility Adjacency Diagram(s)
3. Modules with associated Room Data Sheets

1-4.2.1 Notional Site

The notional site plan diagram demonstrates key site development criteria. It is not a site specific solution. The information represents the land requirements to construct this facility and includes associated AT standoff and parking. Utilization of existing or shared parking is allowable and may reduce the total acreage required for the facility. Adapt the requirements to the specific site and location and comply with the applicable Installation Development Plan (IDP) and Area Development Plan (ADP) for facility siting.

1-4.2.2 Composite Facility Adjacency Diagram(s)

The composite diagram(s) represent ways to conceptually assemble the functional areas (modules) into a cohesive whole. They demonstrate how the various functional components of the facility type can be successfully placed together into layout diagrams. Individual modules are represented by different colors. Composite diagrams demonstrate acceptable ways the fixed modules can be placed together into conceptual building plans. They are not intended to be definitive building designs.

1-4.2.3 Modules

Spaces and rooms that are integrally related with a specific functional connection or operational flow are grouped into a module. Modules and the associated room data sheets identify specific criteria and additional detail for each functional area of the facility as outlined in the space program sheets located in the appendix. Information is provided in a standard presentation and data sheet format. The required space adjacencies and modules are illustrated in figures.

The modules are a grouping of functional spaces and represent “lego blocks” to be used in a “kit-of-parts” design approach. Use the fixed modules as pre-assembled pieces of the facility “puzzle.” Assemble them to comply with the required adjacencies indicated in the diagrams and module plans. Arrange modules and create a configuration/composite building layout/plan responding to the constraints and opportunities of the specific site.

The resulting shape of the facility assembled from the standard facility prototype modules must provide construction efficiencies obtained from building proportions and overall configuration. The building footprint shall be organized and well composed. The building design must comply with the Installation Facility Standards (Architectural Compatibility Plan) and the AFCFS.

1-4.2.4 Module Flexibility/Adjustments

Modules must be used as designed to the greatest extent possible, and shall not be deconstructed or altered except as indicated herein. The intent of the standard facility prototype criteria is to avoid manipulation of the composition, functional relationships, adjacencies, and module sizes. Modules contain fixed attributes and must not be changed arbitrarily. Modules may be rotated, flipped, and reversed to accommodate an overall composition or site issue. When the fixed modules cannot be arranged to produce a constructible floor plan due to site constraints, it is permissible to slightly adjust a module proportion to create a constructible plan. Manipulating the module shape must not result in an overall increase in square feet or reduce the functionality of any module or the composite plan.

Some Modules are linked to space requirements that increase or decrease in size based on the personnel count and equipment for a particular mission. In these cases, increase or decrease the size of the module to match the revised scope calculation. This may sometimes require minor adjustments in other adjacent modules so that they properly fit together to create a constructible facility floor plan. Spaces must comply with any critical dimensions indicated on module plans. Manipulate as few modules as possible to create a constructible facility. The resulting composite plan must respect the established modules adjacencies and must not exceed the authorized project scope.

1-4.2.5 Room Data Sheets

Specific requirements for each room, space, or area are provided on room data sheets that are located following their respective module. Information contained on the data sheets defines the functional and physical requirements for each of the spaces within the facility type.

1-4.3 Programming Sheet(s)

This tool is provided in two formats. A pdf programming sheet is provided in the appendix primarily as a reference and reflects the baseline standard facility program. The additional interactive programming sheet provides a tool for planners and programmers. It allows the input of authorized personnel positions and special purpose spaces. Updated inputs are automatically calculated and provide new required square

footage for each space and the estimated overall facility size. A link is provided in the appendix to provide direct access to the interactive tool.

1-4.4 Facility Drawings – BIM

This component of the standard facility prototype tool includes both a pdf version and Revit version of the modules and rooms. The spaces, rooms and modules shown reflect the baseline standard facility program spreadsheet located in the appendix. The drawings contained in the facility criteria document are exact copies of the larger BIM drawings and comply with the program scope. The BIM drawings provide a starting point for the digitization of building data and a starting point in the design/construction of a facility. BIM and pdf documents are found at the link provided in the appendix.

1-4.5 Request for Proposal Template

The Supplemental Request for Proposal (RFP) Data document is a standard facility prototype tool to assist the A-E design professionals to quickly proceed from establishment of an approved floor plan to development of a Design-Build RFP. The text in the RFP is color coded to identify the following:

- Black: Standard requirements; DO NOT edit/change
- Blue: Edited to reflect specific facility type elements
- Red: Must be edited by RFP Preparer to reflect site specific or locational requirements

Retain color coding during RFP development thru acceptance of the 100% Submittal. Use Track Changes to edit the draft RFP. Remove all color coding and resolve Track Changes prior to advertisement of the solicitation. A link is provided in the appendix.

1-4.6 Additional and Alterations

For additions and alterations to existing facilities, use the adjacencies, sizing/scope and detailed requirements contained in the site diagrams, module drawings, and room data sheets to the maximum extent possible. The functionality and adjacency of the modules are still valid, but may require some manipulation to fit into existing spaces. This standard may be modified slightly to accommodate the existing structure. However, proposed adjustments to the standard must be submitted to AFCEC for functional issues and deviations from the core requirements. Move non-structural walls to the greatest extent possible to open up space in the existing facilities to make them more receptive to the placement of the modules. The planner and designer shall determine the most efficient means to balance the placement of modules within existing spaces or as a facility addition.

CHAPTER 2 SITE & OVERALL ADJACENCY

2-1 GENERAL FACILITY OVERVIEW

The GM/PE Hangar will function primarily as an inspection hangar and secondarily as a repair hangar for scheduled and un-scheduled maintenance. The GM/PE Hangar will consist of the following modules: Hangar Bay Module, Shop Support Module, Break Room Module, Administration Module, Locker/Restroom Module, Building Support Module and Electro-Environmental (E/E) Shop Module.

AFCFS: Consult the Air Force Corporate Facilities Standards (AFCFS) to determine quality standards for this facility group. This standard facility prototype is considered a Group 3 hierarchy.

FACILITY USERS/OCCUPANTS: For a Classic Association, the approximate number of personnel assigned to this facility is 60 with a peak shift of 30.

OPERATIONAL ASPECTS: Hours of operation for this facility will be based on the functional requirements of the Base.

2-2 NOTIONAL SITE

The site diagram represents a notional layout to reflect site development requirements/criteria only. It is not an actual site design. Siting must comply with the Installation (IDP) and Area Development Plans (ADP).

2-2.1 Site Location and Orientation

Several factors determine the most appropriate and cost-effective location for a facility. The availability and capacity of required utilities and the mass/scale of the facility relative to adjacent structures and noise issues shall be analyzed.

Emphasis shall be placed on operation, function, and safety when siting the facility. The preferred location for this facility is immediately adjacent to the flight line or in close proximity. Other facility functions placed in close proximity may include General Purpose Maintenance Hangars and Aircraft Sunshades. Analyze and comply with airfield clearances, building setback restrictions, and line of sight restrictions from the adjacent flight-line.

The preferred orientation for this facility is such that the engine bays are provided direct access to the flight-line operations area for ease of access to the facility for flight line vehicles and equipment.

The approximate project area required for the General Maintenance Periodic Inspection Hangar *is 48.00 acres*, which includes antiterrorism standoff and parking.

2-2.2 Vehicular and Pedestrian Circulation

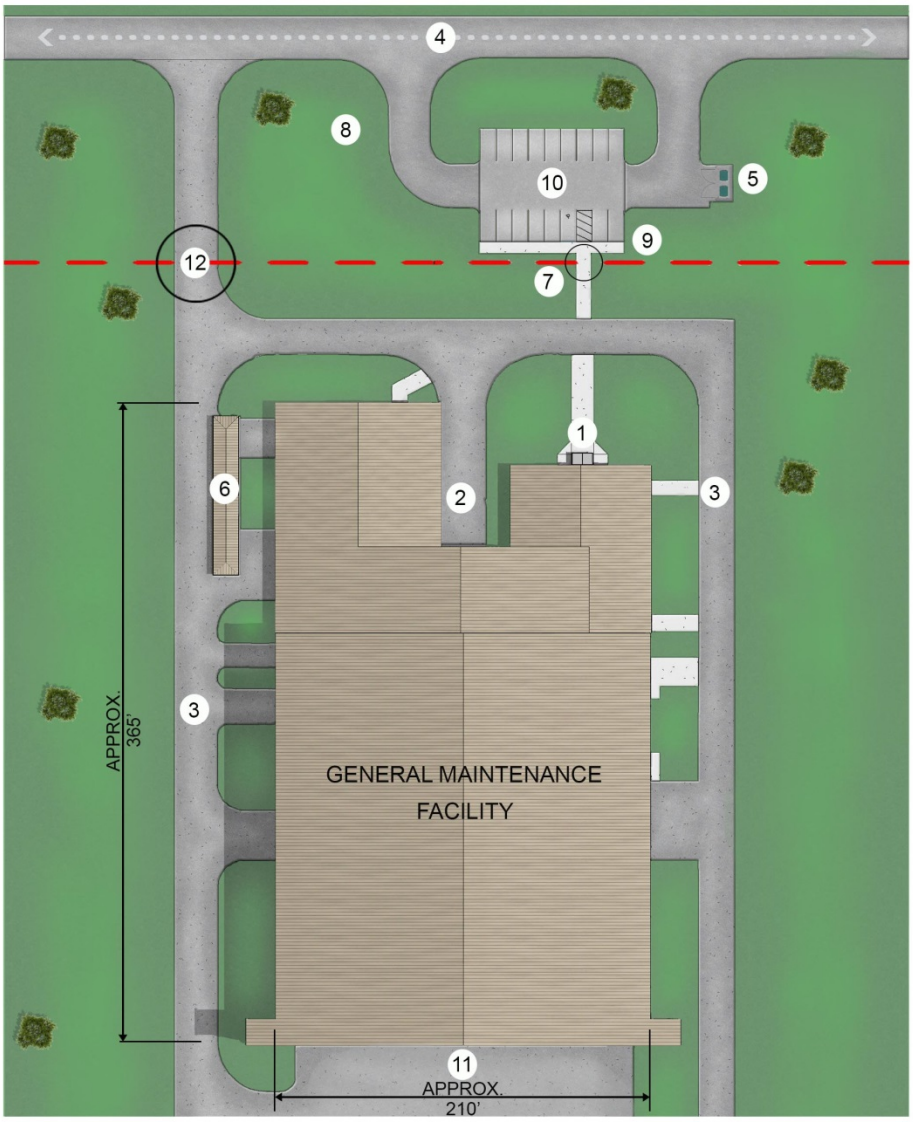
Convenient and safe vehicular access and circulation shall be provided for personal vehicles and essential services, including operations, maintenance, deliveries, trash and garbage collection, and emergency services.

Parking shall be provided to accommodate 40% of the largest shift of assigned personnel, to the facility.

Separate service drives to the facility from parking circulation areas.

Locate sidewalk networks to provide convenient and safe pedestrian circulation from existing circulation elements of the project site to the new parking areas and doors of the facility.

Figure 2-2 NOTIONAL SITE DIAGRAM



NOTES:

1. PRIMARY BUILDING ENTRY
2. CONCRETE TUG PULL THRU
3. CONCRETE FIRE ACCESS LANE (20' MIN.)
4. EXISTING ROAD
5. DUMPSTER ENCLOSURE WITH CONCRETE PAD
6. GOX CART COVERED PARKING
7. PEDESTRIAN ACCESS CONTROL POINT
8. STANDARD B-3 SIGN
9. 6' WIDE CONCRETE SIDEWALK (MIN.)
10. HEAVY DUTY ASPHALT PAVEMENT
11. CONCRETE HANGAR ACCESS APRON
12. CONTROLLEDVEHICLE ACCESS

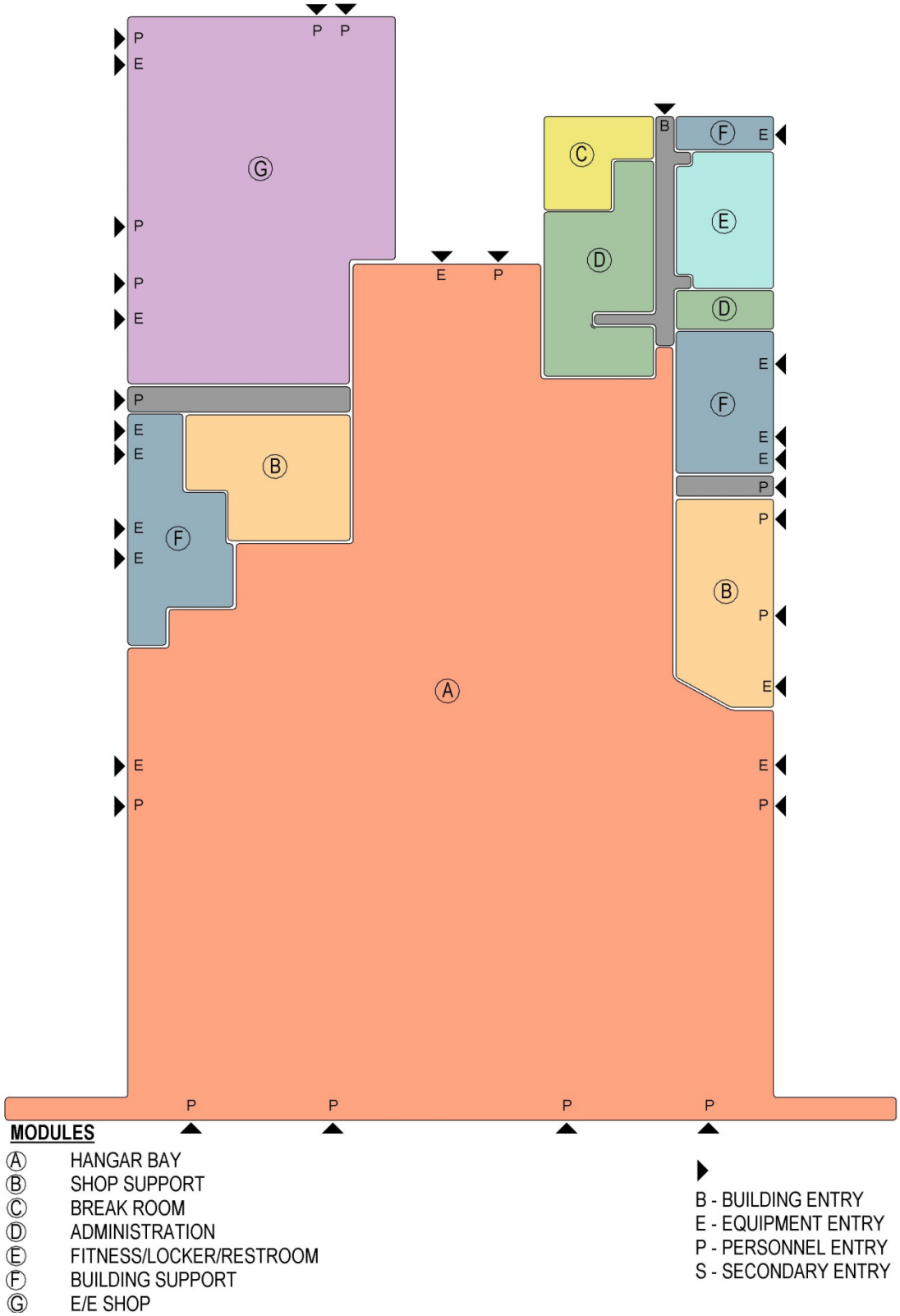
LEGEND:

- AIRFIELD FENCE (EXACT LOCATION TO BE DETERMINED)
- ACCESS STREET
- CONTROLLED VEHICLE ACCESS

2-3 COMPOSITE FACILITY ADJACENCY

This facility has a mixed use of occupants and many points of entry. The majority of administration personnel will enter the facility through the main building entrance. Shop personnel and maintenance groups will primarily enter the facility from the flight line points of entry or directly into the E/E Shop.

Figure 2-3 Functional Adjacency Diagram



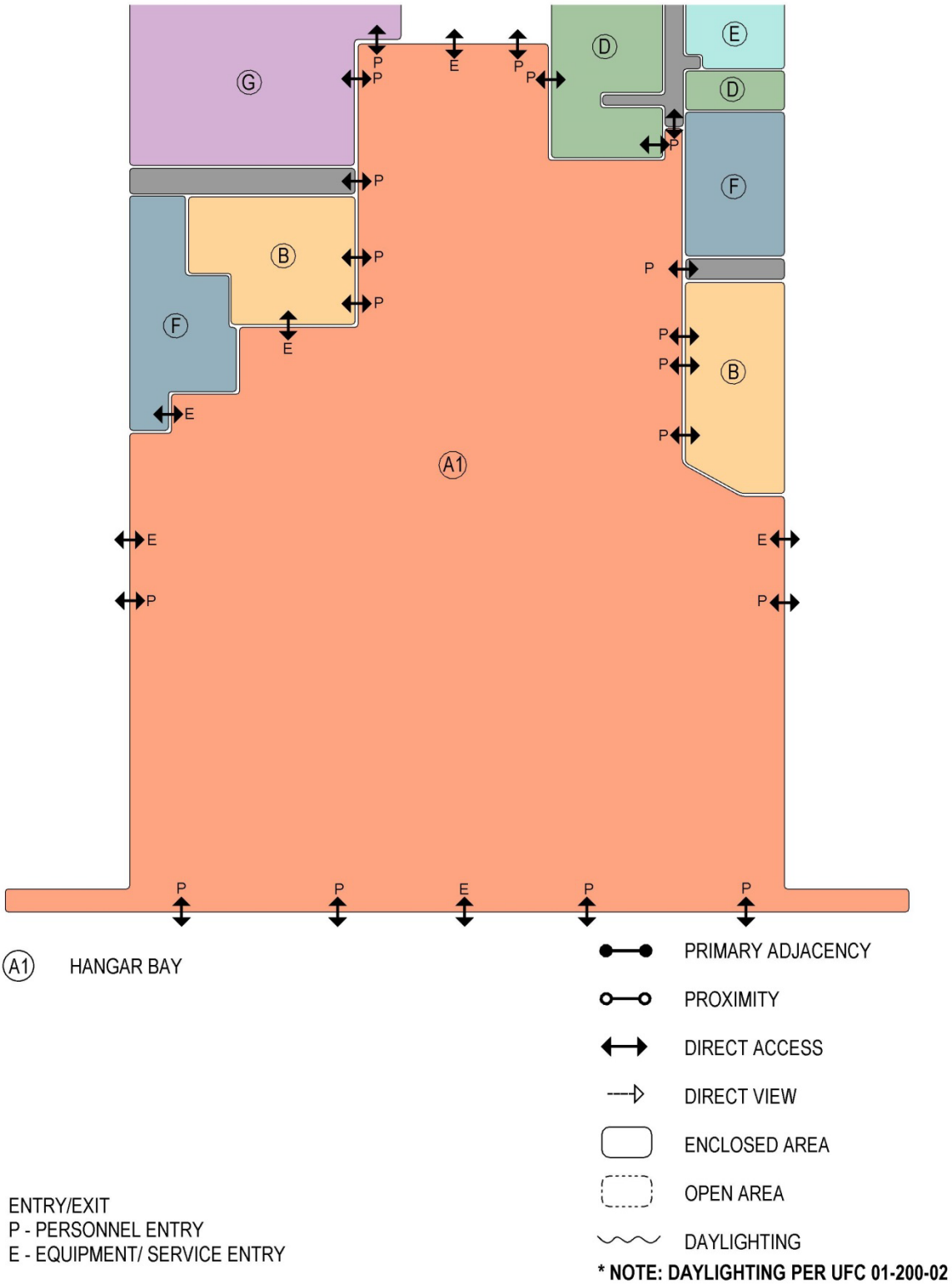
CHAPTER 3 FACILITY REQUIREMENTS & CRITERIA

3-1 MODULE A – HANGAR BAY MODULE

3-1.1 Function and Adjacency

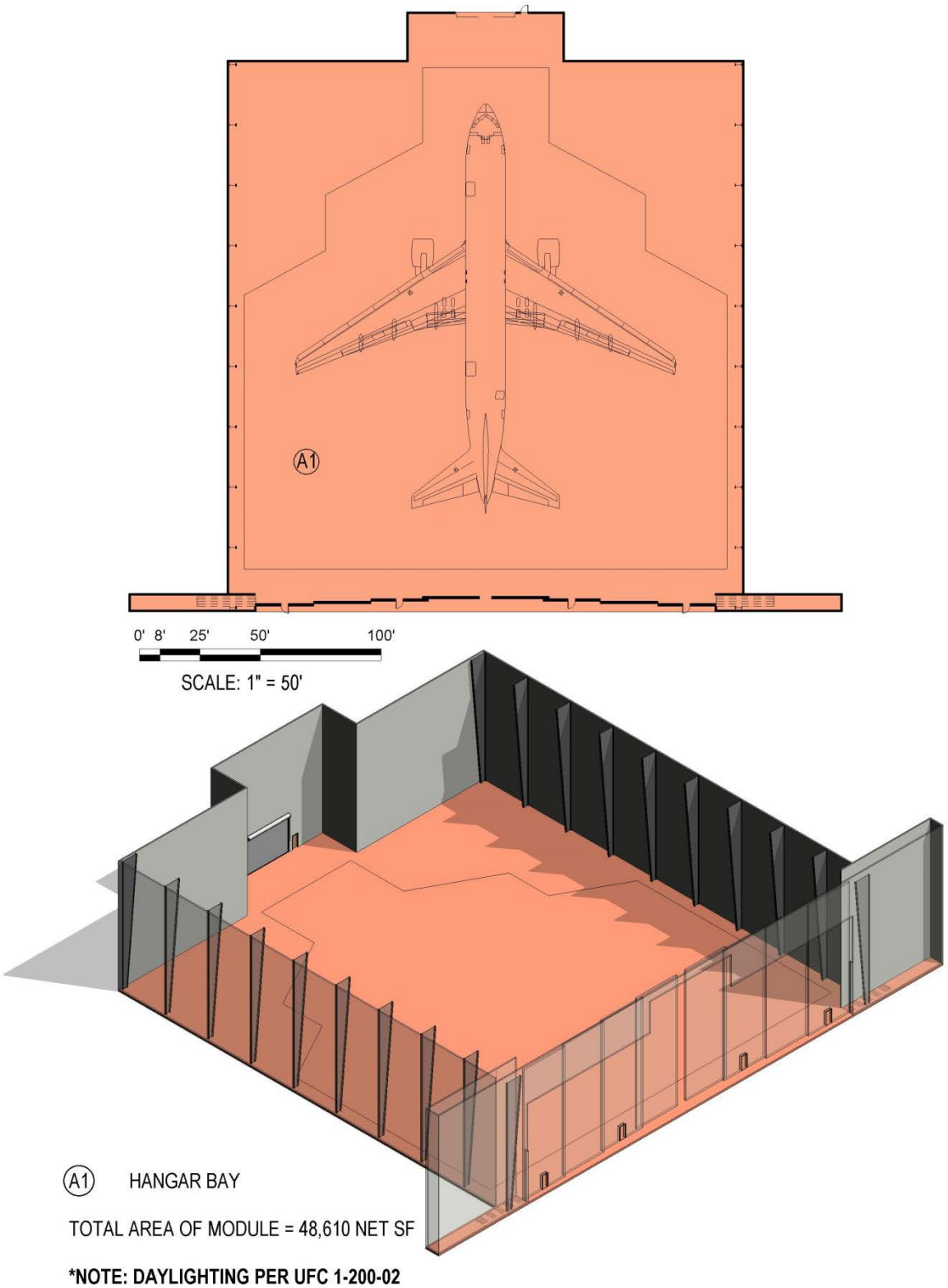
The Hangar Bay will be the central focus of the facility with the remaining modules being placed around it. A portion of the hangar bay will be designated for the parking of inspection stands, forklifts, and other equipment; however, no storage room is required for moveable equipment. The Hangar Bay must be conveniently located to the Locker/Restroom module and have direct access to the Shop Support and E/E Shop Modules.

Figure 3-1 Module A Adjacency Diagram



3-1.2 Hangar Bay

Figure 3-2 Module A Floor Plan & Axonometric



3-1.3 Data Sheets

Figure 3-3		A1 Hangar Bay Room Data Sheet
Description/Usage		The Hangar Bay requires space for an engine transport trailer and an engine lift trailer. Engine changes are performed inside the Hangar to avoid complications due to wind and other natural hindrances. A portion of the Hangar will be designated for the parking of inspection stands, forklifts, and other equipment; however, no storage room is required for moveable equipment.
Ceiling Height		Exposed to structure
Windows		Daylighting
Doors	**Type**	Overhead insulated coiling door, 18'x20' Insulated metal exterior door, 3'x7'
	Security/ Hardware	Access control rim exit PA closer
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU – painted, Structural insulated wall panels – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Emergency shower stations, compressed air (oil free shop air) with hose reels
HVAC		55°F Heating, Ventilate to 6 ACH up to 15 foot imaginary ceiling, Fuel low level Exhaust
Fire Protection		Foam Generators, Fire alarm/mass notification, sprinklers
Power		Convenience Outlets, 180kVA 400Hz Converter, Pedestal Pit with Welding Receptacle, 400Hz Receptacle, and 120V power, Overhead Door Motors, Dedicated Equipment Outlets, Hangar Bay Door Motors
Lighting		Highbay Fluorescent Fixtures
Communication	**Tele.**	Wall Phone
	Data	Wireless Access Points
	CCTV	N/A
	CATV	N/A
	Security	Infrared Intrusion Detection at Hangar and roll up doors, Card Reader, Balanced Magnetic Switch, Electric Strike, Request to Exit Device
Acoustical		Min. STC 40 between the Hangar Bay and regularly occupied areas.
Furnishings/Equipment/ Casework		
Special Requirements		• Hangar walls shall comply with ETL 02-15, Section A1.1

3-2 MODULE B – SHOP SUPPORT MODULE

3-2.1 Function and Adjacency

The Shop Support Module areas do not require direct adjacency to each other and can therefore provide added flexibility in their potential arrangements. All Shop Support areas must have direct access to the Hangar Bay. The Shops are required to have convenient to the Locker/Restroom Module and the Coordinator Office within the Administration Module.

Figure 3-4 Module B Adjacency Diagram (1 of 2)

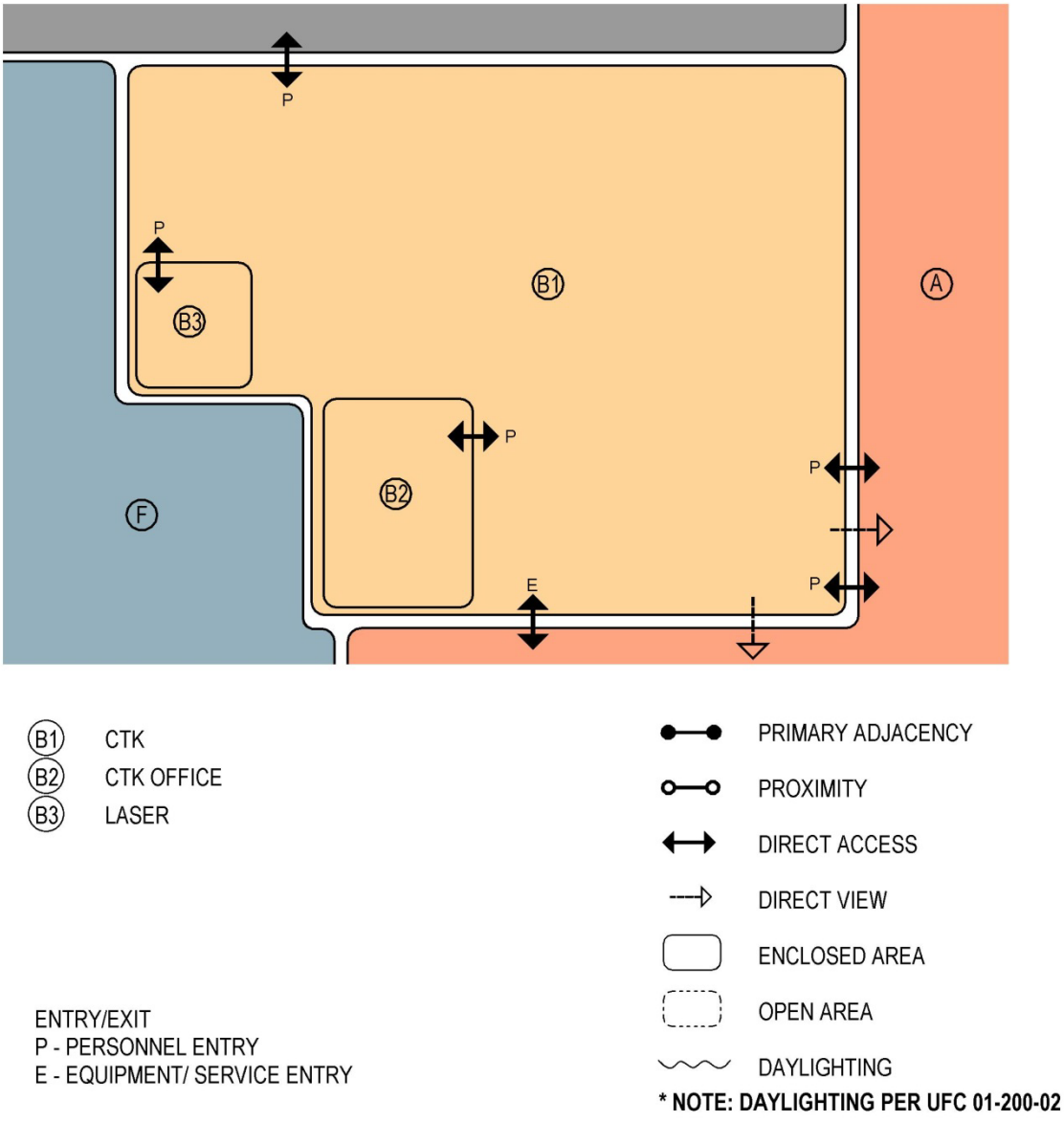
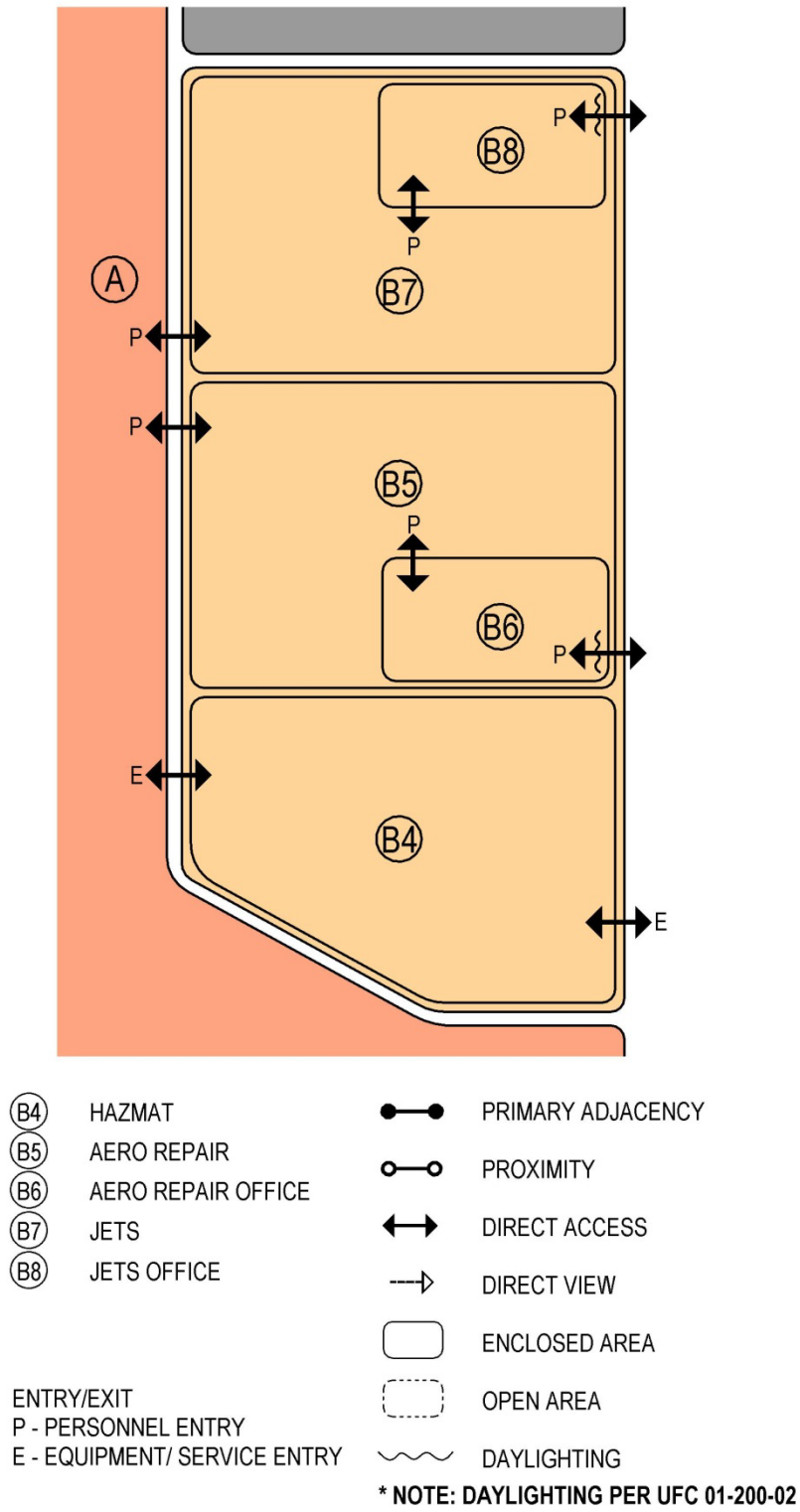
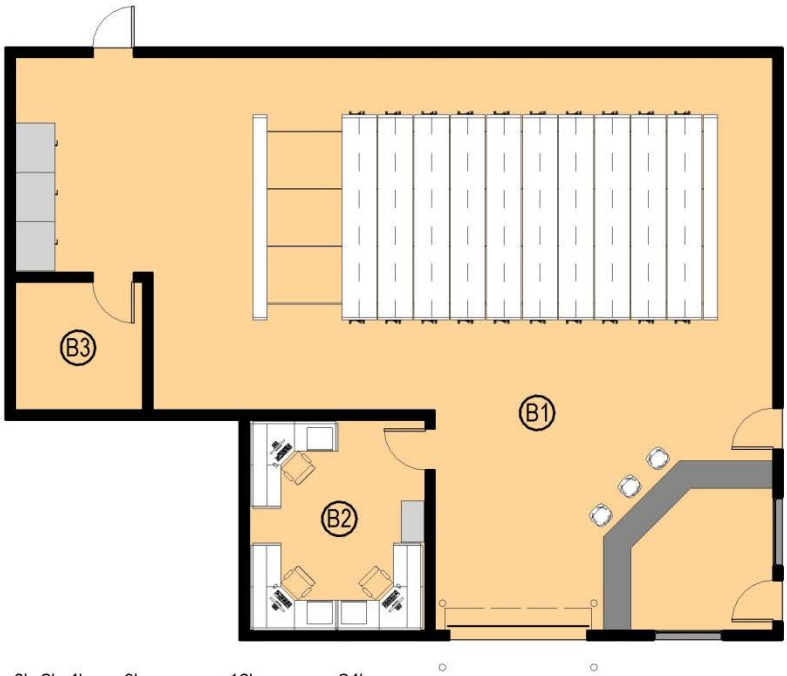


Figure 3-5 Module B Adjacency Diagram (2 of 2)



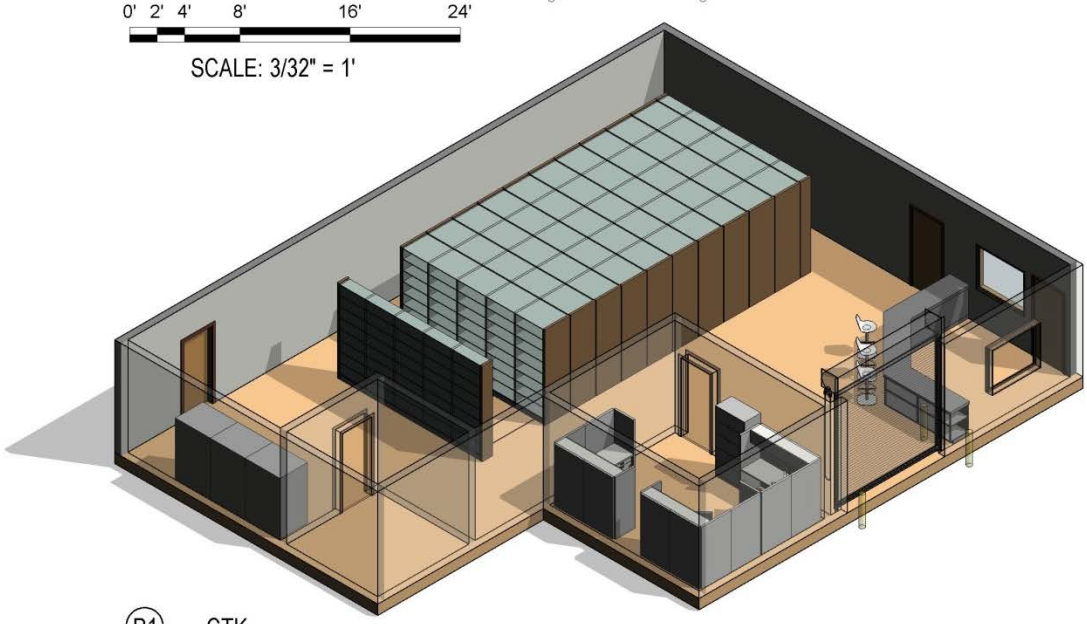
3-2.2 Shop Support

Figure 3-6 Module B Floor Plan & Axonometric (1 of 2)



0' 2' 4' 8' 16' 24'

SCALE: 3/32" = 1'

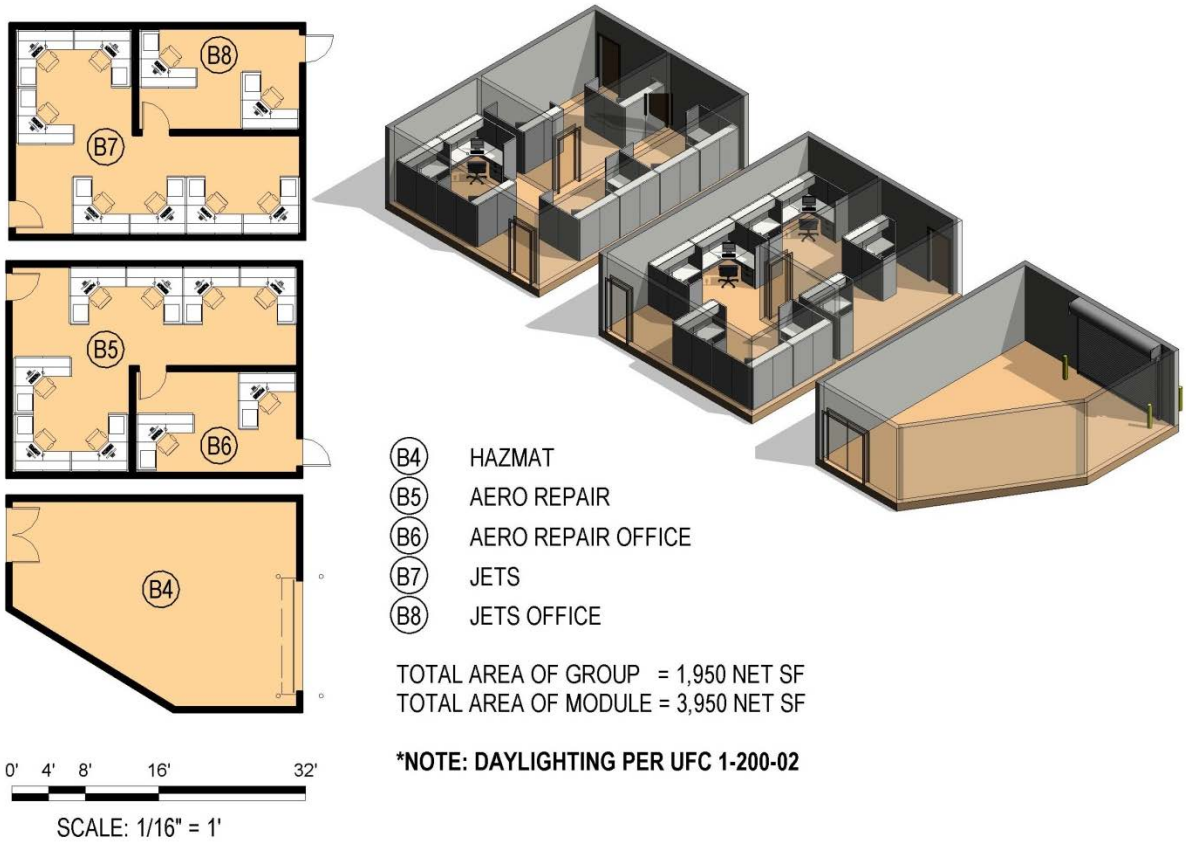


B1 CTK
B2 CTK OFFICE
B3 LASER

TOTAL AREA OF GROUP = 2,000 NET SF

***NOTE: DAYLIGHTING PER UFC 1-200-02**

Figure 3-7 Module B Floor Plan & Axonometric (2 of 2)



3-2.3 Data Sheets

Figure 3-8		B1 CTK Room Data Sheet
Description/Usage		CTK will house tools and equipment to be checked out by aircraft maintenance personnel. This room requires a secure tool checkout counter with controlled entry into the storage bay.
Ceiling Height		10’-0” minimum
Windows		Visual access to the hangar bay
Doors	**Type**	Insulated metal, 3’x7’ Overhead insulated coiling door, 10’x8’
	Security/ Hardware	Keyed lock set Card reader
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	CMU - painted
	Floor	Sealed Concrete
	Base	No base
	Ceiling	Exposed to Structure - painted
Plumbing		Emergency Eyewash, Industrial hand wash
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Outlets for Charging Stations, Power for Overhead Door Motors, Power for Motorized Tool Storage Rack, Dedicated Equipment Outlets
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets, Charging Station Outlets
	CCTV	N/A
	CATV	CATV Outlets
	Security	Card Reader
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		High density storage rack system Built in checkout counter with lockable rolling doors to counter Stools at checkout counter Hazmat storage cabinets
Special Requirements		

Figure 3-9		B2 CTK Office Room Data Sheet
Description/Usage		The CTK Office will house an administrator for CTK. This office requires direct access to the CTK.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7'
	Security/ Hardware	Keyed lock
	View Panels/ Kick-Plates	View panel Kick-plates
Finishes	**Walls**	CMU-painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 45
Furnishings/Equipment/ Casework		(3) L-shaped desks, ergonomic task chairs, file cabinet, wall clock, marker board, cork board, 4 gal trash can, 4 gal recycle bin
Special Requirements		

Figure 3-10		B3 Laser Room Data Sheet
Description/Usage		The Laser Room will house the facility's on-site laser machine.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Hollow metal, 3'x7'
	Security/ Hardware	Standard classroom lockset
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	CMU - painted
	Floor	Sealed Concrete
	Base	Resilient
	Ceiling	Exposed to structure-painted
Plumbing		N/A
HVAC		Exhaust hood, 78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, Sprinklers
Power		Convenience Outlets, Outlets for Dedicated Equipment
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		STC 45
Furnishings/Equipment/ Casework		
Special Requirements		

Figure 3-11		B4 Hazmat Room Data Sheet
Description/Usage		The Hazmat room will store hazardous material. Hazmat requires direct physical access to the Hangar Bay and exterior.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Hollow metal, 3'x7' pair Overhead coiling door, 10'x11'-10"
	Security/ Hardware	Exit device, closer
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	CMU-painted
	Floor	Sealed concrete
	Base	Resilient
	Ceiling	Exposed to structure-painted
Plumbing		N/A
HVAC		Exhaust, 55°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, Sprinklers
Power		Convenience Outlets, Outlets for Dedicated Equipment
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Wallphone Outlet
	Data	Wall Outlets
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Card Reader, Electronic Strike for Exterior Openings
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		
Special Requirements		

Figure 3-12		B5 Aero Repair Room Data Sheet
Description/Usage		The Aero repair room will function as a support office for the GM/PE Hangar. This room requires direct access to the hangar bay and the Aero Repair Office.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Insulated Metal, 3'x7'
	Security/ Hardware	Access control mort lock
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	CMU - painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire alarm/mass notification, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlets
	Security	N/A
Acoustical Requirements		STC 45
Furnishings/Equipment/ Casework		Systems furniture to accommodate (7) personnel, ergonomic chairs, wall clock, marker board, cork board, 4 gal trash can at each desk, 4 gal recycle bin at each desk.
Special Requirements		

Figure 3-13		B6 Aero Repair Office Room Data Sheet
Description/Usage		The Aero Repair Office will house the Aero Repair supervisors and requires direct access to the Aero Repair room.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Hollow Metal, 3'x7' - Class room lockset Aluminum Storefront, 3'x7' Access control rim exit, card reader
	Security/ Hardware	Entry lock
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	CMU - painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire alarm/mass notification, sprinklers
Power		Workstation Outlets, Convenience Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Jack at each workstation
	Data	Workstation Outlets, Wallphone Outlet
	CCTV	N/A
	CATV	CATV Outlet
	Security	Card Reader, Balanced Magnetic Switch, and Electronic Strike
Acoustical Requirements		STC 45
Furnishings/Equipment/ Casework		(2) L-shaped desks, ergonomic task chairs, file cabinets, wall clock, marker board, cork board, 4 gal trash can at each desk, 4 gal recycle bin at each desk
Special Requirements		

Figure 3-14		B7 Jets Room Data Sheet
Description/Usage		The Jets room will function as a support office for the GM/PE Hangar.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Insulated metal, 3’x7’
	Security/ Hardware	Access control mort lock
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	CMU - painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire alarm/mass notification, sprinklers
Power		Workstation Outlets, Convenience Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 45
Furnishings/Equipment/ Casework		(7) L-shaped desks, ergonomic chairs, wall clock, marker board, cork board, 4 gal trash can at each desk, 4 gal recycle bin at each desk
Special Requirements		

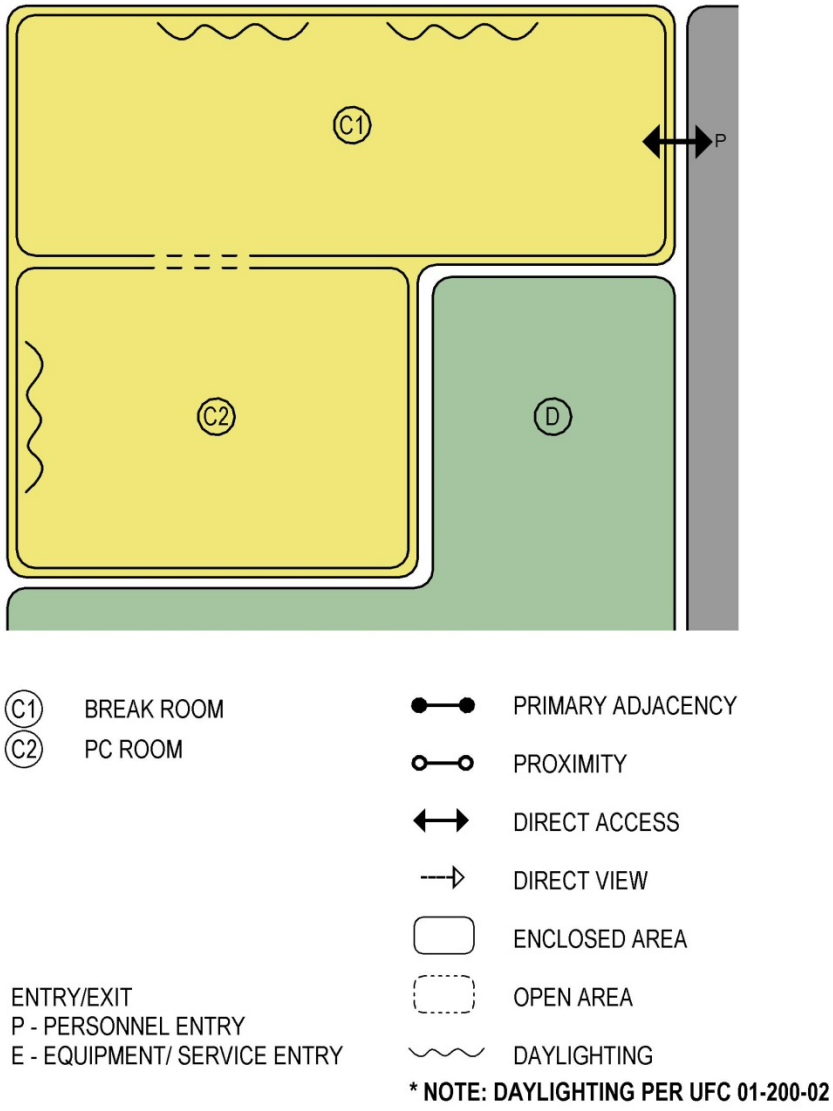
Figure 3-15		B8 Jets Office Room Data Sheet
Description/Usage		The Jets Office will house the Jets supervisors and requires direct access to the Jets room.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Hollow Metal, 3'x7' - Class room lockset Aluminum Storefront, 3'x7' Access control rim exit, card reader
	Security/ Hardware	Standard classroom lockset
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	CMU - painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire alarm/mass notification, sprinklers
Power		Workstation Outlets, Convenience Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	Card Reader, Balanced Magnetic Switch, and Electronic Strike
Acoustical Requirements		STC 45
Furnishings/Equipment/ Casework		(2) L-shaped desks, ergonomic task chairs, file cabinets, wall clock, marker board, cork board, 4 gal trash can at each desk, 4 gal recycle bin at each desk
Special Requirements		

3-3 MODULE C – BREAK ROOM MODULE

3-3.1 Function and Adjacency

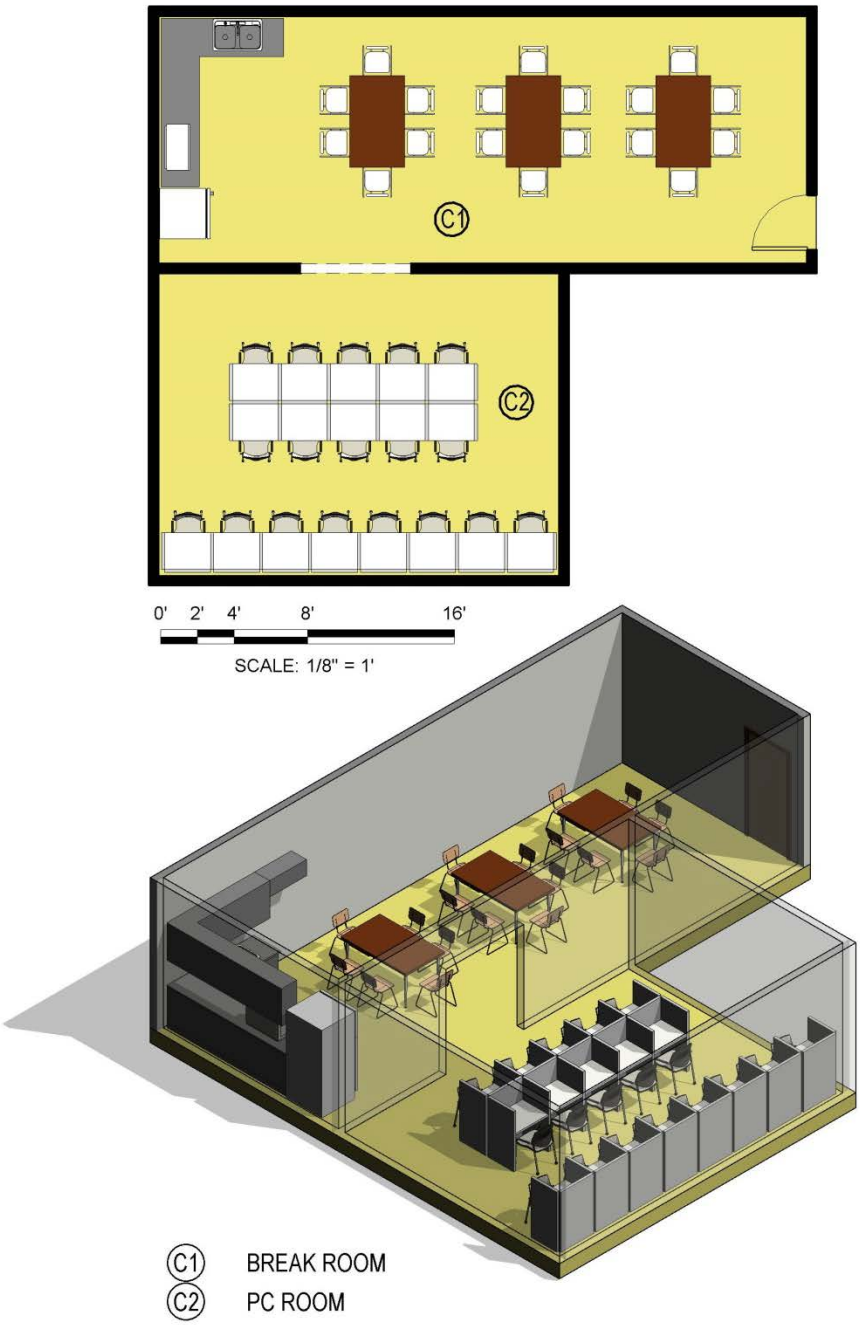
This module is required to be easily accessible for all personnel. This module will include a break room with seating and tables for sixteen to twenty (16-20) personnel and a PC area with eighteen to twenty (18-20) carrels where personnel can access time sheets and internet at the end of shifts.

Figure 3-16 Module C Adjacency Diagram



3-3.2 Break Room

Figure 3-17 Module C Floor Plan & Axonometric



3-3.3 Data Sheets

Figure 3-18		C1 Break Room Data Sheet
Description/Usage		The Break Room will primarily function as a clean eating place for GM/PE personnel with seating and tables for sixteen to twenty (16-20) personnel.
Ceiling Height		9'-0"
Windows		Daylighting
Doors	**Type**	Solid core wood, 3'x7'
	Security/ Hardware	Passage set, closer
	View Panels/ Kick-Plates	View panel Kick-plates
Finishes	**Walls**	Gyp board – painted, tile backsplash from countertop to bottom of overhead cabinets
	Floor	Ceramic or porcelain tile
	Base	Tile cove base to match floor
	Ceiling	ACT or painted gyp board
Plumbing		Double sink with disposal Ice maker/water dispenser for refrigerator Dishwasher Floor drains
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Countertop Outlets, Convenience Outlets, Outlets for Dedicated Equipment
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Wallphone Outlet
	Data	Wall Outlets, Wireless Access Points
	CCTV	N/A
	CATV	CATV Outlet
	Security	Glass Break for Windows
Acoustical Requirements		STC 40 if between occupied spaces
Furnishings/Equipment/ Casework		Seating for 16-20 people; refrigerator, microwave, dishwasher, double sink with disposal, vending machines, two wall mounted video monitors, (2) 23 gal recycle bins, 23 gal trash can with lid, cork board and marker board.
Special Requirements		

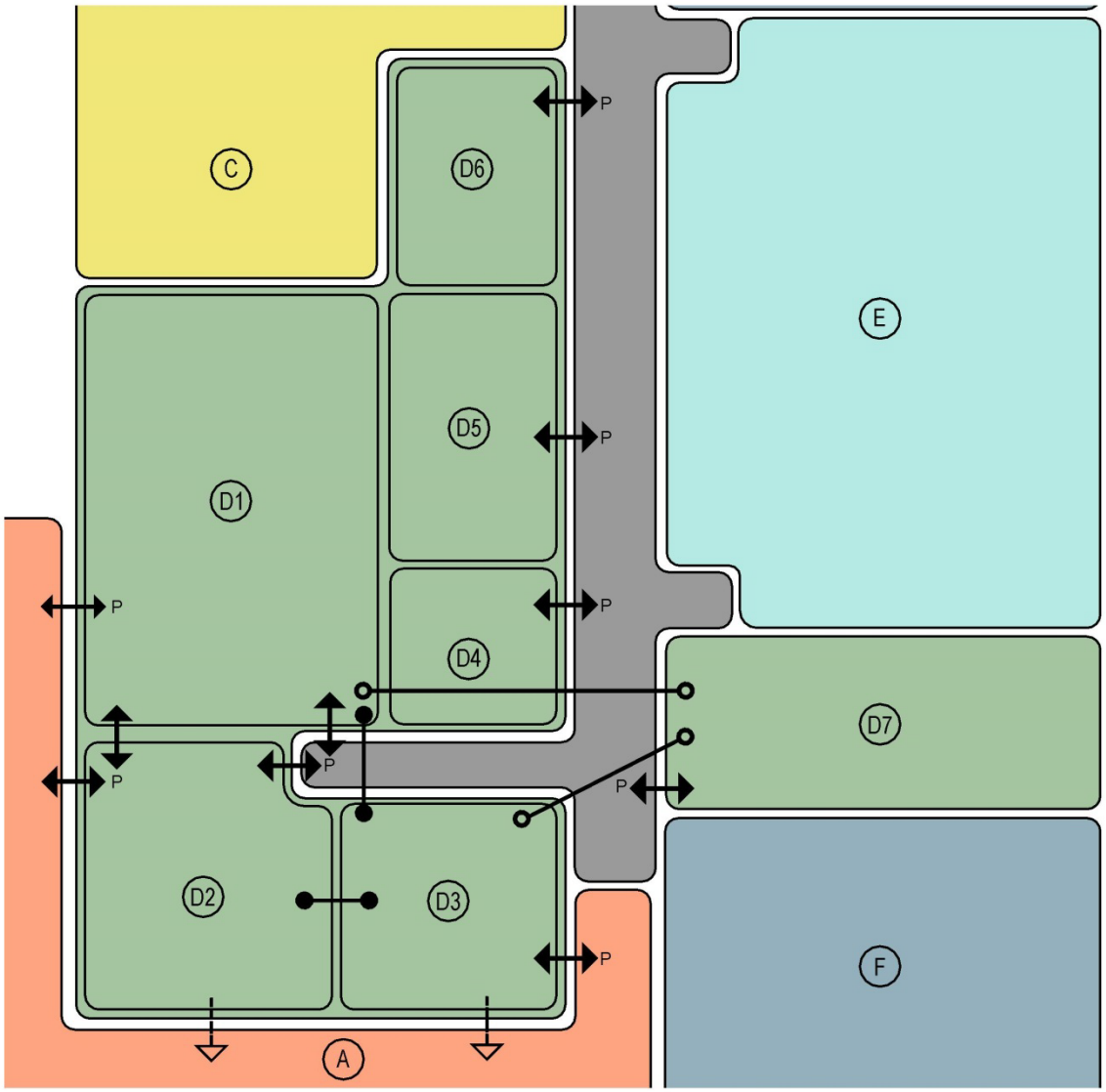
Figure 3-19		C2 PC Room Data Sheet
Description/Usage		The PC Room will provide eighteen to twenty (18-20) carrels for personnel to access time sheets and internet at the end of their shift.
Ceiling Height		9'-0"
Windows		Daylighting
Doors	**Type**	N/A
	Security/ Hardware	N/A
	View Panels/ Kick-Plates	N/A
Finishes	**Walls**	GWB - painted
	Floor	Ceramic or porcelain tile
	Base	Tile cove base to match floor
	Ceiling	ACT or painted GWB
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire alarm/mass notification, sprinklers
Power		Workstation Outlets, Convenience Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	Glass Break Sensor for Windows
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		Carrel workstations, ergonomic task chairs, 23 gal recycle bin, 23 gal waste receptacle, cork board and marker board, wall clock.
Special Requirements		

3-4 MODULE D – ADMINISTRATION MODULE

3-4.1 Function and Adjacency

The Administration Module areas do not require direct adjacency to each other and can therefore provide added flexibility in their potential arrangements. The Coordinator Office and Dock Chief require direct visual and physical access to the Hangar Bay module. The Administration Module as a whole needs to be conveniently located near the Lockers/Showers, while the Coordinator Office needs to be located conveniently to the Shop Support Module.

Figure 3-20 Module D Adjacency Diagram



D1 CONFERENCE ROOM
D2 COORDINATOR OFFICE
D3 DOCK CHIEF
D4 OIC
D5 FLIGHT CHIEFS
D6 RECORDS
D7 OPEN OFFICE

ENTRY/EXIT
P - PERSONNEL ENTRY
E - EQUIPMENT/ SERVICE ENTRY

PRIMARY ADJACENCY
PROXIMITY
DIRECT ACCESS
DIRECT VIEW
ENCLOSED AREA
OPEN AREA
DAYLIGHTING

*** NOTE: DAYLIGHTING PER UFC 01-200-02**

3-4.2 Administration

Figure 3-21 Module D Floor Plan & Axonometric (1 of 2)

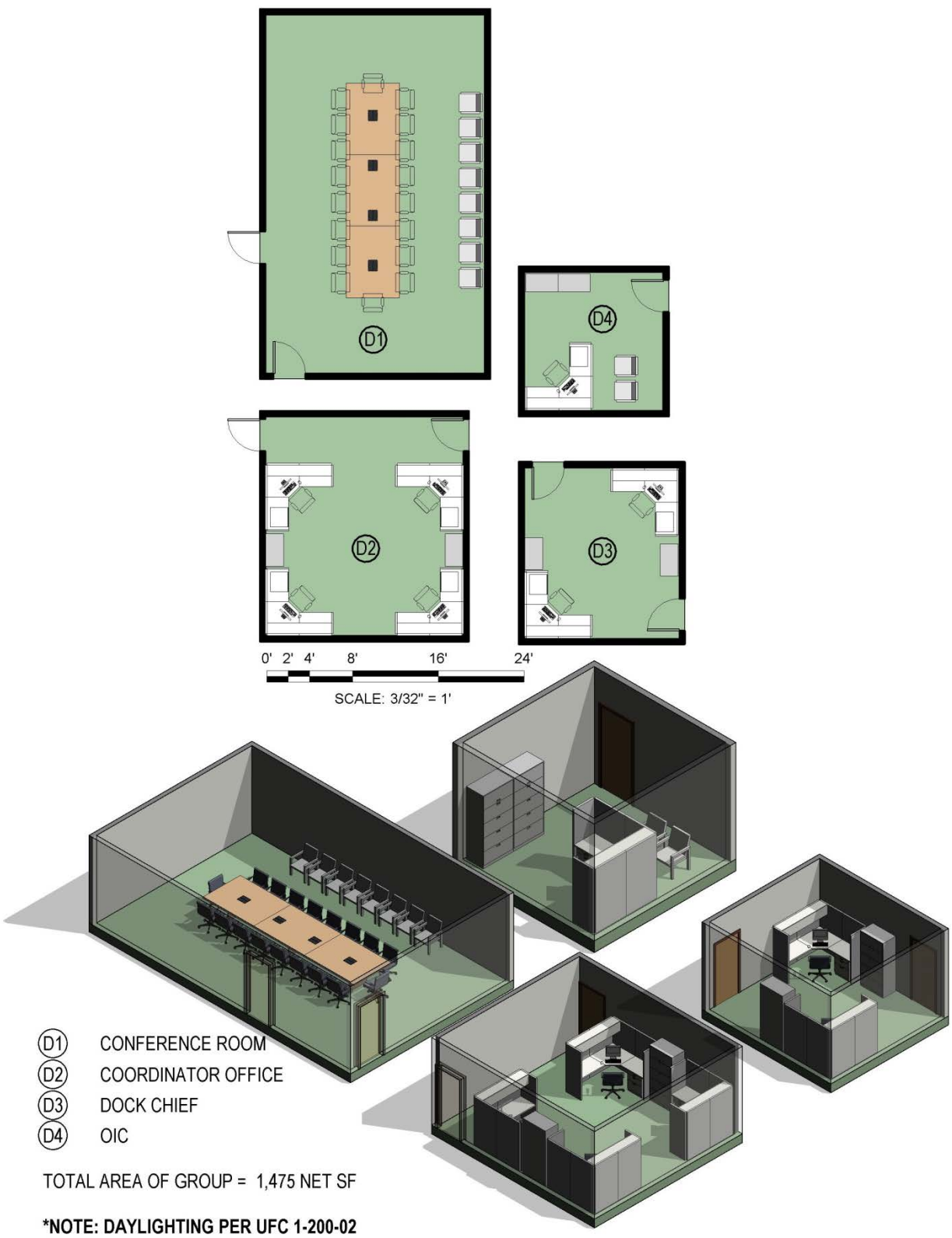


Figure 3-22 Module D Floor Plan & Axonometric (2 of 2)

3-4.3 Data Sheets

Figure 3-23		D1 Conference Room Data Sheet
Description/Usage		The Conference room shall accommodate at least twenty (20) people for daily pre-dock meetings and ten to fifteen (10-15) people for daily post-dock meetings. This room should be located next to the Dock Chief and Dock Coordinator offices.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Solid core wood, 3'x7" Insulated metal, 3'x7'
	Security/ Hardware	Standard classroom lockset
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	GWB - painted
	Floor	Carpet Tile
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Wall Outlets, Floor Outlets
Lighting		Recessed Indirect Fluorescent Fixtures, Recessed Downlights
Communication	**Tele.**	Wall Outlets, Floor Outlets, Wallphone Outlet
	Data	Wall Outlets, Floor Outlets, VTC
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 45 minimum
Furnishings/Equipment/ Casework		Conference table, executive conference chairs, side chairs, credenza, display board, wall clock, 4 gal trash can at each door, 4 gal recycle bin at each door
Special Requirements		

Figure 3-24		D2 Coordinator Office Room Data Sheet
Description/Usage		The Coordinator Office controls the switchboards for the Hangar Bay. AC maintainers will report to this office before going to the shops or Hangar Bay. This office consists of four (4) workstations, all the same size and layout. This office should be located next to the Dock Chief and Conference Room.
Ceiling Height		9'-0"
Windows		Requires view to Hangar Bay
Doors	**Type**	Solid core wood, 3'x7' Insulated metal, 3'x7'
	Security/ Hardware	Standard classroom lockset
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	GWB - painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 39 minimum
Furnishings/Equipment/ Casework		(4) L-shaped desks, ergonomic task chairs, lateral file cabinets, wall clock, marker board, cork board, 4 gal trash can at each desk, 23 gal recycle bin
Special Requirements		

Figure 3-25		D3 Dock Chief Room Data Sheet
Description/Usage		The Dock Chief office will house the Dock Chief and one (1) assistant. This office will require SIPRnet and NIPRnet and should be located next to the Coordinator Office and Conference Room
Ceiling Height		9'-0"
Windows		Requires view to Hangar Bay
Doors	**Type**	Solid core wood, 3'x7' Insulated metal, 3'x7'
	Security/ Hardware	Standard classroom lockset
	View Panels/ Kick-Plates	Kick-Plates
Finishes	**Walls**	GWB - painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Telephone Jack required at each workstation
	Data	SIPRnet and NIPRnet
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 39 minimum
Furnishings/Equipment/ Casework		(2) L-shaped desks, ergonomic task chairs, lateral filing cabinets, wall clock, marker board, cork board, 4 gal trash can at each desk, 23 gal recycle bin
Special Requirements		

Figure 3-26		D4 OIC Room Data Sheet
Description/Usage		This room will serve as office space for the facility's OIC (Officer In Charge).
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Solid core wood, 3'x7'
	Security/ Hardware	Entry lock
	View Panels/ Kick-Plates	N/A
Finishes	**Walls**	GWB-painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 39
Furnishings/Equipment/ Casework		L-shaped desk, ergonomic task chair, guest chair, lateral file cabinet, wall clock, marker board, cork board, 4 gal trash can, 4 gal recycle bin
Special Requirements		

Figure 3-27		D5 Flight Chiefs Room Data Sheet
Description/Usage		The Flight Chiefs Room will serve as office space for the facility's Flight Chiefs.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Solid core wood, 3'x7'
	Security/ Hardware	Entry lock
	View Panels/ Kick-Plates	N/A
Finishes	**Walls**	GWB-painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 39
Furnishings/Equipment/ Casework		Systems furniture to accommodate (4) personnel, ergonomic task chairs, lateral file cabinets, wall clock, marker board, cork board, 4 gal trash can at each desk, 23 gal recycle bin
Special Requirements		

Figure 3-28		D6 Records Room Data Sheet
Description/Usage		The Records room will contain lateral files for storing maintenance records and a copier/printer connection.
Ceiling Height		9'-0"
Windows		N/A
Doors	**Type**	Solid core wood, 3'x7'
	Security/ Hardware	Storeroom lockset Reg closer
	View Panels/ Kick-Plates	Kick-Plate
Finishes	**Walls**	GWB-painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 39
Furnishings/Equipment/ Casework		Systems furniture for (2) personnel ergonomic task chairs, printer/copier/fax machine, document shredder, storage for printing and office supplies, lockable lateral file cabinets, wall clock, marker board, cork board, 4 gal trash can at each desk, 23 gal recycle bin
Special Requirements		

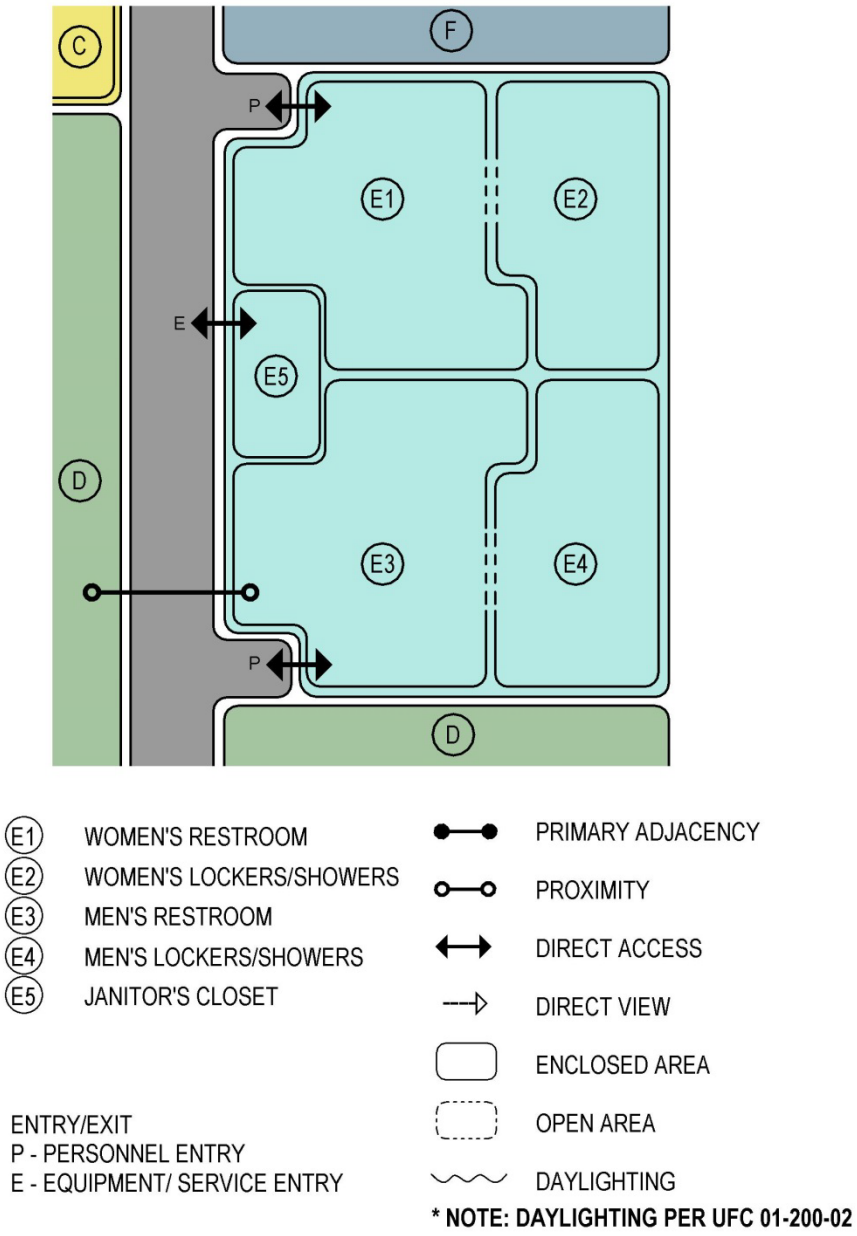
Figure 3-29		D7 Open Office Room Data Sheet
Description/Usage		The Open Office will provide office space for GM/PE staff.
Ceiling Height		9'-0"
Windows		Daylighting
Doors	**Type**	Solid core wood, 3'x7'
	Security/ Hardware	Entry lock
	View Panels/ Kick-Plates	N/A
Finishes	**Walls**	GWB-painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV Outlet
	Security	N/A
Acoustical Requirements		STC 39
Furnishings/Equipment/ Casework		Systems furniture to accommodate (4) personnel, ergonomic task chairs, lateral filing cabinets, wall clock, marker board, cork board, 4 gal trash can at each desk, 23 gal recycle bin
Special Requirements		

3-5 MODULE E – LOCKER/RESTROOM MODULE

3-5.1 Function and Adjacency

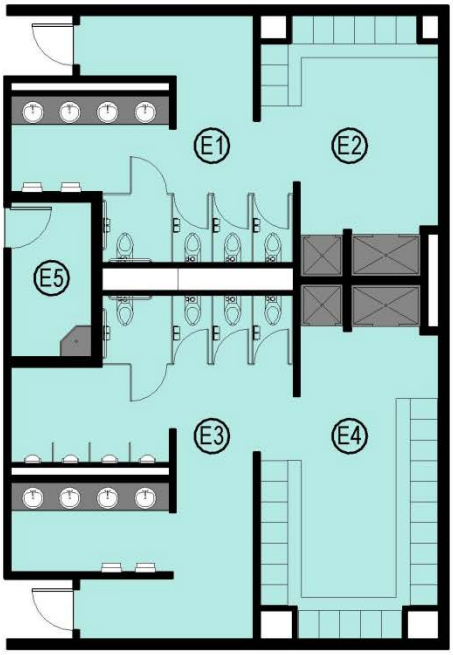
This module shall be easily accessible for all personnel. Place this module in a centralized location with direct access from the building's main corridor. The locker rooms should be conveniently located to Shop Support, Administrative, and Hangar Bay Modules. Determine if restrooms will need to function as storm shelters per ICC-500 and FEMA P361 Safe Rooms.

Figure 3-30 Module E Adjacency Diagram



3-5.2 Locker/Restroom

Figure 3-31 Module E Floor Plan & Axonometric



E1 WOMEN'S RESTROOM
E2 WOMEN'S LOCKERS/SHOWERS
E3 MEN'S RESTROOM
E4 MEN'S LOCKERS/SHOWERS
E5 JANITOR'S CLOSET

TOTAL AREA OF MODULE = 1,235 NET SF

***NOTE: DAYLIGHTING PER UFC 1-200-02**

3-5.3 Data Sheets

Figure 3-32		E1-E4 Lockers/Restrooms Room Data Sheets
Description/Usage		The Lockers/Restrooms serve all personnel in the facility. Locker rooms will include enough lockers for all full-time and part-time personnel to have a dedicated locker. Include a Janitor Closet near restrooms with a floor sink and mop/broom hooks. Determine if restrooms will need to function as storm shelters per ICC-500 and FEMA P361 Safe Rooms.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	3' x 7' solid core wood; Closers on all doors
	Security/ Hardware	N/A
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	Moisture resistant GWB full-height in locker rooms, tile wainscot to 5' A.F.F. with moisture resistant GWB above in restrooms and full-height tile in showers.
	Floor	Ceramic or porcelain tile
	Base	Tile cove base to match floor
	Ceiling	Moisture resistant GWB - painted
Plumbing		Sinks; toilets; urinals; floor drains in Shower and Locker areas
HVAC		68°F Heating, indirect Air Conditioning, Exhaust
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Convenience Outlets, Connection for electronic Flushes and Sinks
Lighting		Recessed Indirect Fluorescent Fixtures, Downlights
Communication	**Tele.**	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		STC 50 minimum
Furnishings/Equipment/ Casework		Fixture count shall be determined by number of building occupants at maximum load; wall mounted toilets and urinals; wall mounted baby changing stations; Double-height lockers 18"Wx24"D (min. 44 in Men and 18 in Women)
Special Requirements		Moisture resistant gypsum board throughout Line of sight shall be blocked from corridors

3-6 MODULE F- BUILDING SUPPORT MODULE

3-6.1 Function and Adjacency

The Mechanical, Electrical and Communications rooms shall be placed on an exterior wall away from the building's main entrance with exterior entry doors. SIPR and Storage rooms require interior access. SIPRnet and CER rooms need to be located near Administrative areas.

Figure 3-33 Module F Adjacency Diagram (1 of 2)

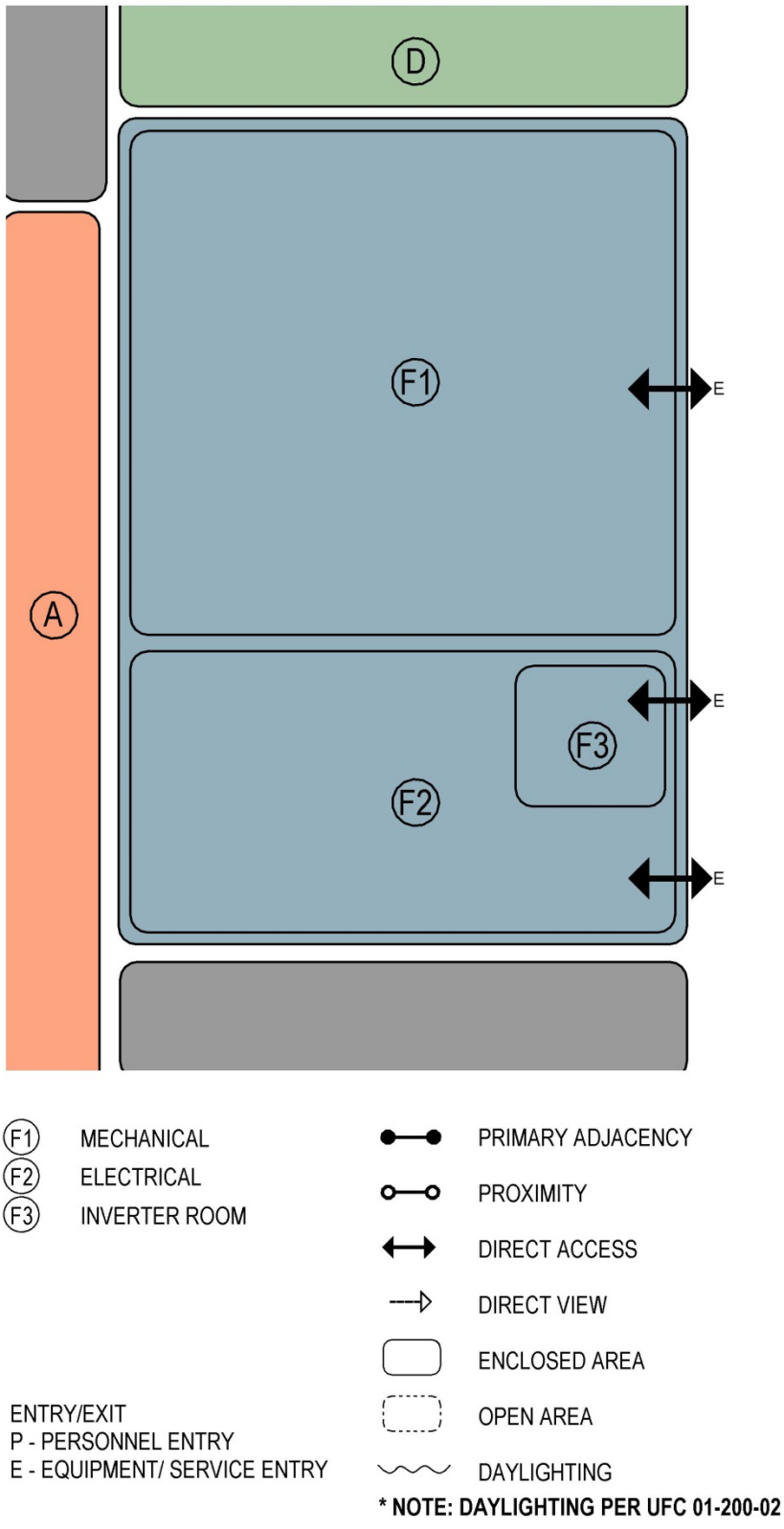
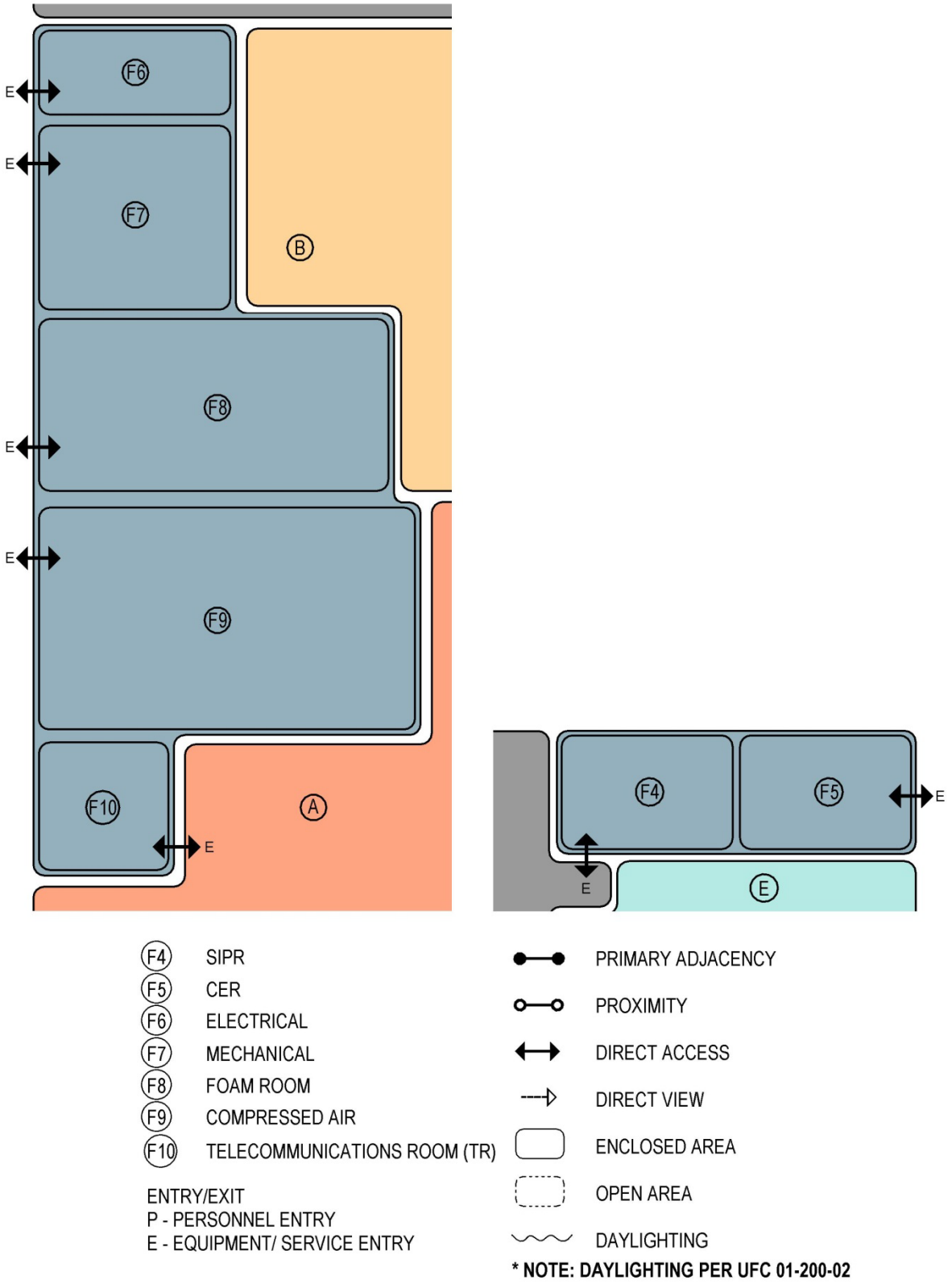


Figure 3-34 Module F Adjacency Diagram (2 of 2)



3-6.2 Building Support

Figure 3-35 Module F Floor Plan & Axonometric (1 of 2)

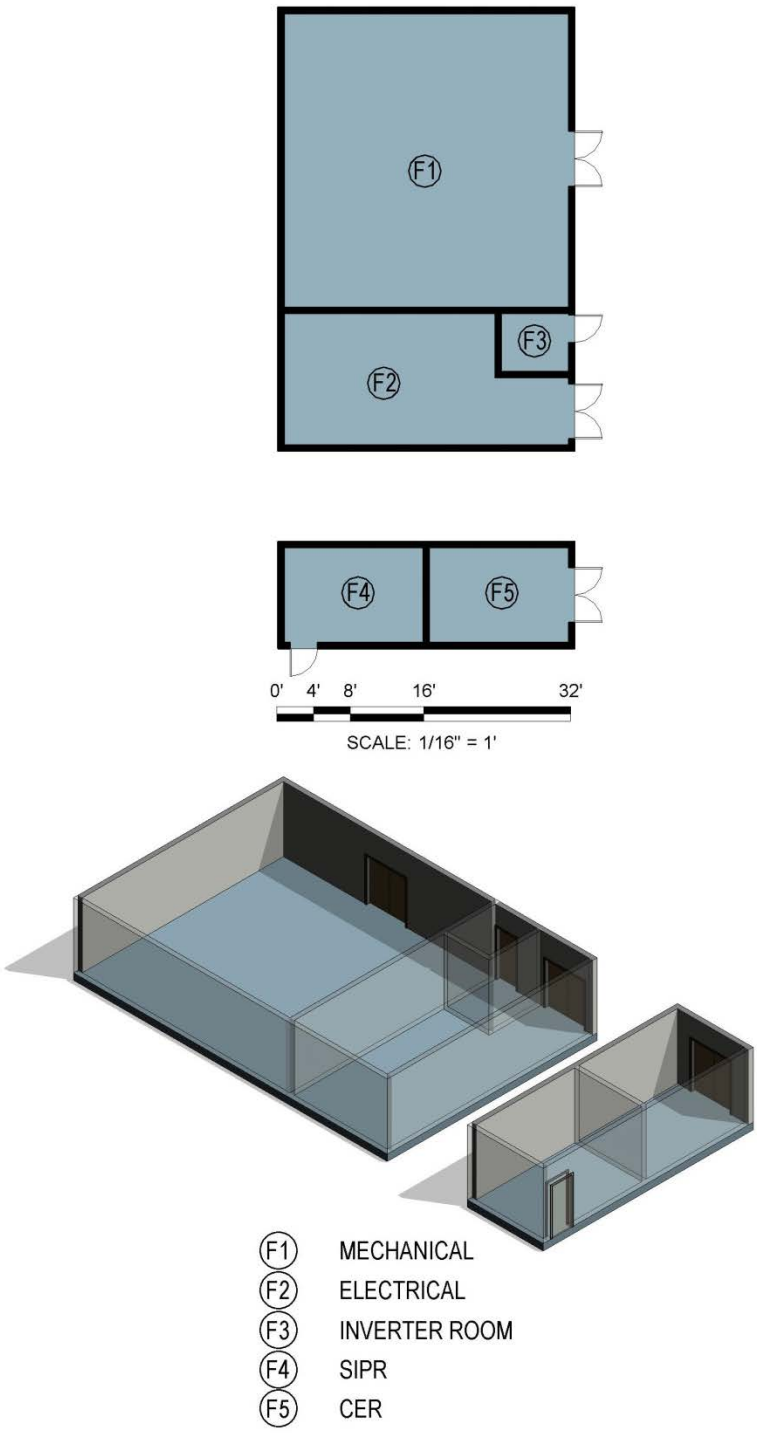
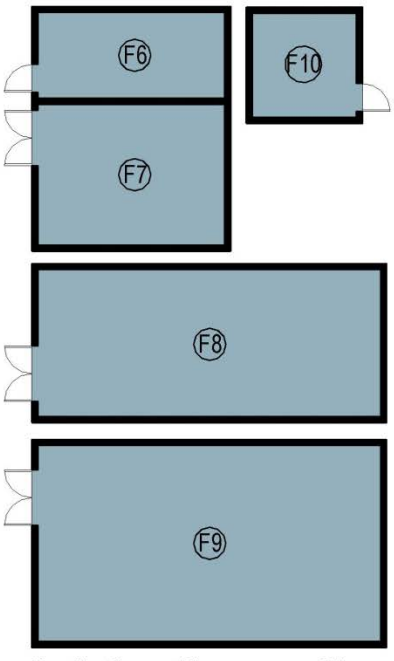
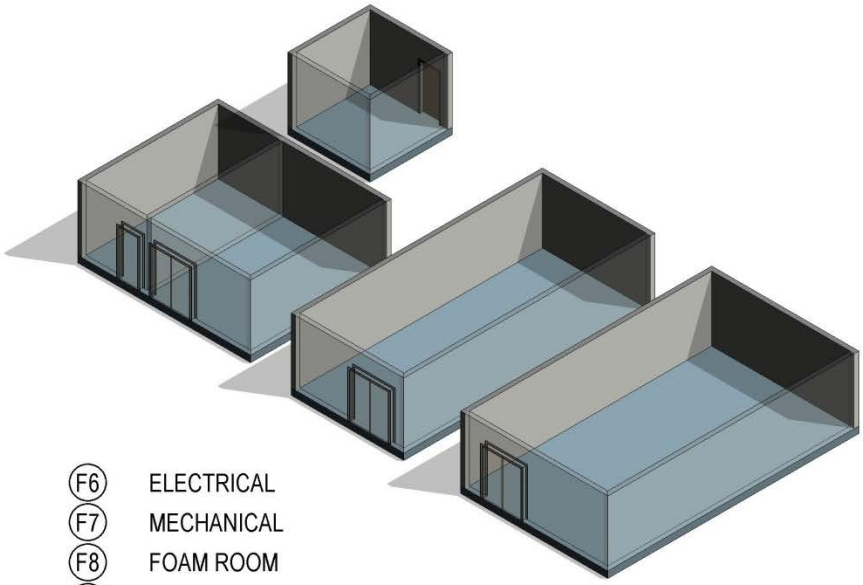


Figure 3-36 Module F Floor Plan & Axonometric (2 of 2)





F6 ELECTRICAL
F7 MECHANICAL
F8 FOAM ROOM
F9 COMPRESSED AIR
F10 TELECOMMUNICATIONS ROOM (TR)

TOTAL AREA OF GROUP = 2,035 NET SF
TOTAL AREA OF MODULE = 3,795 NET SF

***NOTE: DAYLIGHTING PER UFC 1-200-02**

3-6.3 Data Sheets

Figure 3-37		F1-F2, F6-F7 Mechanical and Electrical Room Data Sheets
Description/Usage		Due to the large area of the GM/PE Hangar, multiple Mechanical and Electrical rooms are required to minimize run distances and duct sizing.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7' Insulated metal, 3'x7' pair
	Security/ Hardware	Access control mort lock
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU-painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Open to structure
Plumbing		Floor drains, make-up water
HVAC		55°F heating, ventilation to maintain maximum 10°F change from ambient
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Convenience Outlets, Dedicated Equipment Outlets, Rack Mounted Outlets
Lighting		Chain Hung or Surface mounted Fluorescent Fixtures
Communication	**Tele.**	Wallphone
	Data	Wall Outlet for EMCS and DDC controls.
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switches, Electronic Strike, and card reader for doors
Acoustical Requirements		STC 50 minimum between building support and office spaces
Furnishings/Equipment/ Casework		
Special Requirements		Fire rated walls are required around the mechanical room

Figure 3-38		F3 Inverter Room Data Sheet
Description/Usage		Inverter room
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7'
	Security/ Hardware	Access control mort lock PA closer
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU - painted
	Floor	Sealed concrete
	Base	Resilient
	Ceiling	Exposed to structure-painted
Plumbing		N/A
HVAC		Battery exhaust system, 72°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Convenience Outlets, Dedicated Equipment Outlets
Lighting		Chain Hung or Surface mounted Fluorescent Fixtures
Communication	**Tele.**	Wallphone
	Data	Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switches, Electronic Strike, and card reader for doors
Acoustical Requirements		STC 50 minimum between building support and office spaces
Furnishings/Equipment/ Casework		
Special Requirements		Fire rated walls and doors required in storage rooms over 100 sf

Figure 3-39		F4 SIPR Room Data Sheet
Description/Usage		The SIPRnet room will house communication racks for the facility's administrative areas.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Hollow metal or solid core wood door, 3'x7'
	Security/ Hardware	Access control mort lock Combination lock
	View Panels/ Kick-Plates	N/A
Finishes	**Walls**	GWB – painted or CMU - painted
	Floor	Sealed concrete
	Base	Resilient or none if CMU
	Ceiling	GWB-painted
Plumbing		Floor drains for HVAC equipment
HVAC		Dedicated HVAC, 72°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Convenience Outlets, Dedicated Equipment Outlets, Rack Mounted Outlets
Lighting		Surface mounted Fluorescent Fixtures
Communication	**Tele.**	Wallphone, Rack for telecom
	Data	Rack for Data
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switches, Electronic Strike, and card reader for doors, Motion Sensor for interior
Acoustical Requirements		STC 50 minimum between building support and office spaces
Furnishings/Equipment/ Casework		
Special Requirements		

Figure 3-40		F5 CER Room Data Sheet
Description/Usage		The CER room will house the facility's CER communication racks.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7' pair
	Security/ Hardware	Access control mort lock PA closer
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	GWB – painted or CMU - painted
	Floor	Sealed concrete or VCT
	Base	Resilient or no base if CMU walls
	Ceiling	GWB-painted
Plumbing		Floor drains for HVAC
HVAC		Dedicated HVAC system, 72°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Surface mounted Fluorescent Fixtures
Lighting		Convenience Outlets, Dedicated Equipment Outlets, Rack Mounted Outlets
Communication	**Tele.**	Wallphone, Rack for Telecom
	Data	Wall Outlet, Rack for Data
	CCTV	N/A
	CATV	Rack for CATV
	Security	Balanced Magnetic Switches, Electronic Strike, and card reader for doors
Acoustical Requirements		STC 50 minimum between building support and office spaces
Furnishings/Equipment/ Casework		
Special Requirements		Fire rated walls and doors required in storage rooms over 100 sf

Figure 3-41		F8 Foam Room Data Sheet
Description/Usage		The Foam room requires direct physical access to the exterior.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7' pair
	Security/ Hardware	Access control mort lock PA closer
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU - painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Floor drains
HVAC		55°F Heating, exhaust for Summer ventilation
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Convenience Outlets, Dedicated Equipment Outlets
Lighting		Chain Hung or Surface mounted Fluorescent Fixtures
Communication	**Tele.**	Wallphone
	Data	Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switches, Electronic Strike, and card reader for doors
Acoustical Requirements		STC 50 minimum between building support and office spaces
Furnishings/Equipment/ Casework		
Special Requirements		

Figure 3-42		F9 Compressed Air Room Data Sheet
Description/Usage		The Compressed Air room will house the facility's air compressor.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7' pair
	Security/ Hardware	Access control mort lock PA closer
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU - painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Floor Drains
HVAC		55°F Heating, exhaust for Summer ventilation
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Convenience Outlets, Dedicated Equipment Outlets
Lighting		Chain Hung or Surface mounted Fluorescent Fixtures
Communication	**Tele.**	Wallphone
	Data	Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switches, Electronic Strike, and card reader for doors
Acoustical Requirements		STC 50 minimum between building support and office spaces
Furnishings/Equipment/ Casework		
Special Requirements		

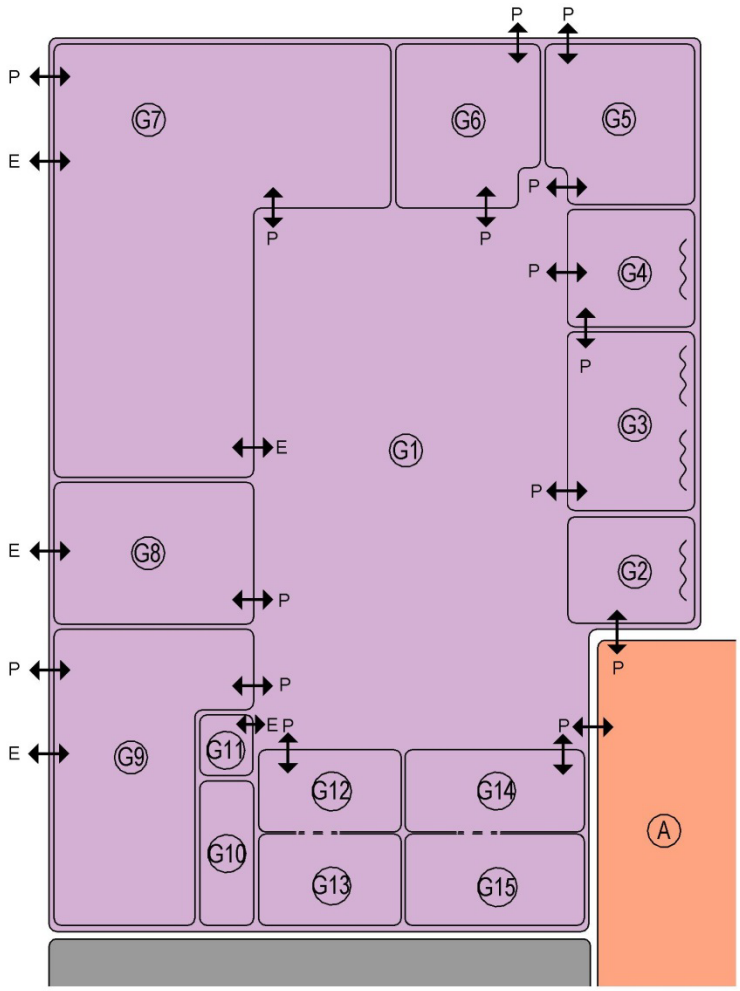
Figure 3-43		F10 Telecommunications Room Data Sheet
Description/Usage		The Telecommunications room will house telecommunication racks for the facility's administrative areas.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7'
	Security/ Hardware	Storeroom lock
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU - painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Floor Drains for HVAC equipment
HVAC		72°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Chain Hung or Surface mounted Fluorescent Fixtures
Lighting		Convenience Outlets, Dedicated Equipment Outlets, Rack Mounted Outlets
Communication	**Tele.**	Wallphone, Rack for Telecom
	Data	Wall Outlet, Rack for Data
	CCTV	N/A
	CATV	Rack for CATV
	Security	N/A
Acoustical Requirements		STC 50 minimum between building support and office spaces
Furnishings/Equipment/ Casework		
Special Requirements		Fire rated walls and doors required in storage rooms over 100 sf

3-7 MODULE G – ELECTRO/ENVIRONMENTAL (E/E) SHOP MODULE

3-7.1 Function and Adjacency

The E/E Shop shall be placed on an exterior wall with exterior entry doors for both equipment and personnel. Direct physical access to the Hangar Bay is required for the E/E Shop

Figure 3-44 Module G Adjacency Diagram



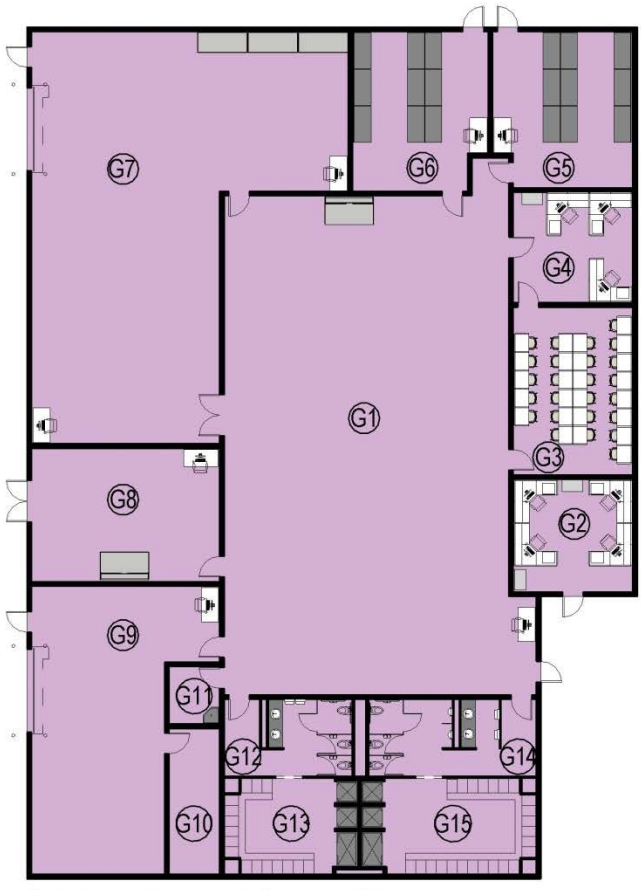
G1 WIRE MX SHOP
G2 E/E OPEN OFFICE
G3 INTERNET CAFE
G4 SECTION CHIEFS
G5 SLAB SHOP
G6 NI-CAD SHOP
G7 EE/AGE SHOP (GOX CART MX)
G8 LIFE RAFT CYLINDER SHOP
G9 NITROGEN SHOP (OBIGS MX)
G10 NITROGEN SHOP STORAGE
G11 JANITOR
G12 WOMEN'S RESTROOM
G13 WOMEN'S LOCKER/SHOWER
G14 MEN'S RESTROOM
G15 MEN'S LOCKER/SHOWER

PRIMARY ADJACENCY
PROXIMITY
DIRECT ACCESS
DIRECT VIEW
ENCLOSED AREA
OPEN AREA
DAYLIGHTING
*** NOTE: DAYLIGHTING PER UFC 01-200-02**

ENTRY/EXIT
P - PERSONNEL ENTRY
E - EQUIPMENT/ SERVICE ENTRY

3-7.2 E/E Shop

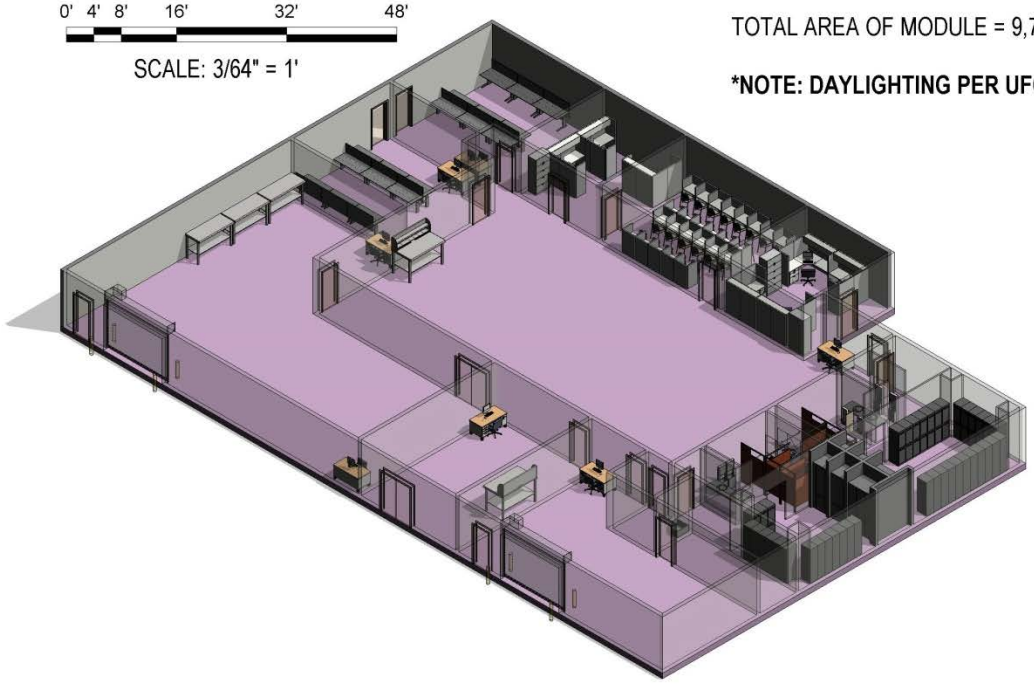
Figure 3-45 Module G Floor Plan & Axonometric



G1 WIRE MX SHOP
G2 E/E OPEN OFFICE
G3 INTERNET CAFE
G4 SECTION CHIEFS
G5 SLAB SHOP
G6 NI-CAD SHOP
G7 EE/AGE SHOP (GOX CART MX)
G8 LIFE RAFT CYLINDER SHOP
G9 NITROGEN SHOP (OBIGS MX)
G10 NITROGEN SHOP STORAGE
G11 JANITOR
G12 WOMEN'S RESTROOM
G13 WOMEN'S LOCKER/SHOWER
G14 MEN'S RESTROOM
G15 MEN'S LOCKER/SHOWER

TOTAL AREA OF MODULE = 9,740 NET SF

***NOTE: DAYLIGHTING PER UFC 1-200-02**



3-7.3 Data Sheets

Figure 3-46		G1 Wire MX Shop Room Data Sheet
Description/Usage		The Wire MX Shop will provide repair and maintenance shop space for wire maintenance.
Ceiling Height		Exposed to structure
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7'
	Security/ Hardware	Access control mort lock
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU-painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Floor Drains
HVAC		Exhaust hood for soldering station, 78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Power for MD-2 400Hz Frequency Converter, Power for B-9 400Hz rectifier, Convenience Receptacles, Dedicated Equipment Outlets
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Workbench Outlets, Wallphone Outlet
	Data	Workbench Outlets
	CCTV	N/A
	CATV	CATV
	Security	N/A
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		Computer workstation, ergonomic task chair, wall clock
Special Requirements		Grounding Bus Bar Around Perimeter

Figure 3-47		G2 E/E Open Office Room Data Sheet
Description/Usage		The E/E Open Office will house E/E personnel requiring workstations.
Ceiling Height		9'-0"
Windows		Daylighting
Doors	**Type**	Insulated metal, 3'x7'
	Security/ Hardware	Access control mort lock Reg closer
	View Panels/ Kick-Plates	Kick-plate
Finishes	**Walls**	GWB-painted
	Floor	VCT
	Base	Resilient
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Glass Break Sensor for Windows
Acoustical Requirements		STC 39 minimum
Furnishings/Equipment/ Casework		Systems furniture to accommodate (4) personnel, ergonomic task chairs, lateral filing cabinet, wall clock, marker board, cork board, 4 gal trash can at each desk, 23 gal recycle bin
Special Requirements		Grounding Bus Bar Around Perimeter

Figure 3-48		G3 Internet Café Room Data Sheet
Description/Usage		The Internet Café Room will provide computer space for EE Shop maintainers to check email and access the internet.
Ceiling Height		9’-0”
Windows		Daylighting
Doors	**Type**	Insulated metal, 3’x7’
	Security/ Hardware	Entry lock
	View Panels/ Kick-Plates	N/A
Finishes	**Walls**	CMU-painted or GWB-painted
	Floor	VCT
	Base	Resilient or non if CMU
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Glass Break Sensor for Windows
Acoustical Requirements		STC 39
Furnishings/Equipment/ Casework		Systems furniture carrel to accommodate (25) computers, stacking guest chairs, marker board, cork board, wall clock, 23 gal trash can, 23 gal recycle bin
Special Requirements		

Figure 3-49		G4 Section Chiefs Room Data Sheet
Description/Usage		This office will house the E/E Shop Section Chiefs.
Ceiling Height		9’-0”
Windows		Daylighting
Doors	**Type**	Insulated metal, 3’x7’
	Security/ Hardware	Entry lock
	View Panels/ Kick-Plates	N/A
Finishes	**Walls**	CMU-painted or GWB-painted
	Floor	VCT
	Base	Resilient or none if CMU
	Ceiling	ACT
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Workstation Outlets, Convenience Outlets, Dedicated Equipment Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Glass Break Sensor for Windows
Acoustical Requirements		STC 39
Furnishings/Equipment/ Casework		(3) L-shaped desks, ergonomic task chairs, lateral filing cabinets, wall clock, marker board, cork board, 4 gal trash can at each desk, 23 gal recycle bin
Special Requirements		

Figure 3-50		G5 Slab Shop Room Data Sheet
Description/Usage		The Slab Shop will provide space for charging equipment.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7'
	Security/ Hardware	Exit device PA closer
	View Panels/ Kick-Plates	Kick-plate
Finishes	**Walls**	CMU-painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Emergency Eyewash
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Battery Exhaust system
Fire Protection		N/A
Power		Workstation Outlets, Convenience Receptacles, Dedicated Equipment Outlets, 30A/250V Power for SLAB chargers
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Card Reader, Electric Strike
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		Computer workstation, ergonomic task chair, (9) battery charging workstations
Special Requirements		Grounding Bus Bar Around Perimeter

Figure 3-51		G6 NI-Cad Shop Room Data Sheet
Description/Usage		The NI-Cad Shop will house battery charging stations for Ni-Cad.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7'
	Security/ Hardware	Exit device PA closer
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU-painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Emergency eyewash station
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Battery Exhaust system
Fire Protection		N/A
Power		Workstation Outlets, Convenience Receptacles, Dedicated Equipment Outlets, 30A/250V Power for Ni Cad chargers
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Card Reader, Electric Strike
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		Computer workstation, ergonomic task chair, (9) battery charging workstations
Special Requirements		Grounding Bus Bar Around Perimeter

Figure 3-52		G7 EE/AGE Shop (GOX Cart MX) Room Data Sheet
Description/Usage		The EE/AGE Shop will provide space for GOX cart maintenance.
Ceiling Height		Exposed to structure
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7' and 3'x7' pair Overhead coiling door, 10'x11'-10"
	Security/ Hardware	Exit device PA closer
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU-painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Emergency eyewash station
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Exhaust hood, high level O2 alarm system
Fire Protection		N/A
Power		Workstation Outlets, Convenience Receptacles, Dedicated Equipment Outlets
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Balanced Magnetic Switch for Exterior Openings, Card Reader, Electric Strike
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		Computer workstation, ergonomic task chair, (3) workbenches
Special Requirements		Grounding Bus Bar Around Perimeter

Figure 3-53		G8 Life Raft Cylinder Shop Room Data Sheet
Description/Usage		The Life Raft Cylinder Shop will provide maintenance space for Life Raft Cylinder repairs.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7' Insulated metal, 3'x7' pair
	Security/ Hardware	Access control mort lock PA closer
	View Panels/ Kick-Plates	Kick-plate
Finishes	**Walls**	CMU-painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		N/A
HVAC		Exhaust hood, 78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Low O2 alarms
Fire Protection		N/A
Power		Workstation Outlets, Convenience Receptacles, Dedicated Equipment Outlets
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Balanced Magnetic Switch for Exterior Openings, Card Reader, Electric Strike
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		Computer workstation, ergonomic task chair, (1) workbench
Special Requirements		Grounding Bus Bar Around Perimeter

Figure 3-54		G9 Nitrogen Shop (OBIGS MX) Room Data Sheet
Description/Usage		The Nitrogen Shop (OBIGS MX) will house shop space for OBIGS maintenance.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7' Overhead coiling door, 10'x11'-10"
	Security/ Hardware	Exit device, PA closer
	View Panels/ Kick-Plates	Kick-plates
Finishes	**Walls**	CMU-painted
	Floor	Sealed Concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Floor Drains
HVAC		Exhaust hood, 78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Low O2 alarms
Fire Protection		N/A
Power		Workstation Outlets, Convenience Receptacles, Dedicated Equipment Outlets
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Workstation Outlets, Wallphone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Balanced Magnetic Switch for Exterior Openings, Card Reader, Electric Strike
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		Computer workstation, ergonomic task chair
Special Requirements		Grounding Bus Bar Around Perimeter

Figure 3-55		G10 Nitrogen Shop Storage Room Data Sheet
Description/Usage		The Nitrogen Shop Storage room will store Nitrogen cartridges when they are not in use.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7'
	Security/ Hardware	Storeroom lock Reg closer
	View Panels/ Kick-Plates	Kick-plate
Finishes	**Walls**	CMU-painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		N/A
HVAC		Exhaust hood, 78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Low O2 alarms
Fire Protection		N/A
Power		Convenience Receptacles
Lighting		Surface or Pendant Mounted Fluorescent Fixtures
Communication	**Tele.**	Wallphone Outlet
	Data	Wall Outlets
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		N/A
Furnishings/Equipment/ Casework		
Special Requirements		Fire rated walls and doors required in storage rooms over 100 sf

Figure 3-56		G11-G15 Lockers/Restrooms Room Data Sheets
Description/Usage		This Lockers/Restroom module is intended to serve all personnel in the E/E Shop. Locker rooms will include enough lockers for all full-time and part-time personnel to have a dedicated locker. Include a Janitor Closet near restrooms with a floor sink and mop/broom hooks.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	**Type**	Insulated metal, 3'x7'; Closers on all doors
	Security/ Hardware	N/A
	View Panels/ Kick-Plates	N/A
Finishes	**Walls**	Moisture resistant GWB full-height in locker rooms, tile wainscot to 5' A.F.F. with moisture resistant GWB above in restrooms and full-height tile in showers.
	Floor	Ceramic or porcelain tile
	Base	Tile cove base to match floor
	Ceiling	Moisture resistant GWB - painted
Plumbing		Sinks; toilets; urinals; floor drains in Shower and Locker areas
HVAC		Exhaust, Indirect HVAC
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Convenience Outlets
Lighting		Recessed Indirect Fluorescent Fixtures
Communication	**Tele.**	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		STC 50
Furnishings/Equipment/ Casework		Fixture count shall be determined by number of building occupants at maximum load; wall mounted toilets and urinals; wall mounted baby changing stations; Double-height lockers 18"Wx24"D (min. 214 in Men and 90 in Women)
Special Requirements		Moisture resistant gypsum board throughout Line of sight shall be blocked from corridors

CHAPTER 4 ENGINEERING/TECHNICAL CRITERIA

4-1 NOT USED

APPENDIX A – REFERENCES

ABA	Architectural Barriers Act Accessibility Standard for Department of Defense Facilities
ACI 301	American Concrete Institute “Specifications for Structural Concrete”
ACI 318/318R	American Concrete Institute “Building Code Requirements for Reinforced Concrete and Commentary”
ACI 530/530.1	American Concrete Institute “Building Code Requirements for Masonry Structures” and “Specifications for Masonry Structures”
AFCFS	Air Force Corporate Facility Standards
AFH 32-1084	Air Force Handbook 32-1084, Civil Engineering, Facility Requirements
AFI 31-101	Air Force Physical Security Program
AFI 32-1063	Electric Power Systems
AFI 32-1065	Grounding Systems
AFMAN 32-1084	Facility Requirements
AISC	American Institute of Steel Construction “Specification for Structural Steel Buildings”
AISI	American Iron and Steel Institute “North American Specification for the Design of Cold-Formed Steel Structural Members”
ASCE 7	American Society of Civil Engineers “Minimum Design Loads for Buildings and Other Structures”
ASHRAE 15	Safety Standard for Refrigeration Systems
ASHRAE 62.1	Ventilation for Acceptable Indoor Air Quality
ASHRAE 90.1	Energy Standard for Buildings Except Low-Rise Residential Buildings
ASHRAE 189.1	Standard for the Design of High Performance Green Buildings
ASTM Codes and Standards	American Society of Testing and Materials
AWS D1.1-00	American Welding Society “Structural Welding Code –Steel”
EISA Section 438	Stormwater Management for Federal Facilities under Section 438 of the Energy Independence and Security Act
EM 200-1-3	Requirements for the Preparation of Sampling and Analysis Plans
ER-1110-1-263	Chemical Data Quality Management for Hazardous, Toxic, Radioactive Waste Remedial Activities
EPACT 2005	Energy Policy Act of 2005
ETL 02-15	Engineering Technical Letter: Fire Protection Engineering Criteria – New Aircraft Facilities
ETL 04-3	Design Criteria for Prevention of Mold in Air Force Facilities
ETL 07-4	Air Force Carpet Standard

ETL 12-15	LED Fixture Design and Installation Criteria for Interior and Exterior Lighting Applications, w/Change 1
ETL 13-4	Engineering Technical Letter (ETL) 13-4: Standby Generator Design, Maintenance, and Testing Criteria
FAA AC 70/7460-1K	Federal Aviation Administration Advisory Circular: Obstruction Marking and Lighting
FAA AC 150/5320-5D	Federal Aviation Administration Advisory Circular: Airport Drainage Design
FAA AC 150/5345-43F	Federal Aviation Administration Advisory Circular: Specification for Obstruction Lighting Equipment
IEEE C2	National Electrical Safety Code
IENSA	10th Ed of the Handbook
IFC	International Fuel Gas code
IMC	International Mechanical Code
IPC	International Plumbing Code
MIL-HDBK 1004/6	Lightning Protection
MIL-HDBK 1013/1A	Design Guidelines for Physical Security of Facilities
MIL-HDBK-1190	Facility Planning and Design Guide
MUTCD	Manual on Uniform Traffic Control Devices
NFPA 10	Standard for Portable Fire Extinguishers
NFPA 70	National Electrical Code
NFPA 70E	Electric Safety in the Work Place
NFPA 72	National Fire Alarm and Signaling Code
NFPA 101	National Fire Protection Association
NFPA 220	Standard on Types of Building Construction
NFPA 780	Standard for the Installation of Lightning Protection System
NPDES	National Pollutant Discharge Elimination System (NPDES) for Construction Activities (Varies by State)
OSHA	Occupational Safety and Health Administration Regulations
TI-800-01	Design Criteria
UFC 1-200-01	General Building Requirements
UFC 1-200-02	High Performance and Sustainability Building Requirements
UFC 1-300-07A	Design Build Technical Requirements
UFC 3-101-01	Architecture
UFC 3-110-03	Roofing
UFC 3-120-01	Design: Sign Standards
UFC 3-120-10	Interior Design
UFC 3-190-06	Protective Coatings and Paints
UFC 3-201-01	Civil Engineering
UFC 3-201-02	Landscape Architecture

UFC 3-210-10	Low Impact Development
UFC 3-220-01	Geotechnical Engineering
UFC 3-220-04FA	Backfill for Subsurface Structures
UFC 3-220-08FA	Engineering Use of Geotextiles
UFC 3-230-01	Water Storage, Distribution, and Transmission
UFC 3-240-01	Wastewater Collection
UFC 3-250-01FA	Pavement Design for Roads, Streets, Walks and Open Storage Areas
UFC 3-250-04	Standard Practice for Concrete Pavements
UFC 3-250-08FA	Standard Practice for Sealing Joints and Cracks in Rigid and Flexible Pavements
UFC 3-250-11	Soil Stabilization for Pavements
UFC 3-260-01	Airfield and Heliport Planning and Design
UFC 3-260-02	Pavement Design for Airfields
UFC 3-260-17	Dust Control for Roads, Airfields, and Adjacent Areas
UFC 3-301-01	Design: Structural Engineering
UFC 3-400-02	Design: Engineering Weather Data
UFC 3-410-04N	Industrial Ventilation
UFC 3-420-01	Plumbing Systems
UFC 3-450-01	Noise and Vibration Control
UFC 3-501-01	Electrical Engineering
UFC 3-520-01	Interior Electrical Systems,
UFC 3-530-01	Design: Interior and Exterior Lighting and Controls,
UFC 3-550-01	Exterior Electrical Power Distribution
UFC 3-570-02A	Cathodic Protection
UFC 3-575-01	Lightning and Static Electricity Protection Systems
UFC 3-580-01	Telecommunications Building Cabling Systems Planning and Design
UFC 4-010-01	DoD Minimum Antiterrorism Standards for Buildings
UFC 4-010-02	DoD Minimum Antiterrorism Standoff Distances for Buildings (FOUO)
UFC 4-021-01	Design and O&M: Mass Notification Systems
UFC 4-022-01	Security Engineering: Entry Control Facilities / Access Control Points
UFC 4-022-02	Selection and Application of Vehicle Barriers
UFC 4-022-03	Security Fences and Gates
UFC 4-023-03	Design of Buildings to Resist Progressive Collapse
USGBC LEED-NC	LEED for New Construction and Major Renovations Rating System (U.S. Green Building Council)

APPENDIX B – AIRCRAFT MAINTENANCE UNIT FACILITY PROGRAMMING SHEET

MODULE NO.	AREA	NO. OCCUP	NO. OF ROOMS REQUIRED	INDIVIDUAL ROOM RQRMNTS	NET USER REQUIREMENTS		COMMENTS
				SF	SF	SM	
A	Hangar Bay						
A.1	GM/PE Hangar Bay	0	1	48610	48610	4,515.87	
	SUBTOTAL ENGINE BAY AREA				**48610**	**4,515.87**	
B	Shop Support						
B.1	CTK	3	1	1,710	1,710	158.86	
B.2	CTK Office	3	1	200	200	18.58	
B.3	Laser	0	1	90	90	8.36	
B.4	HAZMAT	0	1	600	600	55.74	
B.5	Aero Repair	7	1	480	480	44.59	
B.6	Aero Repair Office	2	1	195	195	18.12	
B.7	Jets	7	1	480	480	44.59	
B.8	Jets Office	2	1	195	195	18.12	
	SUBTOTAL ENGINE SHOP SUPPORT AREA				**3950**	**366.96**	
C	Break Room						
C.1	Break Room	18	1	480	480	44.59	3
C.2	PC Room	18	1	360	360	33.44	4
	SUBTOTAL BREAKROOM AREA				**840**	**78.04**	
D	Administration						
D.1	Conference Room	26	1	690	690	64.10	7,8
D.2	Coordinator Office	4	1	380	380	35.30	7,8
D.3	Dock Chief	2	1	235	235	21.83	7,8
D.4	OIC	1	1	170	170	15.79	7,8
D.5	Flight Chiefs	4	1	270	270	25.08	7,8
D.6	Records	2	1	215	215	19.97	7,8
D.7	Open Office	4	1	90	90	8.36	7,8
	SUBTOTAL ADMINISTRATION AREA				**2,050**	**190.45**	
				10% Circulation	**2,255**	**209.49**	
E	Locker/Restroom						
E.1	Women's Restroom	4	1	270	270	25.08	9
E.2	Women's Lockers/Showers	18	1	210	210	19.51	3,9
E.3	Men's Restroom	8	1	395	395	36.70	9
E.4	Men's Lockers/Showers	22	1	290	290	26.94	3,9
E.5	Janitor's Closet	0	1	70	70	6.50	
	SUBTOTAL ADMINISTRATION AREA				**1,235**	**114.73**	
F	Building Support						
F.1	Mechanical	0	1	1,000	1,000	92.90	10
F.2	Electrical	0	1	390	390	36.23	10
F.3	Inverter Room	0	1	50	50	4.65	
F.4	SIPR	0	1	160	160	14.86	
F.5	CER	0	1	160	160	14.86	
F.6	Electrical	0	1	190	190	17.65	10
F.7	Mechanical	0	1	315	315	29.26	10
F.8	Foam Room	0	1	600	600	55.74	
F.9	Compressed Air	0	1	800	800	74.32	
F.10	Telecommunications Room (TR)	0	1	130	130	12.08	
	SUBTOTAL BUILDING SUPPORT AREA				**3,795**	**352.56**	

G	E/E Shop						
G.1	Wire MX Shop	0	1	3,080	3,080	286.13	
G.2	E/E Open Office	4	1	285	285	26.48	
G.3	Internet Café	25	1	425	425	39.48	
G.4	Section Chiefs	3	1	280	280	26.01	
G.5	Slab Shop	1	1	450	450	41.81	
G.6	NI-Cad Shop	1	1	440	440	40.88	
G.7	EE/AGE Shop (GOX Cart MX)	2	1	2,070	2,070	192.30	
G.8	Life Raft Cylinder Shop	1	1	530	530	49.24	
G.9	Nitrogen Shop (OBIGS MX)	1	1	900	900	83.61	
G.10	Nitrogen Shop Storage	0	1	160	160	14.86	
G.11	Janitor	0	1	70	70	6.50	
G.12	Women's Restroom	3	1	200	200	18.58	
G.13	Women's Locker/Shower	32	1	250	250	23.23	3
G.14	Men's Restroom	5	1	265	265	24.62	
G.15	Men's Locker/Shower	48	1	335	335	31.12	3
	SUBTOTAL E/E SHOP AREA				**9,740**	**904.85**	
	TOTAL FACILITY NET FLOOR AREA				**70,425**	**7,042.50**	
	NET TO GROSS	**15%**					1,5,6
	TOTAL FACILITY GROSS AREA				**80,989**	**7,524**	

H	Exterior Elements						
H.1	Covered Entry	0	1	210	210	20	2
H.2	Covered GOX Cart Parking	0	1	700	700	65	2
H.3	Parking	17					4
	SUBTOTAL EXTERIOR ELEMENTS				**210**	**20**	
	TOTAL FACILITY SITE SUPPORT				**210**	**20**	

COMMENTS:

1 Includes walls, corridors, columns, etc.
2 Covered exterior elements count as 1/2 square footage. Noncovered exterior spaces are not included in building programming square
3 Locker count is based on double-height lockers and includes all openings.
4 Parking count includes 12 POV, 4 GOV, and 1 Handicap space.
5 Includes all areas listed in Air Force Manual 32-1084, Chapter 1 and Chapter 6
6 Per AFM 32-1084 Chapter 1, net-to-gross multiplier of up to 25%, used 15% as large portion of area is in Hangar Bay.
7 Reference Tables in Chapter 6 of Air Force Manual 32-1084 for additional information.
8 Administration Areas include circulation factor of 10% per Chapter 1 Air Force Manual 32-1084
9 Male/Female ratio of 73/30
10 Building Support areas are estimates only and actual size is dependent on requirements for climate zone, location, system, etc.

APPENDIX C – BIM & PDF DRAWING LINK

See the link below for the BIM & PDF versions of the drawings:
http://www.wbdg.org/references/afbim_tools.php

APPENDIX D – SUPPLEMENTAL RFP DATA LINK

See the link below for the Supplement RFP data:
http://www.wbdg.org/references/afbim_tools.php

APPENDIX E – AIR FORCE MILCON SUSTAINABILITY REQUIREMENTS SCORESHEET

Air Force MILCON Sustainability Requirements Scoresheet

version LEED® 2009 (Updated September 2013)

* required entry

General Information

Federal Requirements Complete

XXXX123456	Project ID (e.g. ABCD12345)
xxxxxxxxxxxxxxxxx	Real Property Unique ID (RPUID)
General Maintenance/Periodic Inspection (GM/PE Hangar) - Prototype Design	Building Name
New Building Construction	Project Type
Other	Installation
Other	City
Other	State
Other	CONUS
Air Combat Command	MAJCOM
TBD	PM Name
$0.00	PA ($k)
80,989	Building Size (SF)
2015	Program Year (FY####)
Initial Design Charrette	Project Phase
2015	Design Started (FY####)
10/9/2017	BOD (MM/DD/YY)
In Progress	Pursuing formal LEED® Certification
	[Select]
LEED® 2009	LEED® Rating System
43	LEED® Points Status
Certified	LEED® Certification Level Status
19	LEED® Energy and Water Points Status
91%	HPSB Compliant
26%	Energy Efficiency Achieved (% below ANSI/ASHRAE/IESNA Standard 90.1-2010)
2/27/2015	Date Scoresheet Completed or Revised
2013_V0	Scoresheet version

Color Coding: See Instructions Tab for more detail	
Drop-Down Box	Recommended (not required)
No Entry Required	Yes or N/A
Custom Entry	Maybe
LEED Prerequisite	No

* required entry

Federal Requirements for High Performance and Sustainable Buildings (HPSB) & UFC 1-200-02

HPSB I: Employ Integrated Design Principles (UFC 1-200-02 para 2-2)

Total Points: 2 — Possible Points: 2

Yes	HPSB I.1	**Integrated Design**	1
Yes	HPSB I.2	**Commissioning**	1

UFC 1-200-02 para 2-3. Promote Sustainable Location and Site Development

Total Points: 0 — Possible Points (HPSB only): 1

Maybe	UFC para 2-3.1	**Site selection**	1
Maybe	UFC para 2-3.2	**Mitigation of Heat Island Effect**	1
Yes	UFC para 2-3.3	**Reduction of Light Pollution**	1
Maybe	HPSB III.3-4	**Stormwater Management**	1

HPSB II: Optimize Energy Performance (UFC 1-200-02 para 2-4)				
Total Points	4		Possible Points	4
Yes	HPSB II.1	**Energy Efficiency**		1
		Yes	Reduce energy use 30% below ANSI/ASHRAE/IESNA Standard 90.1-2010 or if not - achieve maximum energy efficiency that is lifecycle cost effective	
		26.0%	Insert percentage below ANSI/ASHRAE/IESNA Standard 90.1-2010 in terms of energy use (e.g. 32)	
		0	Insert building energy intensity (kBtu/yr-sqft) calculated IAW 10 CFR 433	
Yes	HPSB II.2	**On-site Renewable Energy - Solar Hot Water Heater System**		1
		Yes	Installed solar hot water heater system or found installation not lifecycle cost effective	
		0.0	Insert generation capacity (MMBtu/yr)	
		0.0%	Insert percentage of demand	
Yes	HPSB II.3	**On-site Renewable Energy**		1
		Yes	Installed renewable energy elements or projects were not lifecycle cost effective	
		0	Renewable energy types (check below)	
		☐ Solar PV ☐ Geothermal ☐ Hydro ☐ Waste to Energy ☐ Solar CP ☐ GSHP ☐ Wind ☑ Renewables were not lifecycle cost effective ☐ Solar Thermal Electric		
			Insert generation capacity (kW)	
			Insert percentage of total building	
Yes	HPSB II.4	**Measurement and Verification**		1
		Yes	Water Metering: Select N/A if no service	
		Yes	Electric Metering: Select N/A if no service	
		Yes	Natural Gas Metering: Select N/A if no service	
		N/A	Steam Metering: Select N/A if no service	
HPSB III: Protect and Conserve Water (UFC 1-200-02 para 2-5)				
Total Points	3		Possible Points	3
Yes	HPSB III.1	**Indoor Water**		1
Yes	HPSB III.2	**Outdoor Water**		1
Yes	HPSB III.4	**Water used for heating and cooling**		1
		Yes	Water efficient measures were implemented with heating and cooling equipment when life cycle effective	
HPSB IV: Enhance Indoor Environmental Quality (UFC 1-200-02 para 2-6)				
Total Points	5		Possible Points	6
Yes	HPSB IV.1	**Thermal Comfort**		1
Yes	HPSB IV.2	**Ventilation**		1
Yes	HPSB IV.3	**Moisture Control**		1
Maybe	HPSB IV.4	**Daylighting**		1
Yes	HPSB IV.5	**Low Emitting Materials**		1
Yes	HPSB IV.6	**Protect Indoor Air Quality during Construction**		1
Yes	HPSB IV.7	**Environmental Tobacco Smoke**		
HPSB V: Reduce Environmental Impact of Materials (UFC 1-200-02 para 2-6)				
Total Points	6		Possible Points	6
Yes	HPSB V.1	**Recycled Content**		1
Yes	HPSB V.2	**Biologically-based Products**		1
Yes	HPSB V.3	**Environmentally Preferable Products**		1
Yes	HPSB V.4	**Waste and Materials Management - Recycling**		1
Yes	HPSB V.5	**Waste and Materials Management - Divert 50% from Disposal**		1
		50.0%	Insert percentage diverted from landfill	
			Data element is not applicable	
Yes	HPSB V.6	**Ozone Depleting Substances**		1
HPSB Totals			Possible Points	**22**
20	**Federal Requirements - Yes or N/A**			
2	**Federal Requirements - Maybe**			
0	**Federal Requirements - No**			
91%	**Percentage of Federal Requirements Met**			

LEED® 2009 Checklist

LEED® Credits and/or Prerequisites that meet HPSB/UFC Requirements
LEED® Credits and/or Prerequisites that align closely with HPSB/UFC Requirements
LEED® Credits that meet USAF Energy & Water Criteria (may depend on technologies & strategies)

Sustainable Sites				
Achievable Points	7	Sustainable Sites	Possible Points	26
Yes	Prereq 1	Construction Activity Pollution Prevention (HPSB GP3)		Required
Maybe	Credit 1	Site Selection		1
Maybe	Credit 2	Development Density & Community Connectivity		5
Maybe	Credit 3	Brownfield Redevelopment		1
Maybe	Credit 4.1	Alternative Transportation - Public Transportation Access		6
Yes	Credit 4.2	Alternative Transportation - Bicycle Storage & Changing Rooms		1
Yes	Credit 4.3	Alternative Transportation - Low-Emitting & Fuel Efficient Vehicles		3
Yes	Credit 4.4	Alternative Transportation - Parking Capacity		2
Maybe	Credit 5.1	Site Development - Protect or Restore Habitat		1
Maybe	Credit 5.2	Site Development - Maximize Open Space		1
	Credit 6.1	Stormwater Design - Quantity Control (HPSB GP3)		1
	Credit 6.2	Stormwater Design - Quality Control (HPSB GP3)		1
Maybe	Credit 7.1	Heat Island Effect - Non-Roof (UFC)		1
Maybe	Credit 7.2	Heat Island Effect - Roof (UFC)		1
Yes	Credit 8	Light Pollution Reduction		1
			Select which LEED® Interior Lighting Option was used	
Water Efficiency				
Achievable Points	7		Possible Points	10
Yes	Prereq 1	Water Use Reduction - 20% Reduction (HPSB GP3)		Required
4	Credit 1	Water Efficient Landscaping (HPSB GP3)		2 to 4
		2	Reduce Potable Water Use by 50% (HPSB GP3)	2
		4	No Potable Use or Irrigation (HPSB GP3)	2
Maybe	Credit 2	Innovative Wastewater Technologies		2
3	Credit 3	Water Use Reduction (HPSB GP3)		2 to 4
		2	30% Reduction (HPSB GP3)	2
		3	35% Reduction (HPSB GP3)	1
		4	40% Reduction (HPSB GP3)	1
Energy & Atmosphere				
Achievable Points	14		Possible Points	35
Yes	Prereq 1	Fundamental Commissioning of the Building Energy Systems (HPSB GP1)		Required
Yes	Prereq 2	Minimum Energy Performance (HPSB GP2)		Required
Yes	Prereq 3	Fundamental Refrigerant Management (HPSB GP5)		Required
10	Credit 1	Optimize Energy Performance (HPSB GP2)		1 to 19
		1	12% for New Buildings/8% for Existing Building Renovations	1
		2	14% for New Buildings/10% for Existing Building Renovations	1
		3	16% for New Buildings/12% for Existing Building Renovations	1
		4	18% for New Buildings/14% for Existing Building Renovations	1
		5	20% for New Buildings/16% for Existing Building Renovations	1
		6	22% for New Buildings/18% for Existing Building Renovations	1
		7	24% for New Buildings/20% for Existing Building Renovations	1
		8	26% for New Buildings/22% for Existing Building Renovations	1
		9	28% for New Buildings/24% for Existing Building Renovations	1
		10	30% for New Buildings/26% for Existing Building Renovations	1
		11	32% for New Buildings/28% for Existing Building Renovations	1
		12	34% for New Buildings/30% for Existing Building Renovations	1
		13	36% for New Buildings/32% for Existing Building Renovations	1
		14	38% for New Buildings/34% for Existing Building Renovations	1
		15	40% for New Buildings/36% for Existing Building Renovations	1
		16	42% for New Buildings/38% for Existing Building Renovations	1
		17	44% for New Buildings/40% for Existing Building Renovations	1
		18	46% for New Buildings/42% for Existing Building Renovations	1
		19	48%+ for New Buildings/44%+ for Existing Building Renovations	1
0	Credit 2	On-Site Renewable Energy (HPSB GP2)		1 to 7
		1	On-site 1%	1
		2	On-site 3%	1
		3	On-site 5%	1
		4	On-site 7%	1
		5	On-site 9%	1
		6	On-site 11%	1
		7	On-site 13%	1
Yes	Credit 3	Enhanced Commissioning (HPSB GP1)		2
Yes	Credit 4	Enhanced Refrigerant Management (HPSB GP5)		2
Maybe	Credit 5	Measurement & Verification (HPSB GP2)		3
Maybe	Credit 6	Green Power		2

Materials & Resources				
Achievable Points 6			Possible Points	14
Yes	Prereq 1	Storage & Collection of Recyclables (HPSB GP5)		Required
0	Credit 1.1	Building Reuse - Maintain Existing Walls Floors & Roof		1 to 3
		1	Maintain 55% of Existing Walls Floors & Roof	1
		2	Maintain 75% of Existing Walls Floors & Roof	1
		3	Maintain 95% of Existing Walls Floors & Roof	1
Maybe	Credit 1.2	Building Reuse - Maintain 50% of Interior Non-Structural Elements		1
0	Credit 2	Construction Waste Management (HPSB GP5)		1 to 2
		1	50% Recycled or Salvaged	1
		2	75% Recycled or Salvaged	1
0	Credit 3	Materials Reuse		1 to 2
		1	5% of value of material reused content	1
		2	10% of value of material reused content	1
2	Credit 4	Recycled Content (HPSB GP5)		1 to 2
		1	10% of value of material recycled content	1
		2	20% of value of material reused content	1
2	Credit 5	Regional Materials		1 to 2
		1	10% Extracted, Processed & Manufactured	1
		2	20% Extracted, Processed & Manufactured	1
Yes	Credit 6	Rapidly Renewable Materials (HPSB GP5)		1
Yes	Credit 7	Certified Wood (HPSB GP5)		1
Indoor Environmental Quality				
Achievable Points 9			Possible Points	15
Yes	Prereq 1	Minimum IAQ Performance (HPSB GP4)		Required
Yes	Prereq 2	Environmental Tobacco Smoke (ETS) Control (HPSB GP4)		Required
Maybe	Credit 1	Outside Air Delivery Monitoring		1
Yes	Credit 2	Increased Ventilation		1
Maybe	Credit 3.1	Construction IAQ Management Plan, During Construction (HPSB GP4)		1
Yes	Credit 3.2	Construction IAQ Management Plan, Before Occupancy (HPSB GP4)		1
Yes	Credit 4.1	Low Emitting Materials, Adhesives & Sealants (HPSB GP4)		1
Yes	Credit 4.2	Low Emitting Materials, Paints & Coatings (HPSB GP4)		1
Yes	Credit 4.3	Low Emitting Materials, Flooring Systems (HPSB GP4)		1
Yes	Credit 4.4	Low Emitting Materials, Composite Wood & Agrifiber Products (HPSB GP4)		1
Yes	Credit 5	Indoor Chemical & Pollutant Source Control		1
Yes	Credit 6.1	Controllability of Systems, Lighting (HPSB GP4)		1
Maybe	Credit 6.2	Controllability of Systems, Thermal Comfort		1
Yes	Credit 7.1	Thermal Comfort, Design (HPSB GP4)		1
Maybe	Credit 7.2	Thermal Comfort, Verification		1
Maybe	Credit 8.1	Daylight & Views - Daylight 75% of Spaces (HPSB GP4)		1
Maybe	Credit 8.2	Daylight & Views - Views for 90% of Spaces		1
Innovation & Design Process				
Achievable Points 0			Possible Points	6
	Credit 1.1	Innovation in Design 1.1		1
			Select if ID 1.1 was for energy and/or water	
	Credit 1.2	Innovation in Design 1.2		1
			Select if ID 1.2 was for energy and/or water	
	Credit 1.3	Innovation in Design 1.3		1
			Select if ID 1.3 was for energy and/or water	
	Credit 1.4	Innovation in Design 1.4		1
			Select if ID 1.4 was for energy and/or water	
	Credit 1.5	Innovation in Design 1.5		1
			Select if ID 1.5 was for energy and/or water	
	Credit 2	LEED® Accredited Professional		1
Regional Priority Credits				
Achievable Points 0			Possible Points	4
	Credit 1.1	Regional Priority 1.1		1
			Select if RP 1.1 was for energy and/or water	
	Credit 1.2	Regional Priority 1.2		1
			Select if RP 1.2 was for energy and/or water	
	Credit 1.3	Regional Priority 1.3		1
			Select if RP 1.3 was for energy and/or water	
	Credit 1.4	Regional Priority 1.4		1
			Select if RP 1.4 was for energy and/or water	

LEED Project Totals (pre-certification estimates)	Possible Points 110
43	Total LEED® Yes Points
18	Total LEED® Maybe Points
0	Total LEED® No Points
19	Total LEED® Energy and Water Related Points
Certified	LEED® Certification Status
N/A	LEED® Horizontal Benchmark Level
N/A	LEED® Utility Benchmark Level
N/A	LEED® Industrial Benchmark Level

LEED®: Certified: 40-49 points, **Silver:** 50-59 points, **Gold:** 60-79 points, **Platinum:** 80-110