

STANDARD DESIGN

**AIR FORCE
CORROSION CONTROL/FUEL CELL
MAINTENANCE HANGAR
FACILITY**



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CHAPTER 1 INTRODUCTION

1.1. STANDARD DESIGN

Standard Designs provide functional and spatial requirements for specific Air Force facility types, and are intended for use in conjunction with DoD Unified Facilities Criteria (UFC), Air Force Corporate Facility Standards, Installation Facility Standards, and other applicable standards.

Standard Designs are living documents that are periodically reviewed, updated, and made available to users by posting on the Whole Building Design Guide. This Standard Design, as well as those for many other Air Force facilities, can be accessed at this web site: <http://wbdg.org/ffc/af-afcec/prototypes-standard-designs>

This Standard Design is effective upon issuance and is distributed only in electronic media.

1.2 AIR FORCE STANDARD DESIGN POLICY

1.2.A. Required use of Standard Designs

The use of Air Force Corporate Facilities Standards (AFCFS), Installation Facility Standards (IFS) and Standard Designs has been codified in the most recent version of AFI 32-1023, *Designing and Constructing Military Construction Projects* (ref (c)). In compliance with the AFI, all facility designs must conform to the standards outlined and specified in the AFCFS, and if there is an applicable Installation Facilities Standards (IFS) document, the project must conform to those standards as well.

This Standard Design was developed in close coordination with the facility's functional users to by determine personnel counts, allowable/authorized space/room sizes, adjacency diagrams between the functional spaces and the overall facility space requirements. It also addresses special requirements unique to this facility type. Use this Standard Design in conjunction with other AF policy and regulations such as AFI's, and UFC's when programming and designing this facility type.

1.2.B. Integration with Air Force Corporate and Installation Facility Standards

The Air Force Corporate Facilities Standards (AFCFS), is an enterprise-wide program of facility standards establishing an acceptable level of quality and performance for facility design, facility operations and ongoing building maintenance. The AFCFS provides an exciting direction forward; intended to create sustainable installations and cohesive, efficient, High Performance and Sustainable Buildings throughout the Air Force.

Installation Facilities Standards (IFS) are part of the Air Force Corporate Facilities Standards (AFCFS) program to assist bases in implementing facilities standards at the local level. Bases develop and maintain an IFS, which replaces the Architectural Compatibility Plan, as a component plan of the Installation Development Plan (IDP).

Programmers and designers for Corrosion Control/ Aircraft Fuel Cell Maintenance Hangar Facilities must use this Standard Design to ensure the specific functional, spatial, and special requirements are met, meet the local requirements established by the IFS, and the overall Air Force requirements set forth in the AFCFS.

1.3 APPLICABILITY

This Standard Design provides requirements for evaluating, planning, programming, and designing a Corrosion Control/ Aircraft Fuel Cell Maintenance Hangar Facility that supports the mission, is appropriately sized, flexible, durable, and life-cycle cost efficient. The information in this Standard Design applies to the design of all new construction projects, to include additions, alterations, and renovation projects worldwide. 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.

The facility size is dependent on the Corrosion Control and Aircraft Fuel Cell Maintenance Hangar Bays. Use the Interactive Programming Worksheet to assist in these adjustments.

1.3. A. Additions 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. Remove 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 must determine the most efficient means to balance the placement of modules within existing spaces or as a facility addition.

CHAPTER 2 FACILITY DESIGN

2.1 FACILITY DESCRIPTION

2.1.A. Function

The primary function of this Corrosion Control/Fuel Cell Facility is to provide a facility that fully supports the mission with a flexible state-of-the-art building. The facility will primarily function as a touch-up painting facility, and secondarily as a wash-rack facility. The Aircraft Fuel portion of the CC/FC Hangar will be used to remove, repair and replace fuel cell tanks from aircraft; including the KC-46A, KC -135 & C-17. The facility is comprised of Hangar Bays (2), Shop areas and Administrative/Support areas. Corrosion Control/Fuel Cell Facilities will consist of but are not limited to grouped rooms or “Modules”. The modules needed for this facility are as follows (included rooms are noted below module title):

Area Modules

- Corrosion Control Hangar Bay
 - Hangar Bay
 - Return Air Filtration
 - Filter Storage
 - Supply Air Plenum
- Aircraft Fuel Cell Maintenance Hangar Bay
 - Hangar Bay
- Corrosion Control Tools & Support
 - CTK Vestibule
 - CTK
 - Tool Storage
 - Stencil
 - Transition/ Staging
- Corrosion Control Shops
 - Sanding Booth
 - Paint Booth
 - Paint Storage
 - Paint Mixing
 - Clean Room
- Aircraft Fuel Tools & Support
 - CTK Vestibule
 - CTK
 - Fuel Tool Storage
- Aircraft Fuel Shops
 - Fuel Shop Storage
 - Fuel Shop
 - Fuel Tank Storage
 - Fuel Tank Repair

- Administration
 - Training (x 2)
 - Contractor Office (x 2)
 - Section Chiefs (x 2)
 - Dispatch (x 2)
- Ready Room (x 2)
- Toilet, Locker, Shower
 - Initial Accumulation Point
 - Men's Toilet / Shower (Dirty)
 - Men's Toilet / Shower (Clean)
 - Women's Toilet / Shower (Dirty)
 - Women's Toilet / Shower (Clean)
 - Men's Toilet/ Shower (Fuel Shops)
 - Women's Toilet/Shower (Fuel Shops)
 - Janitor
- Building Support
 - Mechanical
 - Compressed Air
 - Fire Pump
 - Electrical
 - Telecommunications
 - 400 HZ Converter Rooms (x2)

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

2.1.B. Typical Users

This facility is operated by active duty, guard, and reserve military personnel as well as civilian contractor representatives of the systems providers as well as USAF Civilian Federal Workforce.

Hours of operation for this facility type are user driven and may vary up to two shifts. Anticipated personnel count for the Corrosion Control Hangar is ten (10) total, with a peak shift of six (6). Anticipated personnel count for the Fuel Cell Maintenance Hangar is fifteen (15), with a peak shift of eight (8).

2.1.C. Related AFMAN 32-1084 Category Code

The related AFMAN 32-1084 Category Codes are as follows: This facility would be governed by Chapter 3, Facility Class 2, Maintenance Facilities, Category Group 21, Maintenance Facilities and Chapter 6, Facility Class 6, Administrative, Category Group 61, Administrative and Administrative Support Spaces.

2.2 CRITERIA

APPLICABLE UNIFIED FACILITY CRITERIA

Comply with UFC 1-200-01, DoD Building Code (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 Standard Design in addition to UFC 1-200-01 and the UFCs and government criteria referenced therein. UFC 1-200-01 references other “Core UFCs” that are applicable to this Standard Design as well as most all DoD facilities.

UFC 1-200-01	DoD Building Code (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 3-230-01	Water Storage, Distribution, and Transmission
UFC 3-240-01	Wastewater Collection
UFC 3-250-01	Pavement Design for Roads and Parking Areas
UFC 3-250-04	Standard Practice for Concrete 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 3-401-01	Mechanical Engineering
UFC 3-410-01	Heating, Ventilation, and Air Conditioning Systems
UFC 3-410-02	Lonworks Direct Digital Control for HVAC and Other Local Building Systems
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 3-570-01	Cathodic Protection
UFC 3-575-01	Lightning and Static Electricity Protection Systems
UFC 3-580-01	Telecommunications Building Cabling Systems Planning and Design
UFC 3-600-01	Fire Protection Engineering for Facilities
UFC 4-010-01	DoD Minimum Antiterrorism Standards for Buildings
UFC 4-010-05	Sensitive Compartmented Information Facilities Planning, Design, and Construction.
UFC 4-020-01	Security Engineering Facilities Planning Manual
UFC 4-021-01	Design and O&M: Mass Notification Systems
UFC 4-010-06	Cybersecurity of Facility-Related Control Systems
UFC 4-022-03	Security Fences and Gates
UFC 4-023-03	Design of Buildings to Resist Progressive Collapse
UFC 4-211-01	Aircraft Maintenance Hangars
UFC 4-211-02	Corrosion Control Hangars
USGBC LEED-NC	LEED for New Construction and Major Renovations Rating System (U.S. Green Building Council)

2.2.A. Sustainability

Comply with the Federal sustainability requirements as detailed in UFC 1-200-02, High Performance and Sustainable Building Requirements. Determine third-party certification requirements based on Table 1-1 of UFC 1-200-02 and current AF guidance at <https://www.wbdg.org/ffc/af-afcec>.

2.2.B. Security and Antiterrorism

The facility must meet, UFC 4-020-01 Security Engineering Facilities Planning Manual, UFC 04-010-01 DoD Minimum Antiterrorism Standards for Buildings, Change 1, UFC 4-010-05 Sensitive Compartmented Information Facilities Planning, Design, and Construction and ICD/ICS 705 Technical Specifications for Construction and Management of Sensitive Compartmented Information Facilities. Internal security measures include designated 'non-secure' and 'secure' areas within the building with access to secure areas controlled and monitored by special access hardware, Intrusion Detection Systems and Closed-Circuit Television Systems (CCTV). Exterior security measures will include antiterrorism stand-off distances for parking, controlled vehicular circulation, appropriately located trash enclosures, clear space surrounding the facility, and the single point of building entry.

2.3 NOTIONAL SITE

2.3.A. Site Location, Orientation and Adjacencies

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. Additional land may be needed to comply with the stormwater management requirements of UFC 3-210-10 Low Impact Development. 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.

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 must be analyzed.

Emphasis must 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 Corrosion Control Facility is 6.0 acres, which includes antiterrorism/force protection standoff and parking. Utilization of existing or shared parking is allowable and may reduce the total acreage required for the facility.

2.3.B. Parking

Parking will be as required by the programming documents, but at a minimum must be provided to accommodate 40 percent of the largest shift of assigned personnel.

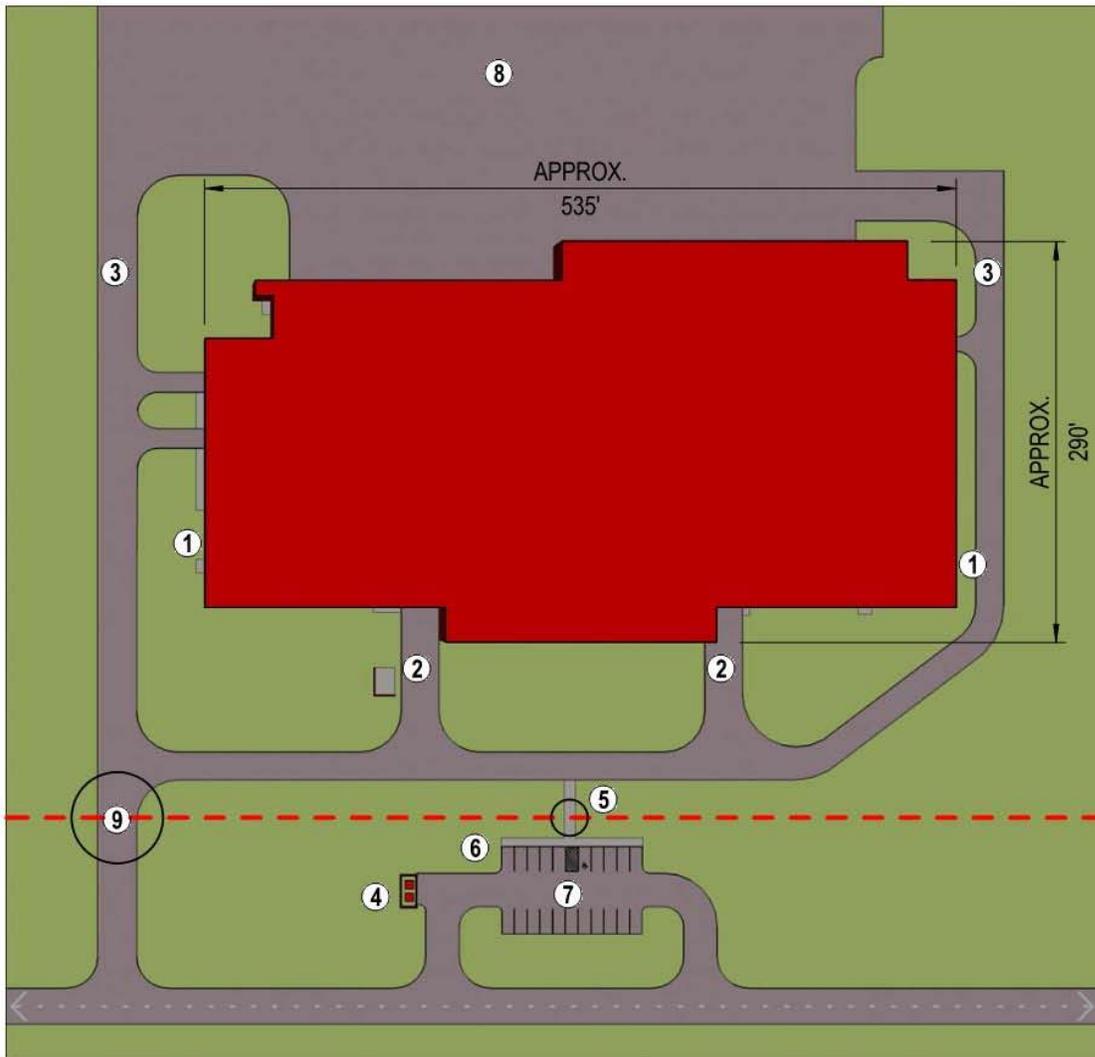
2.3.C. Vehicular and Pedestrian Circulation

Convenient and safe vehicular access and circulation must be provided for personal vehicles and essential services, including operations, maintenance, deliveries, dumpster/recycling collection, and emergency services.

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. Sidewalk width must accommodate maintenance and emergency services requirements.

2.3.D. Notional Site Plan

See Next Page for Image



NOTES:

- ① PRIMARY BUILDING ENTRY
- ② CONCRETE TUG PULL THRU
- ③ CONCRETE FIRE ACCESS LANE (20' MIN.)
- ④ DUMPSTER / RECYCLING ENCLOSURE WITH CONCRETE PAD
- ⑤ PEDESTRIAN ACCESS CONTROL POINT
- ⑥ 6' WIDE CONCRETE SIDEWALK (MIN.)
- ⑦ ASPHALT PAVEMENT
- ⑧ CONCRETE HANGAR ACCESS APRON
- ⑨ CONTROLLED VEHICLE ACCESS

LEGEND:

- - - CONCEPTUAL AT SETBACK (REFERENCE UFC 4-010-01)
- - - ACCESS STREET
- CONTROLLED VEHICLE ACCESS

2.4 BUILDING DESIGN

2.4.A. General Considerations

General considerations of the facility design are centered on:

- The Hangar Bay and the associated Administration and Support areas.
- The functional relationships between the modules as well as within the modules
- The general personnel flow requirements within the facility.

Daily shift personnel enter the facility through entrances that are located close to the designated hangar section or area of the building.

The Building Support Module needs exterior access.

Other general considerations include:

- The size of the hangar bays per AFMAN32-1084 Generic Hangar Facilities for AMC Tanker Aircraft.

2.4.B. Building Configuration

The building should be configured for future expansion or reconfiguration. The general size of the building is based on the number, type and size of the mission required. The general configuration of the building is a linear type configuration with the respective Administrative/Support and Shop areas located on the outer edge of each hangar bay type. The size of the following module is affected by the type and size of the mission:

- Hangar

2.4.C. Interior/Exterior Relationships

The Land Side of the Facility will have access to POV and Visitor parking. There are two primary points of entry to facility that will be the designated entry for staff of each hangar bay.

2.4.D. Functional Area Requirements

Facility Modules Adjacency Diagrams & Conceptual Axonometric Layout(s)

The composite diagram(s) represent ways to conceptually assemble the functional areas (modules) into a cohesive whole. Individual modules are represented by different colors.

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 Interactive Programming Sheet located at the end of the document.

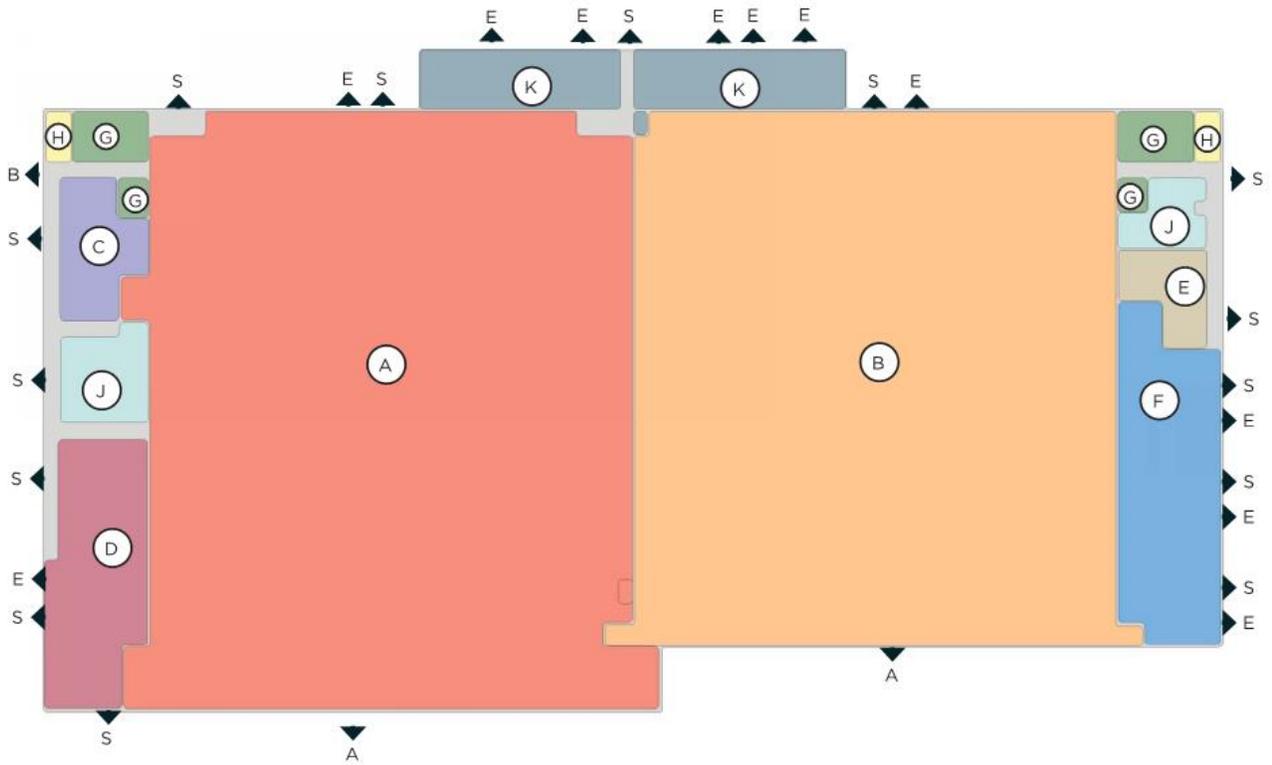
The modules are a grouping of functional spaces and represent “Lego blocks” to be used in a “kit-of-parts” design approach. Use the fixed modules as pre-assembled pieces of the facility “puzzle”. Assemble them to comply with the required adjacencies indicated in the diagrams and module plans.

Modules must be used as shown in this Standard Design to the greatest extent possible and must not be deconstructed or altered except as indicated herein. The intent of the Standard Design 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/or mirrored to accommodate an overall composition or site issue, but this must not be done arbitrarily and should occur only when necessary.

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.

Functional Adjacency Diagram

The following Functional Adjacency Diagram forms the basis of design for the Standard Design Corrosion Control/Fuel Cell Maintenance Hangar. The CC/FC Hangar will include all functions of the Corrosion Control and Aircraft Fuel Cell Maintenance Hangars. The facility will feature two separate Hangar Bays separated by a fire wall. Each Hangar Bay will have direct access to their respective Consolidated Tool Kits (CTKs), and shops. Dirty/Clean Restrooms & Showers will be provided for staff in the Corrosion Control Hangar and general use Toilets/Shower will be provided for staff on the Aircraft Fuel Cell Maintenance Hangar portion of the facility. Administrative & Ready Room areas will be provided for both hangars. Each hangar will be provided a dedicated main entry and several points of entry providing direct access to shops and hangar spaces. This Facility Adjacency Diagram as well as the provided module plans is the Air Force approved Standard Design plan.



- (A) CORROSION CONTROL HANGAR
- (B) FUEL CELL MAINTENANCE HANGAR
- (C) CC TOOLS & SUPPORT
- (D) CC SHOPS
- (E) FUEL TOOLS & SUPPORT
- (F) FUEL SHOPS
- (G) ADMINISTRATION
- (H) READY ROOM
- (J) TOILET, SHOWER, LOCKER
- (K) BUIDLING SUPPORT

- PRIMARY ADJACENCY
- PROXIMITY
- ↔ DIRECT ACCESS
- > DIRECT VIEW
- ENCLOSED AREA
- ▶ **ENTRY / EXIT**
- A - AIRCRAFT ENTRY
- B - BUILDING ENTRY
- E - EQUIPMENT / SERVICE ENTRY
- P - PERSONNEL ENTRY
- S - SECONDARY ENTRY

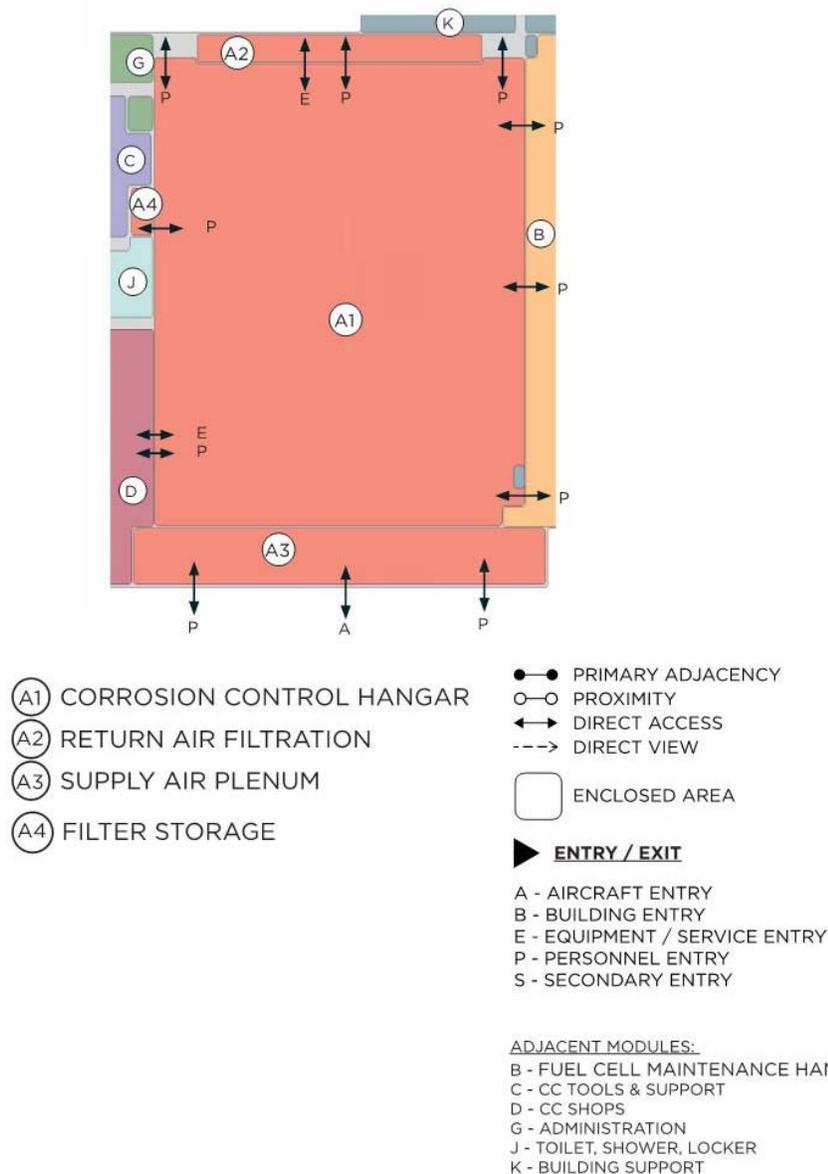
DRAWINGS NOT TO SCALE

MODULE A – CORROSION CONTROL HANGAR MODULE

Function and Adjacency

This module includes the Corrosion Control Hangar Bay, the Return Air Filtration Room, Supply Air Plenum and Filter Storage room. The hangar bay will be the central focus of the Corrosion Control portion of the facility with related support modules placed adjacent to it. A portion of the hangar bay will be designated for the parking of floor stands, manually-pulled carts, and other equipment; however, no storage room is required for moveable equipment. The hangar bay must have direct physical access Dirty/Clean Toilet, Shower, Locker Module, specifically the Air Shower room first, as well as direct access to the Corrosion Control Shop Support Modules.

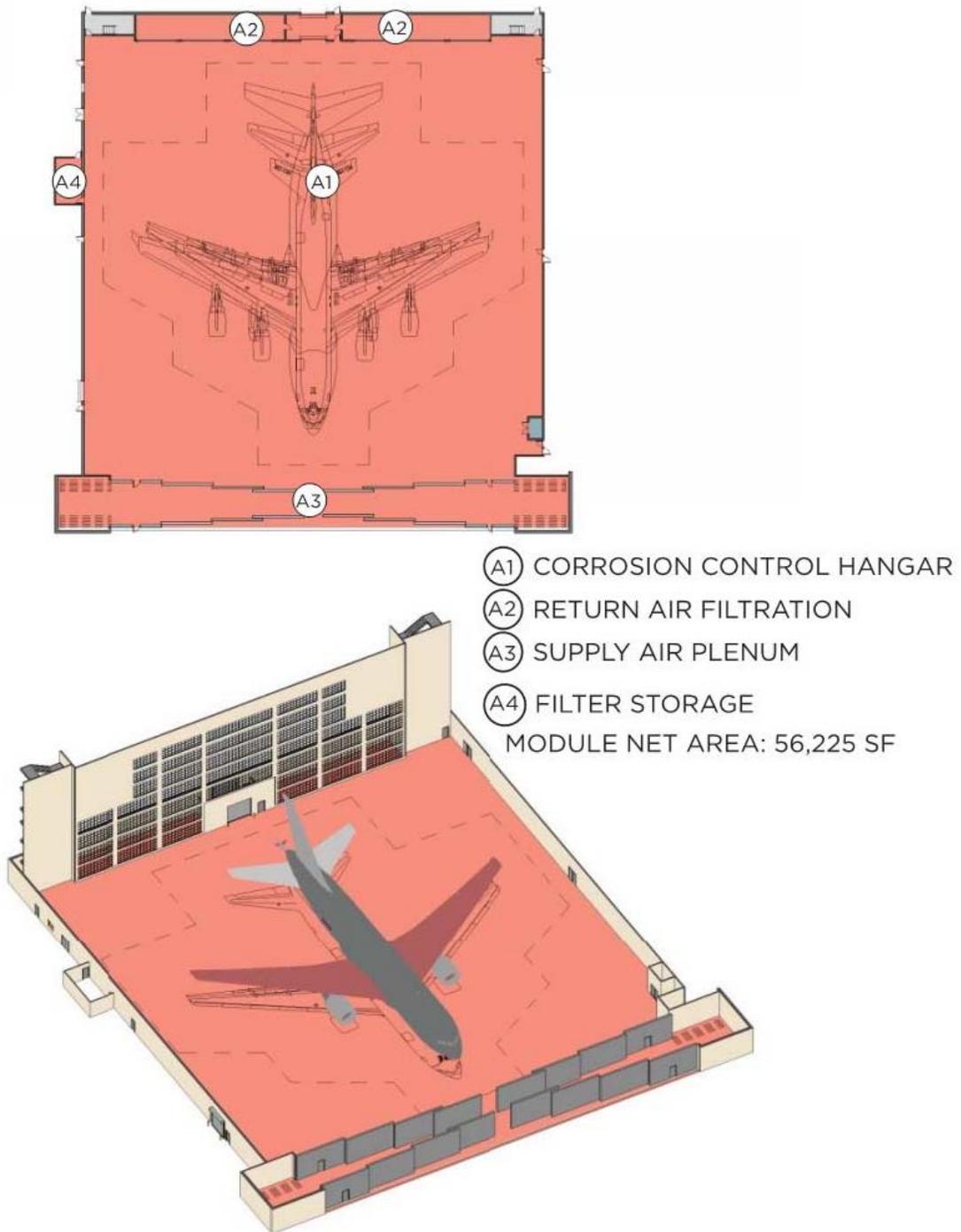
Figure 2-A.1 Module A Adjacency Diagram



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Corrosion Control Hangar Bay

Figure 2-A.2 Module A Floor Plan & Axonometric



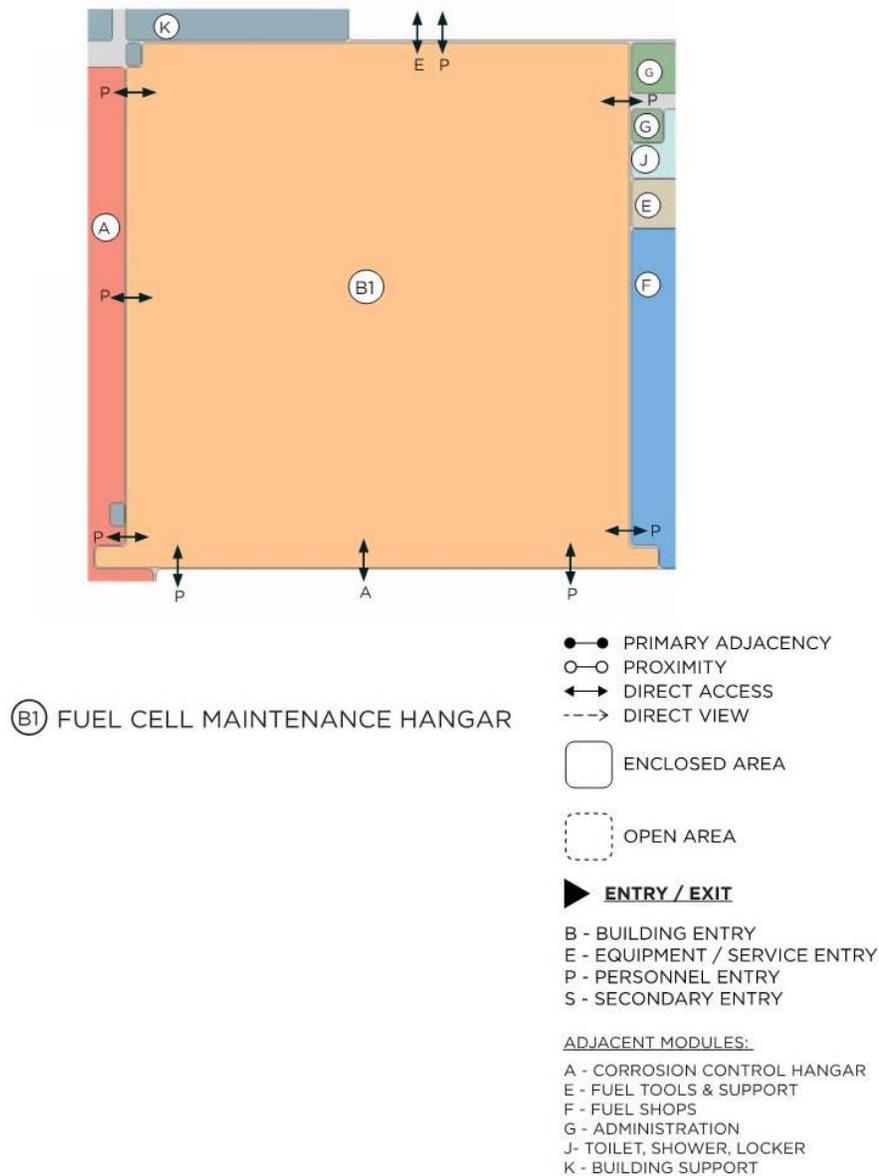
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MODULE B – FUEL CELL MAINTENANCE HANGAR BAY MODULE

Function and Adjacency

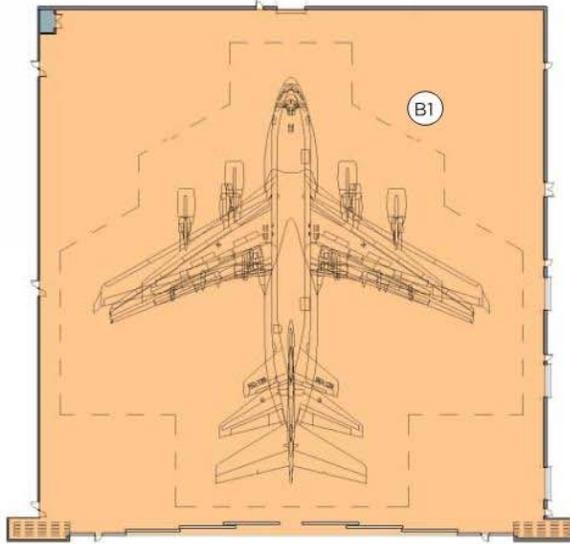
This module consists of the Fuel Cell Maintenance Hangar Bay. The hangar bay will be the central focus of the Fuel Cell portion of the facility with related support modules placed adjacent to it. A portion of the hangar bay will be designated for the parking of floor stands, manually-pulled carts, and other equipment; however, no storage room is required for moveable equipment. The Hangar Bay will require an access door for the aircraft tug vehicle. The hangar bay must have physical access to the Fuel Cell Shop Support Modules.

Figure 2-B.1 Module B Adjacency Diagram



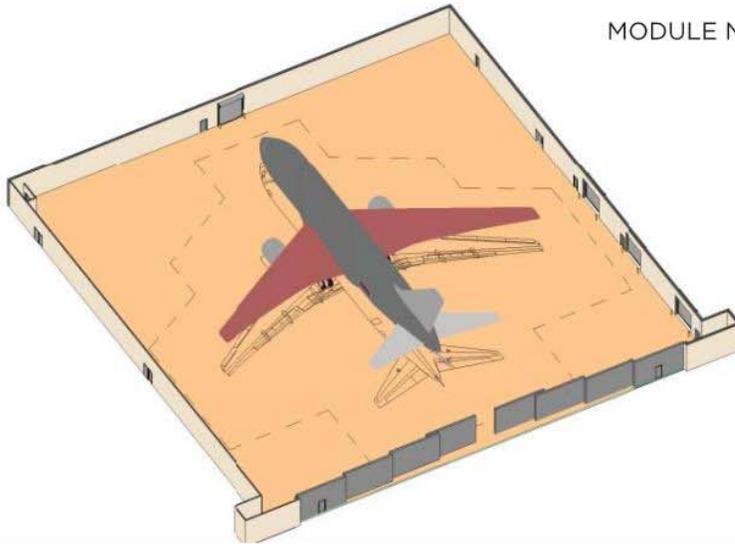
Fuel Cell Maintenance Hangar Bay

Figure 2-B.2 Module B Floor Plan & Axonometric



ⓑ FUEL CELL MAINTENANCE HANGAR

MODULE NET AREA: 50,290 SF



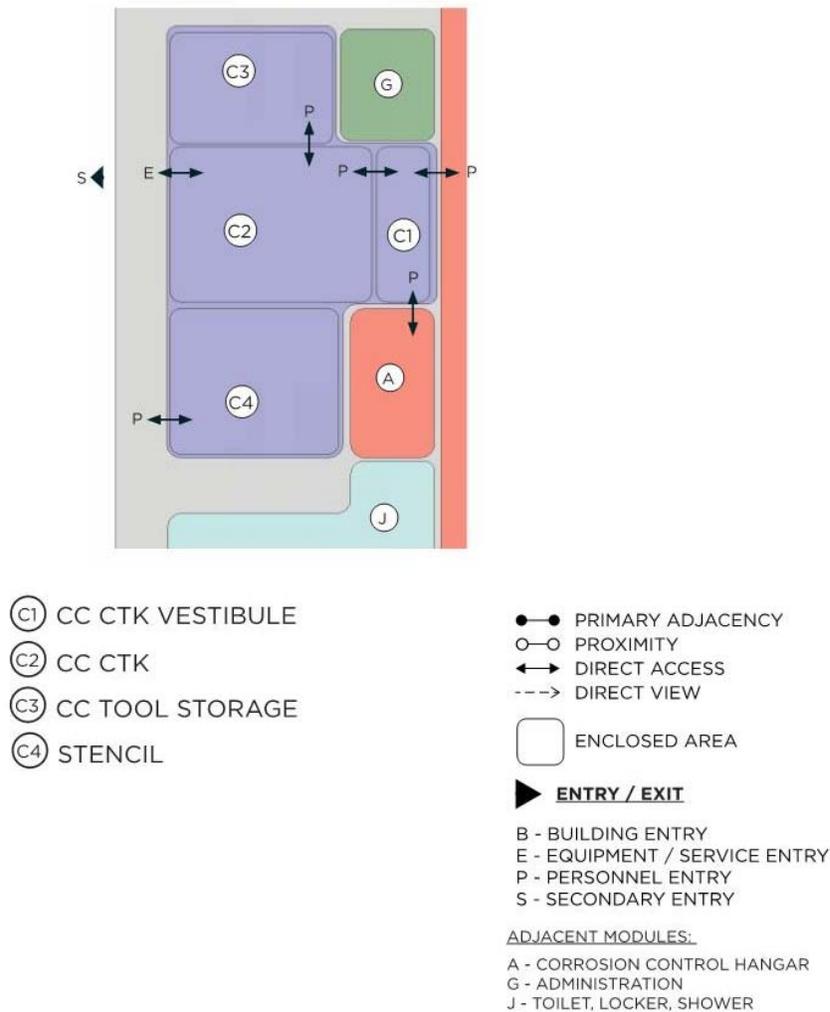
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MODULE C – CORROSION CONTROL TOOLS & SUPPORT

Function and Adjacency

The Corrosion Control Tools & Support Module consists of the CC CTK, CC CTK Vestibule, CC Tool Storage and Stencil Room. This module is located within the 'Clean' area of the facility and is separated from other Corrosion Control shop areas that are located within the 'dirty' area. In order to access the 'clean' areas (when corrosion control activity is in progress), access to this 'clean' area must be through the 'dirty' / 'clean' toilets as required by UFC 4-211-02, Figure 2-5 Clean-Dirty Schematic. This module must have direct access to the Corrosion Control Hangar Bay.

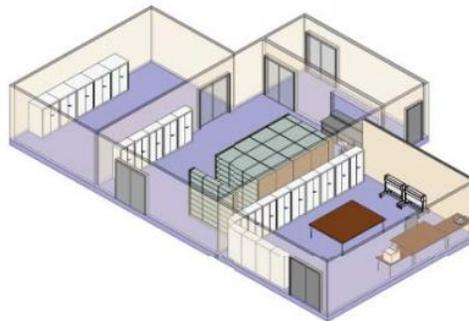
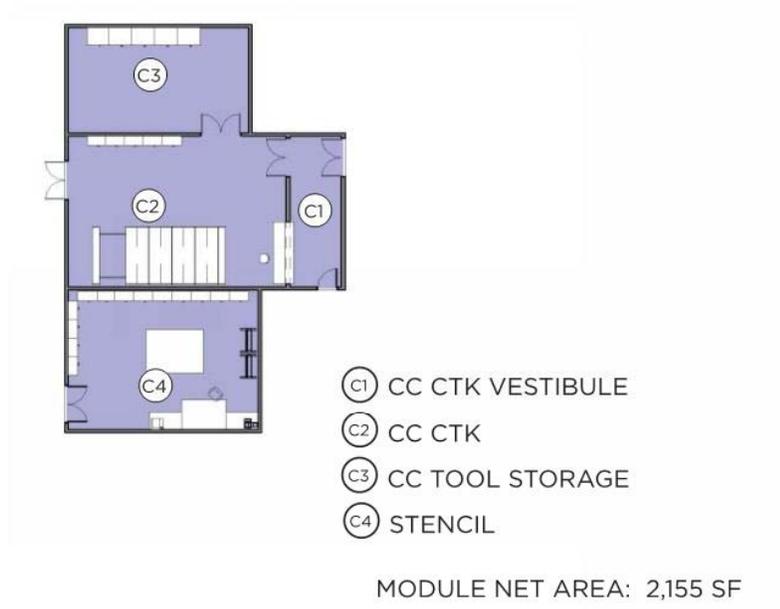
Figure 2-C.1 Module C Adjacency Diagram



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Corrosion Control Tools & Support

Figure 2-C.2 Module C Floor Plan & Axonometric



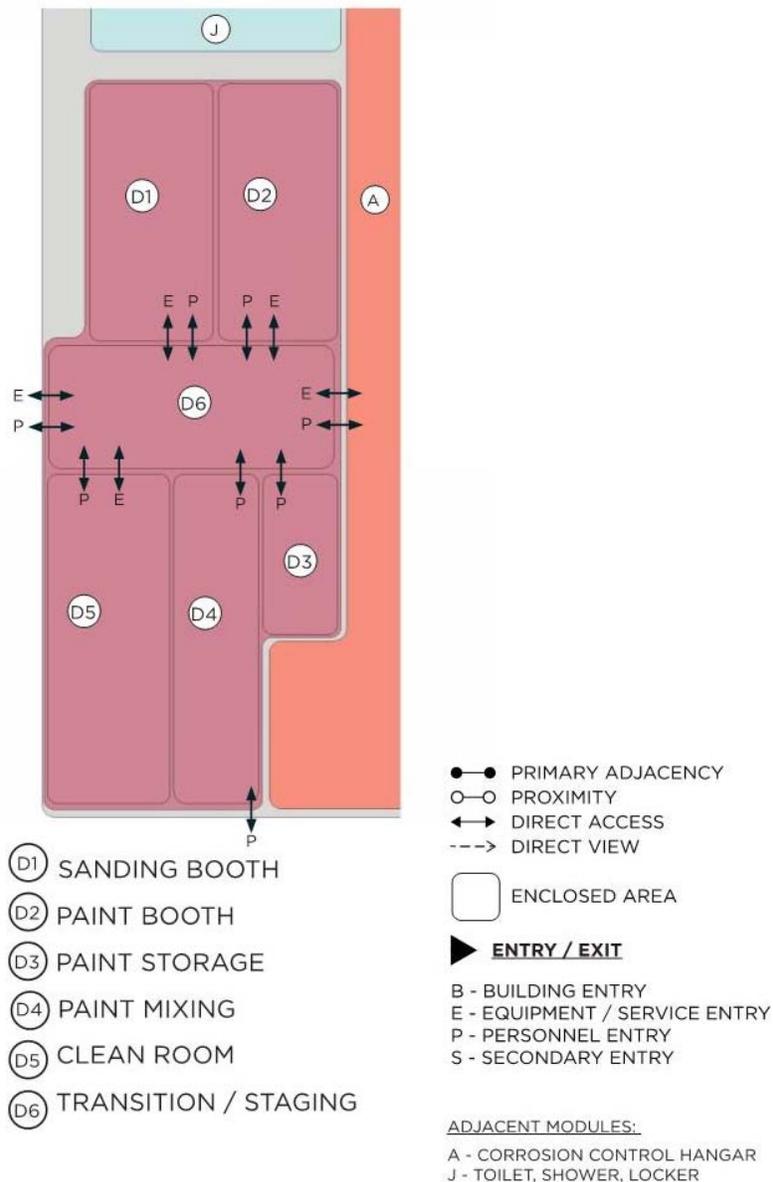
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MODULE D – CORROSION CONTROL SHOPS

Function and Adjacency

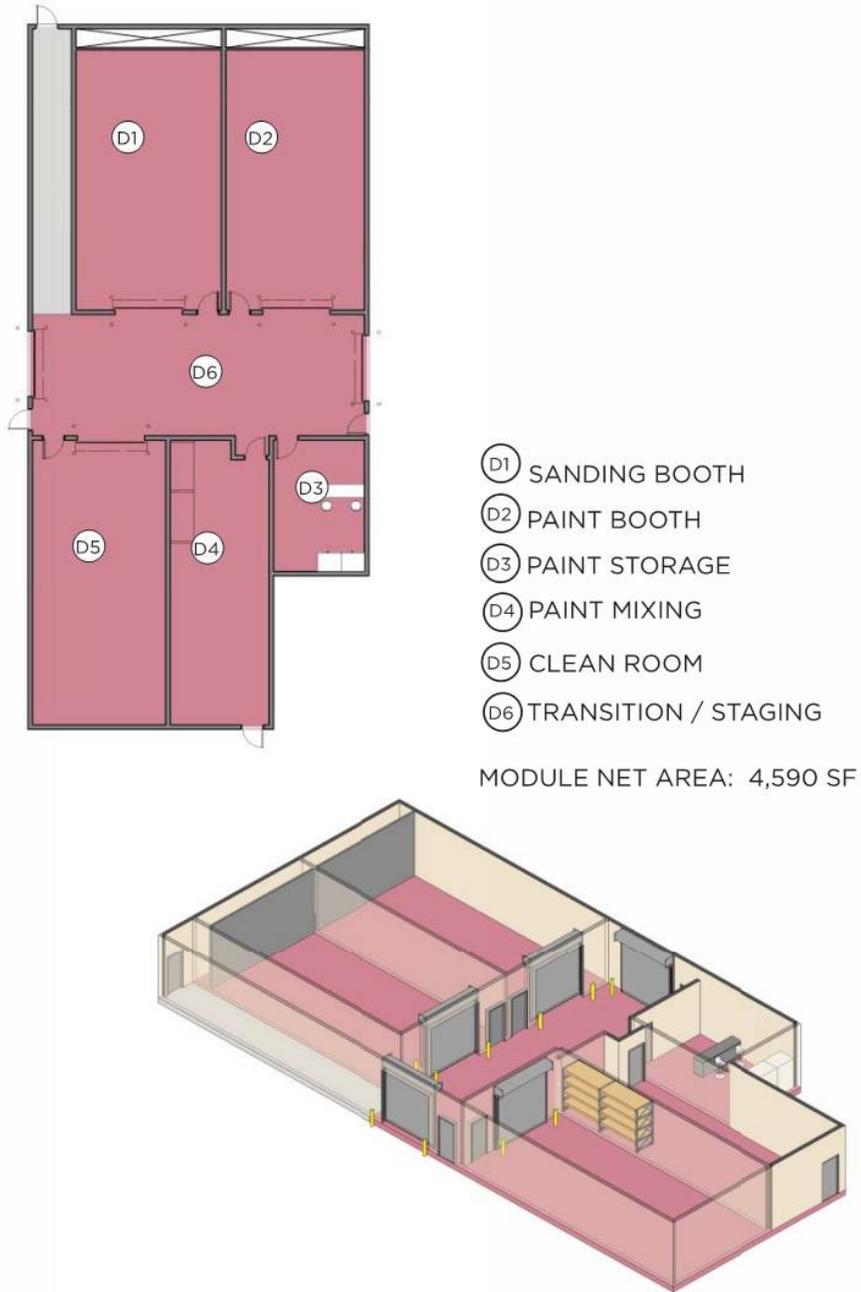
The Corrosion Control Shop Module consists of the Sanding Booth, Paint Booth, Paint Storage, Paint Mixing, Clean Room and a Transition/Staging area. This module is located within the 'Dirty' portion of the facility and is separated from other Corrosion Control Shop/Support areas that are located within the 'clean' portion. In order to access the 'clean' areas (when corrosion control activity is in progress), access to this 'dirty' must be through the 'dirty'/ 'clean' toilets as required by UFC 4-211-02, Figure 2-5 Clean-Dirty Schematic. This module must have direct access to the Corrosion Control Hangar Bay as well as to the exterior via the transition/staging space.

Figure 2-D.1 Module D Adjacency Diagram



Corrosion Control Shops

Figure 2-D.2 Module D Floor Plan & Axonometric



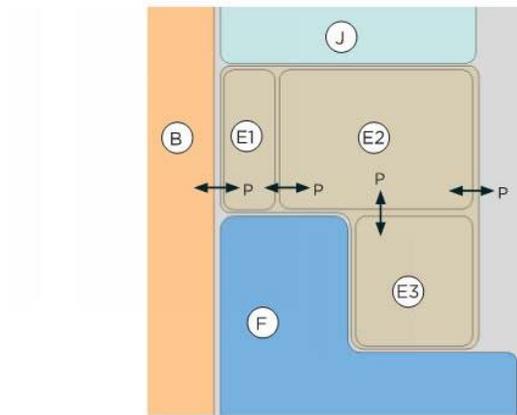
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MODULE E – FUEL TOOLS & SUPPORT

Function and Adjacency

The Fuel Cell Tools & Support Shop Support Module consists of Fuel Shop CTK, Fuel Shop CTK Vestibule, and Fuel Tool Storage. This module must direct access to the Fuel Cell Maintenance Hangar Bay and as well as to exterior.

Figure 2-E.1 Module E Adjacency Diagram



- ⓔ FUEL SHOP CTK VESTIBULE
- ⓔ FUEL SHOP CTK
- ⓔ FUEL TOOL STORAGE

- PRIMARY ADJACENCY
- PROXIMITY
- ↔ DIRECT ACCESS
- DIRECT VIEW

▭ ENCLOSED AREA

▭ OPEN AREA

▶ **ENTRY / EXIT**

- B - BUILDING ENTRY
- E - EQUIPMENT / SERVICE ENTRY
- P - PERSONNEL ENTRY
- S - SECONDARY ENTRY

ADJACENT MODULES:

- B - FUEL CELL MAINTENANCE HANGAR
- F - FUEL TOOLS & SUPPORT
- J - TOILET, SHOWER, LOCKER

DRAWINGS NOT TO SCALE

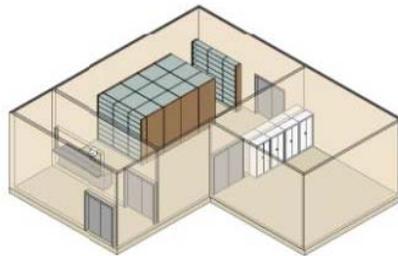
Fuel Tools & Support

Figure 2-E.2 Module E Floor Plan & Axonometric



- Ⓔ FUEL SHOP CTK VESTIBULE
- Ⓔ FUEL SHOP CTK
- Ⓔ FUEL TOOL STORAGE

MODULE NET AREA: 1,370 SF



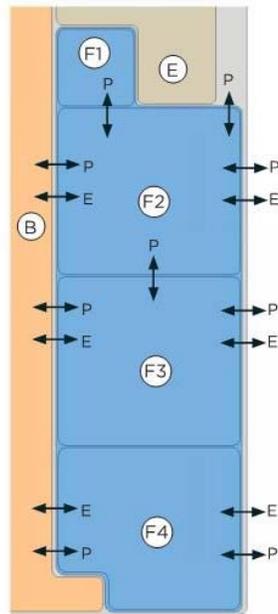
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MODULE F– FUEL SHOPS

Function and Adjacency

The Fuel Cell Shops Module consists of Fuel Shop Storage, Fuel Shop and Fuel Tank Storage & Fuel Tank Repair. This module must have direct access to the Fuel Cell Maintenance Hangar Bay and as well as to the exterior.

Figure 2-F.1 Module F Adjacency Diagram



- (F1) FUEL SHOP STORAGE
- (F2) FUEL SHOP
- (F3) FUEL TANK REPAIR
- (F4) FUEL TANK STORAGE

- PRIMARY ADJACENCY
- PROXIMITY
- ↔ DIRECT ACCESS
- > DIRECT VIEW

◻ ENCLOSED AREA

▶ **ENTRY / EXIT**

- B - BUILDING ENTRY
- E - EQUIPMENT / SERVICE ENTRY
- P - PERSONNEL ENTRY
- S - SECONDARY ENTRY

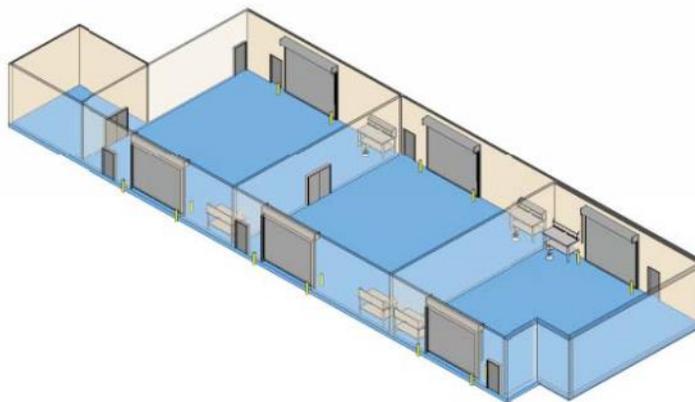
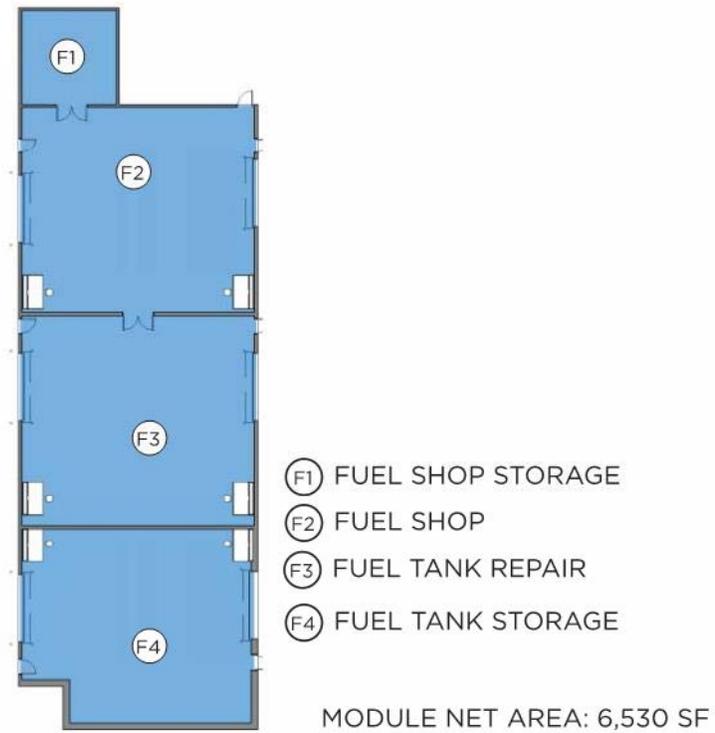
ADJACENT MODULES:

- B - FUEL CELL MAINTENANCE HANGAR
- E - FUEL TOOLS & SUPPORT

DRAWINGS NOT TO SCALE

Fuel Shops

Figure 2-F.2 Module F Floor Plan & Axonometric



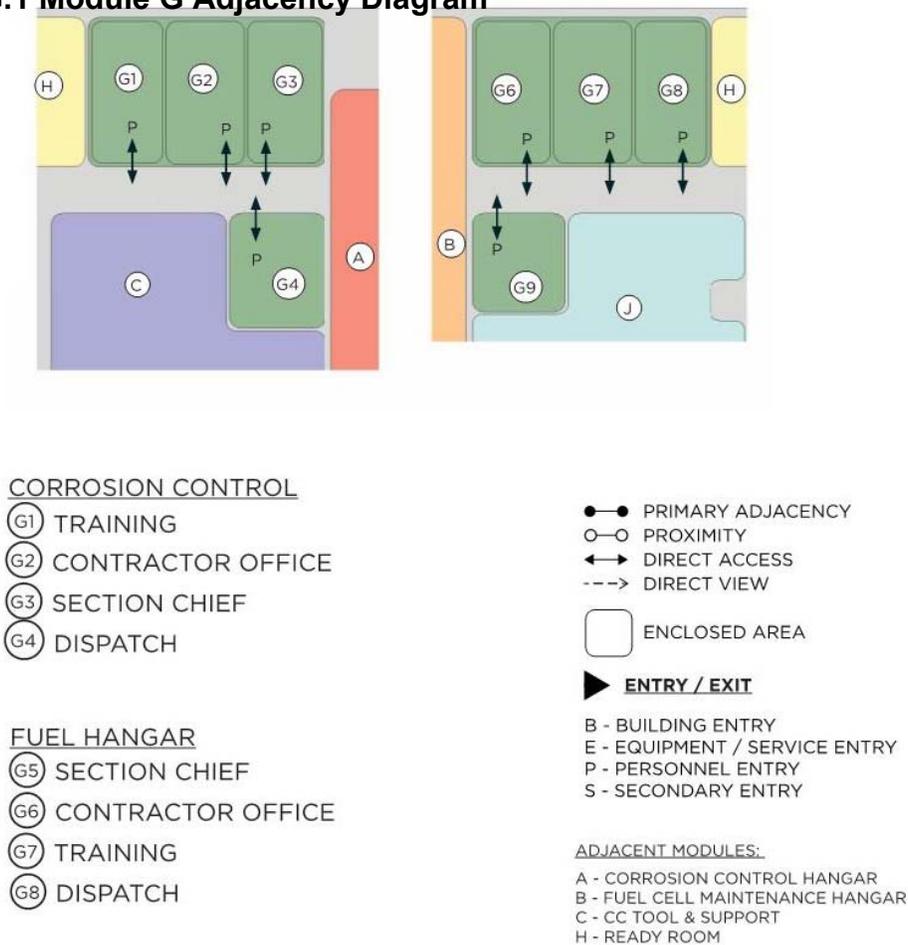
DRAWINGS NOT TO SCALE

MODULE G – ADMINISTRATION

Function and Adjacency

The Administration Module is located within both the Corrosion Control and Fuel Cell portions of this facility. The Administration Module will be separated into two portions for staff use that is primarily designated to their respective Hangar Bay and Shop Support Modules. This module includes a Training, Contractor Office, Section Chief and Dispatch Office which requires direct visual access to the related Hangar Bay. The Toilet, Shower, Locker Module should be near to decrease contamination to the Administration Module from the Hangar Bays.

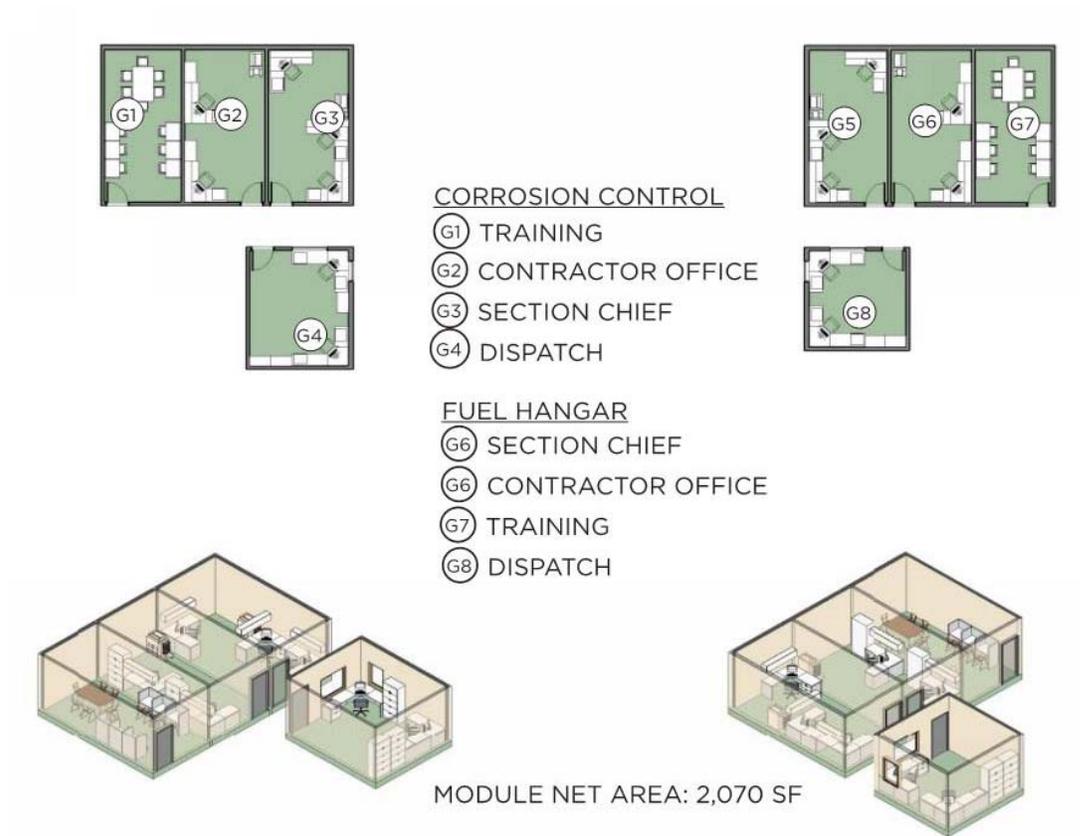
Figure 2-G.1 Module G Adjacency Diagram



DRAWINGS NOT TO SCALE

Administration

Figure 2-G.2 Module G Floor Plan & Axonometric



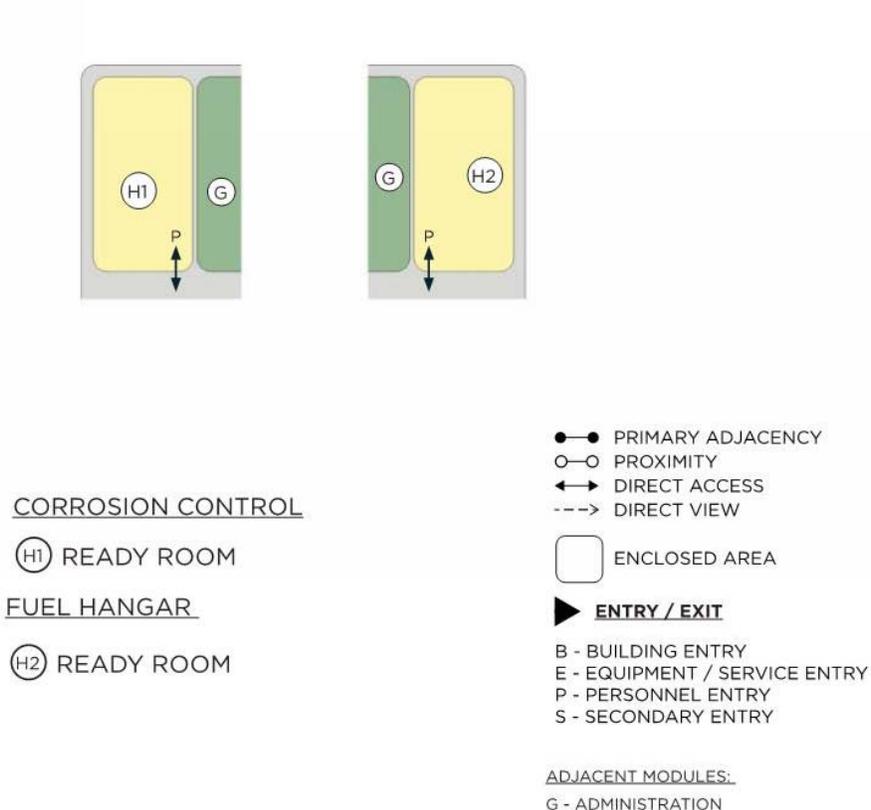
DRAWINGS NOT TO SCALE

MODULE H – READY ROOM

Function and Adjacency

This module is required to be easily accessible for all personnel. This module will be separated into two portions for staff use that is primarily designated to their respective Hangar Bay and Shop Support Modules. The ready rooms will include seating and tables for up to eight personnel with a counter, microwaves, refrigerators, etc. The ready room is also required to have a designated recycling area.

FIGURE 2-H.1 MODULE H ADJACENCY DIAGRAM



DRAWINGS NOT TO SCALE

Ready Room

Figure 2-H.2 Module H Floor Plan & Axonometric



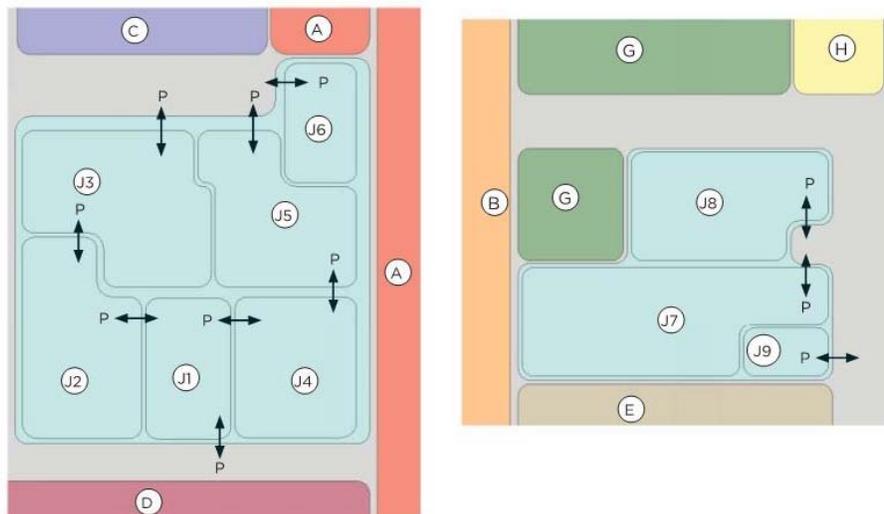
DRAWINGS NOT TO SCALE

MODULE J – TOILET/Shower

Function and Adjacency

The Toilet/Shower Module shall be easily accessible for all personnel. There are two Toilet/Shower Modules, one for the Corrosion Control section and one for the Fuel Cell section. The Corrosion Control Toilet/Shower is a Dirty to Clean Toilet/Shower facilities arranged to prevent contamination from users in the hangar/shops into the administrative areas. In order to access the 'clean' areas (when corrosion control activity is in progress), access to this 'dirty' must be through the 'dirty'/ 'clean' toilets as required by UFC 4-211-02, Figure 2-5 Clean-Dirty Schematic. The plumbing fixture count in the Standard design plan is approximate and actual plumbing fixture count shall be as required per actual occupancy count and as required in International Plumbing Codes, latest edition, Chapter 29.

Figure 2-J.1 Module J Adjacency Diagram



CORROSION CONTROL:
TOILET, SHOWER, LOCKER

- (J1) INITIAL ACCUMULATION POINT
- (J2) MEN'S TOILET/SHOWER (DIRTY)
- (J3) MEN'S TOILET/SHOWER (CLEAN)
- (J4) WOMEN'S TOILET/SHOWER (DIRTY)
- (J5) WOMEN'S TOILET/SHOWER (CLEAN)
- (J6) JANITOR

FUEL SHOP:
TOILET, SHOWER, LOCKER

- (J7) MEN'S TOILET/SHOWER (FUEL SHOPS)
- (J8) WOMEN'S TOILET/SHOWER (FUEL SHOPS)
- (J9) JANITOR

- PRIMARY ADJACENCY
- PROXIMITY
- ←→ DIRECT ACCESS
- - - -> DIRECT VIEW

ENCLOSED AREA

▶ ENTRY / EXIT

- B - BUILDING ENTRY
- E - EQUIPMENT / SERVICE ENTRY
- P - PERSONNEL ENTRY
- S - SECONDARY ENTRY

ADJACENT MODULES:

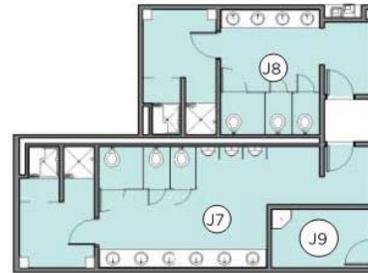
- A - CORROSION CONTROL HANGAR
- B - FUEL CELL MAINTENANCE HANGAR
- C - CC TOOLS & SUPPORT
- D - CC SHOPS
- E - FUEL TOOLS & SUPPORT
- G - ADMINISTRATION
- H - READY ROOM

Toilet/Shower

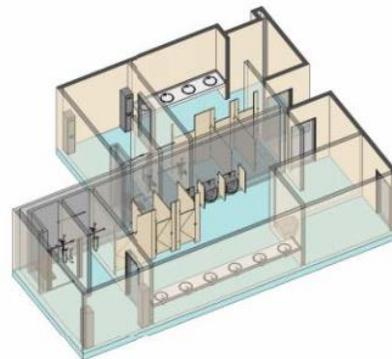
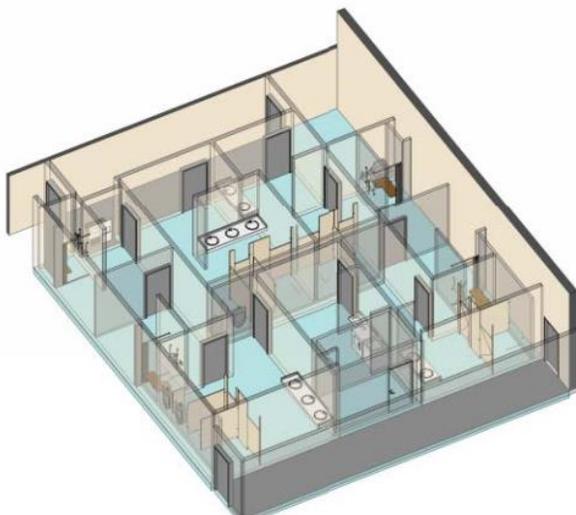
Figure 2-G.2 Module J Floor Plan & Axonometric



- CORROSION CONTROL:
TOILET, SHOWER, LOCKER
- (J1) INITIAL ACCUMULATION POINT
 - (J2) MEN'S TOILET/SHOWER (DIRTY)
 - (J3) MEN'S TOILET/SHOWER (CLEAN)
 - (J4) WOMEN'S TOILET/SHOWER (DIRTY)
 - (J5) WOMEN'S TOILET/SHOWER (CLEAN)
 - (J6) JANITOR



- FUEL SHOP:
TOILET, SHOWER, LOCKER
- (J7) MEN'S TOILET/SHOWER (FUEL SHOPS)
 - (J8) WOMEN'S TOILET/SHOWER (FUEL SHOPS)
 - (J9) JANITOR



MODULE NET AREA: 2,540 SF

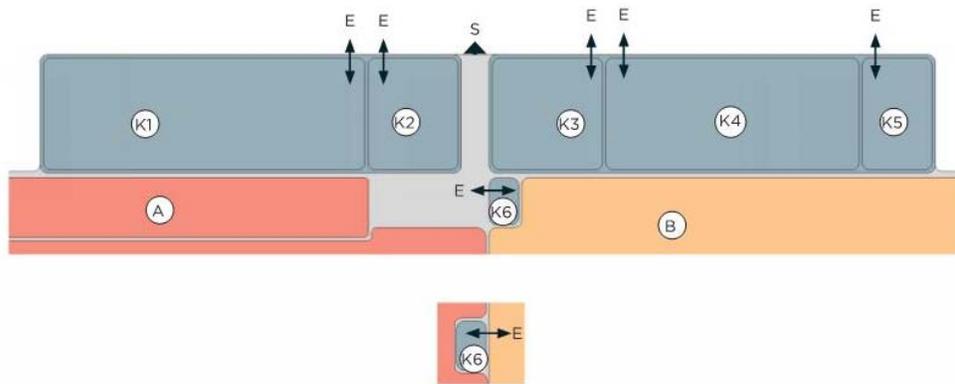
DRAWINGS NOT TO SCALE

MODULE K – BUILDING SUPPORT

Function and Adjacency

The Building Support Module consists of a mechanical room, fire pump room (if required), electrical room, and communications room. All rooms will have exterior access (with the exception of the communications room, which may have interior access). These modules will be located on the exterior wall adjacent to the utility courtyard and accessible for maintenance.

Figure 2-K.1 Module K Adjacency Diagram



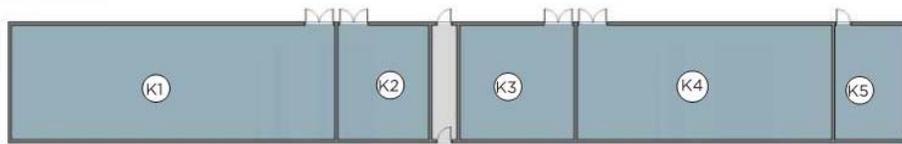
- (K1) MECHANICAL
- (K2) COMPRESSED AIR
- (K3) FIRE PUMP
- (K4) ELECTRICAL
- (K5) TELECOMMUNICATIONS
- (K6) 400 HZ CONVERTER

- PRIMARY ADJACENCY
- PROXIMITY
- ↔ DIRECT ACCESS
- - -> DIRECT VIEW
- ENCLOSED AREA
- ▶ **ENTRY / EXIT**
- B - BUILDING ENTRY
- E - EQUIPMENT / SERVICE ENTRY
- P - PERSONNEL ENTRY
- S - SECONDARY ENTRY

ADJACENT MODULES:
 A - CORROSION CONTROL HANGAR
 B - FUEL CELL MAINTENANCE HANGAR

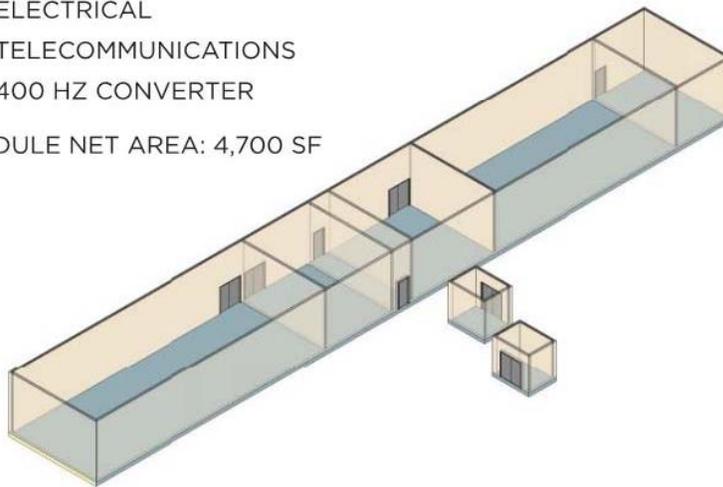
Building Support

Figure 2-K.2 Module K Floor Plan & Axonometric



- (K1) MECHANICAL
- (K2) COMPRESSED AIR
- (K3) FIRE PUMP
- (K4) ELECTRICAL
- (K5) TELECOMMUNICATIONS
- (K6) 400 HZ CONVERTER

MODULE NET AREA: 4,700 SF



DRAWINGS NOT TO SCALE

2.4.E. Room Data Sheets

Specific requirements for each room, space, or area are provided on room data sheets that correspond to their respective color-coded Modules, basis of design Functional Adjacency Diagram as well as the Interactive Programming Worksheet. Information contained on the data sheets defines the functional and physical requirements for each of the spaces within the facility type and are generally minimum requirements and must be modified as required for specific unique situations/scenarios as deemed appropriate by the USAF.

Figure 3-A.3.1 Corrosion Control Hangar Bay		
Index		A1
Description/Usage		The Corrosion Control Hangar Bay will be a touch up painting facility and a secondary wash rack facility.
Ceiling Height		Clearance of wings for airframe to lowest immovable object for maintenance/jacking clearances.
Windows		Translucent wall panels for daylighting
Doors	Type	Steel Rolling Hangar Doors, Overhead insulated coiling door, 12' x 12' (10) Hollow Metal door, 3'x7'
	Security/ Hardware	Access control rim exit PA closer
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted wainscot 8' above floor, pre-finished metal wall or liner panels above to roof deck
	Floor	Epoxy-non-slip (fuel resistant) or dry shake hardener
	Base	No base
	Ceiling	Walkable/sealed ceiling panel-factory finished.
Plumbing		Emergency shower stations, Emergency eyewash stations, Hand wash station, Compressed air, Breathing air
HVAC		55°F Heating, Ventilation: 0.5 cfm/ft ² normal, up to 1.7 cfm/ft ² when fuel vapor exceeds 14.4 ppm. Low level exhaust for fuel vapor extraction. Refer to UFC 4-211-02 for requirements during paint operation.
Fire Protection		Foam Generators, Fire alarm/mass notification, sprinklers
Power		Convenience Outlets, 180kVA 400Hz Converter, Wall Mounted 480V 200A Receptacle, Overhead Door Motors, Dedicated Equipment Outlets, Hangar Bay Door Motors
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	Per program security requirements
	CATV	N/A
	Security	Per program security requirements
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		Fall protection over fuselage, wings and tail wings, minimum two persons each. Comply with National Electrical Code (NEC) for Spray Application Areas and Aircraft Hangars. Over entire Corrosion Control Hangar bay will be a walkable rated ceiling structure, pre-manufactured metal system or field constructed structural system with gypsum board.

Figure 3-A.3.2 Return Air Filtration		
Index		A2
Description/Usage		The Air Filtration Room is an integral part of the three-stage paint spray ventilation system-required to minimize the amount of hazardous pollutants released into the atmosphere.
Ceiling Height		Exposed to structure
Windows		N/A
Doors	Type	Overhead insulated coiling door -12' x 12' , (3) Hollow Metal door- 3'x7'
	Security/ Hardware	Access control rim exit
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		N/A
HVAC		As required by UFC 4-211-02 to maintain ventilation during paint operations.
Fire Protection		Fire alarm/mass notification, sprinkles
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-A.3.3 Supply Air Plenum Filtration		
Index		A3
Description/Usage		The Supply Air Plenum is an integral part of the three-stage paint spray ventilation system- required to minimize the amount of hazardous pollutants released into the atmosphere.
Ceiling Height		Exposed to structure
Windows		N/A
Doors	Type	Steel Rolling Hangar Doors, (2) Hollow Metal door, 3'x7'
	Security/ Hardware	Access control rim exit
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		N/A
HVAC		As required by UFC 4-211-02 to maintain ventilation during paint operations.
Fire Protection		Fire alarm/mass notification, sprinkles
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-A.3.4 Filter Storage		
Index		A4
Description/Usage		The Filter Storage Room will house the filters for the Corrosion Control Air Filtration System
Ceiling Height		Exposed to structure
Windows		N/A
Doors	Type	(1) Hollow Metal , 3'x7' pair, (1) Hollow Metal , 3' x 7'
	Security/ Hardware	Access control lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted, Structural insulated wall panels – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		N/A
HVAC		55°F Heating, exhaust for summer ventilation
Fire Protection		Fire alarm/mass notification, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-B.3.1 Aircraft Fuel Cell Maintenance Hangar Bay		
Index		B1
Description/Usage		The Aircraft Fuel Cell Maintenance Hangar Bay will be used to remove, repair and replace fuel cell tanks from aircrafts
Ceiling Height		Exposed to structure
Windows		Translucent wall panels for daylighting
Doors	Type	Steel Rolling Hangar Doors, Overhead insulated coiling door, 12' x 12' (7) Hollow metal door, 3'x7'
	Security/ Hardware	Access control rim exit, PA closer
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted/ Metal wall panel
	Floor	Epoxy-non-slip (fuel resistant) or dry shake hardener
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency shower stations, Emergency eyewash stations, Hand wash station, Compressed air, Breathing air
HVAC		55°F Heating, Ventilation: 0.5 cfm/ft2 normal, up to 1.7 cfm/ft2 when fuel vapor exceeds 14.4 ppm. Low level exhaust for fuel vapor extraction. Fuel cell ventilation and purge system.
Fire Protection		Foam generators
Power		Convenience Outlets, 180kVA 400Hz Converter, ith Welding Receptacle, 400Hz Receptacle, and 120V power, Overhead Door Motors, Dedicated Equipment Outlets, Hangar Bay Door Motors
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone
	Data	Wireless Access Points
	CCTV	N/A
	CATV	N/A
	Security	Infrared Intrusion Detection at Hangar and roll up doors, CardReader, Balanced Magnetic Switch, Electric Strike, Request to Exit Device
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		Fall protection over fuselage, wings and tail wings, minimum two persons each.

Figure 3-C.3.1 Corrosion Control CTK Vestibule		
Index		C1
Description/Usage		The CTK Vestibule will serve as a checkout counter for maintenance personnel checking out tools.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7' pair
	Security/ Hardware	Lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	GWB - painted
Plumbing		
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone Outlet
	Data	Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-C.3.2 Corrosion Control CTK		
Index		C2
Description/Usage		The CTK will house tools and equipment to be checked out by personnel. This room will be climate-controlled.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	(2) Hollow metal, 3'x7' pair
	Security/ Hardware	Access control rim exit
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency eyewash stations, compressed air
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets, Charging Station Outlets
	CCTV	N/A
	CATV	CATV Outlets
	Security	Balanced Magnetic Switch, Card Reader, Electronic Strike for Exterior Openings and Glass Break for Windows
Acoustical		N/A
Furnishings, Equipment and Casework		High density storage rack system Built in checkout counter with lockable rolling doors to counter Stools at checkout counter Flammable Storage
Special Requirements		

Figure 3-C.3.3 Corrosion Control Tool Storage		
Index		C3
Description/Usage		The Tool Storage room will house tools.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7' pair
	Security/ Hardware	Lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Compressed air
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone Outlet
	Data	Wall Outlets
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Car reader, Electronic strike for exterior openings
Acoustical		
Furnishings, Equipment and Casework		High density storage rack system Flammable Storage
Special Requirements		

Figure 3C.3.4 Stencil		
Index	C4	
Description/Usage	The Stencil room requires clearance for two large-scale plotters (6'-0" x 6'-0" clearance each), a long desk for decal "weeding", two small-scale printers with layout space (3'-0" x 5'-0" layout space for each), and storage cabinets (4 shelves per cabinet) storage for Gerbervinyl.	
Ceiling Height	9'-0" minimum	
Windows	Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall	
Doors	Type	Hollow metal, 3' x 7' pair
	Security/ Hardware	Entry lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU-painted
	Floor	Vinyl Composition Tile or sealed concrete
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing	N/A	
HVAC	78°F Cooling (maximum 55°F dewpoint)/68°F Heating	
Fire Protection	Fire Alarm/Mass Notification Devices, sprinklers	
Power	Per UFC 3-520-01	
Lighting	Per UFC 3-530-01	
Communication	Tele.	Dedicated Equipment Outlets, Wall phone Outlet
	Data	Dedicated Equipment Outlets
	CCTV	N/A
	CATV	N/A
	Security	Glass Break for Windows
Acoustical Requirements	Per UFC 3-450-01 for noise control	
Furnishings, Equipment and Casework	(2) Large-scale plotters, (2) small-scale printers, storage cabinets, tables for printers (1 each), (1) large stencil-cutting table with glass top with adjustable task seating (9'-0" wide by 7'-0")	
Special Requirements		

Figure 3-D.3.1 Sanding Booth		
Index		D1
Description/Usage		The Sanding Room will be utilized for sandblasting small parts/equipment in preparation for painting.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7' Overhead coiling door, 12' x 12'
	Security/ Hardware	Lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency eyewash, Industrial hand wash, Compressed air, Breathing air
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating, booth ventilation and exhaust, as required by manufacturer
Fire Protection		Sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-D.3.2 Paint Booth		
Index		D2
Description/Usage		The Paint Booth will be used for painting and drying small detachable aircraft parts (i.e. the size of fairings)
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7' Overhead coiling door, 12' x 12'
	Security/ Hardware	Access control rim exit devise closer Fire labeled gasketing
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Compressed air, Breathing air
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Booth ventilation and exhaust as required by manufacturer
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		Pre-manufactured booths
Special Requirements		

Figure 3-D.3.3 Paint Storage		
Index		D3
Description/Usage		The Paint Storage Room will house a variety of paint, provided by an off-site hazmat pharmacy
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7'
	Security/ Hardware	Locksets, fire labeled gasketing
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency Eyewash, Emergency Shower, Spill containment or drains to industrial waste system. Containment trenches at doors.
HVAC		Heating, ventilation, exhaust, and cooling required per NFPA 33
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone Outlet
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		
Furnishings, Equipment and Casework		Adjustable shelving
Special Requirements		

Figure 3-D.3.4 Paint Mixing		
Index		D4
Description/Usage		The Paint Mixing Room requires storage for flammable and combustible liquids.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	(2) Hollow metal, 3'x7'
	Security/ Hardware	Locksets, fire labeled gasketing
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency Eyewash, Emergency shower, Spill containment or drains to industrial waste system. Containment trenches at doors.
HVAC		Heating, ventilation, exhaust, and cooling required per NFPA 33
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone Outlet
	Data	Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		Flammable storage Stools at built in work counter
Special Requirements		

Figure 3-D.3.5 Clean Room		
Index		D5
Description/Usage		The Clean Room is a climate-controlled room used for cleaning and prep work for aircraft components.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7' Overhead coiling door, 12' x 12'
	Security/ Hardware	Access control lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Floor drains
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone Outlet
	Data	Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-D.3.6 Transition / Staging Room Data Sheet		
Index		D6
Description/Usage		The Transition / Staging area will be used for equipment movement between designated shop space and the hangar bay.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	(2) Hollow metal, 3'x7' (2) Overhead coiling door, 12' x 12'
	Security/ Hardware	Locksets, fire labeled gasketing
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone Outlet
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		
Furnishings, Equipment and Casework		Adjustable shelving
Special Requirements		

Figure 3-E.3.1 Fuel Shop CTK Vestibule		
Index		E1
Description/Usage		The CTK will serve as a checkout counter for maintenance personnel checking out tools.
Ceiling Height		9'-0" minimum
Windows		Visual access to Fuel Cell Maintenance Hangar Bay
Doors	Type	Hollow metal, 3'x7' pair
	Security/ Hardware	Passage set
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Wall Outlets
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-E.3.2 Fuel Shop CTK		
Index		E2
Description/Usage		The Fuel Shop CTK will house tools and equipment to be checked out by personnel.
Ceiling Height		9'-0" minimum
Windows		Visual access to Fuel Cell Maintenance Hangar Bay
Doors	Type	(2) Hollow metal, 3'x7' pair
	Security/ Hardware	Access control rom exit device closer Fire labeled gasketing
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency Eyewash, Compressed air
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets, Charging Station Outlets
	CCTV	N/A
	CATV	CATV Outlets
	Security	Balanced Magnetic Switch, Car reader, Electronic strike for exterior openings and glass break for windows
Acoustical		
Furnishings, Equipment and Casework		High density storage rack system Built in checkout counter with lockable rolling doors to counter Stools at checkout counter Flammable Storage
Special Requirements		

Figure 3-E.3.3 Fuel Tool Storage		
Index		E3
Description/Usage		The Tool Storage room will house tools
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7' pair
	Security/ Hardware	Lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone Outlet
	Data	Wall Outlets
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Car reader, Electronic strike for exterior openings
Acoustical		
Furnishings, Equipment and Casework		High density storage rack system Flammable Storage
Special Requirements		

Figure 3-F.3.1 Fuel Shop Storage		
Index		F1
Description/Usage		The Fuel Shop Storage room will house parts used in the Fuel Shops for repairs and maintenance.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7' pair
	Security/ Hardware	Classroom lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency eyewash, Compressed air
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Battery Exhaust system
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone Outlet
	Data	Wall Outlets
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Car reader, Electronic strike for exterior openings
Acoustical		
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-F.3.2 Fuel Shop		
Index		F2
Description/Usage		The Fuel Shop is used to perform miscellaneous maintenance – related tasks and repairs.
Ceiling Height		9'-0" minimum
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	(2) Overhead coiling door, 12' x 12' (1) Hollow metal, 3'x7' pair, (3) Hollow metal, 3'x7'
	Security/ Hardware	Access control rim exit device closer Fire labeled gasketing
	View Panels/ Kick Plates	Kick-plates
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency eyewash, Emergency Shower, Compressed Air, Breathing Air
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Minimum ventilation 0.5 cfm/ft ² and ventilation up to 1.7 cfm/ft ² if fuel vapor exceeds 14.4 ppm.
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Car reader, Electronic strike for exterior openings
Acoustical		
Furnishings, Equipment and Casework		Two (2) workbenches with one (1) stool each.
Special Requirements		

Figure 3-F.3.3 Fuel Tank Repair		
Index		F3
Description/Usage		The Fuel Tank Repair will be used to perform repairs to and house parts used for repairs to fuel tanks.
Ceiling Height		9'-0" minimum
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	(2) Insulated Hollow 3'x7', (2) Overhead coiling door, 12' x 12'
	Security/ Hardware	Access control rom exit device closer Fire labeled gasketing
	View Panels/ Kick Plates	Kick-plates
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		Emergency eyewash, Emergency Shower, Compressed Air, Breathing Air
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating, Tank pressurization and purge exhaust system. Minimum ventilation 0.5 cfm/ft2 and ventilation up to 1.7 cfm/ft2 if fuel vapor exceeds 14.4 ppm.
Fire Protection		Sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets, Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Car reader, Electronic strike for exterior openings
Acoustical		
Furnishings, Equipment and Casework		Two (2) workbenches with one (1) stool each. Overhead hoist 3000 lb. capacity
Special Requirements		

Figure 3-F.3.4 Fuel Tank Storage		
Index		F4
Description/Usage		The Fuel Tank Storage will be used to house parts used for repairs to fuel tanks.
Ceiling Height		9'-0" minimum
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	(2) Insulated Hollow 3'x7', (2) Overhead coiling door, 12' x 12'
	Security/ Hardware	Access control rom exit device closer Fire labeled gasketing
	View Panels/ Kick Plates	Kick-plates
Finishes	Walls	CMU – painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets, Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switch, Car reader, Electronic strike for exterior openings
Acoustical		
Furnishings, Equipment and Casework		Two (2) workbenches with one (1) stool each. Overhead hoist 3000 lb. capacity
Special Requirements		

Figure 3-G.3.1 Training Room		
Index		G1
Description/Usage		The Training Room will be used for training new personnel and for continuing education for existing personnel.
Ceiling Height		9'-0"
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Classroom lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	Gypsum board - painted
	Floor	Vinyl Composition Tile
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		Systems furniture computer carrels for (6) personnel, ergonomic task chairs, meeting table with seating for (6)
Special Requirements		

Figure 3-G.3.2 Contractor Office		
Index		G2
Description/Usage		The Contractor Office will house administrative space for personnel contracted through the aircraft manufacturer.
Ceiling Height		9'-0" minimum
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Standard classroom lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	GWB - painted
	Floor	Vinyl Composition Tile
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Balanced Magnetic Switch for Exterior Openings
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		Two (2) L-shaped desks, ergonomic task chairs, lateral file cabinets
Special Requirements		

Figure 3-G.3.3 Section Chief		
Index		G3
Description/Usage		The Section Chiefs office will house administrative space for three Section Chiefs.
Ceiling Height		9'-0"
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Entry lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	Gypsum board - painted
	Floor	Vinyl Composition Tile
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Balanced Magnetic Switch for Exterior Openings and Glass Break for Windows
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		(3) L-shaped desks, ergonomic task chairs
Special Requirements		

Figure 3-G.3.4 Dispatch		
Index		G4
Description/Usage		The Dispatch office will provide administrative space for Corrosion Control Dispatchers. This room requires direct visual access to the Corrosion Control Hangar Bay.
Ceiling Height		9'-0"
Windows		Visual access to the Hangar Bay
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Access mortise lock Closer
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	Gypsum board - painted
	Floor	Vinyl Composition Tile
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Glass Break for Windows
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		(2) L-shaped desks, ergonomic task chairs, lateral filing cabinets
Special Requirements		

Figure 3-G.3.5 Section Chief		
Index		G5
Description/Usage		The Section Chiefs office will house administrative space for three Section Chiefs.
Ceiling Height		9'-0"
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Entry lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	Gypsum board - painted
	Floor	Vinyl Composition Tile
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Balanced Magnetic Switch for Exterior Openings and Glass Break for Windows
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		(3) L-shaped desks, ergonomic task chairs
Special Requirements		

Figure 3-G.3.6 Contractor Office		
Index		G6
Description/Usage		The Contractor Office will house administrative space for personnel contracted through the aircraft manufacturer.
Ceiling Height		9'-0" minimum
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Standard classroom lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	Gypsum board - painted
	Floor	Vinyl Composition Tile
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Balanced Magnetic Switch for Exterior Openings
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		Two (2) L-shaped desks, ergonomic task chairs, lateral file cabinets
Special Requirements		

Figure 3-G.3.7 Training Room		
Index		G7
Description/Usage		The Training Room will be used for training new personnel and for continuing education for existing personnel.
Ceiling Height		9'-0"
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Classroom lockset
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	Gypsum board - painted
	Floor	Vinyl Composition Tile
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		Systems furniture computer carrels for (6) personnel, ergonomic task chairs, meeting table with seating for (6)
Special Requirements		

Figure 3-G.3.8 Dispatch		
Index		G8
Description/Usage		The Dispatch office will provide administrative space for Aircraft Fuel Dispatchers. This room requires direct visual access to the Aircraft Fuel Cell Maintenance Hangar Bay.
Ceiling Height		9'-0"
Windows		Visual access to the Hangar Bay
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Access mortise lock Closer
	View Panels/ Kick Plates	View panels, 5" x 20" Kick plates on both sides of doors
Finishes	Walls	Gypsum board - painted
	Floor	Vinyl Composition Tile
	Base	Resilient
	Ceiling	Acoustical Ceiling Tile
Plumbing		N/A
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F Heating
Fire Protection		Fire Alarm/Mass Notification Devices, sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Workstation Outlets, Wall phone Outlet
	Data	Workstation Outlets
	CCTV	N/A
	CATV	CATV outlet
	Security	Glass Break for Windows
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		(2) L-shaped desks, ergonomic task chairs, lateral filing cabinets
Special Requirements		

Figure 3-H.3.1 Ready Room		
Index		H1 & H2
Description/Usage		The ready room is used as an informal gathering space for personnel during lunch and breaks and as a transitional space before and after shifts. Two rooms to be provided for primary use by staff from each hangar.
Ceiling Height		9'-0" minimum
Windows		Exterior – Aluminum framed, insulated fixed, blast resistant; Meeting daylighting requirements of UFC 1-200-02, if located on an exterior wall
Doors	Type	Hollow metal, 3' x 7'
	Security/ Hardware	Keyed lock set
	View Panels/ Kick Plates	View panels, 5" x 20" for door to corridor Kick plates both sides of doors
Finishes	Walls	Gypsum board – painted or CMU - painted
	Floor	Sealed concrete, stained concrete, quartz epoxy or tile
	Base	Resilient or quartz epoxy or tile
	Ceiling	Acoustical ceiling tile or open to structure – painted
Plumbing		Sink with disposal, Plumbing and drains for installed appliances.
HVAC		Air conditioned; heated; ventilation, 78°F Cooling (maximum 55°F dewpoint)/68°F
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Determined by operations at location
	Data	NIPR
	CCTV	N/A
	CATV	Yes, see plans for locations
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		Refrigerator, microwave, dishwasher, double sink with disposal; vending machines; wall-mounted bulletin board.
Special Requirements		Recycling Area

Figure 3-J.3.1 Initial Accumulation Point/Respirator Cleaning Data Sheet		
Index		J1
Description/Usage		This is an initial decontamination area with a walk-through vestibule with an air shower (air lock). This room has drums for disposable PPE. Also, within this space is an area for respirator cleaning.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	Type	Hollow metal, 3'x7'; Closers on all doors
	Security/ Hardware	Multipoint lock Closer gasketing
	View Panels/ Kick Plates	Kick Plates
Finishes	Walls	Gypsum Board - Painted
	Floor	Tile or Resinous Epoxy
	Base	Tile or Resinous Epoxy
	Ceiling	Gypsum Board - Painted
Plumbing		Sinks; Washer and dryer; floor drains
HVAC		Air Conditioned and heated restroom
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		Washer and Dryer at the Fuel Cell Maintenance Hangar entry point.
Special Requirements		Air Shower for 2 persons minimum.

Figure 3-J.3.2 Men's Toilet, Shower (Dirty) Data Sheet		
Index		J2
Description/Usage		Toilet & Shower room serving male personnel in the facility is within the dirty or contaminated area of the Corrosion Control side of the facility.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7'; Closers on all doors
	Security/ Hardware	Multipoint lock Closer gasketing
	View Panels/ Kick Plates	Kick Plates
Finishes	Walls	Ceramic tile full height at wet walls, showers, Gypsum Board - Painted
	Floor	Tile or Resinous Epoxy
	Base	Tile or Resinous Epoxy
	Ceiling	Gypsum Board - Painted
Plumbing		Sinks; toilets; urinals; floor drains in restroom areas & showers
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F, exhaust per UFC.
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		Fixture count shall be determined by number of building occupants at maximum load per International Plumbing Code latest edition, Chapter 29; wall hung water closets and urinals; lavatories in counter tops.
Special Requirements		Water resistant gypsum board throughout.

Figure 3-J.3.3 Men's Toilet, Shower (Clean) Data Sheet		
Index		J3
Description/Usage		Toilet & Shower room serving male personnel in the facility and is located in the clean or non-contaminated area of the Corrosion Control side of the facility.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7'; Closers on all doors
	Security/ Hardware	Multipoint lock Closer gasketing
	View Panels/ Kick Plates	Kick Plates
Finishes	Walls	Ceramic tile full height at wet walls, showers, Gypsum Board - Painted
	Floor	Tile or Resinous Epoxy
	Base	Tile or Resinous Epoxy
	Ceiling	Gypsum Board - Painted
Plumbing		Sinks; toilets; urinals; floor drains in restroom areas & showers
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F, exhaust per UFC.
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		Fixture count shall be determined by number of building occupants at maximum load per International Plumbing Code latest edition, Chapter 29; wall hung water closets and urinals; lavatories in counter tops.
Special Requirements		Water resistant gypsum board throughout.

Figure 3-J.3.4 Women's Toilet, Shower (Dirty) Data Sheet		
Index		J4
Description/Usage		Toilet & Shower room serving female personnel in the facility is within the dirty or contaminated area of the Corrosion Control side of the facility.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7'; Closers on all doors
	Security/ Hardware	Multipoint lock Closer gasketing
	View Panels/ Kick Plates	Kick Plates
Finishes	Walls	Ceramic tile full height at wet walls, showers, Gypsum Board - Painted
	Floor	Tile or Resinous Epoxy
	Base	Tile or Resinous Epoxy
	Ceiling	Gypsum Board - Painted
Plumbing		Sinks; toilets; floor drains in restroom areas & showers
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F, exhaust per UFC.
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		Fixture count shall be determined by number of building occupants at maximum load per International Plumbing Code latest edition, Chapter 29; wall hung water closets; lavatories in counter tops.
Special Requirements		Water resistant gypsum board throughout.

Figure 3-J.3.5 Women's Toilet, Shower (Clean) Data Sheet		
Index		J5
Description/Usage		Toilet & Shower room serving female personnel in the facility and is located in the clean or non-contaminated area of the Corrosion Control side of the facility.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7'; Closers on all doors
	Security/ Hardware	Multipoint lock Closer gasketing
	View Panels/ Kick Plates	Kick Plates
Finishes	Walls	Ceramic tile full height at wet walls, showers, Gypsum Board - Painted
	Floor	Tile or Resinous Epoxy
	Base	Tile or Resinous Epoxy
	Ceiling	Gypsum Board - Painted
Plumbing		Sinks; toilets; floor drains in restroom areas & showers
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F, exhaust per UFC.
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		Fixture count shall be determined by number of building occupants at maximum load per International Plumbing Code latest edition, Chapter 29; wall hung water closets; lavatories in counter tops.
Special Requirements		Water resistant gypsum board throughout. See RFP for accessories requirements.

Figure 3-J.3.6 Janitor Room Data Sheet		
Index		J6 & J10
Description/Usage		Custodial room for general maintenance for the facility, one for Corrosion Control side and one for Fuel Cell Maintenance side.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7'
	Security/ Hardware	Keyed lock set
	View Panels/ Kick Plates	No view panels Kick Plates both sides of door
Finishes	Walls	Gypsum Board - Painted, Ceramic Tile at mop sink
	Floor	Tile or Resinous Epoxy
	Base	Tile or Resinous Epoxy
	Ceiling	Gypsum Board - Painted
Plumbing		Mop sink, floor drain
HVAC		Heating, ventilation, air conditioning. Exhaust per UFC.
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		Mop shelf
Special Requirements		Water resistant gypsum board throughout.

Figure 3-J.3.7 Men's Toilet, Shower (Fuel Shops) Data Sheet		
Index		J7
Description/Usage		Toilet & Shower room serving male personnel on Fuel Cell Maintenance side of the facility.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7'; Closers on all doors
	Security/ Hardware	Multipoint lock Closer gasketing
	View Panels/ Kick Plates	Kick Plates
Finishes	Walls	Ceramic tile full height at wet walls, showers, Gypsum Board - Painted
	Floor	Tile or Resinous Epoxy
	Base	Tile or Resinous Epoxy
	Ceiling	Gypsum Board - Painted
Plumbing		Sinks; toilets; urinals; floor drains in restroom areas & showers
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F, exhaust per UFC.
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		Fixture count shall be determined by number of building occupants at maximum load per International Plumbing Code latest edition, Chapter 29; wall hung water closets and urinals; lavatories in counter tops.
Special Requirements		Water resistant gypsum board throughout.

Figure 3-J.3.8 Women's Toilet, Shower (Fuel Shops) Data Sheet		
Index		J8
Description/Usage		Toilet & Shower room serving female personnel on Fuel Cell Maintenance Hangar maintenance area of the facility.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7'; Closers on all doors
	Security/ Hardware	Multipoint lock Closer gasketing
	View Panels/ Kick Plates	Kick Plates
Finishes	Walls	Ceramic tile full height at wet walls, showers, Gypsum Board - Painted
	Floor	Tile or Resinous Epoxy
	Base	Tile or Resinous Epoxy
	Ceiling	Gypsum Board - Painted
Plumbing		Sinks; toilets; urinals; floor drains in restroom areas & showers
HVAC		78°F Cooling (maximum 55°F dewpoint)/68°F, exhaust per UFC.
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		Fixture count shall be determined by number of building occupants at maximum load per International Plumbing Code latest edition, Chapter 29; wall hung water closets and urinals; lavatories in counter tops.
Special Requirements		Water resistant gypsum board throughout.

Figure 3-K.3.1 Mechanical Room Data Sheets		
Index		K1
Description/Usage		Mechanical equipment storage and operations
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	Type	Insulated hollow metal, 3'x7' pair
	Security/ Hardware	Access control mort lock 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, make-up water, eyewash, compressed air
HVAC		55°F heating, ventilation to maintain maximum 10°F change from ambient
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone
	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		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-K.3.2 Compressed Air Room Data Sheet		
Index		K2
Description/Usage		The Compressed Air Room will house the facility air compressors.
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	Type	Insulated hollow metal, 3'x7' pair
	Security/ Hardware	Classroom lockset Closer, fire labeled gasketing
	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, Ventilation to maintain maximum of 10F above ambient.
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone
	Data	Wall Outlet
	CCTV	N/A
	CATV	N/A
	Security	Balanced Magnetic Switches, Electronic Strike, and card reader for doors
Acoustical Requirements		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-K.3.3 Fire Pump Room Data Sheet		
Index		K3
Description/Usage		Mechanical equipment storage and operations
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	Type	Insulated hollow metal, 3'x7' pair
	Security/ Hardware	Access control mort lock Closer
	View Panels/ Kick Plates	Kick-plates
Finishes	Walls	CMU - painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		Floor Drain
HVAC		55°F heating, ventilation to maintain maximum 10°F change from ambient
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-K.3.4 Electrical Room Data Sheets		
Index		K4
Description/Usage		Electrical equipment storage and operations
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	Type	Insulated hollow metal, 3'x7' pair
	Security/ Hardware	Access control mort lock Closer
	View Panels/ Kick Plates	Kick-plates
Finishes	Walls	CMU - painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed to structure-painted
Plumbing		N/A
HVAC		55°F heating, ventilation to maintain maximum 10°F change from ambient
Fire Protection		Fire Alarm/Mass Notification, wet pipe sprinklers
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	Wall phone
	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		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

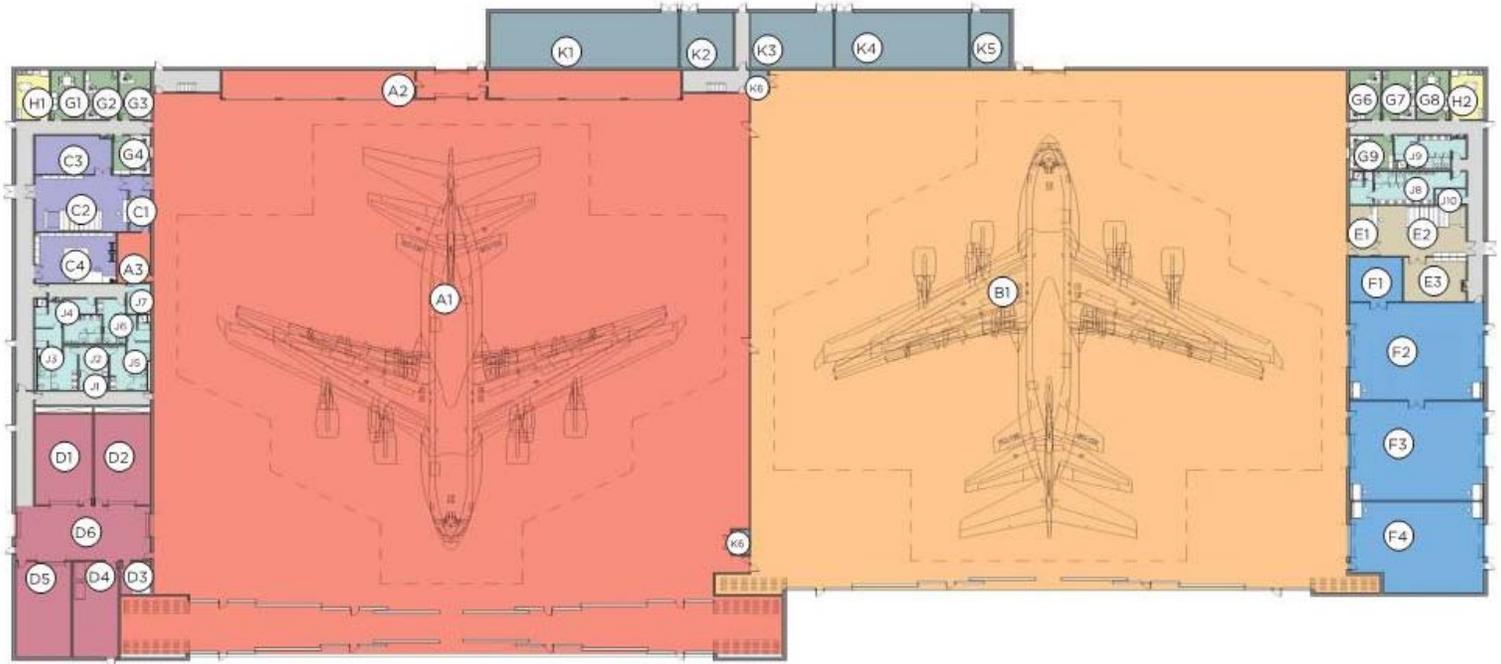
Figure 3-K.3.5 Telecommunications Room Data Sheet		
Index		K5
Description/Usage		Telecommunications equipment storage and operations
Ceiling Height		9'-0" minimum (clear)
Windows		N/A
Doors	Type	Insulated hollow metal, 3'x7'
	Security/ Hardware	Access control mortar lock
	View Panels/ Kick Plates	Kick-plates
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, Dedicated unit required.
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.	Wall phone, 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		Per UFC 3-450-01 for noise control
Furnishings, Equipment and Casework		
Special Requirements		

Figure 3-K.3.6 400 HZ Converter Room Data Sheet		
Index		K6
Description/Usage		This room will house 400 HZ Converter equipment. There will be a room provided for designated use by each hangar bay.
Ceiling Height		No ceiling, 9'-0 minimum clearance
Windows		No Windows Permitted
Doors	Type	Insulated hollow metal, 3'x7' pair
	Security/ Hardware	Keyed lock set
	View Panels/ Kick Plates	No view panels Kick plates on both sides of door
Finishes	Walls	CMU - painted
	Floor	Sealed concrete
	Base	No base
	Ceiling	Exposed structure - painted
Plumbing		N/A
HVAC		Heating, Ventilation to maintain maximum of 10F above ambient and pressurization from hangar bay
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		Per UFC 3-450-01 for Noise Control
Furnishings, Equipment and Casework		
Special Requirements		

Entrance & Circulation Room Data Sheet		
Description/Usage		This data sheet is for the building entrance and general circulation or corridor spaces not associated with individual modules. There will be a covered entrance at Corrosion Control side and the Fuel Cell side. Stairs in the Corrosion Control Hangar Bay are to the walkable stepped ceiling above hangar bay.
Ceiling Height		9'-0" minimum
Windows		N/A
Doors	Type	Hollow metal, 3'x7' (egress)
	Security/ Hardware	Keyed lock set
	View Panels/ Kick Plates	N/A Kick plates both sides of door
Finishes	Walls	CMU – painted or gypsum board - painted
	Floor	Sealed concrete, stained concrete or tile
	Base	Resilient or tile
	Ceiling	Acoustical ceiling tile or exposed structure - painted
Plumbing		N/A
HVAC		Heated and air conditioned
Fire Protection		Wet pipe sprinkler system
Power		Per UFC 3-520-01
Lighting		Per UFC 3-530-01
Communication	Tele.	N/A
	Data	N/A
	CCTV	N/A
	CATV	N/A
	Security	N/A
Acoustical Requirements		N/A
Furnishings, Equipment and Casework		N/A
Special Requirements		N/A

2.4.F. Floor Plan

The floor plan below is a composite of the Modules within the approved Functional Adjacency Diagram which is based on the criteria listed within this Standard Design document. The scaled drawing showing conceptual fixture and furniture information is located within the Standard Design drawings.



2.4.G. Interactive Programming Worksheet

This tool is provided in two formats. A snapshot of the programming sheet is provided in this section primarily as a reference and reflects the baseline standard facility program based on the criteria as discussed in this document. 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.

MODULE NO.	AREA TYPE	NO. OCCUP	SF PER USER	NO. OF ROOMS REQUIRED	INDIVIDUAL ROOM RQRMTS	NET USER REQUIREMENTS		COMMENTS
						SF	SM	
A Corrosion Control Hangar Bay								
A1	Corrosion Control Hangar Bay			1	53,825	53,825	5,000.34	1
A2	Air Filtration			1	2,125	2,125	197.41	
A3	Filter Storage			1	275	275	25.55	
SUBTOTAL CORROSION CONTROL HANGAR BAY AREA						56,225	5,223.30	
B Aircraft Fuel Hangar								
B1	Aircraft Fuel Hangar			1	50,290	50,290	4,671.94	1
SUBTOTAL AIRCRAFT FUEL HANGAR BAY AREA						50,290	4,671.94	
C Corrosion Control Tools & Support								
C1	CC CTK Vestibule			1	195	195	18.12	2
C2	CC CTK			1	840	840	78.04	2
C3	CC Tool Storage			1	470	470	43.66	2
C4	Stencil			1	650	650	60.39	2
SUBTOTALCORRSION CONTROL TOOLS & SUPPORT AREA						2,155	200.20	
D Corrosion Control Shops								
D1	Sanding			1	845	845	78.50	2
D2	Paint Booth			1	845	845	78.50	2
D3	Paint Storage			1	720	720	66.89	2
D4	Paint Mixing			1	205	205	19.04	2
D5	Clean Room			1	955	955	88.72	2
D6	Transition / Staging			1	1,020	1,020	94.76	3
SUBTOTALCORRSION CONTROL SHOPS AREA						4,590	426.41	
E Fuel Tools & Support								
E1	Fuel Shop CTK Vestibule			1	175	175	16.26	3
E2	Fuel Shop CTK			1	760	760	70.60	3
E3	Fuel Tool Storage			1	435	435	40.41	3
SUBTOTAL FUEL SHOPS AREA						1,370	127.27	
F Fuel Shops								
F1	Fuel Shop Storage			1	385	385	35.77	3
F2	Fuel Shop			1	2,130	2,130	197.88	3
F3	Fuel Tank Repair			1	2,150	2,150	199.74	3
F4	Fuel Tank Storage			1	1,865	1,865	173.26	4
SUBTOTAL FUEL SHOPS AREA						6,530	606.64	
G Administration								
G1	Training			1	265	265	24.62	6
G2	Contractor Office			1	265	265	24.62	5
G3	Section Chief			1	265	265	24.62	5
G4	Dispatch			1	240	240	22.30	5
G5	Section Chief			1	265	265	24.62	5
G6	Contractor Office			1	265	265	24.62	5
G7	Training			1	265	265	24.62	6
G8	Dispatch			1	240	240	22.30	5
SUBTOTAL ADMINISTRATION AREA						2,070	192.30	
H Ready Room								
H1	CC Ready Room			1	270	270	25.08	4
H2	Fuel Shop Ready Room			1	270	270	25.08	4
SUBTOTAL BREAK ROOM AREA						540	50.17	
J Toilet/Shower/Locker								
J1	Air Shower			1	60	60	5.57	
J2	Initial Accumulation Point			1	140	140	13.01	
J3	Men's Toilet/ Shower (Dirty)			1	355	355	32.98	7
J4	Men's Toilet/ Shower (Clean)			1	375	375	34.81	7
J5	Women's Toilet/ Shower (Dirty)			1	280	280	26.01	7
J6	Women's Toilet/ Shower (Clean)			1	275	275	25.55	7
J7	Janitor			1	115	115	10.68	
J8	Men's Toilet/ Shower (Fuel)			1	495	495	45.98	7
J9	Women's Toilet/ Shower (Fuel)			1	350	350	32.52	7
J10	Janitor			1	95	95	8.83	
SUBTOTAL TOILETS/ SHOWERS/ LOCKERS AREA						2,540	235.97	
K Building Support								
K1	Mechanical			1	1,735	1,735	161.18	8
K2	Compressed Air			1	485	485	45.06	8
K3	Fire Pump Room			1	610	610	56.67	8
K4	Electrical			1	1,365	1,365	126.81	8
K5	Telecommunications			1	375	375	34.84	8
K6	400 HZ Converter Room			2	65	130	12.08	8
SUBTOTAL BUILDING SUPPORT AREA						4,700	436.63	
L Circulation								
	Facility Corridors			1	2,530	2,530	235.04	9
	Stairs			2	245	490	45.52	9
TOTAL FACILITY NET FLOOR AREA						126,310	11,734.20	
CIRCULATION MULTIPLIER								9
NET TO GROSS MULTIPLIER								10
TOTAL FACILITY GROSS AREA (ROUNDED)						138,600		10,11.12

COMMENTS:

- Hangar Bay size is based upon AFMAN 32-1084, Chapter 3, paragraph 3.1.2.3.7. Generic Hangar Facilities for AMC Tanker Aircraft and Table 3.2 Aircraft Separation Dimensions Inside hangars.
- This area size is per user defined sizes and previous non-depot level Air Force Corrosion Control type hangars.
- This area size is per user defined sizes and previous Air Force Fuel Cell Maintenance type hangars.
- Ready Room is a Special Purpose Room as defined in Chapter 6 of Air Force Manual 32-1084 for a user justified area for 60 persons. Reference Tables in Table 6.3 of Air Force Manual 32-1084 Typical Special Purpose Spaces Programming for Break Room, 16% of occupancy x 100 sf per occupants.
- Reference Tables in Chapter 6 of Air Force Manual 32-1084 for Administration room sizes. Administration Areas include circulation factor of 10% per Chapter 1 Air Force Manual 32-1084.
- Team/Meeting/Mini-Conference Room; Conference Room per Table 6.4 of Air Force Manual 32-1084.
- Male/Female ratio of 60/40 as determined by the subject matter experts. Actual fixture count shall be based on International Plumbing Code, latest edition, Chapter 29 and the UFC 3-420-01, latest edition, Plumbing Systems.
- Building Support areas are estimates from charrette and may vary in final design when actual system is selected. (Sq. Ft. not included in Total Facility Net Floor Area as this area is included in Net to Gross Multiplier).
- Circulation areas are based on Proof of Concept and a circulation multiplier of up to 10% per Air Force Manual 32-1084.
- Per AFM 32-1084 Chapter 1, net-to-gross multiplier of up to 25%, used 7% as large portion of area is in Hangar Bay and for any additional Building Utility spaces that may be required. Also included in multipliers are column furr-outs and mechanical/plumbing chases.
- All area SF's are rounded to the nearest whole 5 number.
- This worksheet represents a facility rounded up to 138,600 Square Feet.