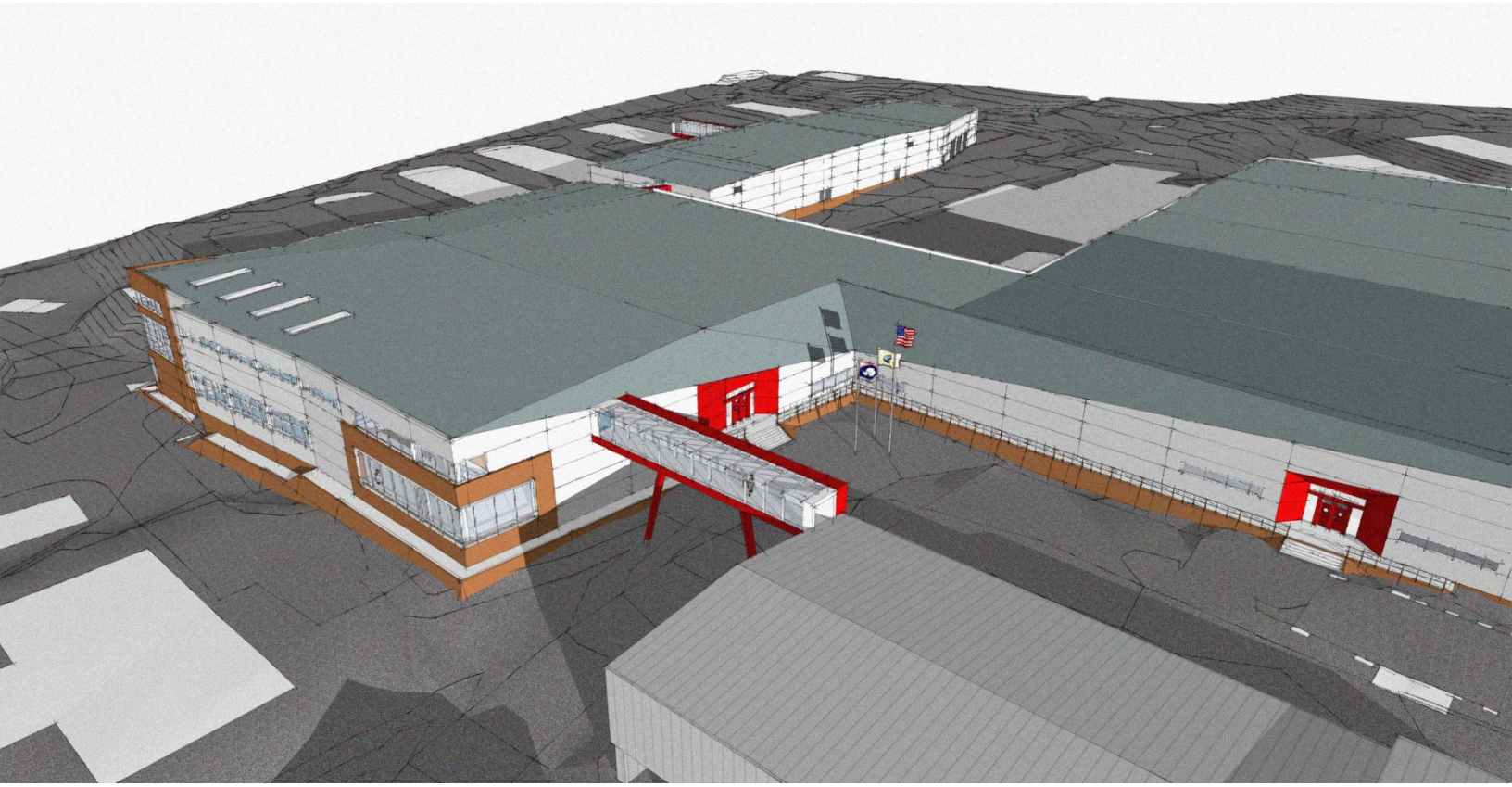

McMURDO STATION MODERNIZATION DESIGN

Programming Report

May 11, 2016

100% Submittal

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MERRICK & COMPANY

Michael Baker INTERNATIONAL

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SECTION 1

Methodology and Assumptions

Methodology and Assumptions

Purpose

The purpose of this Modernization Design Program is to:

- State the vision and goals for this project
- Identify workcenter and staff needs
- Identify dedicated/shared support areas
- Identify storage and warehousing needs
- Identify mechanical/electrical/plumbing needs
- Identify performance criteria
- Identify workstation/private office typicals.
- Assign square footages
- Key adjacencies
- Work flow strategies

Pertinent information related to general planning principles, workcenter functions/tasks, staff needs, hours of operations, working relationships, equipment needs and security are also listed.

This information will be the road map for the new Core Facility at McMurdo Station.

The Charrette Report dated September 4, 2015 is our starting point. We will now be meeting with key representatives to gather the remaining data needed to determine what the needs are for working in a "new" McMurdo.

Methodology and Assumptions

Summary

Antarctic Support Contract (ASC) contracted with OZ Architecture to provide programming services for the McMurdo Station in Antarctica. OZ developed a questionnaire which was emailed out to each workcenter, followed by interviews to review the information in more detail. In each interview, additional information was gathered about the workcenters, required adjacencies, individual staff needs, privacy and security requirements, support space requirements, meeting requirements, and qualitative desires/opportunities. OZ, along with representatives from each department conducted tours of a majority of the workcenters at McMurdo Station.

Once all of the information was gathered, OZ developed the McMurdo Station Modernization Design Programming Report. Each of the facilities listed in this Programming Report were separated into individual workcenters with space requirement sheets for each which include specific requirements for each area and incorporate comments from the workcenter staff. There is also a Support and Auxiliary program that includes support spaces that can be shared by all of the workcenters. The Executive Summary provides the overall square footage needs for all workcenters and support spaces. The Programming Report synthesizes the information that was gathered and outlines the basis for design.

Methodology and Assumptions

Space Requirements Matrix

The following page represents a Space Requirements Matrix that will be used in Section 2 of this report. The matrix's represent the organizational structure by work center for McMurdo Station and combines the information gathered from the charrette as well as from on-site meetings with each workcenter.

The basic metrics for measuring the components of the programming documents include the following industry standards:

Basic Metrics Definitions:
Net Square Feet (NSF) – The area of each individual program space. This includes individual workspaces (workstations and private offices), support spaces and special program critical spaces.

Circulation Factor – This accounts for the primary circulation (main circulation route connecting the building elevators/lobby, exit stairs and core toilets.) It also accounts for secondary circulation between individual spaces and support spaces.

Usable Square Feet (USF) – Area of floor that is occupiable by a tenant (minus the building elevators/lobby, exit stairs and core toilets). This includes primary and secondary circulation.

Occupiable Square Feet (OSF) – Total usable area plus the prorated allocation of the floor and building common area within a building.

Total Gross Building Square Footage – Total area of a building enclosed by the exterior face of the perimeter walls. This is done on a floor-by-floor basis.

Additional abbreviates include: WS – Workstation, TD – Touchdown, QTY – Quantity and SF - Square Foot

Within the Program Documents you will find the following:

McMurdo Station Building Summary – designates the Gross Building Square Footage for each facility.

We then move into individual building summaries based on individual work centers. These sections begin with a summary of all the work centers within a building, followed by an itemized tabulation of the different type of work areas (private office, work station, support spaces, etc.) within a work center. Each section ends with a summary of any shared support spaces used by more than one group in a building.

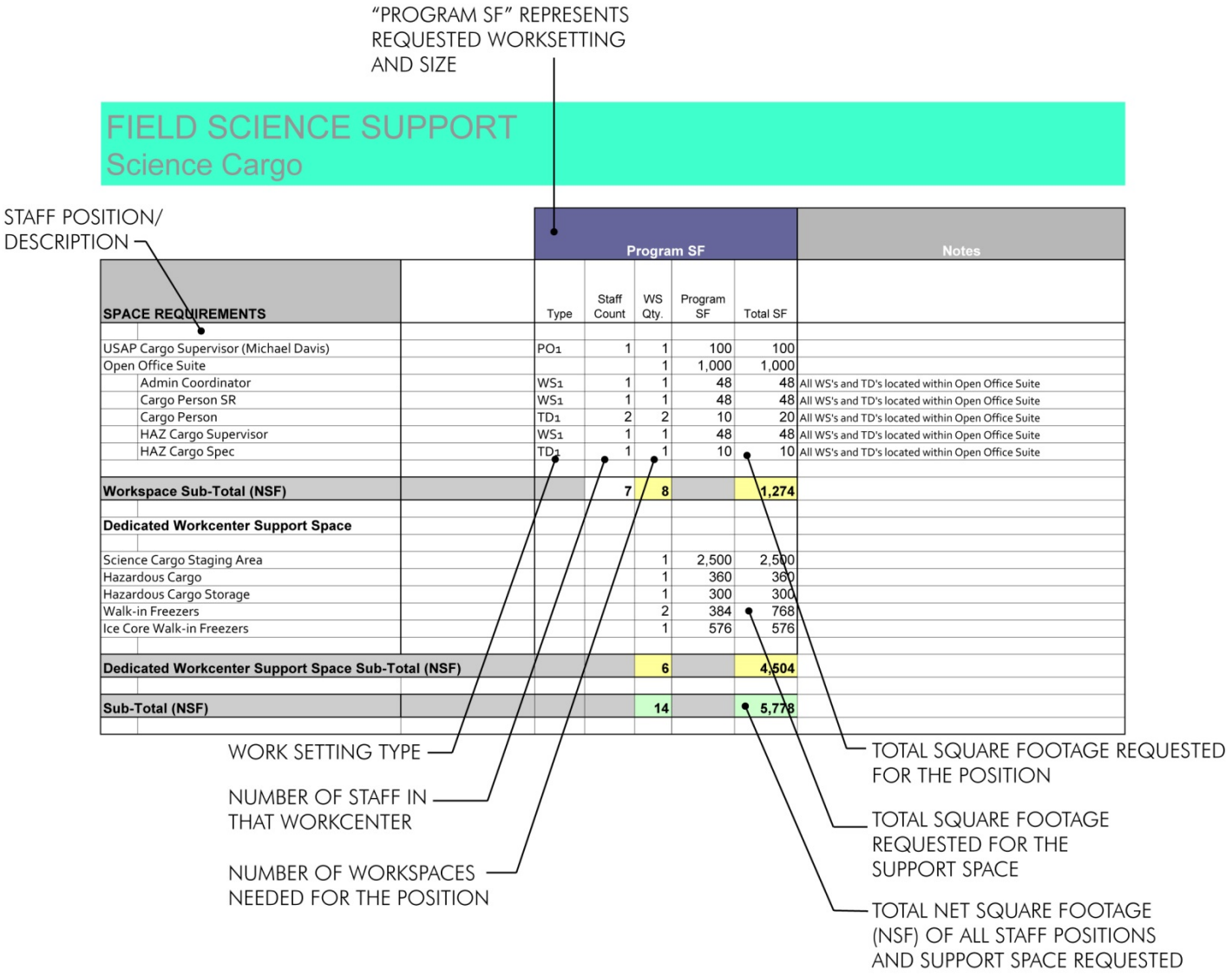
Building Summary: Program SF Column – this column shows the requested total number of workstations or rooms for the building with any designated support spaces for each work center. The net square footage per work center is calculated and then has a circulation factor applied to the net square footage to determine to total Usable Square Footage. This does include primary and secondary circulation. An occupiable factor is then calculated to yield the total interior square footage of the building. Lastly, the Total Gross Square Footage is determined by multiplying the Occupiable Square Footage by a sizing factor for the exterior skin. This yields the gross footprint of the building.

Methodology and Assumptions

Space Requirements Matrix

Work Center Summary – summarizes the work center's space allocations based on work space type (private office, work station, etc) with a total square footage for the number of spaces required. The designated support spaces specific to that work center are shown and broken out by name as identified in the charrette. These are combined to show the total number of spaces and square footage per work center. No multipliers are applied at this level of information.

General Floor Shared Support – calculates the total square footage for all support spaces that serve more than one work center within a building.



Defining Parameters

Defining Parameters

To achieve the primary goals of improving: 1) logistical efficiency, 2) resource efficiency, and 3) quality of life, the following principals guide the design of the McMurdo Core Facility.

- Facilities shall be designed for 24 Hour operations.
- Self-sufficiency in phasing – McMurdo must remain fully functional upon the completion of each phase, without reliance upon the implementation of subsequent phases.
- Simplicity and standardization – to promote ease of operations and maintenance.
- Reliability – to reduce maintenance staffing and associated costs.
- Integrated social spaces – to support the collaboration and the sense of community within McMurdo.
- Flexibility and adaptability – to support the evolving nature of scientific inquiry in Antarctica.
- Minimize footprint – to optimize logistical efficiency, resource efficiency and to reduce the reliance upon vehicular traffic.
- Minimal building volume to optimize energy efficiency.
- Strategic redundancy – to enhance both ongoing operations and disaster recovery.
- Design appropriately to respond to environment, terrain and weather conditions.
- Healthy Environments, where indoor air quality is improved through non-toxic materials and appropriate ventilation.
- Frozen food inventory is decreasing while dry goods storage is increasing.
- Selected outside storage materials to be housed in interior warehousing area.
- Facilities are to be designed as 50 year building.

Strategic Recommendations

Strategic Recommendations

Workflow Strategy

General

One of the primary goals for this project is to provide a safe and efficient route for people and materials at McMurdo. Fundamentally, the plan provides separate circulation paths for people and vehicles, the former occurring primarily along the South edges of the campus, and the latter primarily along the North edge of the campus.
In addition, the plan minimizes the distance between work centers and the number of material handling touch-points within storage areas and these work centers.

Personnel Flow

The new facility allows participants to quickly orient themselves and enhances their arrival experience to McMurdo. From the airfield, participants will be dropped off by a shuttle vehicle either at or near the main Central Services entry. This entry is ceremonial in nature and strategically located between Crary Lab and the Field Science Support facility for its pivotal location to reinforce that science is the core mission of McMurdo.

Upon entry, participants are welcomed into a reasonably spacious Gallery are where the Mission of the National Science Foundation is expressed through both historical artifacts and exhibits of current research activities. The terminus of this gallery is a dramatic overlook to the sea ice and Royal Society Mountains beyond. This overlook area also serves as a pre-function space to an adjacent Multi-Purpose Lecture space where newcomers receive orientation and safety briefings.

After orientation, arrivals walk along a hallway that affords continued views to the landscape, past food service, to the Passenger Support area where arrivals will receive the baggage and be assigned their rooms. Lodging is located is just beyond this Passenger Support area.

The departure sequence of personnel is primarily the reverse of the arrival sequence. Participants will drop their bags off at the Passenger Support area, where it is then transferred to the ATO area of the Field Science Support facility. Departing participants will gather in to wait for a shuttle vehicle to return them to the runway for departure.

Material Flow

Logistical efficiency is the cornerstone of the redesign of McMurdo Station. As such, ease of delivery, receipt, handling and issuance of material is critical component to this program.

In-Bound Material
Cargo bound for the Core Facility work centers arriving in sea containers by annual vessel will be delivered to the material handling yard that is bound by the 4 facilities of Contingency Operations, Central Services, Field Science Support and Trades Shops.

Strategic Recommendations

Workflow Strategy

From this yard, material is transferred from the sea containers into the various material handling and warehousing spaces that are contiguous with each of the 4 main facilities. In the case of the Contingency

Operations facility, Beverages are delivered and stored adjacent that facilities kitchen and lounges. In the case of Central Services, food, general station supplies and personal packages are delivered and stored in warehousing spaces directly contiguous with the related functions of dining, central supply, Station Store and Post Office.
In the case of Field Science Support, incoming cargo will be delivered through the ATO and Field Science Cargo spaces, and then into the adjoining warehousing area.

Out-bound Cargo

The processing of Cargo destined to Field Camps occurs within a collocated ATO and Science Cargo area within the Field Science Support facility, which houses the vast majority of the gear required to support this field science. Furthermore, out-bound grantee-specific cargo, science cargo and hazardous cargo certification all occur in this facility.

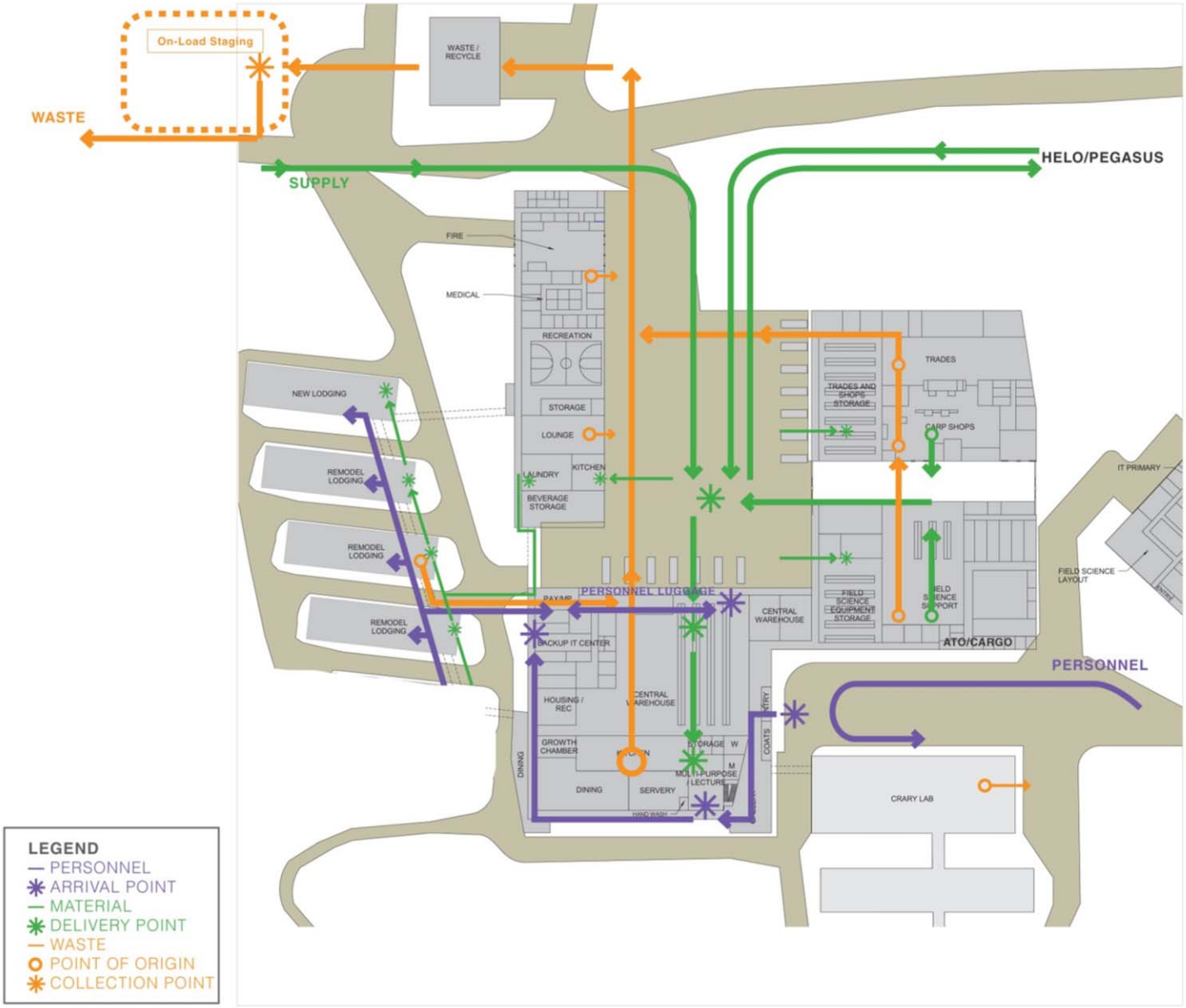
Material generated by the Carpentry Shop that is destined to the field will flow from the Shop facility through the Concourse between the Trades Shops and the Field Science Support facility to the ATO/ Science Cargo processing area.

Out-bound Waste

Waste from Workcenters and Lodging will follow an efficient route back through the main material handling yard to a Waste/Recycling facility between the Core Facility and the vessel pier. Food Service waste will flow from the kitchen through a dedicated hallway to an intermittent waste processing facility that contains both a cardboard bailer and food waste storage containers.

Strategic Recommendations

Workflow Strategy



Strategic Recommendations

Workplace Strategy

Central Services – Administration

This area was created to consolidate the administrative functions into a central location. Work Center Managers will work out of the administrative area and will be in close proximity to all the other Managers. Supervisors and staff will have workspace or touch down space in their respective Work Center.

In keeping with the overall project defining parameters, the following goals were established for the administration areas at McMurdo.

- Workstation typicals should have standardized/interchangeable components and a simple inventory list.
- Furniture and materials should be of high quality for durability and to reduce maintenance/replacement over time.
- Integrate spaces that provide for informal and formal collaborations and connectivity.
- Maximize space utilization and design spaces for flexibility and adaptability to support current and future needs.
- Provide a healthy work environment by using materials and furniture that are non-toxic, contain recycled content, have returnable/recyclable packaging.
- Locate enclosed office/support spaces on interior walls where possible to maximize daylight and views for all.
- Create multi-purpose spaces that can be shared and used by all on a 24/7 schedule.

Work Modes:

We have determined the following types of work modes commonly found at McMurdo:

- Resident Worker – Staff that are in the office working a majority of the time. They need an assigned workspace and appropriate ancillary support space (formal and informal meeting space, training or multi-purpose rooms, workrooms and break spaces).
    - Worksetting Type - workstation or private office, depending on the tasks and needs of the position.
- Mobile Worker – Staff that are more mobile in nature and have limited time at their workspace. They go between workspace and work center and don't need an assigned space. When they do need to be at a desk, it is normally for training and reporting their time.
    - Worksetting Type - touchdown workstation

Strategic Recommendations

Workplace Strategy

Workplace Strategy:

With the understanding that this is a 50 year building solution, flexibility is one of the key components in the design of the administration area. An efficient layout of different worksettings as well as smart space planning that allows for additional growth without having to re-layout all of the workstations is recommended.

Multi-purpose spaces are non-dedicated in most instances so they can be used by all. They are designed to be used for meetings, trainings, band practice rooms, crafts, focused work, and quieter social spaces. They are dispersed throughout the building for ease of access on a 24/7 basis. A mixture of formal multi-purpose spaces with partitions and doors and informal spaces that are integrated into the work area should be provided. Furniture should vary from tables, chairs to mobile soft seating.

Support spaces like work/copy rooms are centrally located for easy access.

Floorplans

Floorplans

Central Services Level 0 Floorplan

Program by Department Legend

- BUILDING SUPPORT
- CENTRAL SERVICES
- CIRCULATION

Scale = 1/32" = 1'-0"

Floorplans

Central Services Level 1 Floorplan

Scale = 1/32" = 1'-0"

Program by Department Legend

- BUILDING SUPPORT
- CENTRAL SERVICES
- CIRCULATION
- SHARED SUPPORT
- WAREHOUSE

Floorplans

Central Services Level 2 Floorplan

Program by Department Legend

- BUILDING SUPPORT
- CENTRAL SERVICES
- CIRCULATION
- SHARED SUPPORT
- WAREHOUSE

Floorplans

Trades Level 1 Floorplan

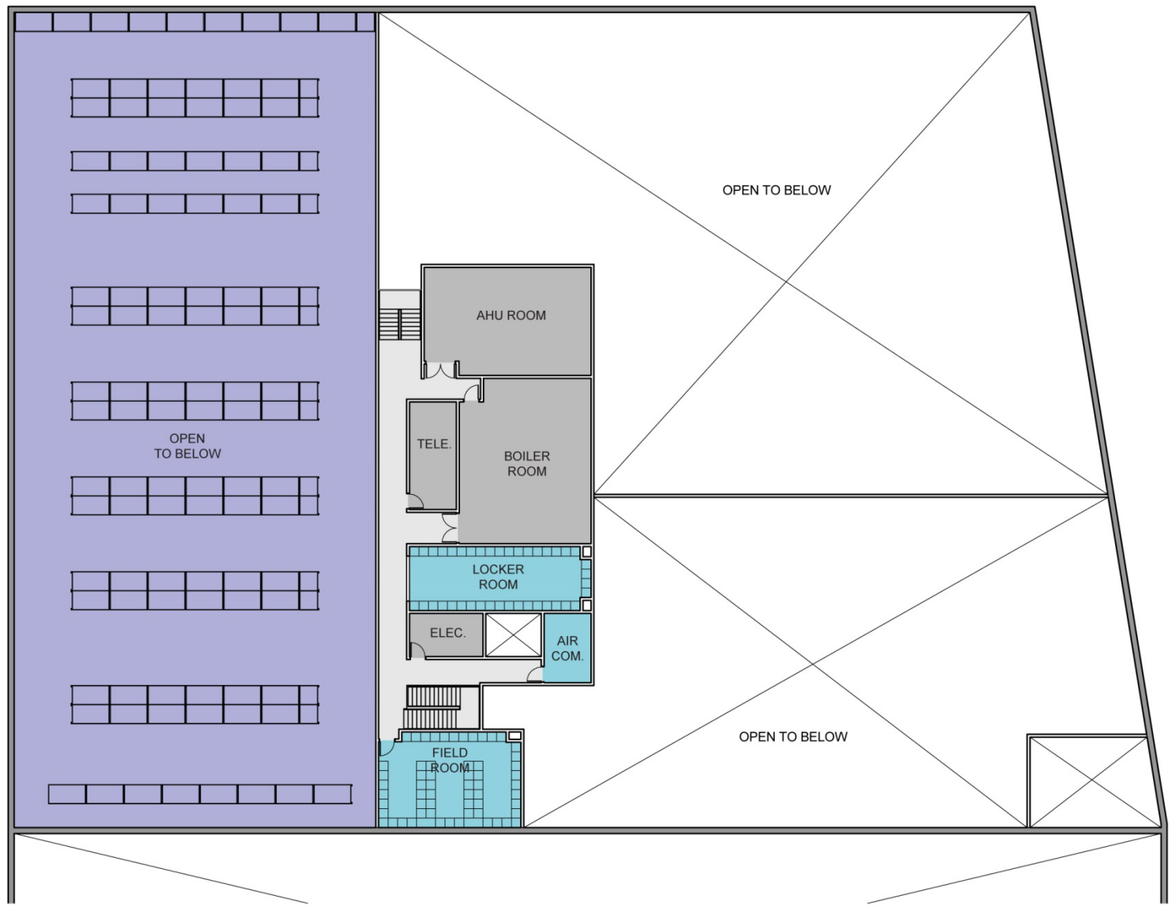
Scale = 1/32" = 1'-0"

Program by Department Legend

- BUILDING SUPPORT
- CIRCULATION
- SHARED SUPPORT
- TRADES AND CARP SHOPS
- WAREHOUSE

Floorplans

Trades Level 2 Floorplan



Scale = 1/32" = 1'-0"

Program by Department Legend

- BUILDING SUPPORT
- CIRCULATION
- TRADES AND CARP SHOPS
- WAREHOUSE

Floorplans

Field Science Support Level 1 Floorplan

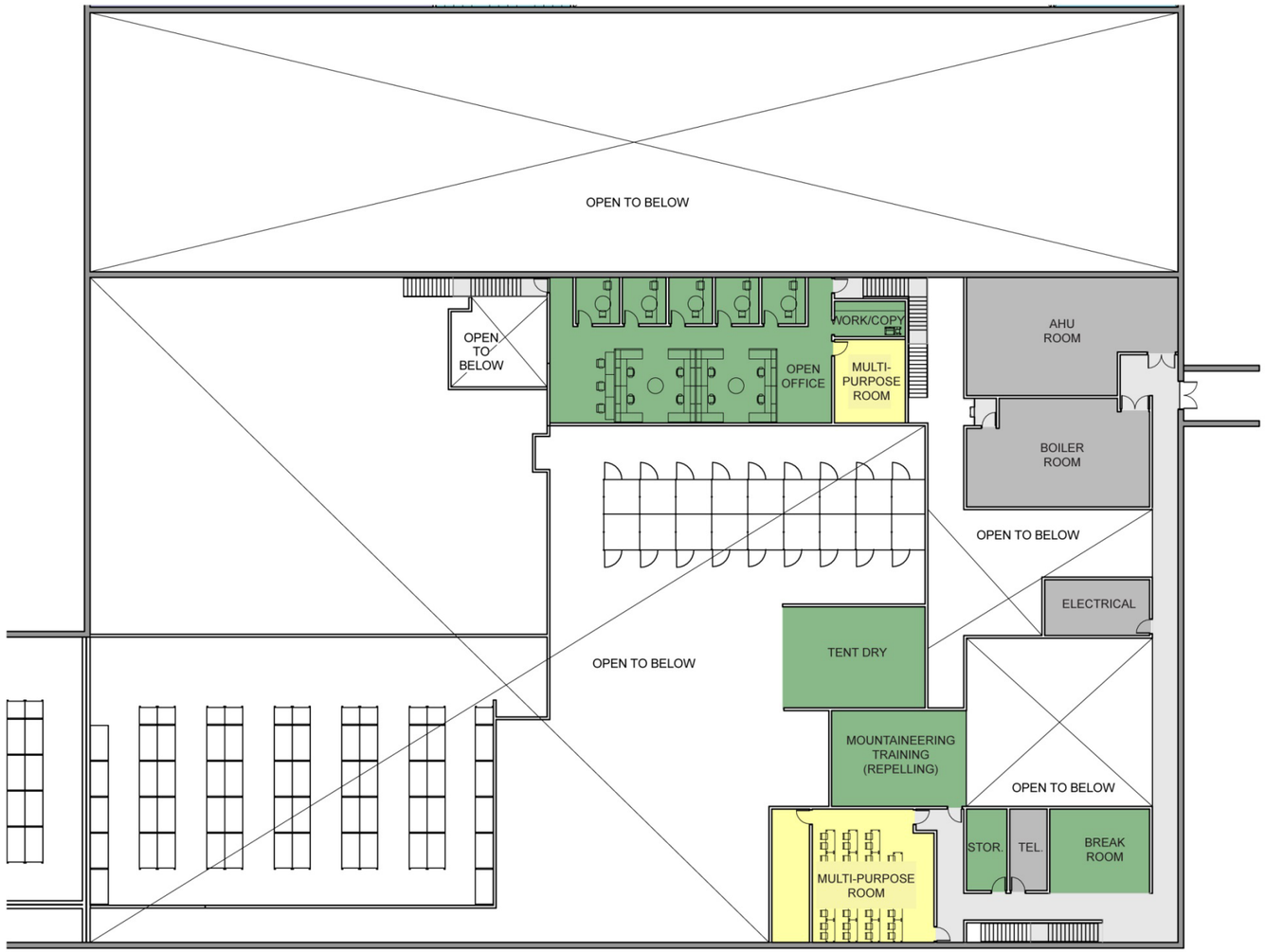
Scale = 1/32" = 1'-0"

Program by Department Legend

- BUILDING SUPPORT
- CIRCULATION
- FIELD SCIENCE SUPPORT
- SHARED SUPPORT
- TRADES AND CARP SHOPS
- WAREHOUSE

Floorplans

Field Science Support Level 2 Floorplan



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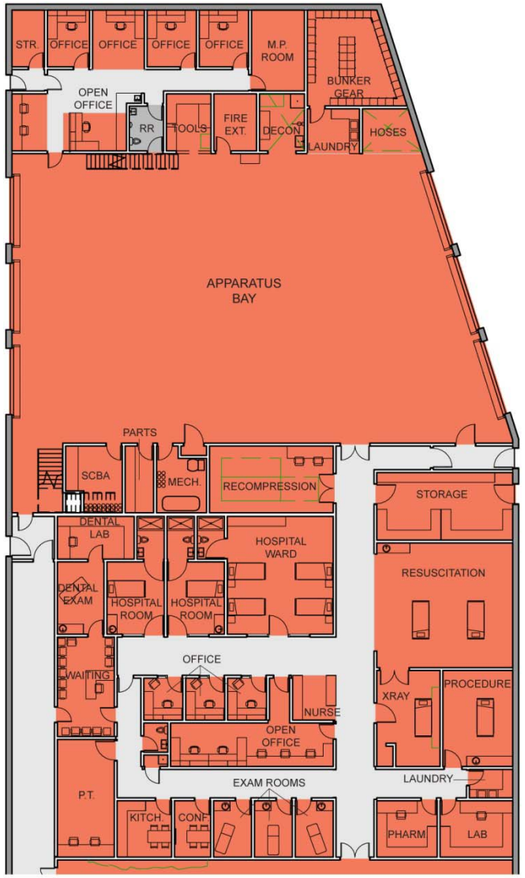
Program by Department Legend

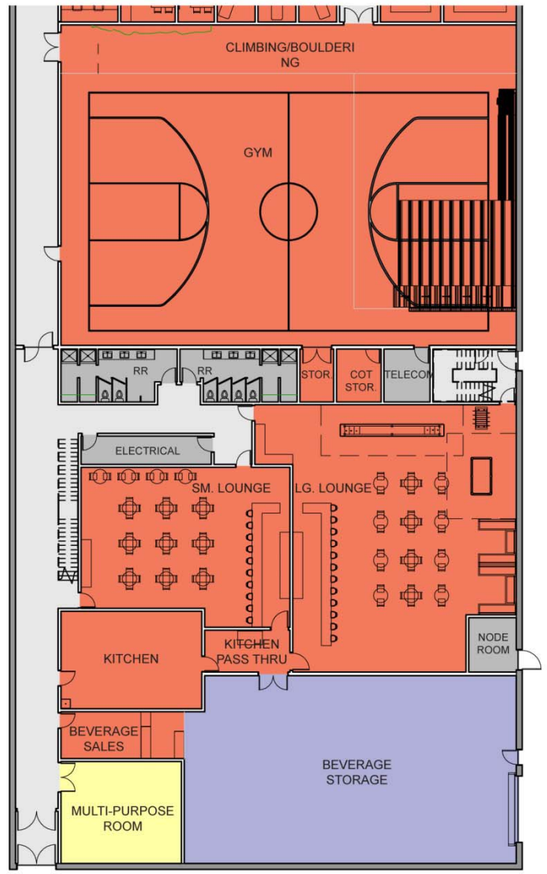
- BUILDING SUPPORT
- CIRCULATION
- FIELD SCIENCE SUPPORT
- SHARED SUPPORT

Floorplans

Contingency Operations Level 1



North



South

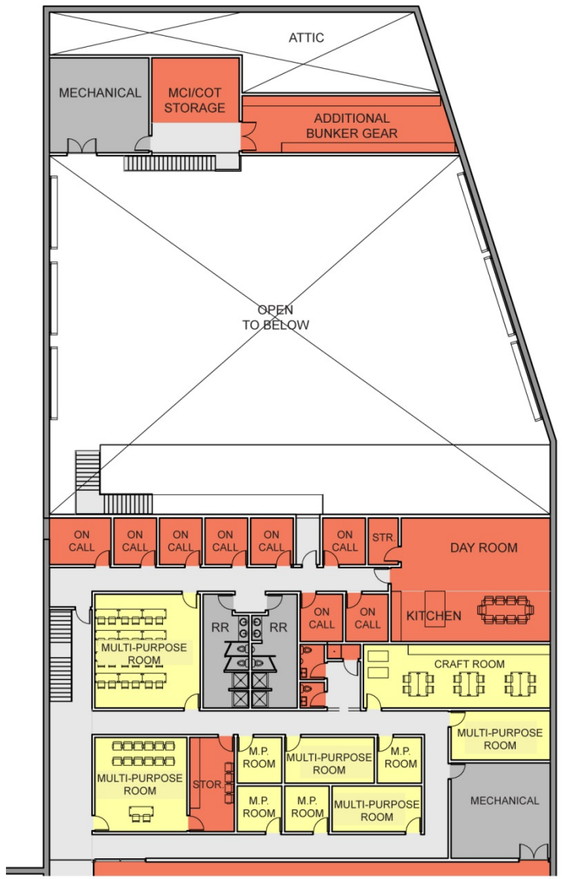
Scale = 1/32" = 1'-0"

Program by Department Legend

- BUILDING SUPPORT
- CIRCULATION
- CONTINGENCY OPERATIONS
- SHARED SUPPORT
- WAREHOUSE

Floorplans

Contingency Operations Level 1



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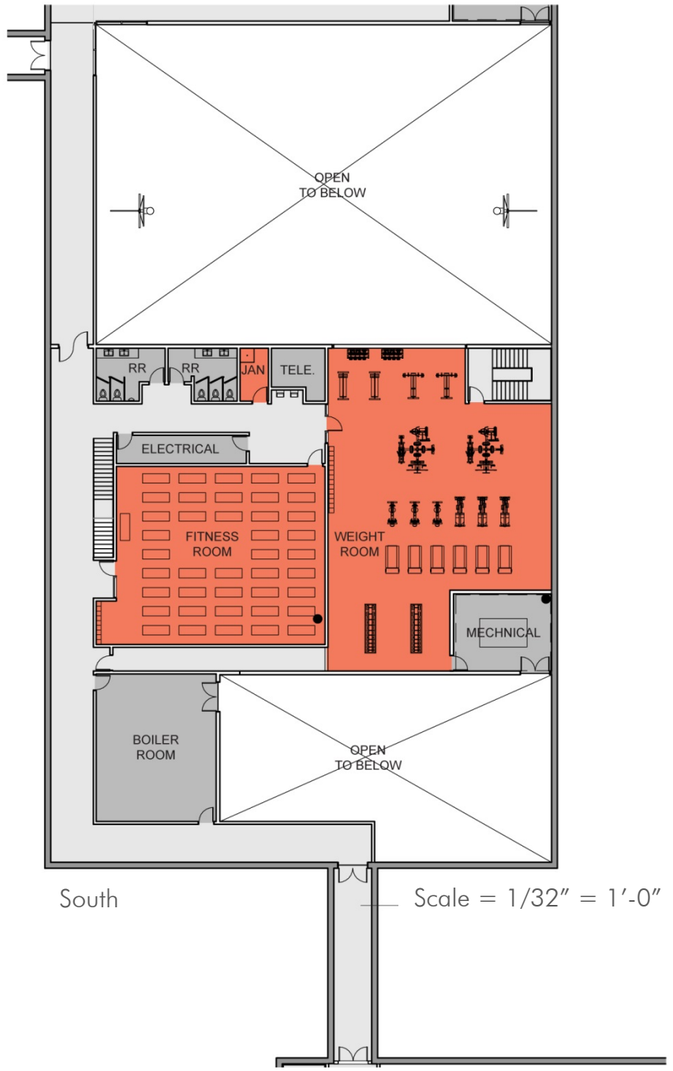


South

Scale = 1/32″ = 1′-0″

Program by Department Legend

- BUILDING SUPPORT
- CIRCULATION
- CONTINGENCY OPERATIONS
- SHARED SUPPORT

SECTION 2

Executive Summary

Building Summary

MCMURDO STATION
Building Summaries

Building Name		Program SF
McMurdo Core		
Central Services and Warehousing		95,020
Trade Shop		42,013
Field Science Support		43,244
Contingency & Operations Building		56,008
Concourse		14,384
Total Gross Bldg S.F.		250,669

Central Services

Central Services

Summary

CENTRAL SERVICES
Summary

Executive Summary:		Program SF			
		Staff Count	WS Qty.		Total SF
Lower Level					
Chapel		**1**	**3**		**580**
	Workspace		1		100
	Dedicated Workcenter Support Space		2		480
Hut 10		**0**	**2**		**1,080**
	Workspace		0		0
	Dedicated Workcenter Support Space		2		1,080
1st Level					
Supply		**28**	**5**		**292**
	Workspace		5		292
	Dedicated Workcenter Support Space		0		0
Food Service		**53**	**41**		**13,796**
	Workspace		13		296
	Dedicated Workcenter Support Space		28		13,500
Station Services		**50**	**15**		**2,902**
	Workspace		9		352
	Dedicated Workcenter Support Space		6		2,550
Laundry & Janitorial		**1**	**3**		**148**
	Workspace		1		48
	Dedicated Workcenter Support Space		2		100
Shuttle Services		**47**	**13**		**282**
	Workspace		13		282
	Dedicated Workcenter Support Space		0		0
Post Office		**2**	**4**		**648**
	Workspace		2		148
	Dedicated Workcenter Support Space		2		500
Command & Control		**21**	**16**		**4,542**
	Workspace		12		3,792
	Dedicated Workcenter Support Space		4		750
PAX		**0**	**2**		**1,100**
	Workspace		2		1,100
	Dedicated Workcenter Support Space		0		0
Warehousing		**0**	**3**		**25,900**
	Workspace		0		0
	Dedicated Workcenter Support Space		3		25,900
Second Level					
Administation		**100**	**85**		**4,536**
	Workspace		85		4,536
	Dedicated Workcenter Support Space		0		0
Coffee		**0**	**2**		**1,300**
	Workspace		0		0
	Dedicated Workcenter Support Space		2		1,300
General Shared Support			**31**		**6,600**
Total Staff		**303**			
Total Workspaces			**143**		
Total Support Spaces			**77**		
Sub-Total (NSF)					**63,706**
Circulation 35%					**22,297**
Total USF					**86,003**
Total OSF (assuming OF of 1.08)					**92,883**
Total Gross Bldg S.F. (1.023 multiplier)					**95,020**

CENTRAL SERVICES
Chapel

		Program SF					Notes
SPACE REQUIREMENTS		Type	Staff Count	WS Qty.	Program SF	Total SF	
Chaplin Office		PO1	1	1	100	100	
Workspace Sub-Total (NSF)			**1**	**1**		**100**	
Dedicated Workcenter Support Space							
Multi Purpose Area				1	400	400	
Storage				1	80	80	
Dedicated Workcenter Support Space Sub-Total (NSF)				**2**		**480**	
Sub-Total (NSF)				**3**		**580**	

Central Services

Chapel

DEPARTMENT PROFILE

Primary Function of Workcenter: A multi-denominational chapel is envisioned to occupy a flexible space to accommodate approximately twenty persons. This space is served by an adjacent storage room for religious implements and artifacts. In addition, an adjacent office is provided for both private meetings and an administrative space for the assigned chaplain. The Chapel is located on the West end of Central Services, near the lodging, and overlooking the Royal Society Range.

Hut 10

CENTRAL SERVICES
Hut 10

SPACE REQUIREMENTS		Program SF: Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
Workspace Sub-Total (NSF)			**0**	**0**		**0**	
Dedicated Workcenter Support Space							
Multi Purpose Area				1	1,000	1,000	
Restroom				1	80	80	
Dedicated Workcenter Support Space Sub-Total (NSF)				**2**		**1,080**	
Sub-Total (NSF)				**2**		**1,080**	

Hut 10

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:

Mechanical

- Kitchen and dining/bar areas are heated with in-floor radiant systems. Range hoods with wet chemical fire suppression are provided at cooktops. Kitchen makeup air is provided through cascaded Class 1 and 2 air from adjacent spaces and through Dedicated Outdoor Air System (DOAS) units. DOAS units are variable flow, controlled via interlock with kitchen exhaust system and space carbon dioxide (CO_2) sensors.

Electrical

- Kitchen loads are supplied by dedicated kitchen panels (480Y/277 volt and 208Y/120 volt), located adjacent or within the spaces being served. The kitchen is provided with receptacles and circuits, sized for specific equipment, with additional convenience outlets. Lighting for the kitchen and seating area shall include preset scenarios for maximum flexibility.

Plumbing

Floor drains are provided in wet areas (Bars, kitchens, etc.)

CENTRAL SERVICES
Supply

SPACE REQUIREMENTS		Program SF Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
Supply Supervisor (Kim Boyer)		PO1	1	1	100	100	
Materials Person Sr.		WS1	7	3	48	144	All WS's within Open Office Suite
Inv. Data Spec Lead		WS1	1	1	48	48	All WS's within Open Office Suite
Inv. Data Spec			2				
Materials Person			17				
Workspace Sub-Total (NSF)			**28**	**5**		**292**	
Dedicated Workcenter Support Space							
Dedicated Workcenter Support Space Sub-Total (NSF)				**0**		**0**	
Sub-Total (NSF)				**5**		**292**	

CENTRAL SERVICES
Food Service

SPACE REQUIREMENTS		Program SF Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
Culinary Manager (Tom)		PO1	1	1	100	100	
Front and Back of House Manager		TD1	2	1	10	10	All WS's and TD's located within suite
Admin Coordinator Sr		WS1	1	1	48	48	All WS's and TD's located within suite
Food Service Supervisor		TD1	1	1	10	10	All WS's and TD's located within suite
Program Executive Chef		WS1	1	1	48	48	All WS's and TD's located within suite
Food Clerk		TD1	1	1	10	10	All WS's and TD's located within suite
Production Cook		TD1	18	6	10	60	All WS's and TD's located within suite
Sous Chef		TD1	6	1	10	10	All WS's and TD's located within suite
Production Cook			18				
Lead Baker			2				
Prep Cook			2				
Workspace Sub-Total (NSF)			**53**	**13**		**296**	
Dedicated Workcenter Support Space							
Conference Room (5-6 ppl)				1	120	120	
Kitchen				1	5,000	5,000	
Restrooms				2	50	100	
Laundry				0	0	0	
Dining				1	4,500	4,500	
Servery				1	2,500	2,500	
Staff Lockers				20	4	80	
Dishwashing				1	200	200	
Walk in Coolers, Freezers				1	1,000	1,000	
Dedicated Workcenter Support Space Sub-Total (NSF)				**28**		**13,500**	
Sub-Total (NSF)				**41**		**13,796**	

Food Service

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:

Mechanical

- Food Service and Laundry areas are heated with in-floor radiant systems. Exterior entrances are provided with local radiant heat and man-doors will have air curtains to minimize infiltration. Exhaust hoods with wet chemical fire suppression are provided at cooking lines, and clothes dryers are direct vented to the exterior. Makeup air is provided through cascaded Class 1 and 2 air from adjacent spaces and through Dedicated Outdoor Air System (DOAS) units.

Electrical

- Food Services loads are supplied by dedicated kitchen panels (480Y/277 volt and 208Y/120 volt), located adjacent to or within the spaces being served. Sealed and gasketed fixtures are provided for all food preparation and serving spaces. Receptacles and circuits, sized for specific equipment, are provided based on user equipment nameplates (ovens, mixers, etc). Dedicated receptacles are located behind each washer / dryer unit. Food Service and Laundry spaces are provided with occupancy sensors for lighting control. Select kitchen and laundry loads are provided with generator backed power.

Plumbing

- 180 degree domestic hot water is generated locally for pot wash and laundry use. Pot wash sinks are separately drained to grease interceptors before combining with site sanitary mains. Clothes washers are separately drained through a common lint trap before combining with site sanitary mains. Wash fountains are provided for hand washing. Floor drains are provided in wet areas (janitor's closets, kitchens, etc.).

CENTRAL SERVICES
Station Services

SPACE REQUIREMENTS		Program SF					Notes
		Type	Staff Count	WS Qty.	Program SF	Total SF	
Recreation							
Recreation Supervisor Office (Kelly)		WS1	1				
Retail (Jessica)							
Retail Office		PO2	2	1	120	120	2 workstations in office, 1 for retail and 1 for beverage
Lodging Open Office Suite				0	0	0	All WS's located within suite
Lodging Supervisor		WS1	1	1	48	48	
Rooms Coordinator		WS1	1	1	48	48	
Lodging Assistant		WS1	1	1	48	48	
Steward Supervisor		WS1	1	1	48	48	
Janitor Lead		TD1	2	2	10	20	
Dining Lead		TD1	4	2	10	20	
Steward			37				
Workspace Sub-Total (NSF)			**50**	**9**		**352**	
Dedicated Workcenter Support Space							
Recreation							
Gear Issue				1	500	500	existing is roughly 300sf
Rec Closet				1	50	50	Adjacent to Rec Office
Retail							
Retail Store				1	1,200	1,200	confirm and match existing size
Lodging							
Lodging Storage				1	100	100	
Salon (Alisha)				1	200	200	
Radio and Vinyl Room (Joolee)				1	500	500	Room for 3 people: 2 at booth and 1 at lounge for listening.
Dedicated Workcenter Support Space Sub-Total (NSF)				**6**		**2,550**	
Sub-Total (NSF)				**15**		**2,902**	

CENTRAL SERVICES
Laundry and Janitorial

		Program SF					Notes
SPACE REQUIREMENTS		Type	Staff Count	WS Qty.	Program SF	Total SF	
Laundry							
Open Office		WS1	1	1	48	48	
Workspace Sub-Total (NSF)			**1**	**1**		**48**	
Dedicated Workcenter Support Space							
Laundry							
Laundry Room				0	0	0	Per meeting on 2-15-2016 with Station Services, the main Laundry facility is now planned to be in the residence building. Individual small laundry facilities are located within Kitchen, Field Science Support and Fire/Medical.
Janitorial							
Main Closet				2	50	100	Bulk storage in warehouse
Dedicated Workcenter Support Space Sub-Total (NSF)				**2**		**100**	
Sub-Total (NSF)				**3**		**148**	

Laundry & Janitorial

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:
(Laundry & Janitorial)

Mechanical

- Exhaust hoods with wet chemical fire suppression are provided at ranges, and clothes dryers are direct vented to the exterior. Janitorial spaces are provided with exhaust per ASHRAE 62.1 Standards. Makeup air is provided through cascaded Class 1 and 2 air from adjacent spaces and through Dedicated Outdoor Air System (DOAS) units. Where possible, exhaust are combined for heat recovery before discharge.

Electrical

- Laundry and janitorial spaces are provided with occupancy sensors for lighting control. Dedicated receptacles are located behind each washer / dryer unit. Convenience outlets are provided in laundry and janitorial spaces.

Plumbing

- 180 degree domestic hot water is generated locally for laundry use. Clothes washers are separately drained through a common lint trap before combining with site sanitary mains. Wastes from hazardous sources (HAZMAT sink, Amalgam sink, etc) are collected locally and do not utilize the sanitary sewer system. Wash fountains are provided for hand washing. Floor drains are provided in wet areas (janitor's closets, kitchens, etc.)

FIELD SCIENCE SUPPORT
Shuttle Services

SPACE REQUIREMENTS		Program SF: Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
Vehical OPS Supervisor			1				Share w/ Pass SVCS Rep
Vehical Oper, SR		WS1	2	2	48	96	
LRG Passenger Vehicle			3				Shares 3 TD Stations : All TD's within Open Office Suite
Vehical Operator		TD1	12	3	10	30	Shares 3 TD Stations : All TD's within Open Office Suite
Pass SVCS Rep SR		WS1	1	1	48	48	All WS's within Open Office Suite
Pass SVCS Rep		WS1	2	1	48	48	Share Station with Vehical Ops Supervisor
ATS 1		TD1	12	6	10	60	Requested 6 TD Stations for all Drivers
ATS 2			6				
ATS 3			2				
ATS Apprentice			6				
Workspace Sub-Total (NSF)			**47**	**13**		**282**	
Dedicated Workcenter Support Space							
Dedicated Workcenter Support Space Sub-Total (NSF)				**0**		**0**	
Sub-Total (NSF)				**13**		**282**	

Post Office

CENTRAL SERVICES
Post Office

SPACE REQUIREMENTS		Program SF: Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
Post Office							
Post Master		PO1	1	1	100	100	
Postal Clerk		WS1	1	1	48	48	
Workspace Sub-Total (NSF)			**2**	**2**		**148**	
Dedicated Workcenter Support Space							
Work Room w/ Customer Counter				1	300	300	
Package Storage Room				1	200	200	
Dedicated Workcenter Support Space Sub-Total (NSF)				**2**		**500**	
Sub-Total (NSF)				**4**		**648**	

CENTRAL SERVICES
Command & Control

SPACE REQUIREMENTS		Program SF					Notes
		Type	Staff Count	WS Qty.	Program SF	Total SF	
IT&C Backup Operations Data Center				1	1,200	1,200	
NOC				1	200	200	
Mission OPS Comms/SPAWAR Primary				1	700	700	
Wiring Closet/Fire Suppression UPS				1	500	500	
SPAWAR				1	300	300	
MAC Weather				1	500	500	
SPAWAR							
SOPP Site Manager		PO_2	1	1	120	120	
Weather Manager		WS_1	1	1	48	48	
Air Traffic Control Manager		WS_1	1	1	48	48	
Air Traffic Control		WS_1	7	1	48	48	
Weather Observer		WS_1	10	1	48	48	
Meteorology ARG/IT Support		PO_1	1	1	80	80	
SFA - Support Forces Antarctica							Adjacent to EOC & Raven Ops
Deployment Commander		PO_3	1	1	160	160	
Deployed Commander		PO_2	1	1	120	120	
1st Sargent		PO_2	1	1	120	120	
Flight Maintenance Manager		PO_2	1	1	120	120	
Raven OPS							Adjacent to SFA
Admin Asst/OPS Coordinator		WS_1	1	1	48	48	
Scheduler		WS_1	1	1	48	48	
Director of Operations		WS_1	1	1	48	48	
Workspace Sub-Total (NSF)			**21**	**12**		**3,792**	
Dedicated Workcenter Support Space							
Conference Rooms EOC - Large (16-20 people)				1	300	300	
EOC Comms				1	100	100	
EOC Storage				1	100	100	
Air Crew Briefing Room				1	250	250	
Dedicated Workcenter Support Space Sub-Total (NSF)				**4**		**750**	
Sub-Total (NSF)				**16**		**4,542**	

Central Services

Command & Control

DEPARTMENT PROFILE

Primary Function of Workcenter: To receive, interpret and relay information critical to USAP operations. Command and Control infrastructure will provide strategic redundancy and emergency back-up capabilities in Central Services in Central Services to support the primary data centers for NSF, NASA and Joint Polar Satellite System (JPSS) in the event of a catastrophic failure in the primary IT/Communications facility, which will be located in BL004. In addition to the data centers, this facility will support backup campus telephony, uninterrupted power supply (UPS), appropriate fire protection, HVAC and wiring closets to allow for efficient replacements and upgrades to critical IT infrastructure.

Department Hours: 24-7 Operations

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:

Mechanical

- Occupied spaces are served by a dedicated outdoor air system (DOAS) and heated with in-floor radiant systems. Spaces containing heat-generating equipment are conditioned via dedicated Outdoor Air units utilizing economizer cooling.

Electrical

- Command and Control loads are supplied by dedicated distribution panels (480Y/277 volt and 208Y/120 volt), located adjacent or within the spaces being served. Lighting within this space is provided with preset scenes for maximum flexibility. All loads are provided with generator backed power. Surge suppression is provided for all sensitive and/or computer loads.

PAX

CENTRAL SERVICES
PAX

SPACE REQUIREMENTS		Program SF: Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
Passenger Terminal				1	900	900	
Passenger Terminal Storage				1	200	200	
Workspace Sub-Total (NSF)			**0**	**2**		**1,100**	
Dedicated Workcenter Support Space							
Dedicated Workcenter Support Space Sub-Total (NSF)				**0**		**0**	
Sub-Total (NSF)				**2**		**1,100**	

CENTRAL SERVICES
Warehousing

SPACE REQUIREMENTS		Program SF: Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
Workspace Sub-Total (NSF)			**0**	**0**		**0**	
Dedicated Workcenter Support Space							
Central Supply				1	500	500	
Central Warehousing				1	25,000	25,000	Central Supply + Food + Retail
Frozen Storage				1	400	400	Confirm & match existing size
Dedicated Workcenter Support Space Sub-Total (NSF)				**3**		**25,900**	
Sub-Total (NSF)				**3**		**25,900**	

Central Services

Warehousing

DEPARTMENT PROFILE

Primary Function of Workcenter: Material required for use within Central Services function will be located in the Central Warehouse and distributed as necessary. Surplus material, and material used less frequently, yet intended for specific work groups, can be stored within the Central Warehouse and transferred to satellite warehouses as needed throughout the season.

INTERIOR SPACE REQUIREMENTS:

Key Adjacencies: co-located with Central Services

Customer receiving area/staffed counter/waiting: Central Supply will be a separate area of the Central Warehouse where a service counter will be staffed.

CENTRAL SERVICES
Admin

SPACE REQUIREMENTS		Program SF					Notes
		Type	Staff Count	WS Qty.	Program SF	Total SF	
National Science Foundation							All WS's and TD's included in Pod's
National Rep Antarctic		PO_3	1	1	160	160	
National Rep Antarctic - visiting		PO_2	2	1	120	120	
NSF Station Manager		PO_1	1	1	100	100	
NSF Admin		WS_1	1	1	48	48	
McMurdo Ground Station							All WS's and TD's included in Open Office Pod's
MGS Engineer		WS_1	1	1	48	48	
Weather Manager		WS_1	1	1	48	48	
Ken Borek Air							All WS's and TD's included in Pod's
KBA Station Supervisor		PO_1	1	1	100	100	
Support		WS_1	2	2	48	96	
Antarctic Support Contract (ASC)							All WS's and TD's included in Open Office Pod's
McMurdo Area Manager		PO_1	1	1	100	100	
Disbursing Specialist		PO_2	1	1	120	120	
Continuous Improvement		PO_1	1	1	100	100	
HR Manager		PO_1	1	1	100	100	
Admin		WS_1	3	3	48	144	
Property Specialist		WS_1	1	1	48	48	
Scheduler		WS_1	1	1	48	48	
Support Forces Antarctica (SFA)							All WS's and TD's included in Open Office Pod's
Services Representative		WS_1	1	1	48	48	
Safety Representative		WS_1	1	1	48	48	
Missions Support Representative		WS_1	1	1	48	48	
Military Sealift Representative		WS_1	1	1	48	48	
NCHB1		WS_1	1	1	48	48	
USCG Liason		WS_1	1	1	48	48	
Advanced Deployment Team		TD_1	4	4	10	40	
Tech Management & Admin							All WS's and TD's included in Open Office Pod's
HR Manager		PO_1	1	1	100	100	Close to NSF. Place in discrete location.
Chalet Admin Coord Sr.		WS_1	2	2	48	96	
Chalet Admin Coord		WS_1	1	1	48	48	
HR Generalist Sr.		WS_1	1	1	48	48	Close to NSF. Place in discrete location.
Disbursing Specialist		WS_1	1	1	48	48	
Human Resources		TD_1	1	1	10	10	
Continuous Improvement		TD_1	1	1	10	10	
Property Specialist		TD_1	1	1	10	10	
Scheduler		WS_1	2	1	48	48	
Environmental Engineer Manager		PO_1	1	1	100	100	
Enviro Engineer SR.		WS_1	2	1	48	48	
Enviro Specialist SR		WS_1	1	1	48	48	
Enviro Specialist		WS_1	1	1	48	48	
H & S Engineering Lead		WS_1	1	1	48	48	
H & S Engineering SR		WS_1	1	1	48	48	
Safety Engineer, LCRM		WS_1	1	1	48	48	
Safety Engineer		TD_1	1	1	10	10	
Bldg/Safety Inspector		WS_1	1	1	48	48	
Emergency Response Lead		TD_1	1	1	10	10	
R/O Manager/ Comms Manager		WS_1	1	1	48	48	
Comms Specialist		WS_1	1	1	48	48	
Editor/Journalist		WS_1	1	1	48	48	
Comms Editor Sr.		TD_1	1	1	10	10	
Work Order Scheduler Sr.		WS_1	1	1	48	48	
Work Order Scheduler		WS_1	2	1	48	48	

Administration

Transportation & Logistics							All WS's and TD's included in Open Office Pod's
Supply Manager (Heather)		PO1	1	1	100	100	
Pete Cruser		PO1	1	1	100	100	
Aviation OPS Supervisor		PO1	1	1	100	100	
Aviation OPS Coordinator		WS1	3	3	48	144	
Infastructure & Operations							All WS's and TD's included in Open Office Pod's
I & O Project Manager		PO1	1	1	100	100	
Airfield Manager		WS1	1	1	48	48	
Operations Manager		PO1	1	1	100	100	
Admin Assistant		TD1	1	1	10	10	
Dispatcher		WS1	4	4	48	192	
Station Services Manager (Mike)		PO1	1	1	100	100	
Admin Coord Sr		WS1	1	1	48	48	
Accounting Clerk LD		WS1	1	1	48	48	
Facilities Engineer Sr.		PO1	1	1	100	100	Shared Office with Facilities Maint. Supervisor
Facilities Maintenance Supervisor (Keith)		PO1	1				Shared Office with Facilities Engineer Sr.
Utilities Manager		PO1	1	1	100	100	
MAC OPS Supervisor		WS1	1	1	48	48	Close to Command & Control
Comms Operator		WS1	4	2	48	96	
Camp Supervisor		TD1	1	1	10	10	All share 1 TD Station
Sous Chef - MP		TD1	1				
Calibration Coord.		TD1	1				
Project Management & Professional Services							All WS's and TD's included in Open Office Pod's
Acting Manager		PO1	1	1	100	100	
Architect		TD1	1	1	10	10	All positions share 6 Touchdown Stations
DDC Engineer		TD1	1	1	10	10	
Energy Engineer		TD1	1	1	10	10	
Mech. Sr. Engineer		TD1	1	1	10	10	
Fire Protection Engineer		TD1	2	2	10	20	
Designer/Drafter		TD1	1				
Project Manager		TD1	2				
Construction Sr. Engineer		TD1	2				
IT & Communications							All WS's and TD's included in Open Office Pod's
MCM IT&C Manager		PO1	1				Shared Office with S&TPS Implementation
Science & Tech Project Services							All WS's and TD's included in Open Office Pod's
S&TPS Implementation		PO1	1	1	100	100	Shared Office with MCM IT&C Manager
Workspace Sub-Total (NSF)			**100**	**85**		**4,536**	
Dedicated Workcenter Support Space							
Dedicated Workcenter Support Space Sub-Total (NSF)				**0**		**0**	
Sub-Total (NSF)				**85**		**4,536**	

Central Services

Coffee Shop

CENTRAL SERVICES
Coffee and Library

SPACE REQUIREMENTS		Program SF					Notes
		Type	Staff Count	WS Qty.	Program SF	Total SF	
None							
Workspace Sub-Total (NSF)			**0**	**0**		**0**	
Dedicated Workcenter Support Space							
Coffee Shop				1	800	800	
Library				1	500	500	
Dedicated Workcenter Support Space Sub-Total (NSF)				**2**		**1,300**	
Sub-Total (NSF)				**2**		**1,300**	

Central Services

Coffee Shop

DEPARTMENT PROFILE

Primary Function of Workcenter: A multi-purpose coffee shop will accommodate approximately 30-40 people. This location positions the Coffee Shop between the Administration functions of Central Services and the working areas of the Crary Lab, The Field Science Support and the Trades/Shops facilities. The Coffee Shop is serviced by a warming kitchen and toilets. Through scheduling, this multi-purpose space can support special events and receptions.

INTERIOR SPACE REQUIREMENTS:

Key Adjacencies: Crary Lab

Key Divisions: Acoustic separation from adjacent Administrative area of Central Services.

Sensitive storage needs:

- AV Storage

Acoustical concerns: Acoustics for Open-Mic Night

CENTRAL SERVICES
General Shared Support

		Program SF			Notes
Shared Support Spaces		Qty.	Program SF	Total SF	
Lower Level					
Node Room		0	0	0	Square footage included in circulation factor
Electrical		0	0	0	Square footage included in circulation factor
Water Entry		0	0	0	Square footage included in circulation factor
1st Level					
Coat Room - East		1	180	180	
Coat Room - West		1	180	180	
Handwash - East		1	100	100	
Handwash - West		1	100	100	
Multipurpose/Lecture		1	1,500	1,500	150 people x 10 sf/person
Multipurpose/Lecture Storage		1	100	100	
Computer Kiosk Zones		2	100	200	
Waste Prep		1	400	400	
East Restrooms		2	200	400	
West Restrooms		2	200	400	
Storage/Mechanical		0	0	0	Square footage included in circulation factor
Telecom		0	0	0	Square footage included in circulation factor
Electrical		0	0	0	Square footage included in circulation factor
2nd Level					
Conference Rooms - Medium (8-12)		4	180	720	
Conference Rooms - Small (4-6)		6	120	720	
NSF Executive Board Room		1	300	300	
Work/Copy Room		2	100	200	
Storage		1	300	300	
East Restrooms		2	200	400	
West Restrooms		2	200	400	
Janitor		0	0	0	Square footage included in circulation factor
Telecom		0	0	0	Square footage included in circulation factor
AHU		0	0	0	Square footage included in circulation factor
Boiler		0	0	0	Square footage included in circulation factor
Electrical		0	0	0	Square footage included in circulation factor
Mech, Elec, HVAC Fire Suppression		0	0	0	Square footage included in circulation factor
Shared Support Spaces Sub-Total (NSF)		**31**		**6,600**	

Trades

Trades

Summary

TRADE SHOP
Summary

Executive Summary:		Program SF			
		Staff Count	WS Qty.		Total SF
Trades		**57**	**30**		**9,986**
	Workspace		20		**1,494**
	Support Space		10		8,492
Carpentry		**38**	**24**		**8,590**
	Workspace		15		**1,000**
	Support Space		9		7,590
General Shared Support			**9**		**14,490**
Total Staff		**95**			
Total Workspaces			**35**		
Total Support Spaces			**19**		
Sub-Total (NSF)					**33,066**
Circulation 15%					**4,960**
Total USF					**38,026**
Total OSF (assuming OF of 1.08)					**41,068**
Total Gross Bldg S.F. (1.023 multiplier)					**42,013**

Trade Shop

TRADES
Trade Shop

SPACE REQUIREMENTS	Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
				Program SF		Notes
Open Office Suite			1	1,000	1,000	
Workstations			8	48	384	All WS's and TD's within Open Office Suite
Touchdowns			6	10	60	All WS's and TD's within Open Office Suite
Touchdowns in Shop			5	10	50	Located in individual Shops
Construction Superint (ASC)		3				
Plumber (ASC)		1				
Electrician (ASC)		4				
Field Camp Power Foreman		1				
Painter Foreman		1				
Plumber Foreman		1				
Painter		1				
Plumber and Plumber Apprentice		2				
Pipefitter		1				
PM Foreman (Utility Tech) (PAE)		1				
Refrigeration Mech		2				
Boiler Mech.		3				
Utility Mechanic		8				
Maintenance Spec		3				
Doc Controls Tech		1				
Admin Coord Sr. (PAE)		1				
Sheetmetal Foreman		1				
Insulator Foreman		1				
Fire System Foreman		1				
Electrical Foreman		1				
Sheetmetal Worker		2				
Welder Foreman		1				
Lineman Foreman and Lineman		2				
Fire Systems Tech		2				
Electrician and Electrician Apprentice		5				
Field Camp Power (Alternate Energy)		2				
Field Camp Power (Alternate Energy Specialilst)		1				
Antenna Rigger and Rigger Lead		4				
Workspace Sub-Total (NSF)		**57**	**20**		**1,494**	
Dedicated Workcenter Support Space						
Welding						
Welding Work Area			1	914	914	include shelf for manuals
Sheet Metal						
Sheet Metal Work Area			1	2,322	2,322	include shelf for manuals
Fire Protection Work Area						
Fire Protection Work Area			1	790	790	include shelf for manuals
Utility Technicians Work Area						
Utility Tech Work Area			1	730	730	include shelf for manuals
Field Camp Power						
Field Camp Power Technician Work Area			1	850	850	include shelf for manuals
Rigger's						
Riggers Work Area			1	730	730	include shelf for manuals
Plumbing						
Plumbing Work Area			1	1,170	1,170	include shelf for manuals
Electrical						
Electrcian's Work Area			1	736	736	Include shelf for manuals, 12 Lockers and Storage for Electrical Safety Gear
Computer Room			1	150	150	12 touchdown stations & 3 control systems computers
Locksmith			1	100	100	Need workbench, key cutting machine and secure key room for all McMurdo keys.
Dedicated Workcenter Support Space Sub-Total (NSF)			**10**		**8,492**	
Sub-Total (NSF)			**30**		**9,986**	

Carpentry Shop

TRADES
Carpentry Shop

SPACE REQUIREMENTS		Program SF					Notes
		Type	Staff Count	WS Qty.	Program SF	Total SF	
Open Office Suite				1	1,000	1,000	
Workstations				8	48	0	All WS's and TD's within Open Office Suite
Touchdowns				6	10	0	All WS's and TD's within Open Office Suite
Facilities Maint Supervisor			1				
Admin Coord Sr. (ASC)			1				
Construction Superint (ASC)			3				
Carpenter Foreman (ASC)			5				
Carpenter (ASC)			13				
Carpenter Apprentice (ASC)			8				
Carpenter Foreman (PAE)			1				
Carpenter			4				
Carp Apprentice			2				
Workspace Sub-Total (NSF)			**38**	**15**		**1,000**	
Dedicated Workcenter Support Space							
Touchdown Stations				4	10	40	1:20 ratio for workstation to personnel
Carpentry Shop				1	6,000	6,000	
Paint Room				1	500	500	
Field Room				1	400	400	
Bench Stock				1	150	150	
Dust Collection				1	500	500	
Dedicated Workcenter Support Space Sub-Total (NSF)				**9**		**7,590**	
Sub-Total (NSF)				**24**		**8,590**	

Trades

Trades and Carpentry Shop

DEPARTMENT PROFILE

Primary Function of Workcenter:

Department Hours: 7:00am-5:00pm daily with coffee breaks mid-morning and mid-afternoon.

Size of workcenter: The typical metals trade foremen are working managers for a crew of 5-12 plumbers, pipefitters, welders and apprentices from the shop office.

A personnel count for a combined trades shop is approximately 97 workers with a ratio of 70% men to 30 women.

INTERIOR SPACE REQUIREMENTS:

Customer receiving area/staffed counter/waiting: The trades shop is frequently visited by support staff and grantees requiring specialized welding, fabrication or service of equipment or work order items scheduled through the work order planner or facilities engineering. A staffed counter is not needed, but this area should be separated from the shop for safety reasons.

Workcenter requirements: An open space for the foreman's trade office with desks and filing cabinets serves the function of direct coordination among the trades foreman.

There needs to be a direct line of site from the foreman's office to the shop space.

Conferencing needs:

- Small private meeting conference room with table and chairs.
- Small shared spaces are preferred and are typically scheduled with all other workcenters

Sensitive storage needs: HR files to be kept in foreman's office desk or file cabinet.

Hazardous storage needs: Cutting oil and solvent cement in less than one gallon quantities. Used glycol based heat transfer fluid is stored in 55 gallon drums on site for waste disposal as well as drained fuel oil containers.

Acoustical concerns: Interior sound deadening for shops to reduce noise levels to adjacent spaces.

Trades and Carpentry Shop

EXTERIOR SPACE REQUIREMENTS:

Vehicle usage and storage requirements: The shop used one pickup for service and hauling materials on site. Block heater plug lines for all vehicles parked outside near the shops is necessary. One overhead garage door for the metals hop at least 10'-12' wide and 12'-14' high for materials delivery with bollards at each side of entrance

PA system: A paging PA system from the administrative assistant desk or customer counter for contacting foreman in the trade shops would be helpful.

SPECIAL CONSIDERATIONS:

- An area drain in the drive in bay will accommodate vehicle snow melt during times of vehicle return from field locations.
- 20amp, 120 volt, convenience outlets for stationery tools and work benches are required, as well as 60 amp 240 volt receptacles for stationary welding machines.
- A radiant floor heating system in the shop area is suggested as a best case method for heating the shop to a maximum of 65 degrees F as well as a heated ventilation make-up air system for recommended shop air changes.
- A fume hood or evacuation exhaust system is necessary for the welding shop work benches as well as accommodations for spark and flash shields surrounding the work bench area.
- The Tool Room needs additional security beyond the use of a standard door.
- Welders will require separate load breakers and circuits.
- Oxygen and acetylene are both used in the metals shop and plumbing work centers as well as Argon and Co2.
- An overhead door to accommodate forklift delivery of containers directly into the plumbing shop
- A pipe rack to hold pipe lengths of 21' adjacent to pipe threading machine

- Space for a vehicle to be parked inside the Trade shop
- An overhead 5 ton bridge crane for this shop would be helpful, not necessary

- Environmentally separate from wood shop due to oils and dust created for fire and safety concerns.
- A common pipe trades tool room with racks and shelves to organize and store the extensive amount of power and hand tools is required for a shop of up to 12 workers.

Trades and Carpentry Shop

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:
(Trade and Carpentry Shops)

Mechanical

- Shop areas are heated with in-floor radiant systems. Exterior entrances are provided with local radiant heat and man-doors have air curtains to minimize infiltration. General exhaust is provided, along with point-of-use exhaust systems for woodworking, machining and welding. Makeup air is provided through cascaded Class 1 and 2 air from adjacent spaces and through Dedicated Outdoor Air System (DOAS) units.

Electrical

- Electrical distribution panels are located throughout the various trade shops to allow for ease of additional equipment. Receptacles and circuits, sized for specific equipment, are provided based on user equipment nameplates (welders, lathes, etc) with additional convenience outlets located throughout each shop. Drop cords are provided in areas where users will be using portable equipment. Class and division hazardous location compliant devices and light fixtures are provided where required. Industrial style lighting, with zonal control, is provided in all shops. The warehouse portion is provided with occupancy sensors for all lighting. Supplemental lighting is provided at select work benches where fine detail or critical tasks are being performed.

Plumbing

- Wastes from hazardous sources (HAZMAT collection, tool cleaning, etc) are collected locally and do not utilize the sanitary sewer system. Floor and trench drains in vehicle maintenance/storage areas are collected through a sand/oil interceptor prior to combining with site sanitary mains. Domestic water connections to non-potable equipment and hose bibbs is protected with backflow preventers. Wash fountains are provided for hand washing. Combination shower/eyewash stations are provided for occupant safety.

General Shared Support

TRADE SHOP
General Shared Support

		Program SF			Notes
Support & Auxilliary		Qty.	Program SF	Total SF	
Breakroom		1	300	300	
Restrooms		2	200	400	
Janitor		1	50	50	
Office Storage		1	40	40	
Tool Room		1	100	100	
Training Room		1	300	300	Also used for light mechanical work
Trades and Shops Storage (Warehousing)		1	13,000	13,000	
Locker Room		1	300	300	
Node Room		0	0	0	Square footage included in circulation factor
Boiler Room		0	0	0	Square footage included in circulation factor
AHU Room		0	0	0	Square footage included in circulation factor
Water Entry		0	0	0	Square footage included in circulation factor
Electrical - 1st Floor		0	0	0	Square footage included in circulation factor
Electrical - 2nd Floor		0	0	0	Square footage included in circulation factor
Telecom		0	0	0	Square footage included in circulation factor
Air Compressor		0	0	0	Square footage included in circulation factor
Workspace Sub-Total (NSF)		**9**		**14,490**	

Field Science Support

Field Science Support

Summary

FIELD SCIENCE SUPPORT
Summary

Executive Summary:		Program SF Staff Count	Program SF Space Count		Program SF Total SF
Field Support & SAR		**45**	**54**		**12,548**
Workspace			14		**990**
Dedicated Workcenter Support Space			40		11,558
Science Cargo		**7**	**14**		**5,778**
Workspace			8		**1,274**
Dedicated Workcenter Support Space			6		4,504
ATO		**11**	**33**		**4,842**
Workspace			7		**506**
Dedicated Workcenter Support Space			26		4,336
General Shared Support			**7**		**6,940**
Total Staff		**63**			
Total Workspaces			**29**		
Total Support Spaces			**72**		
Sub-Total (NSF)					**30,108**
Circulation 30%					**9,032**
Total USF					**39,140**
Total OSF (assuming OF of 1.08)					**42,272**
Total Gross Bldg S.F. (1.023 multiplier)					**43,244**

Field Science Support & SAR

FIELD SCIENCE SUPPORT
Field Support & SAR

SPACE REQUIREMENTS		Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
					Program SF		Notes
Field Manager (Meghan)		PO1	1	1	100	100	
Assistant Field Manager (Jen Bloom)		PO1	1	1	100	100	
Continential Field Supervisor (Ryan)		PO1	1	1	100	100	
Western Antarctic Support			4				
Siple Dome			2				
WAIS Divide			16				
Dry Valleys			2				
Field Support Supervisor (Bija)		PO1	1	1	100	100	
Admin Open Office				1	500	500	All TD's and WS's within suite
Field Equipment Lead		TD1	1	1	10	10	Dedicated workstation
Field Coorinator		TD1	5	1	10	10	Shared Workstation
Mount Tech/Train LD		TD1	1	1	10	10	Shared Workstation
Mountaineer/SAR Lead		TD1	1	1	10	10	Shared Workstation
Mountaineers		TD1	5	1	10	10	Shared Workstation
FSTP Scheduler		TD1	1	1	10	10	Dedicated workstation
SAR Command Center				0	0	0	Whiteboards, maps and a printer
SAR / Mountaineer Lead (Loomy)		TD1	1	1	10	10	Touchdown within command center
Sea Ice Lead		TD1	1	1	10	10	Touchdown within command center
Curriculum Lead		TD1	1	1	10	10	Touchdown within command center
Workspace Sub-Total (NSF)			**45**	**14**		**990**	
Dedicated Workcenter Support Space							
Grantee Storage Pods				18	64	1152	(18) 8'x'8 cages: 2 high for total of 36 cages
General Staging Area				1	2,000	2000	Multi-use, central high-bay space
Field Food - Walk In Cooler				1	384	384	
Tent Wash Bays				1	1,000	1000	With overhead drying capabilty. Located in staging.
Tent Wash Equipment Room				1	100	100	
Field Weather				1	200	200	
Medical Field Kids				1	200	200	Needs to be secure
Survivial Storage				1	200	200	
ECW Storage				1	200	200	
SAR Equipment Storage -Vehicle				1	480	480	
Gear Storage				1	400	400	Includes all lockers for SAR, Auxillary and Field Science Support Staff
SAR Equipment Storage - ECW/Personnel Gear				1	192	192	
Field Gear Repair / Sewing				1	900	900	Individual spaces for Cookware, Instruments, Stoves, Climbing and Tent Repair
Field Gear/Haz Laundry				1	300	300	12x16, (2) industrial + (4) standard W's+D's
Kitchen Wash				1	20	20	Sink and Commercial Dishwasher
Field Training				1	875	875	Training on how to use field equipment
Classroom Training				1	875	875	Capacity of 35 people
Multi-Purpose				1	800	800	Additional classroom and Surge Employee Office
Multi-Purpose Storage				1	100	100	
Admin Multi-Purpose Room				1	240	240	
Office Storage				1	100	100	
Mountaineering Training (Repelling)				1	540	540	Located in Mezzanine
Breakroom/Conference				1	300	300	
Dedicated Workcenter Support Space Sub-Total (NSF)				**40**		**11,558**	
Sub-Total (NSF)				**54**		**12,548**	

Field Science Support

Field Science Support & SAR

DEPARTMENT PROFILE

Primary Function of Workcenter: This facility will include the majority of cargo functions relative to the USAP. Antarctic Terminal Operations, Cargo, Science Field Gear, Science Cargo, Field Communications Gear and the issuance of mechanical field gear will be operated from this facility. It is the "one stop shop" for grantees on their way to any of the various field sites within Antarctica.

INTERIOR SPACE REQUIREMENTS:

Key Adjacencies: Crary

Customer receiving area/staffed counter/waiting: Field Science Support will have multiple areas frequently visited by support staff and grantees. A staffed counter is needed at the Field Science Support administration area to greet grantees. Shuttle services will also have frequent traffic throughout the work day of staff coming in to get updated on their next run. Hazardous Cargo will also have walk in visitors bringing in cargo to be handled. Safe public access is needed to these zones.

Conferencing needs: Conferencing space needed for both building staff and for Grantees to alleviate some of the constraints in the existing Crary Lab. Training rooms and Classrooms needed for

General storage needs: There are 3 types of sleds that need stored (Komatic, Nansen and Siglin)

Sensitive storage needs:

- Field Medical Storage needs to be secure.
- Freezers for Ice Cores is needed with adjacency to the concourse.

EXTERIOR SPACE REQUIREMENTS:

Vehicle usage and storage requirements: SAR needs indoor storage for the Hagglund (8m x 2.2m with 1 m clearance on each side.)

Field Science Support & SAR

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:
(Laundry, Tent Washing, Vehicle Exhaust, Stove & Generator Repair)

Mechanical

- Clothes dryers are direct vented to the exterior. Equipment repair spaces are provided with exhaust per ASHRAE 62.1 Standards. Makeup air is provided through cascaded Class 1 and 2 air from adjacent spaces and through Dedicated Outdoor Air System (DOAS) units. Where possible, exhaust is combined for heat recovery before discharge. Vehicle exhaust is provided by a dedicated overhead exhaust system with retractable hose collectors.

Electrical

- Dedicated receptacles are located behind each washer / dryer unit. Laundry spaces are provided with occupancy sensors for lighting control. Convenience outlets located throughout each space. Drop cords are provided in areas where users will be using portable equipment. Class and division hazardous location compliant devices and light fixtures are provided where required. Industrial style lighting, with zonal control and occupancy sensors, is provided in all spaces. Supplemental lighting is provided at select work benches where fine detail or critical tasks are being performed.

Plumbing

- 180 degree domestic hot water is generated locally for laundry use. Clothes washers are separately drained through a common lint trap before combining with site sanitary mains. Wash fountains are provided for hand washing. Floor and trench drains in vehicle maintenance/storage areas are collected through a sand/oil interceptor prior to combining with site sanitary mains. Combination shower/eyewash stations are provided for occupant safety. Floor drains are provided in wet areas (laundry, tent washing, etc.).

Science Cargo

FIELD SCIENCE SUPPORT
Science Cargo

SPACE REQUIREMENTS		Program SF: Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
USAP Cargo Supervisor (Michael Davis)		PO1	1	1	100	100	
Open Office Suite				1	1,000	1,000	
Admin Coordinator		WS1	1	1	48	48	All WS's and TD's located within Open Office Suite
Cargo Person SR		WS1	1	1	48	48	All WS's and TD's located within Open Office Suite
Cargo Person		TD1	2	2	10	20	All WS's and TD's located within Open Office Suite
HAZ Cargo Supervisor		WS1	1	1	48	48	All WS's and TD's located within Open Office Suite
HAZ Cargo Spec		TD1	1	1	10	10	All WS's and TD's located within Open Office Suite
Workspace Sub-Total (NSF)			**7**	**8**		**1,274**	
Dedicated Workcenter Support Space							
Science Cargo Staging Area				1	2,500	2,500	
Hazardous Cargo				1	360	360	
Hazardous Cargo Storage				1	300	300	
Walk-in Freezers				2	384	768	
Ice Core Walk-in Freezers				1	576	576	
Dedicated Workcenter Support Space Sub-Total (NSF)				**6**		**4,504**	
Sub-Total (NSF)				**14**		**5,778**	

FIELD SCIENCE SUPPORT
ATO

SPACE REQUIREMENTS		Program SF Type	Staff Count	WS Qty.	Program SF	Total SF	Notes
ATO Manager (Bill)		PO1	1	1	100	100	
MCC Supervisor (Tony)		PO1	1	1	100	100	
Joint Inspector		PO1	1	1	100	100	
Shift Supervisor		PO1	2	1	100	100	
LOAD Planner		WS1	4	2	48	96	All WS's and TD's located within Open Office Suite
Airfield Shift Supervisor		TD1	2	1	10	10	All WS's and TD's located within Open Office Suite
Workspace Sub-Total (NSF)			**11**	**7**		**506**	
Dedicated Workcenter Support Space							
ATO Staging Area				1	4,000	4,000	Work Counter with 2 Computers in room
Staff Lockers for ECW Gear				24	4	96	
Conference Room				1	240	240	Shared with Science Cargo
Dedicated Workcenter Support Space Sub-Total (NSF)				**26**		**4,336**	
Sub-Total (NSF)				**33**		**4,842**	

Field Science Support

ATO

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:
(Ice Core and Science Sample Freezers)

Mechanical

- Redundant (N+1) refrigeration units are provided to ensure continuous cooling. Units are continuously monitored by the DDC system.

Electrical

- Ice Core and Freezer loads are supplied by dedicated distribution panels (480Y/277 volt and 208Y/120 volt), located adjacent or within the spaces being served. Sealed and gasketed fixtures are provided within freezers and controlled by occupancy sensor. Panels for these loads are generator backed.

FIELD SCIENCE SUPPORT
General Shared Support

		Program SF			Notes
Support & Auxilliary		Qty.	Program SF	Total SF	
Warehousing					
Field Science Support & MEC		1	6,000	6,000	
East Restrooms		2	200	400	
West Restroom		2	200	400	
Coat Storage		2	70	140	
Janitor		0	0	0	Square footage included in circulation factor
Storage - 1st Floor		0	0	0	Square footage included in circulation factor
Storage - 2nd Floor		0	0	0	Square footage included in circulation factor
Water Entry		0	0	0	Square footage included in circulation factor
Telecom - 1st Floor		0	0	0	Square footage included in circulation factor
Telecom - 2nd Floor		0	0	0	Square footage included in circulation factor
Electrical - 1st Floor		0	0	0	Square footage included in circulation factor
Electrical - 2nd Floor		0	0	0	Square footage included in circulation factor
Boiler Room		0	0	0	Square footage included in circulation factor
AHU Room		0	0	0	Square footage included in circulation factor
Workspace Sub-Total (NSF)		**7**		**6,940**	

Contingency Operations

Contingency Operations

Summary

CONTINGENCY & OPERATIONS BUILDING
Summary

Executive Summary:		Program SF			
		Staff Count	WS Qty.		Total SF
Medical		**13**	**40**		**6,015**
	Workspace		8		**655**
	Dedicated Workcenter Support Space		32		5,360
Fire		**44**	**36**		**10,860**
	Workspace		7		**560**
	Dedicated Workcenter Support Space		29		10,300
Recreation		**0**	**12**		**16,600**
	Workspace		0		**0**
	Dedicated Workcenter Support Space		12		16,600
General Shared Support			**20**		**7,080**
Total Staff		**57**			
Total Workspaces			**15**		
Total Support Spaces			**93**		
Sub-Total (NSF)					**40,555**
Circulation 25%					**10,139**
Total USF					**50,694**
Total OSF (assuming OF of 1.08)					**54,749**
Total Gross Bldg S.F. (1.023 multiplier)					**56,008**

CONTINGENCY & OPERATIONS BUILDING
Fire

SPACE REQUIREMENTS		Program SF Type	Staff Count	Qty.	Program SF	Total SF	Notes
Fire Chief		PO_2	1	1	120	120	
Fire Chief Assistant		PO_2	1	1	120	120	
Fire Captain		PO_1	2	1	100	100	
Fire Lieutenant		PO_1	8	1	100	100	
Firefighter		TD_1	30	2	10	20	3 touchdowns within this room
Fire Prevention Officer		PO_1	2	1	100	100	
Workspace Sub-Total (NSF)			**44**	**7**		**560**	
Dedicated Workcenter Support Space							
Bedrooms (Typical)				7	90	630	
Bedroom for Lieutenant				1	120	120	
Kitchen				1	150	150	
Day Room				1	300	300	
Storage off of Day Room				1	100	100	
Bathrooms/Showers				2	200	400	2 toilets/showers each.
Training Room				1	500	500	15-20 ppl. Can share with other workcenters. Power/Data at tables.
Tool Room				1	100	100	
SCBA				1	100	100	Need workbench for tools & parts. Needs to be isolated for best air quality.
Apparatus Bay				1	6,000	6,000	
EMT Storage				1	20	20	
Bunker Gear				1	550	550	Need 42 lockers
Decontamination Room				1	250	250	Open to apparatus bay with curtain. Need water supply and floor drain.
Laundry Room				1	100	100	
Bathroom at Admin Office				1	80	80	
Additional Bunker Gear				1	150	150	Bunker gear for 60 others. Would be ideal to be located within station. Uniform gear can co-locate here.
Hoses				1	50	50	
Fire Extinguisher Room				1	100	100	
Janitor Closet				1	50	50	
Storage				1	250	250	Linens, paper goods, Sm cubbies for staff toiletries, cleaning supplies and vacuum.
Admin Conference Room				1	200	200	
Admin Storage				1	100	100	
Dedicated Workcenter Support Space Sub-Total (NSF)				**29**		**10,300**	
Sub-Total (NSF)				**36**		**10,860**	

Contingency Operations

Fire

DEPARTMENT PROFILE

Primary Function of Workcenter: The Fire Station supports the needs of the fire department and the entire McMurdo Station community with emergency response.

Department Hours: 24-7 operation

Size of workcenter: There is a total staff of 54 people. There are currently 12 firefighters on a given day.

INTERIOR SPACE REQUIREMENTS:

Key Adjacencies: The apparatus bay needs to be adjacent to the maintenance and support functions of the station. The dorms should be adjacent to the day room and kitchen/dining area.

Conferencing needs: There needs to be a training room to hold 15-20 close to all fire house functions to maintain a 3 minute response time. Power/data should be available. This room can be shared with other workcenters.

General storage needs: Need EMT Supply storage cabinet that is centrally located- secured. 42 lockers for bunker adjacent to apparatus bay. Additional bunker gear for 60 people that can be located away from apparatus bay, but still within fire station. The tool storage room needs to be dedicated tool storage only. Adjacent to the residential area, storage for paper goods, toiletries and cleaning supplies is needed.

Hazardous storage needs: Flammable cabinet (4'w x 20"d)

EXTERIOR SPACE REQUIREMENTS:

Vehicle usage and storage requirements: 4 vehicles – 1 emergency ambulance, 2 fire engines and 1 smaller duty vehicle.

CONTINGENCY & OPERATIONS BUILDING
Medical

SPACE REQUIREMENTS		Program SF					Notes
		Type	Staff Count	Qty.	Program SF	Total SF	
Physician 1		PO1	1	1	100	100	
Physician 2		PO1	1	1	100	100	
Flight Crew		PO1	1	1	100	100	Shared office was approved by Erin Oliver on 3/16/2016. Shared by: Flight Surgeon, Nurse & EMT
Open Office Suite				1	355	355	All WS's and TD's within Open Office Suite
Nurse Practitioner		WS1	1	1	48	0	
Nurse Admin		WS1	1	1	48	0	
Flight Crew		TD1	2	2	10	0	
Dentist		TD1	1				Located TD in Dental Lab
Lab Technician		TD1	1				Located TD in Lab
X-Ray Technician		TD1	1				Located TD in X-Ray Room
Physical Therapist		TD1	1				Located TD in P.T
Pharmacy Technician		TD1	1				Located TD in Pharmacy
		TD1	1				
Workspace Sub-Total (NSF)			**13**	**8**		**655**	
Dedicated Workcenter Support Space							
Recompression Room				1	100	100	Match existing (456sf) per meeting with Fire
Recompression Mech Room				1	100	100	
Reception/Waiting				1	320	320	10 people plus reception desk
Bathroom				2	50	100	
Janitor				1	50	50	
Physical Therapy				1	560	560	2 Touchdowns needed
Xray				1	192	192	Touchdown needed forXray Tech
Procedure Room				1	192	192	
Exam Rooms				6	96	576	
Hospital Room				4	160	640	
Hospital Room Restrooms				2	50	100	
Hospital Ward w/ 4 Beds				1	500	500	Added per meeting on 3/16/2016 with Erin Oliver. Combo of Hospital Rms and Ward ideal.
Resuscitation Room				1	280	280	
Nurse's Station				1	100	100	
Lab				1	200	200	Added per meeting on 3/16/2016 with Erin Oliver. Touchdown needed for Lab Tech
Pharmacy				1	300	300	Towndown needed for Pharm. Tech.
Dental Lab				1	160	160	
Dental Exam				1	200	200	
Laundry				1	100	100	
Kitchenette				1	150	150	
Inventory/ Storage				1	240	240	
Teleconference				1	200	200	
Dedicated Workcenter Support Space Sub-Total (NSF)				**32**		**5,360**	
Sub-Total (NSF)				**40**		**6,015**	

Contingency Operations

Medical

DEPARTMENT PROFILE

Primary Function of Workcenter: Small medical clinic supporting the station of McMurdo. The facility is open to military, contractors, grantees, and NSF Staff. Clinic provides basic check-ups, conducts PQ tests, may hold patients overnight, and deals with medical evacuations.

Department Hours: Typically 7am-6pm. Physician on call 24 hours a day.

Size of workcenter: The ideal team to fully assist the population at McMurdo would consist of: 2 physicians, Physician Assistant/Nurse Practitioner, Flight Nurse, Nurse Administrator, Dentist, Pharmacy Technician, Lab Technician, X-Ray Technician and Physical Therapist. McMurdo Clinic shares space with a USAF medical team: Flight surgeon, Flight Nurse, Flight EMT.

INTERIOR SPACE REQUIREMENTS:

Key Adjacencies: Need to be adjacent to Apparatus Bay for quick patient transport. Close to a large area to assess patients in the event of an MCI – the gym would function well.

Key Divisions:

Customer receiving area/staffed counter/waiting: Daily patients can range from 5-30+. Patient waiting area to accommodate 8 patients is a necessity. Daily patient totals vary due to station illness, PQ testing, and dental appointments. This area needs to be out of site and earshot from the main treatment areas to protect patient privacy.

Workcenter requirements:

Conferencing needs:

- MCI Volunteers meet often and require large space to lean about their duties in the clinic.
- Staff has weekly video conferences. Physicians need reliable access to telemedicine video calls.

General storage needs:

- MCI equipment does not have to be located in the clinic; however, it must be accessible and efficiently transported to the clinic in the event of an emergency.
- Emergency medical cache needs to be in a safe and secure part of the station in the event that the clinic becomes compromised.
- Large storage for medical supplies – this needs to be a well-lit and organized area to find all necessary items (ranges from Band-Aids to bedpans to ventilation tubing)
- Pharmacy requires overstock storage that can be secured.
- Dental supply should be stored within the dental suite.
- Flight equipment should be out of the way, yet easy to access and prep in the event of emergency.

Contingency Operations

Medical

Sensitive storage needs:

- Secure Pharmacy
- Narcotic/Controlled drug safe in Pharmacy
- Patient charts/records must be able to be locked
- Air tanks
- Flight nurse equipment
- MCI equipment needs to be easily accessible and organized
- Large safe needed for storing narcotics/controlled medications in the pharmacy

Hazardous storage needs:

- Air tanks
- Biological waste

Temperature sensitive needs:

- Medical samples and cultures require the use of refrigerators, freezers as well as incubators.

Acoustical concerns: Patient exam rooms, waiting rooms as well as physician offices need to be private and provide as much acoustic privacy as possible.

EXTERIOR SPACE REQUIREMENTS:

Vehicle usage and storage requirements: Ambulance needs to be able to safely and quickly move a patient from the vehicle into the clinic – no stairs or elevators.

PA system:

SPECIAL CONSIDERATIONS:

- Double doors to allow EMT, nurse or physician to walk with a gurney to the emergency bay.
- Computer screens need to be out of site from main waiting area.
- Physician's office needs full privacy
- Pharmacy, lab, x-ray and exam rooms must be completely separated by walls.
- A specific area is needed to receive shipments near the storage area.
- Washer and dryer needed in suite.

Contingency Operations

Medical

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:

Mechanical

- Occupied spaces are served by a dedicated outdoor air system (DOAS) and heated with in-floor radiant systems.

Electrical

- Medical loads are supplied by dedicated distribution panels (480Y/277 volt and 208Y/120 volt), located adjacent or within the spaces being served. Receptacles and circuits, sized for specific equipment, are provided based on user equipment nameplates (x-ray machine, hyperbaric chamber, etc) with additional convenience outlets located throughout each space. Lighting within this space is provided with local and occupancy sensor control. All loads are provided with generator backed power. Surge suppression is provided for all sensitive and/or computer loads.

Plumbing

- Wastes from hazardous sources (HAZMAT sink, Amalgam sink, etc) are collected locally and do not utilize the sanitary sewer system.

Recreation

CONTINGENCY & OPERATIONS BUILDING
Recreation

		Program SF					Notes
SPACE REQUIREMENTS		Type	Staff Count	Qty.	Program SF	Total SF	
Workspace Sub-Total (NSF)			0	0		0	
Support							
Gym				1	6,500	6,500	Based on HS Gym: 56' x 112' Stores 180 cots if you use 36/sf cot (includes circ)
Gym Equipment Storage				1	200	200	Sound system in room
Climbling/Bouldering				1	750	750	
Cot Storage				1	200	200	
Fitness Room				1	1,500	1,500	Yoga, Dance Studio - up to 45ppl
Weight Room/Cardio				1	2,200	2,200	
Small Lounge				1	1,500	1,500	
Large Lounge				1	2,500	2,500	
Bar Kitchen				1	750	750	
Kitchen Pass Through				1	150	150	
AV Storage and DJ for Bars				1	50	50	Needs to be secure
Beverage Sales				1	300	300	
Dedicated Workcenter Support Space Sub-To				12		16,600	
Sub-Total (NSF)				12		16,600	

Contingency Operations

Recreation

DEPARTMENT PROFILE

Primary Function of Workcenter: Provide multiple activities to promote physical and mental wellbeing while at McMurdo.

General storage needs:

- Gym Storage is needed for ball storage, volleyball equipment, ping pong tables, party supplies and portable stage.
- Cot storage; quantity of 200
- Music instrument storage

Sensitive storage needs:

- AV Cabinet for gym

Acoustical Concerns:

- Fitness Room/Yoga Room needs to be acoustically separated from surrounding areas

MECHANICAL, ELECTRICAL & PLUMBING REQUIREMENTS:
(Bars and Contingency Kitchen)

Mechanical

- Food Service and dining/bar areas are heated with in-floor radiant systems. Exterior entrances are provided with local radiant heat and man-doors will have air curtains to minimize infiltration. Exhaust hoods with wet chemical fire suppression are provided at cooking lines. Kitchen makeup air is provided through cascaded Class 1 and 2 air from adjacent spaces and through Dedicated Outdoor Air System (DOAS) units. DOAS units are variable flow, controlled via interlock with kitchen exhaust system and space carbon dioxide (CO_2) sensors.

Electrical

- Kitchen loads are supplied by dedicated kitchen panels (480Y/277 volt and 208Y/120 volt), located adjacent or within the spaces being served. Sealed and gasketed fixtures are provided for all food preparation and serving spaces. Bars are provided with receptacles and circuits, sized for specific equipment, with additional convenience outlets located throughout each space. Power provisions are provided for audio visual equipment. Lighting for bars shall include preset scenarios for maximum flexibility. Kitchen loads are provided with generator backed power.

Plumbing

- 180 degree domestic hot water is generated locally for pot wash. Pot wash sinks are separately drained to grease interceptors before combining with site sanitary mains. Wash fountains are provided for hand washing. Floor drains are provided in wet areas (Bars, kitchens, etc.).

General Floor Shared Support

CONTINGENCY & OPERATIONS BUILDING
General Shared Support

		Program SF			Notes
Support & Auxilliary		Qty.	Program SF	Total SF	
Craft Room		1	500	500	
Small Multipurpose Room (2-4 people)		4	120	480	
Medium Multipurpose Room (8-10 people)		2	200	400	
Large Multipurpose Room (15+ people)		1	400	400	
Multipurpose Room		1	400	400	
Storage		1	200	200	
Beverage Warehouse		1	3,500	3,500	
MCI/Cot Storage		1	200	200	
Restrooms - Single User near Multipurpose		2	50	100	
Restrooms @ Fitness/Cardio		2	200	400	
Restrooms/Showers @ Gym		2	200	400	2 Toilets/Showers
Janitor - 1st Floor		1	50	50	
Janitor - 2nd Floor		1	50	50	
Node Room		0	0	0	Square footage included in circulation factor
Telecom - 1st Floor		0	0	0	Square footage included in circulation factor
Telecom - 2nd Floor		0	0	0	Square footage included in circulation factor
Electrical - 1st Floor		0	0	0	Square footage included in circulation factor
Electrical - 2nd Floor		0	0	0	Square footage included in circulation factor
Mechanical over Fire		0	0	0	Square footage included in circulation factor
Mechanical near Multipurpose Rooms		0	0	0	Square footage included in circulation factor
Mechanical near Fitness		0	0	0	Square footage included in circulation factor
Boiler Room		0	0	0	Square footage included in circulation factor
Workspace Sub-Total (NSF)		**20**		**7,080**	

Multi-Purpose Room Matrix

Multi-Purpose Room Matrix

The following matrix depicts the location and quantity of Multi-Purpose rooms by Workcenter.

Department Information				Number of Occupants					
Facility	Meeting Type	Workcenter	Quantity	2-4 ppl	4-8 ppl	8-12 ppl	12-20 ppl	20+	Notes
Contingency Operations	Multi-Purpose	Fire	1			X			Dedicated
Contingency Operations	Multi-Purpose	Fire	1					X	Dedicated
Contingency Operations	Multi-Purpose	Shared	4	X					Shared
Contingency Operations	Multi-Purpose	Shared	3			X			Shared
Contingency Operations	Multi-Purpose	Shared	1				X		Shared
Central Services	Multi-Purpose	Food Service	1		X				Dedicated
Central Services	Lecture Hall	All	1					X	Shared
Central Services	Multi-Purpose	Admin	1	X					Shared
Central Services	Multi-Purpose	Admin	2			X			Shared
Central Services	NSF Conference Rm	Admin - NSF	1			X			Dedicated
Central Services	Air Crew Briefing Rm	Admin - Air Force	1			X			Dedicated
Central Services	EOC	Command & Control	1					X	Dedicated
Field Science Support	Multi-Purpose	Field Science Support	1			X			Shared
Field Science Support	Multi-Purpose	Field Science Support	2					X	Dedicated
Field Science Support	Multi-Purpose	Science Cargo/ATO	1			X			Shared
Trade Shop	Multi-Purpose	Trades/Carps	1			X			Shared

Dedicated: Workcenter has scheduling priority of room, but is available for use by anyone when not scheduled.

Shared: Multi-Purpose is available for use by anyone at any time.

SECTION 3

Benchmarking

Benchmarking

Introduction

The following pages represent information gathered from the GSA FIT Initiative and the GSA Workplace Standards Benchmarking.

GSA FIT Initiative

The purpose of the FIT initiative is to encourage federal agencies to reduce their office space, improve space utilization rates, foster collaboration, streamline spending on information technology, and increase efficiency.

Fit Objectives:

- Create a place where people want to come to work.
- Encourage and support collaboration.
- Improve productivity.
- Improve space utilization.
- Product energy and carbon savings.
- Save taxpayer dollars.

Four mandatory requirements:

- Comply with your agency's utilization rate policy or 100-150 USF for TTO (total office), and 170 USF for the all-in utilization rate.
- Maximize natural light by specifying furniture panels no taller than 54."
- Open workstations must not exceed 50 SF.
- Offices must not exceed 150sf. FIT furniture can be purchased for offices 80-150sf only.

A minimum of six factors must be incorporated:

- Locate enclosed office/support spaces on interior walls
- Utilize glass walls instead of solid walls where appropriate
- Create open, interactive, free-flowing space to encourage collaboration
- Analyze work patterns/job duties to determine appropriate workspace size
- Consider the importance of acoustics in the open work environment
- Offer a variety of reduced-noise spaces, such as phone booths and quiet rooms
- Maximize space utilization by offering desk-sharing opportunities
- Share meeting space by utilizing an organization-wide reservation system
- Embrace mobility: offer a telework program for a minimum of one day/week

Benchmarking

Terminology

The following is a list of common terminology that will be referenced on the following pages.

Circulation: All pathways connecting programmatic spaces, including offices, workstations, support spaces, entry and elevator lobbies, and egress locations.

Desk Sharing: The practice of leveraging individual workspaces by reducing the total number of seats per assigned headcount. There are many different desk-sharing strategies, such as free-address, hoteling, and shared-owned settings.

Free-Address: The practice of providing temporary seating to employees on a first-come, first-serve basis. Free-address work settings do not need to be reserved through a formal reservation system.

Head Count: The total number of employees, including full-time, part-time, interns, and contractors, that work at a designated office location.

Hoteling: The practice of providing temporary seating to employees on an as-needed basis through a formal reservation system.

Mobility Ratio: The proportion of seats per headcount assigned to a specific facility location.

Net Square Feet (NSF): The total area of workspaces (offices and workstations), dedicated support (conference, supply, etc.) and shared support (Entry lobby, shared floor support, break rooms, etc.) Does not include primary or secondary circulation, building core, and common building support spaces. The NSF, also commonly referred to as the *Net Area*, measures the area contained within the outline of each identified program space. Example: the Net Square Feet of and 8' x 8' workstation is 64 NSF.

Enclosed vs. Open: An *Enclosed* workspace generally refers to an office or shared-office setting in which the workspace is fully surrounded by full-height partitions. *Open* refers to cubicles or workstations within full-height partitions in an open plan environment.

Space Allocation Rate: The total usable area of an organization divided by the total number of personnel (includes all full-time and part-time employees, interns, and any contractors that occupy space. Personnel excludes contractors that service the space, such as janitors and security guards.

Space Allocation Ratio: Proportion of space, measured in Net Square Feet (NSF), dedicated to offices, workstations, collaboration space, general support, social support, and mission specific spaces.

*Terms and definitions sourced from: GSA Workplace Standards Benchmarking_April 19, 2012

Benchmarking

Terminology

Space Types:

Offices – includes all individual and shared workspaces that are fully enclosed.

Workstations – includes all individual and shared workspaces that are not fully enclosed, such as cubicles, open workstations, and touchdown stations.

Collaboration – Incorporates all open and enclosed collaboration spaces, including training rooms, open meeting areas, focus rooms, huddle rooms/enclaves, and project room.

General Support – All common office support functions included in the Usable Square Feet (USF). Includes storage, supply, print and copy, receptions, mail rooms, libraries, lateral files and filing rooms, wellness rooms, and server/ADP rooms.

Social Support – includes all break and recreation areas, such as break rooms, coffee bars, common areas, informal seating, and game rooms.

Mission Specific – specialized rooms to support core business functions, such as laboratories and secure evidence storage.

Excluded – building core, primary and secondary circulation, and all major amenities, such as fitness facilities and cafeterias.

Usable Square Feet (USF): Area of a floor occupiable by a tenant area which is where a tenant normally houses personnel and/or furniture.

Utilization Rate: The average usage of a space often measured as a percentage or the total period that the space is available for use, such as the organization's business hours. This term is often misconstrued as "Space Allocation Rate."

*Terms and definitions sourced from: GSA Workplace Standards Benchmarking_April 19, 2012

Benchmarking

Workplace Strategies

Workplace Strategy #1_ Hoteling & Free-Address

Companies are beginning to rethink both real estate and workplace strategies with four key objectives in mind: 1) increase employee performance by supporting mobile work patterns; 2) utilize space more efficiently and reduce real estate and occupancy costs; 3) reduce resource use and contribute to sustainability; 4) positively impact recruitment and retention by properly supporting diverse workstyles.

Rather than unilaterally assigning all employees to a dedicated workstation or office, many companies are adopting hoteling or free-address programs to repurpose previously assigned individual space to collaborate space, and, in some cases, significantly reducing overall real estate.

Free-Address Workstations

Re-servable Hotel Office

*Workplace Strategies sourced from: GSA Workplace Standards Benchmarking_April 19, 2012

Benchmarking

Workplace Strategies

Workplace Strategy #2_ Touchdowns

Companies are finding the demand for layout space and individual filing is rapidly decreasing as work becomes more digital. The need for more desk surface area is quickly being replaced by the need for more computer screen surface as employees move between multiple electronic documents and files simultaneously. As a result, the functional need for larger workstations are being reevaluated.

Many companies are reducing workstation standards and transitioning to a touchdown system to enhance flexibility, promote overall awareness, and generate higher density, which can result in increased utilization, team efficiency, and real estate cost reductions.

The touchdown systems are generally the most cost-effective workplace solution. While panel-mounted systems are available for 10% less than the traditional cubicle, touchdown systems are available for nearly 50% less. In addition to the cost of furniture, the flexibility of the configuration can reduce the costs associated with moves and maintenance.

Touchdowns without return

Touchdowns with return

*Workplace Strategies sourced from: GSA Workplace Standards Benchmarking April 19, 2012

Benchmarking

Workplace Strategies

Workplace Strategy #3_ The Hub

More than ever before, companies are searching for the best way to foster innovation in an increasingly competitive business environment. The workplace can help by creating more opportunities for the exchange of concepts and ideas. Workplace design can articulate how people use and move throughout the office. Strategically locating spaces within and office increases the likelihood for employees that would not typically work together to cross paths and interact. The idea of the Hub is to intentionally design for these informal points of intersection. At the same time, the Hub results in efficient utilization of space and shared resources. It can also promote organizational community, which often relates to higher job satisfaction.

The break room or pantry is the most common form of a Hub setting in the effort to promote organizational and social community. By co-locating the primary social areas with other support spaces, such as open and enclosed meeting rooms, print and copy functions, and common filing or storage spaces, the Hub has the ability to bring a wider range of people together in one central location.

The circulation and paths that connect the different workplace components are just as important as the individual spaces themselves in a Hub environment. These interstitial spaces guide different people along common paths and foster the informal interactions that promote the exchange of ideas. Pivotal locations along major thoroughfares or intersections can be enhanced with small open breakout areas with seating and tools for impromptu collaboration.

*Workplace Strategies sourced from: GSA Workplace Standards Benchmarking April 19, 2012

Benchmarking

Workplace Strategies

Workplace Strategy #4_ Activity-Based Working

The Activity-Based Working model, commonly referred to as ABW, represents a new approach to the design and organization of how and where work is done in the office. The model recognizes that the one primary work setting for individual work cannot properly accommodate the multitude of different employee work styles and tasks. The type of work an employee is conducting can change on a daily, or even hourly, basis.

The Activity-Based Working model provides a palette of different individual or group work settings that are specifically designed for different user preferences and ways of working, such as more interactive, team-based settings or quite, focused work settings for tasks requiring concentration. Employees are empowered with the choice to seamlessly move between the most appropriate work settings available as the type of work tasks evolve throughout the day.

The Quiet Zone

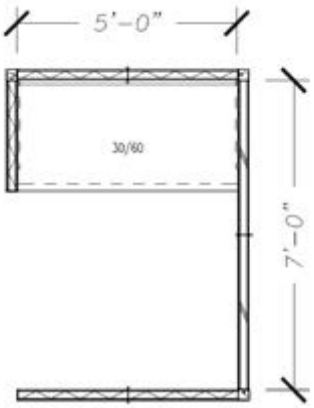
The Team Zone

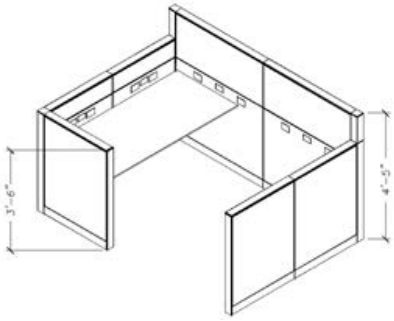
*Workplace Strategies sourced from: GSA Workplace Standards Benchmarking April 19, 2012

Benchmarking

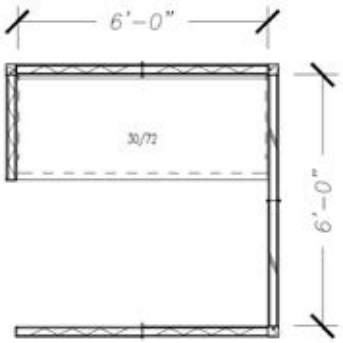
Workstations

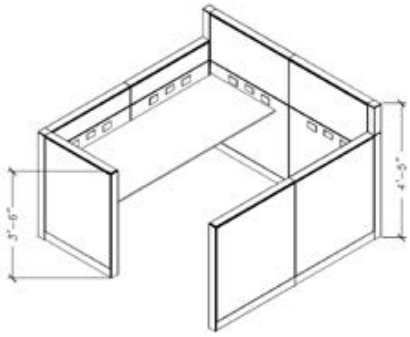
5′ x 7′ Workstation (35 SF)



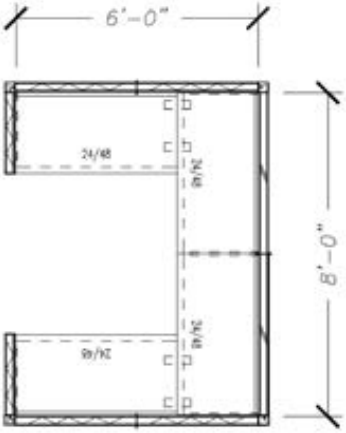


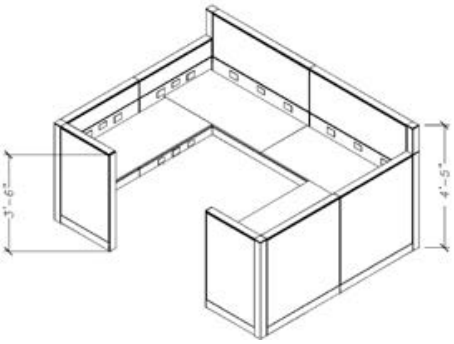
6′ x 6′ Workstation (36 SF)





6′ x 8′ Workstation (48 SF)

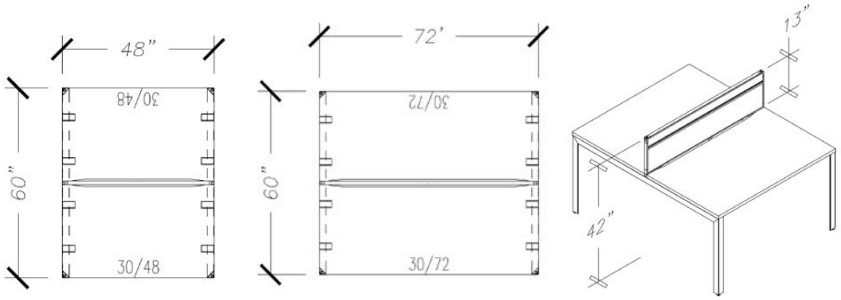




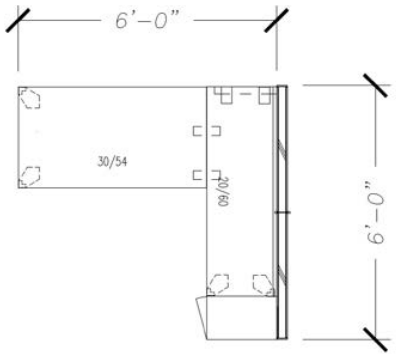
Benchmarking

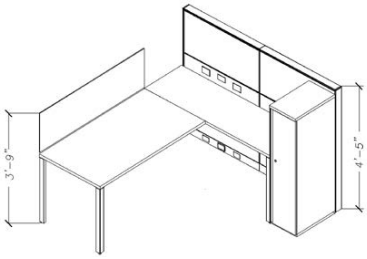
Touchdowns

Touchdown 1 (24 SF or 30 SF)

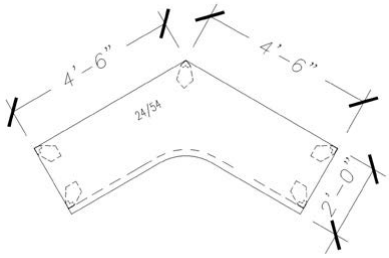


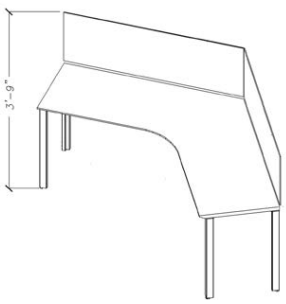
Touchdown 2 (36 SF)





Touchdown 3 (21 SF)

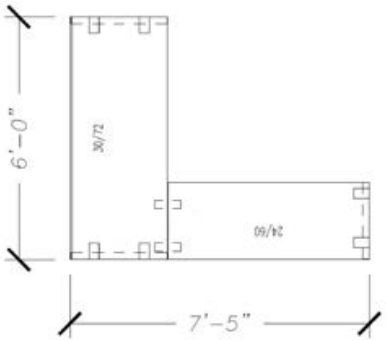




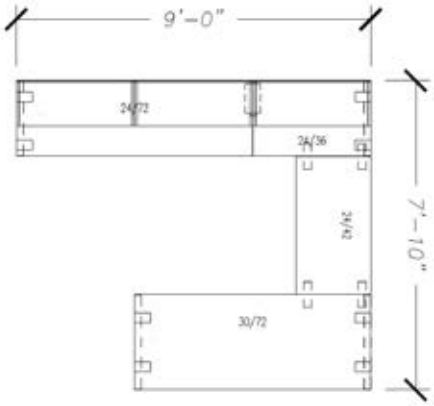
Benchmarking

Private Offices

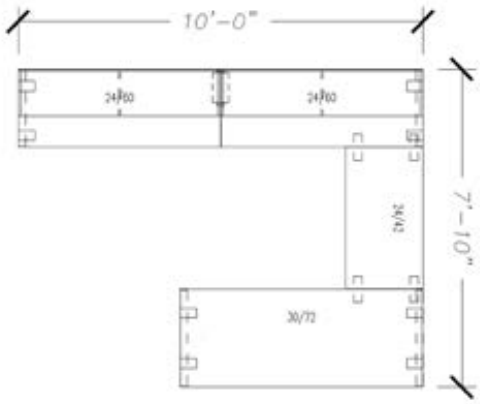
Private Office 1 (100 SF)



Private Office 2 (120 SF)



Private Office 3 (160 SF)



Benchmarking

Support Furniture

Sit to stand tables make moving from sitting to standing – and back again – a natural part of your day. The table supports a full range of movement to help you stay more active and healthy while you work.

Privacy Screens and Modesty Panels

Collaborative Tables

Benchmarking

Storage Options

Storage options available in Metal, Laminate and Veneer

Benchmarking

Lighting & Technology Accessories

Monitor Arms

Keyboard Tray

Task Lighting

Tool Rail

Benchmarking

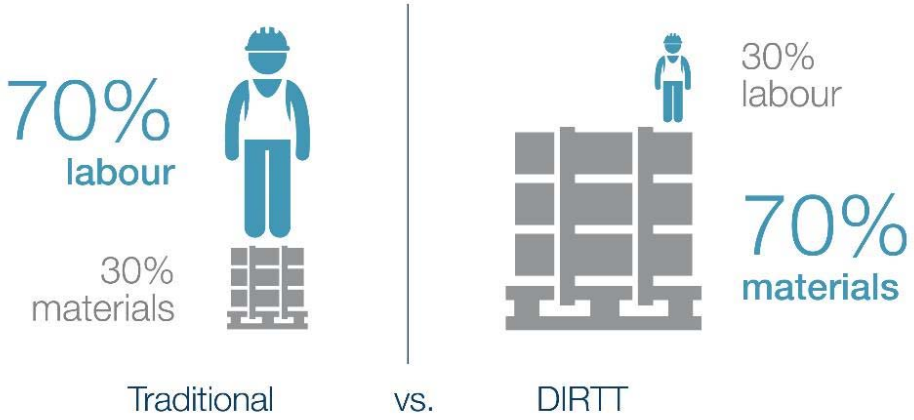
Movable Walls

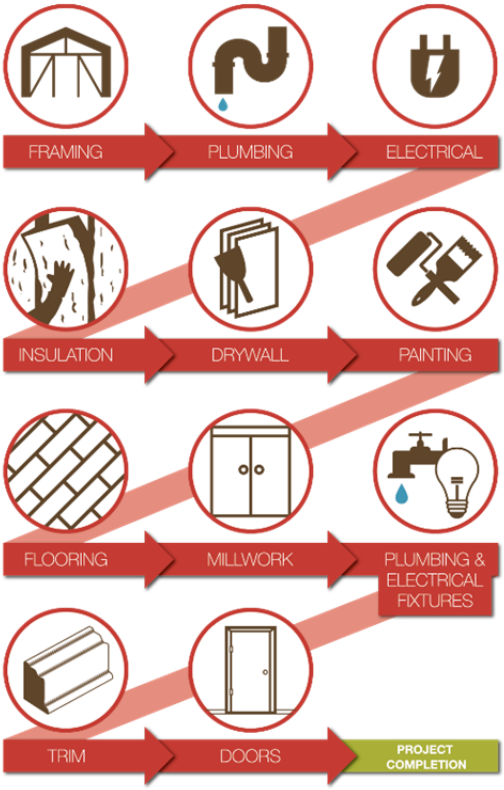
As part of the benchmarking exercise of this program, we recognize there are compelling reasons to consider using moveable walls for this project. Logistics, efficiency in project schedule and budget, and sustainability are the main reasons that this possible solution should be considered. Below are additional attributes that moveable walls provide. This information was compiled from two different moveable wall manufactures - DIRTT and Inscape.

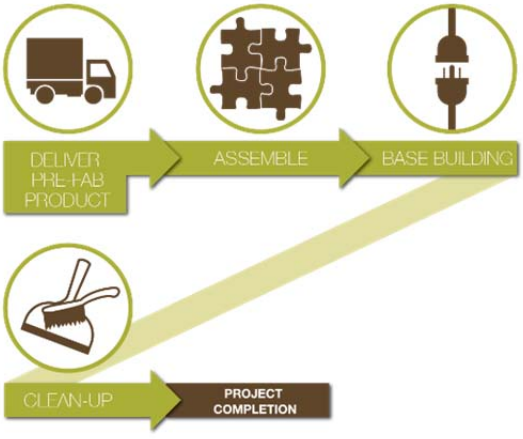
- Lower labor cost
- Trash hauling reduced by 55%
- Construction waste reduced by 65%
- Smart planning will reduce construction schedule by 20% or more
- Construction work flow efficiencies increased. Speeds up move-in by 1/3
- 300% faster reconfigurations
- Other trades' productivity increased by up to 23% (110 minutes/trades person per day) as a result of overall project efficiencies
- Architectural RFI's from GCs decreased by 50% = less time required by GC and architect
- Realistic construction cost savings between 5% and 12%
- Pre-fab interior construction reduced damages to architectural finishes by 65%
- Punchlist reduced by 60%, saving GC and architect non billable hours for additional time/trips.
- Save on operation costs and expensive trades due to easy access and plug and play infrastructure
- Fewer elements and materials for simplified asset management and sustainability
- Controlled recycling
- Less transportation pollution and energy
- Provides horizontal support so any furniture system can hang along the wall initially and post-reconfiguration
- Walls have superior construction and flexibility so can be adapted and reused multiple times
- Packaging is kept to a minimum and are designed for reuse
- STC ratings range from 37-50 depending on materials selected
- Sliding doors save square footage and are non-handed for easy reconfiguration
- Renovations produce little construction waste or air quality issues through dust of off-gassing new productions

Benchmarking

Movable Walls







Benchmarking

Movable Walls

Benchmarking

Movable Walls

GSA PROJECT LIST

Federal Agencies

- NASA
- SPAWAR
- Homeland Security
- GSA Public Building Service
- HUD
- USDA
- VA Hospital
- US District Courts
- US Embassy
- Los Alamos National Labs
- National Institute of Health
- GSA PBS Washington and Philadelphia
- Department of the Interior
- Department of Agriculture

Department of Defense

- Air Force Reserves
- Lackland AFB
- Pope AFB
- Andrews AFB
- Keesler AFB
- Us Army Corp of Engineers
- Cherry Point Naval Hospital
- Strategic Air Command
- Hickam AFB
- VA Hospital Dallas
- Redstone Arsenal
- Robins AFB
- Fort McPherson
- Fort Gillem
- Hunter Army Air Field
- Ft. Stewart
- Ft. Bragg
- Ft. Jackson
- Shaw AFB
- Barskdale AFB

Workstation/ Office Typicals

Workstation/Office Typicals

Workstations

The following workstation typical options maximize the floor plate and are flexible to allow changes in the future. Panel/screen heights will need to be determined and should be based on tasks/needs. It is recommended that they be in a range of 42"-54" above the finished floor to maximize daylight and views throughout the space. It is also advisable to provide adjustable height work surfaces to allow users a change in posture throughout the day.

Touchdown (10 SF)

This touchdown station is for transient/mobile and short term workers. The footprint is efficient, and provides the needed work surface space and access to power and data.

6' x 6' Workstation (36 SF)

This workstation provides a balance of worksurface and storage space for transient/mobile workers, or full time staff.

6' x 8' Workstation (48 SF)

This workstation is designed for a resident worker that needs ample worksurface space and personal storage.

Workstation/Office Typicals

Private Offices

The following Private Office typicals provide the needed support for a variety of task.

Private Office 1 (100 SF)

This standard private office size allows for two work surfaces and 2 guest chairs. Additional storage can be added below or above the worksurface.

Private Office 2 (120 SF)

This slightly larger private office size allows for more space around the 2 guest chairs, and additional opportunity for added storage.

Private Office 3 (160 SF)

This is the largest office size and allows for a desk with a return and back worksurface, as well as a separate conference table for 4-6 people. Additional storage can be added below or above the worksurface, or a storage tower for maximum efficiency.

Workplace Strategies


BUILT ENVIRONMENT LOCATED AT CORE TO MAXIMIZE DAYLIGHT AND VIEWS.
PALLET OF POSTURE: MIX OF SITTING/STANDING HEIGHT SURFACES AND VARIETY OF SEATING TYPES.
DISPERSED OPEN COLLABORATION FOR IMPROMPTU INFORMAL MEETINGS
WORK/COPY
LECTURE HALL
THE ADMINISTRATION SUITE CO-LOCATES MANAGERS & STAFF. FORMAL AND INFORMAL COLLABORATION SPOTS ARE ESSENTIAL TO FOSTER INTEGRATION.
Private Offices
Open Workstations
Touchdown Stations
Closed Collaboration
Open Collaboration

Multi-Purpose Room Options

Multi-Purpose Room Options

Huddle Rooms

Huddle Rooms – 1-4 people

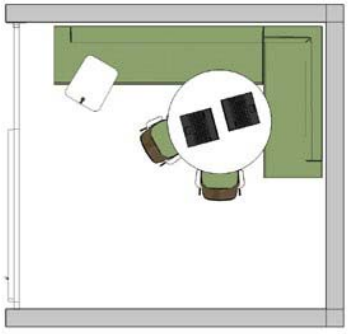
Huddle rooms are comfortable settings for focused heads down work or one-on-one connecting away from the distractions of the open plan. Easy access to enclaves helps workers balance stimuli and connectivity to coworkers, enabling them to get away without going away.

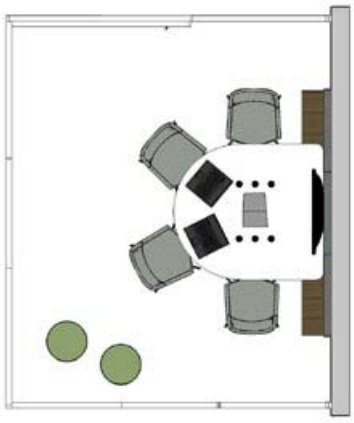
Multi-Purpose Room Options

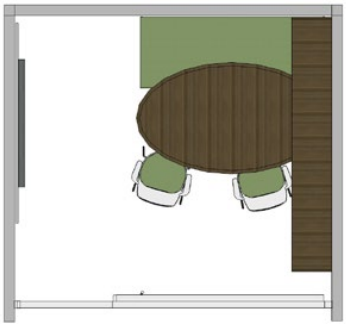
Small

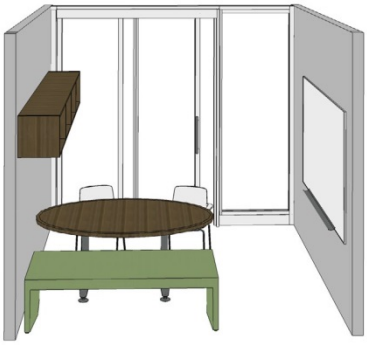
Small Rooms – 4-6 people

These spaces support formal and informal meetings for up to 6 people and are capable of providing necessary tools to share content. Designed to support both designated team space and impromptu meetings, these spaces inspires idea generation. Writeable surfaces and flexible technology give users choice and control over how to display information.







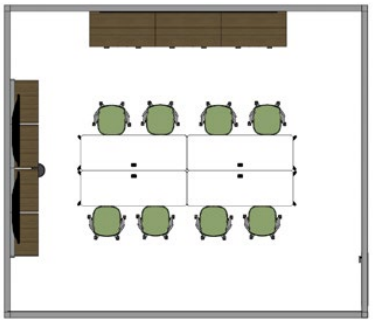


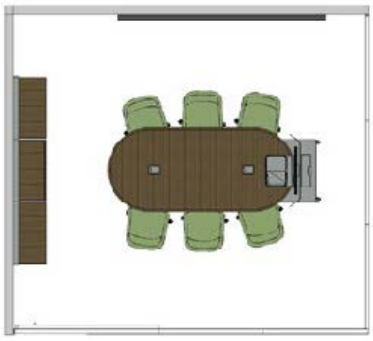
Multi-Purpose Room Options

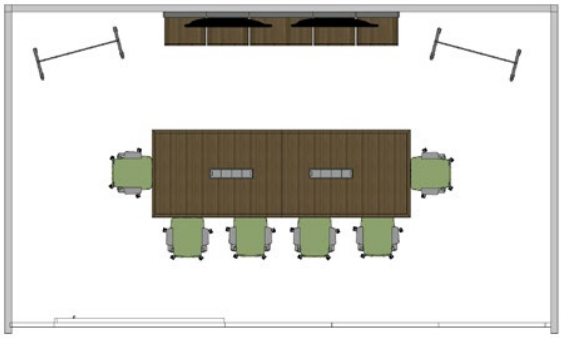
Medium - Large

Medium – 8-12 people Large – 12-18 people

These spaces support formal, extended meetings and integrate both analog and digital technology. Mobile worksurfaces allow for changes to be made to the room configuration quickly and frequently, meeting the needs of users as their activities change.





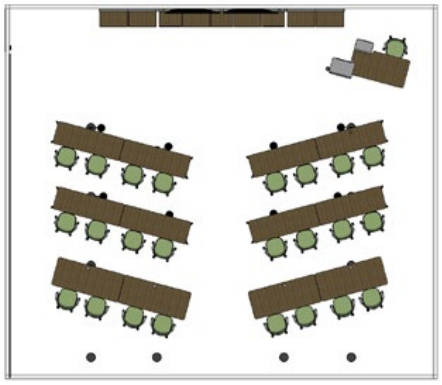


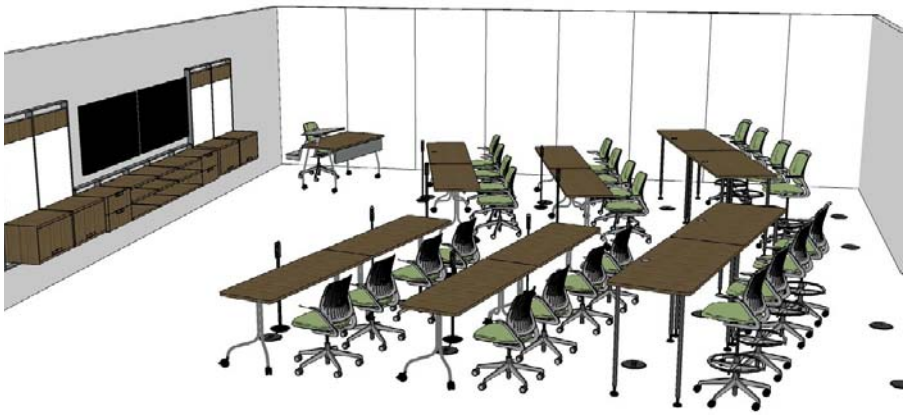
Multi-Purpose Room Options

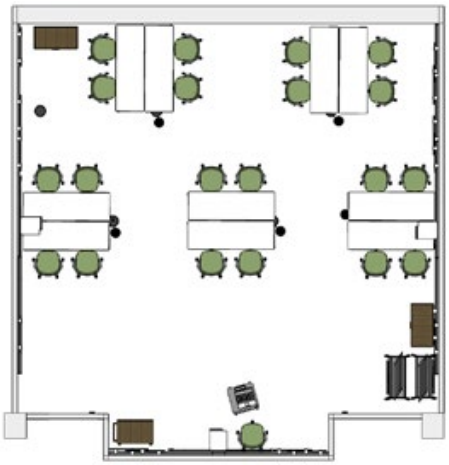
Training/Classroom

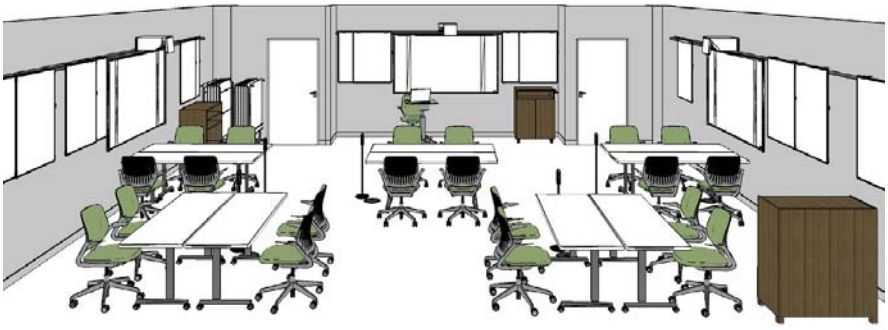
Large – 30-45 people

These spaces are designed to support large groups for formal and informal training. Mobile worksurfaces allow changes to be made to the room configuration quickly and frequently, meeting the needs of users as their activities change. Additionally, the space is equipped with storage for training materials, space for whiteboard display and integrated technology.









Multi-Purpose Room Options

Open Collaboration

Open Collaboration

Designed to utilize space adjacent to resident workspace, this application provides an area for quick touchdowns between small teams who need to share content in a casual setting. Shielded boundaries allow workers to concentrate alone or have a quiet one-on-one conversation while maintaining visibility and absorbing the energy of others nearby.