

21 November 2011

**AIR FORCE SERVICES
FACILITIES DESIGN GUIDE**

**DESIGN:
FITNESS CENTERS**



APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

AIR FORCE SERVICES FACILITIES DESIGN GUIDE (AFSFDG)

FITNESS CENTERS

Any copyrighted material included in this AFSFDG is identified at its point of use. Use of the copyrighted material apart from this AFSFDG must have the permission of the copyright holder.

AIR FORCE SERVICES AGENCY

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

Change No.	Date	Location
210708	21-Jul-08	Resources and Links: Updated links provided in paragraph 7.3
XXX	02-Nov-11	Resources and Links: Updated links provided in paragraph 7.3

The format of this document conforms to UFC 1-300-01; however, it is an Air Force-only document not included in the UFC (Unified Facilities Criteria) system.

FOREWORD

The Air Force Services Facilities Design Guide (AFSFDG) provides planning, design, construction, sustainment, restoration, and modernization criteria, and applies to US Air Force Services projects. AFSFDGs will be used for all Air Force projects and work for other customers where appropriate.

AFSFDGs are living documents and will be periodically reviewed, updated, and made available to users for providing functional and technical criteria for military construction. Headquarters, U.S. Air Force Services Agency (AFSVA) is the OPR for this AFSFDG. This document has been coordinated and reviewed by AF/ILEC (Air Force Office of the Civil Engineer). Contact AFSVA for document interpretation and improvements.

This and other AFSVA Facilities Design Guides may be found at the USAF Services Portal website at <https://www.usafservices.com/Managers/Facilities/DesignGuides/tabid/851/Default.aspx>. Hard copies of documents printed from electronic media should be checked against the current electronic version prior to use to ensure that they are current.

This document is intended to be an addition to UFC 4740-02 Fitness Centers. If any information in this document contradicts information in UFC 4-740-02 Fitness Centers, UFC 4-740-02 Fitness Centers will govern.

TABLE OF CONTENTS

CHAPTER 1 - INTRODUCTION	7
1-1 PURPOSE AND SCOPE.....	7
1-2 DOCUMENT USERS.	7
1-3 FITNESS FACILITY DESCRIPTION.....	8
1-3.1. Fitness Mission	8
1-3.2. Requirements.....	8
1-4 DOCUMENT ORGANIZATION.	8
1-5 LIMITATIONS.	8
1-6 GUIDE GOALS.....	8
CHAPTER 2 - PLANNING AND PROGRAMMING	9
2-1 OVERALL CONSIDERATIONS.....	9
2-1.1 Project Team.....	9
2-1.2 Project Planning.....	9
2-1.3 Project Site Planning.....	11
2-2 FACILITY SPACE DISTRIBUTION.....	11
2-2.1 General Considerations.	11
2-3 COST CONSIDERATIONS.	12
2-3.1 Site Cost Considerations.....	12
2-3.2 Building Design Cost Considerations.	13
2-3.3 Other Design Cost Considerations.....	13
2-4 PROJECT EXECUTION.....	13
2-4.1 Design and Construction Process.....	13
CHAPTER 3 - GENERAL DESIGN CRITERIA	14
3-1 SITE SELECTION AND DESIGN	14
3-1.1 General Site Design Considerations.	14
3-1.2 Circulation.....	15
3-1.3 Parking.....	16
3-1.4 Site Design Considerations.....	16
3-1.5 Site Amenities.	16
3-1.6 Landscape Architecture.	17
3-2 BUILDING DESIGN.	18
3-2.1 Architectural Character	18

3-2.2	Codes and Standards	18
3-3.	BUILDING SYSTEMS	19
3-3.1	Structural.....	19
3-3.2	Heating, Ventilation, and Air Conditioning (HVAC)	19
3-3.3	Plumbing.....	19
3-3.4	Electrical	20
3-4	FURNITURE FIXTURES AND EQUIPMENT	20
CHAPTER 4 - FUNCTIONAL AREA DESIGN CRITERIA		21
4-1	VISITOR & SPECTATOR SUPPORT	22
4-1.1	Lobby	22
4-1.2	Control Point/Reception	22
4-2	ADMINISTRATION	23
4-2.1	Fitness and Sports Manager's Office	23
4-2.2	Sports Program Manager's Office	23
4-2.2	Operations Manager's Office	23
4-2.3	NCOIC's Office	23
4-2.4	Staff Workroom	24
4-2.5	Conference/Classroom	24
4-3	LOCKER ROOMS.....	24
4-3.1	Dressing Room	24
4-3.2	Showers.....	25
4-4	CARDIO/ WEIGHT ROOM.....	25
4-4.1	Fitness Program Manager's Office.....	26
4-4.2	Fitness Assessment Room	26
4-5	TRACK.....	26
4-6	HEALTH AND WELLNESS CENTER (HAWC).....	27
4-6.1	Office Space	27
4-6.2	Classroom.....	28
4-6.3	Wellness Assessment Room	28
4-6.4	Janitor Closet/Storage/Restrooms	28
4-6.5	Equipment Demonstration Room	28
4-7	ENHANCED AREAS	28
4-7.1	Lap Pool.....	29

4-7.2	Enhanced Locker Rooms.....	30
4-7.3	Parent/Child Area (PCA).....	31
4-7.4	HAWC Kitchen/Food Demonstration Area	31
4-7.5	Outdoor Fitness Trail or Parcourse	31
CHAPTER 5 - ILLUSTRATIVE DESIGNS.....		31
CHAPTER 6 - RESOURCES AND LINKS		53
6-1	GOVERNMENT	53
6-2	DEPARTMENT OF DEFENSE PUBLICATIONS:.....	53
6-3	DEPARTMENT OF THE AIR FORCE	53
6-3.1	Air Force Policies	55
6-3.2	Air Force Guides	55
6-4	RELATED NON-GOVERNMENT RESOURCES	56
CHAPTER 7 - ACRONYMS.....		57
CHAPTER 8 -- SPACE CALCULATOR		59
8-1	PURPOSE.....	59
8-2	INSTRUCTIONS	59

LIST OF FIGURES

Figure 1: Fitness Center and Health and Wellness Center, Andersen AB, Guam.....	7
Figure 2: Fitness Center, Ellsworth AFB.....	14
Figure 3: Landscape.....	17
Figure 4: Lobby.....	21
Figure 5: Lobby Adjacency Diagram.....	22
Figure 6: Administration Adjacency Diagram.....	23
Figure 7: Locker Rooms Adjacency Diagram.....	24
Figure 8: Cardio/ Weight Room Adjacency Diagram.....	25
Figure 9: Cardio/ Weight Room.....	25
Figure 10: Health and Wellness Center Adjacency Diagram.....	27
Figure 11: Lap Pool.....	29
Figure 12: Enhanced Locker Rooms Adjacency Diagram.....	30
Figure 13: Parent/Child Area Adjacency Diagram.....	31
Figure 14: Entry/ Vestibule.....	33
Figure 15: Administration.....	34

Figure 16: Health and Wellness Center (HAWC)	34
Figure 17: Fitness Assessment Center (FAC)	35
Figure 18: Restrooms	35
Figure 19: Stairs	35
Figure 20: Support	36
Figure 21: Racquetball	36
Figure 22: Group Exercise	37
Figure 23: Cardio/ Weight Room	37
Figure 24: Locker Rooms	38
Figure 25: Track A	39
Figure 26: Track B	39
Figure 27: Basketball Court A	40
Figure 28: Basketball Court B	40
Figure 29: Enhanced Entry/ Vestibule with Juice Bar	41
Figure 30: Expanded Retail Area for Entry/ Vestibule	41
Figure 31: Parent/ Child Area	42
Figure 32: Massage Room	42
Figure 33: Additional Stretching Area	42
Figure 34: Enhanced Locker Rooms with DV Lounges & Family Room	43
Figure 35: Medium 2 Size - Mega Modules	44
Figure 36: Medium 2 Size - Building First Floor Plan	45
Figure 37: Medium 2 Size - Building Second Floor Plan	46
Figure 38: Large Size - Mega Module	47
Figure 39: Large Size - Building First Floor Plan	48
Figure 40: Large Size - Building Second Floor Plan	49
Figure 41: Mega 2 Size - Mega Module	50
Figure 42: Mega 2 Size - Building First Floor Plan	51
Figure 43: Mega 2 Size - Building Second Floor Plan	52

CHAPTER 1 - INTRODUCTION

1-1 PURPOSE AND SCOPE.

This guidance implements construction policies and processes approved for Fitness Centers. These additional standards in conjunction with UFC 4-740-02 advance the goal of achieving consistent, enhanced quality facilities at all installations. Developing and implementing facilities to achieve fitness facility excellence will help sustain a strong, productive, and viable Air Force.

This design guide is intended to:

- Highlight guidelines and criteria that should be considered during the evaluation, planning, programming, and design processes.
- Provide a consolidated listing of additional resources where more detailed information can be obtained.
- Present an appropriate USAF image for fitness facilities by organizing criteria into a concise user-friendly format for evaluating new or renovated fitness facilities.

The information in this guide applies to the design of all new construction projects as well as to major and minor renovation projects at main operating bases and reserve bases. While the space allocation in the guide does not apply to stand-alone Air National Guard (ANG) bases, the information in the guide may be used to help design the ANG fitness rooms at these locations, i.e., identify type of flooring, space per equipment items, etc. Specifically, it provides guidelines for determining required spaces, technical requirements, installation location, site design, and fitness facility space design.

The guide provides additional information in conjunction with UFC 4-740-02. All references should be consulted in order to program, design, and execute a successful fitness facility project. Chapter 7 provides related AF documents and other related applicable government and industry reference documents.

Figure 1 Fitness Center and Health and Wellness Center, Andersen AB, Guam



1-2 DOCUMENT USERS.

This guide was developed for those who plan, operate, and evaluate Fitness Centers. It is also written so design architects, engineers, programmers, and planners can achieve consistent and enhanced quality fitness facilities throughout the Air Force.

1-3 FITNESS FACILITY DESCRIPTION.

1-3.1. Fitness Mission

The Air Force Fitness mission is to “Enhance combat readiness by supporting unit commanders’ fitness program and provide fitness and sports opportunities to all authorized users.”

1-3.2. Requirements

The Air Force Fitness and Sports Center requirement is to “Facilitate the readiness, fitness, and morale of Air Force members by providing effective, efficient, and pleasant spaces for individual and group exercise, unit physical training (PT), team and individual sports, adaptive/ inclusive sports and recreation programs, testing, training/education, and necessary support.”

1-4 DOCUMENT ORGANIZATION.

The criteria are organized to parallel the design process:

- Programming Criteria provides the basic guidelines for sizing and configuring a facility in conjunction with the Dynamic Prototypes and UFC 4-740-02. The document includes diagrams that clarify the desired relationships between functions, as well as a table summarizing scope requirements for each facility.
- Design Criteria covers information relevant to all phases of design and contains guidelines for organizing the site and designing and planning the building's utilities, layout, character and circulation, and systems.
- Functional Area and Space Guidelines provide detailed design requirements for each functional space in a typical facility. It includes diagrams that correspond with the Dynamic Prototype and can aid in the preparation of working drawings.
- Illustrative Design Information contains examples of floor plans that show how the guide's design principles and Dynamic Prototypes can be applied to a particular project.
- Resources and Links

1-5 LIMITATIONS.

This guide must be used in conjunction with DOD and other documents that give related guidance. Unique design requirements of a specific project will be addressed at the installation level. This design guide is not a substitute for research required by programmers and designers. Further, programmers and designers must incorporate installation and Major Command design requirements.

1-6 GUIDE GOALS.

This design guide is intended to promote:

- Compliance with current policies, yet includes flexibility to meet local needs,
- Understanding of AF fitness goals and their implications for facility design, and
- Teamwork from requirements identification through beneficial occupancy.

CHAPTER 2 - PLANNING AND PROGRAMMING

2-1 OVERALL CONSIDERATIONS.

This chapter identifies the requirement for new and existing fitness facilities for Air Force installations. The space criteria shall determine the number and size of the core elements for each installation.

2-1.1 Project Team

The Project Team will identify and integrate applicable design criteria, site-specific design requirements, specific goals and strategies during programming, planning, design, and construction. Cooperation between participants representing all organizations is critical to the success of any project. Therefore, the organizations and individuals listed below should be involved early in the planning, programming, and design of a fitness facility to ensure that all functional requirements are met. Refer to the USAF Project Manager's Guide (Project Definition Chapter) for information concerning the Design Team Participants from other organizations.

- Commanders
- Force Support Squadron Commander/Director; Sustainment Services Flight Chief; Fitness and Sports Manager and Staff
- Base Civil Engineering Squadron; Project Manager; Trades representatives
- Installation Medical Group; Health Promotion Manager or Health Educator
- Headquarters, Air Force Services Agency fitness (SVORF) and facilities (SVXFB) representatives
- Architectural and Engineering Consultants
- Contracting Officer
- Planners, Architects, Landscape Architects, Engineers, Interior Designers
- Base Support Team including Fire Department, Security Forces, Environmental, Bioenvironmental Engineering Safety, and other appropriate representatives
- Major Command and Civil Engineering representatives
- Others as appropriate

2-1.2 Project Planning

2-1.2.1 Overall Project Scope. The base population is the initial determinant for the total combined scope (space authorization) of all fitness facilities on an installation. For purposes of fitness center facility sizing, base population is defined by the following categories. See base population computation worksheet.

- Assigned military personnel: Including Air Force other U.S. military personnel, full-time Air Force Reserve, and Air National Guard; authorized military personnel included in interservice support agreements with other U.S. services; and authorized military personnel included in support agreements with foreign/NATO

services.

- Family members: Fifty (50) percent of family members from assigned military personnel aged 13 years or older.
- Military transient population: When the installation regularly serves a substantial number (over 100) of military transients (PCS members, students, or members TDY) greater than 30 consecutive days, the average daily strength, based on a firm projection of the total yearly load of such transients, may be added to the base population. Use the following formula:

(Number of 30+ day TDYs* x length in calendar days) x Frequency per year / # of days Fitness Center is open per year** = Average Daily TDY Load

*30+ day TDYs include exercises, recurring courses, and other 30+ day TDYs.

**Assume that Fitness Center is open 363 days per year.

EXAMPLE:

Course 1 - (200 persons X 60 days) * 6 times a year / 363 =	198
Course 2 - (50 persons X 90 days) * 2 times a year / 363 =	25
Exercise 1 - (550 persons X 179 days) * 1 times a year / 363 =	<u>271</u>
Total Average Daily TDY Load	494

For overseas bases, include:

- Assigned DOD civilians: Include NAF, AAFES, and DODEA (Department of Defense Education Activity) personnel as part of the base population. Do not include personnel as DOD civilians if they are counted as family members.
- For PACAF and USAFE: Include assigned military members of host nations or NATO alliances to the base population if written in the host nation agreement.

In accordance with AFRCH 32-1001, Standard Facility Requirements, Air Reserve Bases (ARB), will follow this design guide. A fitness center at an ARB will have a minimum of 17,000SF dedicated to fitness spaces. When planning fitness facility projects, provide core spaces and enhanced spaces not found in other adequate installation facilities. For bases with multiple fitness facilities, ensure at least one facility includes all the core spaces. Enhanced spaces may be included at the discretion of the installation commander, but may not displace core spaces. Consider mission, weather, and customer demand when deciding to include indoor pools or whether a steam room or sauna is preferred. The space allocation for core and enhanced areas vary by the installation size. Flexibility and expansion requirements are significant issues to be addressed during the design of all facilities. See space calculator worksheet for authorized scope for fitness centers with a HAWC.

2-1.2.2 Project Requirements and Acquisition Planning.

Develop a Requirements Document/Project Management Plan (RD/PMP) or Requirements and Management Plan (RAMP) that provides the design agent and the designer with information used in negotiating the design contract and completing the project definition phase. Use the information in this guide as the basis for developing major design issues, requirements, and costs as part of the RD. The PMP should also

identify facility acquisition decisions. Refer to the *USAF Project Managers' Guide for Design and Construction* for useful information on developing a RD/PMP or RAMP.

2-1.3 Project Site Planning.

The selected site must be approved by the local installation commander and should be part of the base general plan. Preferably, the fitness facility should be within walking distance to the dormitories, housing, community centers, outdoor sports facilities/fields, and other compatible facilities.

The selected site should allow for future expansion of the facility, parking, and outdoor activities, as required. Many factors should be carefully evaluated when determining the site. These considerations should include things such as the availability and capacity of required utilities, mass/scale of the facility relative to adjacent structures, proximity to historical districts, and relationships to existing vehicular and pedestrian circulation patterns.

Where permissible, consider providing a designated tobacco use area IAW AFI 40-102, *Tobacco Use in the Air Force*, paragraphs 2.2.9. - 2.2.11. Designated tobacco use areas will be away from points of ingress and/or egress (i.e. doors) to facilities as well as windows and air intake units/vents. Tobacco use area distance must be more than sufficient so as not to allow smoke to be drawn into the building through openings in doors, windows, and/or air intake units. When possible, installation and/or squadron commanders designate outdoor tobacco use areas, which are reasonably accessible to employees and provide some protection from the elements. Smoking area must be marked with a sign: "Designated Tobacco Use Area." Butt cans and receptacles are located only in the designated outdoor area and away from doorways or vestibules. With new or revised tobacco use policies, facility management or squadron leadership must contact the labor relations officer (LRO) at the Civilian Personnel Office. The LRO will notify the union of the proposed changes to give the union an opportunity to negotiate with management in regard to provisions that will affect employees' working conditions.

2-2 FACILITY SPACE DISTRIBUTION

2-2.1 General Considerations.

The Space List and Area Recommendations are minimum guidelines. The size of the core areas will vary with the size of the installation.

- The total scope of all core areas will not exceed the authorized scope of core areas for the installation. However, the core areas must be present at each Air Force Installation before any enhanced areas are added.
- At least one fitness facility on an installation will contain all the core spaces.
- Enhanced areas above the core area authorized must be justified for each area added.

See the space calculator worksheet for small to mega-24 facilities. UFC 4-740-02 identifies core areas for the fitness center and the HAWC (exception: the HAWC is not a core space on Reserve installations). All core spaces must be included before optional enhanced spaces may be added to the project. The total core space area must be

within the authorized scope amount. When included, enhanced spaces may exceed the authorized scope amount. Provide justification for all enhanced spaces in the programming documents whether the program exceeds the authorized scope amount or not.

A Fitness Center Space Calculator (separate file) is an interactive tool, which allows the installation to determine the size of each functional space based on local requirements but within overall space authorization. Planning factors are included for each functional space that identifies the units by which each space increases. Installation Force Support Squadron and Civil Engineering counterparts should complete the worksheet together to help determine how the spaces will be allocated throughout the installation fitness facilities. All space requirements are shown as net area. Use a net-to-gross factor of 1.35 to estimate the gross area of the facility. The additional thirty-five percent includes space requirements for interior circulation between functional spaces, mechanical rooms, and exterior walls.

At mega-large bases, the MAJCOM and base should determine whether it is more cost-effective to build and staff one large complex or multiple smaller-sized facilities. Priority areas to consider for additional square footage with mega-large facilities are the fitness equipment spaces (e.g., cardiovascular, selectorized and free weight areas), Unit PT/group exercise spaces, locker rooms, and administration (as needed to accommodate additional staff).

Overseas installations may increase the net area requirements by an additional 10 percent in the fitness center to address higher utilization. This additional space should be applied within the net area of the core areas.

2-3 COST CONSIDERATIONS.

2-3.1 Site Cost Considerations.

Site Analysis Costs.

Project programmers must consider costs for:

- Preliminary soils analyses essential to determine whether extensive site work and foundation costs are required. Also, organic soil analyses for exterior landscape plant materials may be required.
- Local environmental and climatic conditions such as heavy snow loads, wind loads, high humidity, and extreme temperatures result in additional costs due to structural, and to a lesser extent, insulation requirements.
- Projects located in areas prone to seismic activity.
- Projects located in designated historic districts may incur additional cost in order to ensure compliance with historic preservation requirements.
- Site Grading. Include costs for cut/fill and other work to make the site usable.

2-3.1.1 Site Amenities. Consider bike racks, benches, outdoor track, and lighted walks as required per installation.

2-3.2 Building Design Cost Considerations.

2-3.3 Other Design Cost Considerations.

2-3.3.1 Signage. Include the primary exterior sign and all interior and exterior building signage, including room and informational signage, interior graphics, parking and street signage. All signage will be in accordance with the installation signage program and *UFC 3-120-01, Air Force Sign Standards*.

2-4 PROJECT EXECUTION.

2-4.1 Design and Construction Process.

Successful fitness facilities require involvement of the entire facility design management team early in the process to fully develop facility requirements to identify the appropriate cost, develop programming documents, and deliver the project on-time and within budget. A design “charrette” session with participation from the entire project team serves as a kick-off to the design phase. Charrette goals are to confirm scope, clarify functional requirements, provide validation, identify cost requirements, obtain user feedback, and obtain concept “buy-in” from team members and Commanders.

Design-bid-build is the preferred method of execution although design-build, design-build plus, and other methods have been used. Further guidance on the design process may be found in the *USAF Project Manager’s Guide to Design and Construction*.

CHAPTER 3 - GENERAL DESIGN CRITERIA

This chapter provides general considerations and technical guidance relevant to all phases of design for new or renovated fitness centers. Guidelines are provided for planning and designing the site, building footprint, infrastructure, and building systems. Specific information that expands on these overall principles must be developed for each individual Fitness Center project.

Figure 2 Fitness Center, Ellsworth AFB



3-1 SITE SELECTION AND DESIGN

Although the emphasis in Fitness and Sports Center campus planning is to become part of the community facilities, it should be convenient to base administrative and mission related functions, proximity and access to common public use facilities is desired. When selecting a facility site, consider the condition, capacity, and location of utilities and their impact on future expansion. Ensure that activity spaces have room for expansion.

Involve the installation community planner, architect, landscape architect, and civil, mechanical, electrical, and communication engineers, and the Services staff. Reference *AFPAM 32-1010 Land Use Planning* for additional useful information and guidance on this subject.

3-1.1 General Site Design Considerations.

3-1.1.1 Organization.

Develop a sense of order, arrival, orientation and community in planning the site. Ensure efficient use of real estate, but provide fire protection access ways, construction space, and required life safety egress space.

Transitional Spaces. Provide entrance courts and transition spaces (preliminary spaces adjacent to a destination space) for visitors to gather prior to events. Use outdoor spaces as transition spaces and for extended fitness uses, such as areas for Unit PT, runners, and bicyclists.

3-1.1.2 Climatic Considerations.

Fitness and Sports Centers design and building orientation must take advantage of local climatic conditions. Where practical, use passive solar construction techniques to reduce energy consumption. Consider local climate conditions when creating outdoor spaces for fitness activities.

3-1.1.3 Building Orientation.

Allow for the building to capture natural lighting in accordance with Sustainable Development recommendations. Ensure natural lighting does not cause glare or interfere with activities, especially in the gymnasium.

3-1.2 Circulation.

Plan organized, easily recognizable pedestrian, vehicular, bicycle, service, handicap, and fire emergency access. Make pedestrian pathways leading to the fitness facility obvious, and consider linking the pathways to other fitness trails and sports fields.

3-1.2.1 Vehicular Access.

Design vehicular paths, pedestrian paths and landscape to help define the boundary of the fitness facility campus while enhancing the flow into and out of the adjacent community areas. Provide access to fitness facilities from secondary (collector) streets to minimize the congestion associated with main arterial streets. Where possible, divide main entrances with landscaped traffic medians between entry and exit lanes. Because of the high volume of traffic using the entrances, the recommended minimum width of non-divided entry roads will be 7.3m (24'-0").

Consider passenger loading and/or "U" shaped drop off areas near the fitness facility entrances, providing convenience to guests. Consider delivery trucks, and required easement area.

3-1.2.2 Emergency Service.

Reference the *UFC 3-600-01—Fire Protection Engineering for Facilities* for a minimum separation required between fitness facilities and the closest adjacent building. This separation is for fire protection purposes but may also be dictated by force protection requirements and local fire protection policies. Provide access to fire protection vehicles from three sides. Obtain width, weight, and turning radii of fire fighting vehicles from the base fire department.

3-1.2.3 Service Vehicles.

Provide paved access drives and parking areas designed to accommodate service vehicles. Avoid interior court areas.

Consider installing removable bollards as needed to restrict unauthorized vehicle access. Where possible, separate service entrances associated with delivery entrances, mechanical rooms or mechanical enclosures from visitor parking areas.

Provide access to side or rear service entrance for light delivery trucks; this may require a loading dock. Locate service entrance near main dumpster.

3-1.2.4 Bus Route Access.

Where possible and appropriate, access to public transportation systems will be considered in project design. If the base provides bus service, designers will consider developing shelters and walks to serve guest needs. Bus shelters must be compatible with the architectural style of existing buildings and guidelines established by the base.

3-1.2.5 Pedestrian Access.

Walkways to building entrances will be 2.4m (8'-0") wide. All other sidewalks will be 1.8m

(6'-0") wide. Design and grade sidewalks to provide barrier-free access to the first floor of all fitness facilities and to any associated outdoor use areas. Provide connections to other functional areas of the base with pedestrian circulation systems. Consider including links to jogging/biking trails and outdoor Unit PT areas as part of the site development process.

3-1.3 Parking.

3-1.3.1 Parking. Provide parking spaces as shown in AFH 32-1084.

3-1.3.2 Motorcycle Parking. Provide motorcycle-parking areas as required based on local conditions.

3-1.3.3 Bicycle Parking. Provide bicycle parking as determined by local conditions. Racks will comply with base architectural guidelines. Provide all bicycle parking on concrete surfaces adjacent to sidewalks.

3-1.4 Site Design Considerations.

3-1.4.1 Finished Floor Elevation.

Establish the ground-level finished floor elevation to assure structural protection, positive drainage, and low sidewalk slopes. Consider grading, cut and fill, visual impact of the facility and interior-exterior transitions and the impact on the landscape architect's ability to effectively introduce plant materials into the new environment. The landscape architect, architect, and civil engineer must work closely together to achieve optimal design results. Grade the site to control the visual impact of the parking area, the fitness facility, mechanical equipment, and trash dumpsters.

3-1.5 Site Amenities.

3-1.5.1 Site Furniture.

Provide site furniture that is in harmony with the architectural style of the fitness facility, complements the building, and makes the outdoor spaces more usable and organized. Provide bicycle racks, outdoor seating, sufficient trash disposal containers and recycling bins.

3-1.5.2 Site Accessories.

Provide freeze proof drinking fountains. Consider bike racks, benches, and lighted walks as required per installation.

3-1.5.3 Site Lighting.

Provide lighting to ensure occupants have a means of safely moving between outdoor and indoor spaces. All signage and lighting must be in compliance with the installation's standards. Provide adequate site lighting at any point where there is a change in grade requiring steps, near accessible parking areas, under stairwells, and near main entrances to buildings. Use UFC 3-530-01 Design: Interior and Exterior Lighting and Controls to establish illumination levels. In particular, do not exceed foot-candle level requirements as stated in the UFC 3-530-01 Design: Interior and Exterior Lighting and Controls. Design exterior lighting such that zero direct-beam illumination leaves the building site.

3-1.5.4 Outdoor Areas.

Include outdoor passive and/or active use areas in all fitness campus plans.

3-1.5.5 Sustainability.

Incorporate sustainable design concepts into the fitness facility campus. Consider recycling centers and containers and other refuse issues when developing site design and landscaping. Coordinate locations of recycling and refuse containers with site furnishings and landscape to complement the campus and building design. Emphasize ease of use and service access to these containers.

3-1.5.6 Signage.

Effective site signage should clearly identify the facility as a fitness facility. Follow the guidance defined in *UFC 3-120-01 Air Force Sign Standards* and as supplemented in MAJCOM and installation standards.

Provide signage for direction to Unit PT area, Jogging Path, Fitness Trail, etc.

Display operational hours so they can be seen from the exterior.

3-1.5.7 Fencing.

Fencing may be necessary on the Fitness Center site based upon location and surrounding facilities. Fencing materials used as screening should be compatible with the fitness campus and surrounding architecture and comply with base standards.

3-1.6 Landscape Architecture.

Landscape requirements will conform to each installation's landscape standards and to the [USAF Landscape Design Guide](#). Provide landscape beds for snow removal and consider snow fences in northern tier installations to prevent snowdrifts from forming near doorways.

Landscape plans require the services of a professional landscape architect working in conjunction with the other disciplines to achieve the total design intent for the project. The landscape architect must have an intimate knowledge of the indigenous plant



Figure 3 Landscape

materials for the region. Refer to the *USAF Landscape Design Guide* for further guidance. In addition, the landscape architect must conform with DOD force protection guidance referencing maximum height and location of plant materials adjacent to a fitness facility.

Consider the installation of an irrigation system to support the landscaping and adjacent sports fields.

3-2 BUILDING DESIGN.

All Air Force fitness facilities, regardless of location, must comply with applicable Department of Defense, Air Force and MAJCOM construction and design standards. Comply with local building codes where applicable. When a conflict exists, the more stringent requirement shall apply. Reference [AFI 32-1023, Design and Construction Standards and Execution of Facility Construction Projects](#) for current guidance on applicable Air Force and DOD requirements.

3-2.1 Architectural Character

The form, color, material, massing, graphics, shapes, lighting, and finishes should express the active and energetic functions of the fitness facility. The function of the building, as a fitness facility, should be apparent in the appearance of the building.

The main entrance should be an identifiable focal point.

Consider grouping high bay spaces together. The massing of the building should relate to the surrounding structures. The high bay areas should not be too dominant.

Architectural compatibility with the MAJCOM and Installations' Design Standards and USAF Architectural Compatibility Guide at <http://www.afcee.brooks.af.mil/dc/dcd/prch/acguide/liveacg/index.htm> will influence the design of the exterior appearance of the building.

3-2.1.1 Flexibility and Expansion Potential.

Program requirements and site restrictions may mandate the need for a multistory facility. Single-level facilities with elevated tracks are preferred. Accommodate peak demand by properly sizing the facility and organizing the functions.

3-2.2 Codes and Standards

3-2.2.1 Building Codes. Refer to UFC 1-200-01, *Design: General Building Requirements* http://65.204.17.188/report/doc_ufc.html for applicable codes.

Designs must conform to this guide as well as unique local requirements, design criteria, and applicable codes. Overseas projects must consider host-country requirements.

3-2.2.2 Force Protection Counter-Measure Standards

Coordinate force protection counter-measure standards throughout the design process while recognizing goals for aesthetics and compatibility.

Fitness facilities are a potential target of terrorist attack. A "threat assessment" is therefore required to prepare proper force protection measures. An assessment applicable to the installation's fitness facility should be completed prior to the start of design, whether it is a renovation project or new construction.

Fitness facilities have a higher pedestrian customer base than other types of military facilities.

The provision of vehicular access close to the building, such as drop off and service entrances must be weighed against the potential for terrorist attack at that facility/base.

3-2.2.3 Sustainability.

Each facility must meet a level of “certified” under the Leadership in Energy and Environmental Design (LEED) criteria in accordance with current policies.

Reference UFC 4-030-01 Sustainable Development

3-2.2.4 Fire Protection/Life Safety

Establish independent egress points from each of the functional areas that have different operating hours from the fitness center, e.g., pool, HAWC, etc.

Provide electronic alarms, and clearly label doors with appropriate identification of its purpose, that cannot be viewed directly from the control point.

3-2.2.5 Interior Design

Locally determine whether to include center or perimeter court logos/designs. Options may include the base logo, e.g., Kunsan Wolfpack logo, Air Force logo, or other locally approved logo/design. Refer to the Room Finish Schedule (separate file) for additional information.

Consider specifying low-VOC emitting finishes for improved indoor air quality.

3-2.2.5.1 Acoustics

Reference UFC 3-450-01 Noise and Vibration Control

3-2.2.5.2 Doors

Ensure exterior/interior doors are wide enough for accessibility and moving large equipment.

3-2.2.5.3 Locker Room and Shower Finishes

Do not use wall coverings.

3-3. BUILDING SYSTEMS

3-3.1 Structural

Use a structural system that allows for flexibility and expansion.

If practical, provide a structure that can accommodate future vertical expansion at facilities that have site constraints.

3-3.2 Heating, Ventilation, and Air Conditioning (HVAC)

Reference UFC 3-410-01FA Heating, Ventilating, and Air Conditioning

3-3.3 Plumbing

Provide appropriate floor drains for all showers. Ensure the floor is sloped to the drain to prevent standing water.

Provide floor drains in the drying area.

Provide a hose bib and floor drain in wet areas for wash down.

Locate irrigation controls in the maintenance area.

Provide exterior access to the pool pump room.

Provide recirculating hot water loop systems for showers.

Design the water supply system such that individual showers can be isolated without shutting down the entire shower room and/or facility.

Provide water softeners where required.

Reference UFC 3-420-01 Plumbing Systems

3-3.4 Electrical

3-3.4.1 Power

Provide dedicated electrical rooms to house all major electrical equipment. Comply with UFC 3-520-01, Interior Electrical Systems.

Provide power outlets throughout the building to serve all equipment and to allow for the future reconfiguration of equipment layouts.

Provide a grid of floor-mounted power outlets in open areas to allow for flexibility in locating equipment. Consider a grid of overhead drops only if it can be integrated with the architectural systems.

Provide power outlets and television cable outlets at 7'-0" above finished floors or where needed to accommodate wall-/floor-mounted TV sets/screens. Analyze the power diversity requirements for electrical exercise equipment.

Minimize utility runs.

3-3.4.2 Lighting

Minimize the number of different types of lamps to be used throughout the facility.

Reference UFC 3-550-01 Exterior Electrical Power Distribution

3-4 FURNITURE FIXTURES AND EQUIPMENT

Provide furniture, fixtures and equipment as listed in attached FF&E Schedule (separate file).

CHAPTER 4 - FUNCTIONAL AREA DESIGN CRITERIA

This chapter provides criteria and technical guidance relevant to design for new or renovated Fitness Center spaces, support functions, circulation, including detailed design requirements for each functional space. Follow these design guidelines when organizing the facility:

The control point should be central to the facility with direct views into all activity spaces and should also separate the secured from the unsecured areas.

Multiple egress points to outdoor activities are allowed, but return access should be funneled into the control access points.

- The interior of the facility should be open and flexible.
- Avoid creating an institutional appearance when designing the interior environment.
- Consider a "main-street" circulation system, which creates a dynamic flow of movement through the facility.
- Create visual connections between the entrance and activity spaces, thereby creating a "visual menu" for users.
- Allow natural light into the facility, keeping in mind force protection, glare in critical activity spaces, and energy conservation issues.
- Directional signage should be clear and visible.
- Design for flexibility and expansion.
- Make spaces multifunctional.
- Locate the activity spaces that receive the greatest number of users near the main entrance.
- Locker rooms should be directly accessible to and from the pool, if applicable.
- Minimize the number of corridors where practical.
- Ensure hallways are wide enough for moving large equipment. Provide electric water coolers.

This diagram below shows the functional relationships between the many core spaces in a fitness facility. It does not represent the only possible layout. Other floor plan configurations are acceptable if they maintain the same relationships between spaces. For those facilities that will have enhanced areas, refer to example floor plans in Chapter 5 for relationships. As appropriate for the facility or installation, allow for use of common access

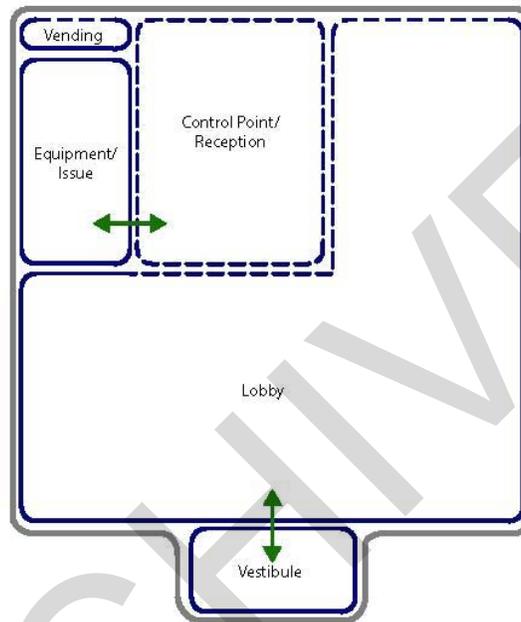
Figure 4 Lobby



cards for entry.

4-1 VISITOR & SPECTATOR SUPPORT

Figure 5 Lobby Adjacency Diagram



4-1.1 Lobby

Provide a Display Area with the following Furnishings and Equipment:

- Health kiosk for promotional brochures or information.
- Event schedule board.
- Fitness center operational information board.
- Walking, jogging, cycling trail maps.
- Facility orientation plan.
- Automatic, self-administered blood pressure measuring machine.
- Staff Board with photos, names, and title/credentials.

Provide appropriate blocking for hanging miscellaneous items on the walls.

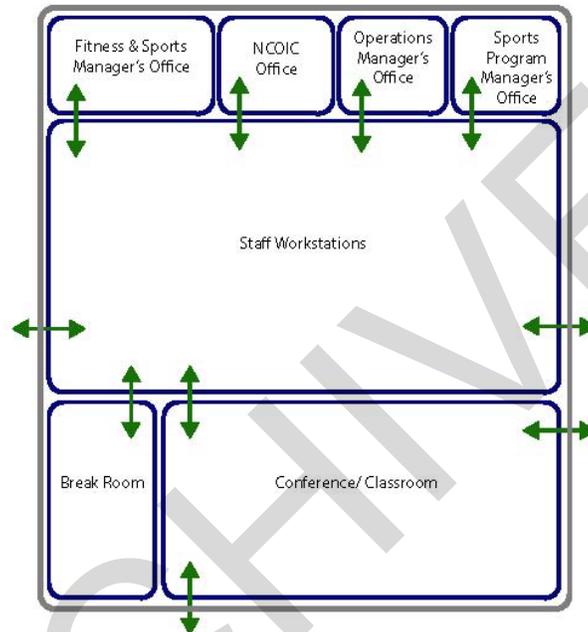
4-1.2 Control Point/Reception

The design of the control point should allow for ID checks of all that enter. It serves as the Supervision, Security, Access, and Egress control point. Electronic devices should be considered to expedite the check-in progress. Once past the lobby, the control point is used for checking in users to all other controlled areas. The central control point should

have either direct visual contact or an electronic monitoring system to adequately observe all activity spaces. Provide computer, data connection, printer, public address system, and security monitor (if necessary to maintain visual connection with all spaces).

4-2 ADMINISTRATION

Figure 6 Administration Adjacency Diagram



This area should be easily visible to customers and be near the lobby. The administration suite should provide offices for the Fitness and Sports Manager, Operations Manager, NCOIC (Non-commissioned Officer in Charge), and Sports Program Manager, and include a common workroom for other employees. The administration suite should be adjacent to the control point. The Fitness Director's office should be near the fitness activity areas.

4-2.1 Fitness and Sports Manager's Office

This should be a securable individual, private office with seating for visitors and visual access to the staff workroom. Consider a window with a view of the lobby area.

4-2.2 Sports Program Manager's Office

This should be a securable individual, private office with seating for visitors and visual access to the staff workroom. Consider a window with a view of the lobby area. Provide a white board.

4-2.2 Operations Manager's Office

This should be a securable individual, private office with seating for visitors and visual access to the staff workroom.

4-2.3 NCOIC's Office

This should be a securable individual, private office with seating for visitors and visual

access to the staff workroom.

4-2.4 Staff Workroom

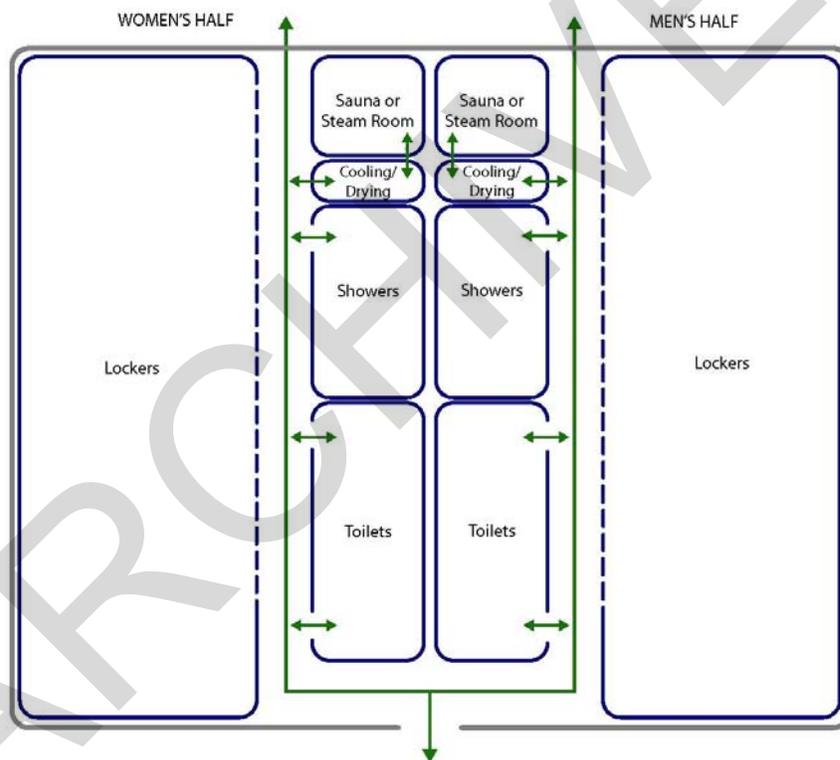
This should be a securable, multi-workstation office with a shared work area. Provide an adjacent break area or room with a sink, microwave, coffeemaker, and refrigerator.

4-2.5 Conference/Classroom

This should be a securable meeting space for staff, sports officials, and other program gatherings.

4-3 LOCKER ROOMS

Figure 7 Locker Rooms Adjacency Diagram



Consider using strategically located "soft storage space" adjacent to locker rooms to allow for future expansion.

4-3.1 Dressing Room

Dressing rooms are dry areas that supports changing into and out of fitness wear and street clothes. Design to ensure proper air exchange to ventilate wet areas. Provide:

- Lockers.
 - Provide digital locks or security latch on each lockable locker for use with personal locks. Consider using open, professional-styled lockers.

- Allow 20-30 mm (6'-8") minimum between face of lockers.
- Lockers should be a minimum of 381 mm (15") wide and at least 381 to 457 mm (18" minimum) deep.
- Avoid U-shaped locker configurations.

4-3.2 Showers

The Space Allocation Worksheet will aid in estimating the number of showers required. Locally determine the distribution of showers between the men and women’s locker rooms. Provide all private showers with attached drying area enclosures for men. Consider adding shower caddies and/or built-in shelves. Determine whether to use shower doors or shower curtains by comparing lifecycle costs and maintenance requirements for both. Provide:

- Towel/clothing hooks in drying areas.
- Showerheads mounted on a sidewall of the shower to allow for adjusting water temperature.
- Commercial-grade built-in soap dispensers.

4-4 CARDIO/ WEIGHT ROOM

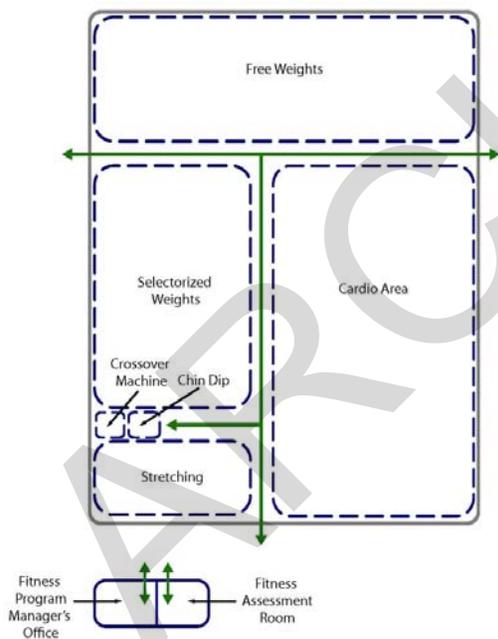


Figure 8 Cardio/ Weight Room Adjacency Diagram

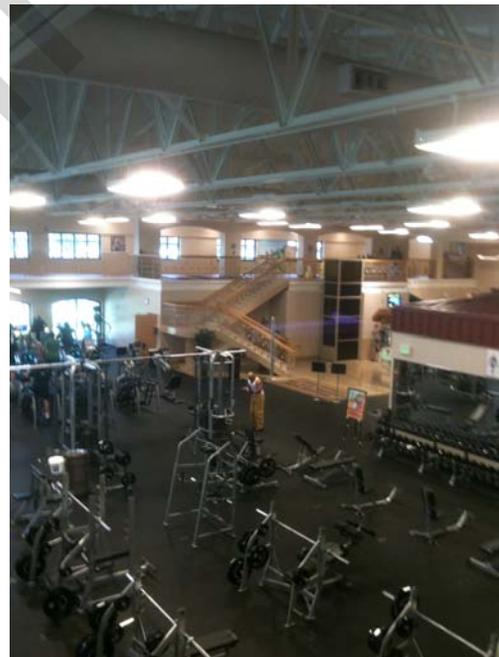


Figure 9 Cardio/ Weight Room

Refer to usafservices.com for information regarding AF equipment standards.

When the HAWC is collocated, Fitness and Sports Center equipment serves the HAWC equipment demonstration functions.

Consider providing a computerized interactive fitness station (or a card file), used by customers, to store workout routines, workout logs, and schedules.

Provide the following:

- Provide sound-absorbing materials to reduce echo.

4-4.1 Fitness Program Manager's Office

Locate this securable office near the fitness activity areas. This should be a private office with seating for visitors. If possible, a window for viewing the activity areas; include blinds for privacy during testing. The office may also be used for fitness testing and counseling.

4-4.2 Fitness Assessment Room

This room is intended for a fitness staff member to evaluate an individual's overall fitness. Place them adjacent to the Fitness Program Manager's office. Provide the following:

- Fitness assessment equipment.
- Computer with network connections and printer.
- Standard finish furniture.

4-5 TRACK

A track is a core feature; the installation determines whether an indoor or outdoor track best meets the needs for the local climate. For outdoor tracks refer to UFC 4-750-02, *Outdoor Sports and Recreational Facilities*, http://www.ccb.org/docs/UFC/4_750_02.pdf, and the annual Fitness Assessment requirements. The indoor track should not interfere with building circulation.

4-6 HEALTH AND WELLNESS CENTER (HAWC)

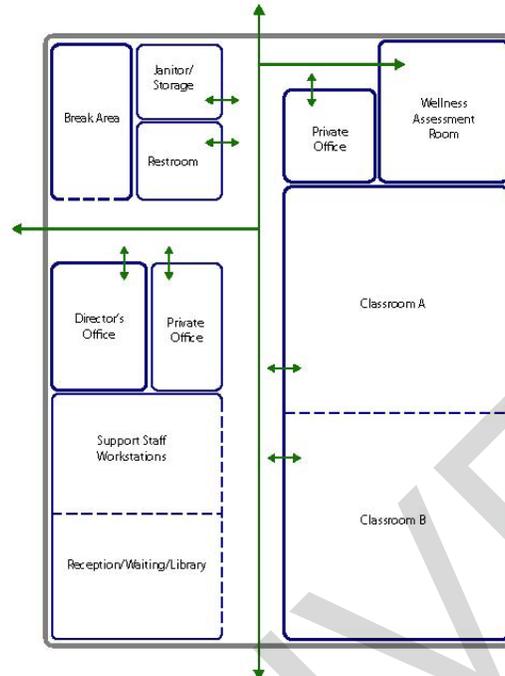


Figure 10 Health and Wellness Center (HAWC) Adjacency Diagram

The Health and Wellness Center (HAWC) is a core space at main operating bases, but not at Reserve installations. The HAWC is the physical location for the AF Health Promotion Programs (HPP). The AF HPP supports unit commanders in cultivating a healthy, fit and resilient force by focusing on five target areas:

- tobacco cessation and prevention
- healthy weight
- optimal nutrition
- physical activity
- community partnerships

AF Health Promotion also advocates for healthy communities to support active duty personnel and their families in achieving healthier lifestyles, and increased workforce productivity. Based on local needs, determine whether the HAWC should be accessible from both the exterior and interior of the fitness facility.

4-6.1 Office Space

At a minimum, three private HAWC offices are needed for a director and two Program Managers. These private offices are utilized for testing, private counseling, and program management. Private Offices for counseling must meet Health Insurance Portability and Accountability Act (HIPPA) standards. At larger facilities, add additional private or semi-private offices to accommodate local staff.

4-6.2 Classroom

An, enclosed, securable large classroom for HAWC classes, particularly the mandatory Balance Eating-Workout Effectively- Live Long (BE WELL) program meetings, training, etc.

4-6.3 Wellness Assessment Room

This room is intended for a Program Manager to evaluate an individual's overall fitness. Provide the following:

- Testing equipment to include heart rate monitor, mats, cardiovascular equipment etc.
- Testing computer with data connection.

Provide the following utility support:

- Individually zone room for HVAC.

4-6.4 Janitor Closet/Storage/Restrooms

Consider adding restrooms and janitor closet if not convenient from the fitness center. See UFC 4-740-02 Janitors Closet for design requirements:

4-6.5 Equipment Demonstration Room

If not collocated with the Fitness Center, include a room approximately 400 square feet, to accommodate cardiovascular equipment and minimal strength conditioning equipment for customer demonstration.

4-6.6 Restrooms and Changing Areas

If not collocated with the Fitness Center, restrooms and changing areas must be provided.

4-7 ENHANCED AREAS

This section provides information on enhanced areas that may be included in addition to the mandatory core areas of a fitness facility. These enhanced spaces may be included at the discretion of each installation commander, provided that all core space requirements have been met. These areas will be different at every installation depending on the unique requirements of each base. Customer survey feedback data can be used to justify the need for enhanced areas. The enhanced areas at each facility should be integrated into the master plan to take advantage of design opportunities. For example, a climbing wall could be used to create a dramatic focal point, or a climbing machine could be used to meet this need if space is limited.

The location of enhanced areas depends upon the specific layout of the fitness facility. Certain areas for enhanced activities such as a rock-climbing wall or machine should be located within core areas, such as the gymnasium. These types of activities should be within sight of the control point. The following are examples of enhanced areas:

- Lap Pool
- DV (Distinguished Visitors) Lockers
- Family Locker Room

- Parent/Child Area (PCA)
- HAWC Kitchen/Food Demonstration Area
- Massage Room
- Expanded Retail Area
- Juice Bar
- Outdoor Fitness Trail or Par Course

4-7.1 Lap Pool

The design of a pool requires specialized knowledge, expertise, and close coordination between the design team members. Attention to the long-term performance of the building systems in the pool area is critical.

Design pools to meet competition requirements with a minimum of six lanes 13,71 m wide by 22.86 m long (45 LF wide by 75 LF long).

Consider climate and additional staff funding requirements when justifying the requirements for an indoor pool. Lifeguard requirements must be locally or MAJCOM funded.

The pool should be deep enough for water aerobics. It should be securable. The pool should be directly accessible from the locker rooms and a shower area should be provided as a transition. Provide a spectator area with a separate entrance, if required.

There should be no diving areas. Consider incorporating coiling overhead doors to allow the pool area to be opened up to the outside.

Provide the following:

- As much natural lighting as possible.
- Slip and moisture resistant materials.
- Moveable starting block mounts and lane markers.
- Adequate storage for floats, flippers, life vests, lane markers, etc. in securable storage areas.
- Proper storage/display of safety equipment, e.g., backboards, rescue tubes, etc.
- Readily accessible storage for skimmers and other pool equipment within pool maintenance area.
- Lifeguard stations.
- Handicapped access to the pool.
- Staff office (if necessary).

Figure 11 Lap Pool



- Telephone communications.
- A computer, network connections, and shared printer.
- Standard finish furniture durable in a pool environment.

Provide the following utility support:

- Connections for time clock, public address system and scorer's table.
- Proper humidity control.

4-7.2 Enhanced Locker Rooms

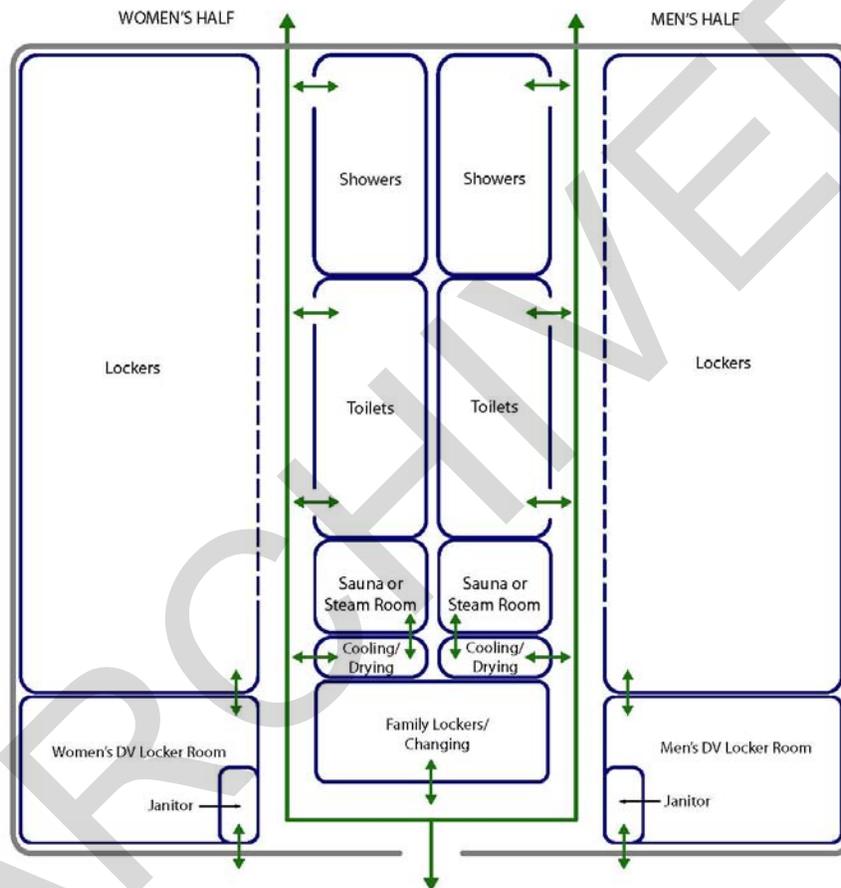


Figure 12 Enhanced Locker Rooms Adjacency Diagram

Provide male and female DV locker rooms independent from the core locker rooms with access into main locker rooms for easy access to sauna or steam room. These rooms may be adjacent to, but visually separate from group locker rooms. Provide a separate Family Locker Room.

See modules for shower, locker and dressing rooms in section 4-4. Additionally, provide private showers, dressing stalls, vanity countertop, lavatories, and toilet area.

4-7.3 Parent/Child Area (PCA)

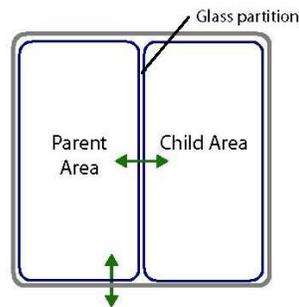


Figure 13 Parent/ Child Area Adjacency Diagram

Coordinate all aspects of this space with the local Airman and Family Services Flight when designing the PCA.

4-7.4 HAWC Kitchen/Food Demonstration Area

This demonstration room should be located adjacent to the classroom. Provide the following:

- Space for classroom/participant seating for at least 10 participants.
- If space does not exist provide break area.

4-7.5 Outdoor Fitness Trail or Parcourse

This area may be identified solely for walking/jogging or combined with calisthenics stations to provide a variety of outdoor physical fitness activities for individual and Unit PT use. Provide the following:

- Durable, weather resistant running surface, e.g., polyurethane.
- Signage marking the length of the course/trail.
- Calisthenics stations, as desired, with appropriate equipment and signage.
- Electric water coolers at appropriate intervals

CHAPTER 5 - ILLUSTRATIVE DESIGNS

This chapter contains examples of a typical fitness facility that conforms to the requirements and the functional relationship guidelines found in the rest of the guidebook. Use these examples to see how a fitness facility works, how the building relates to the site, and how the elements relate to each other. The plans also show how a fitness facility can be arranged and how an expansion can be accommodated while maintaining the same functional relationships and circulation system. The schedules and tables included in this chapter provide guidance on the recommended space, finishes, lighting levels, and HVAC requirements appropriate for each space.

Dynamic Prototypes: Building Information Model

The intent of the Dynamic Prototype BIM (Building Information Model) is to describe the process for utilizing the electronic design tool to improve efficiency and effectiveness in the implementation of the Air Force Facilities Design Guide for Fitness Center (AFFDG-FC) and the Unified Facilities Criteria for Fitness Center (UFC-FC). This Dynamic Prototype is a flexible design model that leverages the advantages of BIM to standardize components of a building type (in this case a fitness center) through a schematic 3D model. Design models can vary from performance criteria to prescriptive criteria depending on the number of variables. For a fitness center the prototype is utilizing a kit-of-parts approach. The kit-of-parts model contains an Architecture model with the intent that other disciplines will be added as the A/E develops the site.

Program Assumptions:

- Each module is designed based on its specific function.
- Medium 2, Large, and Mega 2 building sizes are the basis for conceptual design and sizing requirements. Square footages of rooms change according to building size however, adjacencies between spaces remain the same. Floor plans shown below illustrate the Large building size and are not to scale.
- Space calculator spreadsheet is the governing factor for both the gross and net living area
- All areas are open to adjustment to comply with relationships between groups
- Mechanical, Electrical, Telecommunication, and other building utility spaces will need to be designed and integrated depending upon the location and specific installation requirements.
- Between the Air Force Facilities Design Guide for Fitness Center and the Unified Facilities Criteria for Fitness Center, the Unified Facilities Criteria for Fitness Center will govern with any discrepancy
- It is recommended by the design guide to use structural systems that allow for flexibility and expansion, minimize the number of load bearing walls to allow for reconfiguration, and to use structural systems that allow for large column free areas. All building systems should be explored based on installation-specific requirements.
- Building envelope systems may be applied based on installation-specific requirements.
- All unit configurations have been approved by the appropriate Air Staff.
- Other reconfigurations of the units must meet the requirements listed in the Air Force Facilities Design Guide for Fitness Center and the Unified Facilities Criteria for Fitness Center.

INDIVIDUAL MODULES (Large Size)

Figure 14 Entry/ Vestibule

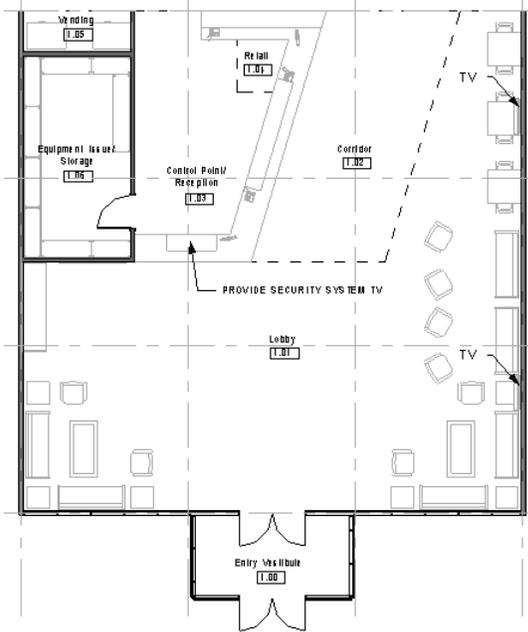


Figure 15 Administration

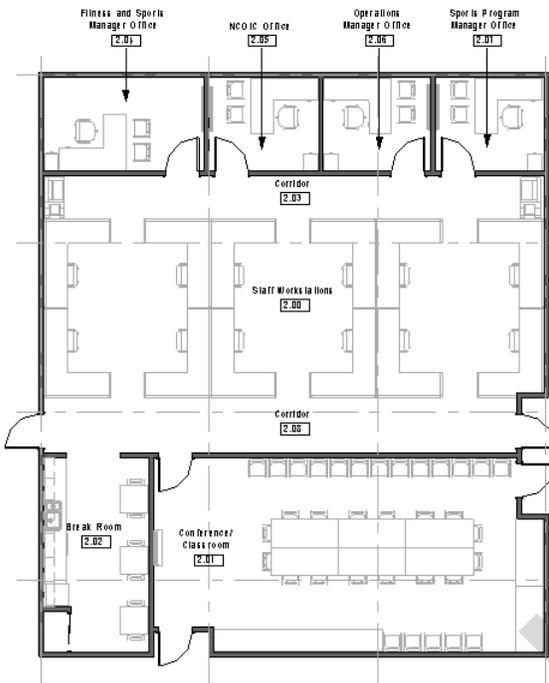


Figure 16 Health and Wellness Center (HAWC)

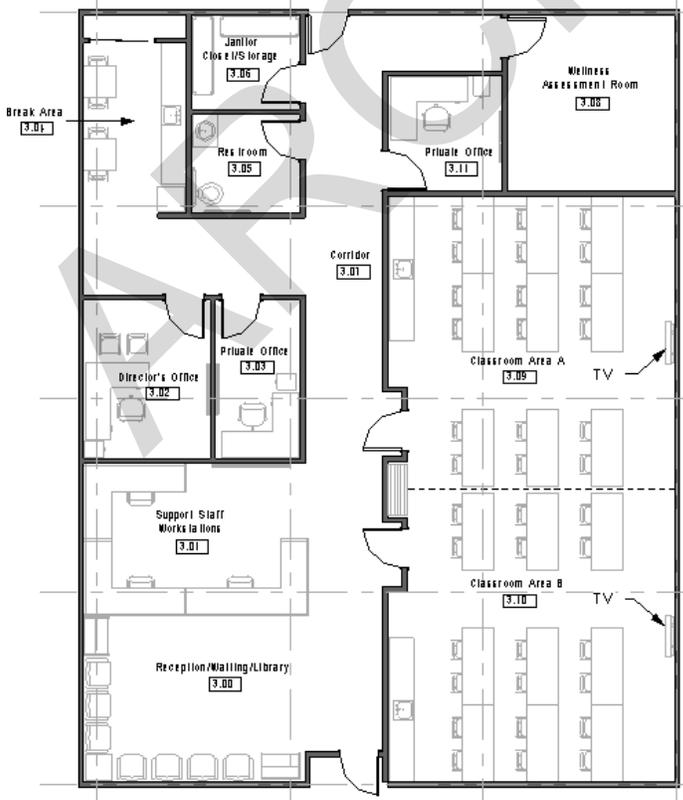


Figure 17 Fitness Assessment Center (FAC)



Figure 18 Restrooms

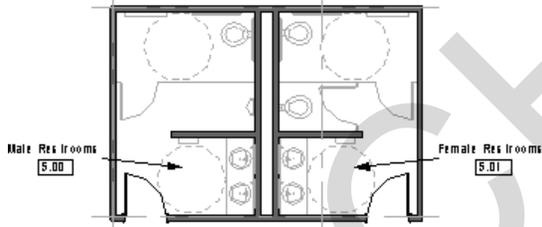


Figure 19 Stairs

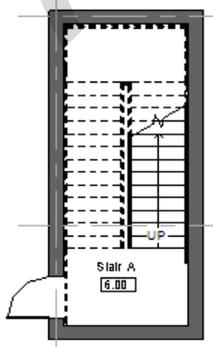


Figure 20 Support

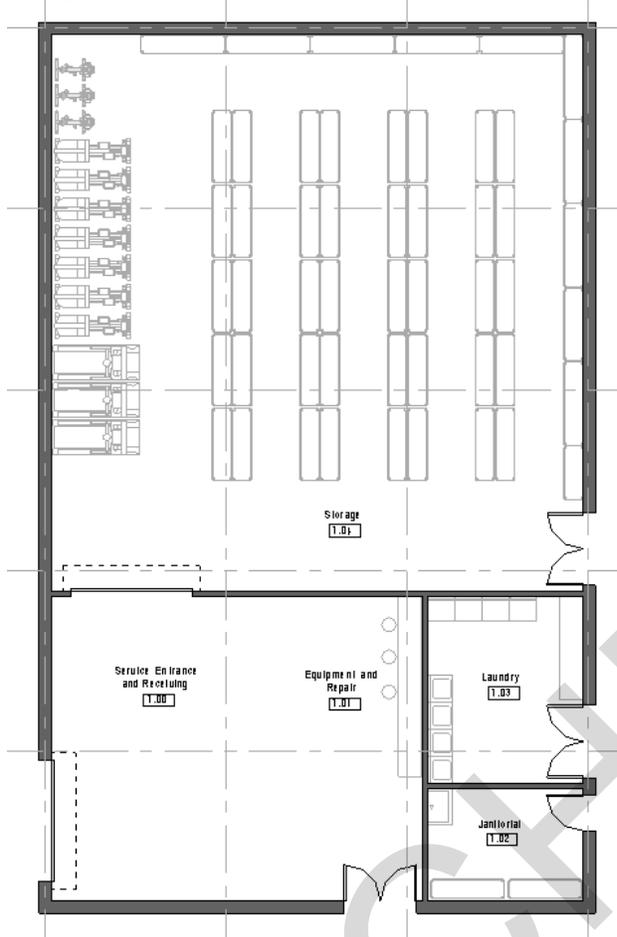


Figure 21 Racquetball

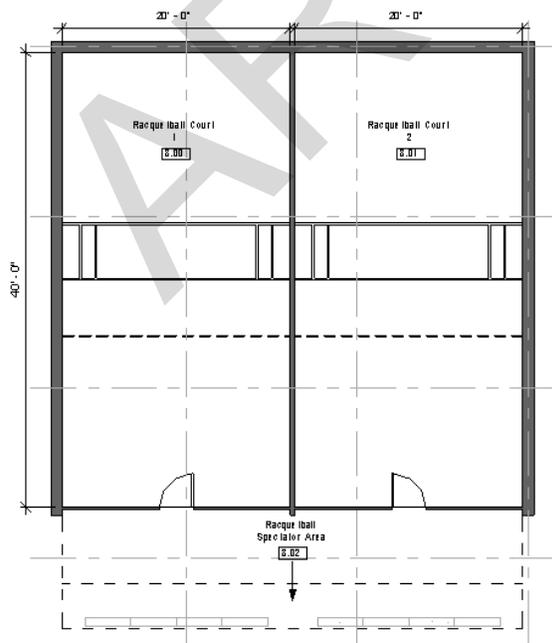


Figure 22 Group Exercise

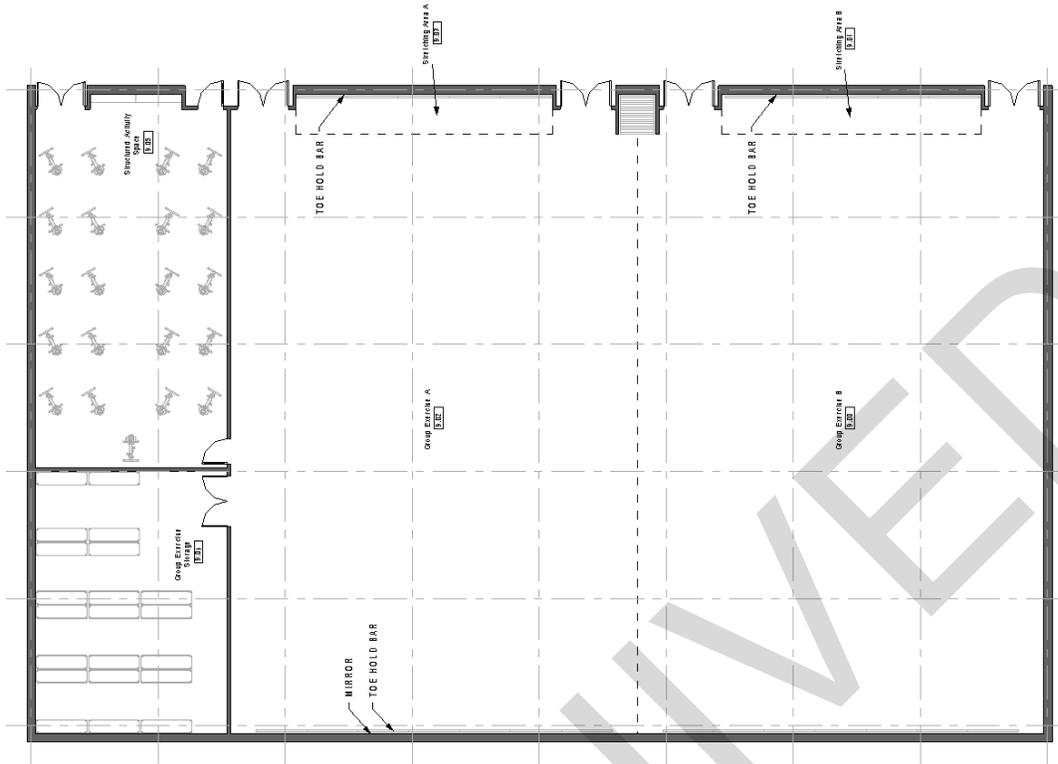


Figure 23 Cardio/ Weight Room

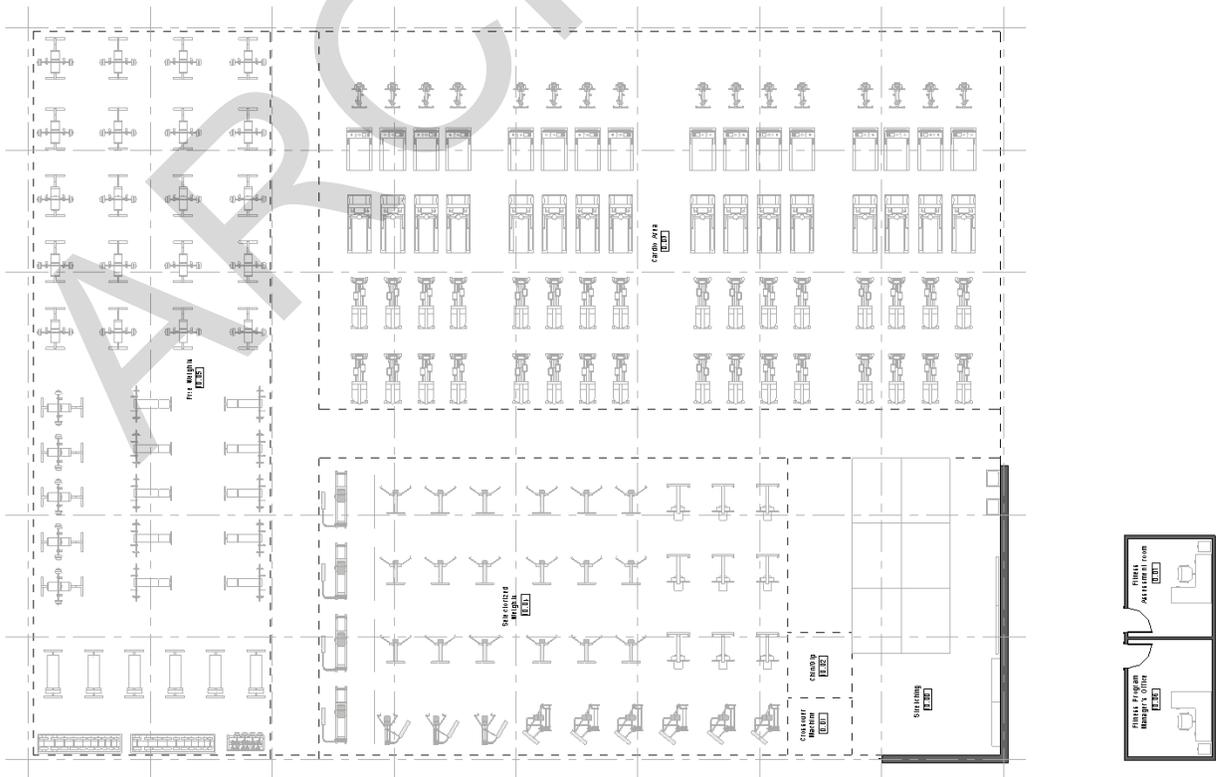


Figure 24 Locker Rooms

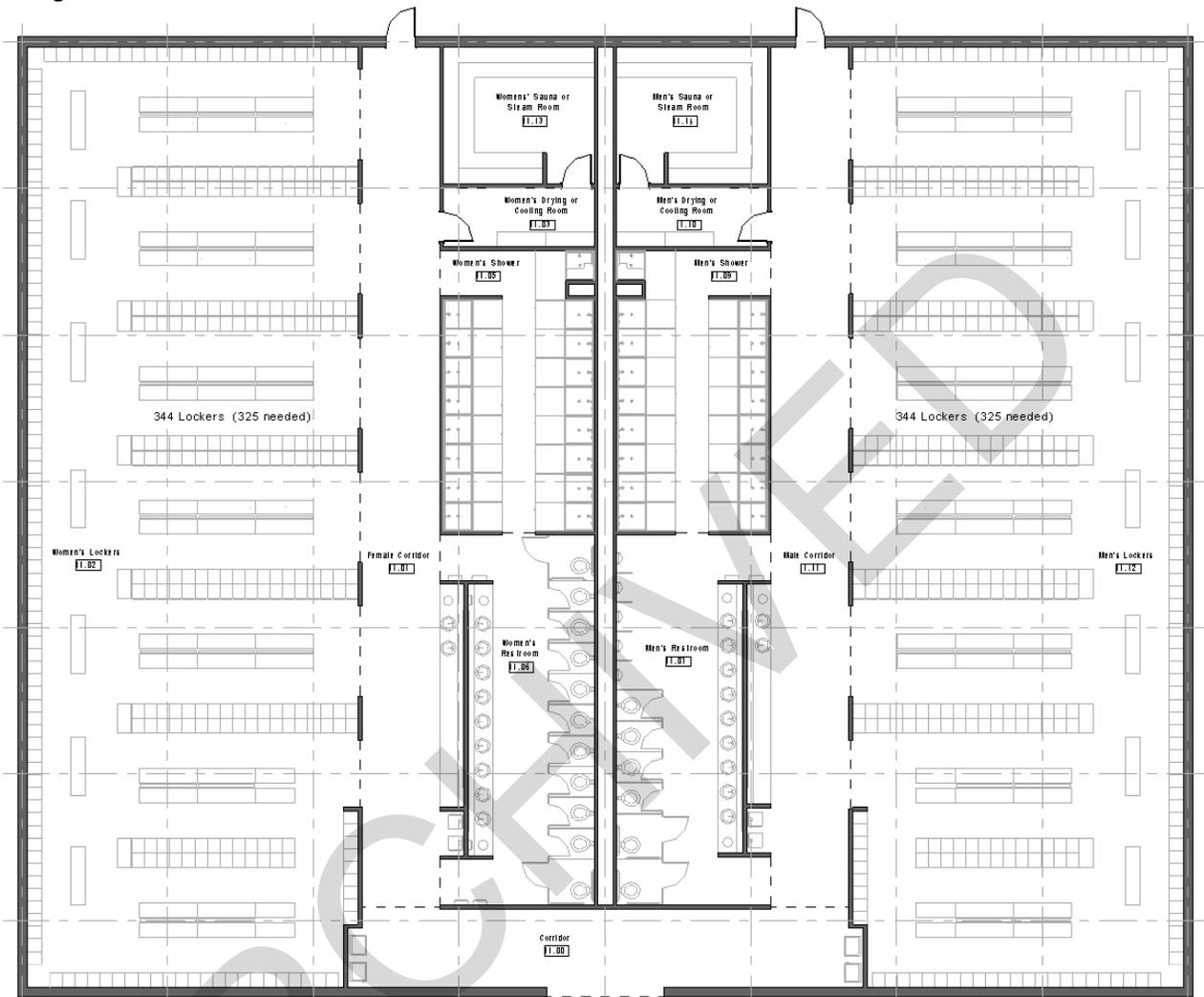


Figure 25 Track A

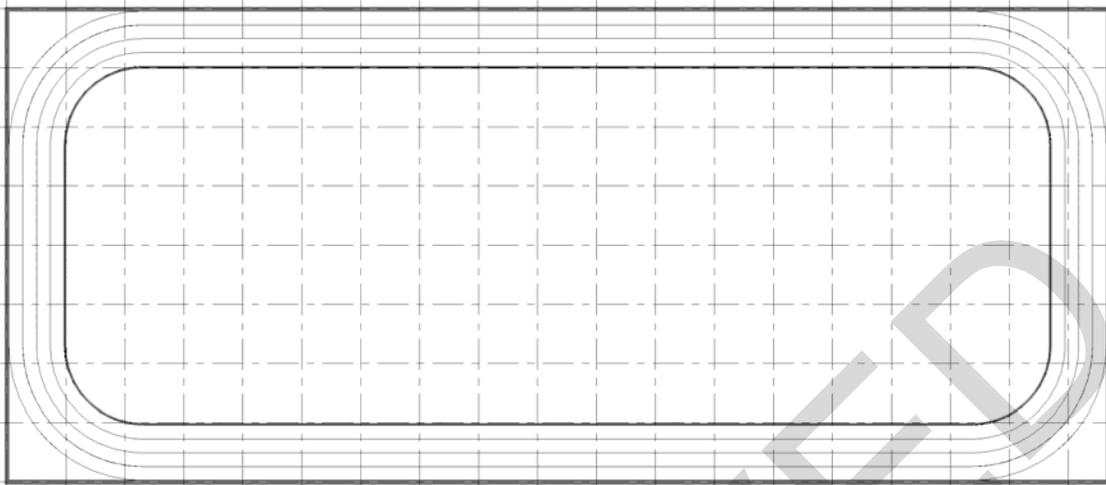


Figure 26 Track B

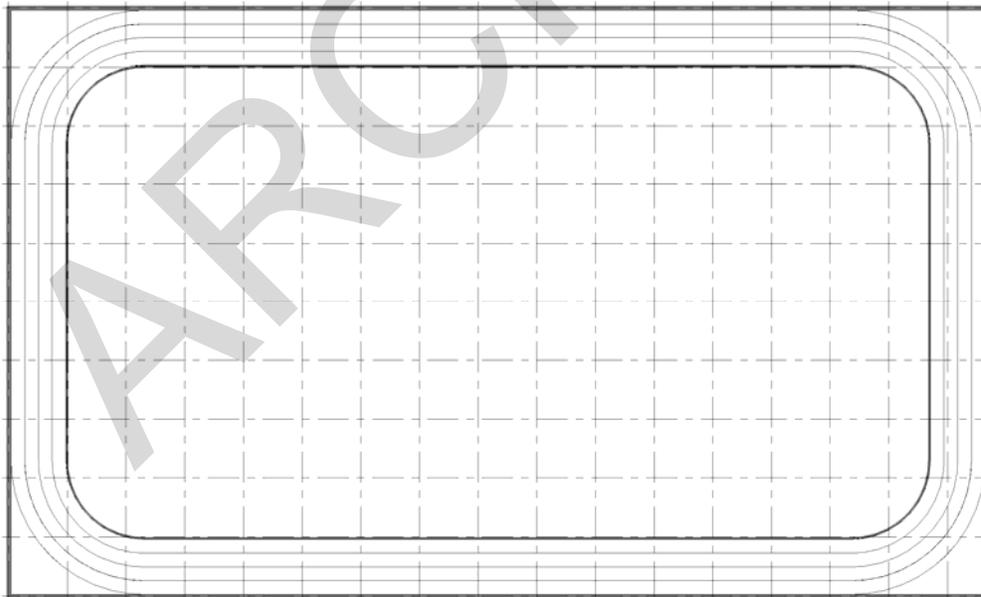


Figure 27 Basketball Court A

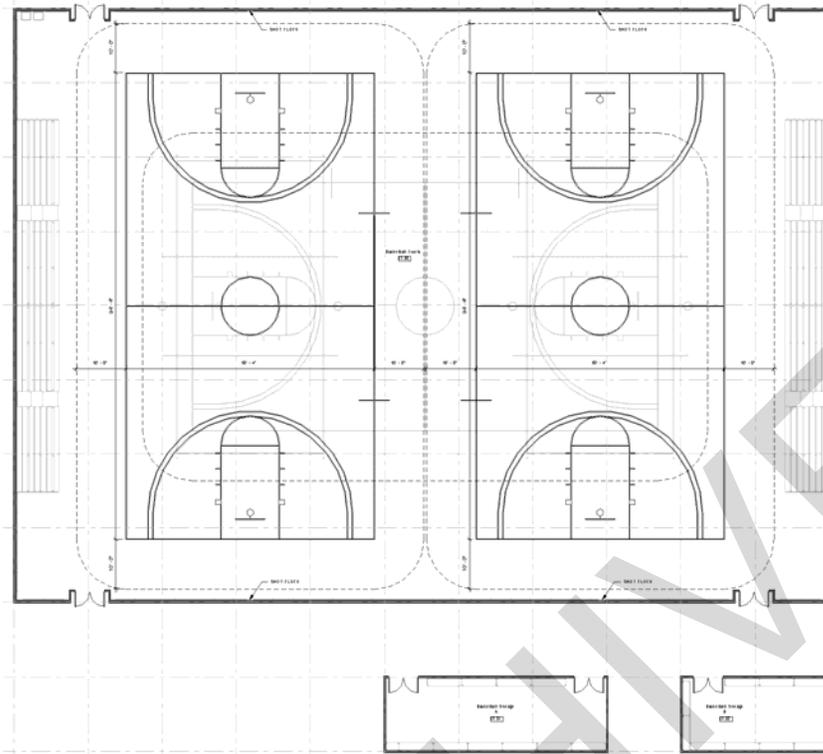
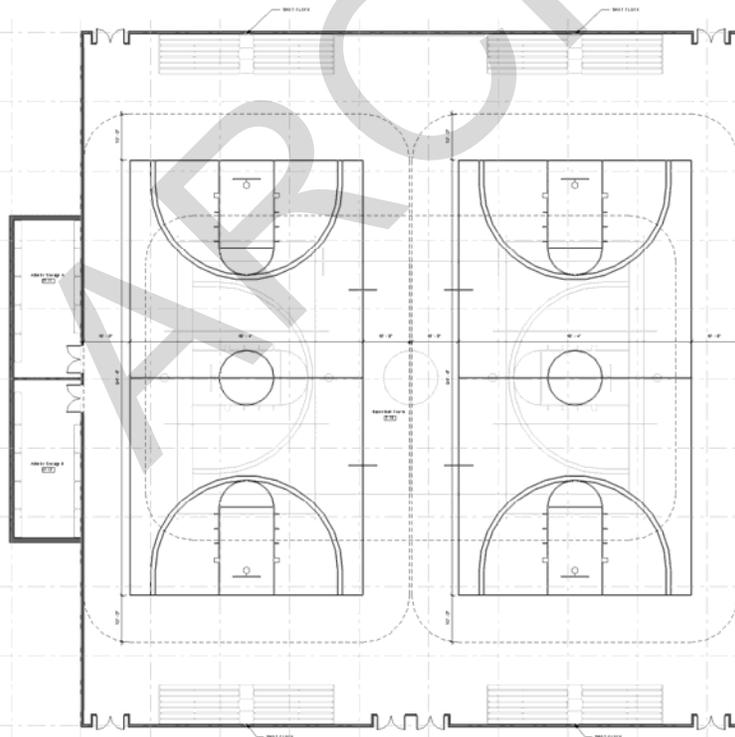


Figure 28 Basketball Court B



ENHANCED INDIVIDUAL MODULES (Large Size)

Figure 29 Enhanced Entry/ Vestibule with Juice Bar

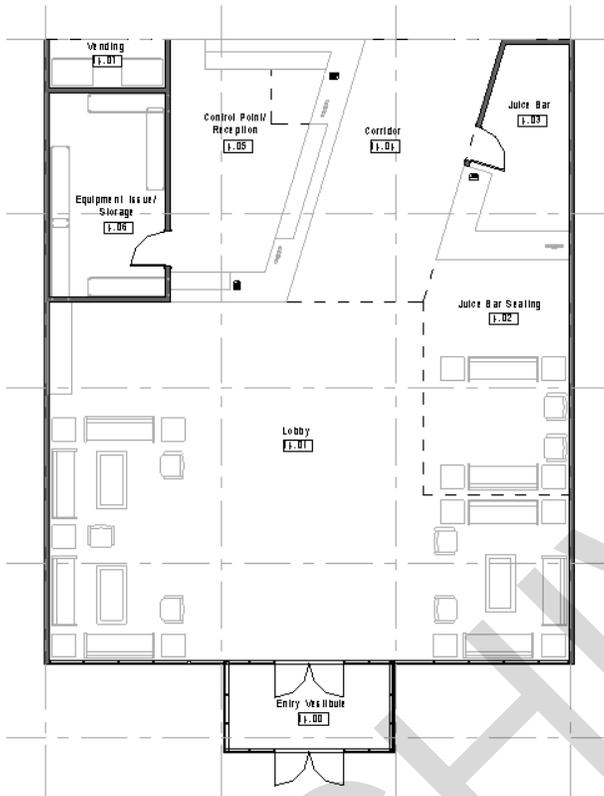


Figure 30 Expanded Retail Area for Entry/ Vestibule



Figure 31 Parent Child Area

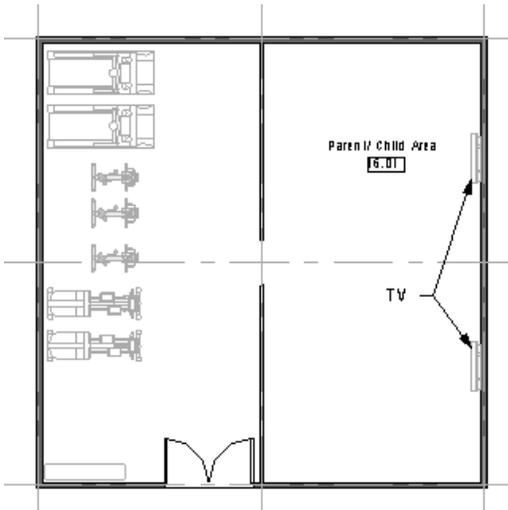


Figure 32 Massage Room

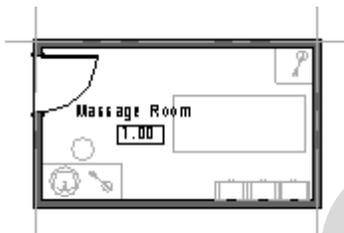
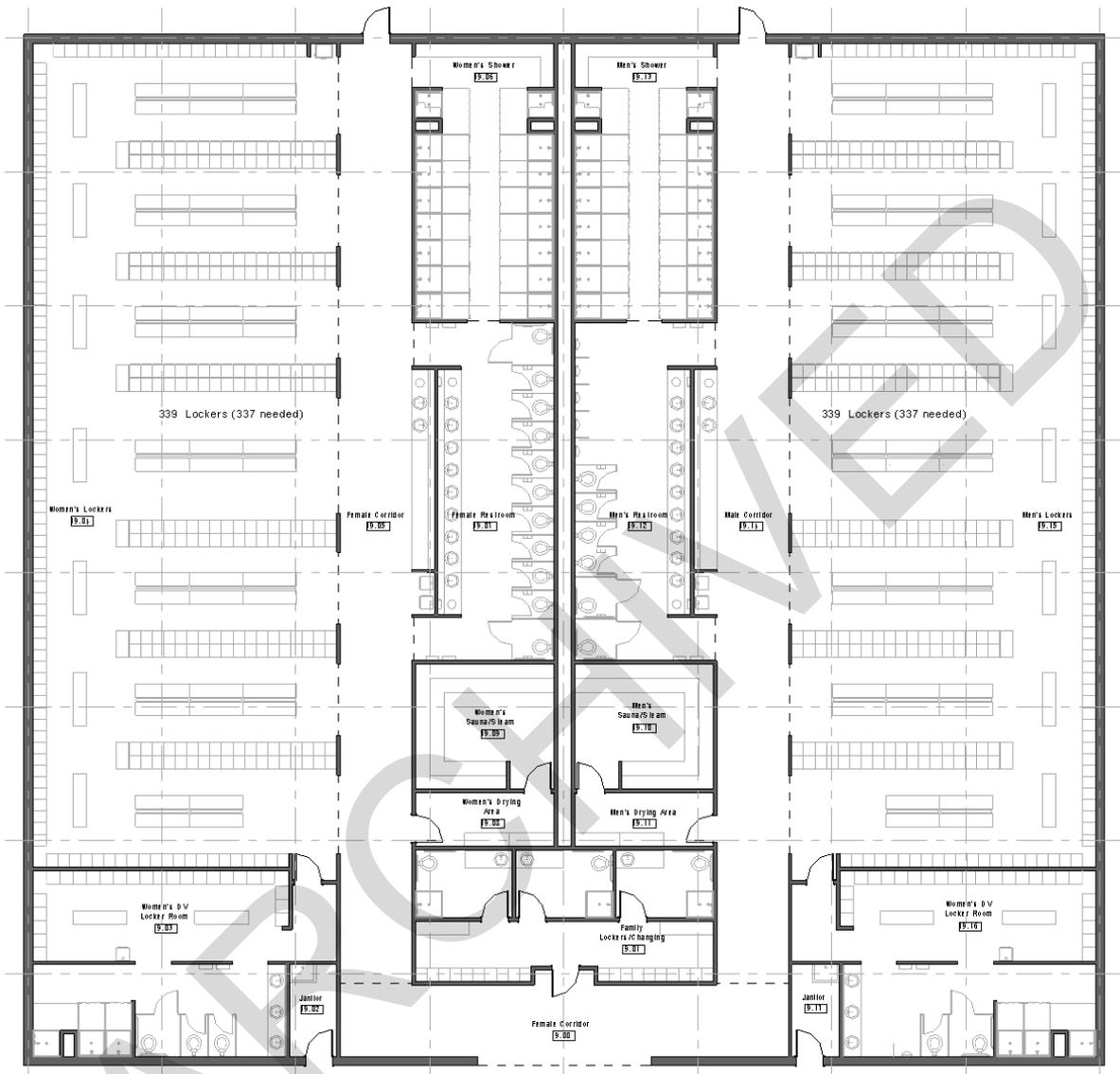


Figure 33 Additional Stretching Area



Figure 34 Enhanced Locker Rooms with DV Lounges & Family Room



EXAMPLE MEGA MODULES AND BUILDING FLOOR PLANS

Mega Modules and Building Floor Plans are shown to illustrate options for arranging the individual modules. They are not intended to constitute a final design.

Figure 35 Medium 2 Size - Mega Modules

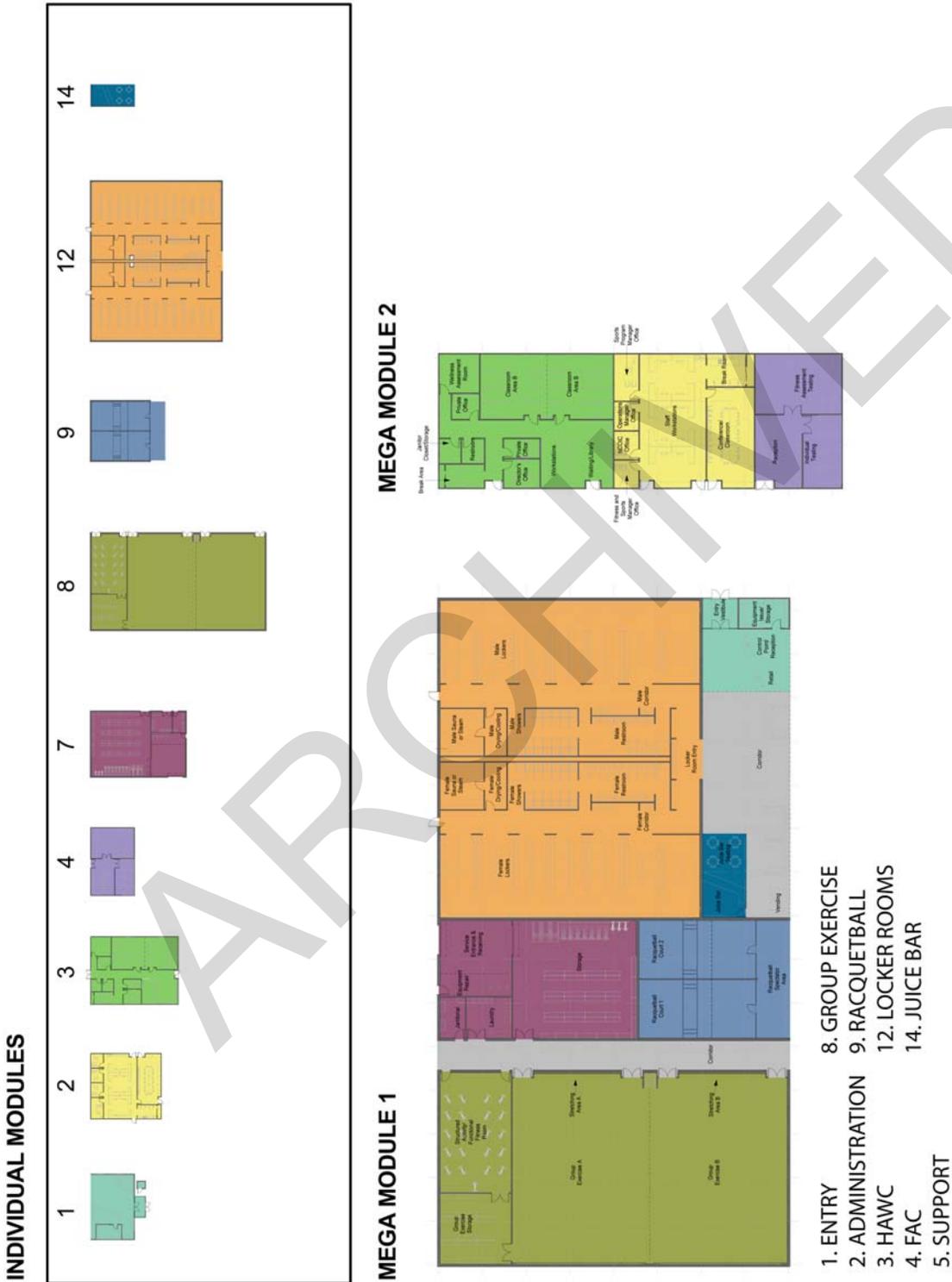


Figure 36 Medium 2 Size - Building First Floor Plan

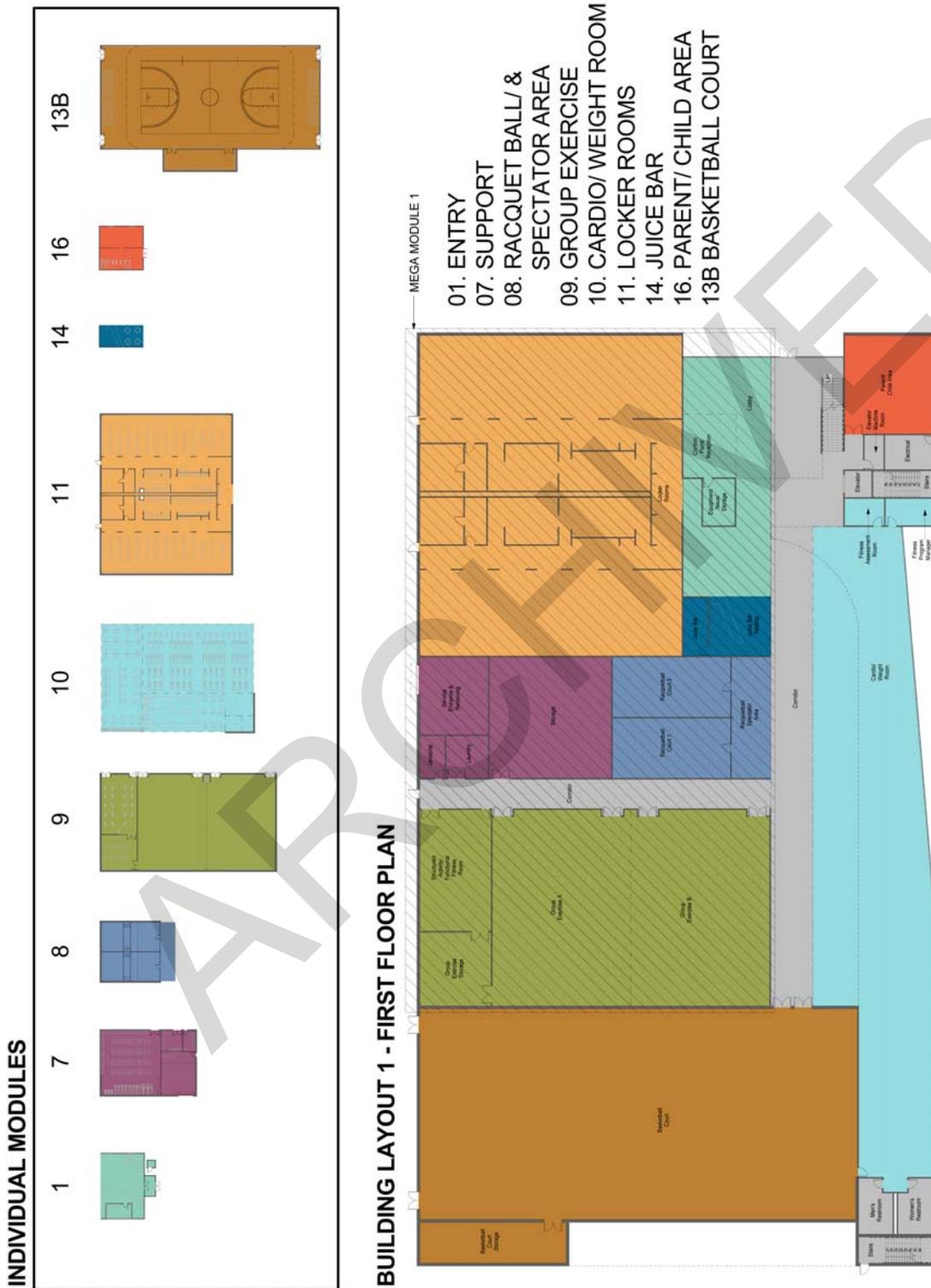


Figure 37 Medium 2 Size - Building Second Floor Plan

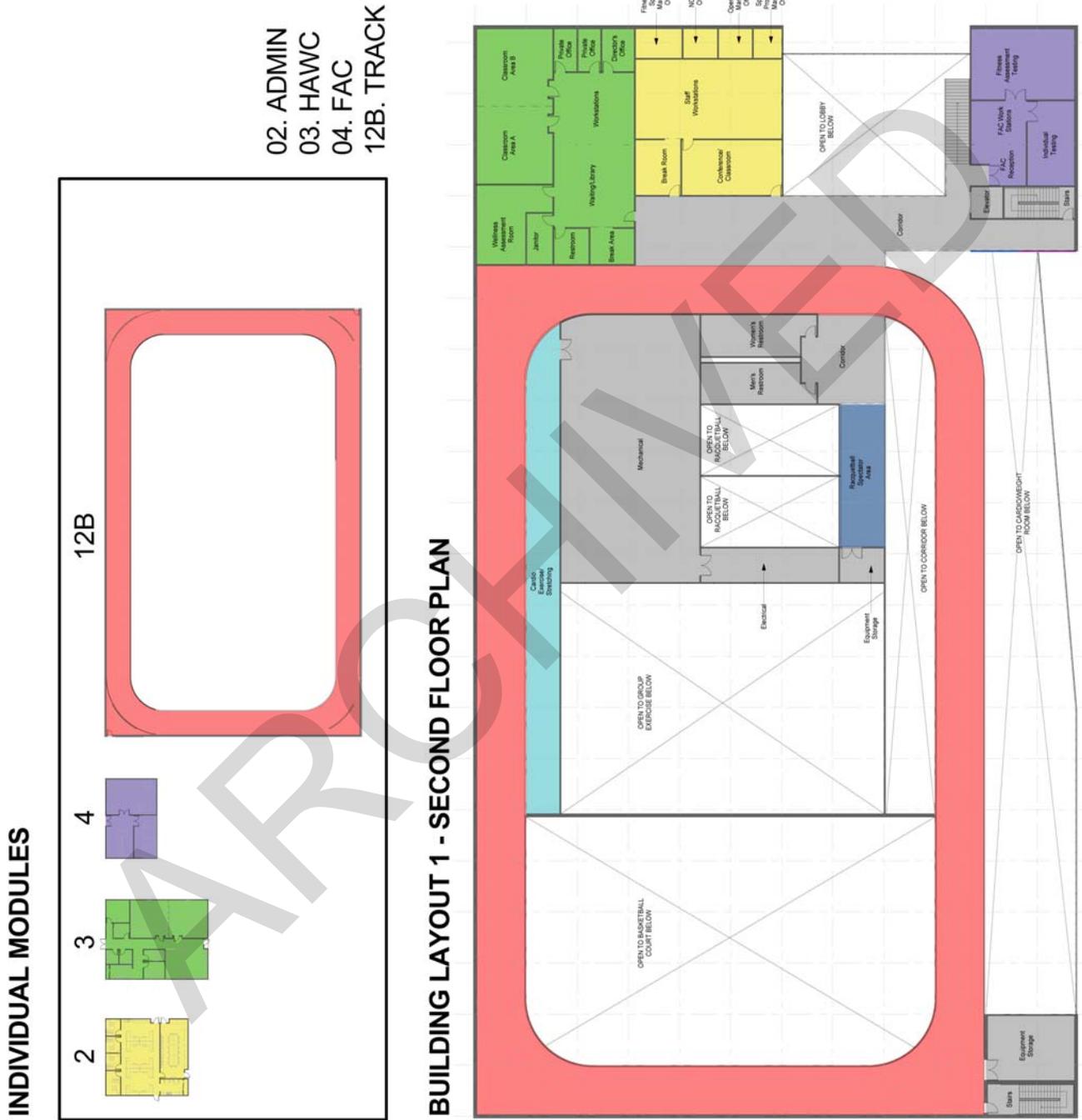


Figure 38 Large Size - Mega Module

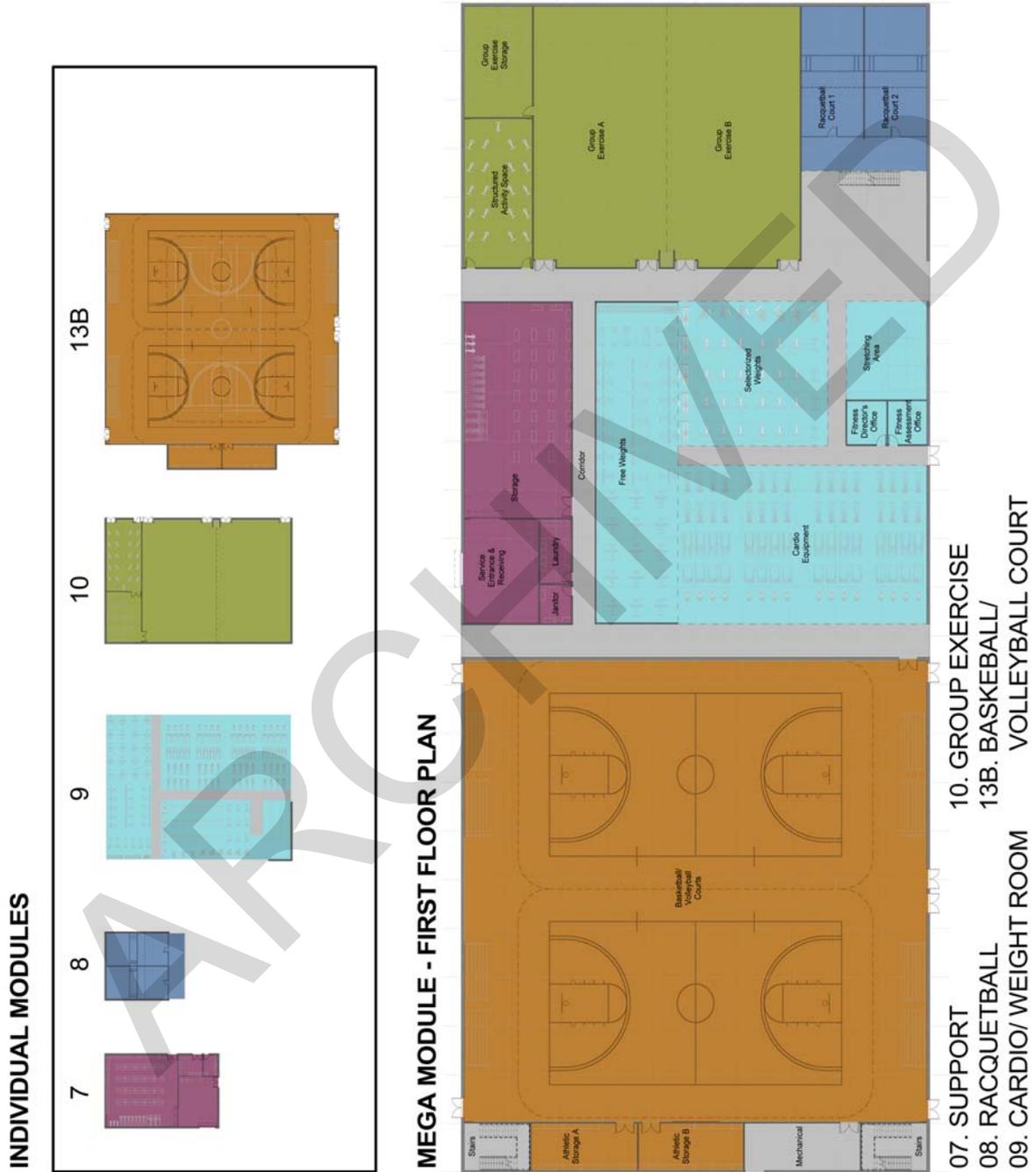


Figure 40 Large Size - Building Second Floor Plan

BUILDING 1 - SECOND FLOOR PLAN

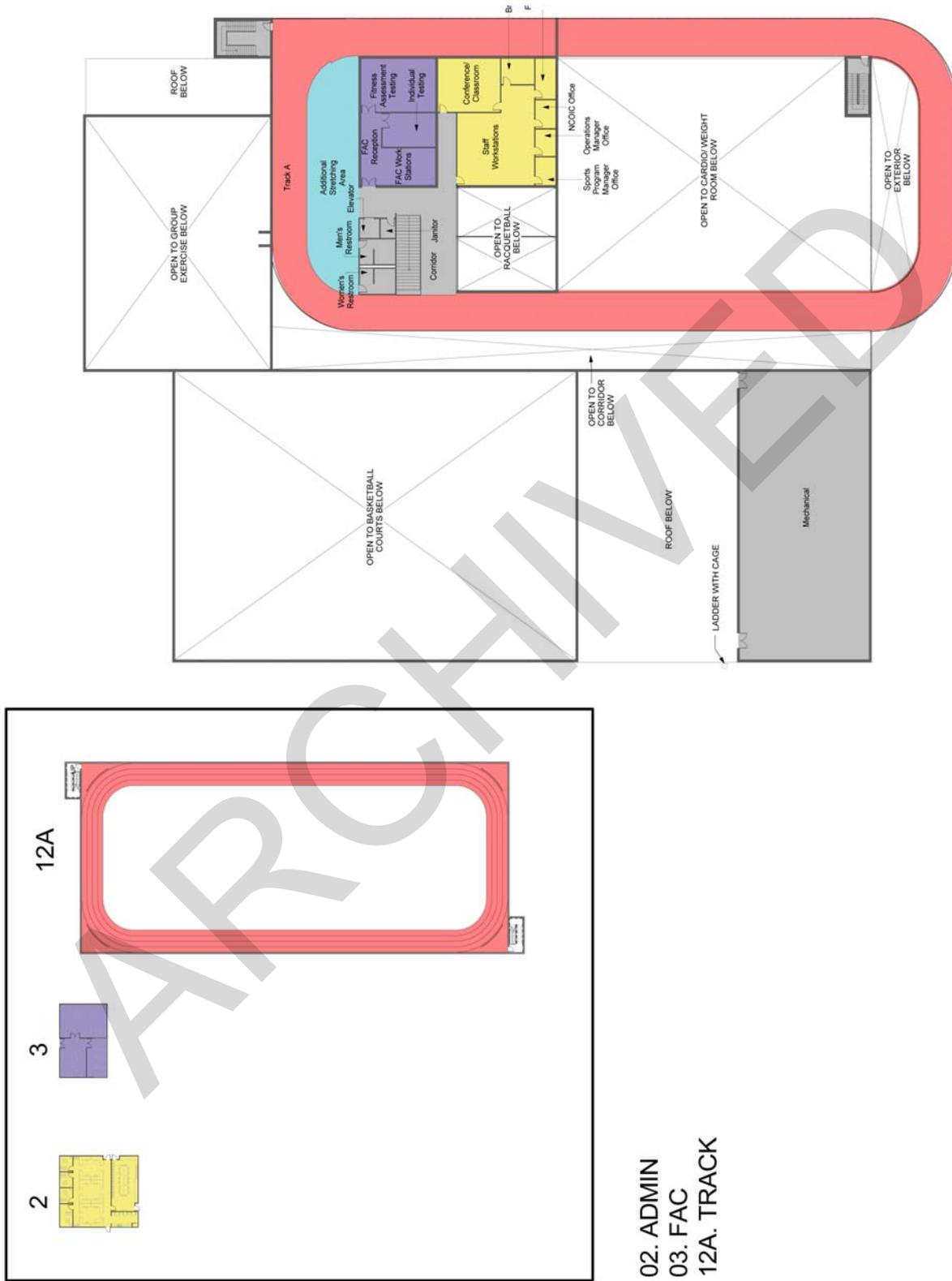


Figure 41 Mega 2 Size - Mega Module

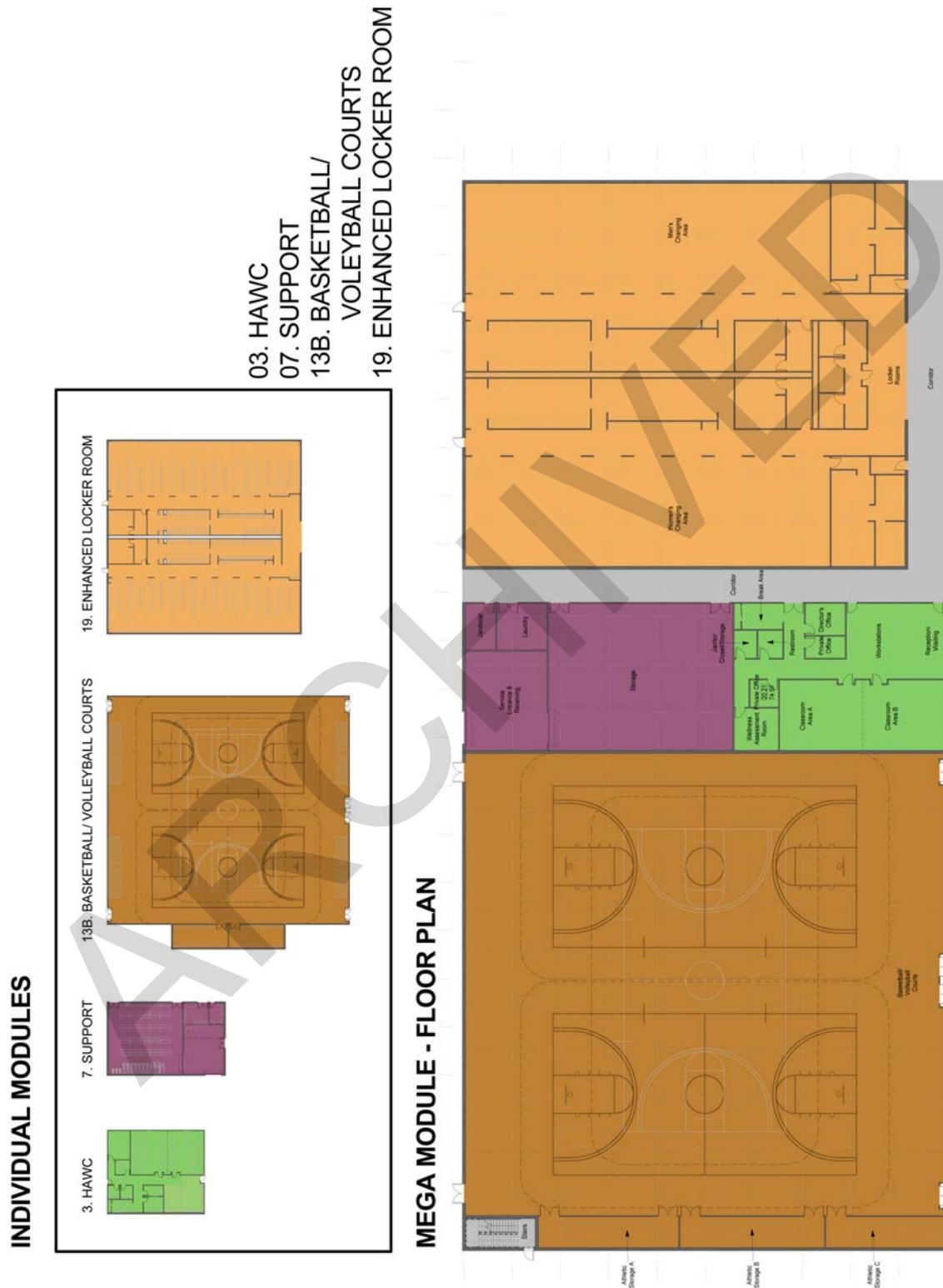
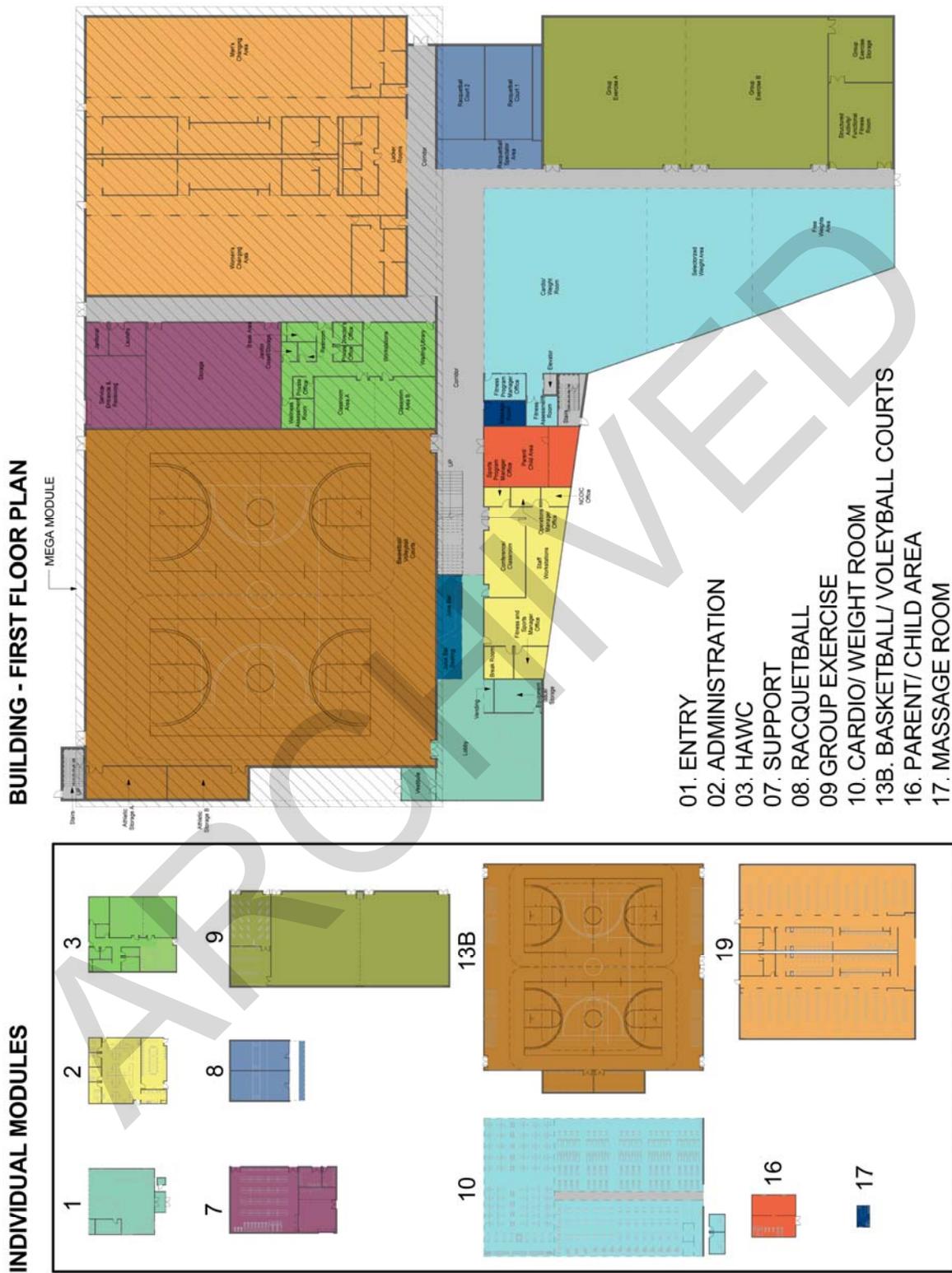


Figure 42 Mega 2 Size - Building First Floor Plan



CHAPTER 6 - RESOURCES AND LINKS

This chapter provides a list of references, including other Air Force, Department of Defense and national standards documents that give related guidance, to be used in conjunction this design guide.

6-1 Government

10 CFR 435, Performance Standard for new Federal Buildings

Americans with Disabilities Act Accessibility Guidelines ADAAG: <http://www.access-board.gov/adaag/html/adaag.htm>

EPA website: <http://www.epa.gov/cpg/products>

UFAS, Uniform Federal Accessibility Standards UFAS: <http://www.access-board.gov>

6-2 Department of Defense Publications:

DOD 5100.76-M, Design Guide for Physical Security of Facilities

DODI 6055.6, Department of Defense Fire Protection Program

DOD MIL-HDBK-1190, Facility Planning and Design Guide: <http://www.ccb.org/>

UFC 3-120-01, Design: Air Force Sign Standard:
http://65.204.17.188/report/doc_ufc.html

UFC 1-200-01, Design: General Building Requirements:
http://65.204.17.188/report/doc_ufc.html

UFC 3-520-01, Design: Interior Electrical Systems:
http://65.204.17.188/report/doc_ufc.html

UFC 3-530, Lighting Design and Controls: http://65.204.17.188/report/doc_ufc.html

UFC 3-550-01, Exterior Electric: http://65.204.17.188/report/doc_ufc.html

UFC 3-600-01 Design: Fire Protection for Facilities Engineering Design and Construction:
http://65.204.17.188/report/doc_ufc.html

UFC 4-010-01, Design: DOD Minimum Antiterrorism Standards for Buildings:
http://65.204.17.188/report/doc_ufc.html

UFC 4-740-02, Design: Fitness Centers: http://65.204.17.188/report/doc_ufc.html

UFC 4-750-02N, Design: Outdoor Sports and Recreational Facilities:
http://www.ccb.org/docs/UFC/4_750_02.pdf

6-3 Department of the Air Force

AFI 36-2905, Fitness Program

<http://www.e-publishing.af.mil/pubfiles/af/10/afi10-248/afi10-248.pdf>

AFPD 23-3, [Air Force Energy Management](#)

<http://www.e-publishing.af.mil/pubfiles/af/23/afpd23-3/afpd23-3.pdf>

AFI 31-209, [Protection of USAF Resources](#)

AFPD 32-10, Installations and Facilities: <http://www.e-publishing.af.mil/pubfiles/af/32/afpd32-10/afpd32-10.pdf>

AFPAM 32-1010, Land Use Planning: <http://www.e-publishing.af.mil/pubfiles/af/32/afpam32-1010/afpam32-1010.pdf>

AFI 32-1021, [Planning and Programming of Facility Construction Projects](#): <http://www.e-publishing.af.mil/pubfiles/af/32/afi32-1021/afi32-1021.pdf>

AFI 32-1023, [Design and Construction Standards and Execution of Facility Construction Projects](#):

<http://www.e-publishing.af.mil/pubfiles/af/32/afi32-1023/afi32-1023.pdf>

AFI 32-1024, [Standard Facility Requirements](#): <http://www.e-publishing.af.mil/pubfiles/af/32/afi32-1024/afi32-1024.pdf>

AFI 32-1032, [Planning and Programming Real Property Maintenance Projects Using Appropriated Funds \(APF\)](#): <http://www.e-publishing.af.mil/pubfiles/af/32/afi32-1032/afi32-1032.pdf>

AFH 32-1084, [Facility Requirements](#): <http://www.e-publishing.af.mil/pubfiles/af/32/afh32-1084/afh32-1084.pdf>

AFH 32-1163 (I), Engineering Weather Data

AFJMAN 32-1090, [Noise and Vibration Control](#)

AFI 32-1022, Planning and Programming of Nonappropriated Fund Facility Construction Projects:

<http://www.e-publishing.af.mil/pubfiles/af/32/afi32-1022/afi32-1022.pdf>

AJMAN 32-1058, Masonry Structural Design for Buildings: <http://www.e-publishing.af.mil/pubfiles/af/32/afji32-1058/afji32-1058.pdf>

AFI 32-7062, USAF Comprehensive Planning: <http://www.e-publishing.af.mil/pubfiles/af/32/afi32-7062/afi32-7062.pdf>

AFI 33-111, Telephone Systems Management: <http://www.e-publishing.af.mil/pubfiles/af/33/afi33-111/afi33-111.pdf>

AFI 33-133, Joint Technical Architecture—Air Force JTA-AF: <http://www.e-publishing.af.mil/pubfiles/af/33/afi33-133/afi33-133.pdf>

AFI 34-105, Programming for Nonappropriated Fund Facility Requirements: <http://www.e-publishing.af.mil/pubfiles/af/34/afi34-105/afi34-105.pdf>

AFI 34-266, Air Force Fitness and Sports Programs: <http://www.e-publishing.af.mil/pubfiles/af/34/afi34-266/afi34-266.pdf>

AFI 40-101 Health Promotion Programs

AFI 64-101, Cable Television Systems on Air Force Bases: <http://www.e-publishing.af.mil/pubfiles/af/64/afi64-101/afi64-101.pdf>

AFI 65-106, Appropriated Fund Support of Morale, Welfare and Recreation and Nonappropriated Fund Instrumentalities: <http://www.e-publishing.af.mil/pubfiles/af/65/afi65-106/afi65-106.pdf>

6-3.1 Air Force Policies

ETL 94-4, Energy Use Criteria for Facilities in the Military Construction Program
<http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters>

ETL 01-1, Reliability and Maintainability R&M Design Checklist
<http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters>

ETL 01-12, Communications and Information System Criteria for Air Force Facilities
<http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters>

ETL 02-12, Communications and Information System Criteria for Air Force Facilities
<http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters>

ETL 03-2, Design Criteria for Prevention of Mold and Mildew in Air Force Facilities in Humid Climates
<http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters>

ETL 03-3, Air Force Carpet Standards
<http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters>

6-3.2 Air Force Guides

USAF Services Portal at
<https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=OO-DP-AE-12-35-14-16&Filter=OO-DP-AE-12>

Achieving Design Excellence http://www.wbdg.org/ccb/browse_cat.php?o=33&c=129

Air Force Cost Guides/Handbooks http://www.wbdg.org/ccb/browse_org.php?o=29

USAF Base Architectural Compatibility Guide
http://www.wbdg.org/ccb/browse_cat.php?o=33&c=129

USAF Environmentally Responsible Facilities Guide
<http://www.afcee.brooks.af.mil/eq/programs/progpage.asp?PID=27>

USAF Project Managers' Guide for Design and Construction
http://www.wbdg.org/ccb/browse_cat.php?o=33&c=129

[USAF Landscape Design Guide](#)
<http://www.afcee.brooks.af.mil/eq/programs/progpage.asp?PID=27>

USAF Master Landscape Construction Specifications
<http://www.afcee.brooks.af.mil/eq/programs/progpage.asp?PID=27>

USAF Sustainable Facilities Guide
<http://www.afcee.brooks.af.mil/eq/programs/progpage.asp?PID=27>

USAF Interior Design Guides
<http://www.afcee.brooks.af.mil/eq/programs/progpage.asp?PID=27>

HQ AFCEE Accessibility Page

JTA-AF Fixed Base Technical Architecture, Vol. 6, Building 1040 Wiring Architecture:
AFCESA

TIA/EIA 570 Residential Communications Standard with CAT 5 cable: AFCESA

6-4 RELATED NON-GOVERNMENT RESOURCES

ACSM - [American College of Sports Medicine Standards](#)

ASHRAE - [American Society of Heating, Refrigerating and Air-Conditioning Engineers
Fundamentals Handbook](#)

ASHRAE - Standard 62-89 Ventilation for Acceptable Indoor Air Quality

CBC - Certified Ballasts Manufacturers

DIN - [Deutsches Institute fur Normung Standards](#)

IES - [Illuminating Engineering Society's Illuminance Selection Procedure](#)

NFPA - [National Fire Protection Association](#)

NEC - [National Electrical Code](#)

NPC [National Plumbing Code](#)

Ramsey/Sleeper Architectural Graphic Standards (Current Edition)

CHAPTER 7 - ACRONYMS

ARB	Air Reserve Base
AAFES	Army-Air Force Exchange Service
ACSM	American College of Sports Medicine
ADAAG	Americans with Disabilities Act Architectural Guidelines
AED	Automatic External Defibrillator
AFCEE	Air Force Center for Engineering and the Environment
AFRCH	Air Force Reserve Command Handbook
ASHRAE	American Society of Heating Refrigeration and Air-Conditioning Engineers
CFR	Code of Federal Register
DIN	Deutsches Institute fur Normung
DOD	Department of Defense
DODEA	Department of Defense Education Activity
DV	Distinguished Visitor
EMCS	Energy Management and Control System
ETL	Engineering Technical Letter
FOUO	For Official Use Only
HAWC	Health and Wellness Center
HID	High Intensity Discharge
HQ AFSVA	Headquarters Air Force Services Agency
HVAC	Heating Ventilation and Air Conditioning
LEED	Leadership in Energy and Environmental Design
m ²	Square Meters
MAJCOM	Major Command
MERV	Minimum Efficiency Reporting Value
mm	Millimeters
NAF	Nonappropriated Fund
NCOIC	Non-commissioned Officer in Charge
O&M	Operations and Maintenance
OPR	Office of Primary Responsibility
PACAF	Pacific Air Force
PCA	Parent/Child Area

PCS	Permanent Change of Station
PT	Physical Training
RAMP	Requirements and Management Plan
RD/PMP	Requirements Document/Project Management Plan
sq. ft.	Square Feet
SVPAF	Fitness And Sports Branch (HQ AFSVA/SVORF)
SVXFB	Facilities Design Branch (HQ AFSVA/SVXFB)
TDY	Temporary Duty
UFAS	Uniform Federal Accessibility Standards
UPC	Uniform Plumbing Code
USAF	United States Air Force
USAFE	United States Air Forces, Europe

ARCHIVED

CHAPTER 8 -- SPACE CALCULATOR

8-1 Purpose

Use the Space Calculator (separate spreadsheet file) to determine the overall authorized space for all Fitness and HAWC facilities for an installation. It is designed to generate a total space program for core and enhanced spaces for all Fitness and HAWC facilities on an installation. It can also compare the existing space with the authorized space.

8-2 Instructions

- Fill in designated boxes only.
- Gather installation population figures and replace default data on TDY and Population sheet. This will show allowable areas for Fitness Center, Sports & HAWC spaces along with the minimum number of gymnasium courts to provide.
- Answer questions in questionnaire by replacing default data with projected data.
- The Space Allocation Chart will show what is authorized for your base and develop a square footage allocation for each sub space.
- A comparison of space in existing facilities with the authorized amount can be made using the last sheet.

	Planning Factor	Space	Factors
CORE SPACES			
VISITOR & SPECTATOR SUPPORT			
Vestibule/Entry Lobby	Provide up to 1 per primary entry per bldg	100 SF	per Bldg
Lobby	Provide 3 sf for each spectator seat	3 SF	per PN
Control Point/Reception	Provide 3 sf per gym spectator	125 SF	per PN
Equipment issue storage	Provide up to 1 per building	175 SF	per Control Point
Retail	Provide up to 1 per building when combined with control point	50 SF	per PN
Vending	Up to 1 per building (provide if no retail)	20 SF	per Machine
Public Restrooms	1 Lav/WC per 100 spectators	50 SF	per 100 spectators
ADMINISTRATION			
Fitness Program Manager's Office	1 office per bldg (include 1 staff; 3 visitors)	125 SF	per Private Office
Sports Program Manager's Office	1 office per installation (include 1 staff; 1 visitor)	100 SF	per Private Office
Operation's Manager	1 office per installation (include 1 staff; 1 visitor)	100 SF	per Private Office
NCOIC's Office	1 office per installation (include 1 staff; 1 visitor)	100 SF	per Private Office
Staff Workroom	# of 6 x 8 workstations + work area	80 SF	per workstn
Conference/Classroom	Use a baseline of 25 pn;	25 SF	per PN
SUPPORT			
Laundry	Installation specific; include 1W/2D, commercial grade; folding table, sink, storage shelves, laundry carts, and optional ice machine per unit. Min 1.	200 SF	per room unit
Storage	35% of Fitness Equip Space		
Equipment Repair	10% of Storage (min 100SF)		

Service Entrance and Receiving	10% of Fitness Equip Space (min 100SF)		
Janitorial	Provide 1 per major bldg wing/floor	60 SF	per room
LOCKER ROOMS	Provide 1.5 lockers for max number of participants in bldg		
Men's Locker Room	# of men's lockers is the percentage of men users times the total lockers needed		
Dressing Room (Standard Lockers)	Provide percentage of standard lockers needed	8 SF	per Floor Lkr
Dressing Room (Cold WX)	Remainder from standard lockers needed	10 SF	per Floor
Double Tier Lockers	Provide percentage of 2-tier lockers needed		
Single-tier Lockers	Remainder from 2-tier lockers needed		
Total Mens Lockers	Percentage of men users times the total lockers needed		
Shower/Drying	1 Shower per 20 lockers	35 SF	Shower
Restrooms	1 Lav/WC per 30 lockers	50 SF	per Lav/WC
Sauna Room	1 PN per 15 lockers	15 SF	per PN
Steam Room	1 PN per 15 lockers	15 SF	per PN
Circulation	50% of all locker room spaces		
Women's Locker Room	Remainder from men's lockers		
Dressing Room (Standard Lockers)	Provide percentage of standard lockers needed	8 SF	per Floor Lkr
Dressing Room (Cold WX)	Remainder from standard lockers needed	10 SF	per Floor Lkr
Double Tier Lockers	Provide percentage of 2-tier lockers needed		
Single-tier Lockers	Remainder from 2-tier lockers needed		
Total Women's Lockers	Percentage of women users times the total lockers needed		
Shower/Drying	1 Shower per 20 lockers	35 SF	Shower
Restrooms	1 Lav/WC per 30 lockers	50 SF	per Lav/WC
Sauna Room	1 PN per 20 lockers	15 SF	per PN
Steam Room	1 PN per 20 lockers	15 SF	per PN
Circulation	50% of all locker room spaces		
Gymnasium			
Basketball/volleyball	NCAA Court + 10' safety area all sides (est 40 participants/court)	8,800 SF	Per Court
Spectator courtside seating (90 LF)	1 section=4 rows of seats, 200 pn	900 SF	200PN Bleacher Section
Spectator court-end seating (50 LF)	1 section=4 rows of seats, 100 pn	500 SF	100PN Bleacher Section
Storage/support	Provide 700 sf for first court	700 SF	1st Court
Sstorage (per addl. ct)	Provide additional 350 sf per addl court	350 SF	per 2nd Court or more

Group Exercise		
Stretching Area	Provide 1 area per 50 participants	100 SF per rm over 50PN
Group Exercise	Provide 50 sf/participant for max Unit PT group (added to participant count)	50 SF per PN
Group Exercise Storage	10% of the exercise space	10% SF of Group Exercise
Fitness Equipment Spaces		
(1-participant per mach/station)		
Stretching Area	Provide 100 sf per 50 participants	100 SF per 50PN
Cardiovascular Equipment	Provide 50 sf per machine (use actual or estimate 10 machines for small, 30 med, 50 large)	50 SF per Machine
Selectorized Weight Training	Provide 50 sf per station (use actual or estimate for a 16pc set; 1 set per small base)	50 SF per station
Crossover machine	Provide 60 sf per station (use actual or estimate 1 per small base)	60 SF per station
Chin/Dip Assist machine	Provide 40 sf per station (use actual or estimate 1 per small base)	40 SF per station
Free Weights	Provide 65 sf per station (use actual or estimate for a 17pc set; 1 set per small base)	65 SF per station
Fitness Program Director's Office	Provide an Fitness Program Director's Office (include 1-staff, 1-participant, 1-visitor, 1 pc cardio equip)	150 SF per PN
Fitness Assessment Room	Provide 1 per facility (include 1-staff, 1-participant, 1- visitor)	125 SF per PN
Racquetball Courts	Provide a minimum of 2 per facility (include 6-participants, 6 visitors per court)	800 SF per Court
Racquetball Spectators	Provide a 25 person spectator area; 1 min	160 SF per area (min 1)
Indoor Track*	Provide up to one indoor 1/8 mi track per bldg (include 16-participants)	4,000 SF per Track (half scope)
Indoor Track Lobby*	Provide an access point for tracks (include 4 visitors)	144 SF per Track
HEALTH AND WELLNESS CENTER		
Reception/Waiting/Library	Provide 300 sf per center (include 1-staff, 10 visitors)	300 SF per HAWC
Office Space/Director	Provide 1 office per center (include 1 staff; 1 visitors)	125 SF per Office
Office Space/Other Private	Provide 1 office per center (include 1 staff; 1 visitors)	100 SF per Office
Support Staff Workstations	# of 6 x 8 workstations + work area	80 SF per Workstation
Classrooms (large room w/ a divider to create 2 rooms)		25 SF per PN
Wellness Assessment Room	Provide 125 sf per system	125 SF per Fitness Testing System
Equipment Demonstration Room (if not collocated w/ Fitness Center)	Provide 50 sf per machine (maximum of 400 SF)	50 SF per Machine
Janitor Closet/Storage	Provide 1 per center	60 SF per room
Restrooms	Provide 1 lav/wc per 15 visitors	50 SF per WC/Lav

ENHANCED AREAS		
Lap Pool	25m x 6 lanes	7,616 SF
Lap Pool (alt)	25m x 8 lanes	9,371 SF
Distinguished Visitors (DV) Locker Rooms		61 SF per room
Men		
Dressing Room (Standard Lockers)	Provide percentage of standard lockers needed	8 SF per Floor Lkr
Dressing Room (Cold WX)	Remainder from standard lockers needed	10 SF per FloorCold WX Lkr
Double Tier Lockers	Provide percentage of 2-tier lockers needed	
Single-tier Lockers	Remainder from 2-tier lockers needed	
Total Lockers	Estimate # of lockers needed	
Shower/Drying	1 Shwr per 20 lockers	35 SF Shower
Circulation	50% of all locker room spaces	
Restrooms	1 Lav/WC per 30 lockers	50 SF per Lav/WC
Women		
Dressing Room	1 lkr per participant (enter % of Std Lockers)	8 SF per Floor Lkr
Dressing Room (Cold WX)	1 lkr per participant (enter % of Cold WX)	10 SF per FloorCold WX Lkr
Double Tier Lockers	Choose % of 2-tier lockers	
Single-tier Lockers		
Total Lockers		
Shower/Drying	1 Shower per 25 lockers	35 SF Shower
Circulation	50% of all locker room spaces	
Restrooms	1 Lav/WC per 30 lockers	50 SF per Lav/WC
Family Locker Room (Dressing, Lockers, Rest Room)		160 SF per shower, wc, lav, changing, and locker
Parent/Child Area (PCA)	Provide 60 sf per child (include 35sf/child and 1 adult machine per 2 children)	60 SF per child
HAWC Kitchen/Food Demonstration Room	Provide 400 sf per room (incl 1 staff, 10-participant)	400 SF per room
Massage Room	Provide 100 sf per room (incl 1 staff, 1-participant)	120 SF per room
Expanded Retail Area	Provide 100 sf per area	100 SF per room
Juice Bar	Provide 150 sf per area	150 SF per room
Expanded Juice Bar Seating	Provide 80 sf per 4-top table seating	80 SF per room
Spa Area	Provide 150 sf per room (incl 6-participant)	150 SF per room