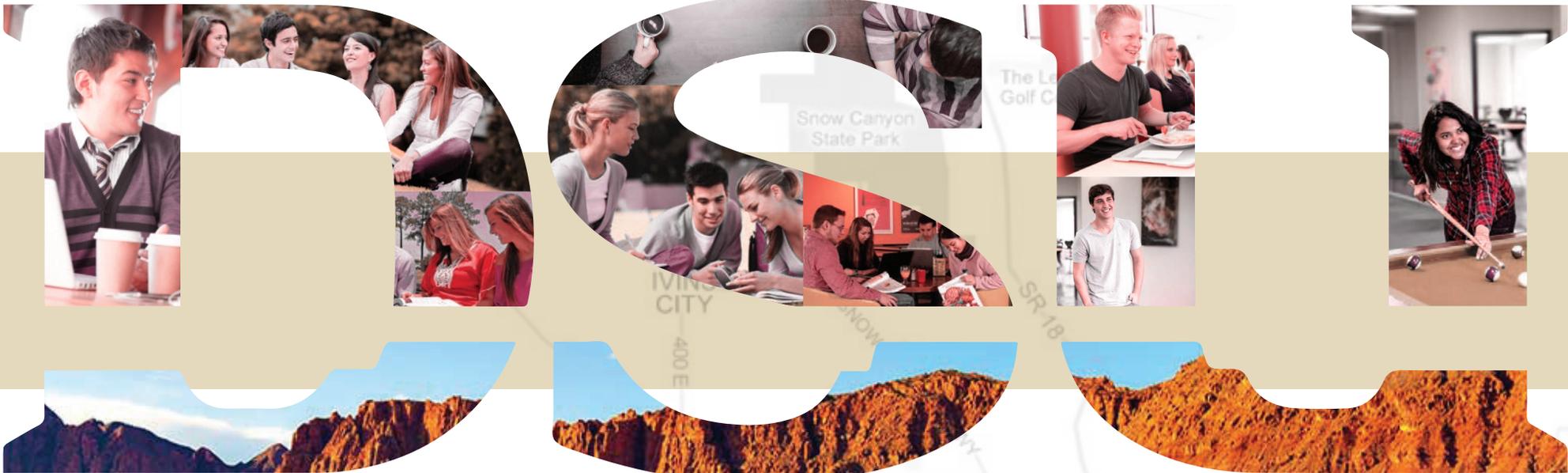


# FINAL D R A F T

## Dixie State University New Student Housing **PROGRAM DOCUMENT**

6.08.2015



METHODSTUDIO<sup>INC.</sup>



# Signature Sheet

## DIXIE STATE UNIVERSITY REVIEW SIGNATURES

We have reviewed the Program for the Dixie State University, New Student Housing and confirm that it adequately represents our request for a program and performance specification document and that it fulfills our mission and goals. The appropriate parties listed below have reviewed it for approval.

### STATE OF UTAH DFCM

\_\_\_\_\_  
Clint Bunnell, Project Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
Brad DeMond, Project Manager

\_\_\_\_\_  
Date

### DIXIE STATE UNIVERSITY

\_\_\_\_\_  
Richard Williams, University President

\_\_\_\_\_  
Date

\_\_\_\_\_  
Sherry Ruesch, Project Manager

\_\_\_\_\_  
Date

# Acknowledgements and Program Design Team

## ACKNOWLEDGEMENTS

### DIXIE STATE UNIVERSITY

Richard Williams - President DSU  
Sherry Ruesch - Executive Director Facilities  
Paul Morris - Vice President, DSU  
Brad last - VP, Advancement  
Randy Judd - Auxillary Services  
Seth Gubler - Director of Housing  
Matt devlore - Student Body President  
Don Steck - Director Road Scholar  
Jon Gibb - Director Facilities Planning  
Doug Whitehead - Dir. of Facilities Operations  
Kerry Dillenbeck - HVAC  
Wayne Stevens - PM  
Orin VanValkenburg - Plumber  
Brent Stanworth - Electrician  
Gary Koeven - Chief Information Officer  
Arlene Sewell - Director IT Projects + Technology  
Allen Fox - Director of Network Services  
Mary Stubbs - Exec. Director of Facilities Operations  
Cameron Draper - Sr. IT Support + AV  
Scott Ford - IT Project Coordinator

### STATE OF UTAH DFCM

Clint Bunnell - Project Manager  
Brad DeMond - Project Manager

## DESIGN TEAM

### ARCHITECTURE

Joe Smith, AIA, LEED™ AP, Partner, Method Studio  
Becky Hawkins, Associate AIA, Partner, Method Studio  
Shawn Benjamin, Associate AIA, Senior Associate, Method Studio  
Kelly Morgan, AIA, LEED™ AP, Principal, Method Studio

### CIVIL

Brent Gardner, Alpha Engineering  
Glen Carnahan, Alpha Engineering

### LANDSCAPE

Brandon Reed, Loft Six Four Landscape Architecture

### STRUCTURAL

Mark Harris, Reveley Engineers and Associates

### MECHANICAL

Stephen Wadsworth, WHW Engineering  
Win Packer, WHW Engineering

### ELECTRICAL

Dave Wesemann, Spectrum Engineers

### COST ESTIMATING

Kris Larson, Construction Cost Control Corporation



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# 01 Executive Summary

# EXECUTIVE SUMMARY

# 01 Executive Summary

## Residence Life Mission + Project Vision and Goals

Dixie State University Housing embraces the following Mission, Values and Vision:

### OUR MISSION

Our mission is to enhance the quality of life in our community by serving as the bridge between the student's educational and personal life.

### OUR VALUES

Working as a team and caring as a family at all organizational levels

Respect, integrity, honesty, and ethical conduct among ourselves and those we serve

Valuing diversity in our staff, among our students, and across our campus

Commitment to giving our individual and departmental best

Safety through personal awareness and responsibility

Individual responsibility and accountability for our duties and actions

Providing helpful service to our students, their families, and other campus departments

Creatively seeking solutions that will encourage academic success and positive community involvement

### OUR VISION

Open, honest, and effective communication

Consistency in how we approach student conduct, through appropriate training and information sharing

Availability to students at all times

Providing the needed resources to promote student achievement

Gaining a more positive attitude and reputation by and through our actions

Being a good campus partner through increasing our familiarity, providing resources, and keeping the students' needs our priority

Core Objectives

Responsibility Student

Involvement Leadership

Academic

Success



#### PROJECT VISION AND GOALS

Building upon the Mission and Vision of DSU Housing and Resident life, the following project vision was created to guide the programming and design of the new student housing project.

1. Develop a student housing facility that enhances the quality of life at Dixie State University.
2. Create a housing environment that reinforces community, learning and living.
2. Promote the “Spirit of Dixie” with a housing complex that serves to:
  - Encourage student life
  - Provide a welcoming and safe environment
  - Celebrate the unique place
  - Serve as a recruitment tool
  - Develop and maximize the Dixie State University Brand
  - Maximize the strong visibility of the site
  - Provides an inviting front door on both sides

The new housing at Dixie State University will be efficient yet inspirational and attractive. It will support individual growth, build community and aid in meeting academic goals. It will activate campus and enrich the overall student experience.

# 01 Executive Summary

## Project Justification

Dixie State University, situated in Washington County, will need to keep pace with one of the fastest growing communities in the nation. Current projections show DSU's enrollment growth will average nearly 3.5% per year. At this pace, DSU's student body will increase to approximately 11,000 students in the next 5 years.

In order to meet the need of additional housing in the St. George area, Dixie State University is proposing a new 350-Bed Student Housing Development which would be a multistory complex of approximately 88,000 square feet located on campus. The facility would include private and shared rooms (3 & 4 bedroom suites), two bathrooms per suite with multiple vanities, kitchenettes (microwave & refrigerator), living room full kitchens in common areas, study rooms, fitness center, video & media room and activity center.

There is adequate space for student parking so no additional parking is needed. This building is part of the University's Master Plan. This project would include site prep, planning, design, bond reserve requirements and construction. They are looking at a \$20 million revenue bond and a use of \$1.5 million in Auxiliary Reserve Funds. To pay off the bond, Dixie State would use revenues from current housing, new housing, campus store net revenue and other non-appropriate net revenues.

Dixie State University's enrollment has more than doubled over the past eight years. However, many students have resorted to commuting to the University due to lack of housing. Currently, private and campus housing is aging and in short supply. Student housing has been identified as the most significant factor limiting the student growth of the institution, and as a result it is important that the university begin constructing student housing as soon as possible. St George City also feels that the lack of student housing has a negative impact for the community and has pledged to help the University with the passing of various "housing friendly" ordinances.





# 01 Executive Summary

## Building Program Summary

### DESCRIPTION

The project will provide Dixie State University with a new student housing complex that meets the following requirements.

- \$17,000,000 construction budget
- Approximately 88,000 square feet
- Minimum 350-bed count
- 4-6 beds per unit
- Multi-level structure
- Suite style
- Laundry facility on each level
- RA locations
- Manager's apartment
- Speed drop computer/printer stations on each level
- Manager's office, admin areas, mail room, multi-purpose room
- Kitchenette in each unit with full kitchen in common areas
- Indoor amenities such as game room for pool, foosball, ping pong, TV, and a fitness area
- Outdoor amenities such as full size sand volleyball courts, BBQ area, and bike storage
- Common lounge areas
- Allow for future expansion of the site for phases 2 - 4

To meet the programmatic needs for the new DSU Student Housing, it has been sized to approximately 88,000 gross square feet. A 25% grossing factor was applied to the net square footage to get to the final gross square footage amount. The gross factor is for circulation, wall thickness, shafts and ancillary spaces.

**DSU STUDENT HOUSING  
SPACE AREA SUMMARY**

5.28.2015

SPACE TYPE	DESCRIPTION	QTY	NET SF	TOTAL NET SF
<b>SUITE STYLE UNITS</b>				
Suite 1		51	990	50490
Suite 2 (RA Suite)		8	960	7680
Number of Beds		354		
	Subtotal			58170
<b>MANAGER'S APARTMENT</b>				
Apartment s.f.				700
Number of Apartments		1		
Number of Beds		2		
	Subtotal			700
<b>AMENITIES</b>				
Common Kitchens (1 per floor)		4	350	1400
Multipurpose Activity Rm		1	800	800
Lobby		1	800	800
Laundry Room (1 per floor)		4	275	1100
Game Room / Lounge		3	700	2100
Unisex Restrooms		2	60	120
Computer Area (1 per floor)	(2 computer stations & 1 printer station)	4	45	180
Exercise Room		1	700	700
Conference Room		1	300	300
Bike Storage		1	375	375
	Subtotal			7875
<b>ADMINISTRATIVE</b>				
Office Suite	(2 offices, reception, mail room & office storage)		700	700
	Subtotal			700
<b>STORAGE &amp; MAINTENANCE</b>				
support-electrical/comm		4	150	600
support-mechanical		4	250	1000
janitor		4	35	140
Main electrical (basement)		1	200	200
elevator		2	160	320
Mechanical Basement		1	1300	1300
	Subtotal			3560

**Total Number of beds 356**

	Net SF	Gross SF
Student Housing Building	71005	88756.25
		25% grossing factor
Tunnel Extension (worst case)	350	
Storm Drain Extension		

# 02 Site Analysis

# SITE ANALYSIS

## 02 Site Analysis

### Overview

#### ANALYSIS

The Site Analysis portion of the program document identifies the impact of the site on the program, project budget and schedule. It identifies the physical characteristics of the direct building site and the surrounding geographical region. The analysis includes diagrams, maps and photographs to illustrate key features including: site topography, site climate, pedestrian and vehicular circulation, view corridors, key physical and visual adjacencies. The site analysis for the programming phase is intended to be a useful tool for the design phase of the project.

#### LOCATION

Dixie State University (DSU) is located in St. George, Utah approximately 300 miles south from Salt Lake City. The campus is located near several recreation areas including Zion National Park, Red Cliffs National Conservation Area, Dixie National Forest, Snow Canyon State Park, Quail Creek State Park, and Sand Hollow State Park. The City annually plays host to the St. George Winter Bird Festival, Tri-State ATV Jamboree, St. George Arts Festival, Ironman 70.3 St. George US Pro Championship, Dixie Lions' Roundup Rodeo, and the St. George Marathon. The city and surrounding area features 12 golf courses and an array of outdoor activities including: hiking, biking and off-road trails. Nearby towns include Washington, Hurricane, Santa Clara, Ivins, La Verkin, and Toquerville.

The DSU campus is located adjacent to the west of the Interstate-15 corridor and consists of approximately 100 acres. The new Student Housing (phase 1) will be located on the north end of the campus at 100 South and 900 East. The site lies directly west of the existing Nissan Towers, east of the Science Building, and within walking distance from the rest of campus. To the west of campus is a residential neighborhood and the historic downtown. A half mile to the east (10 minute walk) there are retail establishments and restaurants – with primary access from the site along 100 South. Primary access to the site is 100 South, while 1000 and 900 East form secondary access points from St. George Boulevard and the I-15 Interchange to the north.



## 02 Site Analysis

## 02 Site Analysis

### Site Location and Planning Principles

#### SITE SUMMARY

The new Student Housing Building site is located in the northeast area of the DSU campus along 100 South, and is the current site of an open field and outdoor stage/platform/sidewalk. The proposed project is sited between Nisson Towers to the east and the Science Building to the west. The site slopes from 100 South toward the south – sloping more dramatically at the north property line and gradually sloping to the south for the rest of the site. See the Civil Design Criteria section for additional site and topographical information.

#### OUTDOOR SPACES

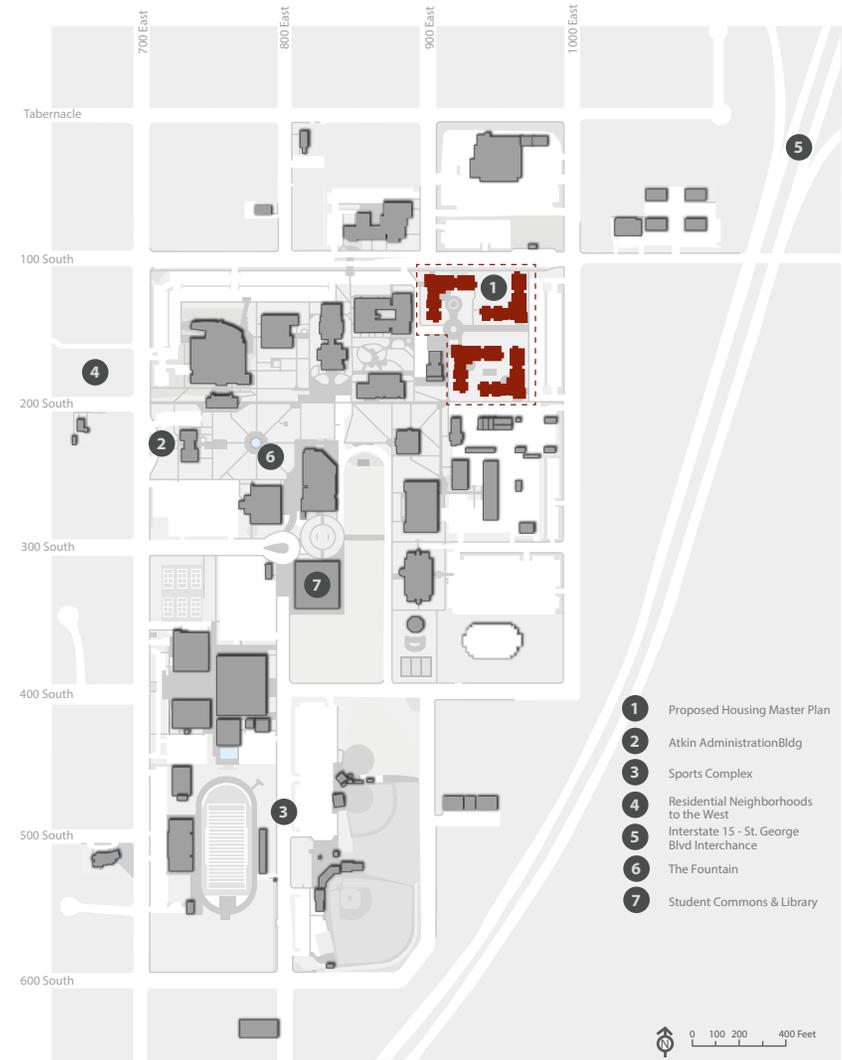
The 1.5 acre (approx.) site affords many opportunities for outdoor space and connections to the rest of campus. It should be the intent of the design team to place emphasis on open spaces, pedestrian paths and native vegetation. Exterior spaces should be designed to encourage a sense of community and interaction; and will include seating and gathering spaces, bike parking with metal canopy, (2) full-size sand volleyball courts, and BBQ pits.

#### LANDSCAPE

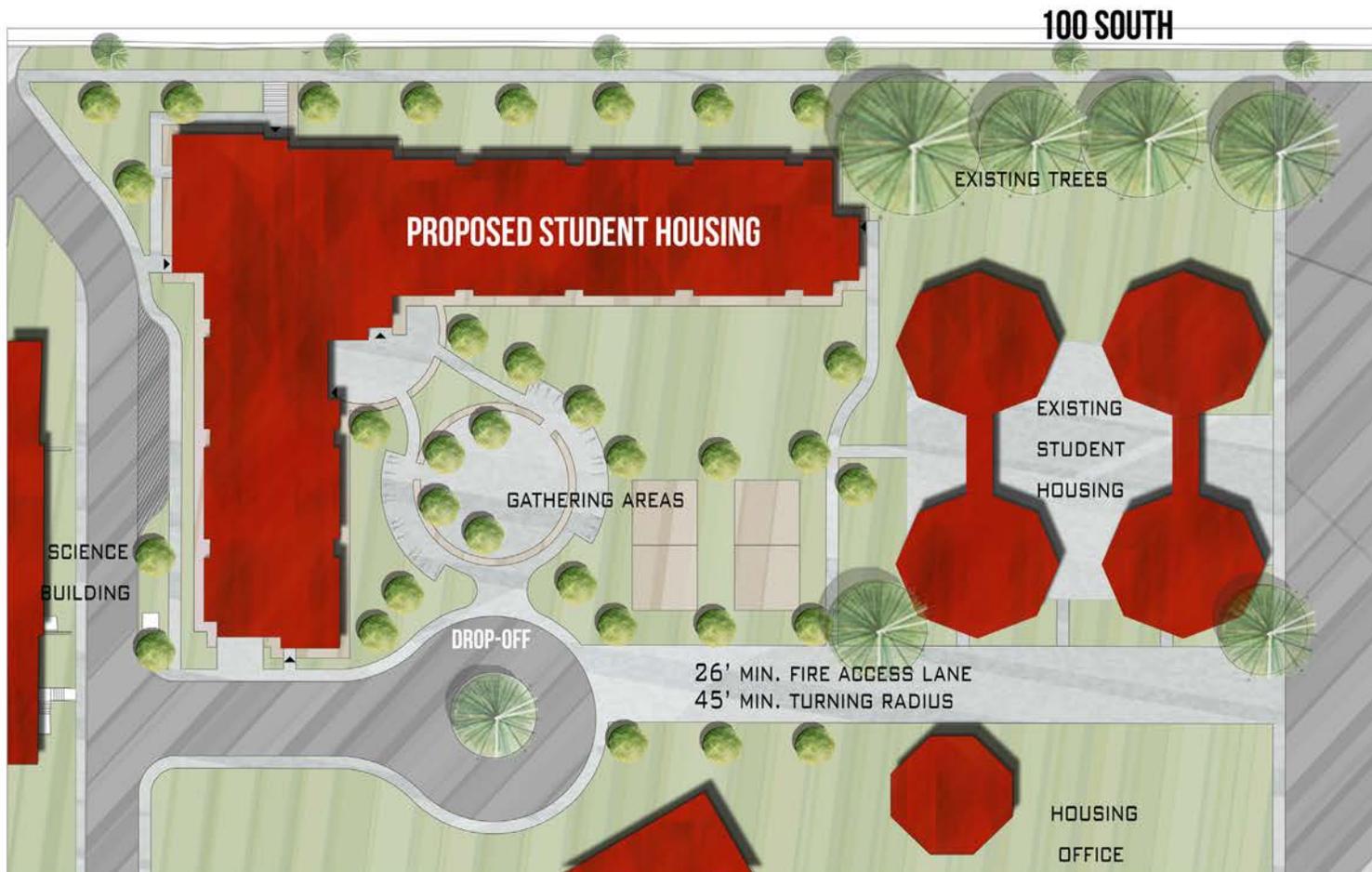
The landscape will demonstrate that this is a higher education facility while being sensitive to local influences, planting products, and techniques. The site will utilize regional, water-wise landscaping, and water efficient irrigation. See the Landscape Design Criteria in Section 3 for additional information.

#### PARKING

Parking for the project will utilize the existing parking 'Lot G' directly east, adjacent to Nisson Towers. 'Lot Y' north of 100 South may also be used for parking if needed. Parking requirements will be tested in the programming and early design phases of the project. A loading zone/move-in drop-off area is required adjacent the new Student Housing building, and may connect into the existing fire-access lane on the south boundary of the project.



SITE LOCATION AND PLANNING PRINCIPLES



## 02 Site Analysis

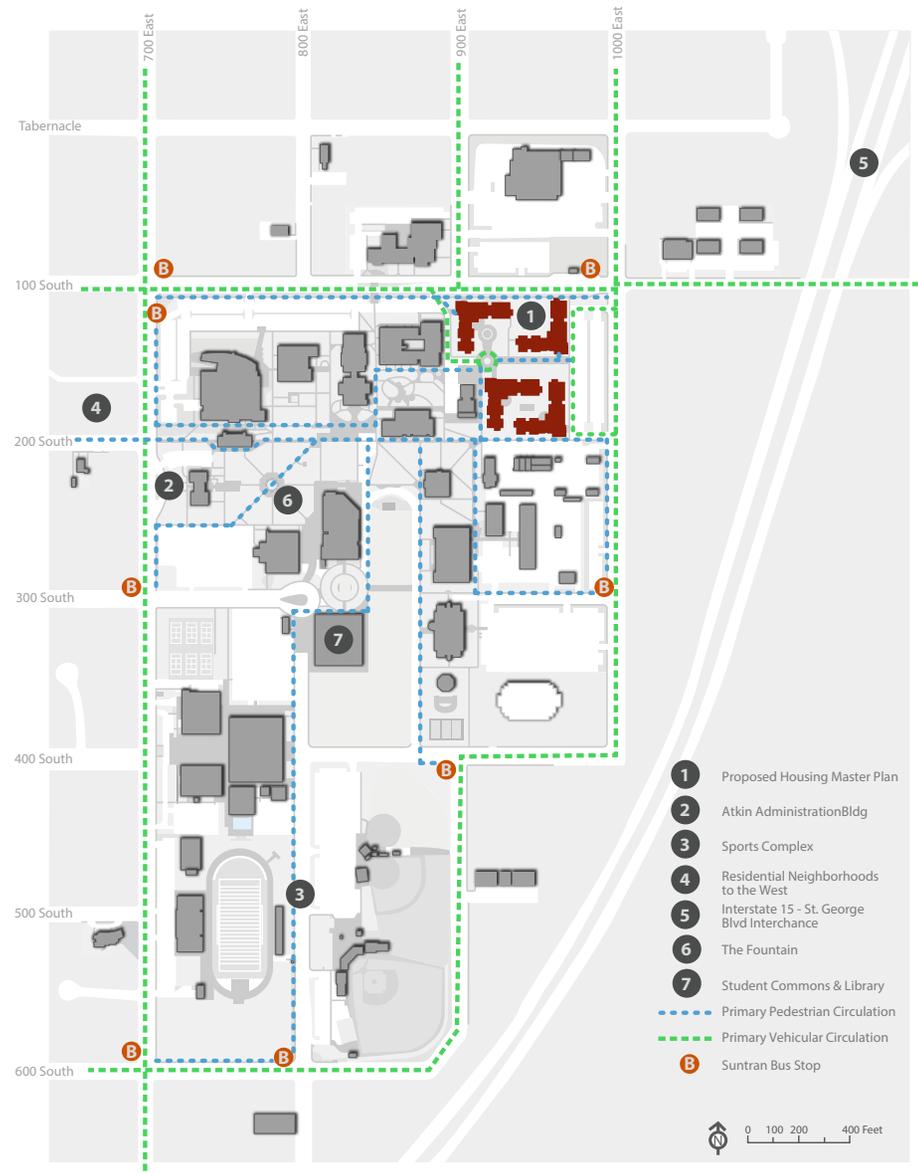
### Site Circulation and Relationships

#### VEHICLE TRAFFIC FLOW

The primary vehicular access for the site is along 100 South and 1000 East. Most traffic is anticipated to come from the north (St. George Blvd.) and from the neighborhoods to the west. The existing access off of 100 South, located at the west property line that currently connects to the central plant will be modified to incorporate a loading/move-in drop-off zone. A 26' minimum fire access lane is required from 'Lot G' and will tie into the access road from 100 South.

#### PEDESTRIAN TRAFFIC FLOW

Pedestrian traffic will be concentrated on 100 South and throughout the network of internal pathways across campus. These pathways connect the proposed Student Housing to the majority of buildings, services, and amenities located on campus. 100 South serves as a primary pedestrian path from the proposed project site to 'off-site' amenities primarily located on St. George Boulevard to the north and the retail/shopping district to the east on South River Road and Red Cliffs Drive. The St. George SunTran bus system also has stops that are adjacent to the site and along the perimeter of the campus, encouraging walkability and access to the rest of St. George.



SITE CIRCULATION AND RELATIONSHIPS



## 02 Site Analysis

### Master Planning

The Master Plan for the new DSU Student Housing consists of 4 new buildings, extensive landscaping, pedestrian pathways, bicycle lanes, open space, amenities, and utilities. The construction of new Student Housing will occur in 4 phases from North to South. The order of construction to be specified as needed.

#### PHASE 1: CONSTRUCTION OF NEW STUDENT HOUSING BUILDING #1

The building faces 100 South and is located north of the existing central plant. Connection to the existing campus utility tunnel is required. Landscaping, pedestrian pathways, and amenities to act as a connecting piece to the rest of campus will be provided.

#### PHASE 2: CONSTRUCTION OF NEW STUDENT HOUSING BUILDING #2

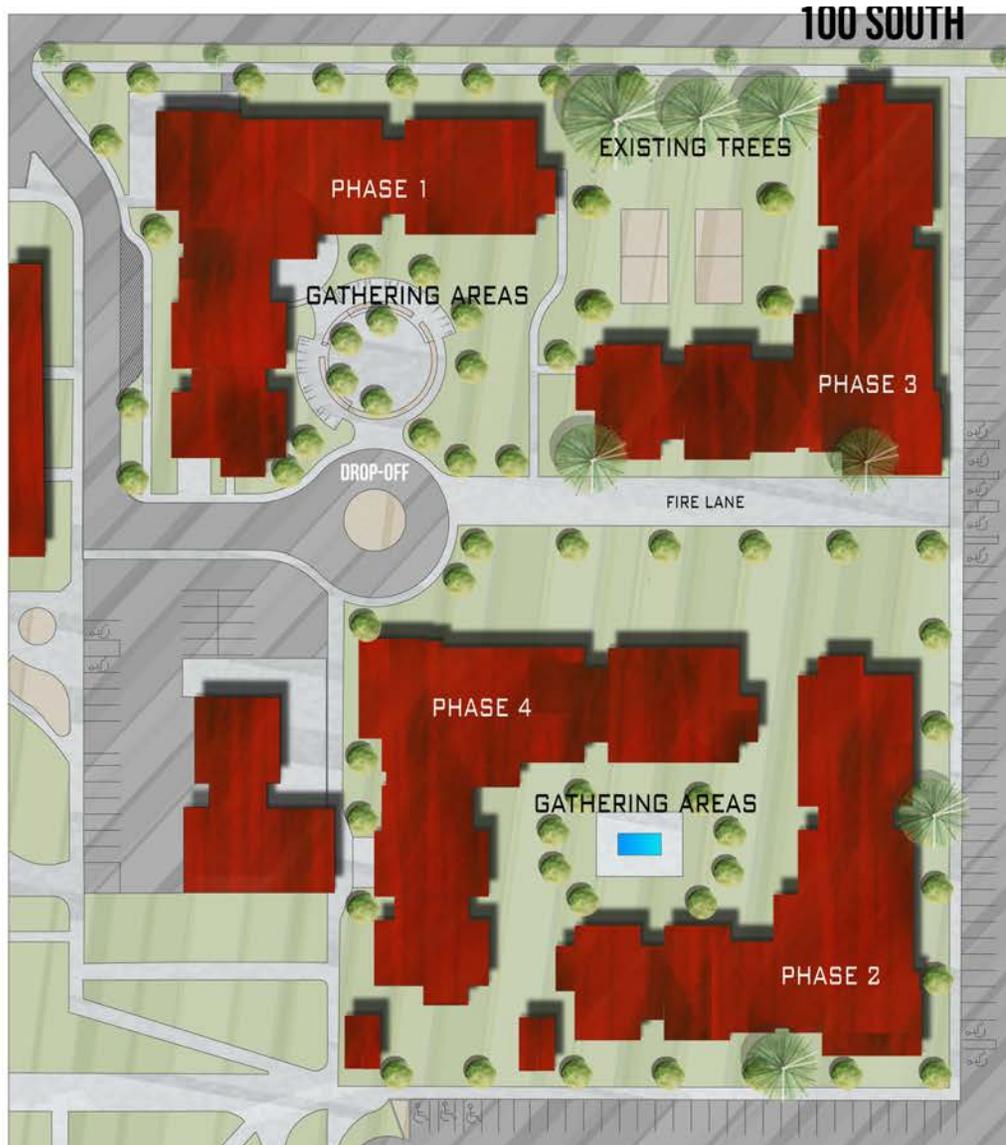
This phase will include the demolition of Shiloh Hall and the Housing Office , along with the construction of a second Student Housing building. Landscaping, pedestrian pathways, and amenities to act as a connecting piece to the rest of campus will be provided.

#### PHASE 3: CONSTRUCTION OF NEW STUDENT HOUSING BUILDING #3

This phase will include the demolition of Nissan Tower and the construction of a third Student Housing building. Landscaping, pedestrian pathways, and amenities to act as a connecting piece to the rest of campus will be provided.

#### PHASE 4: CONSTRUCTION OF NEW STUDENT HOUSING BUILDING #4

This phase will include the construction of a fourth Student Housing building. Landscaping, pedestrian pathways, and amenities to act as a connecting piece to the rest of campus will be provided.



# 02 Site Analysis



## 02 Site Analysis

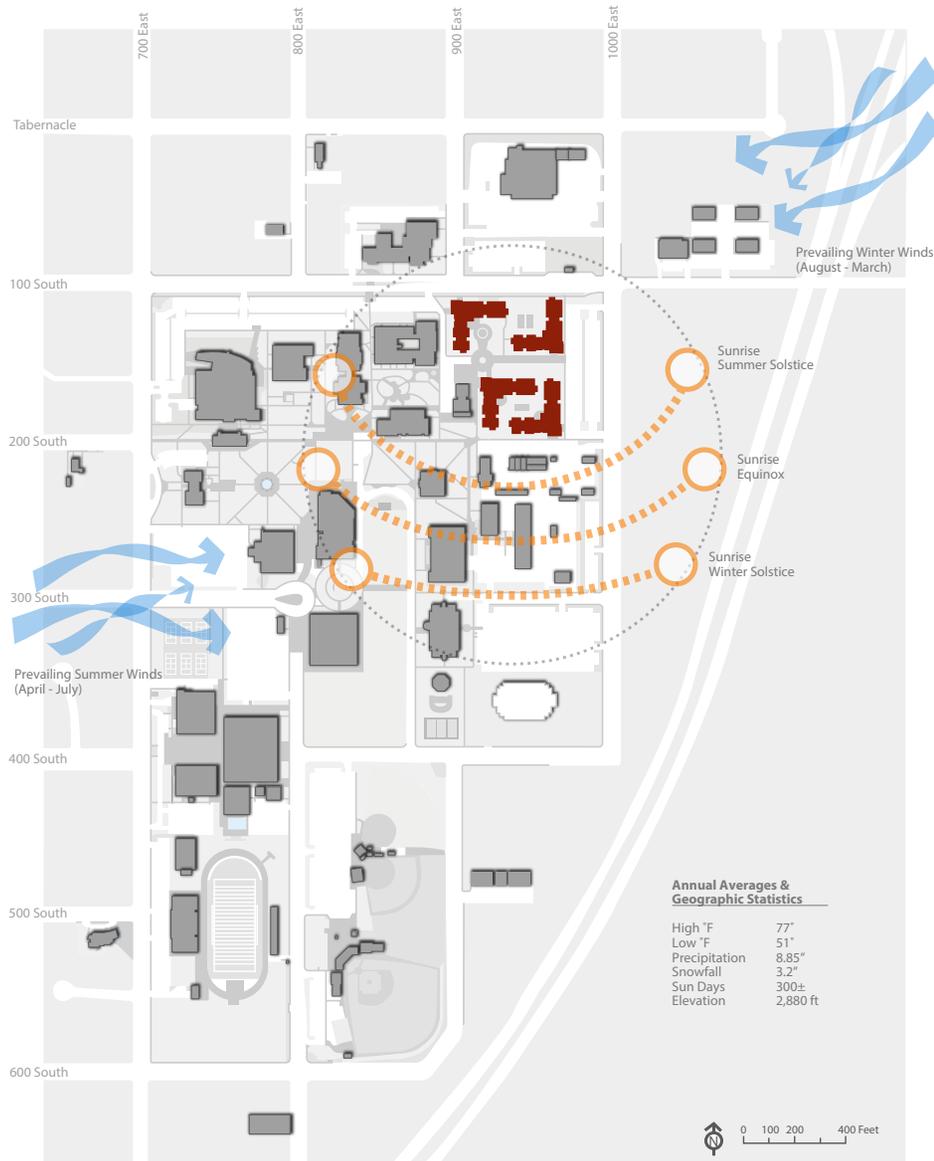
### Site Climate/Orientation

#### SOLAR AZIMUTH

The angle of the sun is at its highest during the Summer Solstice (June 21st). As the seasons change, the height of the sun gets lower in the sky until it is at its lowest point during the Winter Solstice (December 21st). Using the proper length of over hangs will help to shade the interior from the summer sun, while allowing the winter sun to enter, adding heat to the interior. St. George is in a desert and has more cooling days than heating days. The amount of lighting and electrical loading from the building uses will necessitate the management of direct sunlight entering the building to improve building efficiency.

#### WIND PATTERNS

Strong consistent primary winds come from the East/Northeast (Aug-Mar) and West (Apr-Jul) in St. George. Wind patterns in this area do shift and can come from different directions however high importance should be placed on the Northeasterly winds. Sheltering of pedestrians through the use of berms, vegetation and structures should be considered for this site.



SITE CLIMATE AND ORIENTATION



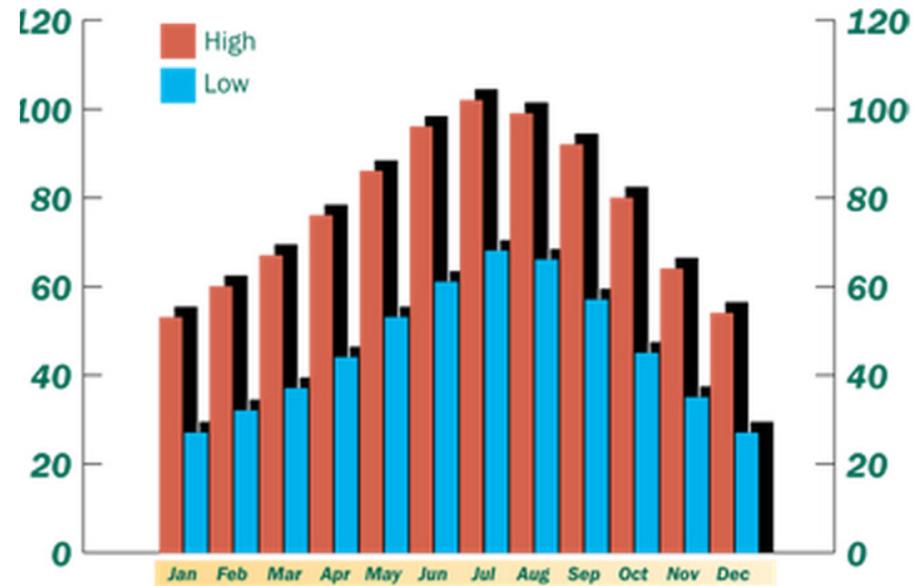
## 02 Site Analysis

Site Climate/Orientation

### WEATHER GRAPH

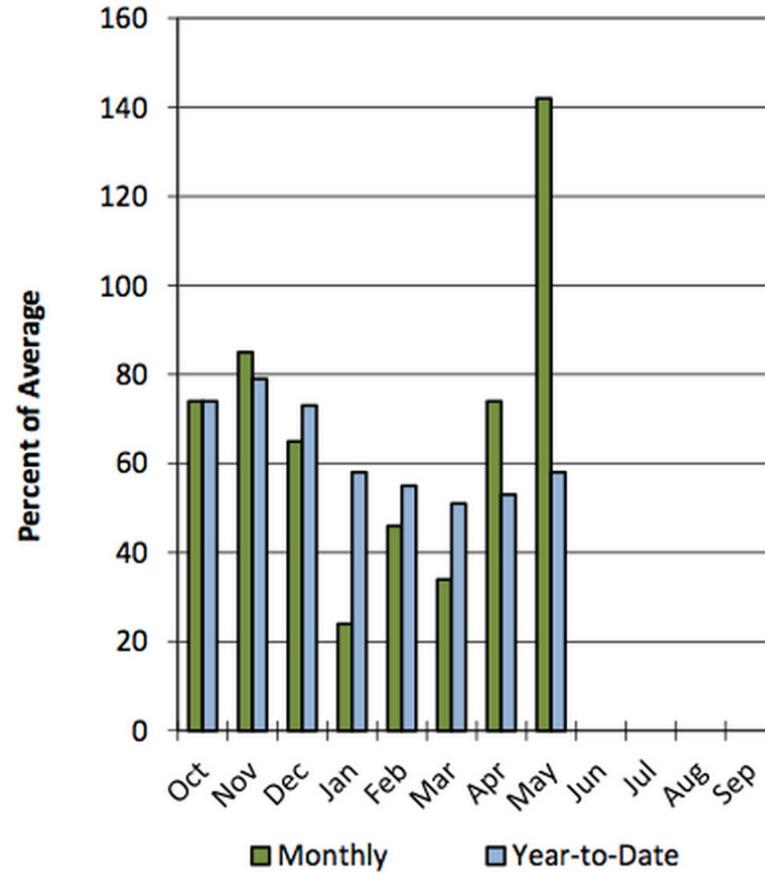
Average High Summer Temperature: 99.2 F

Average Low Winter Temperature: 29.75 F



PRECIPITATION GRAPH

Median Yearly Rainfall: 8.2"  
Median Yearly Snowfall: 3.2"





# BUILDING REQUIREMENTS

## 03 Building Requirements

### Architectural Narrative/Vision

#### BUILDING DESIGN

As the first new on-campus housing project at Dixie State University in over thirty years, this project was recognized early on as having the potential to create a new standard for student housing on campus and to become an icon for residential and student life at DSU. The new building is envisioned to be a 4-5 story structure with a preference by the University for a 5-story building to preserve land if at all possible. A 4-story structure would be acceptable if that is required to meet budget. Throughout the duration of this programming effort the architectural vision of the project was discussed at length. The University has worked to establish campus standards for the materials and aesthetics on campus and to create a cohesive architectural language. It is the desire of the University that the architecture for this new student housing project be designed to be compatible with the rest of campus and that all campus standards be adhered to.

With consideration for this goal, the steering committee also expressed the importance of designing a modern and contemporary aesthetic in an effort to appeal to and be marketable to students. It was also expressed that the building needed to respect the adjacent context surrounding the site. The desired location for this new student housing building is along 100 South in the grass field between the existing Science Building and Nissan Towers. This building will be the first phase in a four phase build-out of new student housing on campus over the next 20 years. See housing master-plan document located within this document.

- **Building Massing**

It is strongly encouraged that the design of the facility take advantage of opportunities to break up the massing of the building and provide articulation to the elevations. This can be done both horizontally and vertically with the massing or within the fenestration or architectural detail of the elevations. Consideration should also be given to stepping the building and breaking the massing up into wings to address scale. In regards to the height of the building, the steering committee expressed desire to keep this building at a 4 or 5 story height with a preference for 5 story to preserve land if possible.

- **Building Orientation**

The building should be oriented to not only meet the goal of serving as a gateway to this main edge of campus and hub for student life but should also take advantage of sustainable practices in response to solar orientation, wind, and take full advantage of views and natural day lighting. Strong considerations must also be given to existing buildings to remain, existing utility infrastructure, pedestrian & vehicular circulation, grading, and proximity to parking. In addition, relationships and adjacency to outdoor amenities is an important element to student life and the student experience on campus and must be considered in the development of the building location and orientation.

- **Natural Light and Views**

Every opportunity to utilize natural light and maintain/enhance view corridors should be considered strongly in the design of the facility. In particular all public spaces and bedroom units must maintain access to natural light and views. This is critical to and affects both the comfort and well being of the occupants as well as the building's energy efficiency.

In an effort to achieve this goal the design could consider the use of large windows, clerestory windows, skylights, and other potential transparent and/or translucent materials. Window openings should be oriented to take advantage of soft northern sky or controlled southern exposure. Windows on the west and east sides of the building should also be controlled or minimized.

Additionally, considerations for the type of glass will be important to controlling and minimizing the amount of heat gain and harmful UV exposure. Balancing the type of glass with the size and orientation will be critical to meet the minimum quantities prescribed by the code and to achieve the goals set forth with the Utah State mandated High Performance Building Standard.

- Exterior Materials

The architectural response should consider the context of St. George, the surrounding area and in particular the Dixie State University campus. Existing buildings utilize materials such as brick, stone, GFRC, precast concrete elements, metal panel, and glass elements. It is the desire of the University to require the design of the new student housing to utilize this palette of materials in an effort to tie the new housing building to campus. The specific colors of brick, stone, aluminum storefront, curtainwall, GFRC, & Precast Concrete elements must match campus standards. These are provided in the performance specifications.

Generally, material selection should be easily maintained and durable. The building should be designed to be warm and inviting to students, faculty, the local community and all that interact with the University.

- Interior Materials

The design of the interior spaces should create a strong living learning environment that is warm, bright, inviting, and promotes good health. Selection of interior finishes and materials should be responsive to the use of each of the spaces as outlined in this program document. Consideration must be given to texture, color, acoustics, sustainability, and light reflectance. In regard to durability and maintenance, generally the selection of materials within reason should consider a 50-year building standard and should correspond to the amount of traffic and anticipated use of each space.

- Mechanical Equipment Screen

The design will include screening of roof mounted mechanical equipment.

- Sustainable Design

The State of Utah has recently adopted a new High Performance Building Standard that all future State owned buildings are required to be designed to. With this in mind, the design of the facility must incorporate sustainable practices that meet the new HPBS while balancing budget parameters. Please see performance specifications for additional information.

## 03 Building Requirements

### Codes, Regulations and Safety

#### OVERVIEW

For the DSU New Student Housing Project the materials, design and construction will conform to the standards established by the Utah State Division of Facilities Construction and Management (DFCM). Furthermore, it will conform to all building, accessibility codes and requirements and the energy codes adopted by the State of Utah at the time of design and construction, whether or not they are specifically referenced in this document.

It is the Design Team and the Architect of Record's responsibility to verify and use all the latest revisions, editions and adopted version code documents. If there are conflicting standards, code provisions and/or regulations, the most stringent will govern unless such requirements are waived in writing by the Utah State Division of Facilities Construction and Management and DSU Facilities Management. The following preliminary analysis is intended to assist proposing teams to establish general parameters for design. Specific, in depth, analysis shall be conducted by proposing teams to insure conformance with applicable codes and standards relative to their specific design proposals.

#### DESIGN STANDARDS

Partial list of applicable codes and standards:

- National Electric Code (NEC) w/ Utah Amendments 2011
- Life Safety Code NFPA 101 w/ Utah Amendments
- International Building Code (IBC) 2012 w/ Utah Amendments
- International Fire Code (IFC) 2009
- International Mechanical Code (IMC) 2012
- International Plumbing Code (IPC) 2012
- Laws, Rules, & Regulations of the Utah State Fire Marshal
- Americans w/ Disabilities Act Title III, 1991/1998 (ADA)
- Planning & Design Criteria to Prevent Architectural Barriers for Aged & Physically Handicapped (4th Revision, w/ lever hardware amendment)
- International Energy Conservation Code 2009
- International Fuel Gas Code (IFGC) 2012
- EIA/TIA, Electronics Industries Association / Telecommunications Industry Association
- IEEE 1100-1999, Recommended Practice for Power & Grounding Electronic Equipment
- IESNA, Illuminating Engineering Society of North America
- NFPA, National Fire Protection Association (applicable sections including but not limited to): NFPA 70, National Electrical Code & NFPA 72, National Fire Alarm Code
- ASHRAE Indoor Air Quality 62-2001 & Addendum 62
- Utah Code for Energy Conservation in New Building Construction (ASHRAE Standard 90.1-1989)
- American Society of Heating, Refrigeration & Air Conditioning (ASHRAE)

- American Society of Heating, Refrigeration & Air Conditioning (ASHRAE)
  - Occupational Safety & Health Administration (OSHA)
  - Sheet Metal & Air Conditioning Contractor National Association (SMACNA)
  - Underwriters Laboratory (UL)
  - American Society of Testing Materials (ASTM)
  - American Standards Association (ASA)
  - DFCM Design Criteria for Architects & Engineers
  - DFCM Indoor Air Quality Criteria
- All public entries to the building will be ADA compliant with automatic door operators including required vestibule doors.
  - One set of accessible restroom doors shall be equipped with automatic door operators including vestibule doors if applicable.
  - ADA compliant parking shall be provided if applicable.

#### OCCUPANCY CLASSIFICATION

The occupancy presented in this package is for preliminary programming and planning purposes. The occupancy determination must be confirmed by the Architect of Record with the State Building Official and the State Fire Marshall at the time of design.

#### ADA ACCESSIBILITY

The new DSU Student Housing Project is required to be in compliance with the American with Disabilities Act, Title III, 1991/1998 (ADA). The Utah State Building Board has adopted the following additional requirements:

# 03 Building Requirements

## 2012 International Building Code Review

TYPE OF CONSTRUCTION  
(Chapter 6)

Type IIA (Type IIB could be used as well)

OCCUPANCY

Residential (dormitories)

R-2 (section 310)

Offices

B (section 303)

Multipurpose room

A-3 (section 303)

Occupancy Separation required

Yes (Table 508.4)

Occupancy Separation

It is anticipated that the primary occupancy type will be R-2 with separated uses for assembly and business areas of 1 hour if sprinkled throughout.

FIRE SPRINKLERS

Yes, NFPA 13

FIRE PROTECTION SYSTEMS

Sections 907.2.9 and applicable subsections are directly related to R-2 occupancy classifications.

FRONTAGE

(Section 506.2)

Assume .75

STORIES ALLOWED

(Table 503) R-2:

4 stories, 5 if fully sprinkled.

ALLOWABLE BUILDING AREA (Type IIA)

Occupancy

R-2

Program area sf

Approximately 23,000 sf foot print (each floor)

Basic allowable area:

92,000 sf (for all four floors combined)

Table (503) per floor

24,000 sf

Frontage increase (506.2)

0.75

Story increase with sprinklers

+1 Story

Allowable area with frontage & sprinkler increase (506.3)

90,000 sf/floor

Actual/allowable per floor

Approximately 26%

FIRE-RESISTIVE REQUIREMENTS (Type IIA)	
Structural Frame- including columns, girders, trusses	1 HR
Bearing Walls- Exterior walls	1 HR
Interior walls	1 HR
Non Bearing walls- interior/exterior	0 HR/interior, 1HR/exterior
Floor Construction-including supporting beams and joists	1 HR
Roof Construction- including supporting beams and joists	0 HR, 1HR (depending upon location above structure)
ALLOWABLE BUILDING AREA (Type IIB)	
Occupancy	R-2
Program area sf	Approximately 23,000 sf foot print (each Floor)
Basic allowable area:	64,000 sf (for all four floors combined)
Table (503) per floor	16,000 sf
Frontage increase (506.2)	0.75
Story increase with sprinklers	+1 Story
Allowable area with frontage & sprinkler increase (506.3)	60,000 sf/floor
Actual/allowable per floor	Approximately 39%
FIRE-RESISTIVE REQUIREMENTS (Type IIB)	
Structural Frame- including columns, girders, trusses	0 HR
Bearing Walls- Exterior walls	0 HR
Interior walls	0 HR
Non Bearing walls- interior/exterior	0 HR/interior, 0HR/exterior
Floor Construction-including supporting beams and joists	0 HR
Roof Construction- including supporting beams and joists	0 HR

## 03 Building Requirements

### Building Systems Design Criteria - Structural Systems

The structural design for this project should provide a building system which will integrate with the program requirements for space layout, as well as with the architectural and building service needs, while meeting current code standards for vertical and horizontal load carrying capacity. User needs in terms of current flexibility of the spaces and future adaptability of use should be considered. The level of user comfort as determined by the acoustic and vibration sensitivity of the structure also should be addressed.

The facility has several program spaces that must be accommodated, including living space and gathering areas.

#### STRUCTURAL / SERVICE COORDINATION

Layout of the structural grid will need to respect the living space established. During the design phase, a completely integrated approach to building systems is recommended. Distribution of HVAC, plumbing and electrical services must be carefully coordinated with the structural elements, particularly at framing intersections and major crossover points. This close coordination must be achieved in order to avoid conflicts and minimize the height of the building.

#### CODES AND STANDARDS

Codes and standards that apply to the design of this building are:

- 2012 International Building Code
- DFCM Design Criteria for Architects and Engineers, May 25, 2005
- American Institute of Steel Construction (AISC) 360-10 Specification for Structural Steel Buildings
- American Institute of Steel Construction (AISC) 341-10 Seismic Provisions for Structural Steel Buildings
- ACI 318-11 Building Code Requirements for Reinforced Concrete

- ACI 530-11 Building Code Requirements for Masonry Structures
- American Iron and Steel Institute (AISI) Specifications for the design of Cold-Formed Steel Structural Members
- American Welding Society (ANSI/AWS) D1.1 Structural Welding Code
- Steel Joist Institute (SJI) for Open Web Joists and Girders
- Steel Deck Institute (SDI) for Metal Floor and Roof Decks

#### GEOTECHNICAL CRITERIA

A geotechnical investigation has been provided for our use, from Landmark Testing & Engineering, dated November 12, 2012. The soils consist of silty sands underlain by claystone, with a shallow groundwater table. Shallow, spread and continuous-type footings bearing on one to four feet of compacted structural fill are recommended. Dewatering will be required for elevator pits, utility trenches, etc.

Liquefiable soils are present at the site, which would normally mean that the site is classified as a Site Class F according to the building code. A Site Class F, according to the building code, may require a site-specific probabilistic and/or deterministic hazard response analysis and possibly a site response analysis for determining the seismic design accelerations. There is a possibility that the structure has a fundamental period of 0.5 seconds or less depending on the height and lateral system, which would eliminate the need for the hazard and site response analysis based upon an exception in the building code. Before proceeding with the structural design, we recommend a peer review of the geotechnical report by a different geotechnical consultant with experience in such analysis since such review is likely to be requested by the structural plan reviewer.

## DESIGN CRITERIA

The structural systems in the facility shall be designed to meet the requirements of the 2012 International Building Code (IBC) and the Design Criteria Manual adopted by the Utah State Building Board. The following minimum requirements should be anticipated:

- Occupancy Category: Category II (Buildings and other structures with a capacity equal to or less than 500 for colleges or adult education facilities)
- Wind Loads
 

Wind Velocity:	115 mph, (3 second Gust), ASCE 7-10 design criteria
Exposure Type:	C, for the building structure, as appropriate to the site.
- Seismic Loads
 

Due to the liquefiable soil conditions, the IBC requires a site-specific response analysis.

Short Period Mapped Acceleration	$S_s = 0.511 g$
Long Period Mapped Acceleration	$S_1 = 0.163 g$
Short Period Acceleration	$SDS = 0.474 g$
Long Period Acceleration	$SD_1 = 0.234 g$
Site Class:	D (F may be possible)
Seismic Design Category	D
Seismic Importance Factor, $I_e$	1.0
- Roof Loads
 

Roof Live Load:	20 psf
Ground snow, $p_g$	29 psf

Calculate roof snow load as specified in the Utah Uniform Building Standard Act Rules R156-56 issued January 1, 2002. Design for snowdrift where appropriate.

Snow Importance Factor, $I_s$	1.0
Roof Snow load:	20 psf plus drift loads
- Floor Live Loads
 

Floor design live loads shall be in accordance with the latest edition of the DFCM Design Criteria Manual and the 2012 International Building Code and as follows:

  1. 80 psf, unreduced, except for column and footing designs with 20 psf movable partition load.
  2. 100 psf for exit corridors and stairs.
  3. Mechanical Equipment Rooms – 125 psf minimum or as required by actual equipment.

## 03 Building Requirements

### Building Systems Design Criteria - Structural Systems

Areas where heavy load concentrations exceed the normal loading requirements shall be designed for the specific load case. Structure supporting specialty equipment will be designed to the requirements of selected “basis of design” equipment.

Note: The more stringent requirement between the 2012 IBC, the DFCM Design Criteria Manual, and the loads given above shall govern.

#### FLOOR VIBRATION CRITERIA

Control of suspended floor and roof structure vibrations due to human and mechanically induced excitation forces are being considered in the design of the building structural floor framing systems.

It is not anticipated that any activities or equipment that are sensitive to floor vibrations will be located within this facility. This should be verified as part of the final design. Should vibration sensitive activities or equipment become necessary within the facility then structural system compatibility should be carefully evaluated.

#### STRUCTURAL SYSTEMS

In considering which structural system should be used, several important aspects of any structural system should be considered:

- Architectural compatibility
- Cost effectiveness for the height of the building
- Ease of construction, including the necessity of specialized trades that may affect cost and schedule
- The effect of structural systems on future remodeling within the building
- The construction schedule

Several different framing systems may be investigated, including but not limited to:

- Load-bearing steel stud exterior and interior walls with long-span composite concrete decks
- Conventional composite steel framing construction with non-load-bearing exterior systems
- Precast concrete systems

Conventional wood-framed construction is not considered by DSU to be an acceptable structural system for this project.

The suspended floor areas may consist of concrete on metal deck slabs supported by steel wide flange floor framing and steel columns or by cold-formed steel stud framing. The floor framing may incorporate welded studs to make the floor slab composite with the steel beams. The roof framing may consist of open web steel joist and/or wide flange beams supporting steel roof deck. Columns and walls will be supported by spread footings and/or continuous footings. The lateral force resisting system may use reinforced concrete or masonry shear walls and cores consisting of interconnecting shear walls. Masonry shear walls and cores may be supported on continuous footings or localized mat foundation elements.

#### FUTURE BUILDING EXPANSION

The A/E designers of the building have not considered potential future horizontal and/or vertical expansions because:

- Future vertical expansion is not anticipated
- Future horizontal expansion of the structure is not anticipated

#### TESTING AND INSPECTIONS

The Architect/Engineer, and the selected testing lab, shall perform periodic construction observations, testing, and special inspections, as outlined in the DFCM Design Criteria for Architects and Engineers. List all required special inspections on the contract drawings, and perform periodic construction observations as required by the A/E agreement. Costs for special inspections and testing services will be paid for directly by the owner.

## 03 Building Requirements

### Building Systems Design Criteria- Mechanical, Plumbing and Fire Protection Systems

#### GENERAL

##### DESIGN PARAMETERS:

A. Mechanical and Plumbing systems design and construction for the Dixie State University Housing shall comply with Utah State Division of Facilities Construction Management's updated engineering design guides and standards, Dixie State University's design standards, local codes, and city regulations.

B. The purpose of this mechanical description is to seek approval, to clarify what options were selected, potential value engineering, and more detail into the mechanical systems being used.

##### PROJECT DESIGN REFERENCES, CODES, AND GUIDES:

- A. ASHRAE Guides and Standards
- B. International Building Code (IBC) and Life Safety Code
- C. International Mechanical Code (IMC)
- D. International Plumbing Code (IPC) and Utah Amendments
- E. ASHRAE/IES 90.1-2010
- F. State of Utah DFCM Guide Lines and Standards
- G. Utah State Fire Marshall
- H. American Society of Mechanical Engineers (ASME)
- I. American Society of Testing Materials (ASTM)
- J. American Standard Association (ASA)
- K. Associated Air Balance Council (AABC) or (NEBB)
- L. National Electrical Code (NEC)
- M. National Fire Protection Association (NFPA)
- N. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
- O. Underwriters Laboratories (UL)
- P. Utah State Safety Orders (OSHA/UOSH)
- Q. Utah Air conservation Regulations/Waste Disposal Regulations
- R. Dixie State University Design Guidelines and Standards
- S. ASHRAE Guides and Standards
- T. International Fuel Gas Code (IFGC) and Questar Standards and Regulations
- U. State of Utah Pressure Vessel Rules and Regulations

##### GENERAL MECHANICAL REQUIREMENTS:

A. Coordinate with design team to provide both an internal and tunnel entrance to the main mechanical room. High temperature hot water supply and return, and chilled water supply and return shall be piped directly into the basement mechanical room.

B. Building mechanical systems shall be designed to be as maintenance friendly as possible. Include adequate space, access, opportunity, etc. for the best possible maintenance. The fan coil units, for the suites and apartments, shall be floor mounted with corridor access to allow routine maintenance without entering into the actual suites or apartments. Provide adequate clearances for service and maintenance.

C. Mechanical systems shall be designed to maximize life cycle costs.

D. Mechanical and plumbing systems shall be designed to comply with DSU standards, including standardized equipment, valves, labeling, and identification requirements, etc.

E. The mechanical systems shall be tested and balanced by an independent, licensed, test and balance contractor approved by DSU.

F. The mechanical and plumbing systems shall be energy conserving and efficient suitable for the building occupants. Systems and equipment shall have a proven history of providing efficiency and optimal energy conservation. Systems shall meet DFCM's High Performance Building Standards.

G. All equipment and piping shall be clearly identified. Equipment, piping, and electrical shall be painted and labeled as required by DSU standards. Colors shall be as specified. Colors are unified throughout the campus and existing colors shall be maintained.

##### PERSONNEL LOAD:

A. Number of occupants shall be based on the architectural layout, and the requirements of ASHRAE 90.1-2010 for the number of occupants per square foot, as indicated for student housing. Programmed amount is 350 students.

**EQUIPMENT HEAT RELEASE:**

A. Heat release from computers, servers, electrical equipment, mechanical equipment, etc. shall be included in the overall heat gain calculations for sizing of the cooling system.

**BUILDING U-VALVES:**

A. Walls, roof and glass values shall be coordinated with architectural specifications and ASHRAE requirements. Building envelope and mechanical systems shall be designed together to meet the energy guidelines and requirements of ASHRAE/IES 90.1-2010 and the State High Performance Building Standard envelope requirements.

**HEATING SOURCE AND SYSTEM:**

A. The source for heating of the building shall be high temperature hot water provided from the central boiler plant located just south of the proposed housing location. High temperature hot water shall be piped directly into shell and tube heat exchangers, located in a basement mechanical equipment room, for the building primary heating loop. The heat exchangers shall be designed for 300 psig on the tube side and 150 psig on the shell side. Due to this facility housing students a back-up heating hot water heat exchanger is required. Exchangers shall be piped in parallel and shall be sized for 100 percent redundancy.

B. New high temperature hot water supply and return piping shall be installed in a new 6'-0" wide by 8'-0" high concrete tunnel extending from the central heating plant to the new student housing basement mechanical room. High temp. hot water piping shall be seamless schedule 80 carbon steel. Provide piping stub outs to the east in two places for future connection for Phases two and three. Coordinate exact location with DSU, design team, site utilities, and civil narrative.

C. Building heating hot water from the heat exchangers shall be distributed by variable speed, base mounted hot water pumps to hot water coils located throughout the building, including but not limited to, hot water coils at each fan coil unit, variable volume air handling unit, VAV terminal unit, and re-heat coils. Heating water pumps shall be sized for 100 percent redundancy.

The heating hot water piping design from the exchangers to the building heating system shall be a two-pipe direct return system, designed for maximum 180° F supply and 140° F return temperatures. System temperature shall be re-set by an outside temperature sensor and transmitter.

E. The hot side of the heat exchangers shall be sized for a 340° F inlet temperature and a 240° F leaving water temperature back to the central plant.

F. The pre-heat coil located in the variable volume air handling unit shall be equipped with an inline coil circulation pump for freeze protection.

G. Each suite or apartment shall be heated by a 4 pipe fan coil unit. Fan coil units shall be serviceable from the corridor without having to enter into the suites or apartments. Common areas shall be heated by a variable volume air handling unit with VAV boxes including pre-heat coils located in the VAV unit and re-heat coils located in the VAV boxes.

H. Equipment required for the heating system located within the mechanical equipment room includes air separator, two water to water heat exchangers, floor mounted expansion tank, hot water pumps, make-up water chemical tank and pump set.

## 03 Building Requirements

### Building Systems Design Criteria- Mechanical, Plumbing and Fire Protection Systems

#### COOLING SOURCE AND SYSTEM:

A. The source for cooling of the building shall be chilled water provided from the Central Chilled Water Plant located in the same building as the Central Heating Plant.

B. Chilled water supply and return piping shall be installed in the same new tunnel as the heating high temperature hot water piping.

C. Chilled water shall be distributed to chilled water coils located in the variable volume air handling unit and the 4 pipe fan coil units by variable speed base mounted chilled water pumps located in the basement mechanical room. Pumps shall be sized for 100 percent redundancy.

D. The chilled water piping design shall be a primary-secondary system, with the primary loop being the piping from the central plant and the secondary loop being the building supply and return. Piping shall be seamless schedule 40, carbon steel.

E. Each suite or apartment shall be cooled by a 4 pipe fan coil unit. Fan coil units shall be serviceable from the corridor without having to enter into the suites or apartments. Common areas shall be cooled by the same variable volume air handling unit used for heating and equipped with a chilled water coil.

F. The telecom rooms shall have independent, always available, dedicated cooling. These will be cooled by wall mounted PTAC units. These units shall be added to the back-up generator. This will allow the cooling units to always be available.

G. All cooling equipment required for the cooling system, expansion tank, air separator, chilled water pumps, and make-up water system for the secondary loop, shall be located in the new basement mechanical equipment room. Primary loop equipment is existing and located in the central plant. Connect to existing chilled water piping in existing chilled water central plant and route through new tunnel to new basement mechanical room in the Student Housing.

H. The secondary chilled water piping design shall be a two-pipe direct return system with a 15 degree Delta T.

I. At the student housing building entrance and in the new basement mechanical room, the primary chilled water supply shall be looped together with the chilled water return. CHWS and CHWR secondary take-offs 12" apart shall be provided between the primary CHWS and CHWR. The primary CHWS shall be provided with a two way automatic control valve (temperature), electronically connected to a temperature sensor and transmitter located in the primary CHWR piping. Air separator and expansion tank shall be located in the secondary CHWR piping.

J. The central VAV air handling unit shall also be equipped with a direct evaporative cooling section to maximize energy efficiency in the cooling season.

#### AIR SYSTEM:

A. Conditioned and fresh air shall be distributed by the variable volume air handling unit and the fan coil units. Fan coil units shall be provided with direct drive fans with ECM motors for improved performance and energy efficiency.

B. Each suite and apartment shall be served by a dedicated 4 pipe fan coil unit. Fan coil units shall be serviceable without entering into the suites or apartments. Common areas shall be fed by one central variable volume air handling unit.

C. The conditioned air from the variable volume air handling unit shall be distributed to the spaces by an overhead medium pressure double wall flat oval metal ducted system to each VAV box. Low pressure duct shall be single wall from the VAV boxes to the diffusers.

D. The variable volume air handling unit shall be equipped with outside air, airflow sensors, internal lights, standard filter sizes, accessible motors, 4-1/2" magnahelic pressure gauges, discharge air, return air, mixed airflow sensors, door windows at fan and filters, etc. as required.

E. Each room shall include high supply and dedicated return. Transfer air under doors is not allowed.

F. All air systems shall be balanced upon completion by a DSU approved test and balance contractor.

**VENTILATION SYSTEM:**

- A. The central variable volume air handling unit shall have full economizer capabilities. Fresh air will be ducted from the exterior to the VAV air handling unit.
- B. The central variable volume air handling system shall include an outside airflow measuring station. Adequate outside airflow shall be provided to make-up the exhaust at all times.
- C. The corridors shall also be conditioned with make-up air and shall be controlled to be positive in relation to the rooms and will allow return air as needed to achieve the necessary volume of air.
- D. Exhaust shall be provided for:
1. Electrical and transformer rooms
  2. Restrooms
  3. Janitors closets
  4. Kitchens
  5. Other areas with smells, odors, or heat as necessary.
- E. Make-up air for the laundry areas shall be provided by either the VAV air handling unit or from a fan coil unit equipped with hydronic heating and cooling coils.
- F. Laundry room dryers shall be ducted to the outside using dryer booster fans. Current codes require that the length of the dryer ducts be less than 25 equivalent feet.
- G. The required outside air for make-up air at each suite and apartment shall be ducted directly from the outside to each fan coil unit.
- H. Combustion air for the dryers shall be provided by a wall louver with damper.

**INSULATION:**

- A. All insulation shall comply with ASHRAE 90.1-2010. The following is a breakdown of the insulation for the piping and equipment:
1. Rectangular ductwork shall be lined.
  2. Low pressure round ductwork, if used, shall be wrapped using round duct insulation.
  3. Heating hot water supply and return piping shall be insulated.
  4. Domestic hot and cold water piping shall be insulated. Cold water shall be complete with vapor barrier.
  5. Roof drain piping shall be insulated on horizontal runs, including roof drain bowl.
  6. Fresh air duct shall be wrapped.
  7. Chilled water supply and return piping shall be insulated, complete with vapor barrier.
  8. Chilled water equipment – Pump casings, air eliminator, expansion tank, etc., shall be insulated with vapor barrier.
  9. Hot water equipment – air eliminator, expansion tank, etc., shall be insulated.
  10. All insulation shall be covered with color coded PVC jacketing. Follow DSU color coding.

**AUTOMATION SYSTEM:**

- A. The new student housing building shall have a new DDC control system tied into the existing Honeywell or Yamas campus head end (campus already has both).

## 03 Building Requirements

### Building Systems Design Criteria- Mechanical, Plumbing and Fire Protection Systems

B. Each suite and apartment shall have a thermostat in the common space, with a remote sensor in a representative bedroom for each suite. Thermostat shall control a dedicated fan coil unit for each suite and apartment. Fan coil unit thermostat shall be programmable and monitored for status by DDC system.

C. Automation System shall incorporate the following control points for status and control:

1. Outside reset controller for the automatic control valve serving the hot water heat exchangers.
2. Start/stop and run status of hot and chilled water pumps.
3. Status of supply air, return air, and mixed air temperatures on variable volume air handling unit.
4. Run status of fan coil units.
5. Start/stop status of variable volume air handling unit.
6. Change over auto controls for summer and winter operation of domestic hot water heaters.

#### PLUMBING SYSTEM:

A. All domestic water, waste, rainwater, and vent piping shall be sized and designed to comply with DFCM, DSU, and IPC design standards and criteria.

B. Plumbing fixtures shall be standard commercial type, and shall be ADA compliant where required. Fixtures shall not be a mixture of manufacturers for the same fixture.

C. Culinary hot and cold water piping shall be routed to the restrooms, mechanical room, sinks, service sinks, laundry, common areas, and any other fixtures that require water. Culinary water piping above ground shall be Type L copper. Culinary piping below ground shall be Type K copper under building. Provide water pressure reducing station in the new student housing basement mechanical room.

D. Manual lever flush valves shall be used on urinals located in the two unisex public restrooms. Tank type flush with lever handles shall be used for all water closets.

E. Soil, waste, and vent piping above grade shall be a combination of PVC for piping serving low flow fixtures and cast iron no-hub for all other fixtures. No-hub is not allowed below grade. Soil and waste piping below grade shall be schedule 80 PVC.

All piping receiving waste from low flow water closets and fixtures above grade shall be schedule 40 PVC.

F. Provide trap guards for all floor drains.

G. Plumbing fixtures shall be designed to be low flow type as required to meet State High Performance Standard. These shall include pint flush urinals, 1.28 gpf high efficiency toilets, and low flow (1.5-1.8 gpm) showerheads.

H. Kitchen sinks shall be double compartment stainless steel with residential type garbage disposers. Individual lavatories and hand sinks shall have non-removable grid strainers in public areas, and drain basket stoppers in residential areas.

I. Water closets shall be floor mounted flush tank type with elongated bowl and open front seat. Provide seat covers for water closets in the suites and apartments.

J. Showers shall include thermostatic and pressure balanced mixing valves. Include ADA handheld showerheads in ADA showers. Bathtubs will not be used.

K. Each fixture shall have individual shut off valves. Each bathroom group shall have isolation ball valves. Main lines shall have isolation ball valves at mechanical room and at each floor.

L. Provide floor mounted service sinks in the custodial closets.

M. Lavatories shall be under cabinet mounted and oval shaped.

N. Floor drains shall be provided in all custodial closets, mechanical equipment rooms, communication closets, laundry rooms, and in the bathrooms of suites and apartments.

O. Laundry rooms shall be provided with a wall mounted washer fitting equal to guy-gray fixture. Fixture shall contain electrical outlets for the washer and dryer, waste pipe, hot and cold water valves with hose connections and gas piping with valve.

P. Showers shall be provided with drains and shower fittings. Provide only one shower head per shower.

Q. Natural gas shall be provided for the clothes dryers, exterior barb – pit and domestic hot water heater.

R. Storm drainage system shall consist of primary and secondary roof drains. Primary roof drains shall connect to storm drainage 5'-0" outside building. Secondary drains shall terminate 12 inches above grade into splash blocks.

#### DOMESTIC WATER HEATING

A. Domestic hot water shall be provided by two sources. The main source shall be high temperature hot water from the Central Boiler Plant. This source shall be available as long as the central boilers are operating. The secondary source shall be high efficiency gas during the summer boiler shutdown. Storage for both heating sources is required. Design team shall verify that storage and recovery capacity be designed to allow every student to shower within a 1 hour time period.

B. Hot water system shall be provided with a re-circulating pumped system, with balance valves at each connection to hot water system.

C. Domestic hot water shall be stored at 140° F with a master mixing valve for the building distribution.

#### WATER TREATMENT

A. Water treatment shall be performed by the campus Water Treatment Service Organization, currently Powers Engineering.

B. The 180° F building heating water shall be treated through the make-up water system. This system shall consist of a plastic drum and pump system with make-up water entering the top of the drum with a 1 inch air gap. Chemicals shall be introduced into the plastic drum. Use same chemicals as existing.

C. Primary chilled water is already treated at the Central Plant. Secondary chilled water shall be the same as paragraph B above.

#### SEISMIC SUPPORT AND ANCHORAGE OF MECHANICAL EQUIPMENT:

A. All mechanical equipment and piping shall be supported and anchored per the current seismic guidelines. All piping 4" and larger shall be seismically braced. Tunnel piping shall be anchored as required.

B. Requirements for the seismic supports and vibration isolation will be written as a performance specification with deferred submittals from the manufacturer.

C. All gas piping shall have seismic supports.

#### ADA REQUIREMENTS:

A. The restrooms, drinking fountains, and other plumbing fixtures shall be ADA compliant where required. Mixing valves shall be provided on all residential fixtures with hot water.

B. Showers shall be hand held type.

#### 18. GAS PIPING:

A. Natural gas piping shall be supplied from the campus to the site by Questar. Questar shall provide and set meter. Exterior piping installation and meter set installation shall be by Questar at contractor's expense. See civil description.

B. Gas piping shall be carbon steel inside building. Gas piping shall supply clothes dryers, domestic water heater, and barbeque pit.

#### FIRE PROTECTION SYSTEMS:

A. Fire sprinkler protection shall be provided suitable for the building type and occupancy. The entire building shall be sprinkled. The system shall comply with NFPA, Campus Fire Marshal, and State of Utah Fire Marshal requirements. All sprinkler heads in the building shall be concealed quick response type.

B. Fire alarm main panels shall be installed by the main front entrance used by the fire department, and the exact placement shall be decided in conjunction with the Campus Fire Marshal. System shall connect to Honeywell system, if an alternate system is approved a new front end for the entire system will be required.

C. The fire sprinkler inspector's test shall be piped into a drain to prevent water damage. The fire sprinkler inspector test shall be of the simulated sprinkler head type, and not the glass bulb type.

#### UTILITIES:

A. See civil engineering narrative for water, sewer, storm drainage, and natural gas.

## 03 Building Requirements

### Building System Design Criteria - Electrical Systems

#### CODES AND STANDARDS

Codes and Standards which are applicable to the design of the electrical systems are listed below. Comply with each of the latest adopted publications.

ASHRAE 90.1, Standard for Energy Conservation in New Building Design  
BICSI, Building Industry Consulting Services International  
Division of Facilities Construction and Management (DFCM), Design Criteria  
Division of Facilities Construction and Management (DFCM), High Performance Building Standard  
Dixie State University Design Standards  
Dixie State University – IT Infrastructure Standards  
EIA/TIA, Electronics Industries Association/Telecommunications Industry Association  
IBC 2012, International Building Code  
IECC 2012, International Energy Conservation Code  
IESNA, Illuminating Engineering Society of North America, The Lighting Handbook, 10th Edition  
NFPA, National Fire Protection Association (applicable sections including but not limited to):  
    NFPA 70, National Electrical Code  
    NFPA 72, National Fire Code  
    NFPA 101, Life Safety Code  
Standard Broadcast Wiring and Installation Practices”, as excerpted from “Recommended Wiring Practices,” Sound System Engineering, (2nd Edition), D. Davis  
UL, Underwriter’s Laboratories  
Utah State Fire Marshal Laws, Rules and Regulations

#### SITE ELECTRICAL AND TELECOMMUNICATIONS

##### Site Electrical Utilities

Dixie State University obtains electrical service from the City of St. George Energy Services (SGES), and owns and maintains their medium-voltage distribution system. The distribution voltage is 13,200 V, 3-phase grounded wye. Feeders originate from the main 15 kV pad-mounted gear located near the substation at 1000 East 300 South. For the most part feeders are looped using pad-mounted switches throughout campus. All new medium-voltage work shall maintain a looped distribution structure with pad-mounted vacuum fault interrupter (VFI) switches.

SGES impact fee is required for all added loads on campus, which is based on the main panel size of any new project. The design-build team shall contact SGES and include this impact fee as part of the proposal for the new Student Housing.

The site for the new building is very near an existing pad-mounted VFI switch, #7. From this switch there is an underground duct bank from a SGES power pole on 100 South that serves as a backup feed for campus. There are other underground duct banks and feeders in and out of this switch. This switch with associated feeders shall be relocated if required by the building that is being proposed by the design-build contractor. It will be the design-build contractor’s responsibility to locate the switch and underground lines and include all costs in the bid to relocate as necessary.

There are at least two options to feed the new building from the underground distribution system. One is to replace existing pad-mounted switch VFI #7 with a new 5-way switch (it is currently a 4-way) that will provide one extra way to feed the new building. The other is to install a new 4-way switch between VFI’s #6 and #7, refeed the existing dormitory building transformer, and feed the new housing. This new switch also shall have an in and out way to maintain the loop between the two existing VFI switches.

Regardless of which is selected, the design-built team shall engage the campus facilities department in the discussion and final decision of the medium-voltage system modifications and feed to the new building. All new duct banks shall be red concrete-encased with 50% spare conduits, minimum (2) 5" conduits. Minimum cable size for loops is #2/0 copper EPR with copper tape shield and #2/0 THWN copper ground conductor. Cable size may be reduced to #2 for short radial feeds to an individual transformer. New switches shall be pad-mounted VFI type, either solid dielectric or non-flammable, liquid-filled type.

Provide a new pad-mounted transformer for the Student Housing building, fed from the medium voltage distribution system as described above. Provide environmentally-safe liquid transformers, such as the FR3 type. Locate the transformer as close to the building as safely and practically possible. Transformer shall be screened from view with the use of landscaping and/or screening walls. The secondary voltage and size of the transformer shall be determined by the design-build contractor, using as a minimum the NEC rules for this building type as the basis of determining loads. The load calculations shall be included on the electrical drawings.

#### Telecommunications Utilities

Provide new fiber optic service to the building from the existing data center located in the Snow Building, Room 009 in the located in the basement. Minimum cable requirement is 12-strand single-mode fiber, and shall be routed entirely in either conduit or cable trays. Two (2) 4" conduits from the new main telecommunications rooms shall be stubbed into the tunnel system. From there, provide (4) 2" conduits (this includes spares) through tunnel to the Snow Building. From the tunnel into the Snow Building data center, provide a minimum of (2) 2" CND. Provide a new 12-port LC-type fiber termination panel in the Snow Building: Commscope 360DP-12LC-SM.

TV cable service is also required from the Snow Building data center to the new building. Provide an RG11 coaxial trunk line along the same route as the fiber, installed in 2" CND. Include terminations on both ends, for distribution throughout the new student housing building.

Comply with the Dixie State University IT Infrastructure Standards and engage the campus IT department in the design process to verify that requirements are met.

#### Tunnel Extension

This project includes a new tunnel extending from the existing tunnel system, near the central plans into the new building. The new tunnel will require the relocation of existing underground power lines (both medium-voltage and low-voltage) and communications lines. All of this relocation work shall be included in the scope and cost of this project. Provide 12" galvanized cable tray, and (4) 2" conduits in the tunnel for running communications lines. Do not install medium-voltage power in the tunnel. This may run along the side of the tunnel in a separate concrete-encased duct bank.

#### BUILDING POWER SYSTEMS

##### Low Voltage Service and Distribution

Provide new secondary feeder into building from the outdoor pad-mounted transformer. The secondary voltage shall be either 120/208V or 277/480V, 3-phase/4-wire. If the latter is chosen, then provide dry-type, step-down transformer(s) and distribution for loads requiring 120/208V. Provide digital metering on the main switchboard(s) and connect to the building automation system (BAS) to report peak kW demand and energy usage. For power quality and sub-metering purposes, separate loads onto different feeders based on load type, such as motors, lighting and outlets. The switchboards shall have provisions to add breakers for future load growth. Provide a minimum of 25% spare bus capacity.

The main and branch distribution equipment shall be located indoors, in dedicated electrical rooms. Provide additional electrical rooms depending on floor plan configuration to keep branch circuit runs to a minimum (see voltage-drop requirements below). Electrical rooms shall be located on every floor of the building, and stacked vertically. Panelboards serving normal lighting and outlet circuits shall be located on the same floor as the equipment they serve. For apartment rooms with cooking appliances, locate a panelboard in each apartment that serves all the loads within that apartment. Dormitory type units with now cooking appliances may be served from panelboards in a common electrical room. All panels shall have locking covers with matching keys. Size panels and feeders per NEC, with 25% additional capacity and provide 25% spare breakers in all branch panelboards. Stub spare conduits out of panelboards into accessible ceiling space, equal to 10% of the total number of conduits that enter the panel.

## 03 Building Requirements

### Building System Design Criteria - Electrical Systems

Outlet and lighting branch circuits shall be loaded to no more than 80% of what is allowed by NFPA 70. Dedicated circuits shall be provided where the load requires and where the NEC dictates. Typically a maximum of 8 outlets per circuit shall be used. In some cases, fewer outlets shall be on a circuit as required by the loads. Outlets with dedicated branch circuits (one outlet per circuit) are required for exercise equipment, vending machines, kitchen counters, refrigerators, dishwashers, microwaves, appliances, A/V cabinets, and other locations likely to have equipment requiring dedicated circuits. Each branch circuit homerun conduit shall have no more than 3 circuits. All 120V multi-wire branch circuits shall have a dedicated neutral conductor for each circuit.

Conductors shall be all copper and installed in raceways, minimum 0.75" diameter. Insulation shall be XHHW-2 for outdoor main feeder entrances and THWN-2 for feeders and branch circuits within the building. EMT or rigid metal conduit shall be used indoors. A transition to MC cable may be used for the last 30' of the circuit above ceilings and within partition walls, and for wiring within housing units. All homeruns shall be in conduit. Branch circuits shall be sized to prevent voltage drop exceeding 3% at the farthest load. The total voltage drop on both feeders and branch circuits shall be designed to not exceed 5%.

A fault current and coordination study shall be performed by a licensed electrical engineer to indicate available fault current at all points in the distribution system. New equipment shall be adequately rated for the amount of available fault current. System coordination shall be studied, and fuses or breakers selected to ensure minimum system outage due to overloads or fault currents. The breakers shall be set with adjustable long time, short time, instantaneous and/or ground fault settings for optimum system coordination. Demonstrate compliance with the NEC regarding selective coordination of overcurrent protective devices serving emergency systems and elevators. Provide arc-flash reduction means for all circuits breakers rated at 1200 amps and higher.

Equipment and Furniture: Power shall be run to any equipment indicated in the program as requiring power and empty raceway. Obtain equipment cut sheets and shop drawings and incorporate requirements into the design to ensure that the proper power and conduit is run to the equipment.

#### Power Quality and Reliability

Surge protective devices (SPD's) and "noise" protection shall be provided at service equipment and on 120/208V distribution panelboards. To the greatest extent possible, SPD units shall be integral to the panelboard or switchboard to ensure that lead lengths do not raise the clamping voltage and negate the use of the SPD unit. The SPD shall protect the sensitive electronics from disturbances that are generated inside or outside of the building.

Provide a lightning protection system per NFPA 780. A system of lightning rods on the roof with down conductors to a counterpoise ground is proposed. Special attention shall be given to the communications antennas, dishes and other equipment that is located on the roof and site, so that these items are bonded to the building lightning protection and grounding system. The system shall have a UL Master Label.

#### Grounding

The grounding system shall be installed per NFPA 70 requirements. A complete equipment grounding system shall be provided such that metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, and all other conductive materials enclosing electrical conductors or equipment, or forming part of such equipment, should be connected to earth so as to limit the voltage to ground on these materials. A separate green insulated equipment grounding conductor shall be provided in all feeder and branch circuit raceways.

### Outlets

The program space data sheets shall be used as a guideline for placing outlets, however, adjustments shall be made to suit the end users' needs during the design and review process with the user groups. The term "outlet" in general refers to a 120V/20A duplex receptacle outlet. All outlets shall be 20A minimum rated and be specification grade and the back-wired type. Residential-grade or 15-amp receptacles are not allowed. All outlets shall be neatly labeled with the panel and circuit number. Where outlet requirements cannot be identified elsewhere in the program, the following shall be used as a general guideline:

**Apartments, Suites and Dormitory Units:** As a minimum, comply with the NEC for placement of outlets for dwelling units. Locate outlets convenient to furniture and equipment identified on the architectural interiors plan. Ensure that there are outlets provided for appliances, televisions, student study desks and tables. Provide one dedicated duplex outlet for each basin sink in bathrooms and makeup counters. Also meet arc fault, ground fault and tamper-resistant requirements of the NEC for dwelling units..

**Offices/Workstations:** For each workstation, provide one outlet dedicated to computer terminals and one normal outlet, and one additional normal outlet for every 10' of wall space.

**Conference Rooms and Meeting Rooms:** One outlet for every 10' of wall space, plus one outlet dedicated to computer terminals on two walls. Include at least one floorbox underneath conference room table for power and data. Provide outlets as required for audio-visual equipment.

**Commons Areas, Lounges and Waiting Rooms:** Provide power outlets for laptop computers for planned seats, but no less than one outlet per each 12' of wall space. Provide floor outlets where stations or equipment cannot be served directly from the wall without crossing aisle space.

**Breakrooms, Kitchenettes (non-dwelling):** GFI Outlets on dedicated circuits every 4' on counter top plus dedicated outlets for refrigerator, microwave, and disposal (switched at counter top), plus one outlet for every 10' of other wall space in room.

**Counter tops (in general –non-dwelling):** One outlet every 4'; GFI where within 8' of a sink.

**Restrooms (non-dwelling):** One GFI outlet near each sink.

**Locker/Shower Rooms (non-dwelling):** One GFI outlet on a dedicated circuit near each grooming counter top.

**Telephone/Data Closets:** At least 6 quad outlets on standby power with circuit density to allow for at least 50 VA per square foot.

**Electrical Rooms:** At least one outlet on emergency power.

**Corridors, Lobbies:** Provide at least one outlet every 25', on alternating sides of the corridor or lobby.

**Stairs:** One outlet at the landing of each level.

**Storage Rooms (small), Janitors Closets:** One outlet.

**Building Exterior:** One WP/GFI outlet near each entrance.

### EMERGENCY / STANDBY POWER SUPPLY SYSTEMS

#### Emergency/Standby Service and Distribution

Provide an emergency/standby diesel generator for the new building. Locate generator outdoors in a screened area with weather-protective, sound-attenuating housing and skid-mounted, double-walled tank. Fuel supply shall be minimum 24 hours at full load. Design at least two transfer switches: one for emergency and one for standby loads. Annunciate alarms adjacent to fire alarm panel. Design generator distribution panel with digital metering. The following shall be provided with emergency power:

## 03 Building Requirements

### Building System Design Criteria - Electrical Systems

Emergency egress and exit lighting  
Fire Alarm  
Elevators (where required by IBC)  
Smoke Control Systems (if required)  
Communications rooms – outlets, lights and air conditioning  
Electrical rooms – lights and outlets  
Security systems  
Building management systems

#### UPS System

A central UPS system is not planned for the building. UPS requirements will be met with Owner-furnished, small plug-in UPS units.

#### LIGHTING

##### General

The basis for design shall be the IESNA Handbook (10th Edition) and its Recommended Practices. For all lighting, a point-by-point plot of illuminance establishing conformance with the Recommended Practices shall be furnished. The design-build proposal shall include lighting fixture cut sheets with a description of where used on the project.

IECC 2012 requirements shall be met and exceeded to meet the overall project requirement to beat this energy code by at least 20%. Energy savings design techniques such as daylighting control, occupancy sensors, centralized and de-centralized control systems, and LED lamps shall be used to maximize energy efficiency.

##### Parking, Pedestrian, and Street Lighting

Provide only campus-standard light poles. The current approved standard is as follows:

Pole: Decorative extruded aluminum pole with base cover  
Manufacturer: HADCO 14EFA-5-TT/3x3-16"VIRG-Verde

Fixture: Decorative "Acorn" style glass globe with spun aluminum cap and cage; LED, cutoff optics  
Manufacturer: HADCO C8511A-64LED-T3-VG

Equivalents may be submitted for review, but must be approved before the bid is submitted.

Building-mounted fixtures may also be used, but must be LED, full cut-off type.

Exterior lighting levels along pedestrian walkways shall be at least 1 FC average with no point falling below 0.5 FC minimum.

##### Interior Lighting

Quantitative and qualitative factors must be considered for interior lighting of this facility. Refer to the cited references and to room data sheets for the desired illuminance levels for each space, and balance this with the requirements for energy conservation, durability for student use, and aesthetics. Important considerations include quality of light, uniformity ratio, glare reduction, color rendering and contrast. All interior lighting shall utilize LED source modules (screw-in type LED lamping for incandescent fixtures will not be acceptable), in fairly standard sizes and shapes. Lighting fixture manufacturers shall have a minimum 5-year proven track record in the manufacture of LED fixtures and be represented by a Utah firm. Required minimum lighting levels shall be met with permanently installed fixtures without relying on plug-in task lights or table lamps, although, separately-switched task lighting is encouraged to reduce energy consumption.

For offices and meeting rooms, pendant indirect lighting should be strongly considered. Select luminaires for areas where monitors are planned which are designed to minimize veiling reflections, and provide multilevel lighting control and task lighting to reduce the illuminance on the monitor. In addition, in rooms with audio visual, design lighting with variable or switched levels as indicated with a separate controlled zone to reduce glare and illuminance on the audio visual display.

For housing units, fixtures shall be durable while maintaining a look complimentary of residential living. Appropriate fixtures include recessed and surface-mounted types. Pendant fixtures shall not be used. Lenses shall be high-impact acrylic or polycarbonate, and be fasted in place (not relying on gravity only to hold the lens in place. Color temperature shall not exceed 3000K, with a color rendering index of 85 minimum. As part of the design-built submittal package, include lighting fixture cut sheets of the proposed selection for the housing units.

For other spaces where glare control is not required recessed fixtures may be used. This includes corridors, workrooms, public restrooms, common areas, equipment rooms and storage rooms. Recessed LED downlights shall be used in areas where aesthetics call for an upgraded appearance, such as in main lobbies.

All interior lighting, including housing units, shall be controlled by some automatic means. This shall include vacancy/occupancy sensors for smaller enclosed areas and relay control with clock and/or timer supervision for larger areas. Manual on/off switches shall be provided in addition to the automatic means of control. Uniformity must be maintained when in reduced lighting modes. Provide dual-level switching where practical to allow users to reduce light in a uniform manner. The corridors and common areas shall be controlled through the building management system with local wall switch override. Wherever natural daylight is provided, incorporate automatic daylighting controls in accordance with IECC by using artificial lighting only as needed. This shall be accomplished with LED fixtures and automatic dimming. Daylighting control is not required for inside housing units.

Exit and emergency lighting shall comply with the IBC. Emergency lighting for means of egress to 1 fc average, 0.3 fc minimum, shall be provided. The emergency lighting shall be shut off during non-business hours to avoid energy waste from 24-hour burn time. Minimal “night-lights” could be considered as way-finding. Emergency lighting shall be included in restrooms, electrical rooms, and communication rooms.

**Lighting Summary**

TYPICAL AREA	ILLUMINANCE (FC) AVERAGE	METHOD OF CONTROL*	COMMENTS
<b>Other than Housing Units:</b>			
Offices	40 – 50	Vacancy Sensor Manual on/off, auto off	Task/ambient lighting
Conference Rooms	40 – 50	Vacancy Sensor Multi-zone control Manual on/off, auto off	
Lobbies	20 – 30	Time schedule on/off with manual on/off override	

TYPICAL AREA	ILLUMINANCE (FC) AVERAGE	METHOD OF CONTROL*	COMMENTS
Student Gathering	30 – 40	Time schedule on/off with manual on/off override	
Corridors and stairs	15 – 20	Time schedule on with night set back (not all off), occupancy sensor override.	
Storage Rooms	10 – 15	Vacancy Sensor Manual on/off, auto off	
<b>Housing Units:</b>			
Bathrooms	20-25	Vacancy Sensor Manual on/off, auto off	
Showers/Tubs	20-25	Control with room	
Sink/Vanities	40-50	Control with room	Vertical and horizontal lighting levels
Bedroom	25-30	Vacancy Sensor Manual on/off, auto off	Plug-in task light at study desks
Kitchen	40 – 50	Toggle switch	Vertical and horizontal lighting levels
Dining	20-25	Vacancy Sensor Manual on/off, auto off	
Laundry	40 – 50	Vacancy Sensor Manual on/off, auto off	
Hallways	15 – 20	Vacancy Sensor Manual on/off, auto off	

\*If daylighting is present, provide daylighting control except for within apartment units

## 03 Building Requirements

### Building System Design Criteria - Electrical Systems

#### FIRE ALARM

Comply with campus standards and Utah State Fire Marshal requirements. Provide a fire alarm and detection system in compliance with NFPA, IFC, federal, state and local codes. Design an addressable, Class A system capable of reporting back to a central station. The fire alarm system will include, but not be limited to, manual fire alarms, automatic smoke detection, audible/visible alarm notification appliances, single-station type detectors for residential units, and required control equipment. Single station-type detectors and notification devices shall also be monitored by the building central fire alarm panel. Provide duct detectors and fan shutdown where required by NFPA and the IMC. Coordinate location of the building annunciator with the fire marshal. All other detectors and functions shall comply with the referenced codes and standards. All fire alarm wiring shall be in metal conduit. The fire alarm system shall report to the central Honeywell graphic-map monitor on campus. Provide the required programming, software and hardware needed to add the new building with associated alarms to the computer graphics. If a system other than Honeywell is used for the new building, then a separate head-end graphics system will have to be provided.

#### TELECOMMUNICATIONS PATHWAYS

##### General

Provide raceways for all telephone, data, television, security, audio/visual and communications cabling. Coordinate all design with the installers and manufacturers of the various systems, and the Owner.

##### Site Service

Refer to site telecommunications description for site service to the building.

##### Riser Distribution

Telecommunications closets shall be provided in each area of the building and stacked on each floor. The minimum size of the main (ER) telecommunications room is 10' x 12', and the satellite (TR) rooms 10' x 11'. Coordinate size, equipment layout and wall space with all communications, security, audio/visual and other equipment that will be housed in these rooms. Closets shall be located such that when cabling is routed through the raceway system provided, the cable distance will not exceed 290 feet

to the furthest outlet. Provide a minimum of four 4" conduits from the MDF to the each IDF location, and 4" sleeves between floors. Twenty-four hour HVAC is required in each closet and shall be supplied with emergency power. Conduits shall be stubbed to the roof from each telecommunications room for roof-mounted dish and antennas.

##### Horizontal Distribution

Provide a cable tray distribution network above accessible ceilings throughout the building and into the IDF and communications closets. Extend the cable tray around inside of the IDF closet to allow cables to be routed within the room. Consider ease of access to the tray system when the building is in full operation. Limit cable tray routing to be above corridors, common and similar areas. Where ceilings are exposed or inaccessible, then provide a bridge of equivalent conduit connecting the cable trays in the accessible ceiling areas. Do not load the cable tray and raceway system to more than 50% of what is allowed by cable fill requirements of NFPA 70.

##### Voice/Data Drops

Each voice/data outlet location, or "drop", shall consist of a 4-11/16" square box with mud ring and one 1" conduit stubbed to the nearest cable tray. Exact locations will be coordinated with the users during design. As a minimum, provide one voice/data drop for each workstation, study desk, computer terminal, television, and AV monitor. Each dwelling unit shall have one data drop (with two cables) at each student study desk, and one for the TV location. Within each drop may be installed up to (4) cables for voice and data per location. Provide wireless access points throughout the common areas, and one per each student apartment.

In addition, each TV location shall include one additional box and conduit stubbed to cable tray for cable TV distribution.

##### Other Empty Conduit Systems

Provide empty conduit and boxes for all other low-voltage signal and communications wiring systems that may be provided in this or other contracts, such as audio/visual systems.

## TECHNOLOGY SYSTEMS

All technology systems shall comply with the latest edition of the Dixie State University IT Infrastructure Standards.

### STRUCTURED CABLING SYSTEMS

#### Site Telecommunications

Refer to Site Telecommunications under the Electrical Systems section for cabling requirements to the building.

#### Entrance Facilities and Main Equipment Rooms

Entrance Facility shall have single-mode fiber multi pair cable between the building POP (point of presence) and the main equipment room (MC). Each equipment room (ER) shall have hybrid single/multi mode 24-strand fiber and category 3 100-pair cable from the MC. All fiber optic cable strand and UTP pair counts will be determined.

#### General Structured Cabling Systems

Voice-data cabling (structured cabling systems) will include 4 pair Category 6 station cabling, multi-pair copper (UTP) and fiber backbones, all terminations, wall plates, fiber termination panels, copper patch cables, 110 type IDC punch down blocks, racks and wire management. The installer of the voice and data cabling system will have on staff a BICSI certified RCDD and all onsite installers shall be BICSI Level II certified. In addition the installer shall provide a warranty for the complete installation through the installed connectivity/cable manufacturer warranty program. Every strand of fiber and every conductor of copper will be tested in full compliance with the current ANSI/TIA/EIA 568.C standards. All fiber will be tested at all applicable window for single and multi-mode cables. All test results will be documented on 8 ½" x 11" papers and electronically in an owner identified software format for every conductor of copper and fiber cable. The campus standard manufacturer is Commscope Systemax throughout.

#### Backbone and Horizontal Cable

From the main equipment room (MC), provide a combination of multimode and single mode fiber cabling for data to each termination room (TR) on each of the floors for voice and data signal distribution. Provide UTP riser pair and fiber strand counts as required by owner. All fiber will be

terminated into separate fiber termination panels (FTP) at each end with SC connectors. Rack mount all cable termination equipment inside open frame 2 post racks. Provide the EF, MC, all ER's, and all TR's with ¾" plywood painted with fire retardant paint on a minimum of two walls. Locate entrance facility cables on 110 type punch down blocks for termination on plywood walls. Locate all riser multi-pair UTP cables on rack mounted 110 type punch down blocks. Locate FTP's for termination of all fiber cable, and all patch panels for termination of all horizontal copper cable in 7', 19" 2- post open frame equipment racks. Provide cable runway (ladder rack) around the entire perimeter of all rooms at 7' 6" above the finished floor, with lateral runs extending from wall to wall over the top of all equipment racks. Provide 7' high, 6" wide, dual sided vertical wire managers every equipment rack, and horizontal wire managers at the top and bottom of each equipment rack, as well as between all equipment and patch panels in equipment racks. Design a minimum of two rack-mounted, 6-outlet TVSS power strips in designated switch/electronics equipment racks.

#### Horizontal Cabling

Horizontal cabling will be provided from each voice-data outlet to the nearest TR on the same building level. All horizontal cable specified for workstation connections, both voice and data, will be Category 6 UTP plenum rated cable and will be terminated to category 6 compliant RJ-45 (8 pin) patch panels and faceplate modules. A typical voice/data drop will consist of 2 cables, however, more may be required for specific applications. Refer to space data sheets and Electrical System narrative for outlet locations and quantities.

#### Wireless Network

Non-classified non-secure building areas, and immediately adjacent outdoor areas, shall be provided with reliable wireless local area network coverage. Provide data outlets at owner designated locations for wireless access points to cover all interior areas as well as to spill-out into all immediately adjacent outdoor areas. Wireless access point data outlets shall consist of 2 Category 6 data jacks mounted on a double gang wall plate. At a minimum, wireless access points shall be provided in all student housing units, meeting rooms, and common gathering spaces.

## 03 Building Requirements

### Building System Design Criteria - Electrical Systems

#### Telephone Outlets

Design voice outlets for elevator panels, fire alarm panels, wall phones Design voice outlets for elevator panels, fire alarm panels, wall phones and other required uses. Install 4 pair Category 6 cable in a suitable wall plate for the application.

Provide hands-free type voice communications phones in the elevator lobby of each level, in compliance with the IBC. The phone shall dial out to campus police, or other 24-hour monitored location.

#### Voice and Data System Active Electronics and Passive Devices

All active voice and data system electronics including, but not limited to, hubs, routers, servers, PBX's, etc... will be provided from a separate building FF&E budget and are not part of the construction budget. All passive devices including, but not limited to cabling, termination devices, wall plates, patch panels, copper patch cables, fiber patch cords, connectors, open frame equipment racks, cable runway, and cable management systems are part of the construction budget.

#### SECURITY SYSTEMS

Security systems shall be comprised of two main elements – access control (card readers) with intrusion detection, and video surveillance. These systems shall report to central campus security. Comply with campus standards. New equipment shall be compatible and integrated with existing systems and equipment.

#### Access Control

The planned facility will be a mixture of 24/7 accessed spaces and regular business hours which will be monitored using zone partitions. Areas can be “secured” while other spaces remain “alarm-free”. Door contact indicators and motion detectors will be the main sensing devices.

Electronic access control of doors using HID “AptiQ” proximity card readers with pin pads shall be provided. Base system compatibility shall follow Dixie University standards. Access control system alarms (forced doors or propped open) shall be integrated into the alarm monitoring system and annunciation. Regular authorized usage of cards shall be executed in the “background” of the system, not burdening system with regular traffic.

Provide card access on all exterior door entrances, all apartment and suite doors, and all telecommunications rooms.

The system shall be an expansion of the existing campus DSX card access system and be an integral and connected part thereof. Provide system

upgrades, including additional licenses, hardware and software updates, as required for the additional card readers and functions required by this project. Verify and coordinate requirements with Campus IT/Security.

#### Video Surveillance

Provide an IP camera system. A mixture of megapixel and standard high resolution digital cameras, both fixed and pan-tilt-zoom, shall be installed at all public entrances and exits, corridors, elevator lobbies, stairwells, game rooms, kitchens, “emergency exit only” doors, and designated sensitive or critical access control locations. Megapixel cameras are to be installed at all high traffic locations and areas where subsequent video forensics may want to be used (facial recognition, high definition zooms, etc). Standard high resolution cameras will be used where general viewing and monitoring of staff or low traffic areas is desired. All cameras are always active and subject to 24/7 recording based on current video diagnostic programming (motion sensed, time/calendar, masked, behavioral, etc.). Surveillance system is to be fully integrated with duress and access control systems to provide immediate video image call-ups for all alarms.

New IP cameras shall be by Axis and connect into the existing Milestone software through the campus network, and report back to the Campus Security / PD Building. Provide system upgrades, including additional licenses, hardware and software updates, as required for the additional cameras required by this project. Verify and coordinate requirements with Campus IT/Security.

#### DISTRIBUTED ANTENNA SYSTEM

A distributed antenna system shall be provided throughout the facility to boost signals for emergency radios in accordance with the IBC. The option of adding capability for cellular phone coverage as well shall be presented with a separate line-item cost provided.

#### AUDIO AND VIDEO SYSTEMS

##### General

Audio and video (AV) systems will be specified for installation as part of the building construction work, to be completed with all building trades. Audio and video systems will be specified for full compliance with the Program and DSU IT Infrastructure standards. All video system displays will be planned for low energy consumption utilizing LED and other emerging technologies. Displays will be RoHS compliant and will have built-in eco-power consumption modes.

All AV systems will be HDCP (High Definition Content Protection) compliant with sufficient HDCP keys (KSV- Key Selection Vector) for correct system operation. All AV systems will fully support EDID (Extended Display Identification Data) communication between display devices and source devices. All AV system switching, processing, distribution and display equipment will support minimum native resolutions of 1920 x 1200, including 1080p/60 and 2K. Specify video systems which deploy HDBaseT (HDBT) technology for transmission of digital audio, video and control signals up to 330 feet on shielded Category 6 type cable. All AV systems will provide scaled outputs to every display device.

#### Multi-Purpose / Meeting Room

Provide fully integrated audio, video, and control systems. Provide a large, LED flat panel monitor or a projector and screen (to be determined during the design process) sized in compliance with AV industry-wide standards based on viewing distances for room seating layouts. Provide video system signal switching, processing, and distribution to select video sources and route the signals to the display device. Specify resident source devices and/or provisions for resident source devices such as PC's, laptops, document cameras and Blu-ray DVD players as directed during the design process. Provide video input connection panels at multiple locations on walls and in furniture to accept analog and digital audio and video signal types. In addition, provide wireless (mirroring) systems to display video content and amplify audio content without connecting to a wired connection panel.

Provide an audio system for the playback of media content with audio, and for voice reinforcement. Speakers will be flush mounted in ceilings as determined during the design process, and will provide a minimum frequency response of 80 Hz to 20kHz and + 2dB sound pressure level throughout all seating areas. Provide one wireless microphone system with one hand held transmitter and one body pack transmitter with one ear-worn microphone element. Provide wired hand held microphones with cords and stands as determined during the design process. Provide multiple microphone input connections panels corresponding with the video input connection panel locations. Provide audio system digital signal processors and power amplifiers for processing, distribution and amplification of audio signals originating from resident source devices, input connection panels and wireless (mirroring) systems. Media content with audio will be selected, processed, and amplified to the speaker system. Provide RF assisted listening systems in compliance with the American's with Disabilities Act.

Provide simple, control systems for the integrated remote control of all audio, video and lighting functions. Provide approximate 7" wired, wall mounted touch panels to facilitate user control. Provide control system processors that accept commands issued at touch panels, process and execute all tasks associated with the received command, and issue resultant commands to individual devices using Ethernet or RS-232 protocols. All audio and video system control functions, and lighting control functions, will be accessible via the control panel. All control system processors will be networked with the owner's facility-wide control system management software, and all touch panels and control system processors will be remotely accessible via the owner's network.

#### Conference Room

Provide fully integrated audio, video, and control systems. Provide a large, LED flat panel monitor or a projector and screen (to be determined during the design process) sized in compliance with AV industry-wide standards based on viewing distances for room seating layouts. Provide video system signal switching, processing, and distribution to select video sources and route the signals to the display device. Specify resident source devices and/or provisions for resident source devices such as PC's, laptops, document cameras and Blu-ray DVD players as directed during the design process. Provide connection panels at multiple locations on walls and in furniture to accept analog and digital audio and video signal types. In addition, provide wireless (mirroring) systems to display video content and amplify audio content without connecting to a wired connection panel.

Provide an audio system for the playback of media content with audio. Voice reinforcement systems will not be provided. Speakers will be flush mounted in walls or ceilings as determined during the design process, and will provide a minimum frequency response of 80 Hz to 20kHz and + 2dB sound pressure level throughout all seating areas. Provide audio system digital signal processors and power amplifiers for processing, distribution and amplification of audio signals originating from resident source devices, input connection panels and wireless (mirroring) systems. Media content with audio will be selected, processed, and amplified to the speaker system. Provide RF assisted listening systems in compliance with the American's with Disabilities Act.

## 03 Building Requirements

Provide simple, control systems for the integrated remote control of all audio, video and lighting functions. Provide approximate 7" wired, wall mounted touch panels to facilitate user control. Provide control system processors that accept commands issued at touch panels, process and execute all tasks associated with the received command, and issue resultant commands to individual devices using Ethernet or RS-232 protocols. All audio and video system control functions will be accessible via the control panel. All control system processors will be networked with the owner's facility-wide control system management software, and all touch panels and control system processors will be remotely accessible via the owner's network.

### Building-wide Digital Signage System

A digital signage system will be provided throughout the building. Approximately 46" diagonal LCD flat panel monitors will be located at the main lobby or gathering space on each floor with appropriate mounting hardware. Small form factor central processing units (CPUs) will be located at each monitor position for IP addressable, Ethernet distribution of content and basic monitor control. The digital signage system will integrate with the campus information system. The digital signage system will also include provisions for visual signage of public address announcements for compliance with the American's with Disabilities Act.

### TV Distribution System

An RF TV distribution system shall be provided for distribution of campus cable audio and video signals throughout the building. The TV distribution system shall be provided with cable, amplifiers, splitters, directional couplers, terminators, outlets, and connectors. The system shall be the broadband type, for distribution of modulated audio and video signals onto a carrier frequency. A minimum 750 MHz bandwidth shall be specified, and all outlets will be provided with between +5 and +10 dBu at each building television outlet. TV outlets will be provided to apartment units (suite living rooms), social rooms, game rooms and rooms with AV systems, in addition to TV locations identified in other parts of the program.

### CLOCK SYSTEM

Clocks will be furnished by the University as part of the FF&E budget.

### EMERGENCY CALL STATIONS

Emergency call phones, such as the "code blue" type, are not used on campus and not required for this project.



## 03 Building Requirements

### Civil Design Criteria

#### Introduction

Alpha Engineering has prepared the following summary of civil site work to be completed as part of the program for the development of the New Campus Housing Project for Dixie State University (DSU).

#### Building Systems Performance Criteria

The proposed New Student Housing Building will consist of a 4- or 5-story building with a footprint of approximately 22,000 square feet to be located at approximately 100 South and 900 East. The site is evenly graded grass landscape with a general slope of 4% and drains from the north to the south. Utility infrastructure including water, sanitary sewer, natural gas, power, and telecommunications are available to the site.

Following is a summary related to the utility infrastructure and site development for the New Student Housing Project.

#### Water

There are existing 6- and 8-inch fire water and culinary water lines adjacent to the project site, which are fed from a 12-inch main line in 100 South. The campus has a fire water system as well as a metered culinary loop, both of which are available west of the proposed building location. It is anticipated that new 8-inch fire water mains will be required on-site creating loops around the master-planned building connecting the existing fire water lines. Additional fire hydrants may also be required, depending on the available coverage. It is anticipated that the fire water lines will need to be extended to the fire riser location(s) for the new building with associated valves and appurtenances. The existing culinary water loop will need to be evaluated to determine whether upsizing will be required once building demands are available. Connections to the fire water and culinary water system will need to be coordinated with the City of St. George water department.

The existing fire water line that runs north-south through the project site will need to be re-located to the east of the proposed building. This will need to be an 8-inch C-900 PVC pipe and will include a new 3-way valve cluster at the connection point in 1000 South. This will also require an encroachment permit and coordination with the City of St. George. See the attached exhibit for the water line re-route location.

Landscaping irrigation will be taken from the existing DSU

secondary water system, which is already available at the site. Lines will need to be extended from the existing service as needed.

#### Sewer

An 8-inch sewer line draining to the south runs along the existing Central Plant access road to the west of the proposed building site. The line is adequate for the proposed construction; however, it is an older clay pipe line and will require the installation of a new manhole at the connection point.

Manholes and other appurtenances will be required and coordinated with the City of St. George wastewater department. Depending on building requirements, acid tanks and/or grease traps may be required per City of St. George Standards.

#### Power

DSU maintains its own high voltage power network. Existing underground power is available at the northwest corner of the proposed building site. The existing infrastructure will need to be evaluated to verify it has the capacity to serve the new building.

#### Natural Gas

There is an existing 4-inch gas main line in 100 South. From this main line, there is a 2-inch gas line that runs from 100 South to the Central Plant on the east edge of the project boundary adjacent to the Nissan Tower. In addition, there is a 1¼-inch main line that is in the driveway on the west side of the project that serves the Science Building and is also fed from 100 South. Questar Gas has indicated that the 2-inch line should be adequate to serve the proposed New Student Housing Building if the total load is below 7 mcfh. If the total load is greater than 7 mcfh the service will need to be extended from the 4-inch main on 100 South. Gas service line size will need to be coordinated with Questar Gas when building loads are available. Separate meters may be required for the building depending on service requirements.

Questar gas will size and install the service from their main line to the meter. Questar Gas will utilize an independent contractor to install the gas service. The design team will need to coordinate this with Questar Gas, and the General Contractor will be responsible to pay Questar Gas for the installation of the service line from the existing main to the meter(s). Questar will not install the gas main until the site has been graded to sub-grade.

Gas service line size will need to be coordinated with Questar Gas when building loads are available. Separate meters may be required for the building depending on service requirements.

Questar gas will size and install the service from their main line to the meter. Questar Gas will utilize an independent contractor to install the gas service. The design team will need to coordinate this with Questar Gas, and the General Contractor will be responsible to pay Questar Gas for the installation of the service line from the existing main to the meter(s). Questar will not install the gas main until the site has been graded to sub-grade.

#### Communications

We understand DSU-owned fiber and cable communication lines are available in the utility tunnels that currently terminate at the Central Plant. These services can be extended to the new building with the extension of the utility tunnel system. Two preliminary alignment options have been shown on the proposed site exhibit.

#### Grading and Drainage

The grade of the existing site for the proposed building slopes generally from north to south. The site drains toward the southeast end of the site and eventually to 1000 East Street. There is a potential for flooding from a large off-site tributary drainage basin to the north that generally flows across 100 South Street and into the site. An existing berm runs along the south side of 100 South Street that has historically performed well in keeping flows within the roadway without overtopping onto DSU's property. Grading of the proposed building and parking areas should be performed such that 1) if 100 South Street overtops the berm, the risk of flooding the building is minimized and the overflow is directed downstream of the building, 2) the building pad is elevated above the adjacent finish road grade, and 3) all flows generated on-site should be conveyed away from the building and directed downstream. Grading of the site should also include analysis of the parking and provide for ADA accessibility to meet current codes.

Roof drains should be connected to a subsurface drainage system and directed away from the building foundation. There is no subsurface drainage system on campus in the vicinity of the proposed construction and any subsurface drainage installed will need to discharge to the surface. Depending on site grading, it may be possible to route a portion of the roof drains to discharge to the curb on 100 South. It is anticipated that the majority of the roof drains will need to be tied into a subsurface drainage system to be extended south and east of the project site to drain to 1000 East. This drainage system could also be used for detention of excess flows created with development of the site. Based on the hydrology study performed for the site, at least 5,100 cubic feet will need to be detained, which calculates to a minimum of 750 feet of 36-inch diameter pipe. A preliminary alignment has been shown on the proposed site exhibit that shows a possible daylight location through a sidewalk drain on 1000 East, generally south of the entrance to the DSU maintenance facility and yard. This will require the extension of a total of approximately 1,140 feet of storm drain pipe (320 feet of 8-inch diameter pipe and 820 feet of 36-inch diameter pipe).

Also, based on the hydrology study performed for the site, there is potential for flows to overtop 100 South during a significant storm event. The existing berm that currently runs along 100 South will need to be raised by one foot. This can be accomplished through replacing the sidewalk at the raised elevation, grading additional berm within the existing landscaping, or constructing a wall to the raised elevation. Additionally, the landscaping along 100 South should be reinstalled with erosion-resistant materials such as large rip rap, pavers, or hardscape. Because this is located within the public right-of-way, this item has potential to be negotiated with the City of St. George as a cost-share.

## 03 Building Requirements

### Civil Design Criteria

#### Communications

We understand DSU-owned fiber and cable communication lines are available in the utility tunnels that currently terminate at the Central Plant. These services can be extended to the new building with the extension of the utility tunnel system. Two preliminary alignment options have been shown on the proposed site exhibit.

#### Grading and Drainage

The grade of the existing site for the proposed building slopes generally from north to south. The site drains toward the southeast end of the site and eventually to 1000 East Street. There is a potential for flooding from a large off-site tributary drainage basin to the north that generally flows across 100 South Street and into the site. An existing berm runs along the south side of 100 South Street that has historically performed well in keeping flows within the roadway without overtopping onto DSU's property. Grading of the proposed building and parking areas should be performed such that 1) if 100 South Street overtops the berm, the risk of flooding the building is minimized and the overflow is directed downstream of the building, 2) the building pad is elevated above the adjacent finish road grade, and 3) all flows generated on-site should be conveyed away from the building and directed downstream. Grading of the site should also include analysis of the parking and provide for ADA accessibility to meet current codes.

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Also, based on the hydrology study performed for the site, there is potential for flows to overtop 100 South during a significant storm event. The existing berm that currently runs along 100 South will need to be raised by one foot. This can be accomplished through replacing the sidewalk at the raised elevation, grading additional berm within the existing landscaping, or constructing a wall to the raised elevation. Additionally, the landscaping along 100 South should be reinstalled with erosion-resistant materials such as large rip rap, pavers, or hardscape. Because this is located within the public right-of-way, this item has potential to be negotiated with the City of St. George as a cost-share.

Based on the geotechnical investigation performed for the site, there is a possibility of encountering groundwater with construction of the building. Although it is not planned to have a basement, the tunnel extension, mechanical room and elevator pits may encounter groundwater depending on the final finish floor elevation of the building. A french drain should be installed approximately 10 to 15 feet deep to keep water out of the foundation of the building along the north and east sides of the building. The french drain could either be routed to a wet well and pumped, or it could be designed to tie into the roof drain subsurface storm drainage system conveying flows off site into 1000 East. This option is recommended to avoid the long term maintenance of pumps and the potential of flooding during power outages. This option is also recommended as there is not a convenient location to discharge a pump that would not cause nuisance water and long term maintenance issues for the grounds. A preliminary alignment has been shown on the proposed site exhibit.

The recommended option has been shown in two phases due to budget constraints. The first phase would be installed with the housing project and would provide for a portion of the required detention. This phase would terminate in a manhole with a pump at the existing parking lot east of the site and would be designed to bubble up in a large storm event and flow into the parking lot. The pump would be sized to accommodate the groundwater and would empty the pipe after a storm event. The second phase would be installed at a future date by Dixie State University and would provide the remaining detention and discharge to 1000 East street. The phasing and preliminary pipe layouts have been shown on the proposed site exhibit.

*Note: Please refer to Hydrology Report in Appendix Section III. Also see original geotechnical report and associated addendum included in performance specifications.*

## 03 Building Requirements

### Landscape Design Criteria

#### OUTDOOR SPATIAL DESIGN OF AMENITIES AND FEATURES

- Close collaboration between owner, architect, landscape architect, and other professional consultants to design a building and landscape that maintains a strong visual and physical connection to existing campus and integrates well with the new students and maximizes their access and experience to living on campus.
- Pedestrian and bike links from new housing to the campus will need to be clearly marked and designated as pedestrian corridors to ensure safety of pedestrians as they travel to and from the campus. Bike racks for bike parking with canopies will need to be located in close enough proximity and conveniently located to main pedestrian entrances that they are utilized effectively, but still screened as to not interfere with a welcoming front entry.
- The vehicular experience with respect to safety of travel and circulation patterns will to be designed to promote efficiency of travel along designated pathways. Safety of travel along these pathways will be addressed through sound design guidelines and queues taken from landscape and hardscape treatments in paving, walls, and plantings. These vehicular roads will have a clear sense of hierarchy and directional flow to make for a more effective travel experience.
- Recreational amenities such as (2) outdoor sand volleyball courts, bbq grilling stations, bike parking with canopies, seating and gathering spaces, and large open lawn areas are suggested as important amenities to incorporate into the overall landscape theme to encourage new student bonding, interaction with one another, and a sense of community.
- Plaza spaces, gathering areas, and smaller patios are suggested as opportunities to encourage outdoor interaction at various levels and scale of social networking and connection.

- Lines and other important physical elements represented by the architectural material palette will be extruded out into the landscape to strengthen and enhance the lines and design of the architecture and to connect the surrounding landscape with the building and other site elements.

- Curves in the landscape organization and design layout may be used to soften the interface between the existing area surroundings with the hard lines of the architecture.

#### PLANT MATERIALS

- Use of the Washington County Plant List is strongly encouraged by DSU, click link below for quick access to the plant list: <http://www.sgcity.org/cityforms/conservation/Washington%20County%20Water%20Wise%20Plant%20List.pdf>
- Use of (14' plus minimum height) California Fan Palms is permitted and encouraged as focal plantings near important building use areas such as welcome areas, entrances, plazas, patios, etc. California Palms shall be installed per DSU specifications and "palm tree planting and staking" details.
- Trees and shrubs should be spaced far enough away from buildings and other trees and shrubs to accommodate future growth. Preservation of existing trees is an important consideration.
- Use xeriscape materials or drought resistant plants on steep terrain and in planting beds. Use of water wise plant materials is encouraged and will be a majority of the plant palette and should be able to withstand drought tolerant conditions during the high heat of the summer months.

- Use of Flowering Plumb trees is prohibited due to disease. Deciduous canopy trees are encouraged along pedestrian corridors and walkways and also in plaza areas to provide shade and relief from the hot sun and to reduce the “heat island effect” in parking lot areas.
- Shrub plant massing’s will avoid creating a security hazard by obstructing views through the site, especially along pedestrian corridors, walkways, entries, etc.
- Natural earth and turf berming with plant massing’s between roads and parking lots may be used to screen negative views of parking lot and focus attention onto the Architectural features of the DSU New Housing Building.
- Trees will be planted to provide shade and to enhance views of surrounding landscape features so as not to take away from the beautiful surrounding mountain vistas that one will enjoy from inside the building looking out.
- Colorful flora and textures of plant material will be intensified and massed at important pedestrian and vehicular pathways and at entryways and around signage to enhance, delight, and direct users and travelers of the various outdoor spaces.
- Use of native vegetation and more drought tolerant material shall be designed and implemented on a majority of the site.

#### IRRIGATION DESIGN

- Irrigation System will be designed to deliver maximum watering efficiency while minimizing the use of water on the site. Shrubbery, flower beds, and grass will be watered on separate control valves.
- Use of overhead spray heads are not permitted within 10’ of any/all building footings and foundations as directed by Dixie State College. Drip irrigation is permitted within 10’ of any/all building footings and foundations.

- An automatic irrigation system will not be the primary source of plant sustainability. Other methods may be incorporated to ensure that plants get the necessary water requirements.
- Drought tolerant turf areas will be incorporated to give useable recreational spaces and visual contrast from native planting areas to more functional outdoor spaces.
- Water wise and xeriscape irrigation design will be incorporated and coordinated between installing contractors and landscape maintenance providers.

#### MATERIAL COSTS AND LOCALLY SELECTED CONSTRUCTION MATERIALS

- Maximize flexibility and cost effective construction methods
- Incorporate use of local building materials that can more easily be brought to the site at lower shipping and other costs.
- Specify local and native plant materials whenever possible

#### SITE ACCESSIBILITY

- Paths to building entrances shall meet ADA criteria for slope and landings. Wherever possible, all other site paths shall meet ADA criteria. If that is unfeasible in a particular location, provide elevator access within the DSU NEW HOUSING Building that will allow wheelchair users to transition the non-compliant grade condition. All usable outdoor spaces shall be fully accessible.

## 03 Building Requirements

### Sustainable Design Criteria

#### HIGH PERFORMANCE BUILDING STANDARD REQUIREMENTS

As indicated in the original RFP, the project will be required to comply with the DFCM High Performance Building Standard (HPBS) 2014, which indicates a 20% energy cost improvement compared to an ASHRAE 90.1-2010 Appendix G Baseline energy model, where life-cycle cost (LCC) effective.

Ideally, for typical design-bid-build (DBB), or construction manager general contractor (CMGC) projects, the DFCM directly hires an energy modeler/engineer (EME) during the programming design phase (PDP) to participate on the design team. During the PDP, the EME will typically assist with programmatic verbiage related to energy performance goals/requirements, develop target energy performance metrics, and initiate the process to determine potential energy efficiency measures (EEMs) that are applicable to the project.

Subsequently, at the beginning of the schematic design phase (SD), the EME will work with the design team and owner/occupants to develop an explicit list of all potential EEMs, and define responsibilities for design team members, related to the energy performance evaluation process. (Examples: Coordinate with the CMGC, or other cost estimator, to provide first-cost data for each EEM, and coordinate with Mechanical Engineer and facilities personnel to develop yearly maintenance costs, which will be used for LCC analysis.)

Once the list of EEMs, including those which are credited under the protocol of ASHRAE 90.1-2010 Appendix G, and those which are not, but will provide 'owner benefit' is completed, the EME will run energy model iterations to determine the

potential energy, and energy cost, savings associated with each EEM. Concurrently, the cost data required to complete LCC analysis will be developed, and ideally, by 50% design development phase (DD), the LCC analysis of EEMs will be completed and reviewed by the appropriate parties, to determine the EEMs that will be applied to the project, and design team members will have clear direction related to their design activities, relatively early in the design process.

Due to the nature of design-build competition projects, adjustments must be made to the process outlined above, in order to fulfill the expectations of the DFCM, as it relates to the design process and evaluation of energy performance, to ensure that energy performance goals/requirements meet their full potential. As such, the following expectations will be required of each competing design team so that upon award of the design, the chosen design team can collaborate with the EME, and carry on the evaluation of EEMs and LCC analysis, similar to DBB/CMGC projects, within an appropriate frame of the design schedule, which will minimize the impact to the design process, and optimize the energy performance potential of the project.

As part of each design team's design competition submittal, it is expected that the following items will be provided. (Note: Design teams may utilize/employ an EME, or similar, if so desired, during the competition phase, but will be required to defer to the DFCM hired EME, upon award of design.)

- Comprehensive list of all potential EEMs that may, regardless of potential, be applied to the project.
- “Baseline” cases for each EEM, or EEM group, such that an incremental performance can be determined relative to each EEM.
- Construction/implementation costs for each EEM and Baseline case.
- Replacement costs for each EEM and Baseline case, where applicable, based on a 40 year period.
- Yearly maintenance costs for each EEM and Baseline case.
- Estimation of any residual value, after 40 years of service.

Once the design is awarded. The above information shall be provided to the EME, such that energy modeling and LCC analysis can be initiated, without delay, with the expectation that the energy performance portion of the design process can be subsequently performed, similar to that of DBB and CMGC projects.

Questions regarding the process or expectations, outlined above, may be submitted to the State Energy Program Director, John Burningham: [johnburningham@utah.gov](mailto:johnburningham@utah.gov), 801-641-7270. Additionally, any deviation or exceptions to the process outlined above, or exemptions requested from the energy performance requirements, must obtain written authorization from the State Energy Program Director.

# 04 Space Requirements

# SPACE REQUIREMENTS

# 04 Space Requirements

Space Area Summary

**DSU STUDENT HOUSING  
SPACE AREA SUMMARY**

5.28.2015

SPACE TYPE	DESCRIPTION	QTY	NET SF	TOTAL NET SF
<b>SUITE STYLE UNITS</b>				
Suite 1		51	990	50490
Suite 2 (RA Suite)		8	960	7680
Number of Beds		354		
	Subtotal			58170
<b>MANAGER'S APARTMENT</b>				
Apartment s.f.				700
Number of Apartments		1		
Number of Beds		2		
	Subtotal			700
<b>AMENITIES</b>				
Common Kitchens (1 per floor)		4	350	1400
Multipurpose Activity Rm		1	800	800
Lobby		1	800	800
Laundry Room (1 per floor)		4	275	1100
Game Room / Lounge		3	700	2100
Unisex Restrooms		2	60	120
Computer Area (1 per floor)	(2 computer stations & 1 printer station)	4	45	180
Exercise Room		1	700	700
Conference Room		1	300	300
Bike Storage		1	375	375
	Subtotal			7875
<b>ADMINISTRATIVE</b>				
Office Suite	(2 offices, reception, mail room & office storage)		700	700
	Subtotal			700
<b>STORAGE &amp; MAINTENANCE</b>				
support-electrical/comm		4	150	600
support-mechanical		4	250	1000
janitor		4	35	140
Main electrical (basement)		1	200	200
elevator		2	160	320
Mechanical Basement		1	1300	1300
	Subtotal			3560

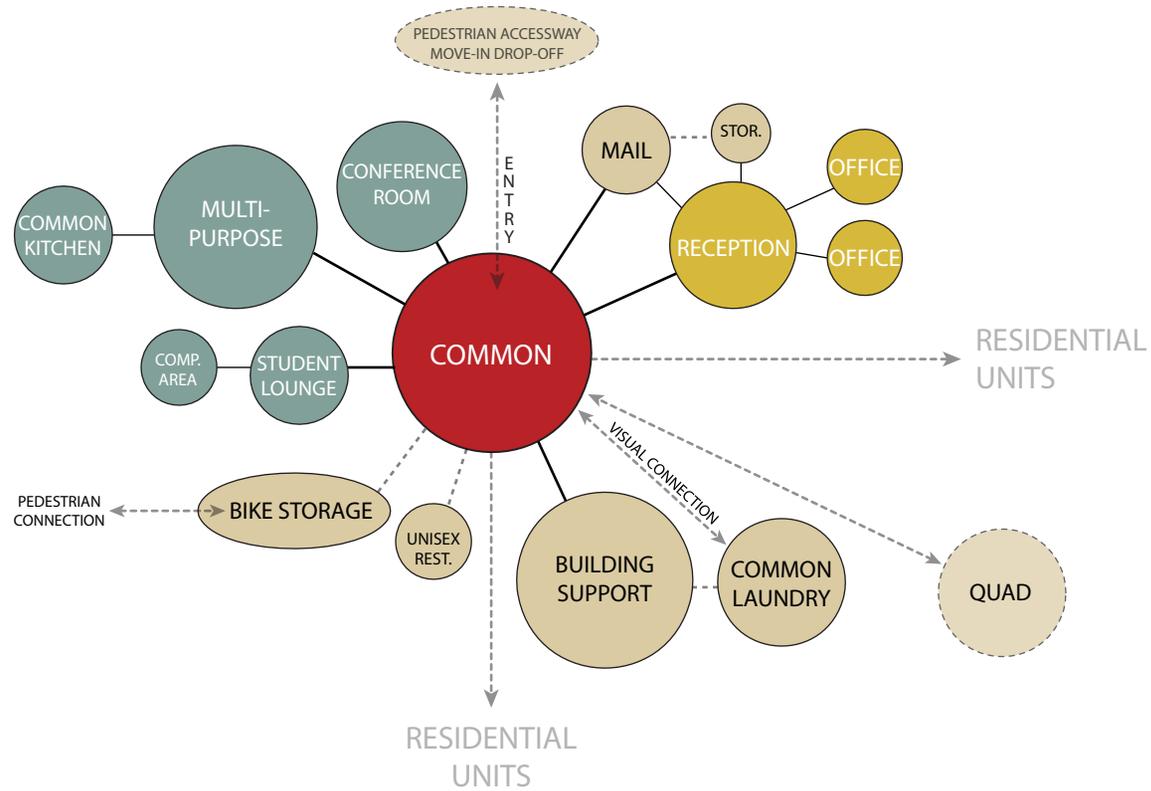
**Total Number of beds 356**

	Net SF	Gross SF
Student Housing Building	71005	88756.25
		25% grossing factor
Tunnel Extension (worst case)	350	
Storm Drain Extension		

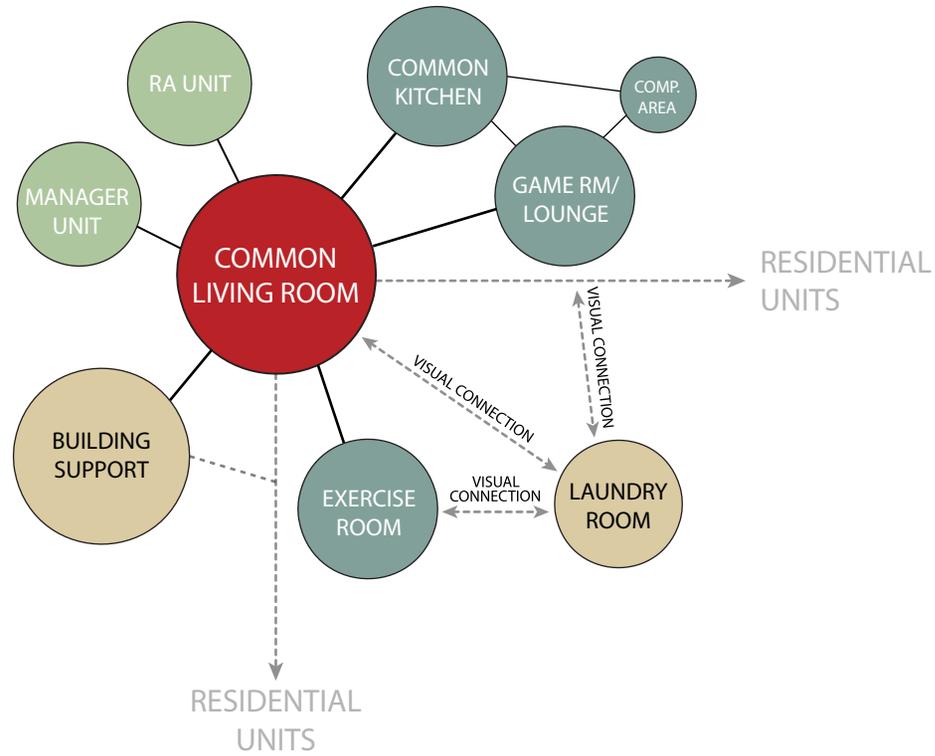
04 space requirements

# 04 Space Requirements

## Adjacency Diagram



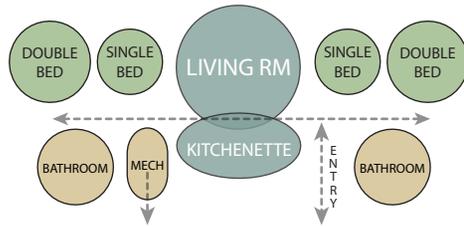
**GROUND LEVEL ADJACENCY DIAGRAM**



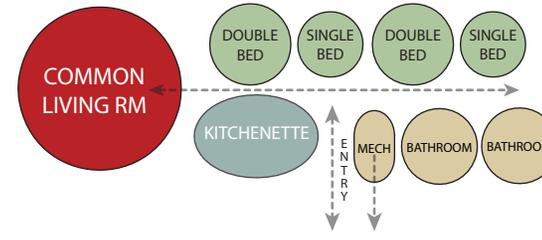
**UPPER LEVEL ADJACENCY DIAGRAM**

# 04 Space Requirements

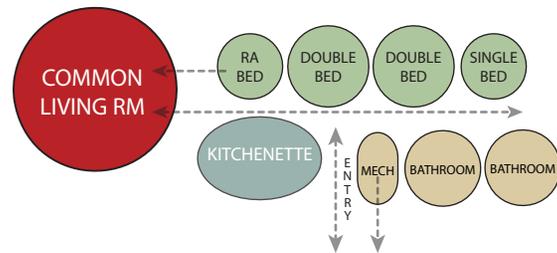
## Adjacency Diagram & Stacking Diagram



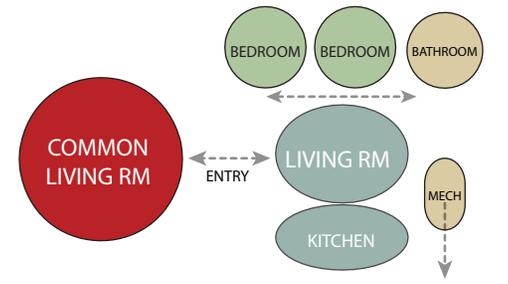
SUITE 01 ADJACENCY DIAGRAM



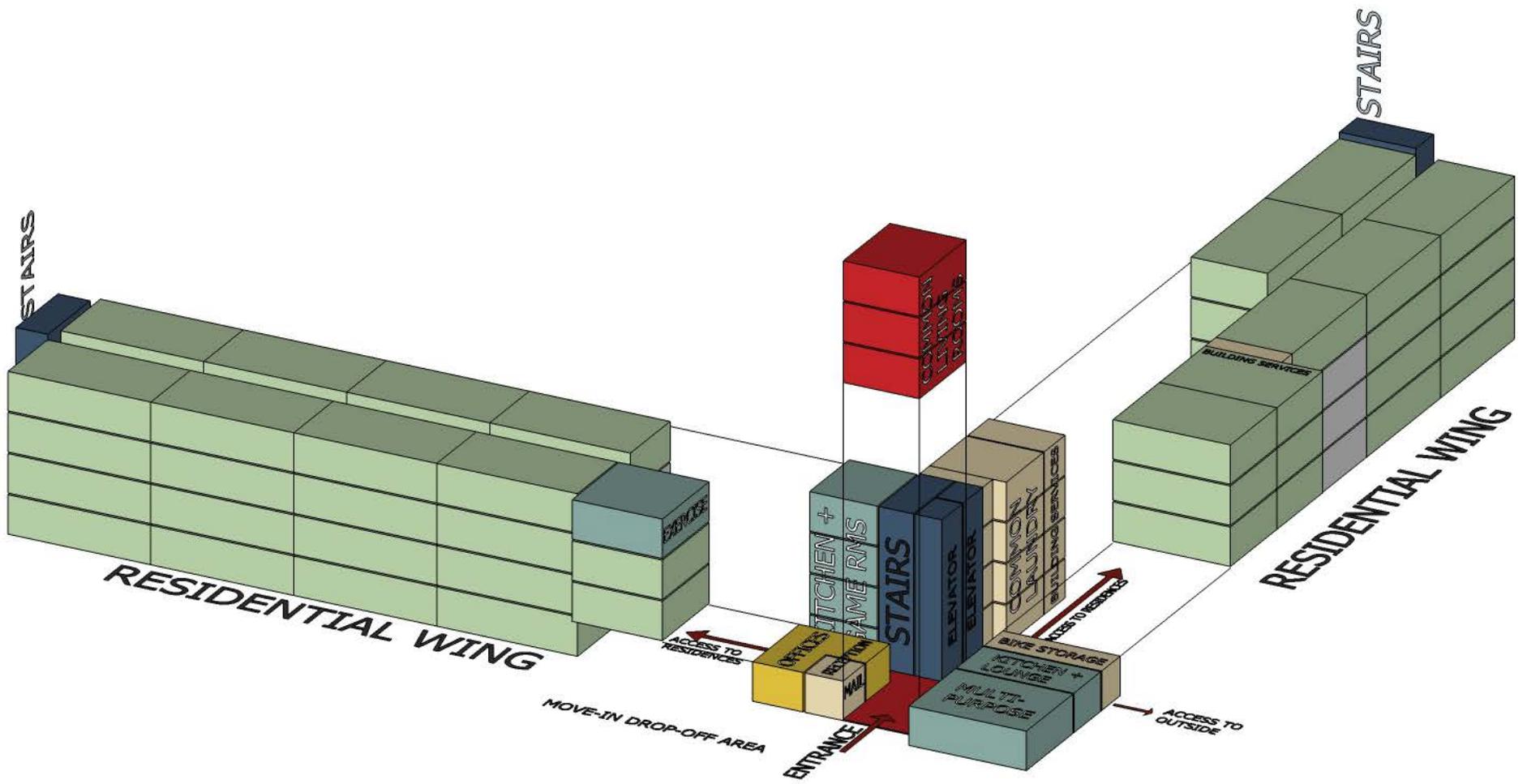
SUITE 02 ADJACENCY DIAGRAM



RA BEDROOM ADJACENCY DIAGRAM



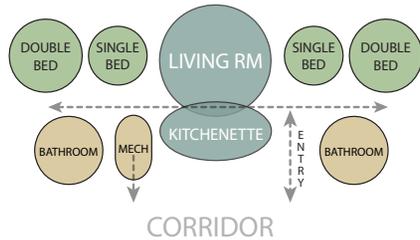
MANAGER'S APARTMENT ADJACENCY DIAGRAM



04 space requirements

# 05 Data Sheets + Room Diagrams

# DATA SHEETS + ROOM DIAGRAMS



## SUITE 1 APPROACH

The suite 1 unit represents 85 percent of the test fit units noted in the program summary. There is an efficiency built into the unit that allows for some flexibility in design and use while providing a balance between the spatial allowance, academic goals/strategies and university fiscal investment capabilities.

This unit provides an opportunity for in-suite interactions including access to outdoor space, but invites residents to engage with others in the larger housing context. Suites are intended and expected to provide basic services while encouraging students to interact in the larger student body community within the new development and beyond.

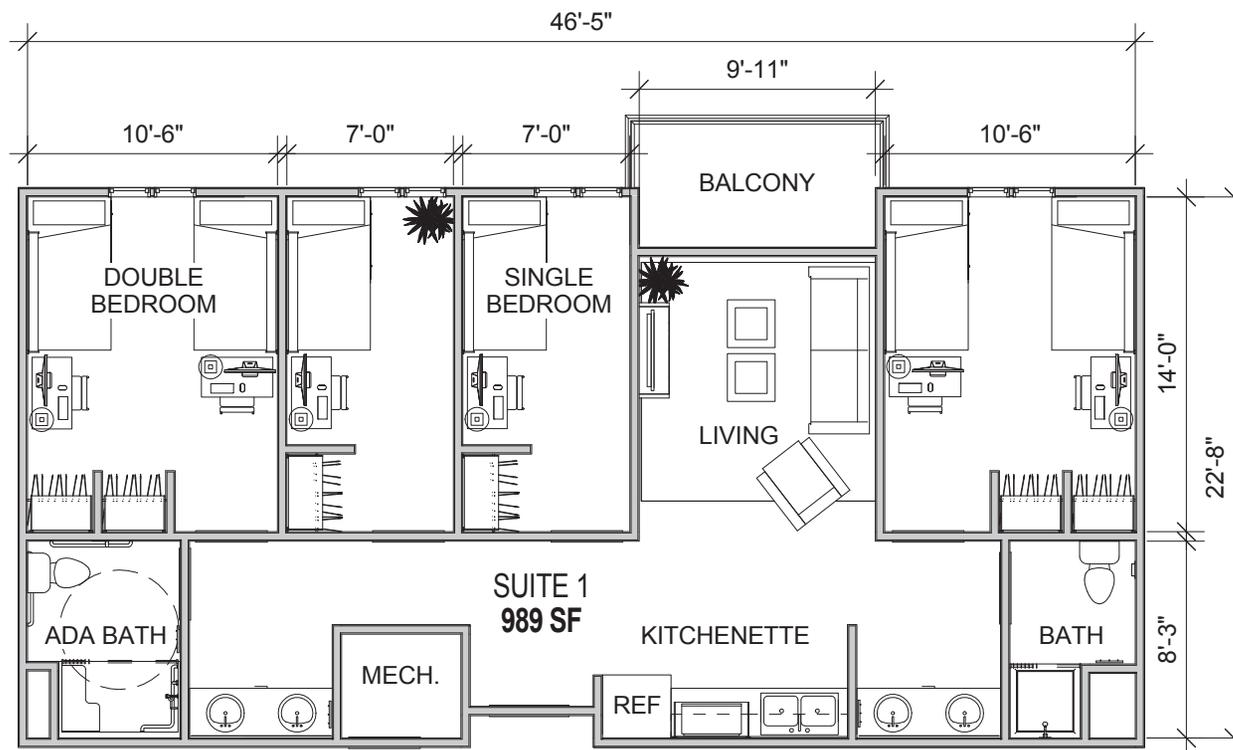
The basic suite bed count of 6 beds per unit provides a good ratio of bathroom & lavatories to students at 3 students per restroom and 2 lavatories per 3 students. Sufficient kitchenette space is also required to meet the limited preparation needs of 6 students.

This suite provides an opportunity for an integrated RA room within the typical unit depending on location and configuration. A ratio of 50 to 1 is the maximum RA target. RA rooms are to be located on each floor being served.



05 data sheets + room diagrams





## Space Requirements

### Space Summary:

Type of Space:	Non-ADA bathroom space within suites
Number Required:	1 per suite
Total Number:	Varies, estimated 58-60 suites
Occupants:	0 assigned
Area:	Range between 36-41 SF
Primary Function:	Provide shower and toilet facilities within the residence suite

### Relationships:

Location:	Within each suite
Adjacencies:	Near bedrooms and kitchenette
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	12" (min.) ceramic tile flooring w/ tile base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms
Privacy:	Bathroom Vanities shall not be visible from common areas in units.

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Provide privacy lock on bathroom doors.  
-Provide (1) personal item drawer per student, could be at/under sink locations

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Counter, under counter lavs and full size mirror located OUTSIDE the toilet/shower room above sinks, (3) equal under counter drawers at center of sinks & adjustable shelf storage under sinks  
-No tubs to be provided  
-Toilet, shower

### Moveable Furnishings:

-None required

### Equipment:

-Toilet paper holder, shower rod, towel hooks (1 per student) in shower area and 3 hooks at each vanity

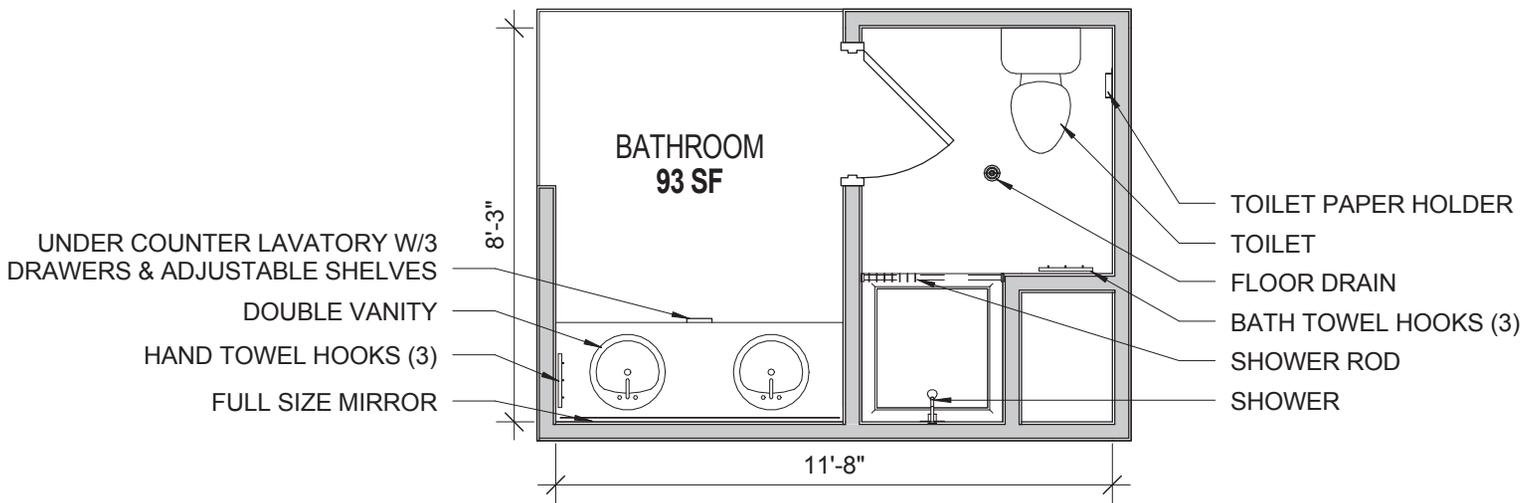
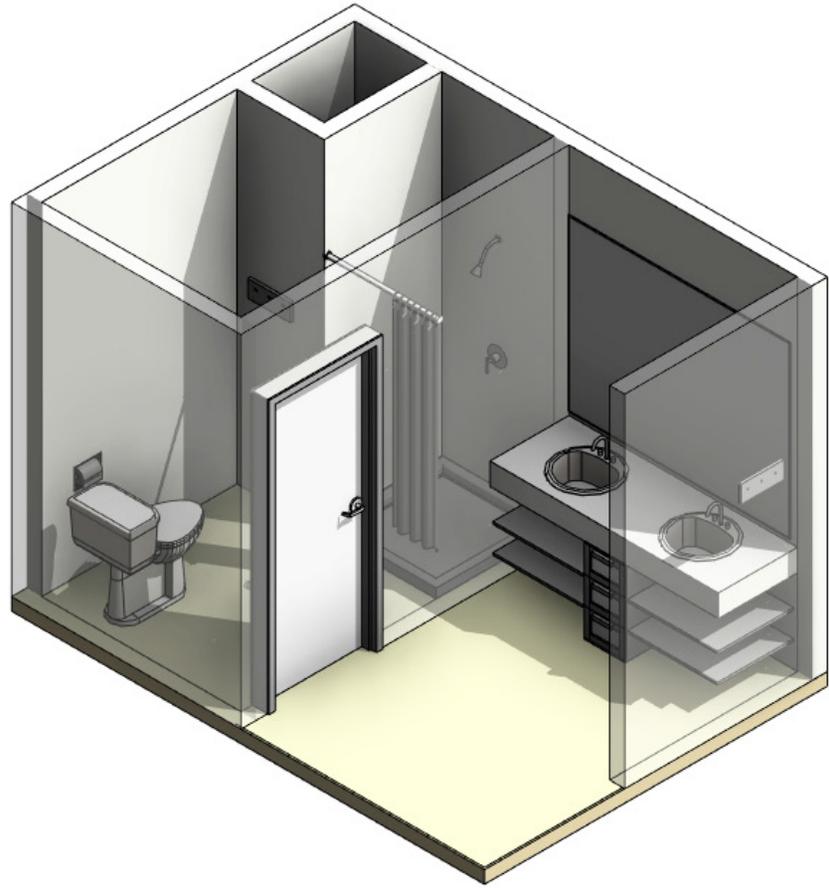
## Technical Requirements

### Mechanical:

Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust per ASHRAE 62.1
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Zoned within suite
Sound Criteria:	None required
Special Systems:	None required
Plumbing:	(1) toilet, (1) shower (w/cultured marble) per toilet/shower room, (2) under counter lavatories per sink location OUTSIDE toilet/shower room, floor drains in restroom floor

### Electrical:

Power:	(2) duplex outlets per sink location, each on dedicated circuits
Phone/Data:	None required
Video:	None required
Lighting:	
Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	40
Controls:	Vacancy Sensor with wall station override



**Space Requirements**

**Space Summary:**

Type of Space:	ADA bathroom space within suites
Number Required:	1 per suite
Total Number:	Varies, estimated 58-60 suites
Occupants:	0 assigned
Area:	Range between 49-64 SF
Primary Function:	Provide shower and toilet facilities within the residence suite

**Relationships:**

Location:	Within each suite as required by code
Adjacencies:	Near bedrooms and kitchenette
Separation:	None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, comfortable feel

**Finishes:**

Floor:	Ceramic tile flooring w/ tile base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms
Privacy:	Bathroom vanities shall not be visible from common areas of units

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): 9'-0"

**Privacy/Security:**

- Provide privacy lock on bathroom doors.
- Provide (1) personal item drawer per student, could be at/under sink locations

**Doors:**

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

**Windows:**

Type:	None required
Glazing:	None required
Natural Light:	None required

**Casework/Fixed Equipment:**

- Counter, under counter lavs and full size mirror located OUTSIDE the toilet/shower room above sinks, (3) equal under counter drawers at center of sinks & adjustable shelf storage under one side of sink (vanity to meet ADA requirements)
- No tubs to be provided
- ADA Toilet, ADA shower (roll-in or transfer), grab bars

**Moveable Furnishings:**

- None required

**Equipment:**

- Toilet paper holder, shower rod, towel hooks (1 per student) mounted no higher than 54" AFF and 3 hooks at each vanity

**Technical Requirements**

**Mechanical:**

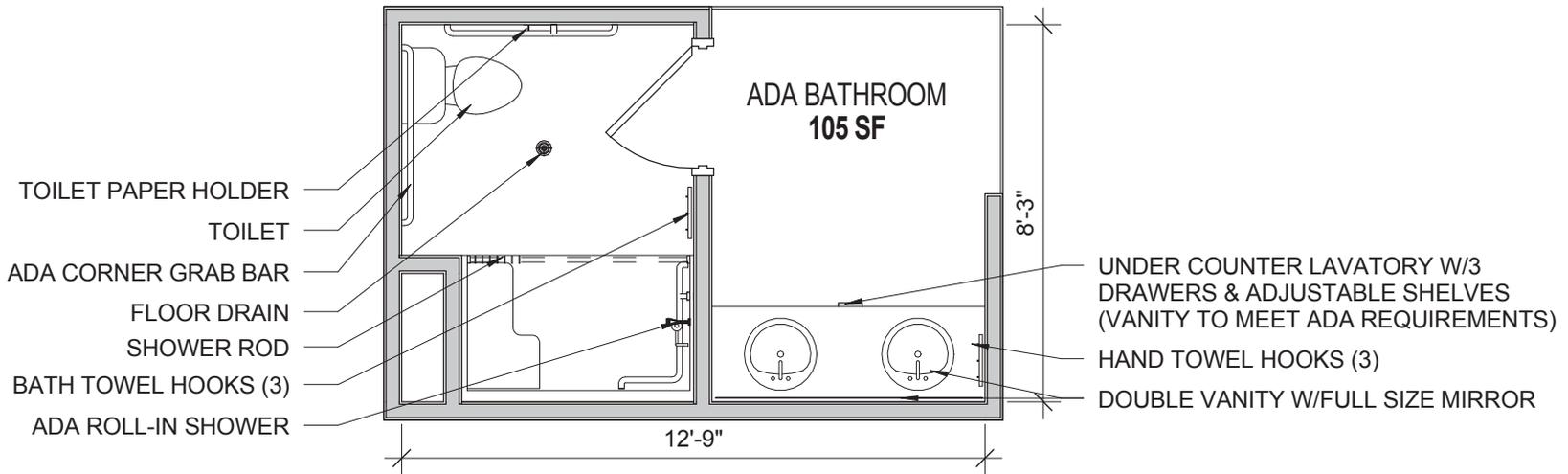
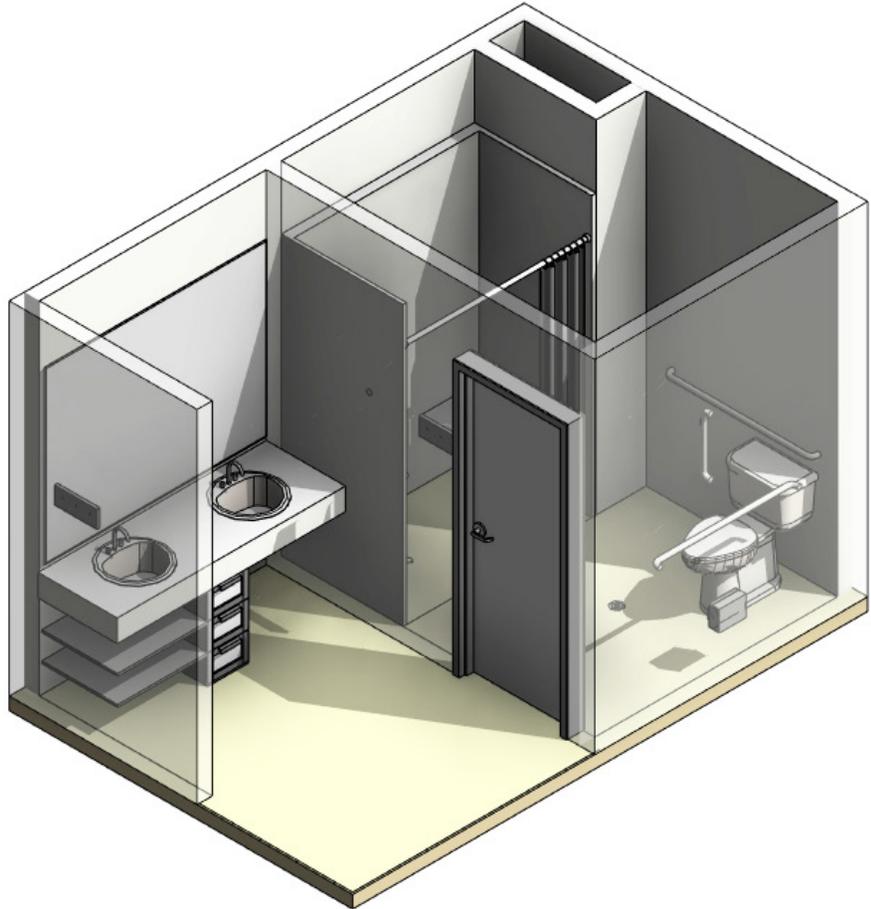
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust per ASHRAE 62.1
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Zoned within suite
Sound Criteria:	None required
Special Systems:	None required
Plumbing:	(1) ADA toilet, (1) ADA shower (roll-in or transfer) per toilet/shower room, (2) under counter lavatories per sink location OUTSIDE toilet/shower room with forward-approach knee space. Floor drain in restroom floor area

**Electrical:**

Power:	(2) duplex outlets per sink location, must be able to accommodate curling irons and blow dryers
Phone/Data:	None required
Video:	None required

**Lighting:**

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	40
Controls:	Vacancy Sensor with wall station override



## Space Requirements

### Space Summary:

Type of Space:	Bedroom space for residents
Number Required:	4 bedrooms per suite, (2) 1 bed rooms (2) 2 bed rooms
Total Number:	Varies, 350 beds min. w/ in building
Occupants:	1-2 per bedroom
Area:	92 SF (single bed) or 144 SF (double bed)
Primary Function:	Provide a comfortable environment to sleep and study

### Relationships:

Location:	Multiple within each suite
Adjacencies:	Near bathrooms and kitchenette
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms

## Architectural Requirements

### Ceiling Height:

Above Finish Floor  
(AFF): 9'-0"

### Privacy/Security:

-Provide keyed lock on bedroom doors.  
-Provide (1) location per student per bedroom  
for laptop and similar items, securable with  
student's own lock

### Doors:

Type:	Solid core wood with clear finish. No closet doors.
Frame:	Painted hollow metal
Special:	Sound isolation at door into suite

### Windows:

Type:	Exterior, 1 per bed- room, 4'x5' or 20sf min. Non-operable Insulated w/ Low-E coating
Frame:	Aluminum Storefront- Champagne
Natural Light:	Required

### Casework/Fixed Equipment:

-Fixed closet shelf (@ two heights per closet)  
-Fixed closet rod (@ two heights per closet)  
-Fixed wall shelf (one per student), 10" deep x 5'  
Long x 2" thick, provide all required blocking

### Moveable Furnishings (NIC)

-Bed 80" long (loftable 33", one per student, to  
allow for storage underneath)  
-Bookshelf (one per student)  
-3 drawer dresser (one per student)  
-Desk and chair (one per student)

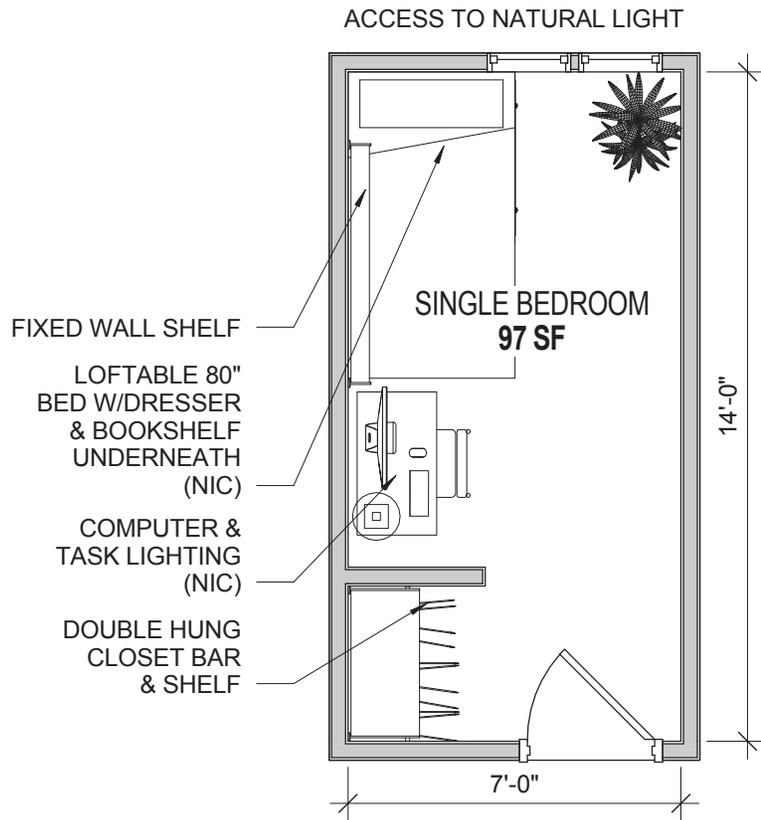
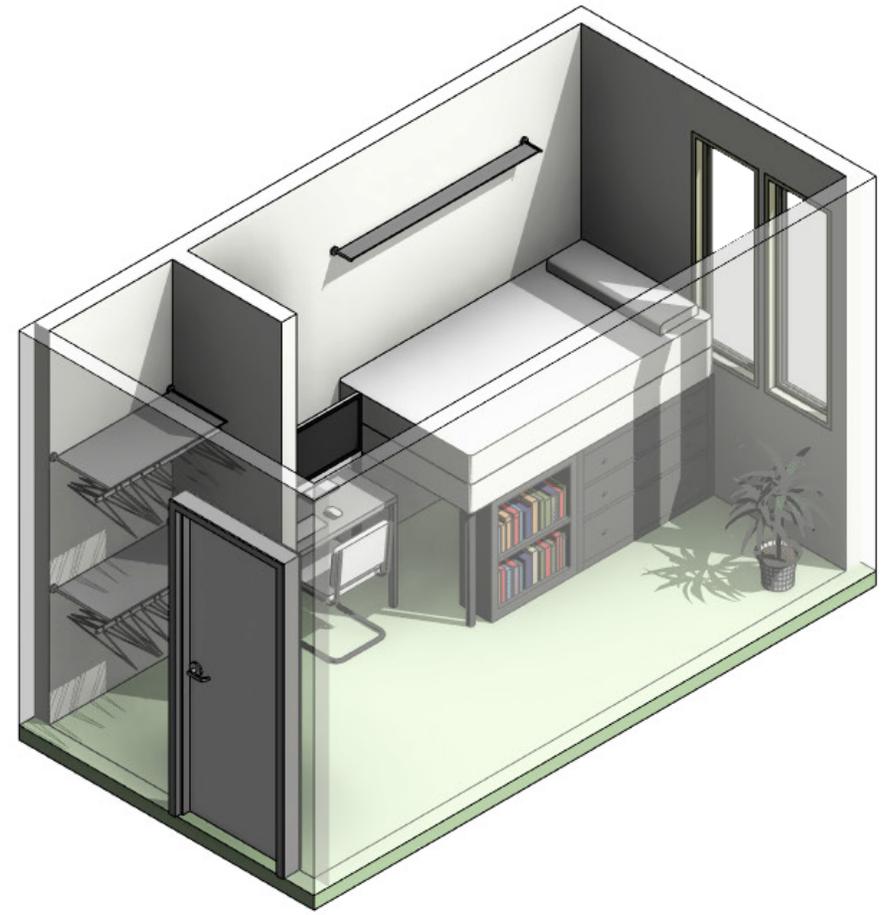
## Technical Requirements

### Mechanical:

Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Remote sensor in bedroom, suite on (1) zone w/ adj. stat in common area, Thermostat control in each suite for each suite.
Sound Criteria:	25 to 35 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	Multiple duplex outlets per bed- room, one of these located adjacent to each desk area specifically, per NEC spacing
Phone/Data:	(1) network port near each desk; wireless access; no phone require- ment
Video:	None required
Lighting:	
Fixture Type:	LED
Task Lighting:	At each desk (NIC)
Foot Candles:	20 ambient, 40 task
Controls:	Vacancy Sensor with wall station override



## Space Requirements

### Space Summary:

Type of Space:	Bedroom space for residents
Number Required:	4 bedrooms per suite, (2) 1 bed rooms (2) 2 bed rooms
Total Number:	Varies, 350 beds min. w/ in building
Occupants:	1-2 per bedroom
Area:	92 SF (single bed) or 144 SF (double bed)
Primary Function:	Provide a comfortable environment to sleep and study

### Relationships:

Location:	Multiple within each suite
Adjacencies:	Near bathrooms and kitchenette
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms

## Architectural Requirements

### Ceiling Height:

Above Finish Floor  
(AFF): 9'-0"

### Privacy/Security:

-Provide keyed lock on bedroom doors.  
-Provide (1) location per student per bedroom  
for laptop and similar items, securable with  
student's own lock

### Doors:

Type:	Solid core wood with clear finish. No closet doors.
Frame:	Painted hollow metal
Special:	Sound isolation at door into suite

### Windows:

Type:	Exterior, 1 per bed- room, 4'x5' or 20sf min. Non-operable Insulated w/ Low-E coating
Frame:	Aluminum Storefront- Champagne
Natural Light:	Required

### Casework/Fixed Equipment:

-Fixed closet shelf (@ two heights per closet)  
-Fixed closet rod (@ two heights per closet)  
-Fixed wall shelf (one per student), 10" deep x 5'  
Long x 2" thick, provide all required blocking

### Moveable Furnishings (NIC)

-Bed 80" long (loftable 33", one per student, to  
allow for storage underneath)  
-Bookshelf (one per student)  
-3 drawer dresser (one per student)  
-Desk and chair (one per student)

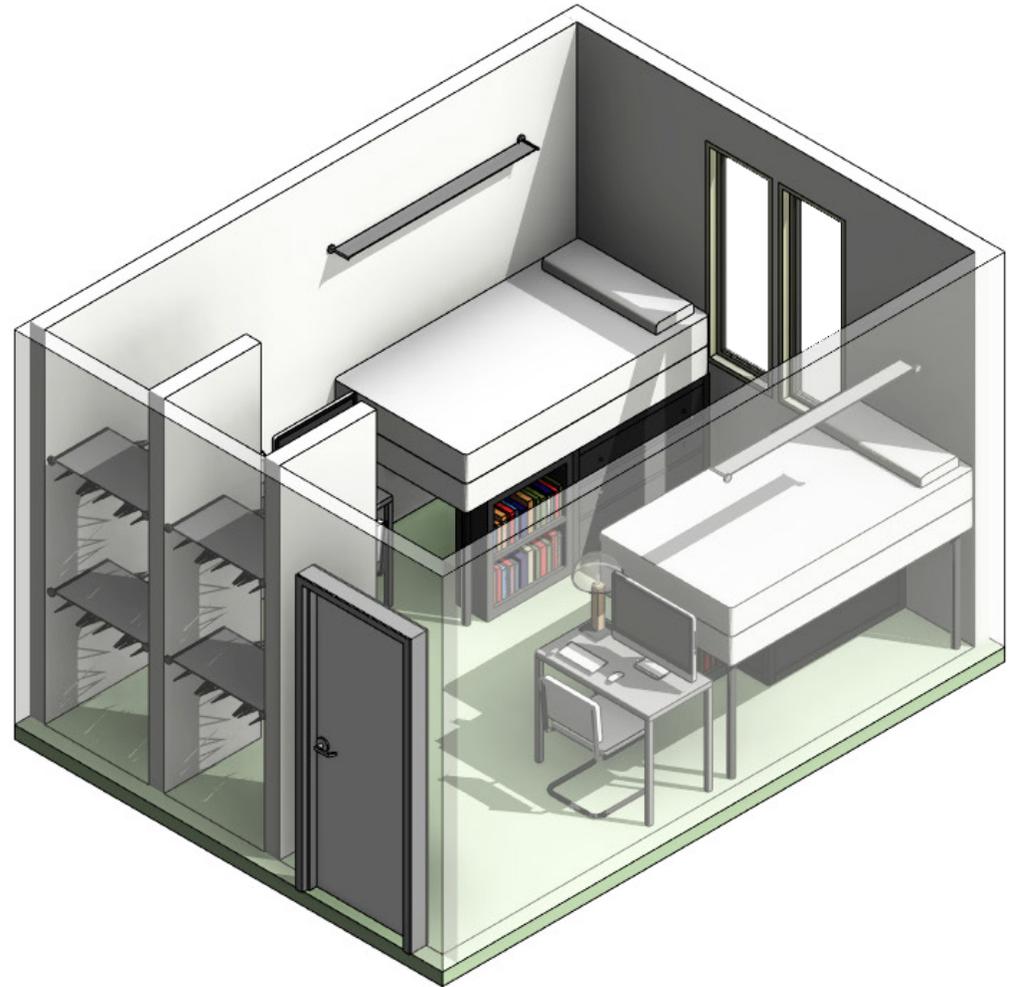
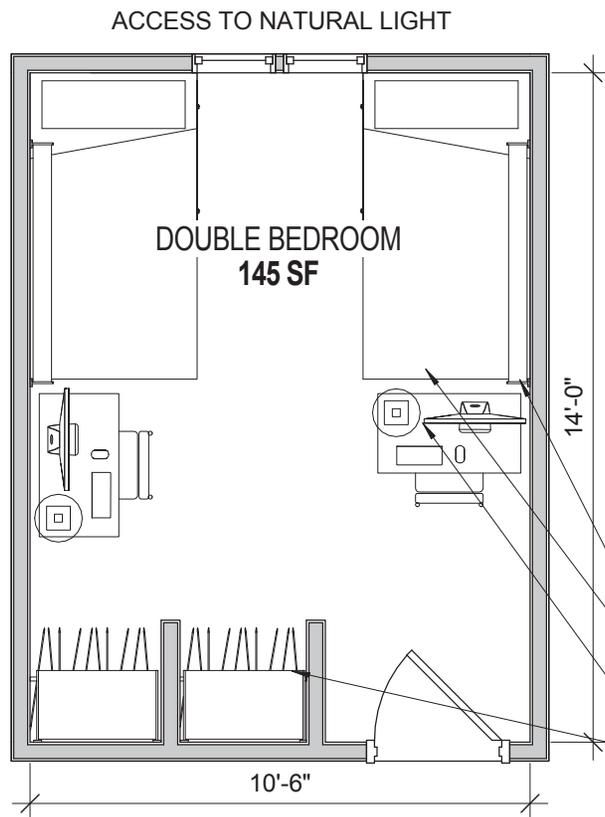
## Technical Requirements

### Mechanical:

Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Remote sensor in bedroom, suite on (1) zone w/ adj. stat in common area, Thermostat control in each suite for each suite.
Sound Criteria:	25 to 35 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	Multiple duplex outlets per bed- room, one of these located adjacent to each desk area specifically, per NEC spacing
Phone/Data:	(1) network port near each desk; wireless access; no phone require- ment
Video:	None required
Lighting:	
Fixture Type:	LED
Task Lighting:	At each desk (NIC)
Foot Candles:	20 ambient, 40 task
Controls:	Vacancy Sensor with wall station override



- FIXED WALL SHELF
- LOFTABLE 80" BED W/DRESSER & BOOKSHELF UNDERNEATH (NIC)
- COMPUTER & TASK LIGHTING (NIC)
- DOUBLE HUNG CLOSET BAR & SHELF

## Space Requirements

### Space Summary:

Type of Space:	Limited kitchen area within the suites
Number Required:	1 per suite
Total Number:	Varies, estimated 58-60 suites
Occupants:	6 accommodated
Area:	Range between 87-162 SF
Primary Function:	Comfortable location to prepare and eat food, visually appealing as it is the entry space for the suite

### Relationships:

Location:	Within each suite
Adjacencies:	Near bedrooms
Separation:	From equipment/mech rooms, noisy public and gathering spaces

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Card key access from hall

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Solid surface counter, cabinets, if possible in design island/breakfast bar  
 -Enough storage/cabinet options for 6 students(1 cabinet per student), food, pots/pans, cutlery, Built-in space for microwave in upper cabinets, etc.

### Moveable Furnishings:

-Table and chairs, or chairs at island breakfast bar (NIC)

### Equipment:

- Microwave (NIC), fridge/freezer(NIC), Chalk board paint on wall (NIC)

## Technical Requirements

### Mechanical:

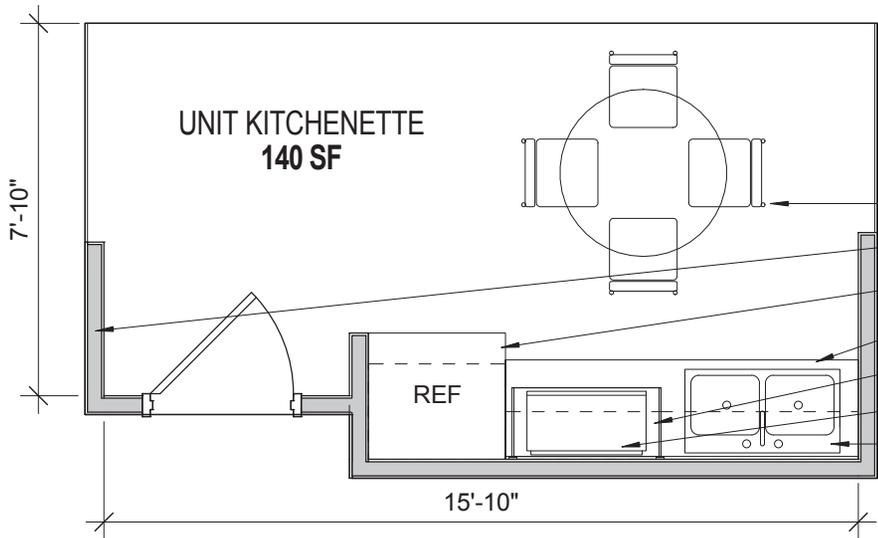
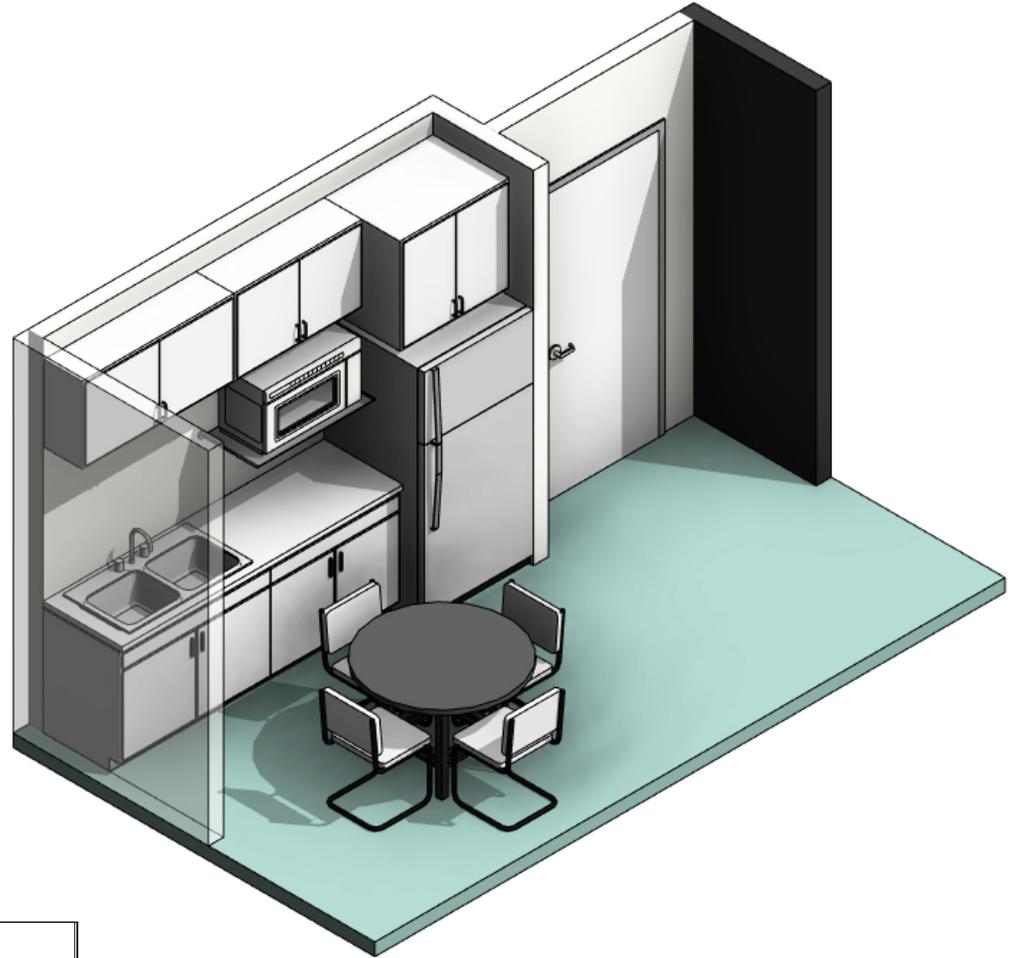
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust at kitchenette
Summer Design Temp:	74° F
Winter Design Temp:	72 ° F
Controls:	Zoned within suite, include adjustable state in common area
Sound Criteria:	None required
Special Systems:	None required
Plumbing:	Two compartment, stainless steel sink, disposal, swing type gooseneckkitchen faucet, water supply for freezer/ice maker

### Electrical:

Power:	duplex outlets above counter at 24" centers (GFI required, reset button at outlet), 2 minimum, (1) duplex outlet each for microwave and fridge, all on dedicated circuits None required
Phone/Data:	None required
Video:	None required

### Lighting:

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	40
Controls:	Vacancy Sensor with wall station override



- TABLE & CHAIRS (NIC)
- CHALKBOARD PAINT ON WALL (NIC)
- FULL SIZE FRIDGE & FREEZER (NIC)
- LOWER CABINETS
- UPPER WALL CABINETS & SHELF
- MICROWAVE (NIC)
- DOUBLE SINK & DISPOSAL

## Space Requirements

### Space Summary:

Type of Space:	Social space within the suites
Number Required:	Provide as necessary per unit plan options
Total Number:	Varies, provided as necessary per unit plan options
Occupants:	6 accommodated
Area:	Estimated 95 SF
Primary Function:	To provide a community environment where students and guests may relax, socialize, entertain, interact and study

### Relationships:

Location:	Within various suites
Adjacencies:	Near bedrooms and kitchenette area, balcony
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Desirable to keep entertainment noise from adjacent suites. Sound isolation const. at perimeter walls of suite

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Lock for sliding glass balcony door

### Doors:

Type:	Sliding glass balcony door
Frame:	Aluminum: champagne
Special:	Tempered Glass
Natural Light:	Required

### Windows:

Type:	Not required
Glazing:	Not required
Frame:	Not required

### Casework/Fixed Equipment:

-None required

### Moveable Furnishings (NIC):

-Couch, arm chairs, coffee table, media center, area rug

### Equipment (NIC):

-TV: support backing in wall by proposing team.

## Technical Requirements

### Mechanical:

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - exhaust at kitchen

Summer Design Temp: 74° F

Winter Design Temp: 72° F

Controls: Zoned within suite, include adjustable stat

Sound Criteria: less than or equal to 35 (NC/RC)

Special Systems: None required

Plumbing: None required

### Electrical:

Power: duplex wall outlets at max. of 12'-0" o.c., plus one for TV

Phone/Data: (1) network outlet, (1) wireless access 1 network outlet at TV

Video: (1) coax TV/cable outlet

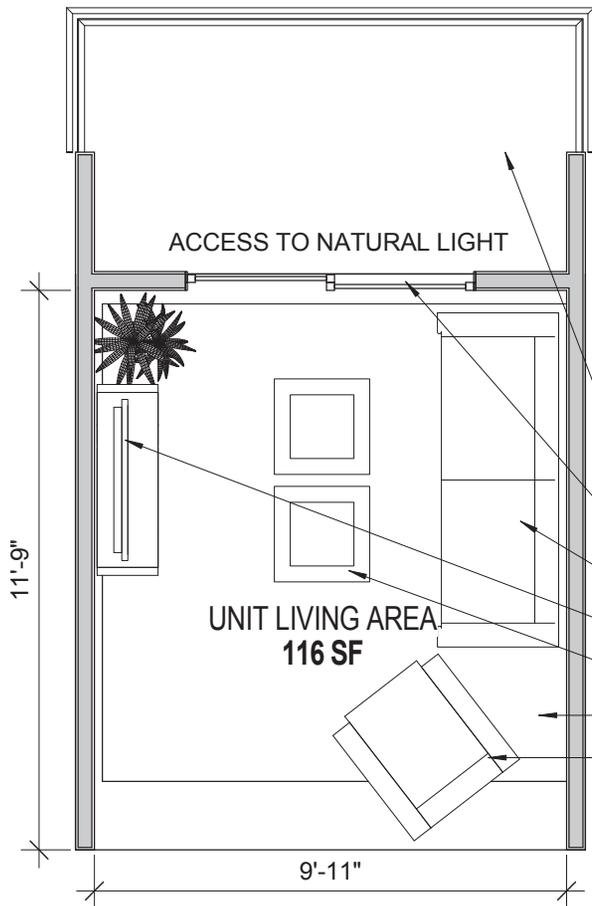
### Lighting:

Fixture Type: LED

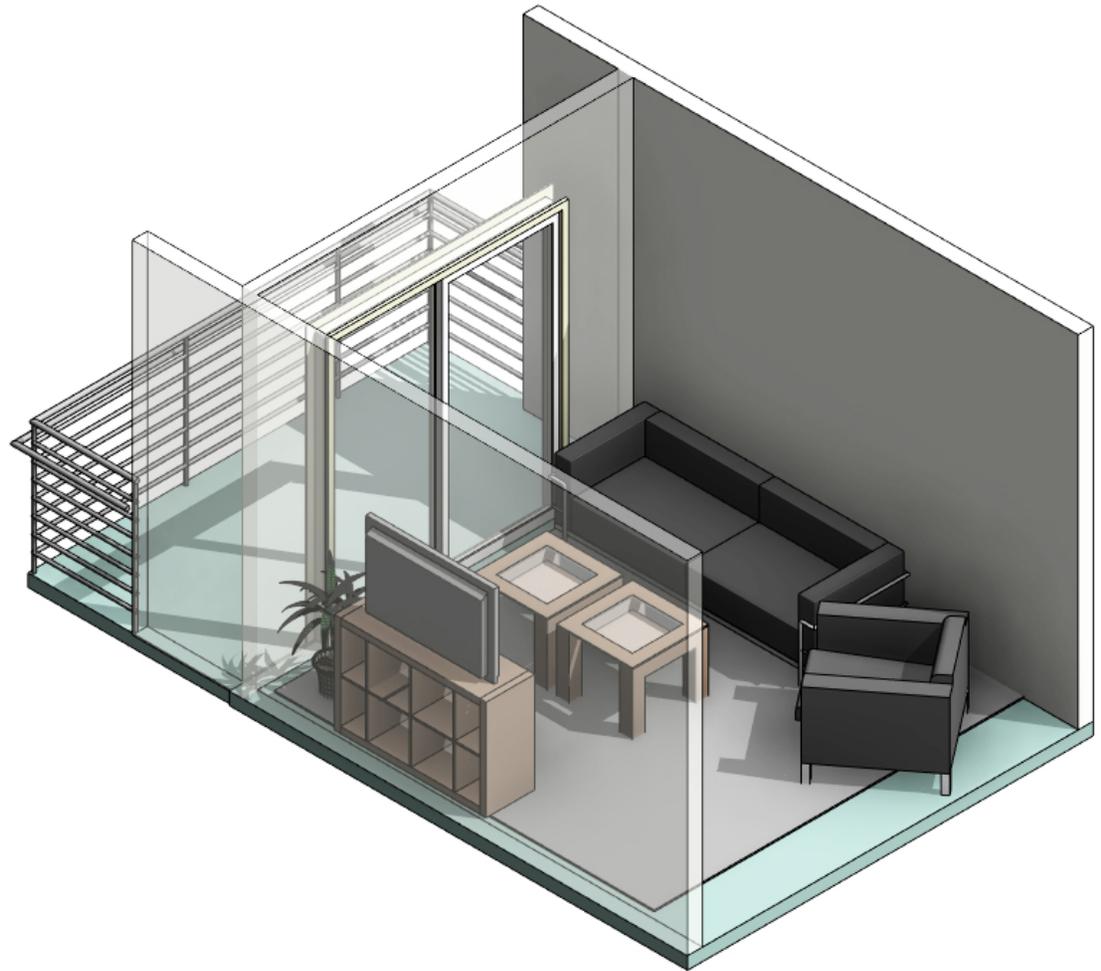
Task Lighting: None required

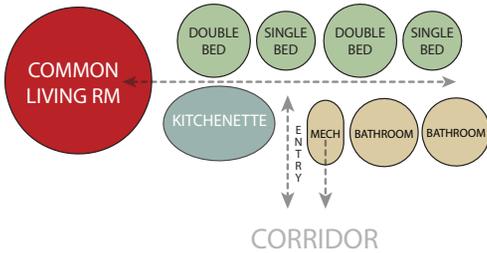
Foot Candles: 30

Controls: Vacancy Sensor with wall station override



- BALCONY
- SLIDING DOOR
- COUCH (NIC)
- TELEVISION & MEDIA CENTER
- COFFEE TABLES (NIC)
- AREA RUG (NIC)
- ARM CHAIR (NIC)



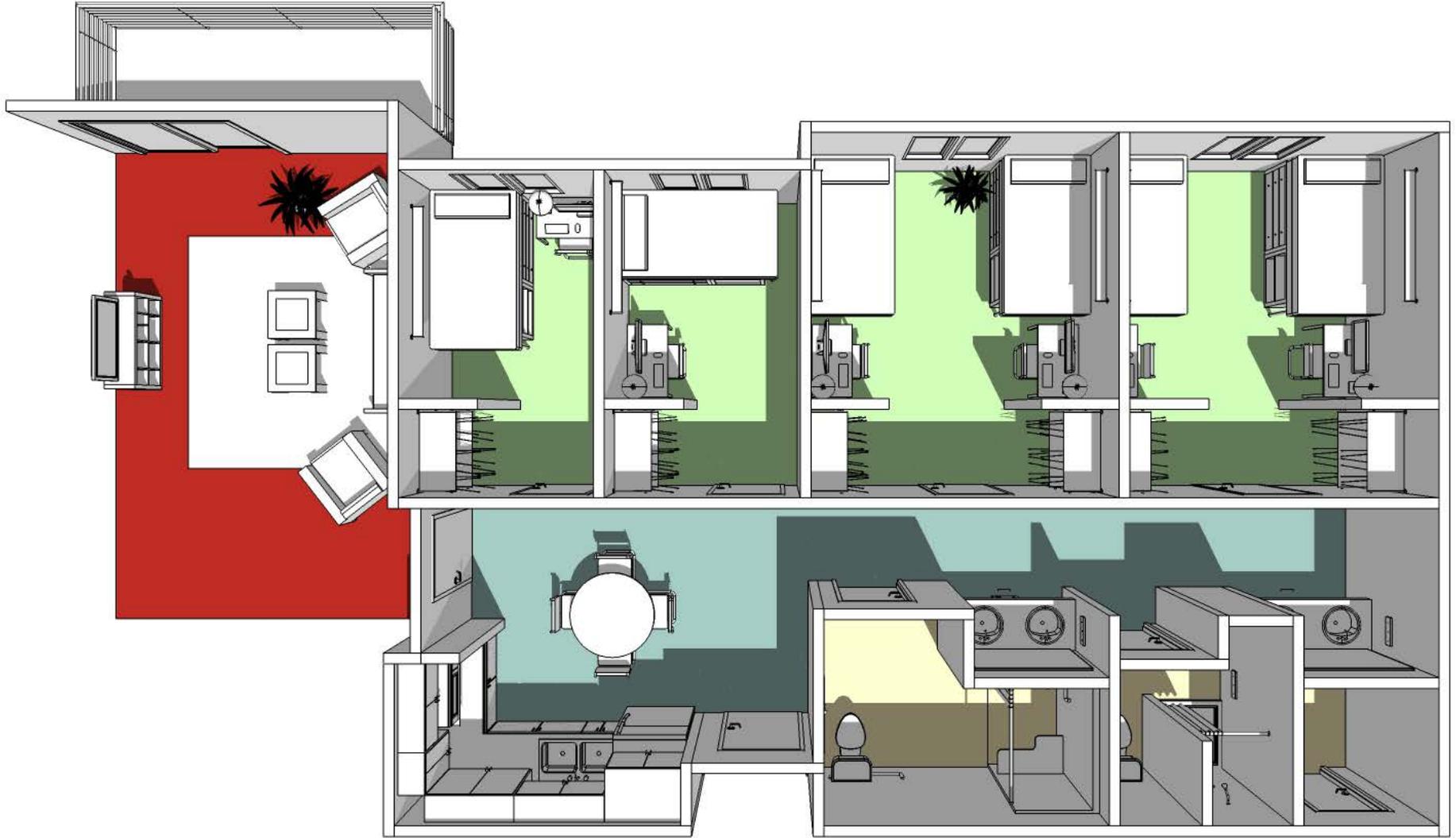


## SUITE 2 APPROACH

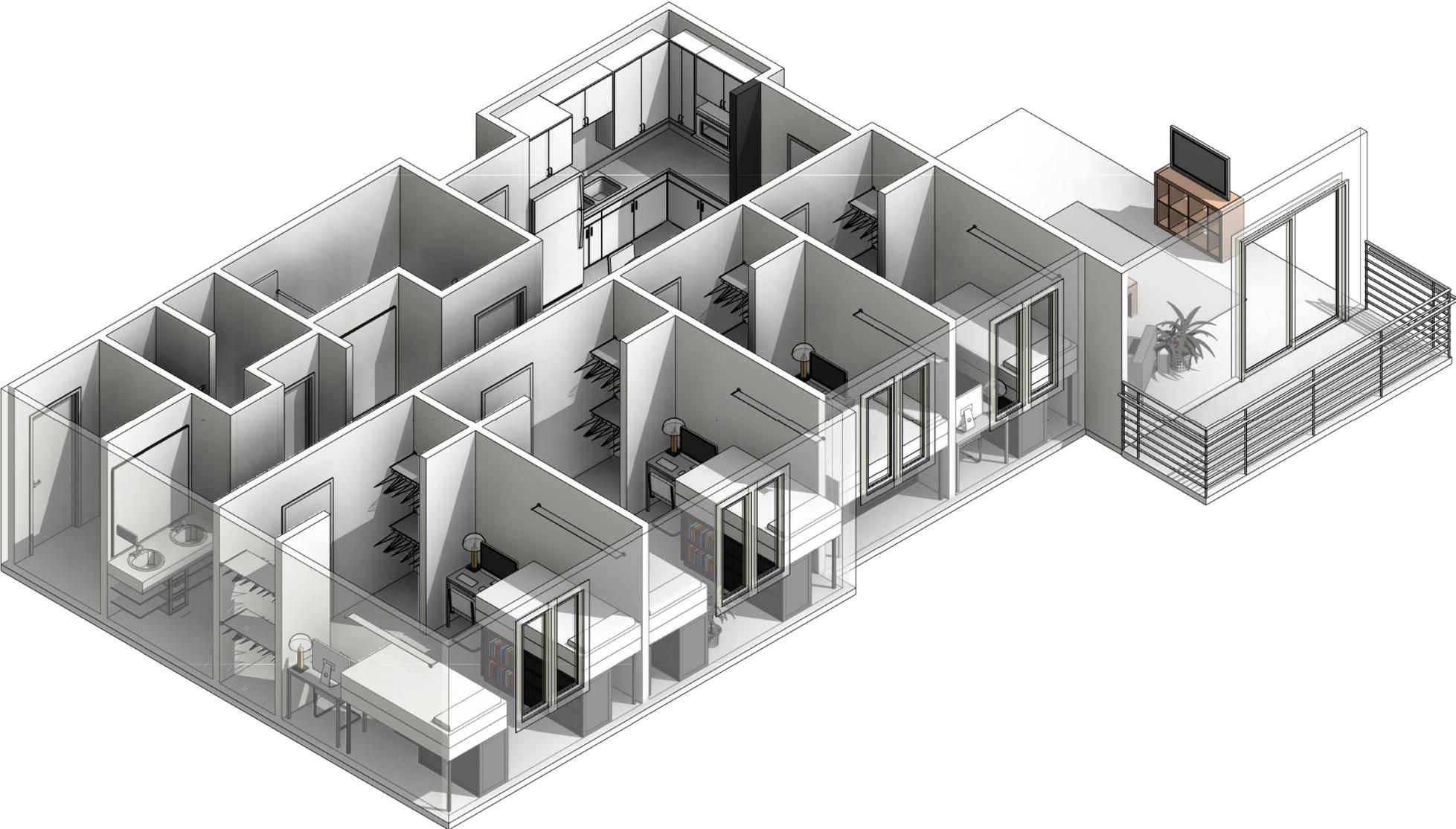
The suite 2 unit represents approximately 13 percent of the test fit units noted in the program summary. This unit requires student to be outside of their suites more often to interact with others at the university. common space is anticipated in near proximity to the suite without being directly within the confines of a particular unit and while not providing access to the exterior directly from the suite an expectation for nearby access is preferred.

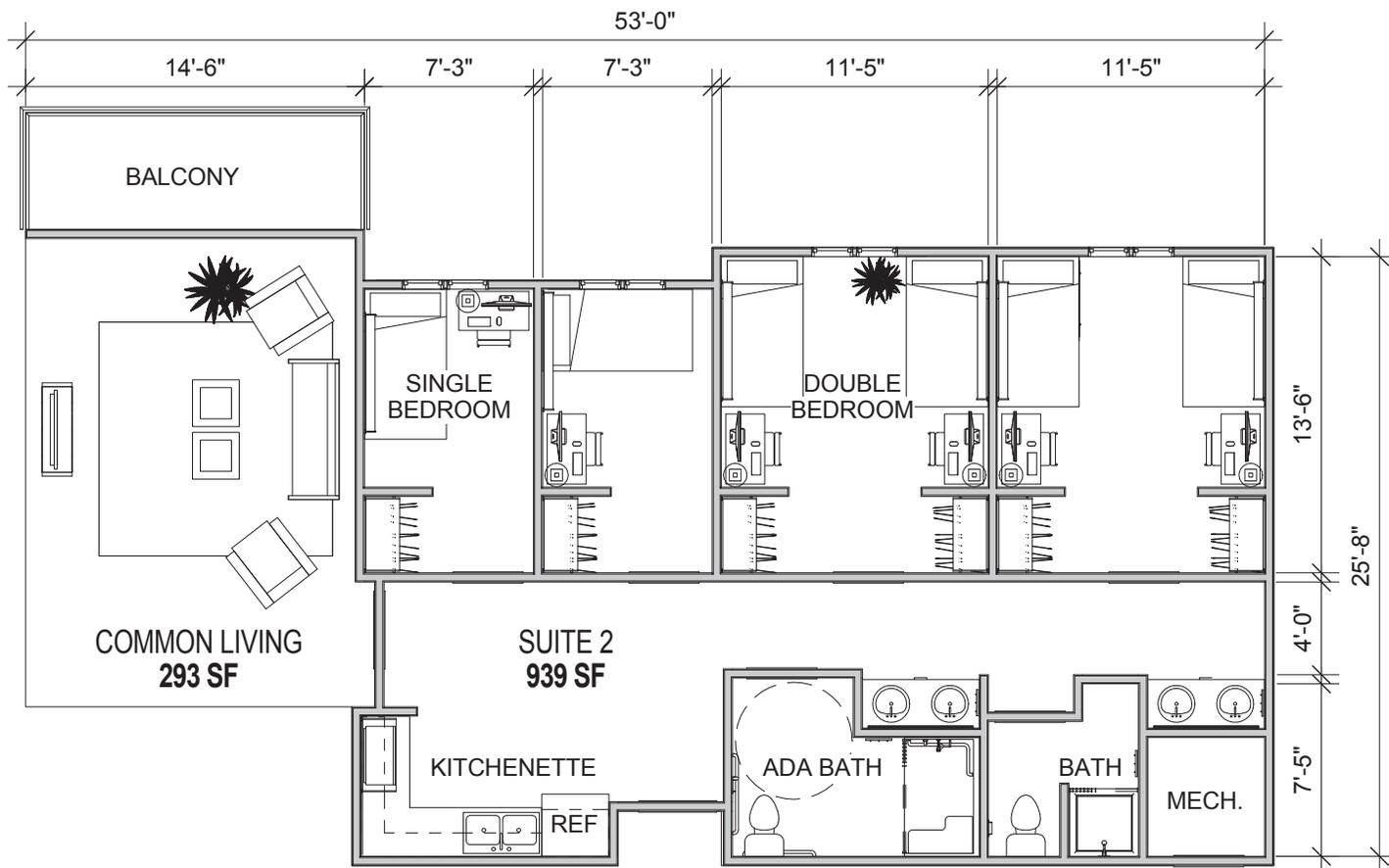
This unit provides an opportunity for minimal in-suite interactions with larger kitchenette areas, but invites residents to engage with others in the larger housing context. Suites are intended and expected to provide basic services while encouraging students to socialize in the larger student body community within the new development and beyond.

The basic suite bed count of 6 beds per unit (as with suite 1) provides a good ratio of bathroom & lavatories to students at 3 students per restroom and 2 lavatories per 3 students. Sufficient kitchenette space is also required to meet the limited preparation needs of 6 students.



05 data sheets + room diagrams





## Space Requirements

### Space Summary:

Type of Space:	Non-ADA bathroom space within suites
Number Required:	1 per suite
Total Number:	Varies, estimated 58-60 suites
Occupants:	0 assigned
Area:	Range between 36-41 SF
Primary Function:	Provide shower and toilet facilities within the residence suite

### Relationships:

Location:	Within each suite
Adjacencies:	Near bedrooms and kitchenette
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Ceramic tile flooring w/ tile base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms
Privacy:	Bathroom Vanities shall not be visible from common areas in units.

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Provide privacy lock on bathroom doors.  
-Provide (1) personal item drawer per student, could be at/under sink locations

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Counter, under counter lavs and full size mirror located OUTSIDE the toilet/shower room above sinks, (3) equal under counter drawers at center of sinks & adjustable shelf storage under sinks  
-No tubs to be provided  
-Toilet, shower

### Moveable Furnishings:

-None required

### Equipment:

-Toilet paper holder, shower rod, towel hooks (1 per student) in shower area and 1 hook on both sides of sinks

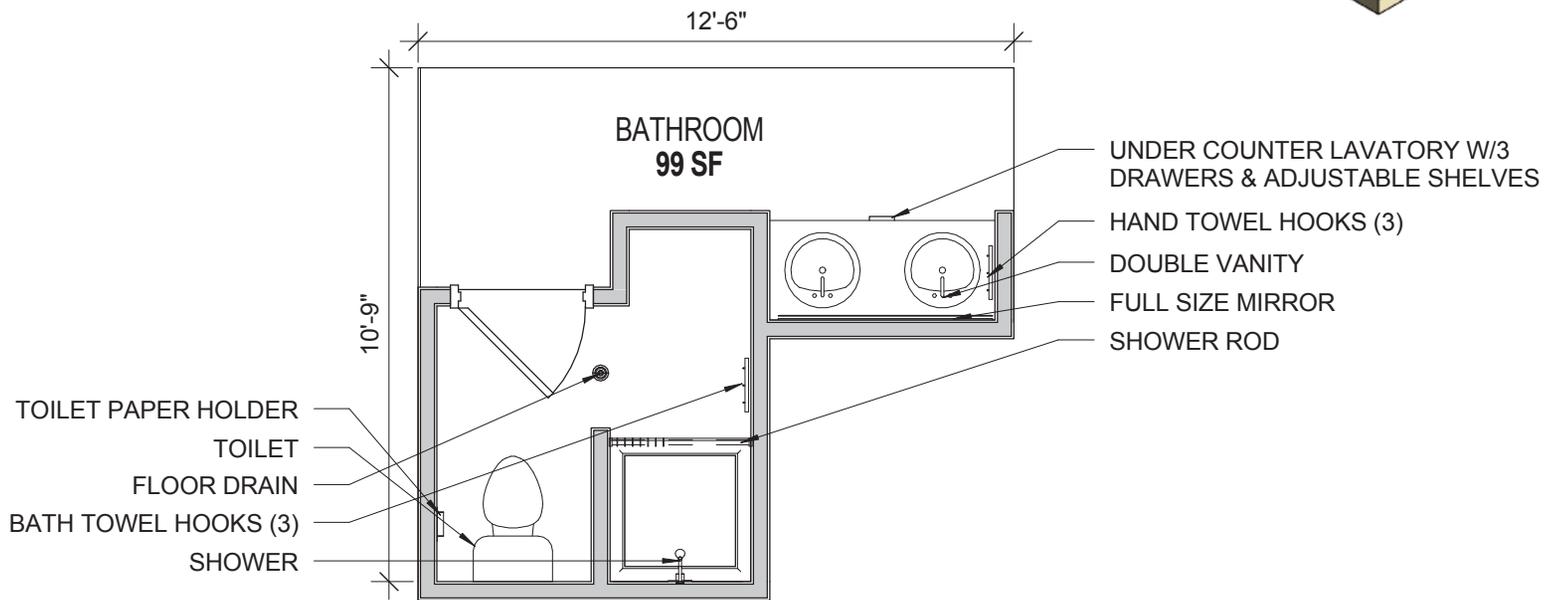
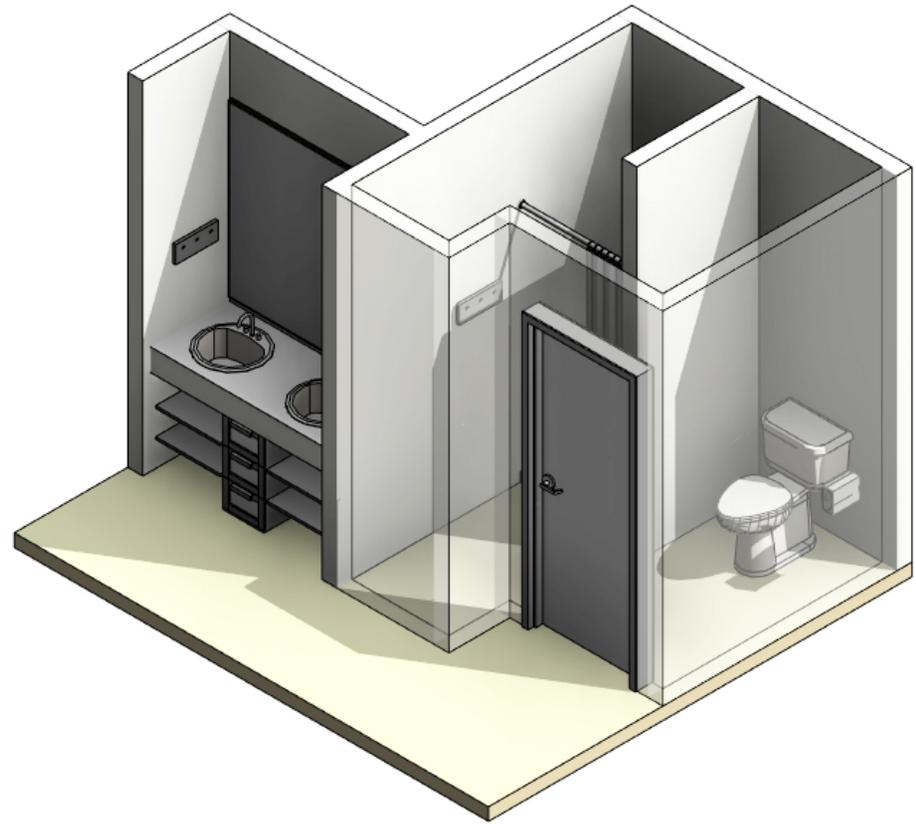
## Technical Requirements

### Mechanical:

Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust per ASHRAE 62.1
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Zoned within suite
Sound Criteria:	None required
Special Systems:	None required
Plumbing:	(1) toilet, (1) shower per toilet/shower room, (2) under counter lavatories per sink location OUTSIDE toilet/shower room, Floor drains in restroom floor area

### Electrical:

Power:	(2) duplex outlets per sink location, each on dedicated circuits
Phone/Data:	None required
Video:	None required
Lighting:	
Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	40
Controls:	Vacancy Sensor with wall station override



**Space Requirements**

**Space Summary:**

Type of Space:	ADA bathroom space within suites
Number Required:	1 per suite
Total Number:	Varies, estimated 58-60 suites
Occupants:	0 assigned
Area:	Range between 49-64 SF
Primary Function:	Provide shower and toilet facilities within the residence suite

**Relationships:**

Location:	Within each suite as required by code
Adjacencies:	Near bedrooms and kitchenette
Separation:	None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, comfortable feel

**Finishes:**

Floor:	Ceramic tile flooring w/ tile base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms
Privacy:	Bathroom vanities shall not be visible from common areas of units

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): 9'-0"

**Privacy/Security:**

- Provide privacy lock on bathroom doors.
- Provide (1) personal item drawer per student, could be at/under sink locations

**Doors:**

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

**Windows:**

Type:	None required
Glazing:	None required
Natural Light:	None required

**Casework/Fixed Equipment:**

- Counter, under counter lavs and full size mirror located OUTSIDE the toilet/shower room above sinks, (3) equal under counter drawers at center of sinks & adjustable shelf storage under sinks (vanity to meet ADA requirements)
- No tubs to be provided
- ADA Toilet, ADA shower (roll-in or transfer), grab bars

**Moveable Furnishings:**

- None required

**Equipment:**

- Toilet paper holder, shower rod, towel hooks (1 per student) mounted no higher than 54" AFF and 1 hook on both sides of sinks.

**Technical Requirements**

**Mechanical:**

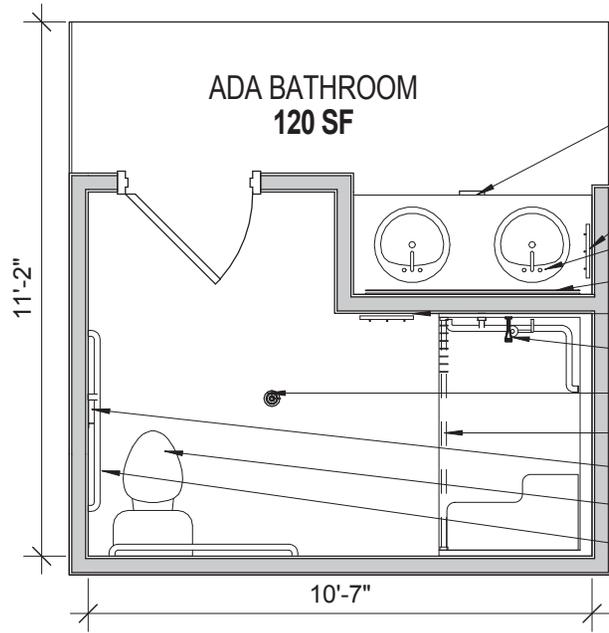
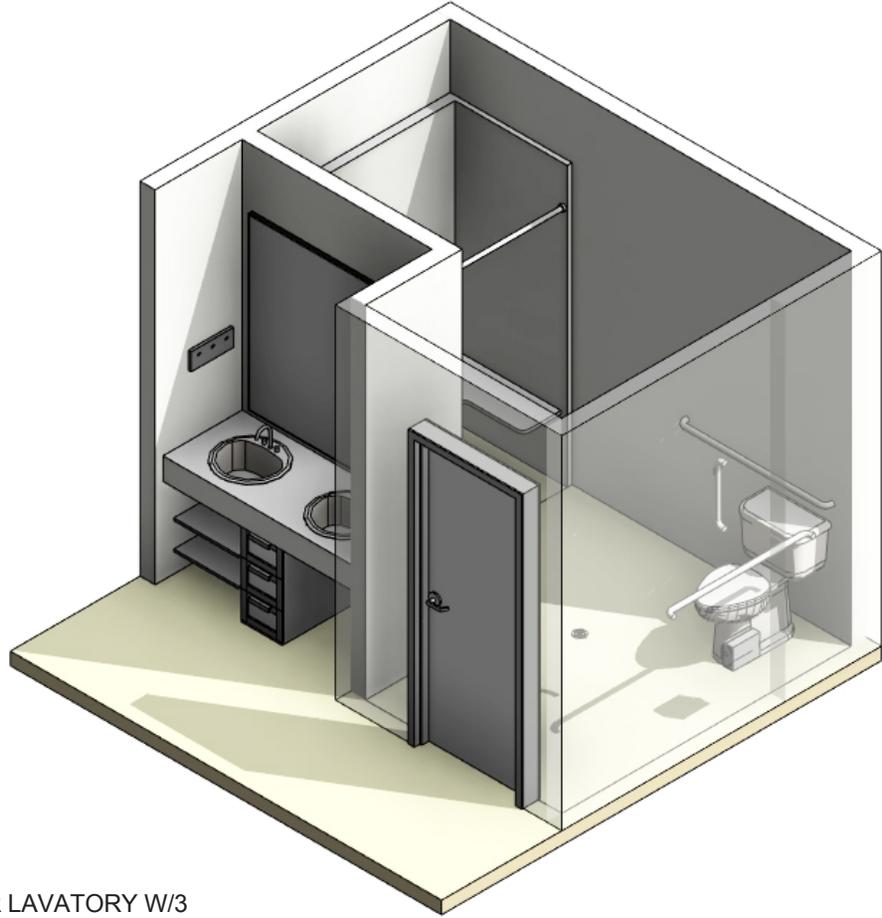
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust per ASHRAE 62.1
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Zoned within suite
Sound Criteria:	None required
Special Systems:	None required
Plumbing:	(1) ADA toilet, (1) ADA shower (roll-in or transfer) per toilet/shower room, (2) under counter lavatories per sink location OUTSIDE toilet/shower room with forward-approach knee space. Floor drain in restroom floor area

**Electrical:**

Power:	(2) duplex outlets per sink location, must be able to accommodate curling irons and blow dryers
Phone/Data:	None required
Video:	None required

**Lighting:**

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	40
Controls:	Vacancy Sensor with wall station override



- UNDER COUNTER LAVATORY W/3 DRAWERS & ADJUSTABLE SHELVES (VANITY TO MEET ADA REQUIREMENTS)
- HAND TOWEL HOOKS (3)
- DOUBLE VANITY
- FULL SIZE MIRROR
- BATH TOWEL HOOKS (3)
- ADA ROLL-IN SHOWER
- FLOOR DRAIN
- SHOWER ROD
- TOILET PAPER HOLDER
- TOILET
- ADA CORNER GRAB BAR

## Space Requirements

### Space Summary:

Type of Space:	Bedroom space for residents
Number Required:	4 bedrooms per suite, (2) 1 bed rooms (2) 2 bed rooms
Total Number:	Varies, 350 beds min. w/ in building
Occupants:	1-2 per bedroom
Area:	92 SF (single bed) or 144 SF (double bed)
Primary Function:	Provide a comfortable environment to sleep and study

### Relationships:

Location:	Multiple within each suite
Adjacencies:	Near bathrooms and kitchenette
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms

## Architectural Requirements

### Ceiling Height:

Above Finish Floor  
(AFF): 9'-0"

### Privacy/Security:

-Provide keyed lock on bedroom doors.  
-Provide (1) location per student per bedroom  
for laptop and similar items, securable with  
student's own lock

### Doors:

Type:	Solid core wood with clear finish. No closet doors.
Frame:	Painted hollow metal
Special:	Sound isolation at door into suite

### Windows:

Type:	Exterior, 1 per bed- room, 4'x5' or 20sf min. Non-operable Insulated w/ Low-E coating
Frame:	Aluminum Storefront- Champagne
Natural Light:	Required

### Casework/Fixed Equipment:

-Fixed closet shelf (@ two heights per closet)  
-Fixed closet rod (@ two heights per closet)  
-Fixed wall shelf (one per student), 10"deep x 5'  
Long x 2" thick, provide all required blocking

### Moveable Furnishings (NIC)

-Bed 80" long (loftable 33", one per student, to  
allow for storage underneath)  
-Bookshelf (one per student)  
-3 drawer dresser (one per student)  
-Desk and chair (one per student)

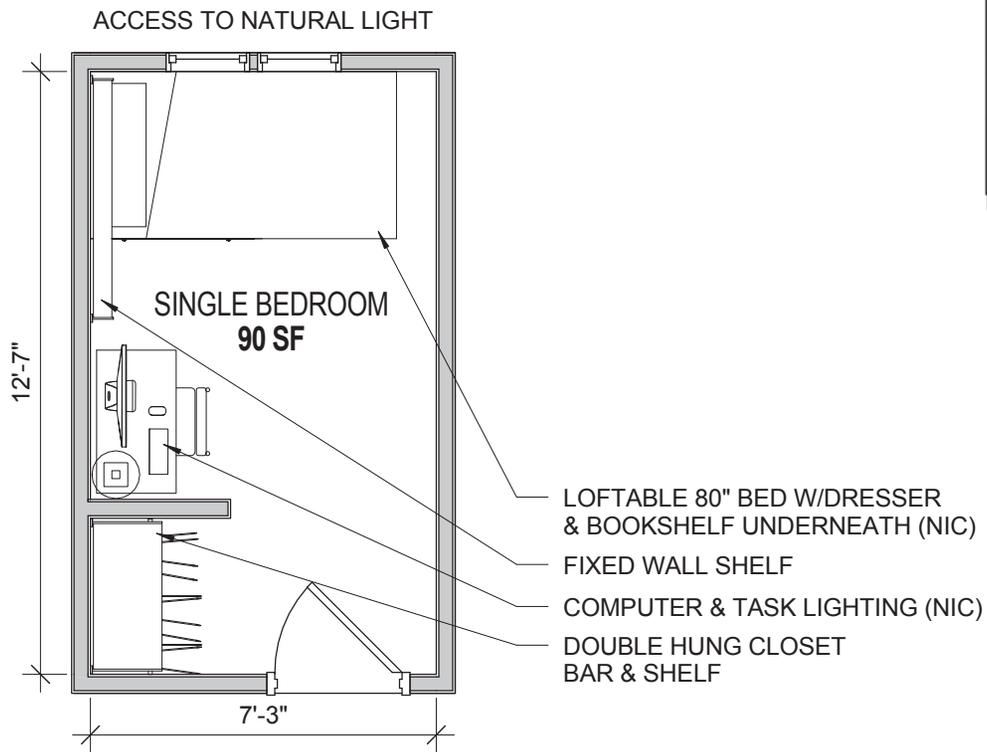
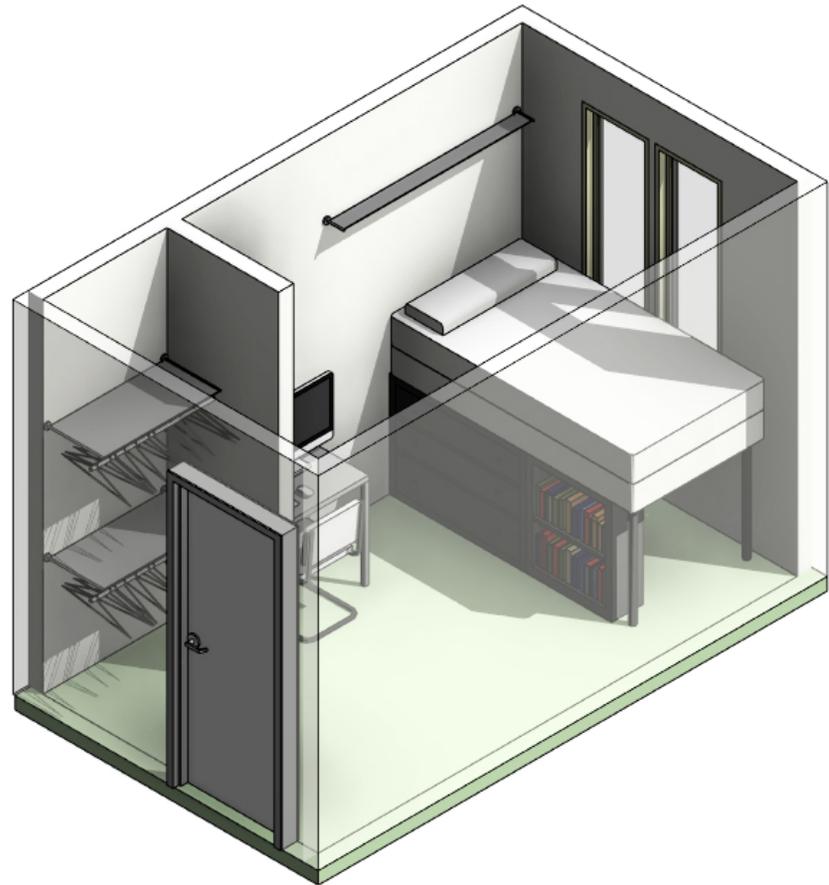
## Technical Requirements

### Mechanical:

Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Remote sensor in bedroom, suite on (1) zone w/ adj. stat in common area, Thermostat control in each suite for each suite.
Sound Criteria:	25 to 35 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	Multiple duplex outlets per bed- room, one of these located adjacent to each desk area specifically, per NEC spacing
Phone/Data:	(1) network port near each desk; wireless access; no phone require- ment
Video:	None required
Lighting:	
Fixture Type:	LED
Task Lighting:	At each desk (NIC)
Foot Candles:	20 ambient, 40 task
Controls:	Vacancy Sensor with wall station override



**Space Requirements**

**Space Summary:**

Type of Space:	Bedroom space for residents
Number Required:	4 bedrooms per suite, (2) 1 bed rooms (2) 2 bed rooms
Total Number:	Varies, 350 beds min. w/ in building
Occupants:	1-2 per bedroom
Area:	92 SF (single bed) or 144 SF (double bed)
Primary Function:	Provide a comfortable environment to sleep and study

**Relationships:**

Location:	Multiple within each suite
Adjacencies:	Near bathrooms and kitchenette
Separation:	None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, comfortable feel

**Finishes:**

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor  
(AFF): 9'-0"

**Privacy/Security:**

-Provide keyed lock on bedroom doors.  
-Provide (1) location per student per bedroom  
for laptop and similar items, securable with  
student's own lock

**Doors:**

Type:	Solid core wood with clear finish. No closet doors.
Frame:	Painted hollow metal
Special:	Sound isolation at door into suite

**Windows:**

Type:	Exterior, 1 per bed- room, 4'x5' or 20sf min. Non-operable Insulated w/ Low-E coating
Frame:	Aluminum Storefront- Champagne
Natural Light:	Required

**Casework/Fixed Equipment:**

-Fixed closet shelf (@ two heights per closet)  
-Fixed closet rod (@ two heights per closet)  
-Fixed wall shelving (one per student), 10" deep x  
5' Long x 2" thick, provide all required blocking

**Moveable Furnishings (NIC)**

-Bed 80" long (loftable 33", one per student, to  
allow for storage underneath)  
-Bookshelf (one per student)  
-3 drawer dresser (one per student)  
-Desk and chair (one per student)

**Technical Requirements**

**Mechanical:**

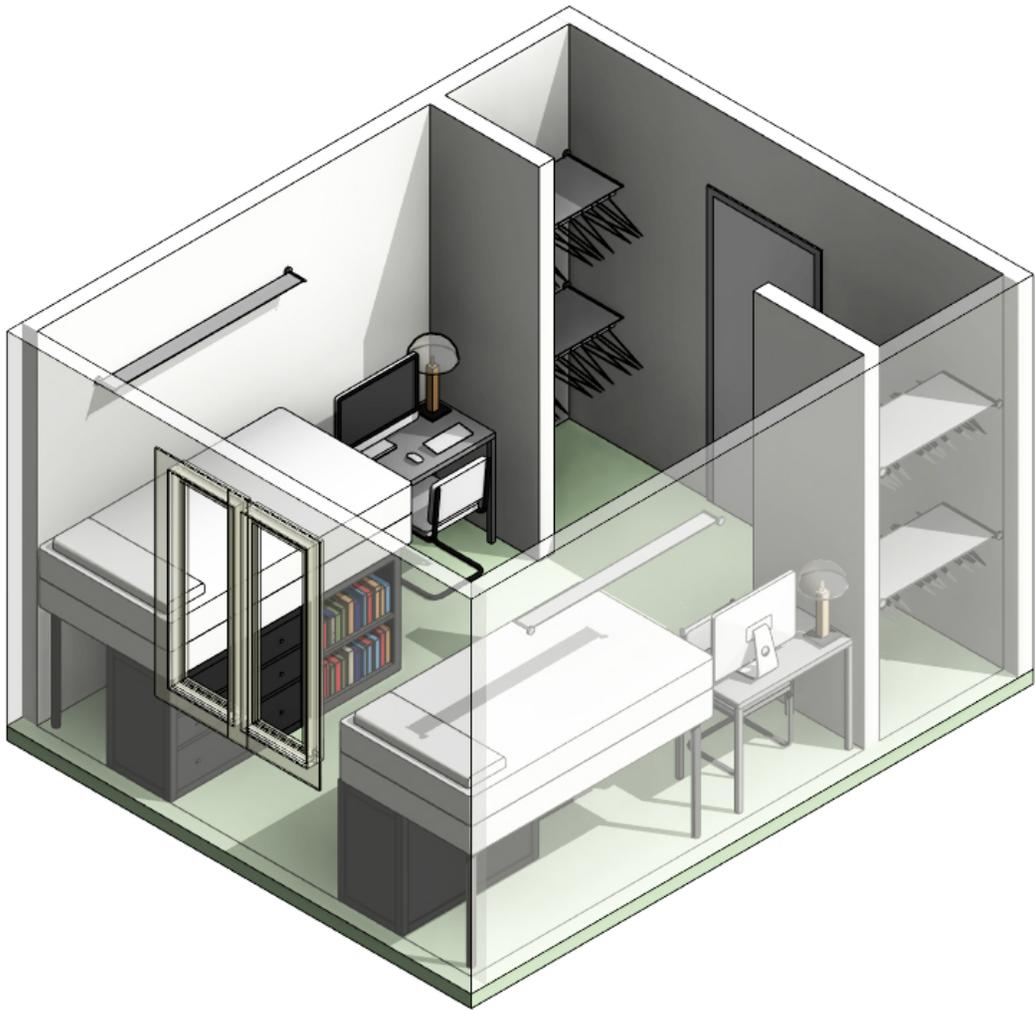
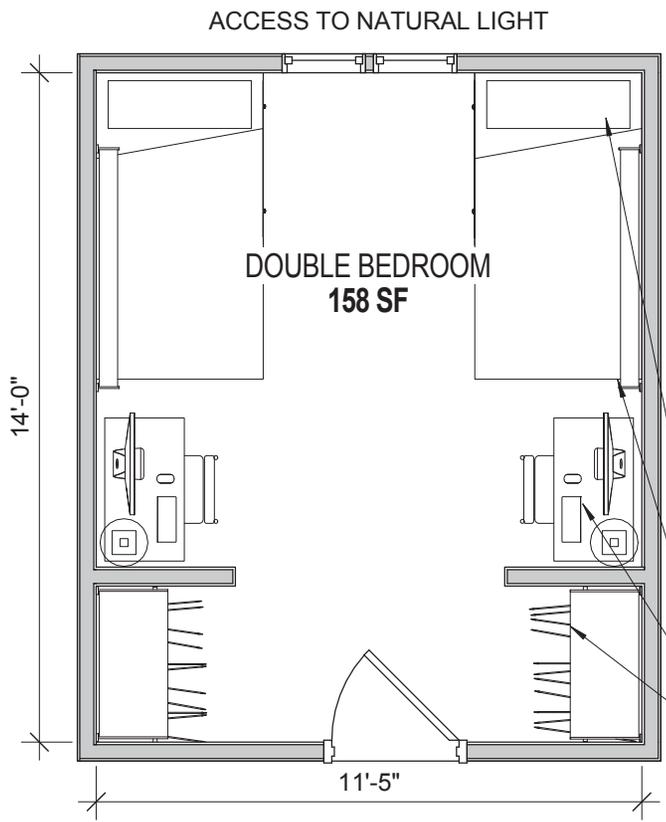
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Remote sensor in bedroom, suite on (1) zone w/ adj. stat in common area, Thermostat control in each suite for each suite.
Sound Criteria:	25 to 35 (NC/RC)
Special Systems:	None required
Plumbing:	None required

**Electrical:**

Power:	Multiple duplex outlets per bed- room, one of these located adjacent to each desk area specifically, per NEC spacing
Phone/Data:	(1) network port near each desk; wireless access; no phone require- ment
Video:	None required

**Lighting:**

Fixture Type:	LED
Task Lighting:	At each desk (NIC)
Foot Candles:	20 ambient, 40 task
Controls:	Vacancy Sensor with wall station override



- LOFTABLE 80" BED W/DRESSER & BOOKSHELF UNDERNEATH (NIC)
- FIXED WALL SHELF
- COMPUTER & TASK LIGHTING (NIC)
- DOUBLE HUNG CLOSET BAR & SHELF

## Space Requirements

### Space Summary:

Type of Space:	Limited kitchen area within the suites
Number Required:	1 per suite
Total Number:	Varies, estimated 58-60 suites
Occupants:	6 accommodated
Area:	Range between 87-162 SF
Primary Function:	Comfortable location to prepare and eat food, visually appealing as it is the entry space for the suite

### Relationships:

Location:	Within each suite
Adjacencies:	Near bedrooms
Separation:	From equipment/mech rooms, noisy public and gathering spaces

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Card key access from hall

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Solid surface counter, cabinets, if possible in design island/breakfast bar  
 -Enough storage/cabinet options for 6 students (1 cabinet per student), food, pots/pans, cutlery, Built-in space for microwave in upper cabinets, etc.

### Moveable Furnishings:

-Table and chairs, or chairs at island breakfast bar (NIC)

### Equipment:

- Microwave (NIC), fridge/freezer(NIC), Chalk board paint on wall (NIC)

## Technical Requirements

### Mechanical:

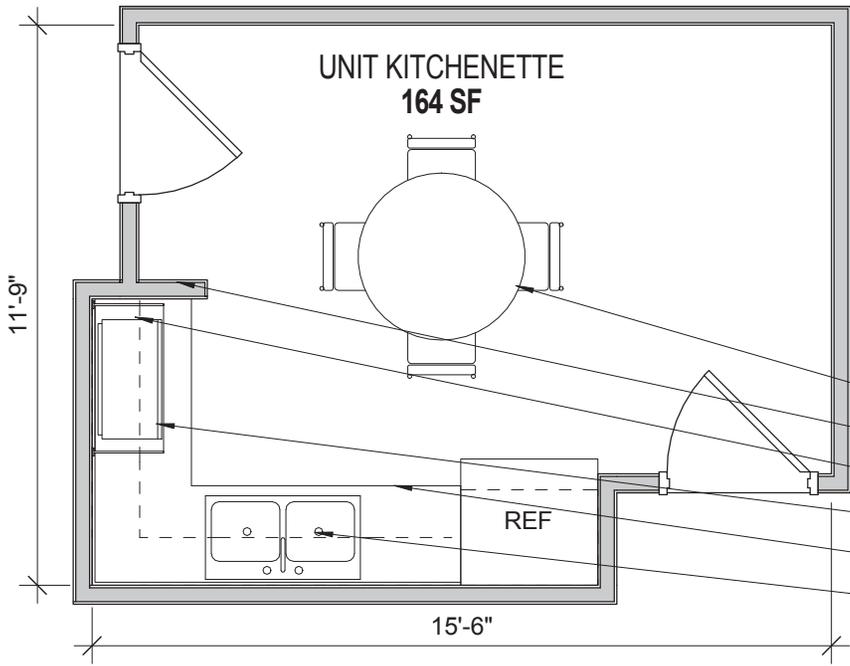
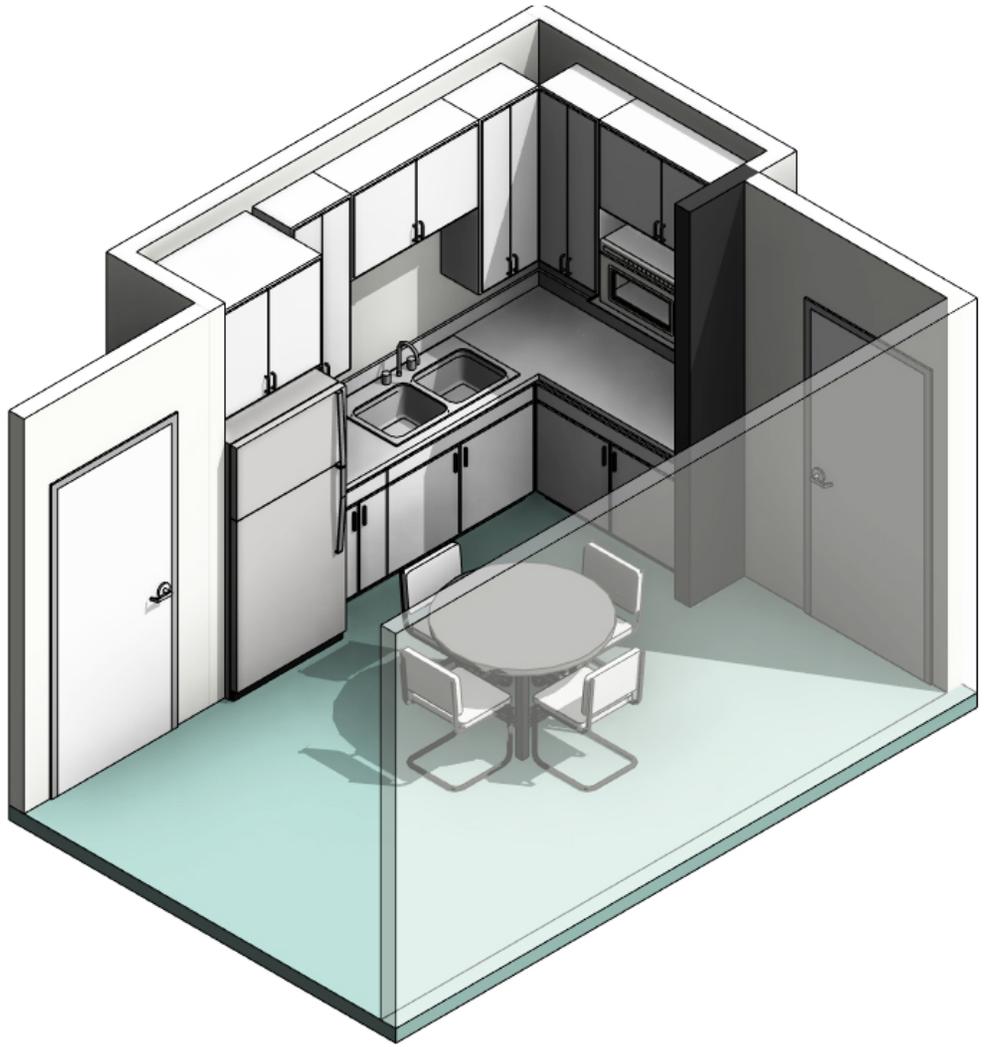
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust at kitchenette
Summer Design Temp:	74° F
Winter Design Temp:	72 ° F
Controls:	Zoned within suite, include adjustable state in common area
Sound Criteria:	None required
Special Systems:	None required
Plumbing:	Two compartment, stainless steel sink, disposal, swing type gooseneckkitchen faucet, water supply for freezer/ice maker

### Electrical:

Power:	duplex outlets above counter at 24" centers (GFI required, reset button at outlet), 2 minimum, (1) duplex outlet each for microwave and fridge, all on dedicated circuits None required
Phone/Data:	None required
Video:	None required

### Lighting:

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	40
Controls:	Vacancy Sensor with wall station override



- TABLE & CHAIRS (NIC)
- CHALKBOARD PAINT ON WALL (NIC)
- UPPER WALL CABINETS & SHELF
- MICROWAVE (NIC)
- LOWER CABINETS
- DOUBLE SINK & DISPOSAL

## Space Requirements

### Space Summary:

Type of Space:	Social space within the suites
Number Required:	Provide as necessary per unit plan options
Total Number:	Varies, provided as necessary per unit plan options
Occupants:	12 accommodated
Area:	Estimated 282 SF
Primary Function:	To provide a community environment where students and guests may relax, socialize, entertain, interact and study

### Relationships:

Location:	Within various suites
Adjacencies:	Near bedrooms and kitchenette area, balcony
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Desirable to keep entertainment noise from adjacent suites. Sound isolation const. at perimeter walls of suite

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Lock for sliding glass balcony door

### Doors:

Type:	Sliding glass balcony door
Frame:	Aluminum: champagne
Special:	Tempered Glass
Natural Light:	Required

### Windows:

Type:	Not required
Glazing:	Not required
Frame:	Not required

### Casework/Fixed Equipment:

-None required

### Moveable Furnishings (NIC):

-Couch, arm chairs, coffee table, media center, area rug

### Equipment (NIC):

-TV, wall mounted bulletin board: support backing in wall by proposing team.

## Technical Requirements

### Mechanical:

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - exhaust at kitchen

Summer Design Temp: 74° F

Winter Design Temp: 72 ° F

Controls: Zoned within suite, include adjustable stat

Sound Criteria: less than or equal to 35 (NC/RC)

Special Systems: None required

Plumbing: None required

### Electrical:

Power: duplex wall outlets at max. of 12'-0" o.c., plus one for TV

Phone/Data: (1) network outlet, (1) wireless access 1 network outlet at TV

Video: (1) coax TV/cable outlet

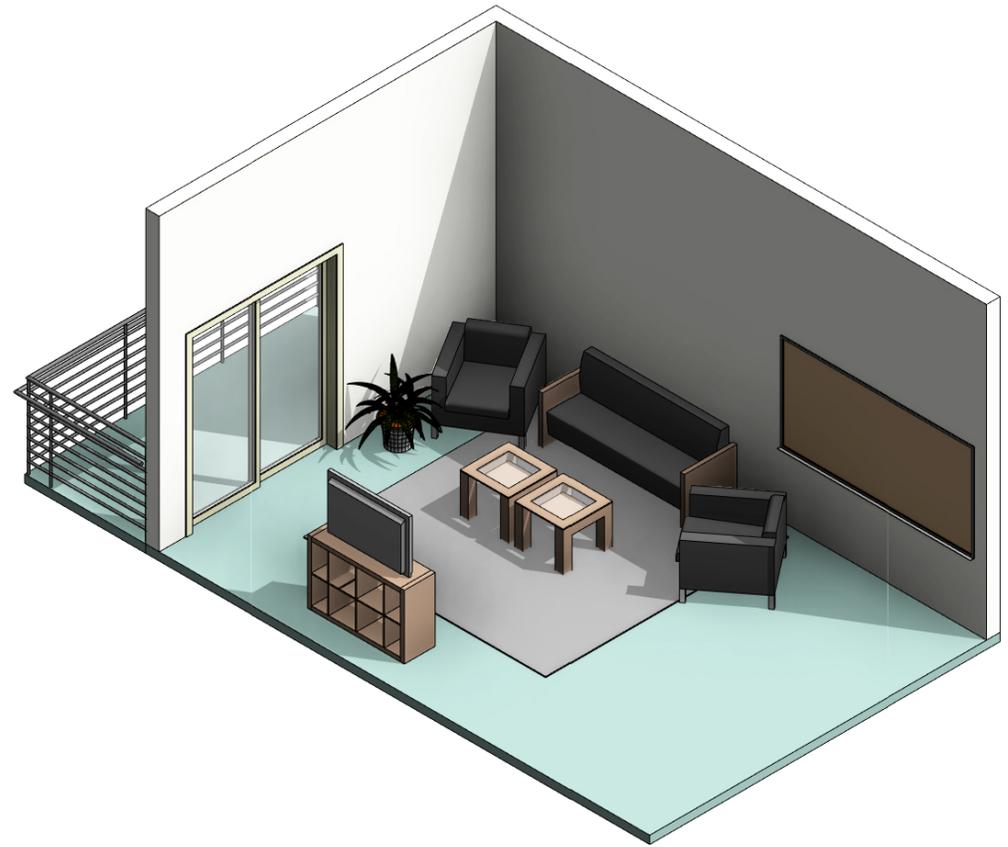
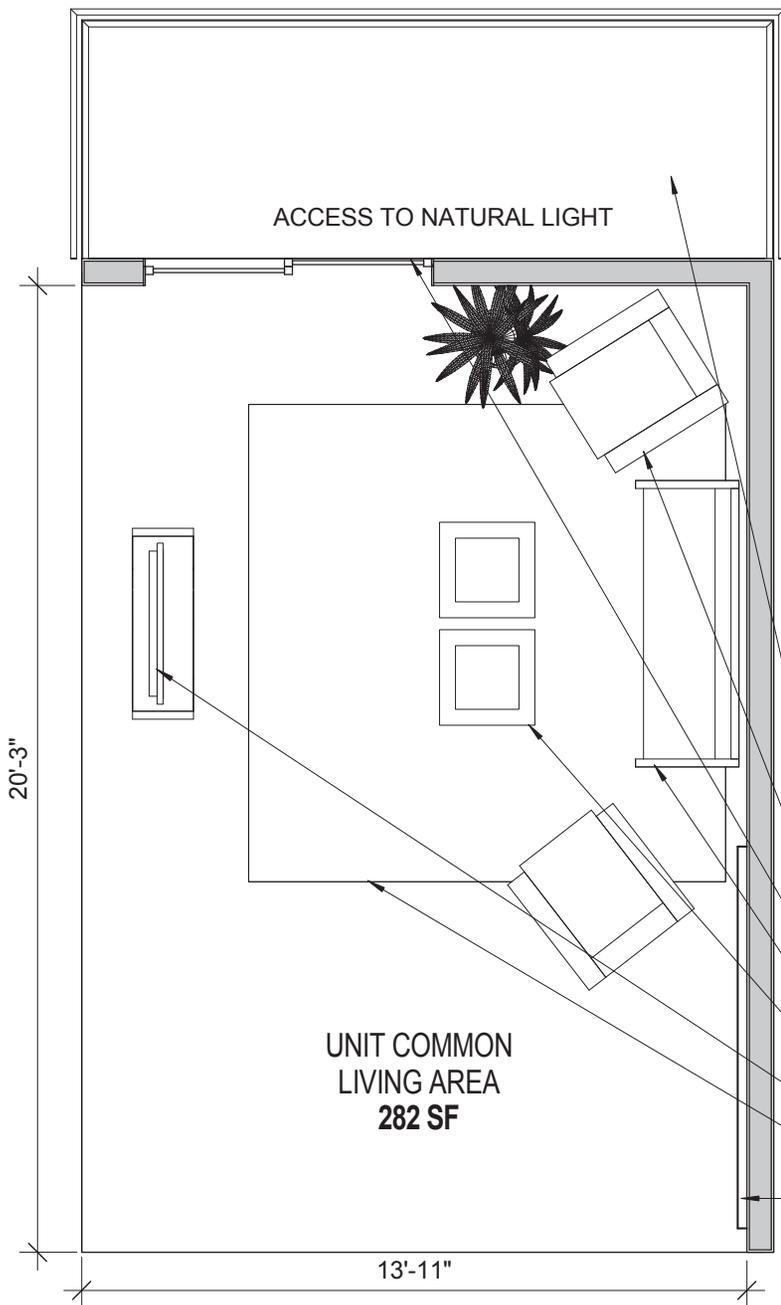
### Lighting:

Fixture Type: LED

Task Lighting: None required

Foot Candles: 30

Controls: Vacancy Sensor with wall station override



- BALCONY
- ARM CHAIR (NIC)
- SLIDING DOOR
- COUCH (NIC)
- COFFEE TABLES (NIC)
- TELEVISION & MEDIA CENTER (NIC)
- AREA RUG (NIC)
- BULLETIN BOARDS (NIC)

## Space Requirements

### Space Summary:

Type of Space:	Bedroom space for residents
Number Required:	4 bedrooms per suite, (2) 1 bed rooms (2) 2 bed rooms
Total Number:	Varies, 350 beds min. w/ in building
Occupants:	1-2 per bedroom
Area:	92 SF (single bed) or 144 SF (double bed)
Primary Function:	Provide a comfortable environment to sleep and study

### Relationships:

Location:	Multiple within each suite
Adjacencies:	Near bathrooms and kitchenette
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of suite, and around bathrooms

## Architectural Requirements

### Ceiling Height:

Above Finish Floor  
(AFF): 9'-0"

### Privacy/Security:

- Provide keyed lock on bedroom doors
- Keyed access to hallway
- Provide (1) location per student per bedroom for laptop and similar items, securable with

### Doors:

Type:	(2) Solid core wood with clear finish. No closet doors.
Frame:	Painted hollow metal
Special:	Sound isolation at door into suite

### Windows:

Type:	Exterior, 1 per bed- room, 4'x5' or 20sf min. Non-operable Insulated w/ Low-E coating
Frame:	Aluminum Storefront- Champagne
Natural Light:	Required

### Casework/Fixed Equipment:

- Fixed closet shelf (@ two heights per closet)
- Fixed closet rod (@ two heights per closet)
- Fixed wall shelving (one per student), 10" deep x 5' Long x 2" thick, provide all required blocking

### Moveable Furnishings (NIC)

- Bed 80" long (loftable 33", one per student)
- Bookshelf (one per student)
- 3 drawer dresser (one per student)
- Desk and chair (one per student)

### Equipment:

## Technical Requirements

### Mechanical:

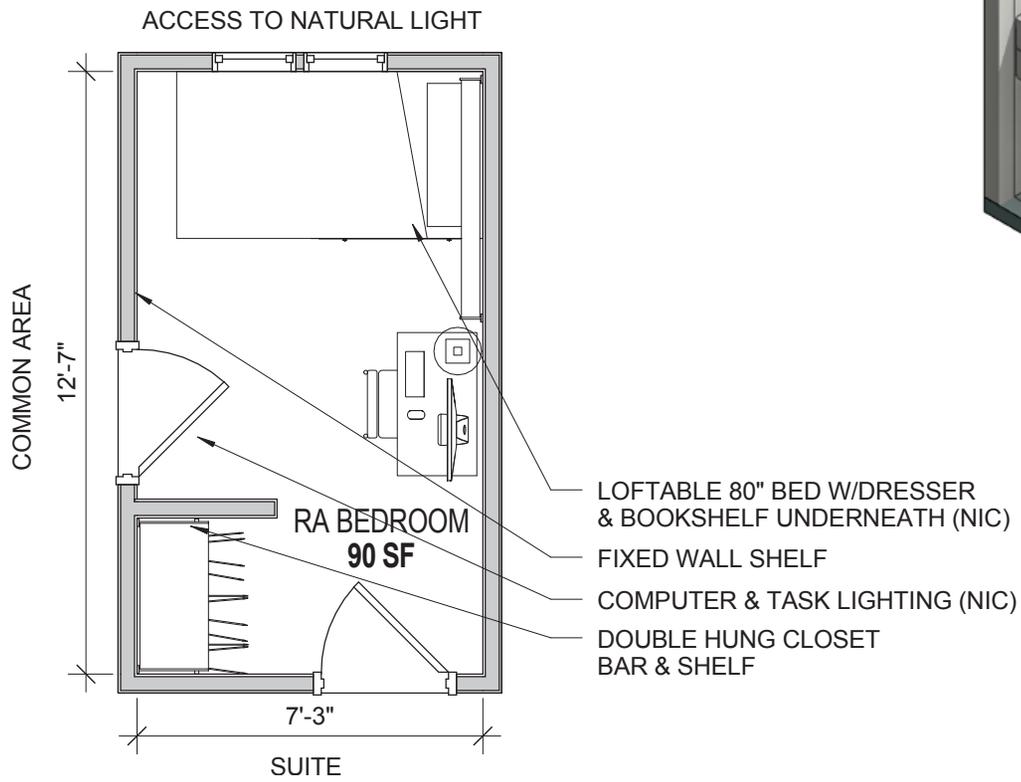
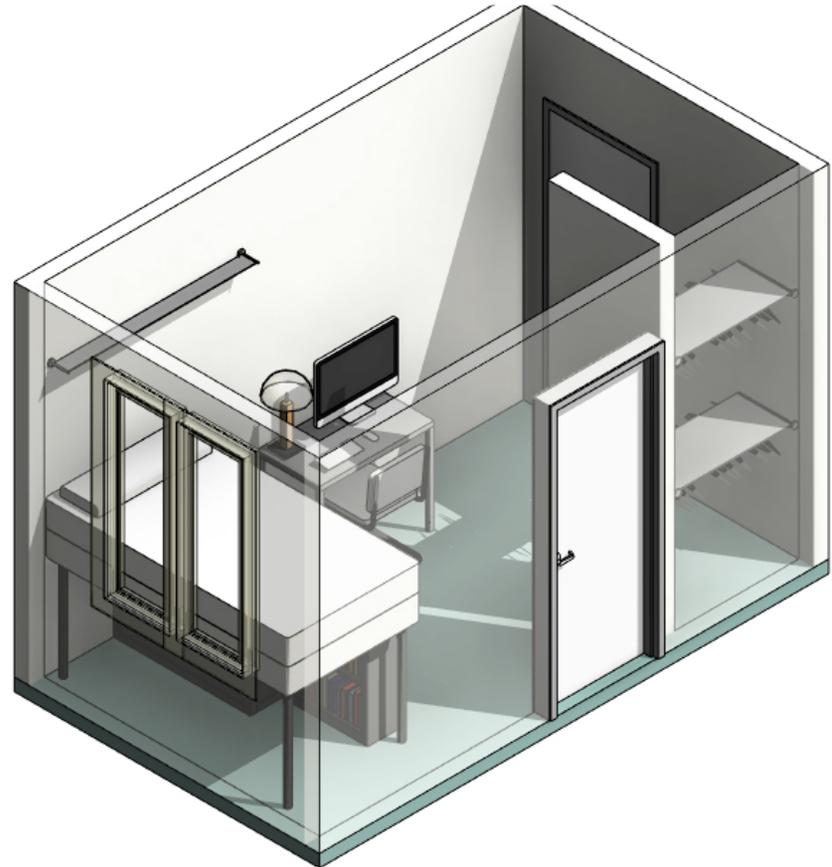
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Remote sensor in bedroom, suite on (1) zone w/ adj. stat in common area, Thermostat control in each suite for each suite.
Sound Criteria:	25 to 35 (NC/RC)
Special Systems:	None required
Plumbing:	None required

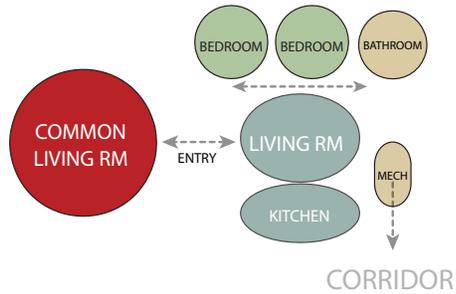
### Electrical:

Power:	multiple duplex outlets per bed- room, one of these located adjacent to each desk area specifically, per NEC spacing
Phone/Data:	(1) network port near each desk; wireless access; no phone require- ment
Video:	None required

### Lighting:

Fixture Type:	LED
Task Lighting:	At each desk (NIC)
Foot Candles:	20 ambient, 40 task
Controls:	Vacancy Sensor with wall station override





### MANAGER'S APARTMENT APPROACH

The Manager's Apartment represents just over 1 percent of the test fit units noted in the program summary. While this is a minimal component of the overall program requirement, there is sensitivity to the comfort of the manager. Location of the apartment should be considered with privacy in mind.

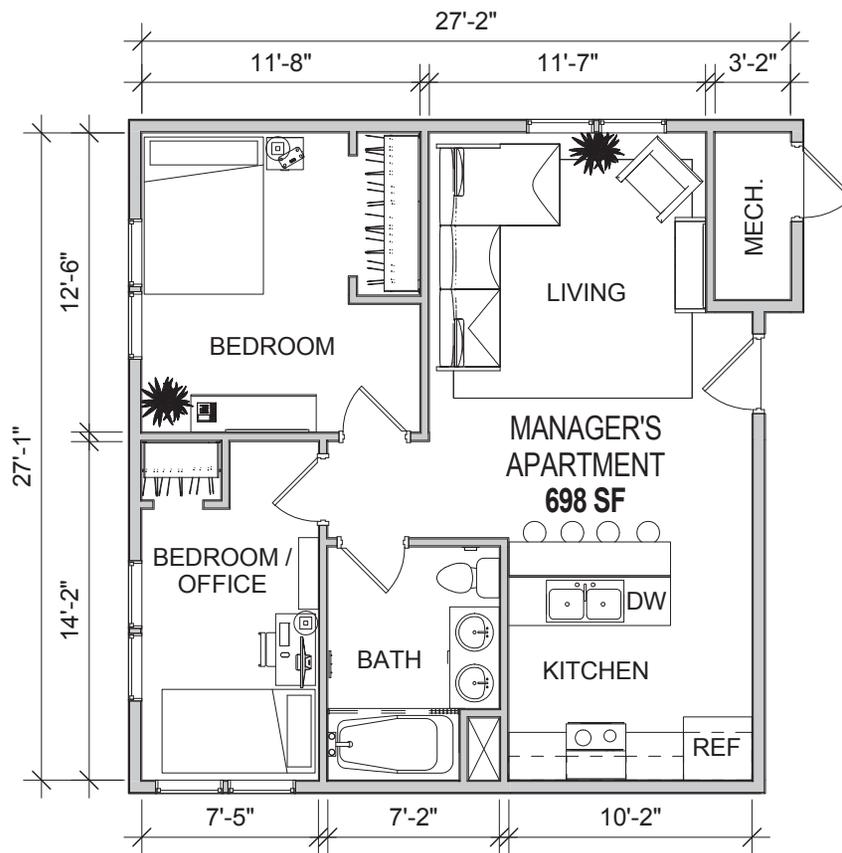
This unit provides an opportunity for comfortable private living, but also allows the manager to be in relative proximity to the building residents so appropriate interactions can take place when needed. There is a preference for outdoor access from the manager apartment if possible.

The basic apartment concept shall accommodate at least 4 people and include sufficient kitchen, dining and living space as well as a full bathroom with a shower/bath (unique to this unit). The space shall be inviting to the manager and others that may be invited into the space.

Ultimately the satisfaction of the manager is key to the success of any student housing project. Considerations that might encourage low turn-over of the manager are preferred.







**Space Requirements**

**Space Summary:**

Type of Space: ADA bathroom space within apartment

Number Required: 1 per Apartment

Total Number: 1

Occupants: 0 assigned

Area: Range between 70 SF

Primary Function: Provide bath/shower and toilet facilities within the residence

**Relationships:**

Location: Within apartment

Adjacencies: Near bedrooms and kitchen

Separation: None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, comfortable feel

**Finishes:**

Floor: Ceramic tile flooring w/ tile base

Walls: Painted gypsum board

Ceiling: Painted gypsum board

Specialty Finishes: None required

Sound: Sound isolation const. at perimeter walls of apart., and around bathrooms

**Privacy:**

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): 9'-0"

**Privacy/Security:**

-Provide privacy lock on bathroom doors.

-Provide (1) personal item drawer per occupant, could be at/under sink locations

**Doors:**

Type: Solid core wood with clear finish.

Frame: Painted hollow metal

Special: None required

**Windows:**

Type: None required

Glazing: None required

Natural Light: None required

**Casework/Fixed Equipment:**

-Counter, under counter lavs and full size mirror located above sinks, (3) equal under counter drawers at center of sinks & adjustable shelf storage under sinks

-Toilet, tub

**Moveable Furnishings:**

-None required

**Equipment:**

-Toilet paper holder, shower rod, towel hooks

**Technical Requirements**

**Mechanical:**

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - exhaust per ASHRAE 62.1

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls: Zoned within suite

Sound Criteria: None required

Special Systems: None required

Plumbing: (1) toilet, (1) tub, under counter lavatories per sink location, floor drain in restroom floor area

**Electrical:**

Power: (2) duplex outlets per sink location, must be able to accommodate curling irons and blow dryers

Phone/Data: None required

Video: None required

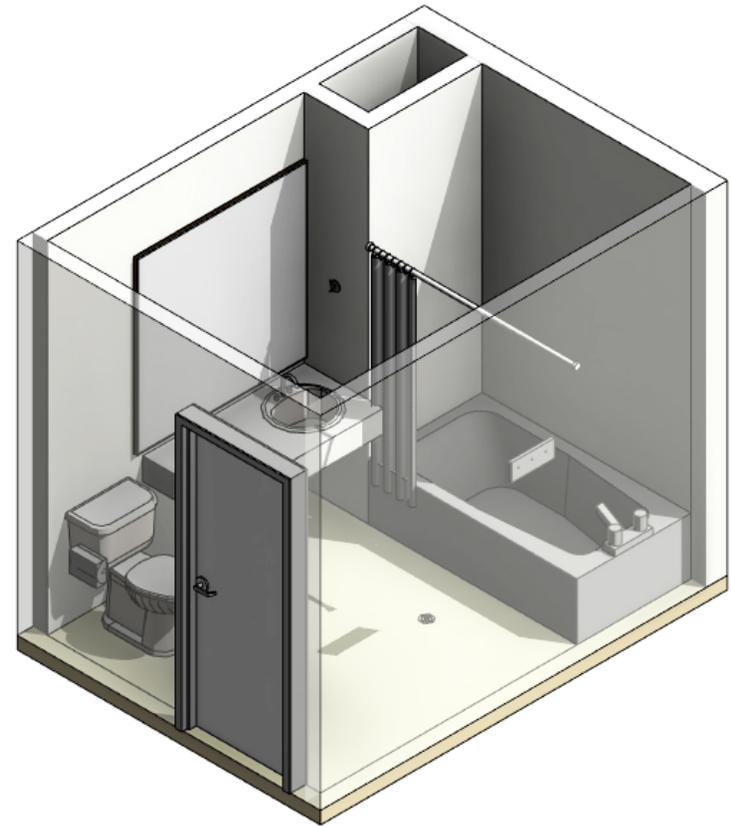
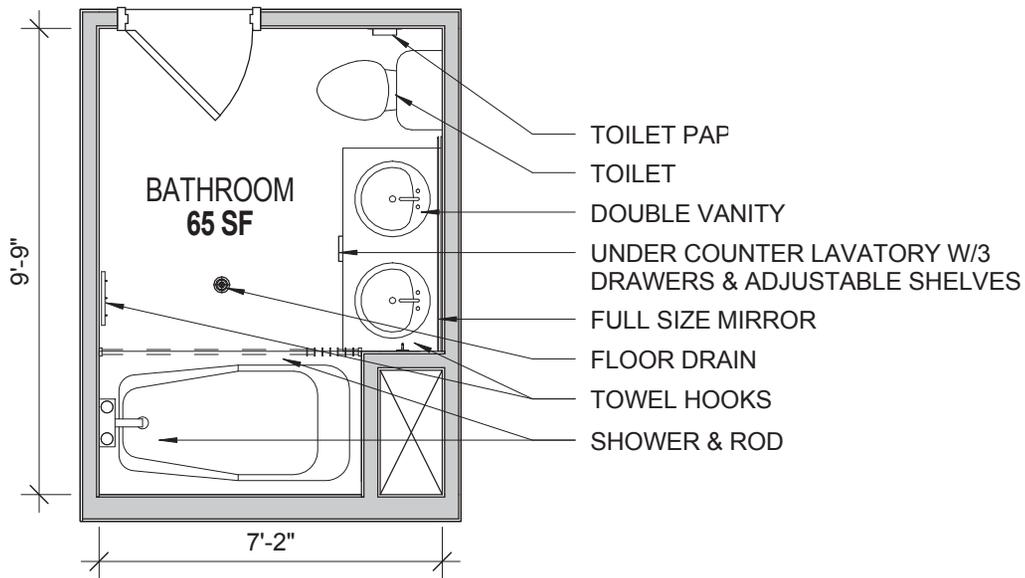
**Lighting:**

Fixture Type: LED

Task Lighting: None required

Foot Candles: 40

Controls: Vacancy Sensor with wall station override



**Space Requirements**

**Space Summary:**

Type of Space:	Bedroom space for residents
Number Required:	1
Total Number:	1
Occupants:	1-2 per bedroom
Area:	150 SF

Primary Function: Provide a comfortable environment to sleep

**Relationships:**

Location:	1 per apartment
Adjacencies:	Near bathrooms and exterior wall
Separation:	None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, comfortable feel

**Finishes:**

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of apartment, and around bathrooms

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): 9'-0"

**Privacy/Security:**

-Provide privacy lock on bedroom doors.

**Doors:**

Type:	Solid core wood with clear finish. Closet doors.
Frame:	Painted hollow metal
Special:	none

**Windows:**

Type:	Exterior, 1 per bedroom, 4'x5' or 20sf min. Non-operable Insulated w/ Low-E coating
Frame:	Aluminum Storefront-Champagne
Natural Light:	Required

**Casework/Fixed Equipment:**

-Fixed closet shelf & rod

**Moveable Furnishings (NIC)**

-Queen Bed, dresser, nightstand

**Equipment (NIC)**

-clock, phone, wall mounted TV: support backing in wall by proposing team

**Technical Requirements**

**Mechanical:**

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - as required by load analysis

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls: Remote sensor in bedroom, apartment on (1) zone w/ adj. stat in Living area.

Sound Criteria: 25 to 35 (NC/RC)

Special Systems: None required

Plumbing: None required

**Electrical:**

Power: Multiple duplex outlets per bedroom, one of these located adjacent to each desk area specifically, per NEC spacing

Phone/Data: (1) network port near each desk; wireless access; phone jack required

Video: None required

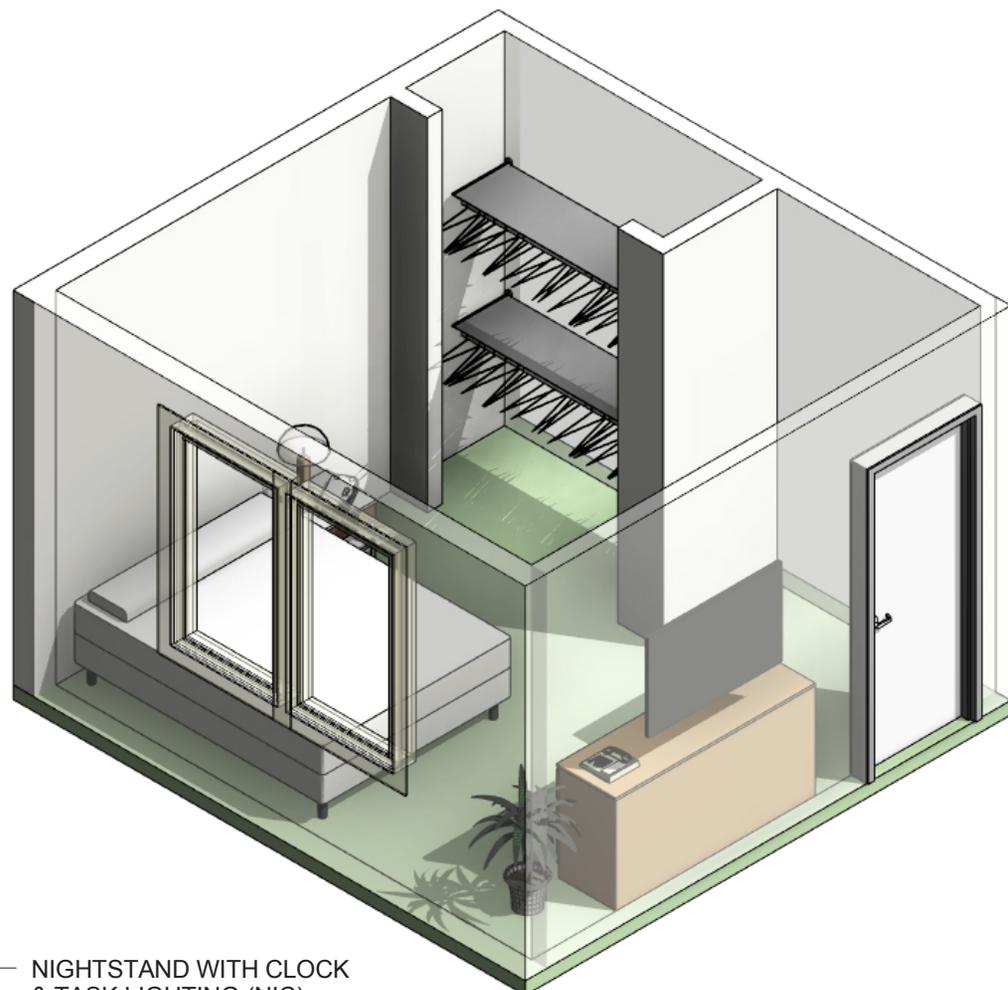
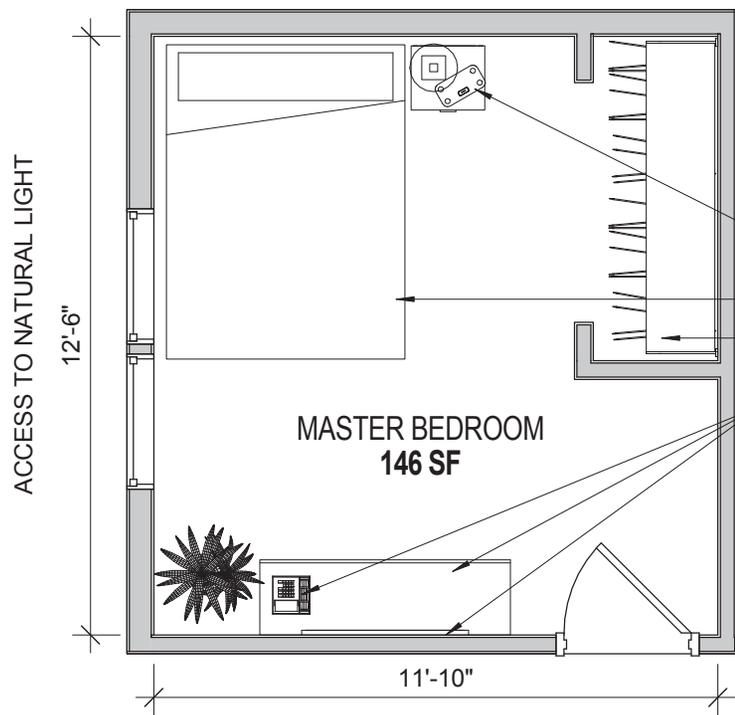
**Lighting:**

Fixture Type: LED

Task Lighting: none required

Foot Candles: 30 ambient

Controls: Vacancy Sensor with wall station override



- NIGHTSTAND WITH CLOCK & TASK LIGHTING (NIC)
- QUEEN SIZE BED (NIC)
- DOUBLE HUNG CLOSET BAR & SHELF
- DRESSER, PHONE & WALL MOUNTED LCD (NIC)

## Space Requirements

### Space Summary:

Type of Space:	Bedroom space for residents
Number Required:	1
Total Number:	1
Occupants:	1-2 per bedroom
Area:	92 SF (single or bunkbed)
Primary Function:	Provide a comfortable environment to sleep or serve as an office

### Relationships:

Location:	1 per apartment
Adjacencies:	Near bathrooms and exterior wall
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of apartment, and around bathrooms

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Provide privacy lock on bedroom doors.

### Doors:

Type:	Solid core wood with clear finish. Closet doors.
Frame:	Painted hollow metal
Special:	none

### Windows:

Type:	Exterior, 1 per bedroom, 4'x5' or 20sf min. Non-operable Insulated w/ Low-E coating
Glazing:	Aluminum Storefront-Champagne
Frame:	Required
Natural Light:	Required

### Casework/Fixed Equipment:

-Fixed closet shelf & rod

### Moveable Furnishings (NIC)

-Bed or bunkbed, bookshelf, desk and chair

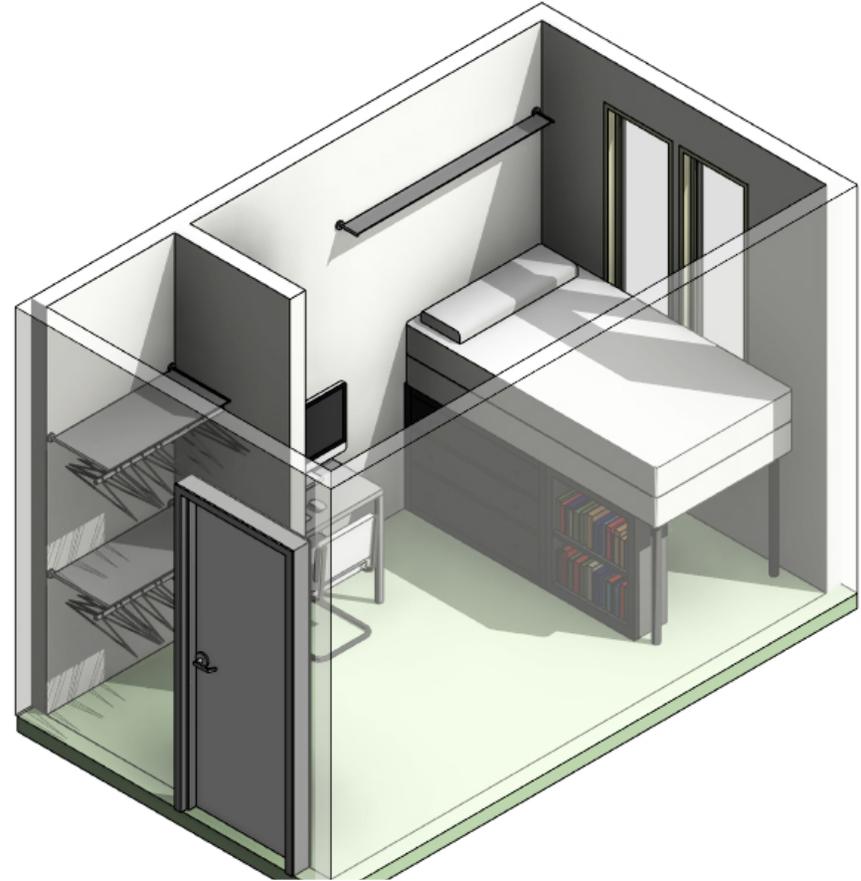
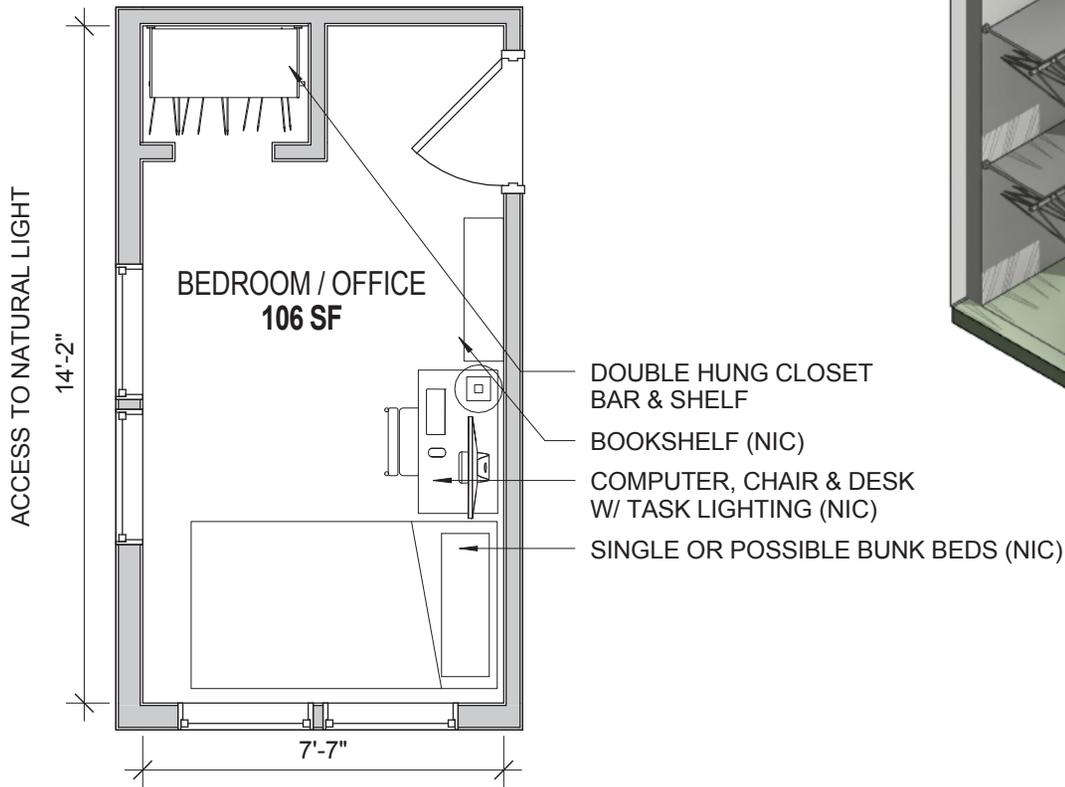
## Technical Requirements

### Mechanical:

Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Remote sensor in bedroom, apartment on (1) zone w/ adj. stat in Living area.
Sound Criteria:	25 to 35 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	Multiple duplex outlets per bedroom, one of these located adjacent to each desk area specifically, per NEC spacing
Phone/Data:	(1) network port near each desk; wireless access; phone jack required
Video:	None required
Lighting:	
Fixture Type:	LED
Task Lighting:	none required
Foot Candles:	30 ambient
Controls:	Vacancy Sensor with wall station override



## Space Requirements

### Space Summary:

Type of Space:	Full kitchen area within the apartment
Number Required:	1 per apartment
Total Number:	1
Occupants:	4 accommodated
Area:	Approximately 110 SF
Primary Function:	Comfortable location to prepare and eat food, visually appealing

### Relationships:

Location:	Within apartment
Adjacencies:	Near bedrooms and living area
Separation:	From equipment/mech rooms, noisy public and gathering spaces

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, comfortable feel

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Sound isolation const. at perimeter walls of apartment

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Card key access from hall

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Solid surface counter, cabinets, if possible in design island/breakfast bar  
 -Enough storage/cabinet options for 4 people, food, pots/pans, cutlery

### Moveable Furnishings:

-Table and chairs, or chairs at island breakfast bar (NIC)

### Equipment:

-Built-in Microwave recirculating range hood, ceramic top range/oven, dish washer, fridge

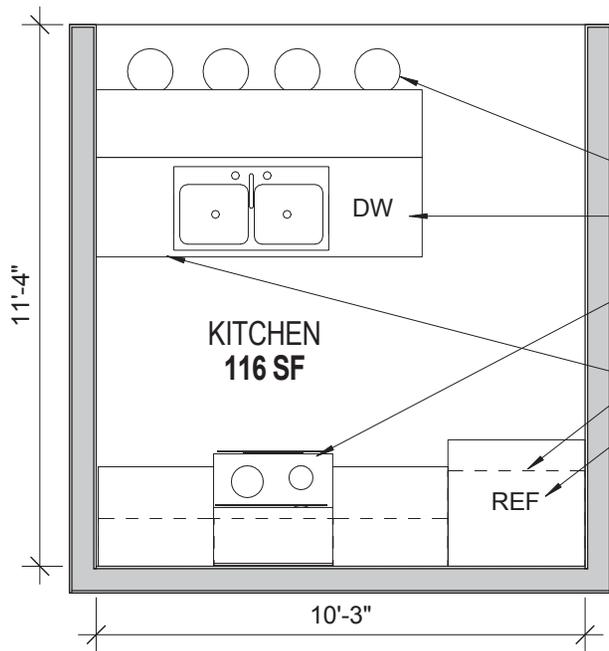
## Technical Requirements

### Mechanical:

Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust at kitchen
Summer Design Temp:	74° F
Winter Design Temp:	72 ° F
Controls:	Zoned within suite, include adjustable state in common area
Sound Criteria:	None required
Special Systems:	None required
Plumbing:	Two compartment, stainless steel sink, disposal, swing type gooseneck kitchen faucet, water supply for freezer/ice maker, dishwasher supply/drain

### Electrical:

Power:	duplex outlets above counter at 24" centers (GFI required, reset button at outlet), 2 minimum, (1) duplex outlet each for microwave and fridge, all on dedicated circuits, 220V outlets at oven range on dedicated circuit, and dedicated standard power for dishwasher
Phone/Data:	None required
Video:	None required
Lighting:	
Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	40
Controls:	Vacancy Sensor with wall station override



- STOOLS (NIC)
- COUNTER, DISHWASHER  
DOUBLE SINK & DISPOSAL
- RESIDENTIAL GRADE OVEN,  
CERAMIC STOVE & MICROWAVE  
RECIRCULATING RANGE HOOD
- UPPER & LOWER CABINETRY
- FULL SIZE FRIDGE & FREEZER (NIC)



**Space Requirements**

**Space Summary:**

Type of Space:	Social space within the Apartment
Number Required:	1
Total Number:	1
Occupants:	4 accommodated
Area:	Estimated 150 SF
Primary Function:	To provide an environment where manager and guests may relax, socialize, entertain, interact.

**Relationships:**

Location:	Within apartment
Adjacencies:	Near bedrooms and kitchen area and bathroom
Separation:	None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, comfortable feel

**Finishes:**

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted gypsum board
Ceiling:	Painted gypsum board
Specialty Finishes:	None required
Sound:	Desirable to keep entertainment noise from adjacent suites. Sound isolation const. at perimeter walls of suite

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): 9'-0"

**Privacy/Security:**

-Card key access from hall

**Doors:**

Type:	None required
Frame:	None Required
Special:	None

**Windows:**

Type:	Exterior, Non-operable
Glazing:	Insulated w/ Low-E coating
Frame:	Aluminum Storefront-Champagne
Natural Light:	Required

**Casework/Fixed Equipment:**

-None required

**Moveable Furnishings (NIC):**

-Couch, arm chairs, coffee table, media center, area rug

**Equipment (NIC):**

-TV, support backing in wall by proposing team.

**Technical Requirements**

**Mechanical:**

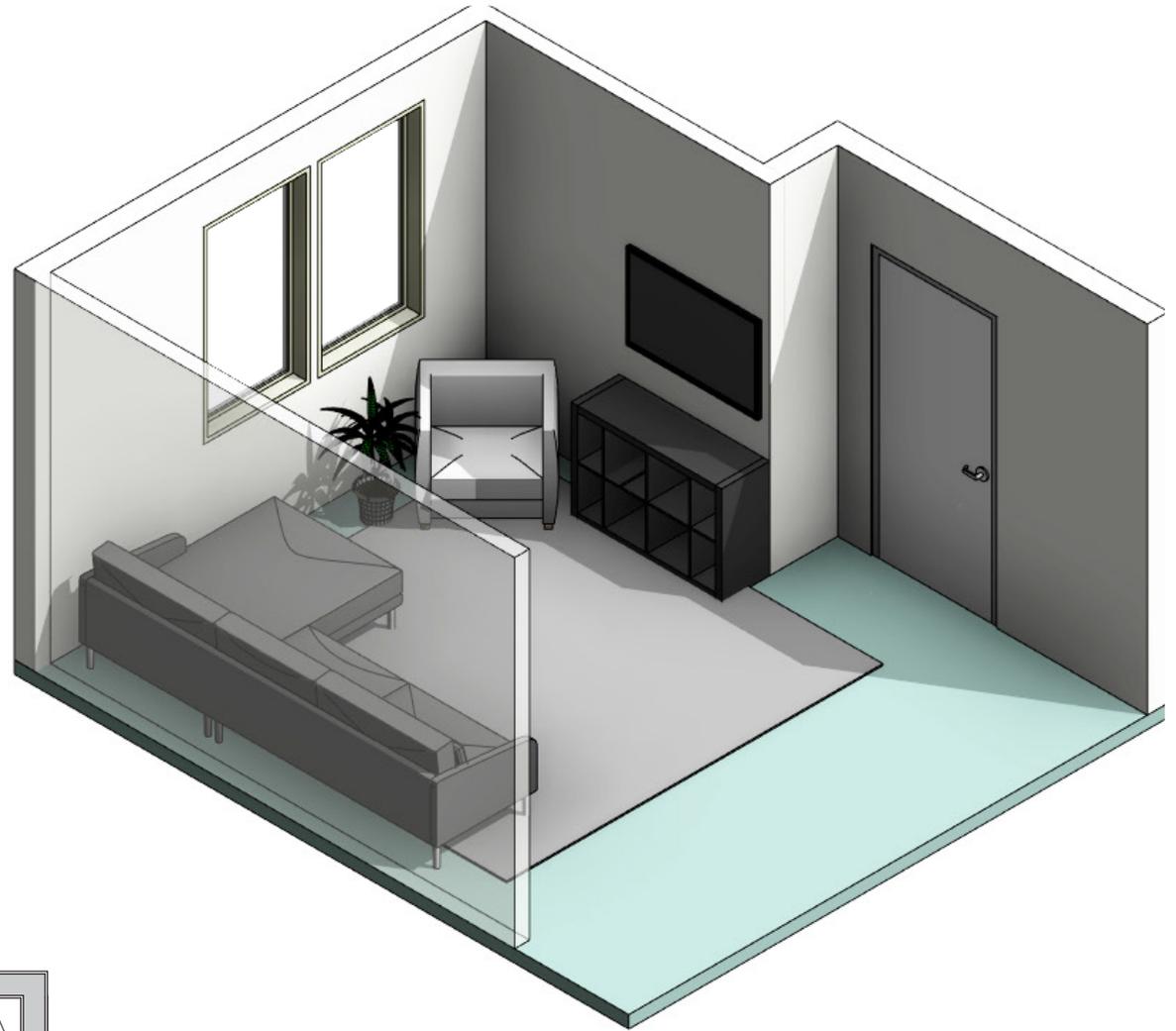
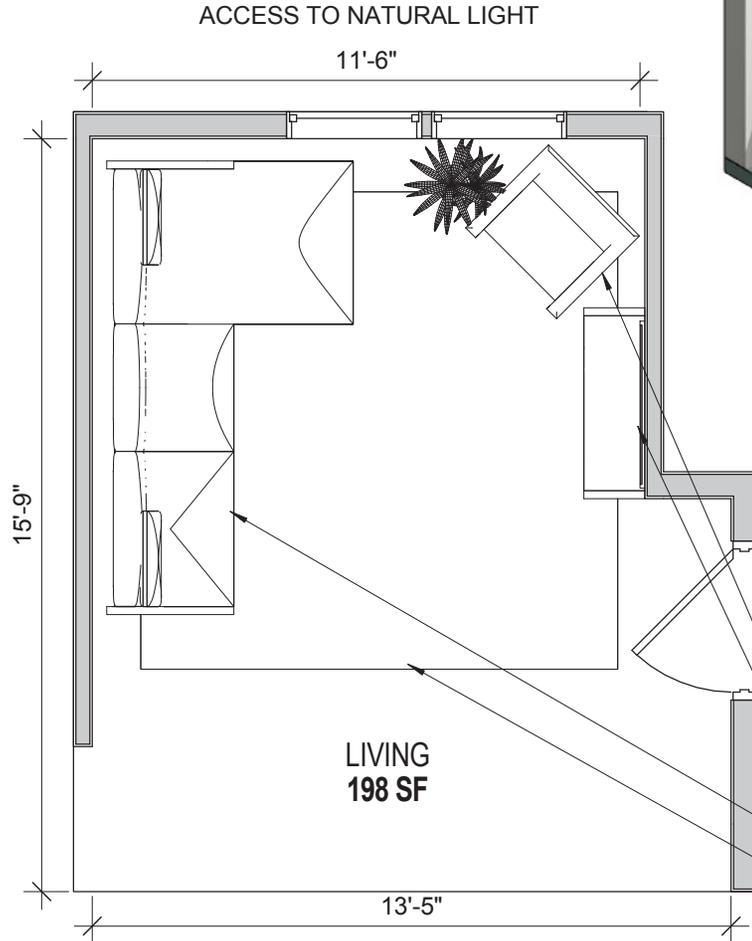
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust at kitchen
Summer Design Temp:	74° F
Winter Design Temp:	72 ° F
Controls:	Zoned within apartment, include adjustable thermostat
Sound Criteria:	less than or equal to 35 (NC/RC)
Special Systems:	None required
Plumbing:	None required

**Electrical:**

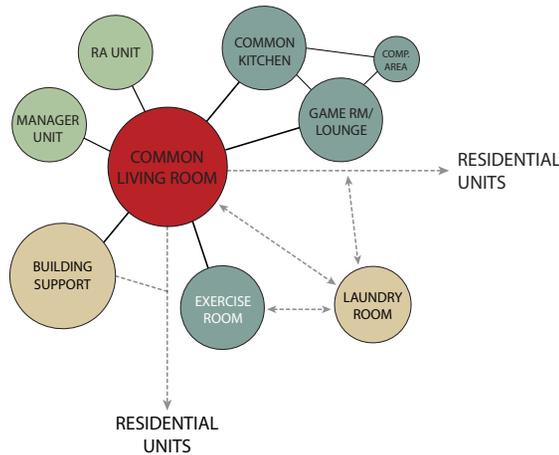
Power:	duplex wall outlets at max. of 12'-0" o.c., plus one for TV
Phone/Data:	(1) network outlet, (1) wireless access 1 network outlet at TV
Video:	(1) coax TV/cable outlet

**Lighting:**

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	30
Controls:	Vacancy Sensor with wall station override



- ARM CHAIR (NIC)
- TELEVISION & MEDIA CENTER (NIC)
- COUCH (NIC)
- AREA RUG (NIC)

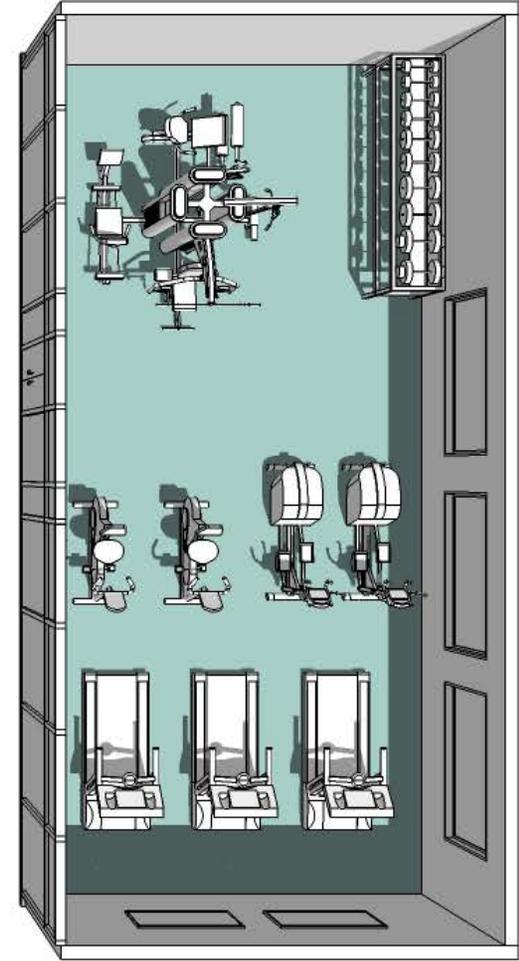
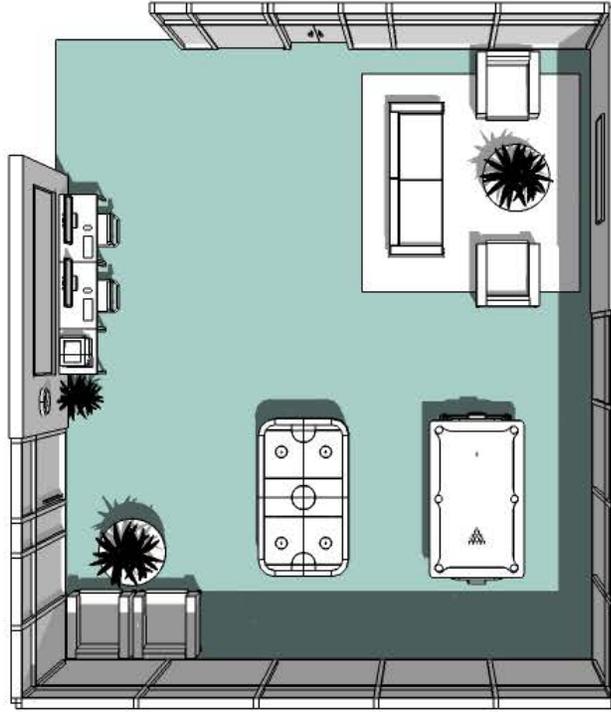
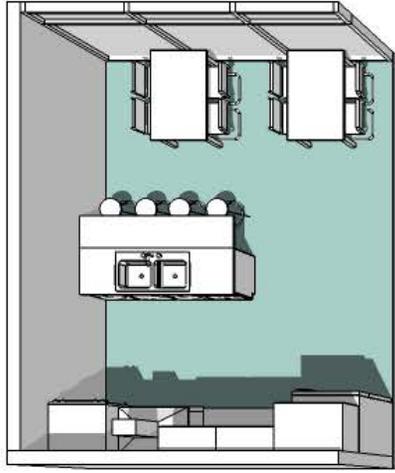
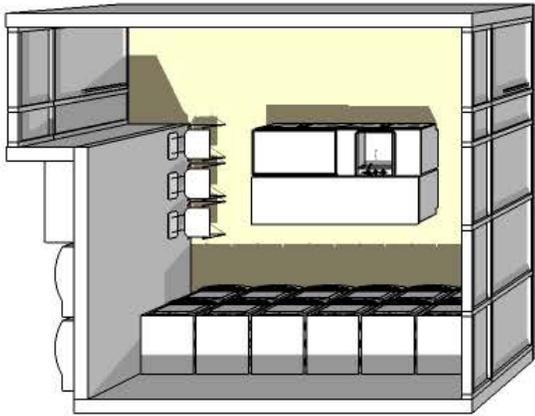


## UPPER LEVEL APPROACH

Upper floor adjacencies differ from the main floor in terms of the overall approach. These levels should be focused on the student interactions among themselves rather than the public consideration.

Residential units shall be apart from common spaces to allow for lower sound levels and greater privacy at the units. Utilitarian spaces should be placed as appropriate to function, but also sufficiently out of sight from common areas.

Experience is a key to the adjacencies on upper levels. Ease of access to common areas and uses is expected as the design integrates RA and Manager units. Visual connections are still important to the university so that student interactions can be more accessible and frequent. Amenity spaces shall be located on every level.



## Space Requirements

### Space Summary:

Type of Space:	Exercise room
Number Required:	1
Total Number:	1
Occupants:	10-20 at a time
Area:	Estimated 700 SF
Primary Function:	To provide a space for exercise within the building.

### Relationships:

Location:	Upper floor with view
Adjacencies:	Central to building
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel

### Finishes:

Floor:	Carpet Tile flooring w/ rubber base
Walls:	Painted, impact-resistant gypsum board, backing for tv's
Ceiling:	None required
Specialty Finishes:	None required
Sound:	Mitigate Sound transfer to adjacent spaces

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): N/A

### Privacy/Security:

-Keyed (digital card) access  
-security camera

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	View front hall
Glazing:	1" Insulated to the exterior
Natural Light:	Desired
Frame:	Alum. Storefront:

### Casework/Fixed Equipment:

-none

### Moveable Furnishings:

-None required by proposing team

### Equipment:

-(2) LCD TV's (NIC)

## Technical Requirements

### Mechanical:

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - as required by DSU IT Infrastructure Standards document, room ceiling exhaust

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls: Temperature sensor

Sound Criteria: less than 45 (NC/RC)

Special Systems: None required

Plumbing: None required

### Electrical:

Power: outlets for excercise equipment in floor, plus outlet 12' o.c. around walls

Phone/Data: wireless access

Video: Campus cable TVs

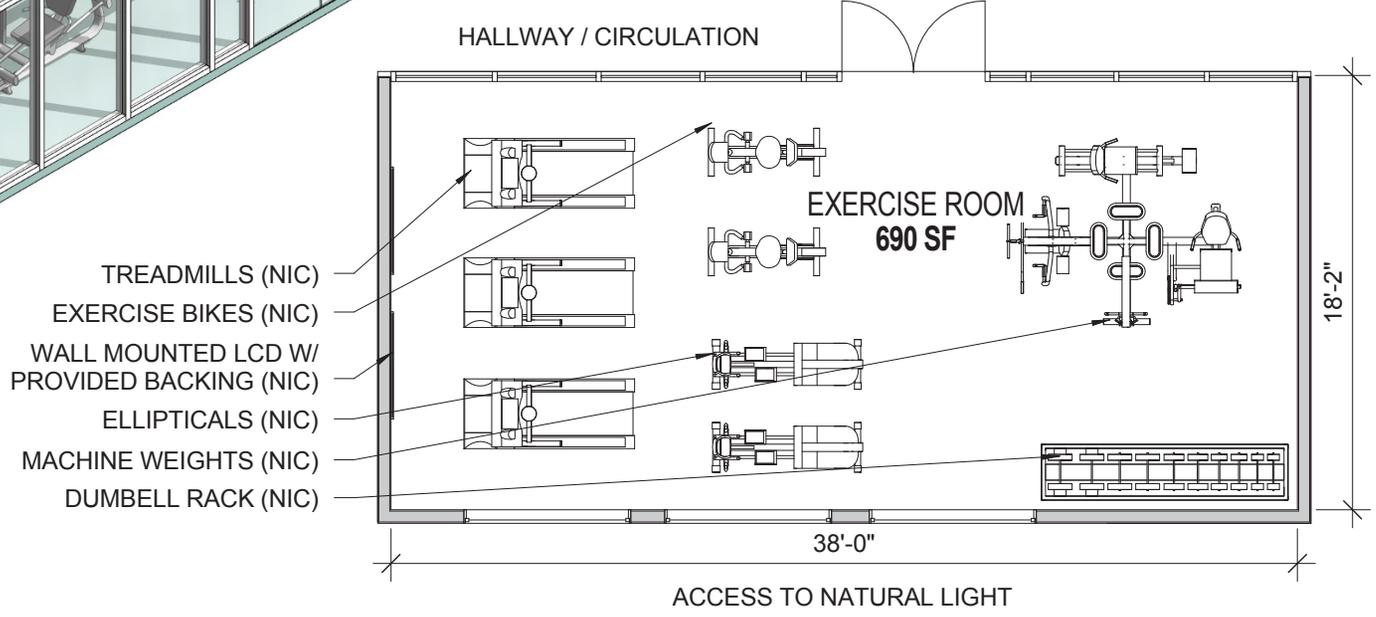
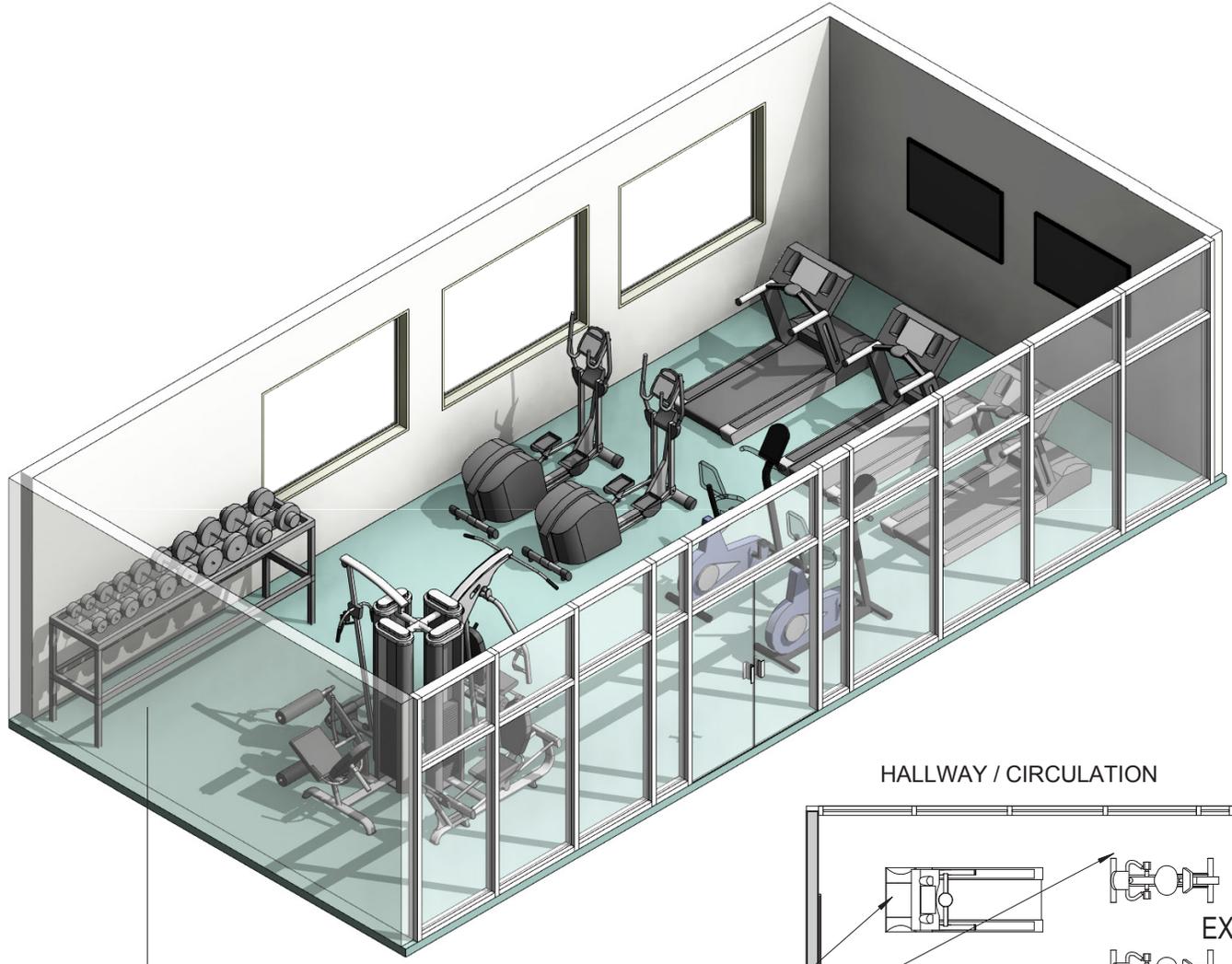
### Lighting:

Fixture Type: LED indirect

Task Lighting: -

Foot Candles: 30

Controls: Vacancy Sensor with wall station override



- TREADMILLS (NIC)
- EXERCISE BIKES (NIC)
- WALL MOUNTED LCD W/  
PROVIDED BACKING (NIC)
- ELLIPTICALS (NIC)
- MACHINE WEIGHTS (NIC)
- DUMBBELL RACK (NIC)

## Space Requirements

### Space Summary:

Type of Space:	Common kitchen for student/group use
Number Required:	1
Total Number:	1
Occupants:	8-10
Area:	Estimated 365 SF
Primary Function:	To provide a common kitchen space for student /group use outside the units

### Relationships:

Location:	Second floor
Adjacencies:	Central to building
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel

### Finishes:

Floor:	Ceramic tile flooring w/ tile base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Some acoustic isolation

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 10'-0"

### Privacy/Security:

-Keyed (digital card or key) access

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Lower and upper cabinetry, serving bar

### Moveable Furnishings(NIC):

-Tables, chairs, stools

### Equipment:

-(1) large sink with disposal, (1) refrigerator (NIC), (1) double oven, (1)cooktop range, (1) dishwasher

## Technical Requirements

### Mechanical:

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - exhaust kitchen as required, kitchen hood exhaust

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls: Temperature sensor

Sound Criteria: less than 45 (NC/RC)

Special Systems: None required

Plumbing: (1) two compartment, stainless steel sink with disposal, swing type goose neck kitchen faucet, water line to each fridge for icemaker, dishwasher supply/drain

### Electrical:

Power: (1) duplex outlet per open wall and at fridge, duplex outlets above counters at 4'-0" o.c. on dedicated circuits, 220V outlet at oven

Phone/Data: Wireless access

Video: CCTV camera

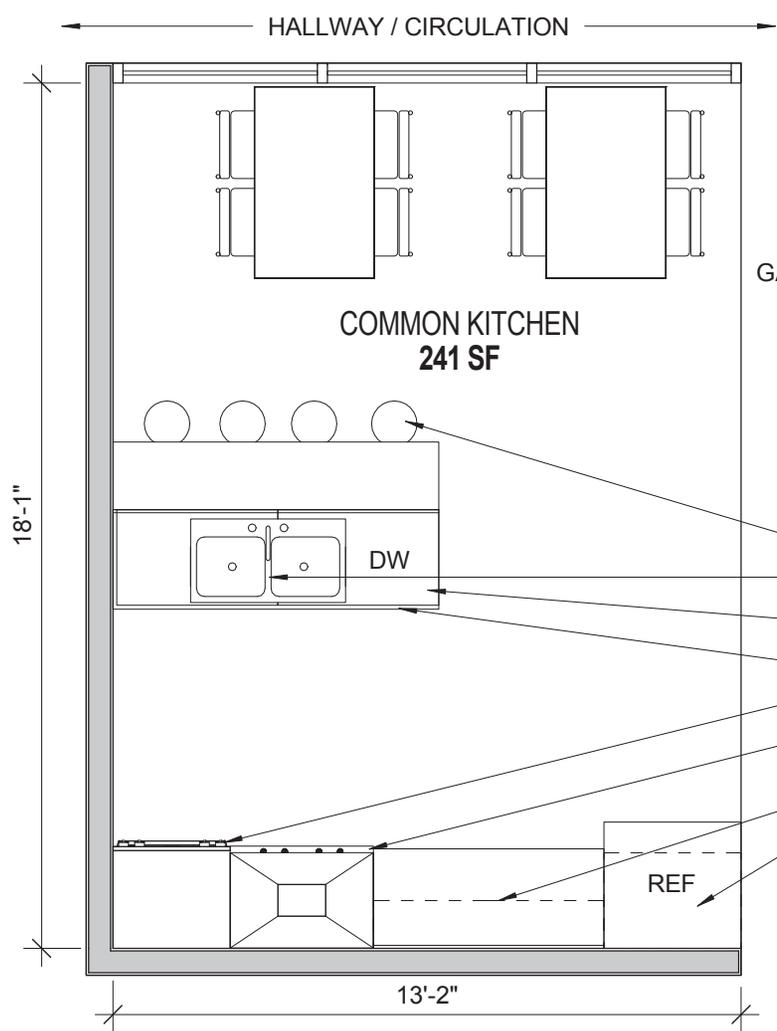
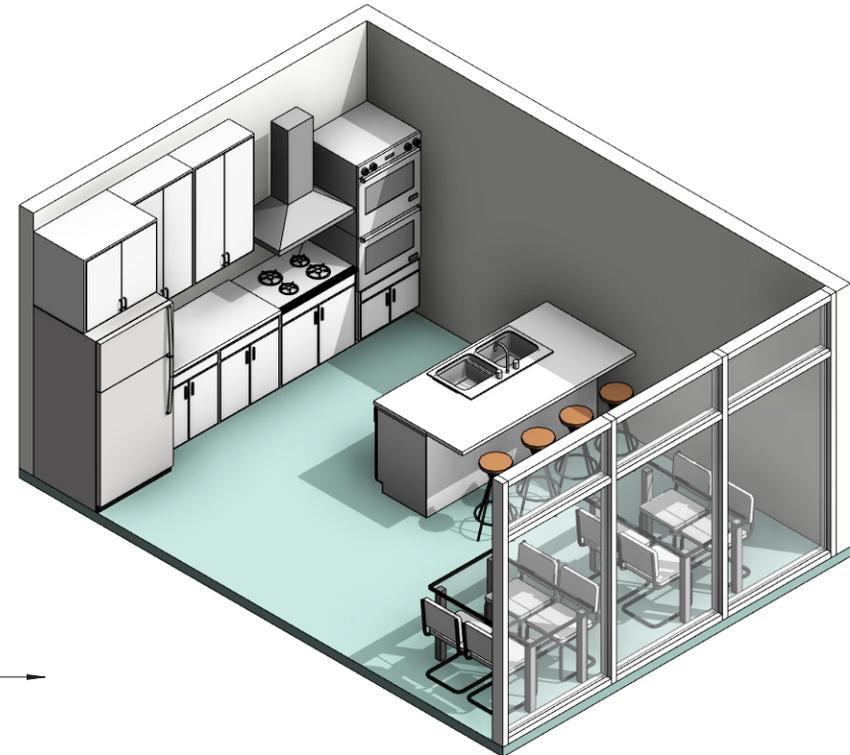
### Lighting:

Fixture Type: LED

Task Lighting: None required

Foot Candles: 40 at prep counters, 20 at seating areas

Controls: Vacancy Sensor with wall station override, daylighting control.



GAME ROOM →

COMMON KITCHEN  
241 SF

- STOOLS (NIC)
- DOUBLE SINK & DISPOSAL
- COUNTER & DISHWASHER
- LOWER CABINETRY
- RESIDENTIAL GRADE DOUBLE OVEN
- RESIDENTIAL GRADE CERAMIC TOP ELECTRIC COOKTOP RANGE & HOOD
- UPPER CABINETRY
- FULL SIZE FRIDGE & FREEZER (NIC)

## Space Requirements

### Space Summary:

Type of Space:	Large social space for students to hang out and play games
Number Required:	Upper floors (level 2-5)
Total Number:	may vary depending on design
Occupants:	20-30
Area:	Estimated 700 SF
Primary Function:	To provide a large, scale space where students can hang out and watch TV

### Relationships:

Location:	Upper floors (after main level)
Adjacencies:	Centralized in bldg, Laundry, Computer stations, common kitchen/lounge
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes

### Finishes:

Floor:	Carpet tile flooring w/ rubber base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Some acoustic isolation from nearby suites

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF):	10'-0" (if possible)
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### Privacy/Security:

- Keyed (digital card or key) access
- Camera to monitor furniture, TV, and games

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	Exterior
Glazing:	Insulated w/ Low-E coating
Natural Light:	Required
Frame:	Aluminum Storefront: Champagne

### Casework/Fixed Equipment:

- None required

### Moveable Furnishings (NIC):

- Sofas, lounmge chairs, coffee tables, area rugs

### Equipment (NIC):

- Pool table, ping pong table, foosball table, board games, bulletin board, TV, clock Support for wall hung items by propsing teams

## Technical Requirements

### Mechanical:

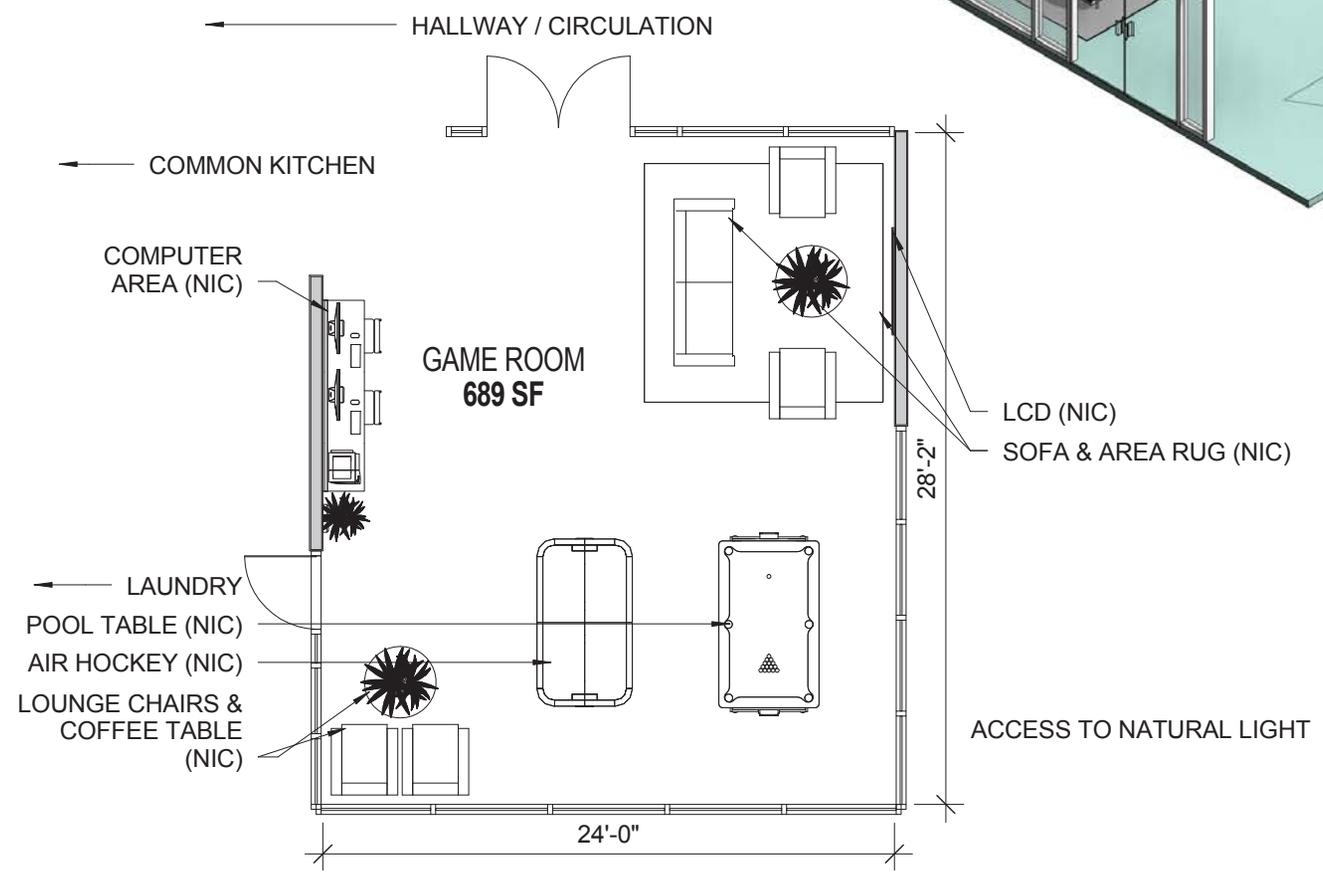
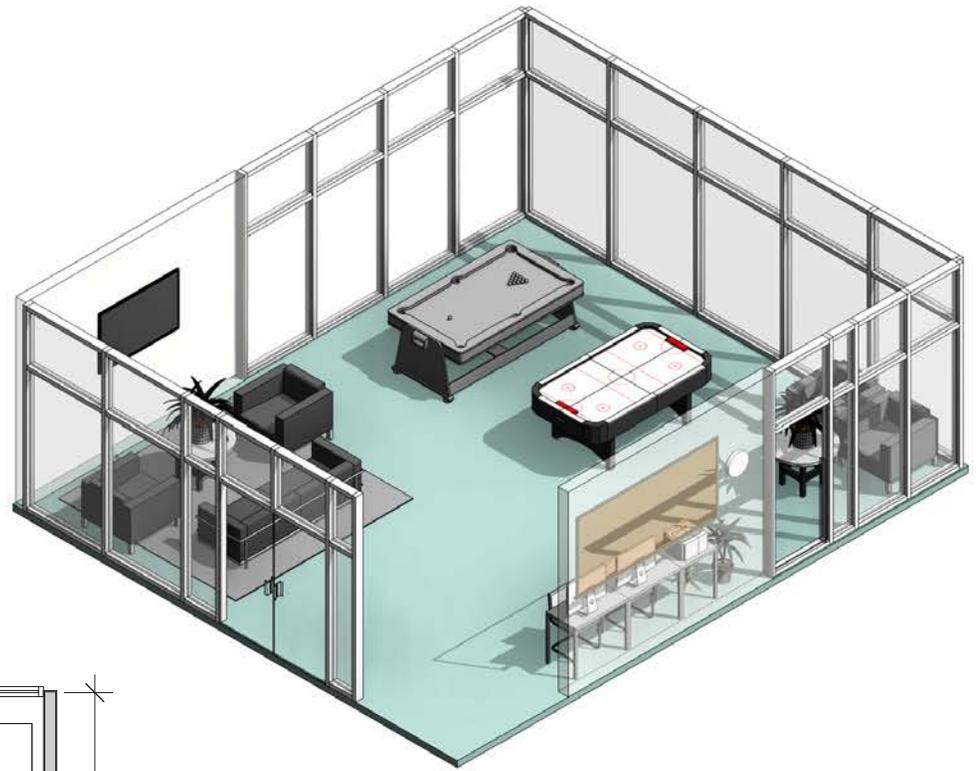
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	(1) duplex outlet @ 12'-0" o.c. around perimeter outlets for each gaming station, outlet for video monitor
Phone/Data:	Wireless access
Video:	CCTV camera, TV wiring and power, including campus cable TV

### Lighting:

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	30
Controls:	Relay control with wall station override, daylighting control



## Space Requirements

### Space Summary:

Type of Space:	Lounge area with computer counter and seating
Number Required:	1 on each floor
Total Number:	May vary depending on # of floors in proposed design
Occupants:	2
Area:	Estimated 45 SF
Primary Function:	To provide a seating area off the main hallway with computer stations for socializing or studying

### Relationships:

Location:	1 on each floor
Adjacencies:	Centralized in bldg, near other community areas
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes

### Finishes:

Floor:	Carpet tile flooring w/ rubber base
Walls:	Painted, gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Some acoustic isolation from nearby suites

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF):	9'-0"
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### Privacy/Security:

-None required

### Doors:

Type:	None required
Frame:	None required
Special:	None required

### Windows:

Type:	Exterior
Glazing:	Insulated w/ Low-E coating
Natural Light:	Required
Frame:	Aluminum Storefront: Champagne

### Casework/Fixed Equipment:

-Counter area for up to (2) computer stations and (1) printer station

### Moveable Furnishings (NIC):

-chairs

### Equipment(NIC):

-bulletin board, clock

## Technical Requirements

### Mechanical:

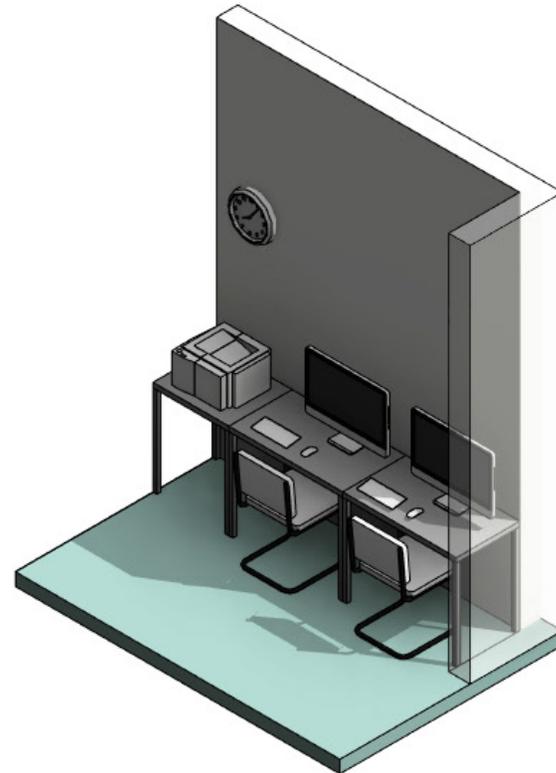
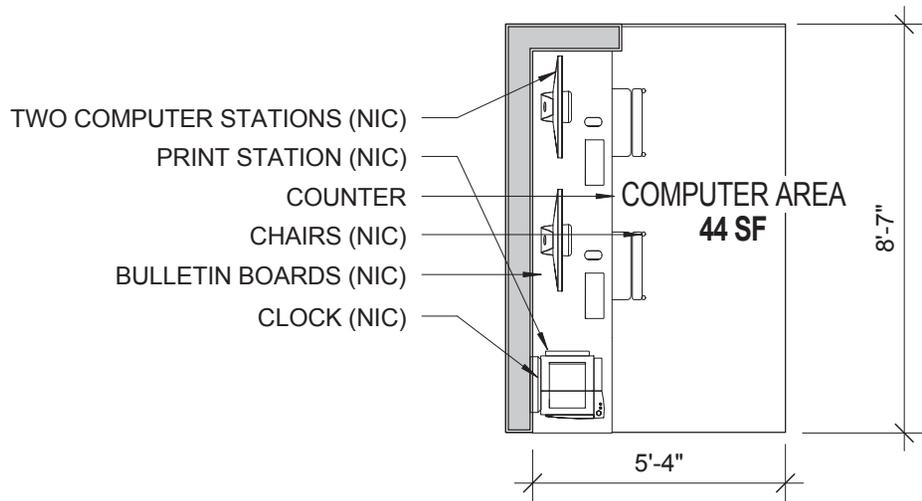
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	(1) duplex outlet @ 12'-0" o.c. around perimeter outlets for each station and monitors
Phone/Data:	Wireless access
Video:	CCTV camera

### Lighting:

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	30
Controls:	Relay control with wall station override



**Space Requirements**

**Space Summary:**

Type of Space:	Room to do laundry
Number Required:	1 per floor
Total Number:	4
Occupants:	4-6
Area:	Estimated 324 SF
Primary Function:	To provide a space for students to do laundry

**Relationships:**

Location:	One per floor
Adjacencies:	Centrally located, visual access to lobbies/corridor
Separation:	None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes

**Finishes:**

Floor:	Ceramic tile flooring w/ tile base
Walls:	Painted, gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Acoustic isolation from nearby suites

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): 9'-0"

**Privacy/Security:**

-Security camera, key card access

**Doors:**

Type:	Solid core wood with clear finish or glass door
Frame:	Painted hollow metal
Special:	None required

**Windows:**

Type:	Interior, to provide visual access to hallway/lobby
Glazing:	Clear, tempered
Natural Light:	Not required

**Casework/Fixed Equipment:**

-Counter

**Moveable Furnishings(NIC):**

-Tables/chairs

**Equipment:**

-Washers and dryers, approx. (6) each min.

**Technical Requirements**

**Mechanical:**

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - as required by load analysis

Summer Design Temp: 74° F

Winter Design Temp: 72 ° F

Controls: Temperature sensor

Sound Criteria: less than 45 (NC/RC)

Special Systems: Dryer venting as required, wall mounted louver and damper for combustion air.

Plumbing: Hot/cold water supply lines, drains for washers, floor drain, laundry sink (small deep sink with goose neck faucet), gas piping, washer & dryer wall mounted fitting housing the waste, electric, and hot and cold water valves

**Electrical:**

Power: (1) duplex outlet per wall, (1) 220v outlet per dryer, (1) duplex outlet per washer

Phone/Data: None required

Video: CCTV camera

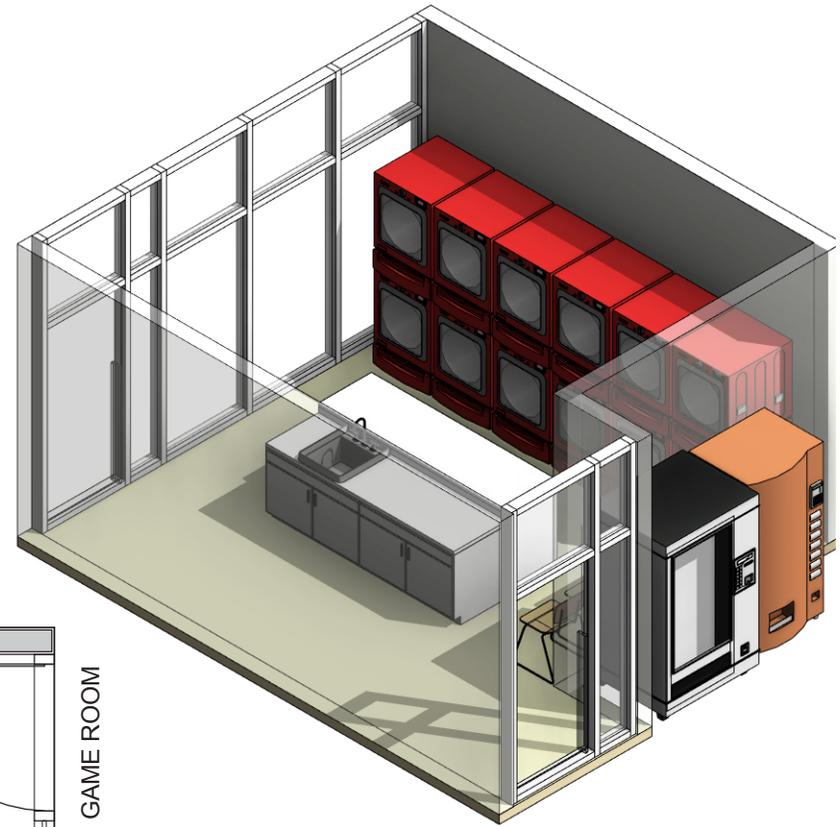
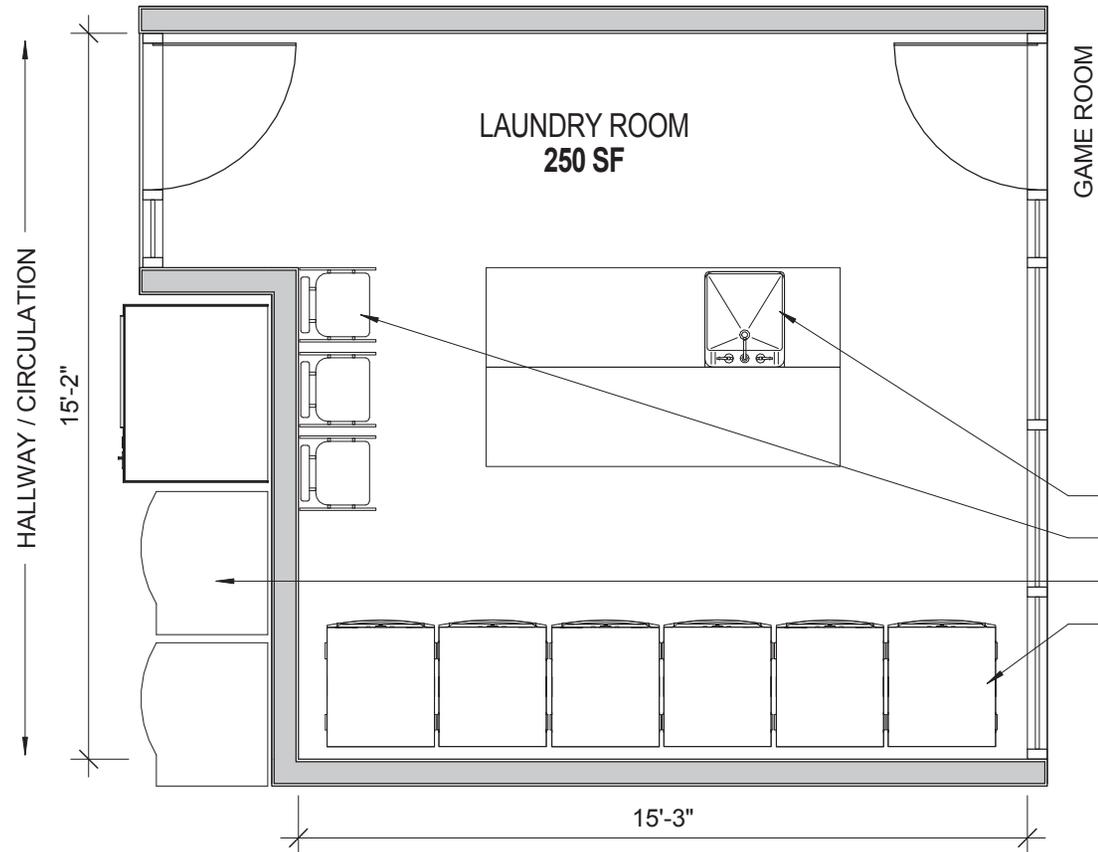
**Lighting:**

Fixture Type: LED

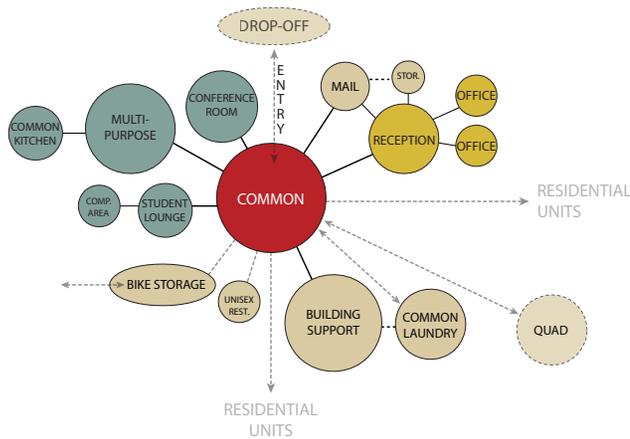
Task Lighting: None required

Foot Candles: 40

Controls: Vacancy Sensor with wall station override



- LAUNDRY COUNTER & SINK
- CHAIRS (NIC)
- VENDING MACHINES (NIC)
- STACKABLE FRONTLOAD WASHERS & DRYERS

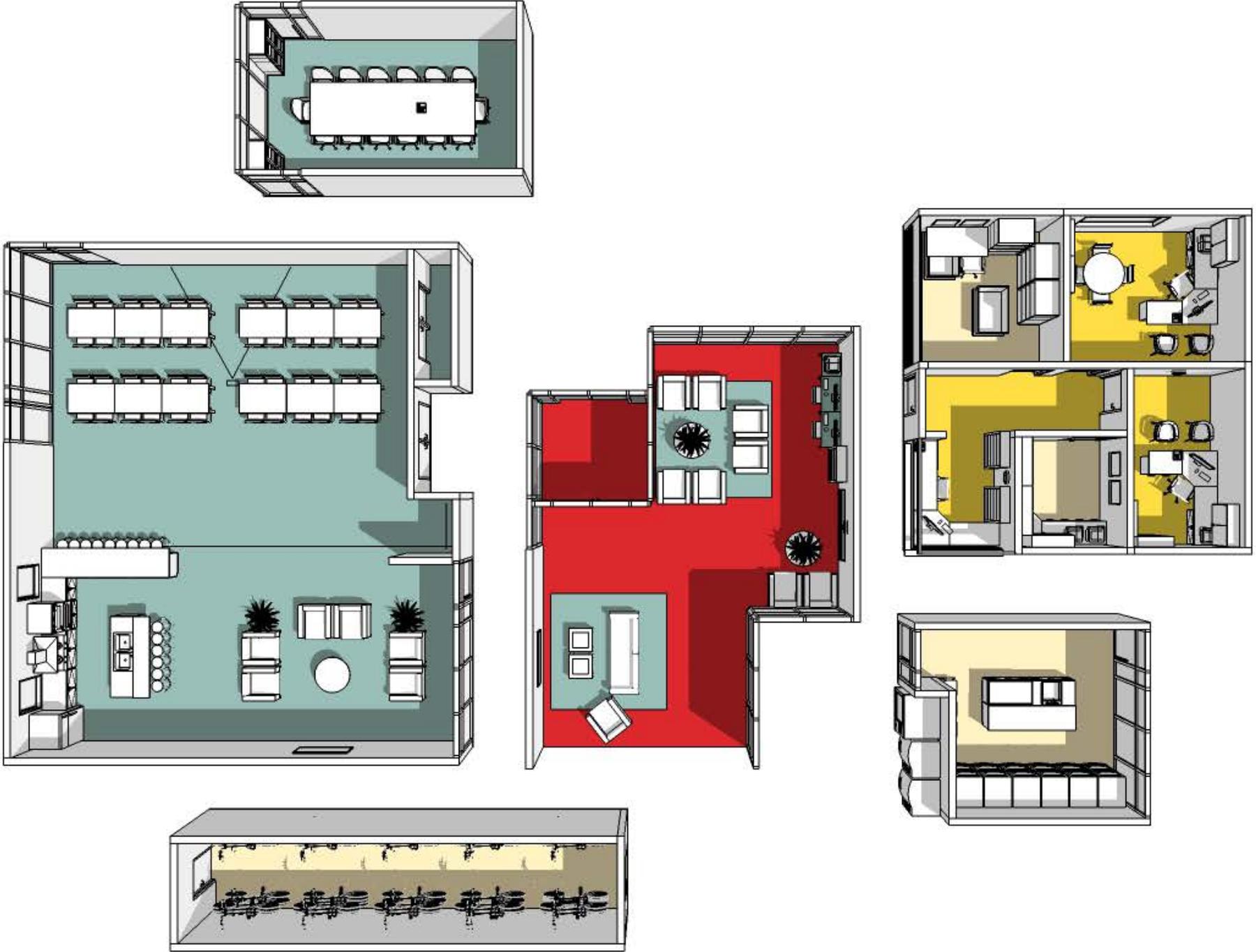


## GROUND LEVEL APPROACH

The construct of adjacencies for the main (entry) level of the new housing building will need to address several design problems. Campus and community connections are important to the university. Having a ‘public’ (100 south) face and ‘campus’ face should be considered in the proposed design. Common space that can serve multiple uses in an open, inviting area that offers both visual and spatial connectivity are preferred. The administrative offices and mail space shall be central to the building where they have visibility and presence.

Residential units shall be apart from the central common space on the main floor to allow for lower sound levels and greater privacy. Utilitarian spaces should be placed as appropriate to function, but also sufficiently out of sight from major public spaces.

An intentional sense of flow is preferred from the campus and city sides of the building, into entry areas and common amenities. Then moving farther from those spaces enhanced privacy is expected.



05 data sheets + room diagrams

## Space Requirements

### Space Summary:

Type of Space:	Entrance lobby and reception area
Number Required:	1
Total Number:	1
Occupants:	10-15
Area:	Estimated 671 SF
Primary Function:	Serve as a waiting space for individuals/groups waiting to be helped by the front desk. Serves to showcase the building to prospective students/parents.

### Relationships:

Location:	Near main bldg entrance
Adjacencies:	Front desk area, central location
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel, showcase DSU

### Finishes:

Floor:	Ceramic tile flooring w/ tile base or other durable material as approved by DSU
Walls:	Painted, impact-resistant gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	None required

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 10'-0"

### Privacy/Security:

-Security cameras desirable to monitor furniture, TV, computers, card access

### Doors:

Type:	Aluminum storefront entry doors/vestibule
Frame:	Aluminum storefront: Champagne
Special:	None required

### Windows:

Type:	Exterior, floor to ceiling storefront
Glazing:	Insulated w/ Low-E coating
Natural Light:	Required
Frame:	Aluminum Storefront: Champagne

### Casework/Fixed Equipment:

-Possible counter top, see below

### Moveable Furnishings(NIC):

-Sofas, lounge chairs and coffee tables

### Equipment(NIC):

-TV, clock, computer and print station, bookshelf, wall mounted bulletin board. Support backing in wall by proposing team.

## Technical Requirements

### Mechanical:

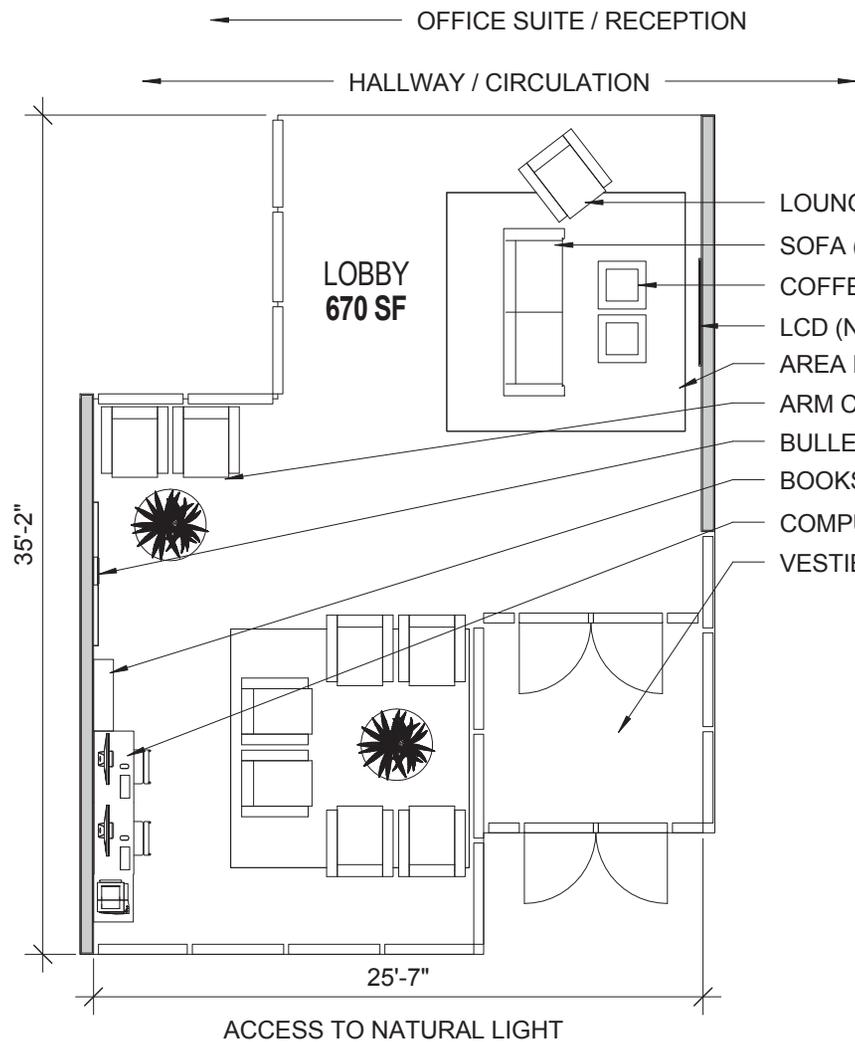
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Zoned with common area, locate thermostat adjacent
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

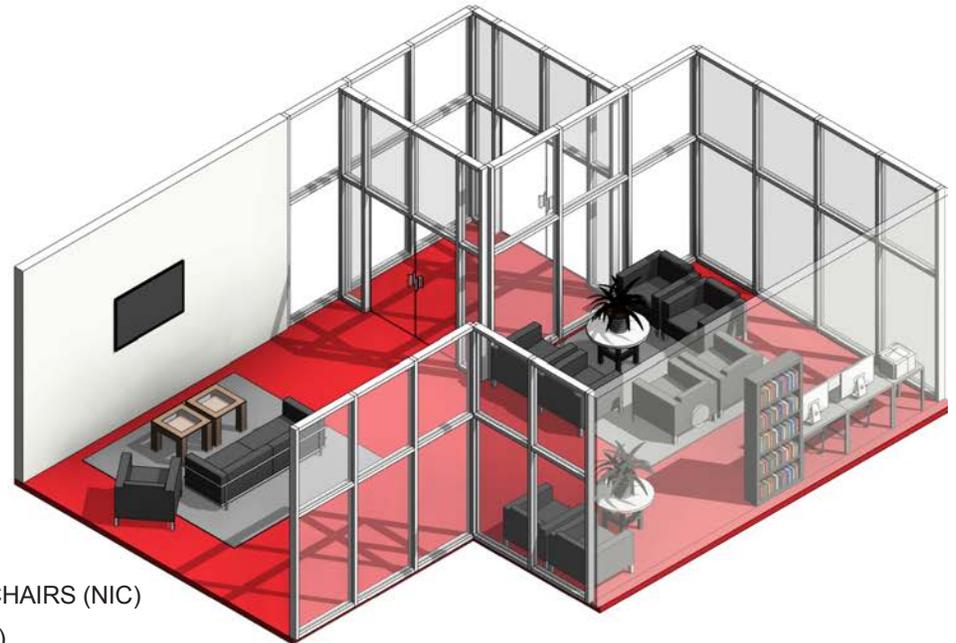
Power:	(2) duplex outlets at desks/counter min., (1) duplex outlet per wall 1 network outlet at TV
Phone/Data:	(2) network outlets near computers
Video:	(1) coax TV/cable outlet near TV

### Lighting:

Fixture Type:	LED, accent fixtures as req'd for showcasing the lobby and/or artwork
Task Lighting:	None required
Foot Candles:	30
Controls:	Relay control with wall station override



- LOUNGE CHAIRS (NIC)
- SOFA (NIC)
- COFFEE TABLES (NIC)
- LCD (NIC)
- AREA RUG (NIC)
- ARM CHAIRS (NIC)
- BULLETIN BOARDS & CLOCK (NIC)
- BOOKSHELF (NIC)
- COMPUTER AREA (NIC)
- VESTIBULE

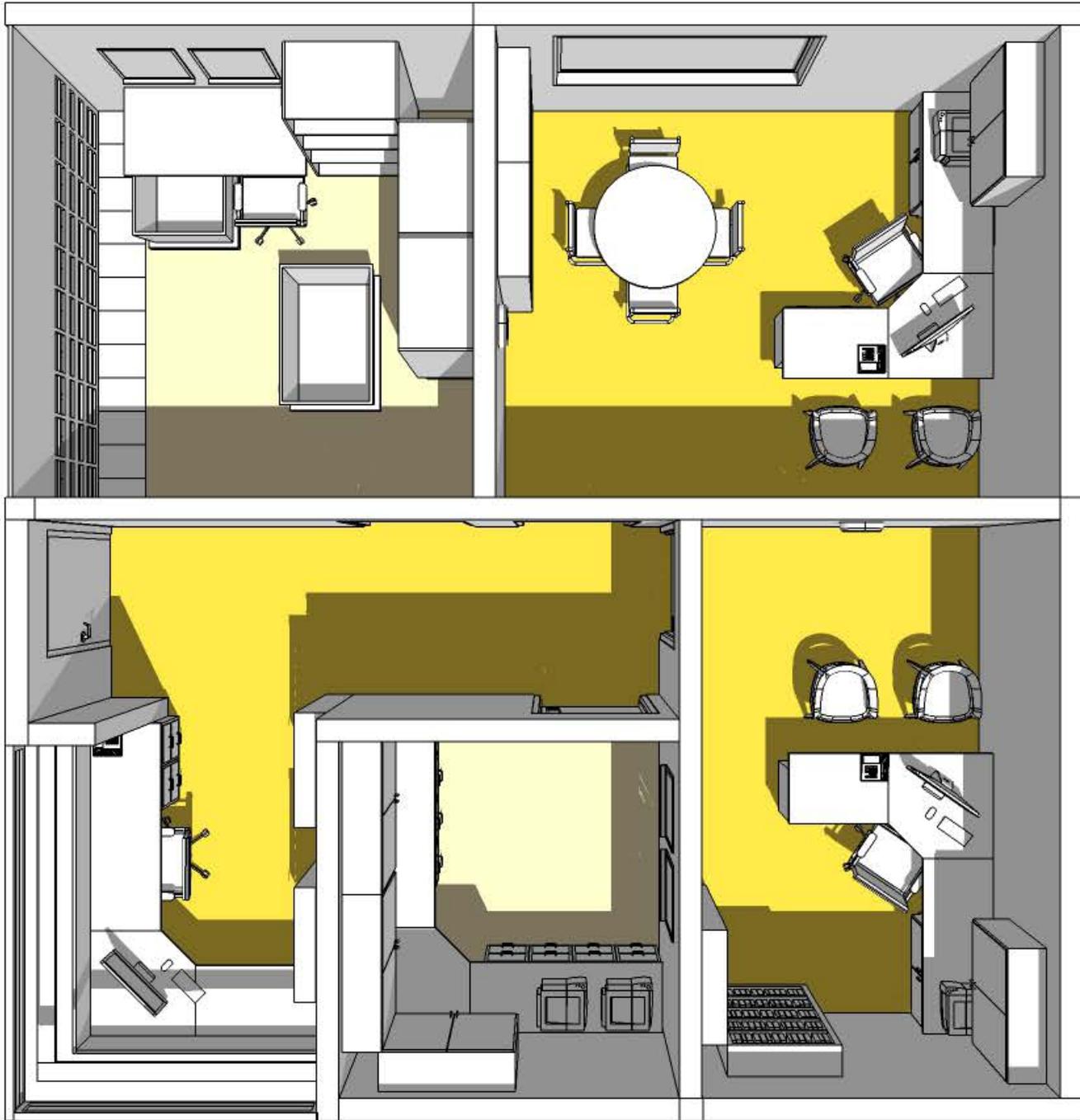


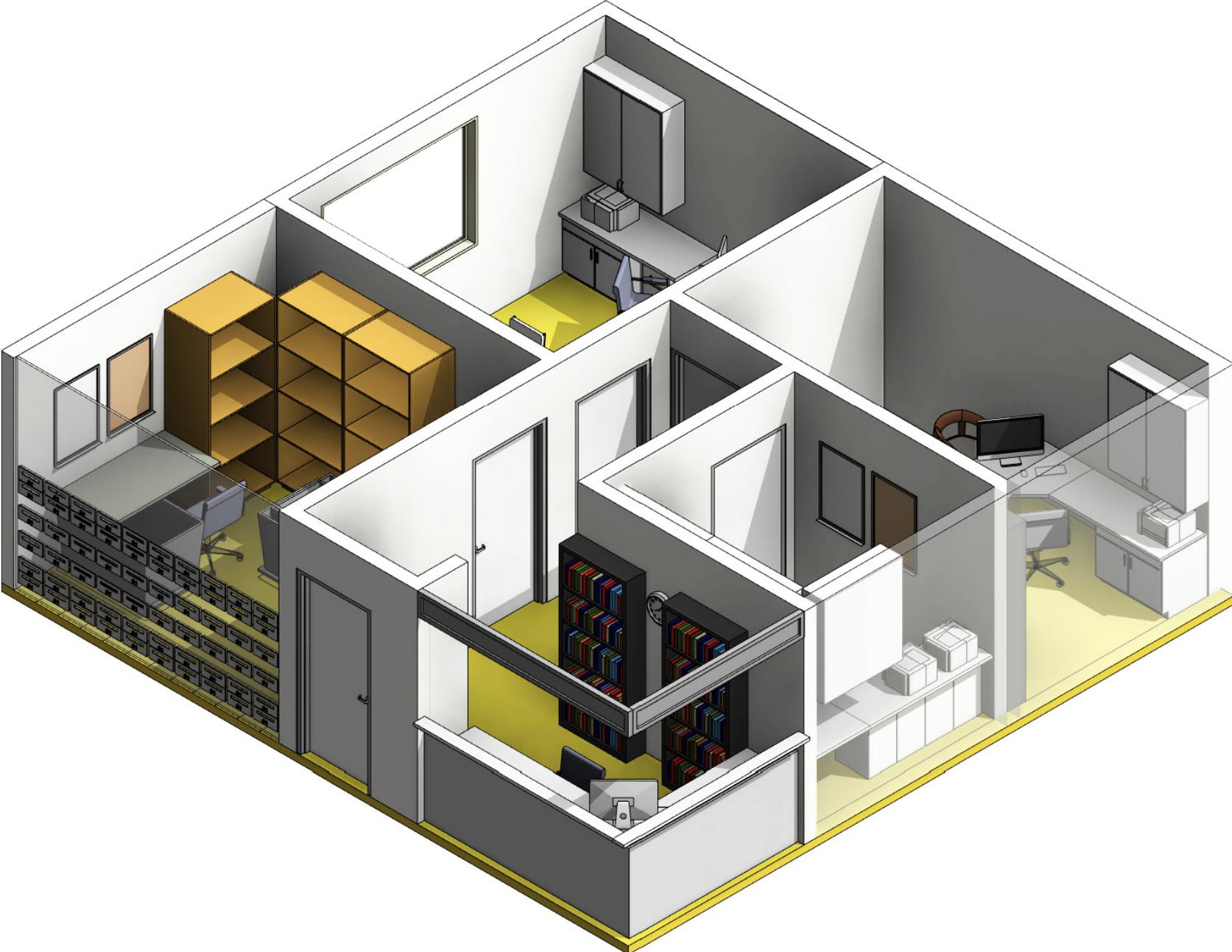
### OFFICE SUITE APPROACH

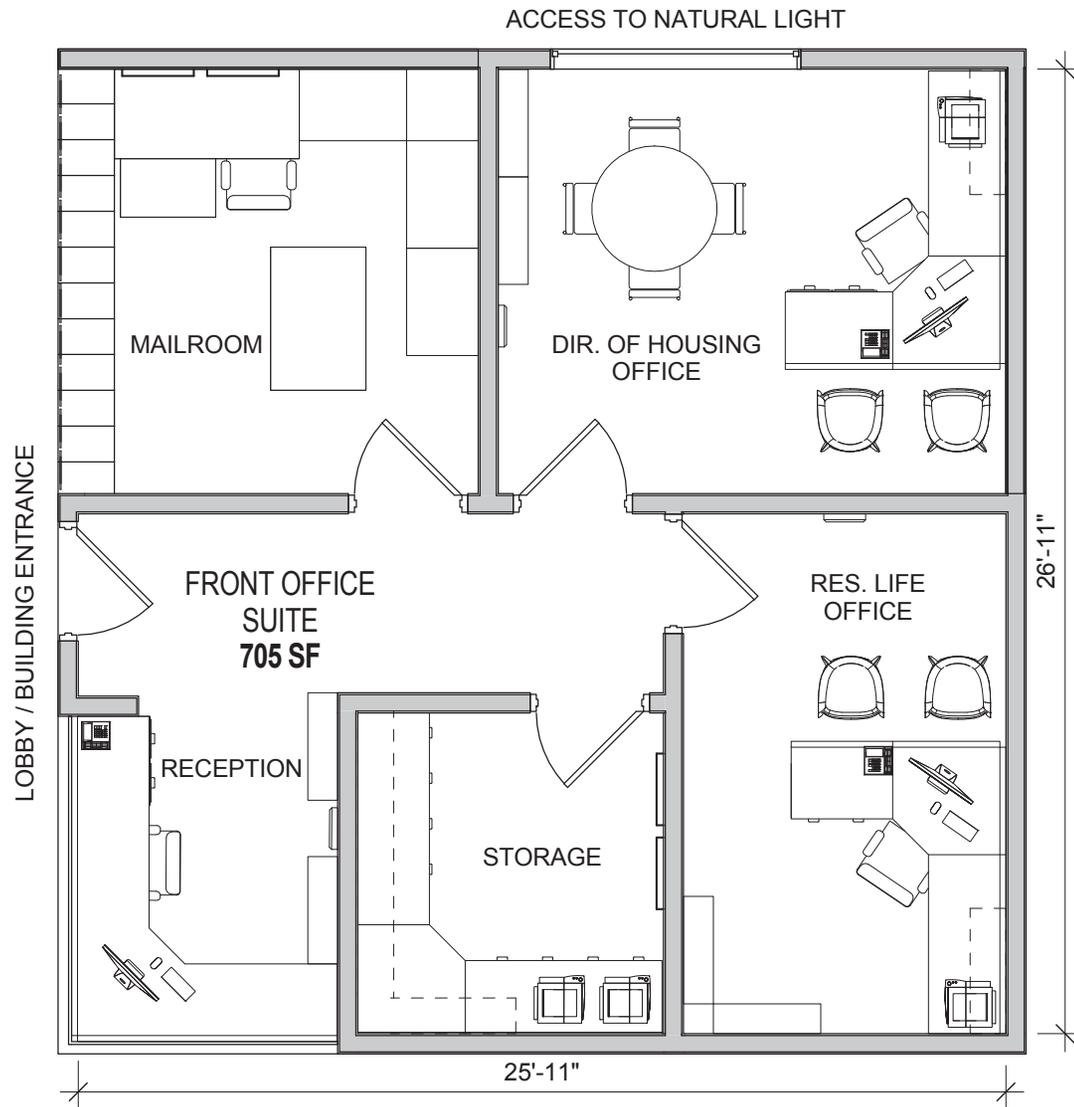
The office suite is a compilation of program and adjacency requirements that work together to satisfy the day to day operation of the new student housing project. The goal is to provide space that functions well but still offers an inviting atmosphere to those living in the building, visitors, and prospective residents.

This office area serves many functions, including offices for the housing director and residential life services coordinator, front desk reception and administration, office storage and work space as well as the mail receiving, sorting and distribution. This is the main level administrative face to the public and should represent an inviting and professional image. Strategies to reduce visual clutter to the public shall be considered. After hours security also needs to be incorporated into the administrative area as demonstrated in the individual diagrams.

While the functions being performed by the various employees vary, the goal is common to the needs of the housing program and student success—consideration for these two elements working in concert is a must.







## Space Requirements

### Space Summary:

Type of Space:	Front desk near the building entrance
Number Required:	1
Total Number:	1
Occupants:	2-4
Area:	Estimated 153 SF
Primary Function:	To be the first point of contact to assist residents and building visitors as well as to perform office tasks

### Relationships:

Location:	First floor
Adjacencies:	Near main bldg entrance, mailroom, offices
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel, showcase DSU

### Finishes:

Floor:	Carpet tile flooring w/ rubber base
Walls:	Painted, gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	None required

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Keyed (digital card or key) access to behind counter area  
-security curtain or window for after hours

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	Can be exterior if adj. to exterior wall, alum. storefront to lobby desirable
Glazing:	Insulated w/ Low-E coating
Natural Light:	Required

### Casework/Fixed Equipment:

-Counter, shelving/upper cabinets, work space-behind counter, drop down wall to secure front desk after hours

### Moveable Furnishings(NIC):

-Chairs, file drawers (lockable), bookshelf

### Equipment(NIC):

-Paper organizer(s), clock, bulletin board, whiteboard, clip boards, computer, phone, printer/copier, scanner

## Technical Requirements

### Mechanical:

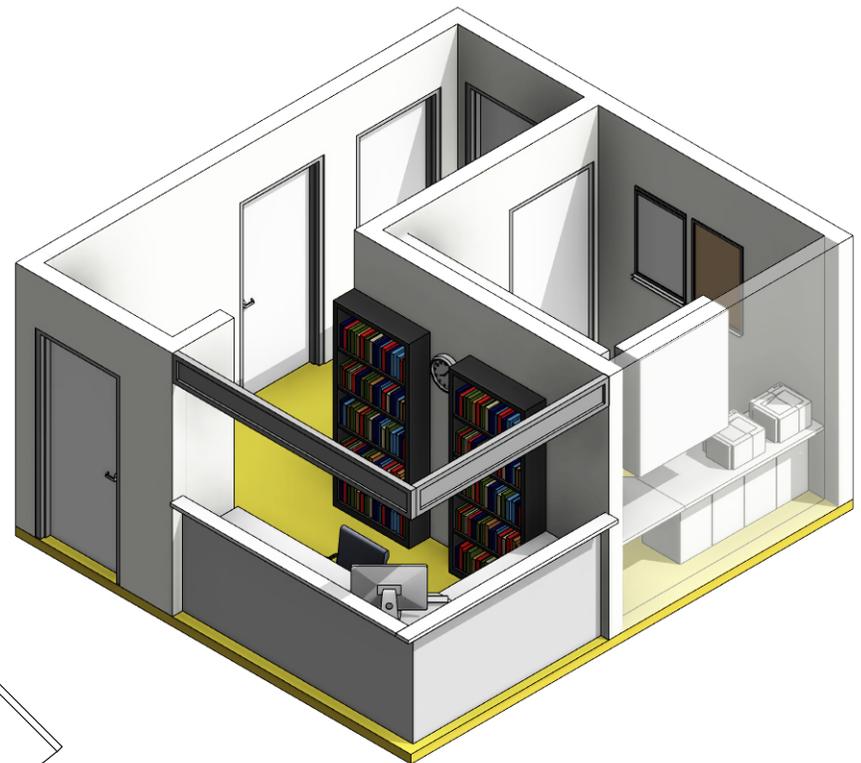
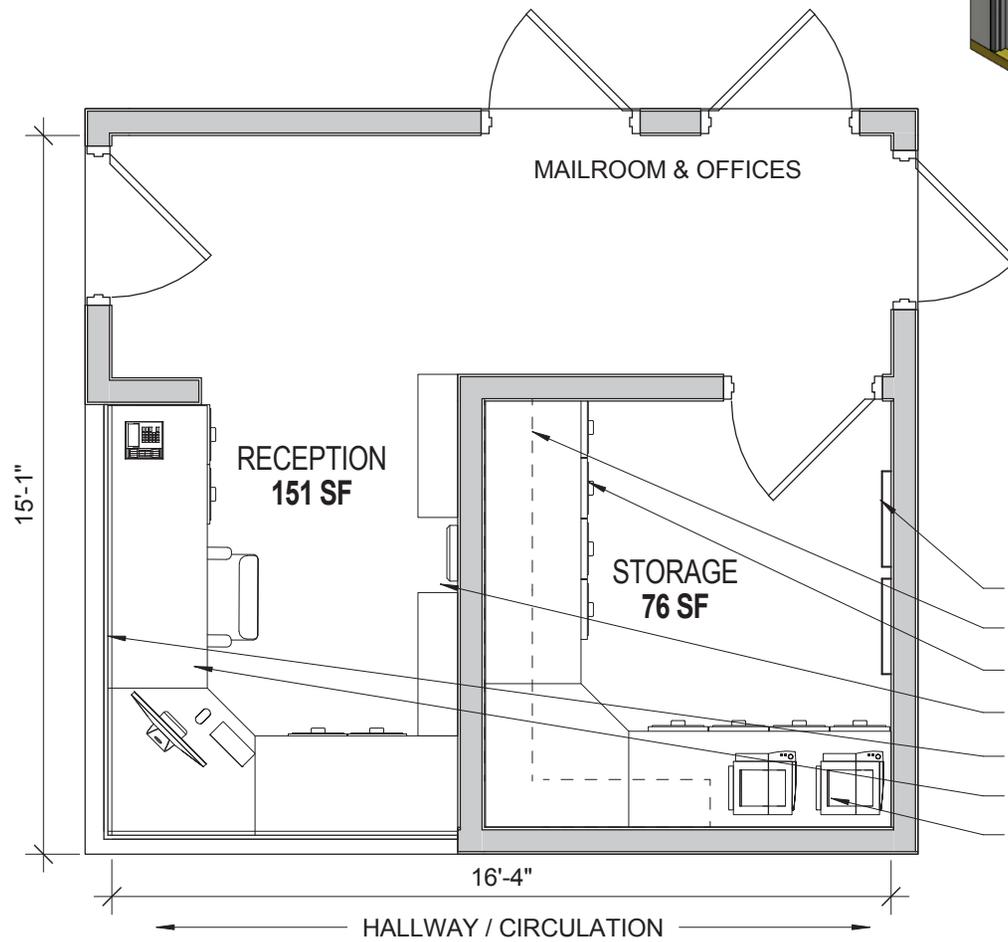
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	Duplex outlets at 12'-0" o.c., above counter duplex outlets near equip. locations 2 for each workstation
Phone/Data:	(1) telephone jack, (1) network outlet, wireless
Video:	CCTV camera

### Lighting:

Fixture Type:	LED
Task Lighting:	At office desks (NIC)
Foot Candles:	30
Controls:	Relay control with wall station override



- BULLETIN BOARD & WHITE BOARD (NIC)
- UPPER CABINETS / SHELVING & WORK COU
- FILE DRAWERS (NIC)
- BOOKSHELF & CLOCK (NIC)
- OVERHEAD SECURITY GATE
- DESK, COMPUTER & CHAIR (NIC)
- PRINTER / COPIER / SCANNER (NIC)

## Space Requirements

### Space Summary:

Type of Space:	Mailroom work area
Number Required:	1
Total Number:	1
Occupants:	1-3
Area:	Estimated 136 SF
Primary Function:	To sort and process mail. Provide an area to work on bulk paperwork. Allow some area for storage.

### Relationships:

Location:	First floor
Adjacencies:	Front desk, Admin. offices
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel, showcase DSU

### Finishes:

Floor:	Vinyl plank flooring w/ rubber base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	None required

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Keyed (digital card or key) access

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Counter space, mailboxes (60 min., 1 per apartment), paper/ office supplies storage cupboards and mounted key boxes

### Moveable Furnishings(NIC):

-Chairs

### Equipment(NIC):

-Paper shredder, 3-hole punch, paper cutter, bulletin board, white board, FUTURE phone and computer

### Special Storage needs:

## Technical Requirements

### Mechanical:

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - as required by load analysis

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls: Temperature sensor

Sound Criteria: less than 45 (NC/RC)

Special Systems: None required

Plumbing: None required

### Electrical:

Power: Duplex outlets at 12'-0" o.c. 2 for each workstation  
Phone/Data: (1) telephone jack, (1) network outlet, wireless

Video: None required

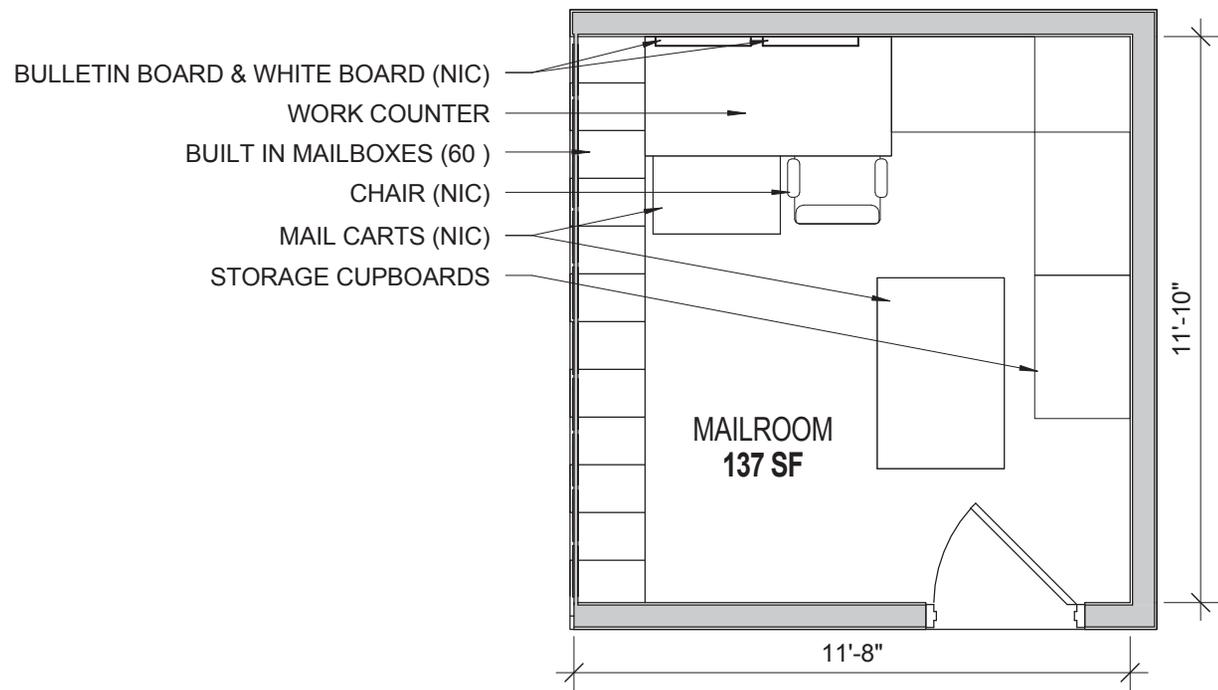
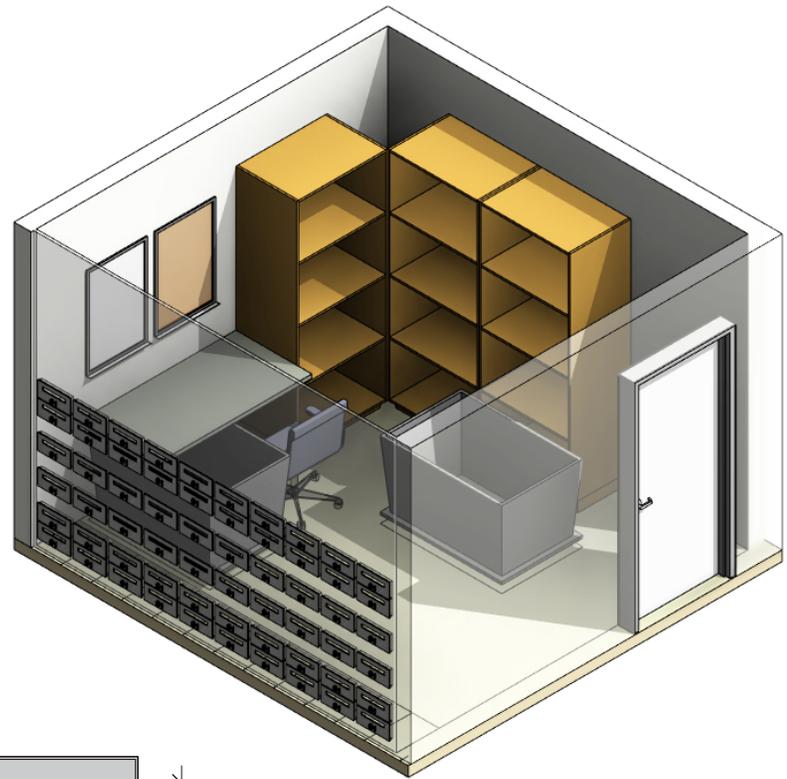
### Lighting:

Fixture Type: LED

Task Lighting: At office desks(NIC)

Foot Candles: 30

Controls: Vacancy Sensor with wall station override



## Space Requirements

### Space Summary:

Type of Space:	Office for the Director of Housing
Number Required:	1
Total Number:	1
Occupants:	1-3
Area:	Estimated 182 SF
Primary Function:	To provide an administrative working space for the Director to perform admin. responsibilities

### Relationships:

Location:	First floor
Adjacencies:	Front desk, office of Res. Life Coordinator
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel, showcase DSU

### Finishes:

Floor:	Carpet tile flooring w/ rubber base
Walls:	Painted, gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Some acoustic isolation for private conversations

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Keyed (digital card or key) access

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	Exterior
Glazing:	Insulated w/ Low-E coating
Natural Light:	Required
Frame:	Aluminum Storefront: Champagne

### Casework/Fixed Equipment:

-Cabinets / shelving

### Moveable Furnishings(NIC):

-Desk, small meeting table (3-4 ppl) if size permits, chairs, file drawers (lockable), bookshelf

### Equipment(NIC):

-Paper organizer(s), clock, bulletin board, computer, phone, printer/scanner

## Technical Requirements

### Mechanical:

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - as required by load analysis

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls: Temperature sensor

Sound Criteria: less than 45 (NC/RC)

Special Systems: None required

Plumbing: None required

### Electrical:

Power: Duplex outlets at 12'-0" o.c. 2 for each workstation  
Phone/Data: (1) telephone jack, (1) network outlet, wireless

Video: None required

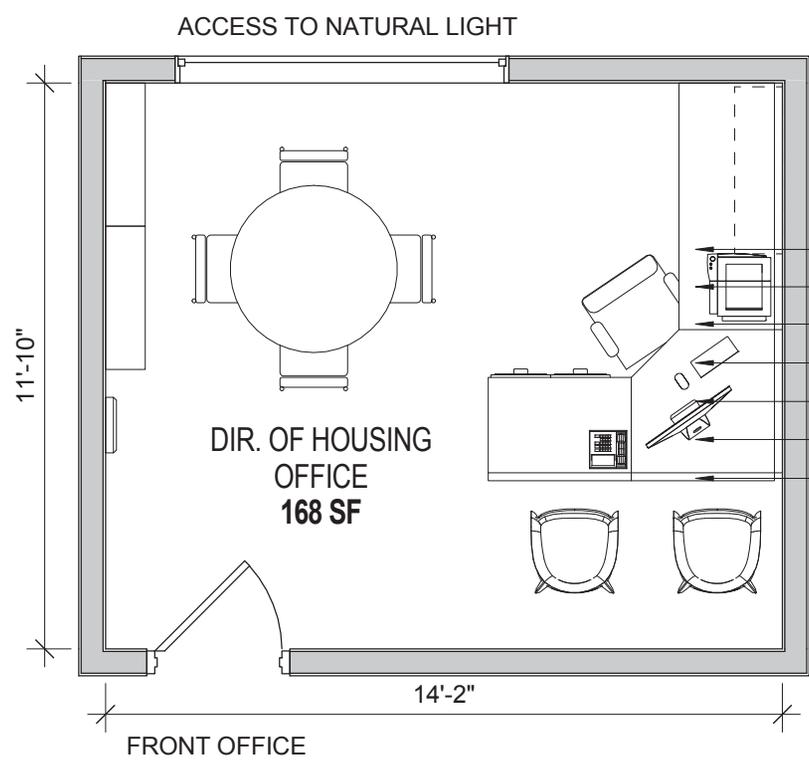
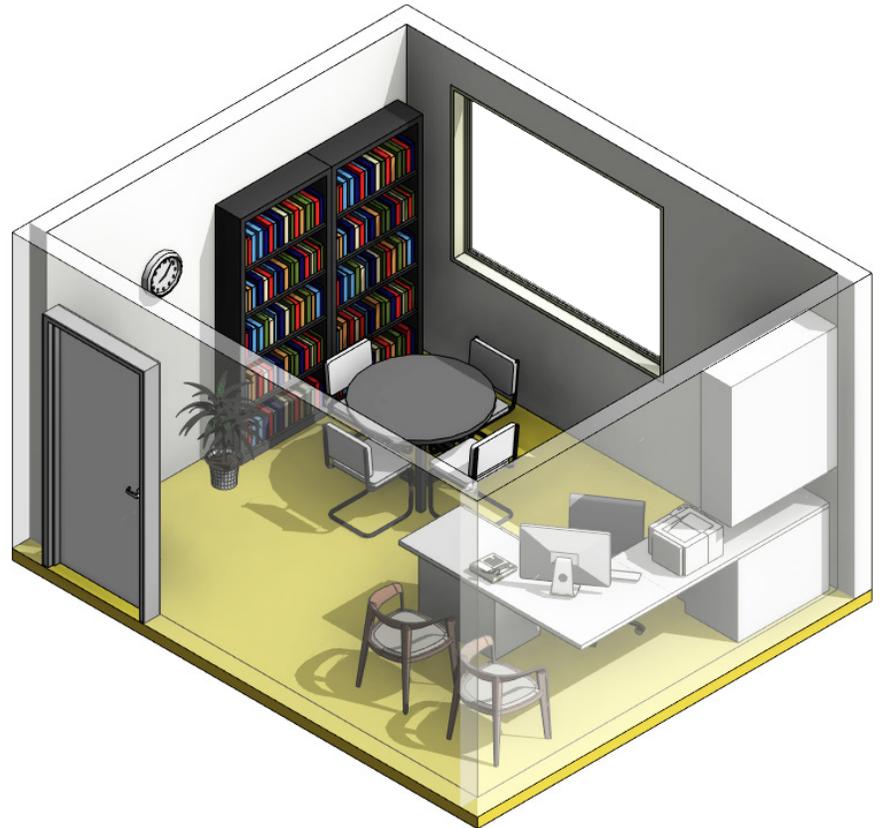
### Lighting:

Fixture Type: LED

Task Lighting: at office desks (NIC)

Foot Candles: 30

Controls: Vacancy Sensor with wall station override



- BULLETIN BOARD
- BOOKSHELF & CLOCK (NIC)
- CABINETS / SHELVING
- PRINTERS (NIC)
- DESK W/PHONE & COMPUTER (NIC)
- FILE DRAWERS (NIC)
- MEETING TABLE & CHAIRS (NIC)

## Space Requirements

### Space Summary:

Type of Space:	Office for the Residential Life Services Coordinator
Number Required:	1
Total Number:	1
Occupants:	1-3
Area:	Estimated 148 SF
Primary Function:	To provide an administrative working space for the Coordinator to perform admin. responsibilities

### Relationships:

Location:	First floor
Adjacencies:	Front desk, Director of Housing Office
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel, showcase DSU

### Finishes:

Floor:	Carpet tile flooring w/ rubber base
Walls:	Painted, gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Some acoustic isolation for private conversations

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 9'-0"

### Privacy/Security:

-Keyed (digital card or key) access

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	Exterior
Glazing:	Insulated w/ Low-E coating
Natural Light:	Required

### Casework/Fixed Equipment:

-Cabinets / shelving

### Moveable Furnishings(NIC):

-Desk, chairs, file drawers (lockable), bookshelf

### Equipment(NIC):

-Inbox, clock, bulletin board, computer, phone, printer/scanner

## Technical Requirements

### Mechanical:

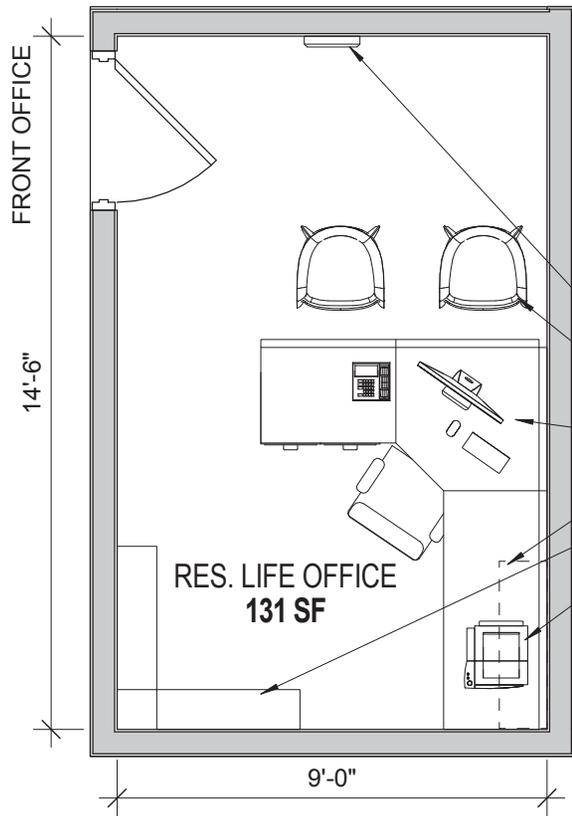
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

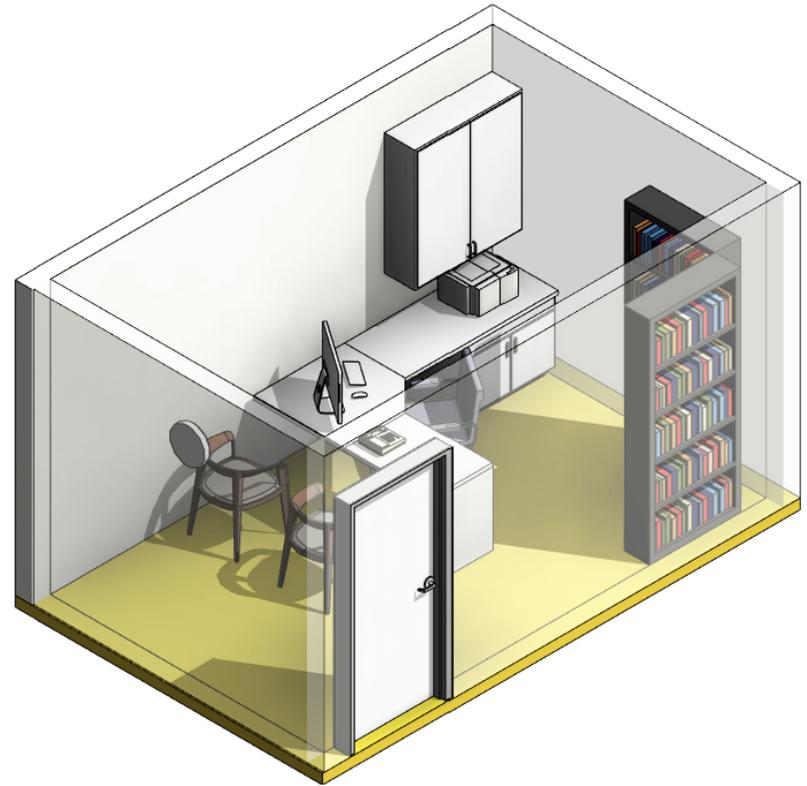
Power:	Duplex outlets at 12'-0" o.c. 2 for each workstation
Phone/Data:	(1) telephone jack, (1) network outlet, wireless
Video:	None required

### Lighting:

Fixture Type:	LED
Task Lighting:	at office desks (NIC)
Foot Candles:	30
Controls:	Vacancy Sensor with wall station override



- CLOCK (NIC)
- CHAIRS (NIC)
- DESK W/PHONE, COMPUTER & FILE DRAWER
- CABINETS / SHELVING (NIC)
- BOOKSHELF (NIC)
- PRINTER (NIC)



## Space Requirements

### Space Summary:

Type of Space:	Meeting space for employees and/or visitors
Number Required:	1
Total Number:	1
Occupants:	10-12
Area:	Estimated 300 SF
Primary Function:	To provide a professional setting to hold meetings

### Relationships:

Location:	First floor
Adjacencies:	Front desk, offices, visible access to hallway/lobby
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

#### Durable finishes

#### Finishes:

Floor:	Carpet tile flooring w/ rubber base
Walls:	Painted, gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Some acoustic isolation from nearby suites

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF):	9'-0"
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### Privacy/Security:

-security camera, key card access

### Doors:

Type:	Solid core wood with clear finish or glass door
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	Interior, to provide visual access to hallway
Glazing:	Clear, tempered
Natural Light:	Not required
Frame:	Aluminum Storefront

### Casework/Fixed Equipment:

-Shelving / office cupboards

### Moveable Furnishings(NIC):

-Conference table and chairs

### Equipment:

-dry erase wall covering project screen (Wall Talker), conference call phone (NIC), wall mounted LCD screen-(Screen NIC) & provide

## Technical Requirements

### Mechanical:

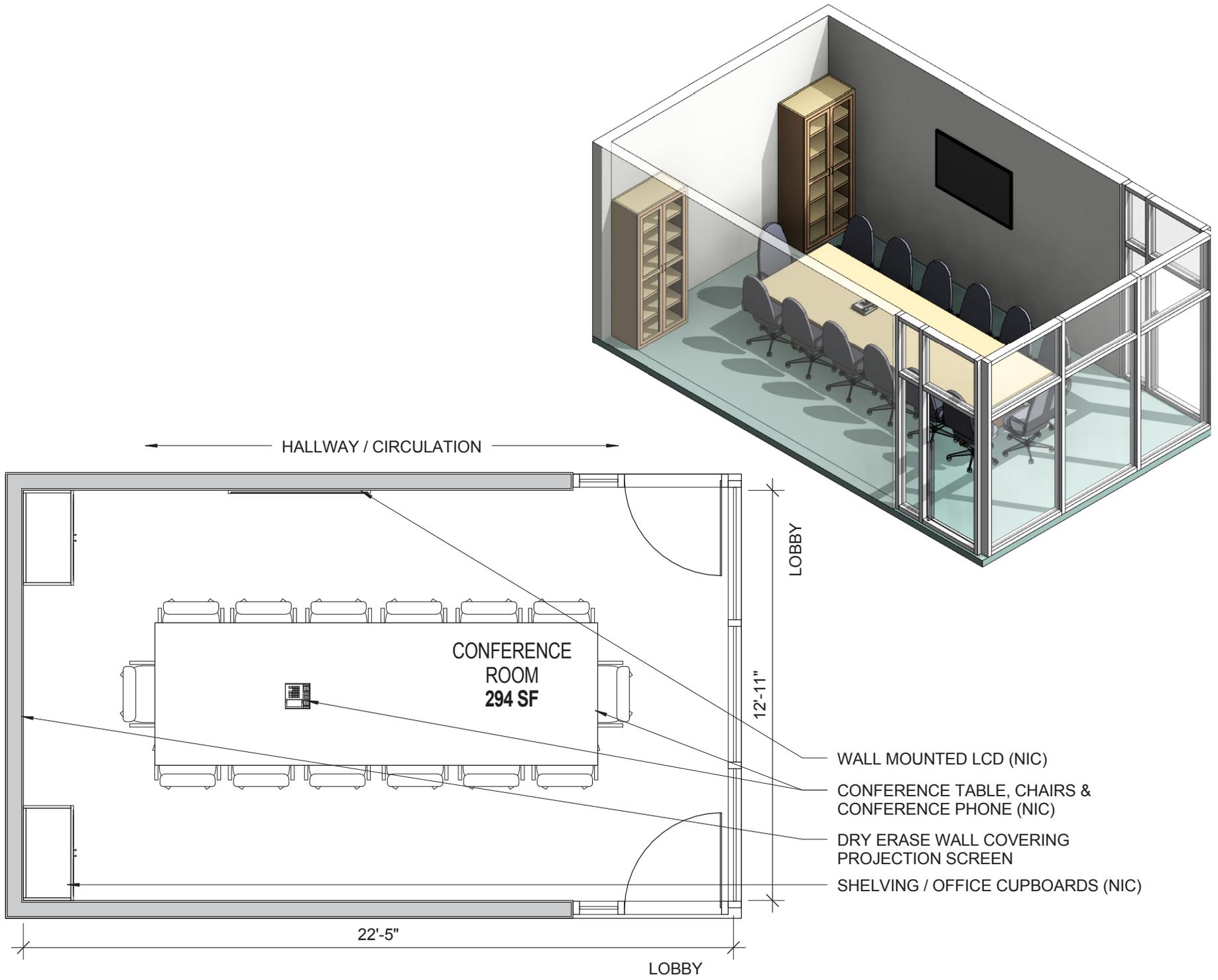
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	(1) duplex outlet per wall, floor box for conf. table power, outlets for AV equipment
Phone/Data:	A/V connectivity to wall mount TV, Wireless access, 1 network outlet per wall
Video:	TV monitor power and network, Campus cable connection

### Lighting:

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	20-40 FC variable
Controls:	Vacancy Sensor with multi-zone control



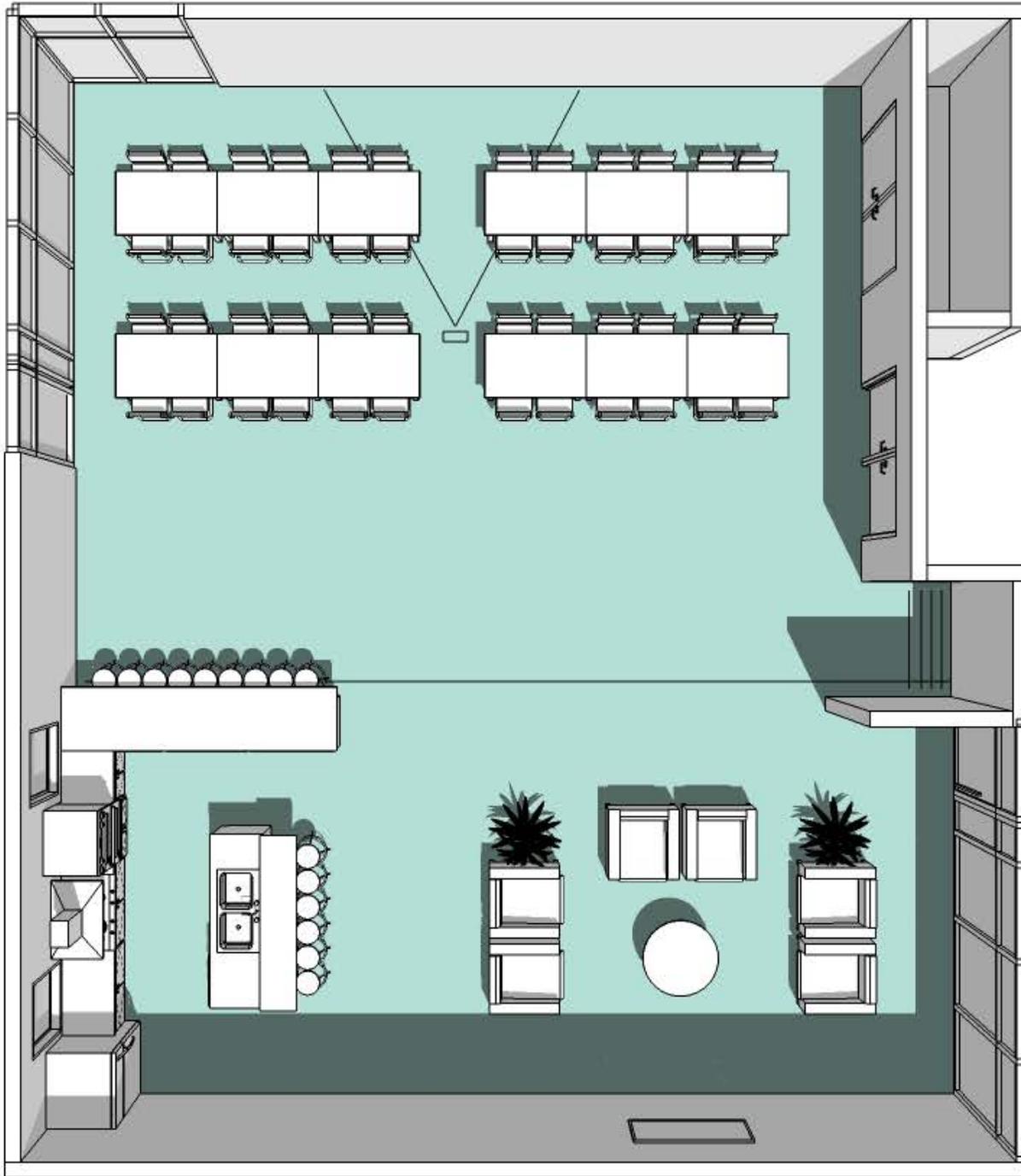
- WALL MOUNTED LCD (NIC)
- CONFERENCE TABLE, CHAIRS & CONFERENCE PHONE (NIC)
- DRY ERASE WALL COVERING  
PROJECTION SCREEN
- SHELVING / OFFICE CUPBOARDS (NIC)

### MULTI-PURPOSE ACTIVITY ROOM APPROACH

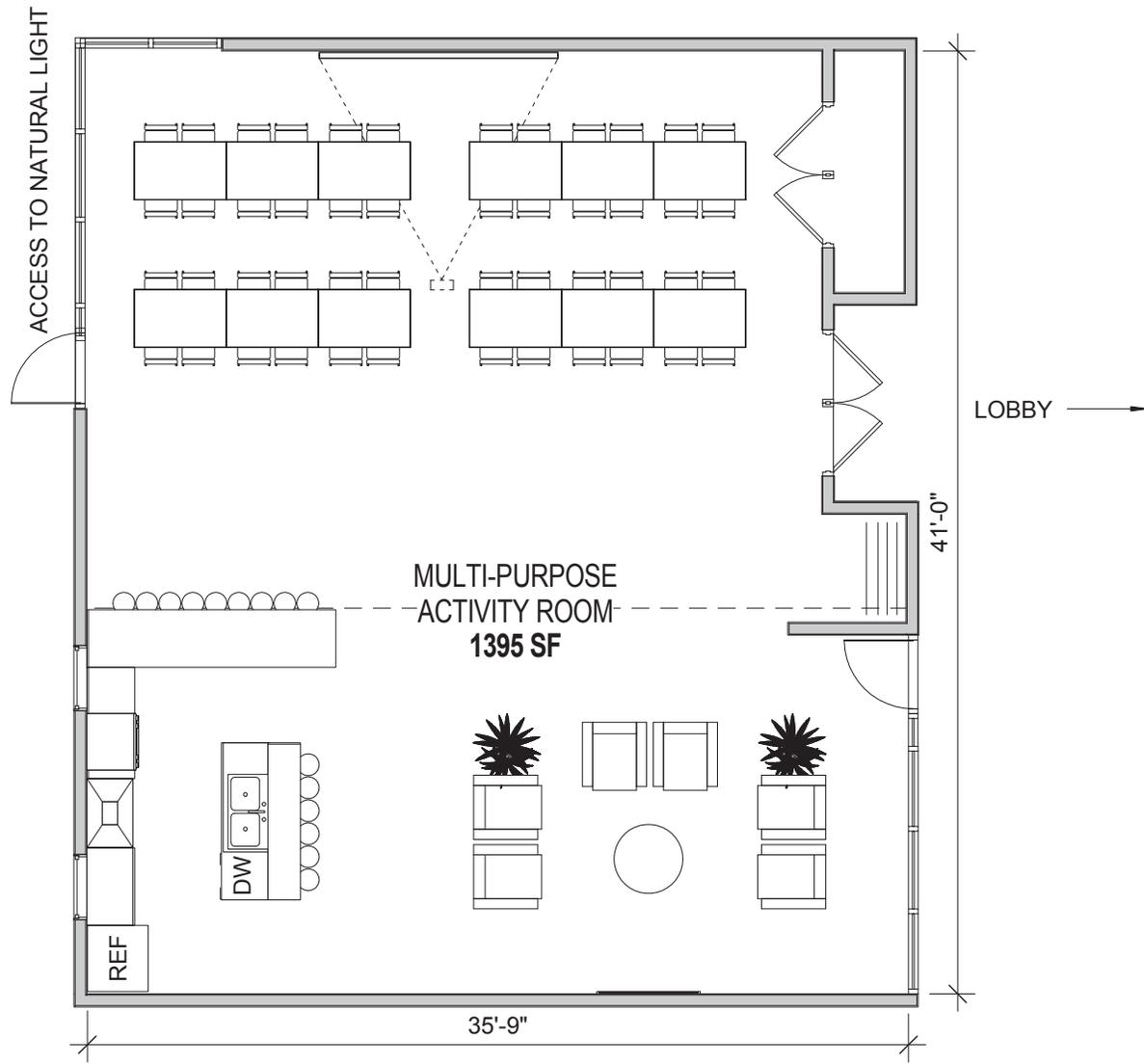
The multi-purpose activity room is the single space that needs to allow for a versatile assortment of activities. Ranging from break-outs, to seminars, resident events, or professional uses, this space needs to be able to cater to the gambit of possibilities quickly and smoothly.

The proximity to a kitchen/serving area is an important adjacency for the multi-purpose space. This room needs to be accessible from the kitchen/living space both directly and indirectly depending on the activity. A folding wall panel system is preferred with an integrated man door. While the meeting area may be sectioned off from the kitchen area, the option to open up the entire area is also desirable.

Generally, this combination space shall be inviting, versatile, and functional.







## Space Requirements

### Space Summary:

Type of Space:	Meeting space for residents and employees
Number Required:	1
Total Number:	1
Occupants:	50
Area:	Estimated 800 SF
Primary Function:	To provide a large meeting room for educational, professional, and social gatherings.

### Relationships:

Location:	First floor
Adjacencies:	Near main entrance
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel

### Finishes:

Floor:	Carpet tile flooring w/ rubber base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Some acoustic isolation

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 10'-0"

### Privacy/Security:

-Keyed (digital card or key) access

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	Exterior
Glazing:	Insulated w/ Low-E coating
Natural Light:	Required
Frame:	Alum. Storefront: Champagne

### Casework/Fixed Equipment:

-Ceiling mounted projector, speakers (wall or ceiling)

### Moveable Furnishings(NIC):

-Rolling tables/chairs

### Equipment:

-Wall Talker (dry erase wall covering projection screen)

### Special Storage needs:

-tables and chairs

## Technical Requirements

### Mechanical:

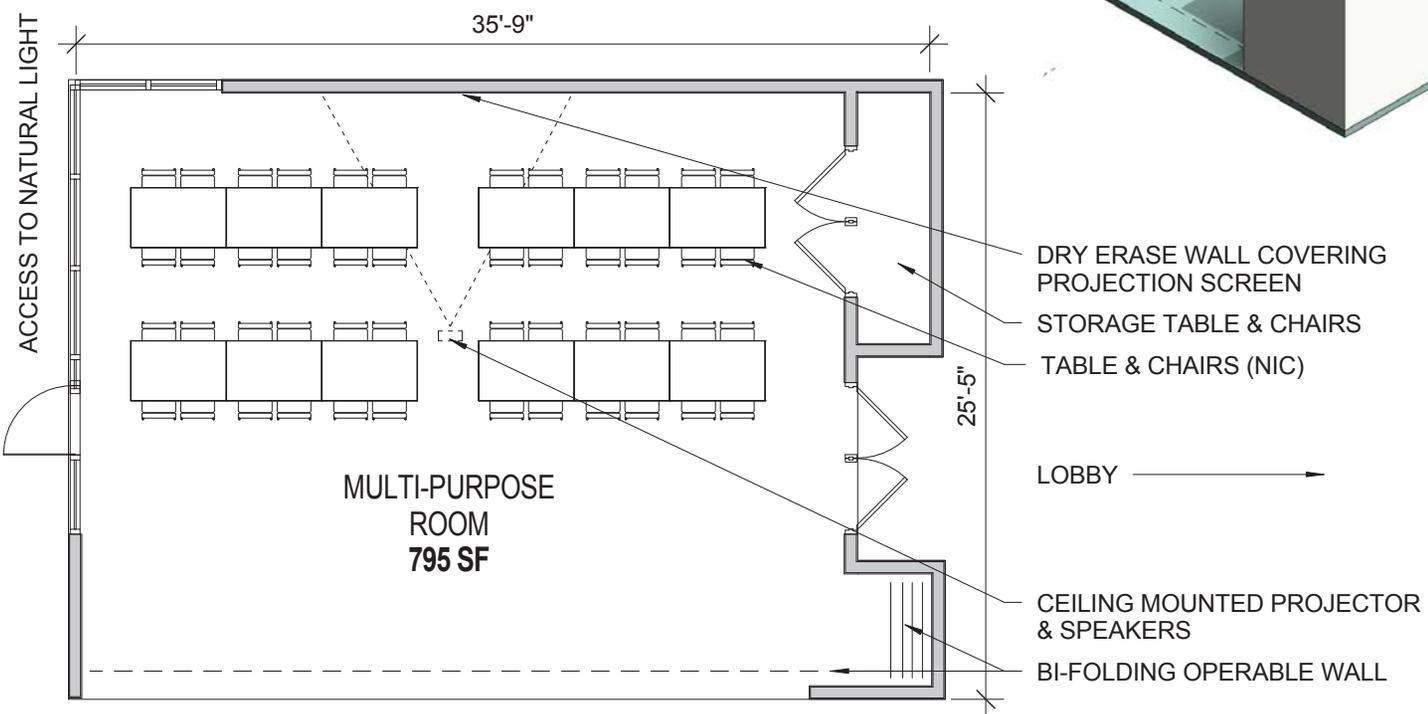
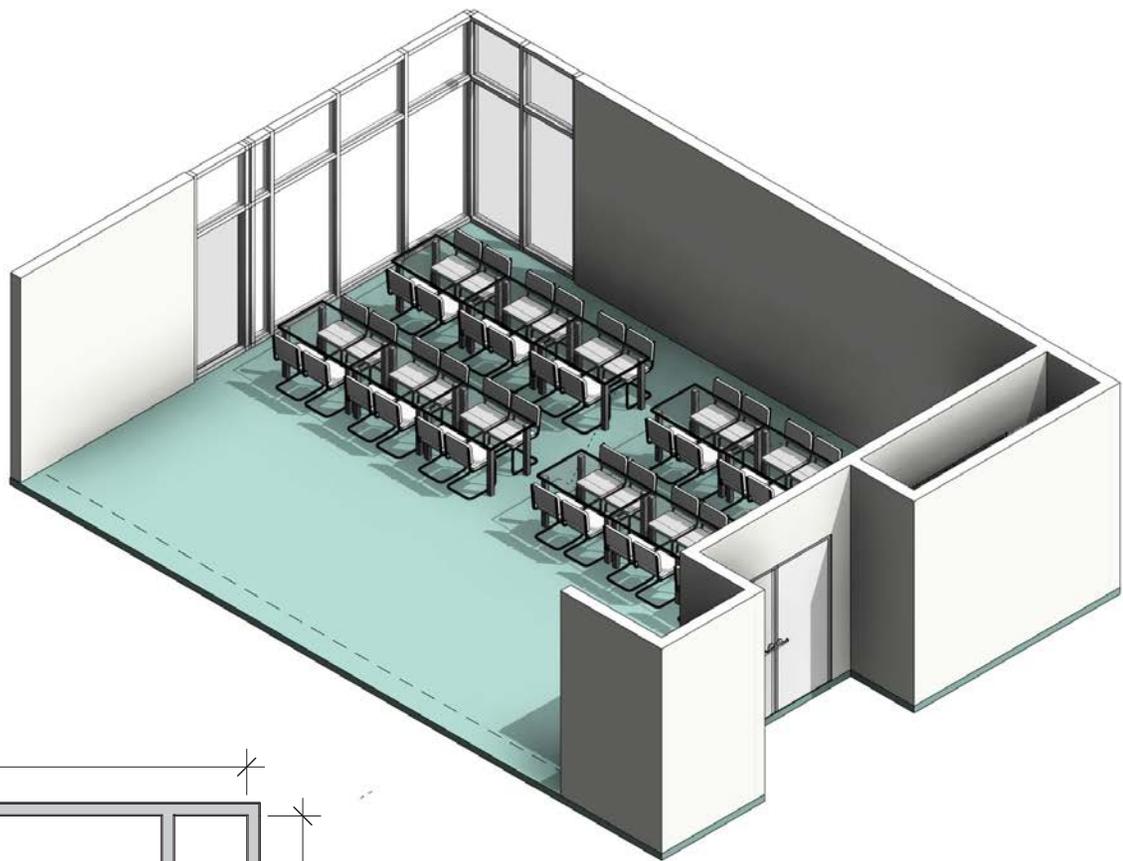
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	None required

### Electrical:

Power:	Duplex outlets at 12'-0" o.c. outlets for AV equipment
Phone/Data:	(1) network outlet each wall, (1) network outlet at ceiling, wireless
Video:	Wall Talker (dry erase wall covering projection screen), ceiling mounted projector, speakers, network for projector

### Lighting:

Fixture Type:	LED
Task Lighting:	at office desks(NIC)
Foot Candles:	10-40FC, variable
Controls:	Vacancy Sensor with wall station override



## Space Requirements

### Space Summary:

Type of Space:	Common kitchen adjacent to/supporting the multi-purpose room
Number Required:	1
Total Number:	1
Occupants:	8-10
Area:	Estimated 300 SF
Primary Function:	To provide a kitchen space for catering events or student social use adjacent to the multi-purpose room

### Relationships:

Location:	First floor
Adjacencies:	Multi-purpose room
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel

### Finishes:

Floor:	Ceramic tile flooring w/ tile base
Walls:	Painted, gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	Some acoustic isolation

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 10'-0"

### Privacy/Security:

-Keyed (digital card or key) access

### Doors:

Type:	Bi-fold operable wall w/ fixed door
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Cabinetry, serving counter w/ service door to multi-purpose room, island

### Moveable Furnishings:

-Possible bar stools at service counter, seating area with lounge chairs and coffee tables

### Equipment:

-(1) large sink with disposal, (2) refrigerators(NIC), (1) double oven, gas range, (1) LCD TV (NIC)

## Technical Requirements

### Mechanical:

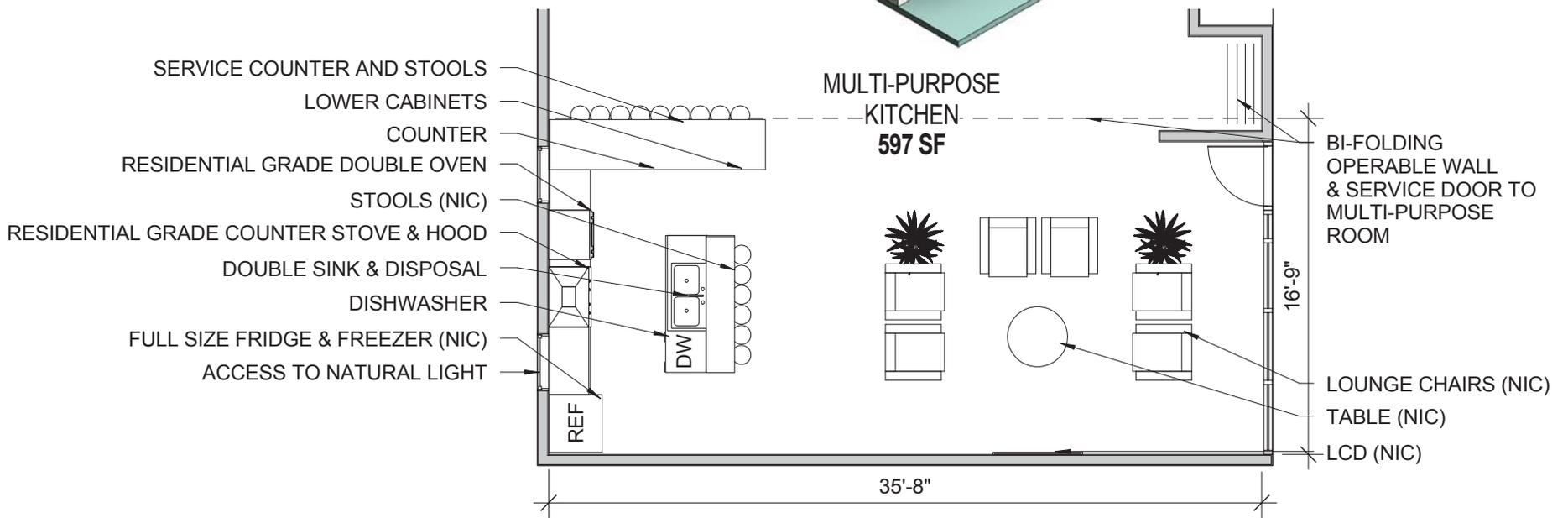
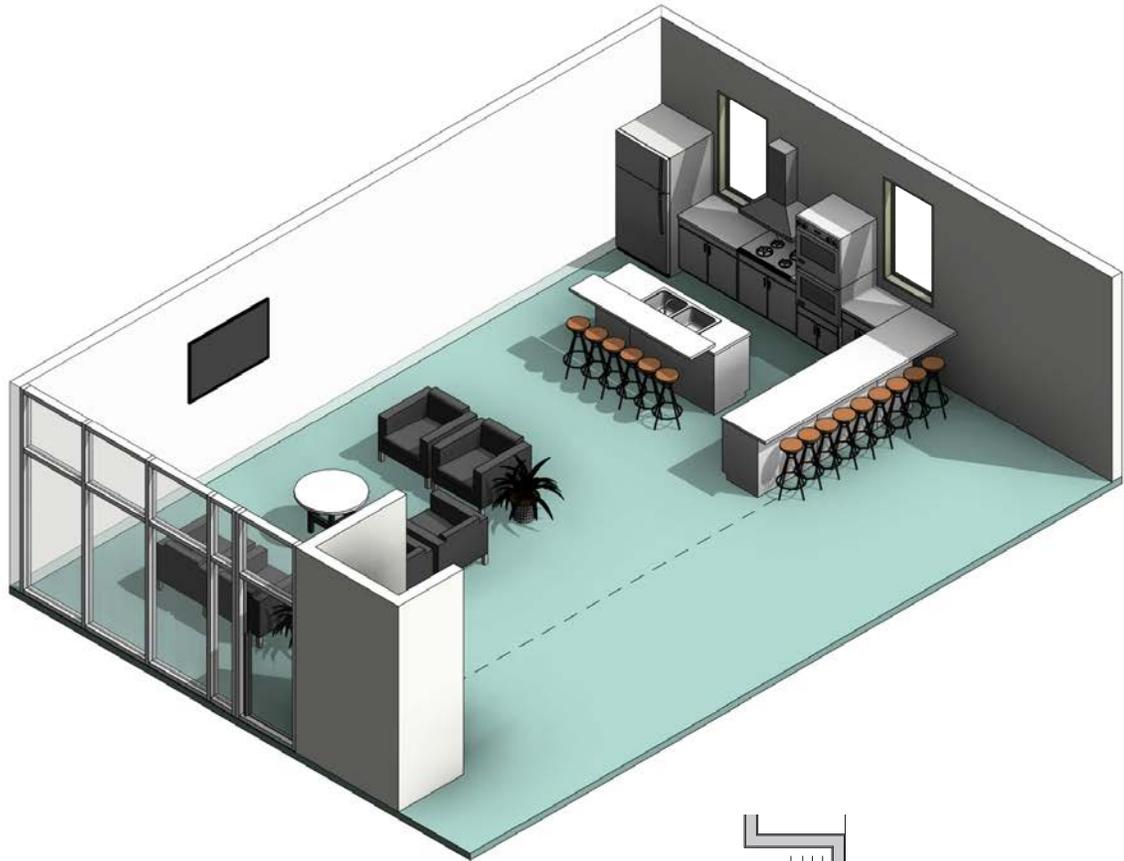
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - exhaust kitchen as required
Summer Design Temp:	74° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	(1) two compartment, stainless steel sink with disposal, swing type

### Electrical:

Power:	Duplex outlets above counters at 4'-0" o.c., 220V outlets at ovens on dedicated circuit
Phone/Data:	None required
Video:	CCTV camera

### Lighting:

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	20-40 FC variable
Controls:	Vacancy Sensor with wall station override



## Space Requirements

### Space Summary:

Type of Space:	Common bike storage room for building resident use
Number Required:	1
Total Number:	1
Occupants:	0 assigned
Area:	Estimated 263 SF
Primary Function:	To provide a secure location out of the weather for residents to store their bikes (40 bikes)

### Relationships:

Location:	First floor
Adjacencies:	Optional central location or near one end of bldg
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes

### Finishes:

Floor:	Smooth Sealed Concrete w/ rubber base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	Susp. grid ceiling
Specialty Finishes:	None required
Sound:	None required

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): 10'-0"

### Privacy/Security:

-Keyed (digital card) access

### Doors:

Type:	Interior - solid core wood with clear finish Exterior - insulated, hollow metal, painted
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-None required

### Moveable Furnishings:

-None required

### Equipment:

-bicycle storage racks for (40) bikes

## Technical Requirements

### Mechanical:

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - as required by load analysis

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls: Temperature sensor

Sound Criteria: less than 45 (NC/RC)

Special Systems: None required

Plumbing: None required

### Electrical:

Power: (1) duplex outlet per wall

Phone/Data: None required

Video: CCTV camera

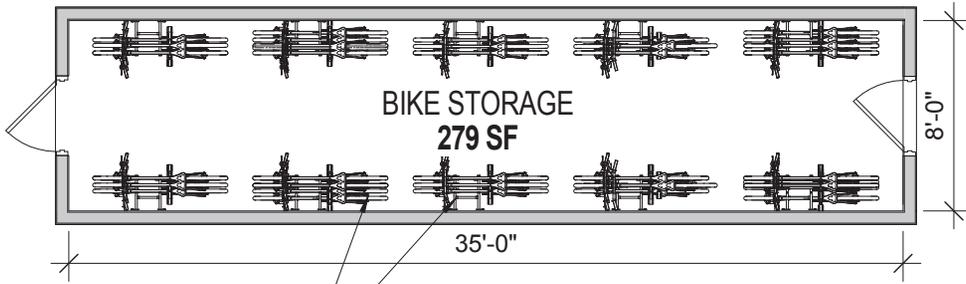
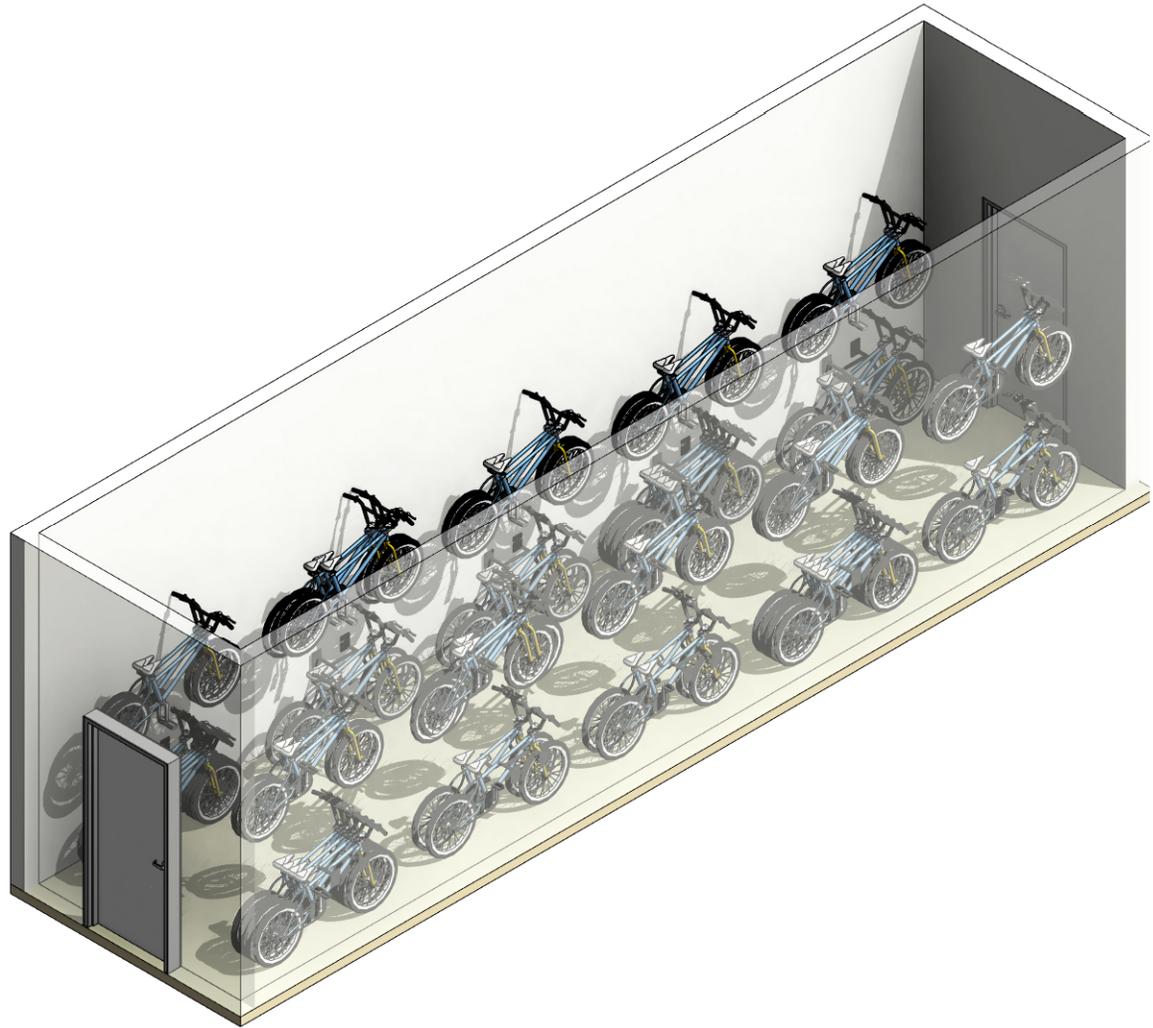
### Lighting:

Fixture Type: LED

Task Lighting: None required

Foot Candles: 20

Controls: Vacancy Sensor with wall station override



BIKES (NIC)  
BICYCLE STORAGE RACKS FOR 40 BIKES

**Space Requirements**

**Space Summary:**

Type of Space: Public bathroom  
 Number Required: 2  
 Total Number: 2  
 Occupants: 1  
 Area:  
 Primary Function: Restroom

**Relationships:**

Location: Main level and upper level  
 Adjacencies:  
 Separation:

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, comfortable feel

**Finishes:**

Floor: Ceramic tile flooring w/ tile base  
 Walls: Painted gypsum board  
 Ceiling: Painted gypsum board  
 Specialty Finishes: None required  
 Sound: Sound isolation const. at perimeter walls of suite, and around bathrooms  
 Privacy: Bathroom vanities shall not be visible from common areas of units

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): 9'-0"

**Privacy/Security:**

-Provide privacy lock on bathroom doors.

**Doors:**

Type: Solid core wood with clear finish.  
 Frame: Painted hollow metal  
 Special: None required

**Windows:**

Type: None required  
 Glazing: None required  
 Natural Light: None required

**Casework/Fixed Equipment:**

-ADA Toilet w/grab bars, ADA hand sink, mirror

**Moveable Furnishings:**

-None required

**Equipment:**

-Toilet paper holder, paper towel dispenser

**Technical Requirements**

**Mechanical:**

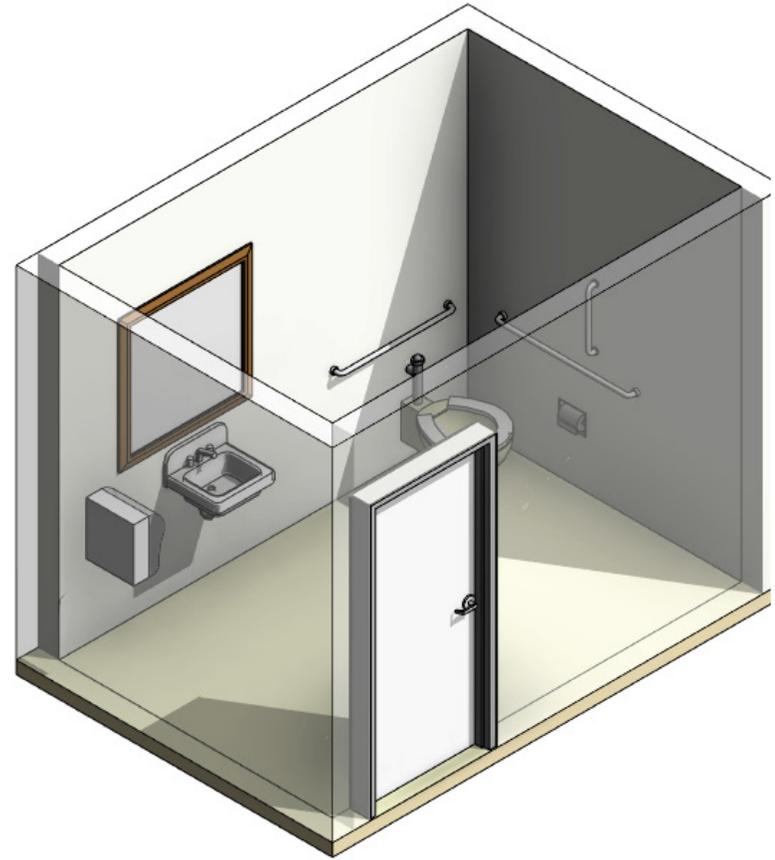
Ventilation: Outdoor air - as required by ASHRAE 62.1  
 Air circulation - exhaust per ASHRAE 62.1  
 Summer Design Temp: 74 ° F  
 Winter Design Temp: 72 ° F  
 Controls: Zoned within suite  
 Sound Criteria: None required  
 Special Systems: None required  
 Plumbing: (1) ADA toilet, Floor drain in restroom floor area

**Electrical:**

Power: (1) duplex outlets  
 Phone/Data: None required  
 Video:  
 Fixture Type: LED  
 Task Lighting: None required  
 Foot Candles: 40  
 Controls: Vacancy Sensor with wall station override



- PAPER TOWEL DISPENSER
- MIRROR
- ADA HAND SINK
- TOILET PAPER HOLDER
- PUBLIC ADA TOILET W/GRAB BARS



## Space Requirements

### Space Summary:

Type of Space:	Custodial storage room
Number Required:	Varies based on proposed design (1 per floor preferred)
Total Number:	1
Occupants:	1
Area:	Estimated 200 SF
Primary Function:	To provide a space to store large amount of paper goods for building. Storage and charging for large cleaning equipment. Location for small desk and computer.

### Relationships:

Location:	First floor
Adjacencies:	Central to building
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel

### Finishes:

Floor:	Sealed concrete flooring w/ rubber base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	None required
Specialty Finishes:	None required
Sound:	None required

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): N/A

### Privacy/Security:

-Keyed (key) access on maintenance key

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-Wall mounted adjustable shelves

### Moveable Furnishings(NIC):

-Small desk and chair

### Equipment:

-None required

## Technical Requirements

### Mechanical:

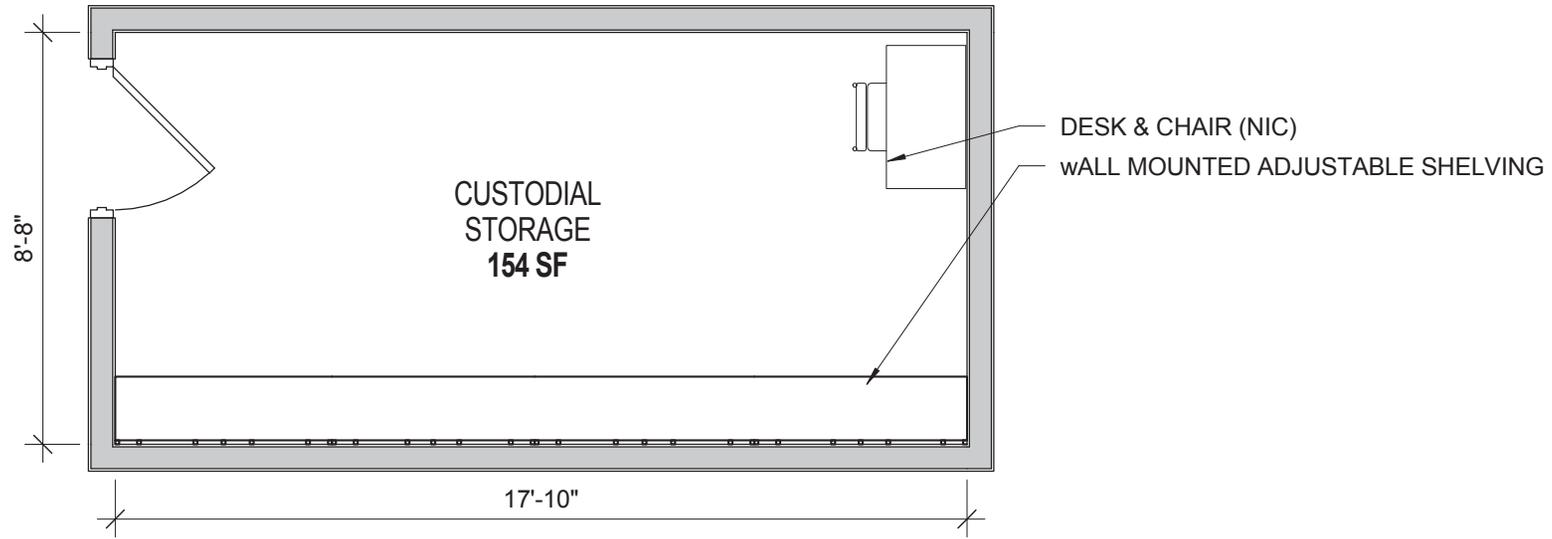
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis, Room ceiling exhaust
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	floor mounted service sink with wall mounted faucet and hose, waste vent, floor drain, hot and cold water

### Electrical:

Power:	(1) duplex outlet per wall, (2) additional duplex outlets with dedicated circuits for charging equipment
Phone/Data:	(1) network outlet
Video:	None required

### Lighting:

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	30
Controls:	Vacancy Sensor with wall station override



**Space Requirements**

**Space Summary:**

Type of Space:	Data/communications room
Number Required:	1 per floor
Total Number:	4
Occupants:	3-4 at a time
Area:	Estimated 150 SF
Primary Function:	To provide a space for network equipment to operate in. Also provide space for network wire (copper/fiber) to terminate into network gear or patch panels.

**Relationships:**

Location:	1 per floor min.
Adjacencies:	Central to building
Separation:	None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, inviting feel

**Finishes:**

Floor:	Sealed concrete flooring w/ rubber base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	None required
Specialty Finishes:	None required
Sound:	None required

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): N/A

**Privacy/Security:**

-Keyed (digital card or key) access, see DSU IT infrastructure standards

**Doors:**

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

**Windows:**

Type:	None required
Glazing:	None required
Natural Light:	None required

**Casework/Fixed Equipment(NIC):**

-(1) 46 RU rack secured to floor, rack accessible from all sides, Re: DSU IT Infrastructure Standards document

**Moveable Furnishings:**

-None required

**Equipment:**

-Re: DSU IT Infrastructure Standards document

**Technical Requirements**

**Mechanical:**

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - as required by DSU IT Infrastructure Standards document

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls: Temperature sensor

Sound Criteria: less than 45 (NC/RC)

Special Systems: split system, wall mounted A/C unit, controls, air cooled condensing units

Plumbing: None required

**Electrical:**

Power: (2) 30A outlets per rack, one each on generator power, plus 20A outlets in room, minimum two per wall

Phone/Data: -

Video: -

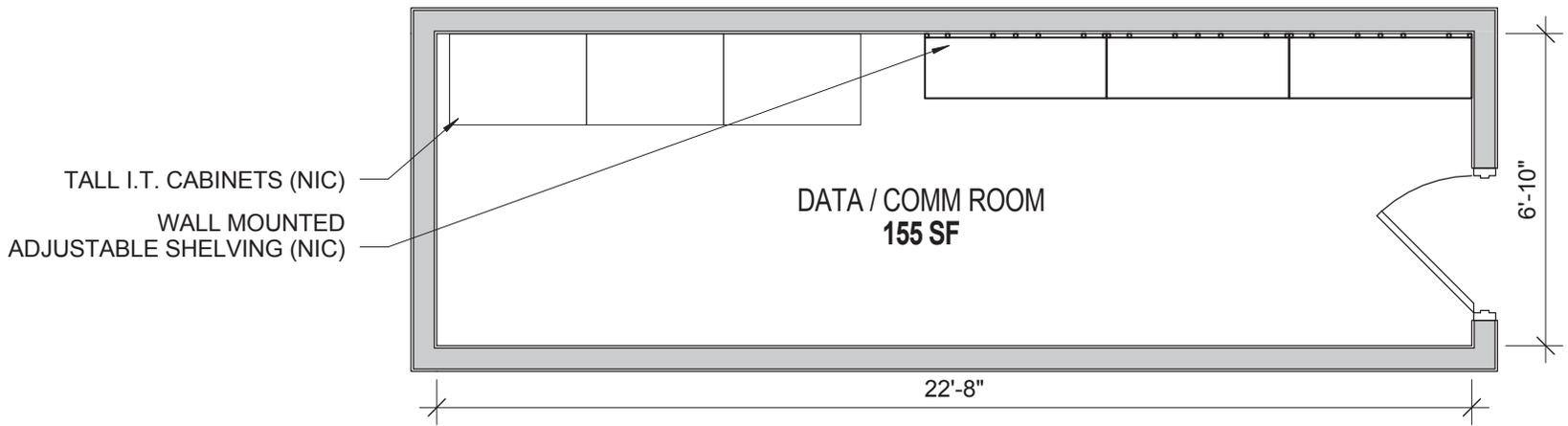
**Lighting:**

Fixture Type: LED

Task Lighting: None required

Foot Candles: 40

Controls: Vacancy Sensor with wall station override



**Space Requirements**

**Space Summary:**

Type of Space:	Janitor Closet
Number Required:	Varies based on proposed design (1 per floor preferred)
Total Number:	4-5
Occupants:	1
Area:	Estimated 35 SF
Primary Function:	To provide a space for Janitorial needs

**Relationships:**

Location:	Each floor
Adjacencies:	Central to building
Separation:	None required

**Architectural Requirements**

**Design/Aesthetic:**

Durable finishes, inviting feel

**Finishes:**

Floor:	Sealed concrete flooring w/ rubber base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	None required
Specialty Finishes:	None required
Sound:	None required

**Architectural Requirements**

**Ceiling Height:**

Above Finish Floor (AFF): N/A

**Privacy/Security:**

-Keyed (digital card or key) access on maintenance key

**Doors:**

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	None required

**Windows:**

Type:	None required
Glazing:	None required
Natural Light:	None required

**Casework/Fixed Equipment:**

-Wall mounted adjustable shelves

**Moveable Furnishings(NIC):**

-None required

**Equipment:**

-None required

**Technical Requirements**

**Mechanical:**

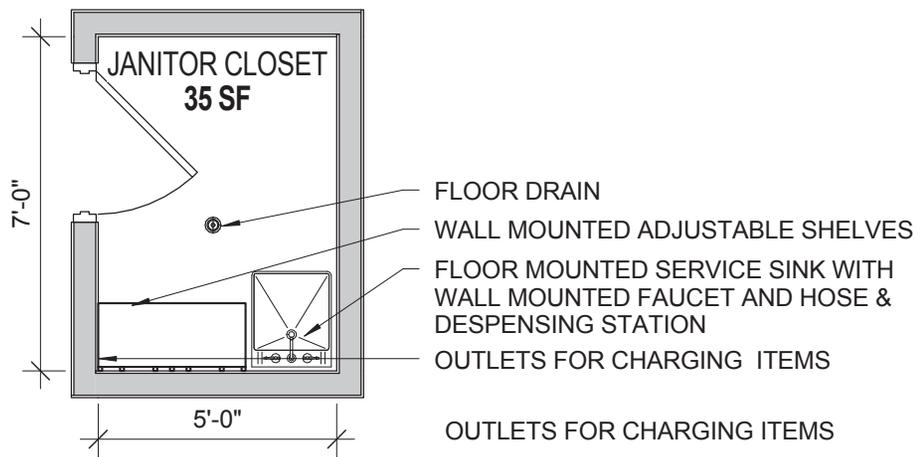
Ventilation:	Outdoor air - as required by ASHRAE 62.1 Air circulation - as required by load analysis, Room ceiling exhaust
Summer Design Temp:	74 ° F
Winter Design Temp:	72 ° F
Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	floor mounted service sink with wall mounted faucet and hose, waste vent, floor drain, hot and cold water

**Electrical:**

Power:	(1) duplex outlet per wall, (2) additional duplex outlets with dedicated circuits for charging equipment
Phone/Data:	None required
Video:	None required

**Lighting:**

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	30
Controls:	Vacancy Sensor with wall station override



## Space Requirements

### Space Summary:

Type of Space:	Trash Chute Room
Number Required:	Varies based on proposed design (1 per floor preferred)
Total Number:	4-5 depending on proposed design 3 chutes minimum (1 per floor Above ground level)
Occupants:	none
Area:	Estimated 100 SF
Primary Function:	To provide a space for trash collection within the building

### Relationships:

Location:	Each floor
Adjacencies:	Central to building if possible, convenient to pick-up required.
Separation:	None required

## Architectural Requirements

### Design/Aesthetic:

Durable finishes, inviting feel

### Finishes:

Floor:	Sealed concrete flooring w/ rubber base
Walls:	Painted, impact-resistant gypsum board
Ceiling:	None required
Specialty Finishes:	None required
Sound:	None required

## Architectural Requirements

### Ceiling Height:

Above Finish Floor (AFF): N/A

### Privacy/Security:

-Keyed (digital card or key) access on maintenance key

### Doors:

Type:	Solid core wood with clear finish.
Frame:	Painted hollow metal
Special:	Self Closing Chute doors per code

### Windows:

Type:	None required
Glazing:	None required
Natural Light:	None required

### Casework/Fixed Equipment:

-None required

### Moveable Furnishings(NIC):

-None required

### Equipment:

-None required

## Technical Requirements

### Mechanical:

Ventilation: Outdoor air - as required by ASHRAE 62.1  
Air circulation - as required by load analysis, Room ceiling exhaust

Summer Design Temp: 74 ° F

Winter Design Temp: 72 ° F

Controls:	Temperature sensor
Sound Criteria:	less than 45 (NC/RC)
Special Systems:	None required
Plumbing:	None required

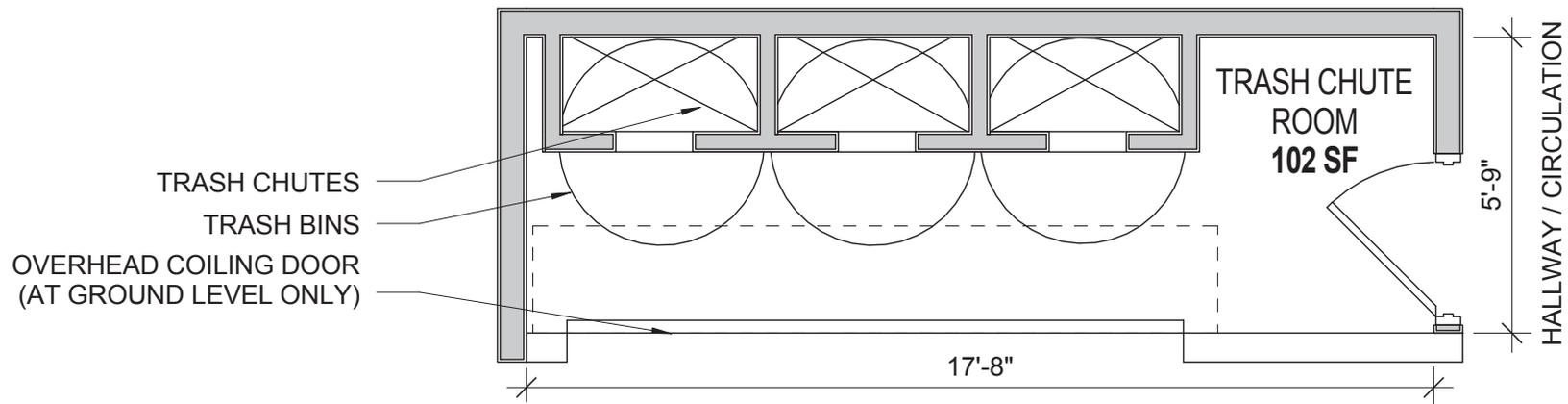
### Electrical:

Power: (1) duplex outlet per wall

Phone/Data:	None required
Video:	None required

### Lighting:

Fixture Type:	LED
Task Lighting:	None required
Foot Candles:	30
Controls:	Vacancy Sensor with wall station override



# 06 Appendices

# APPENDICES

06 / appendices

# 06 Appendices

## Appendix I-Existing Site Exhibit



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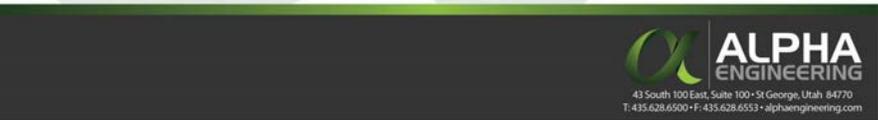
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## Appendix III-Existing Site Exhibit

# Hydrology Study Dixie State University New Student Housing



May 2015



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## Part I. Introduction

This report is being prepared for the proposed Dixie State University (DSU) New Student Housing Project located on the DSU campus in St. George, Utah. The purpose of this report is to analyze existing and proposed hydrologic conditions, evaluate changes, and establish recommendations to mitigate such changes based on City of St. George hydrology requirements and guidelines. Additionally, it has been historically observed that flows within the adjacent roadway may result in flooding of the site. Further analysis of this roadway will be included with this report.

### A. Study Area Location

The property is located at 1000 East 100 South in St. George, Utah. The proposed project will ultimately build out to consist of several multi-level student housing units with footprints of approximately 20,000 square feet all located on the DSU property. The scope of this report will only cover the first unit and associated site improvements, which is to be located on the northwest corner of the site. See **Appendix A, Exh 1 Existing Conditions Plan** for the study area.

### B. Pre-Development Conditions

The overall area of the site is approximately two acres. It is currently being used as a grass field with mild slopes of about 3%-4% draining to the south. There are sections of concrete and asphalt along the north, west and south edges of the site. It is surrounded by 100 South Street to the north; housing units and landscaping to the east; and parking and DSU facilities to the west and south. As the site is covered in either hardscape or grass, there are no significant drainage channels that have developed from site runoff.

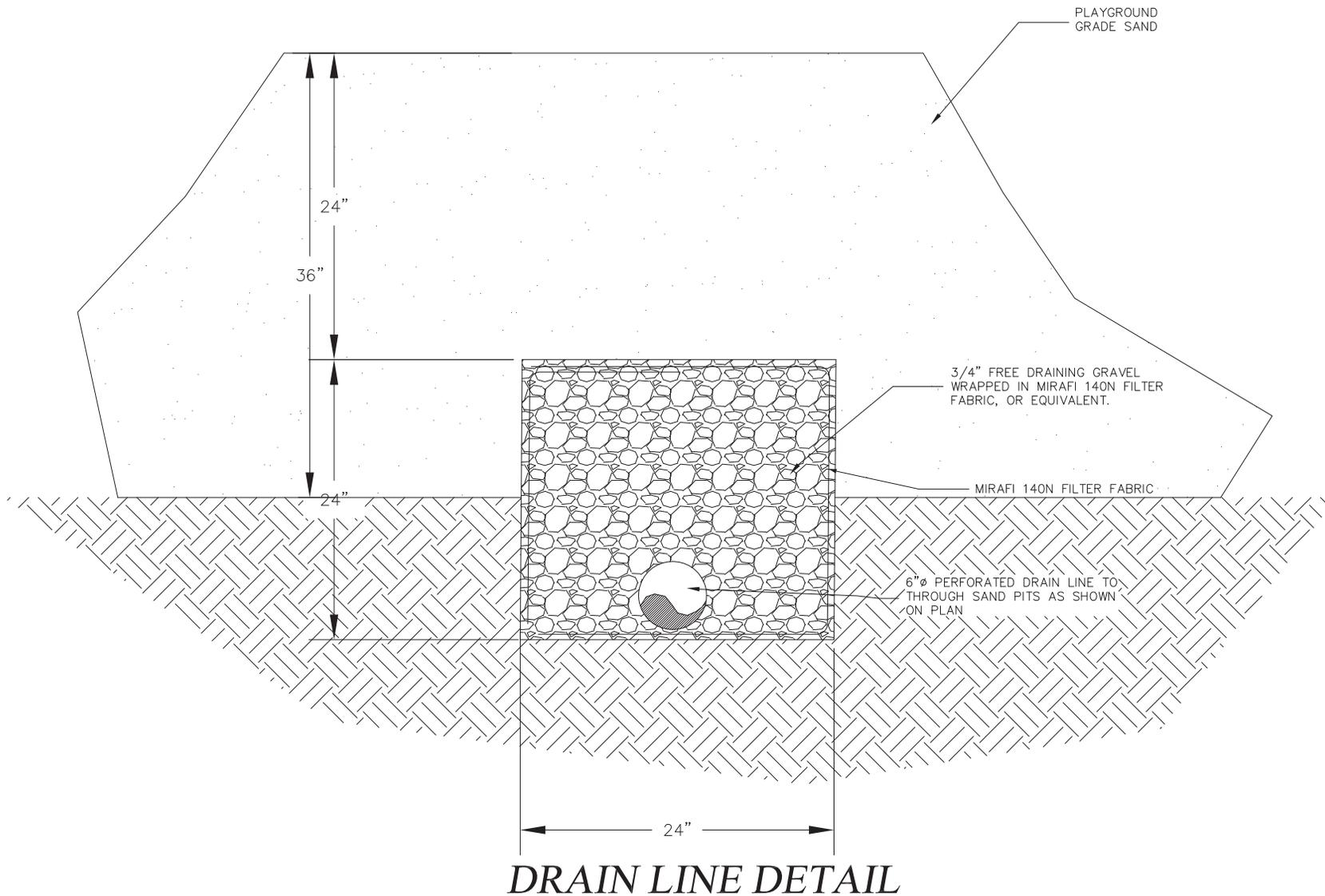
Runoff from the property drains to the south, through the DSU campus, into the City of St. George roadways and drainage system, and ultimately is conveyed into the Virgin River, which is located approximately two miles downstream to the south. There are no tributary flows onto the site from the east or west, and tributary flows from the north are assumed to be intercepted by 100 South Street. As part of this report, the capacity of 100 South Street will be analyzed to verify tributary flows will not overflow onto the site during a significant storm event. The study area was verified to be located outside of a FEMA flood hazard area as shown on Panels 49053C1027G and 49053C1031G, dated April 2, 2009 (see **Appendix A, Exh 3 FEMA Floodplain Exhibit**).

### C. Post-Development Conditions

The proposed development consists of re-grading the site and the construction of a new housing unit with associated site and utility improvements. Site improvements will include concrete sidewalk, desert and grass landscaping, and an asphalt roundabout. The site will be graded to maintain drainage to the south with a small portion being redirected north into 100 South. Storm runoff for the site will be conveyed through gutter and channels with the exception of runoff for the building which will be conveyed through roof drains and subsurface storm drain. It is also anticipated that french drains will be required to intercept and convey groundwater around the building to daylight. See **Appendix A, Exh 2 Proposed Site Plan** for the proposed layout of the site.

As required by city code, flows leaving the site will be equal to or lower than the pre-development conditions. In addition, any points along the downstream ends of the site where storm runoff flow characteristics are modified (ie. sheet flow versus point discharges), proper mitigation and erosion control methods will be incorporated to match pre-development conditions as much as possible.





# 06 Appendices

## Appendix IV-Volleyball Court Details

