

UniFormat II Building Classification Preliminary Project Description (PPD)

Project Name: Colorado Mesa University Formation District Residence Hall
Schematic Design Narrative

Location: Grand Junction, Colorado

Date: June 01, 2026



1 Table of Contents

1	Table of Contents	2
2	A. Substructure	4
2.1	A10 Foundations	4
3	B. Shell	5
3.1	B10 Superstructure	5
3.2	B20 Exterior Enclosure	5
3.3	B30 Roofing	8
4	C. Interiors	9
4.1	C10 Interior Construction	9
4.2	C20 Stairs	15
4.3	C30 Interior Finishes	15
5	D. Services	21
5.1	D10 Conveying Systems	21
5.2	D20 Plumbing Systems	21
5.3	D30 HVAC Systems	25
5.4	D40 Fire Protection Systems	28
5.5	D50 Electrical Systems	28
6	E. Equipment & Furnishings	32
6.1	E10 Equipment	32
6.2	E20 Furnishings	33

7	G. Building Sitework	34
7.1	G10 Site Preparation.....	34
7.2	G20 Site Improvements	34
7.3	G40 Site Electrical Utilities	38
	Appendix A	40
	Appendix B	43

2 A. Substructure

2.1 A10 Foundations

A1020 SPECIAL FOUNDATIONS

- A. The building shall be supported on a post-tensioned concrete constant thickness slab-on-grade, with downturned exterior edge (for frost protection). Assume 12" thick slab with 12" wide x 3'-0" deep exterior thickened edge.
- B. Assume downturned exterior slab edges will be protected with the following based on wall assembly type WA-01 as shown in the Schematic Design drawing set.
 - a. 60 mil self-adhered waterproofing membrane
 - b. Drainage board
 - c. 4" XPS insulation to achieve R-20, min
- C. Assume constant thickness slab-on-grade will require a 15 mill vapor barrier at all locations aside from the elevator pit as shown in floor assembly type FA-01 in the Schematic Design drawing set.
- D. Assume constant thickness slab-on-grade and walls at the elevator pit will require blindside sheet membrane waterproofing as shown in floor assembly type FA-02 in the Schematic Design drawing set.

3 B. Shell

3.1 B10 Superstructure

B1010 FLOOR CONSTRUCTION

- A. Floors shall typically be constructed of prefabricated wood floor trusses @ 16" O.C. with $\frac{3}{4}$ " APA floor sheathing. Refer to framing plans in the Schematic Design drawing set for floor truss span directions parallel to exterior walls.
- B. Corridor floor framing to be 2x8 @ 16" O.C. w/ $\frac{3}{4}$ " APA sheathing.

B1020 ROOF CONSTRUCTION

- A. Roofs shall be constructed of prefabricated wood roof trusses @ 24" O.C. with $\frac{3}{4}$ " APA roof sheathing. Trusses will span exterior wall to exterior wall.

3.2 B20 Exterior Enclosure

Acoustic Considerations

Pertinent Criteria and Codes

The US Department of Housing and Urban Development (HUD) has developed a standard for noise criteria to create suitable living environments. Noise criteria and standards are provided in section 24 CFR Part 51, Environmental Criteria and Standards. Section 51.103 provides specific exterior standards that are "determined by the value of the day-night average sound level produced as the result of the accumulation of noise from all sources contributing to the external noise environment at the site."

The day-night average sound level (Ldn) is the average noise level over a 24-hour period. The noise between 10 pm and 7 am is artificially increased by 10 dB to account for the decrease in community background noise of 10 dB during this time period.

In addition to this exterior noise standard, HUD provides interior noise goals within section 51.101. The HUD goal is that the interior auditory environment shall not exceed a day-night average sound level of 45 dB. HUD also notes that attenuation measures to meet these interior goals shall be employed where feasible and that emphasis shall be given to noise sensitive interior spaces such as bedrooms.

HUD provides the following acceptability Standards:

Table 1: HUD Acceptability Standards

Noise Zone	Day-Night Average Sound Level (dB)	Special Approvals & Requirements
Acceptable	Not exceeding 65 dB	None
Normally Unacceptable	Above 65 dB but not exceeding 75 dB	• Environmental assessment and attenuation required for new construction • Attenuation strongly encourage for major rehabilitation
Unacceptable	Above 75 dB	• Environmental impact statement required • Attenuation required for new construction with approval by the Assistant Secretary of CPD or Certifying Officer

Project Noise Exposure

The project is located between Bunting Ave immediately to the north, Cannell Ave 300 feet to the east, Glenwood Ave 140 feet to the south, and N 7th Street 470 feet to the west. The loudest of these noise sources is assumed to be N 7th Street with two lanes of traffic in each direction and a speed limit of 35 mph. North Ave, Highway 6, is 450 feet to the south and the speed limit is 30 mph. The project location is far from major noise sources: Grand Junction Regional Airport is over two and a half miles away, the Union Pacific Railroad is over one mile away, and the nearest highway with a speed limit of 45 mph is just under one mile away.

Given the project setting far from major noise sources, the HUD standard does not require special approvals.

Exterior glazing assemblies and doors at residences are not required to have, but are recommended to have, an acoustical rating of STC 28 or higher for improved quality. (The **Sound Transmission Class (STC)** is the common descriptor used in identifying the ability of the separating architectural construction to reduce airborne noise. The STC is a single-number rating system that measures a partition's ability to reduce airborne noise in the frequency range of the human voice and is determined in a laboratory setting in accordance with the standard ASTM E90. The higher the STC of a partition, the better the performance of the system at reducing airborne noise.)

Project Information

B2010 EXTERIOR WALLS

- A. Exterior walls to be constructed of 2x6 @ 16" O.C. Doug-Fir wall studs w/ 15/32" APA sheathing.

- B. Exterior materiality is anticipated to consist primarily of a multi-tone brick veneer and masonry-faced wall assemblies with areas of light-colored panel cladding at selected wall planes and inset volumes. Weathering steel accent panels are anticipated at emphasized vertical circulation or entry volumes, based on the exterior imagery shown on sheets A211 and A212 in the Schematic Design drawing set.
- C. The above-grade façade composition shall be approximately 65% to 75% brick masonry, 15% to 25% light-colored panel cladding or cementitious panel systems, and 5% to 10% weathering steel accent panels, exclusive of glazing and doors.

B2020 EXTERIOR WINDOWS

- A. Exterior glazing at residential units are not required to have, but recommended to have, an acoustical rating of STC 28 or higher for acoustic comfort. For reference, a standard 1-inch thick insulated glazing unit with two 1/4-inch panes typically tests between STC 26 to STC 31.
- B. The building is anticipated to utilize thermally broken aluminum windows with insulating glazing in punched openings throughout the residence hall.
 - a. Aluminum-clad wood windows, matching Centennial Village, shall be priced as an additive alternate.

B2030 EXTERIOR DOORS

- A. Exterior doors at residential units are not required to have, but recommended to have, an acoustical rating of STC 28 or higher for acoustic comfort. For reference, an unsealed solid-core door typically tests at approximately STC 20. Providing continuous perimeter gasketing such as Pemko S773 with an automatic drop bottom seal such as Pemko 434RL with threshold typically increases the rating closer to STC 30.
- B. Exterior entrances are anticipated to include insulated hollow metal frames and doors with glazed aluminum storefront assemblies at primary entries and commons areas.

3.3 B30 Roofing

B3010 ROOF COVERINGS

- A. Roofing is anticipated to consist primarily of dark asphalt shingles at sloped roof forms, as indicated by the attached exterior imagery and schematic design architectural character.

4 C. Interiors

4.1 C10 Interior Construction

Pricing Directive

- A. Use CSI format with detailed break-out for pricing format where possible.
- B. Please email pricing documentation to client, Reme Shipley and Bridget Rice (Stantec).
- C. Do not provide a contingency in the budget pricing.
- D. Include 4 weeks of Pre-Construction fees

General Notes

- A. Refer to Appendix A for Interior Design reference materials
- B. Contractor is responsible for updating, painting, and cleaning all
- C. areas within the tenant space unless noted otherwise.
- D. Use low VOC materials, including but not limited to adhesives, paint, stain, sealants, coatings, and cleaning supplies.
- E. Use FSC certified wood.
- F. Use regional materials where possible.
- G. The general contractor is to conduct as many practices as possible to enable LEED certification. The client may not choose to certify the project but would like the option to be as sustainable as possible. This includes recycling demolished construction, salvaging existing items to be reused in space or donated to charity. Price any LEED required construction impact items separately.
- H. General Contractor to provide documentation and complete as built at completion of project.

- I. Any designated allowances and contingencies shall be controlled by the Client and may be credited to the client or used for the project as approved by the Client.

Acoustic Considerations

Pertinent Criteria and Codes

The **Sound Transmission Class (STC)** is the common descriptor used in identifying the ability of separating architectural construction to reduce airborne noise. The STC is a single-number rating system that measures a partition's ability to reduce airborne noise in the frequency range of the human voice and is determined in a laboratory setting in accordance with the standard ASTM E90. The higher the STC of a partition, the better the performance of the system at reducing airborne noise. When a partition is installed in the field, it can be expected to perform roughly 5 points below its laboratory determined STC rating. This field performance is called the Apparent Sound Transmission Class (*ASTC*) and is measured in accordance with the standard ASTM E336.

The **Impact Insulation Class (IIC)** is the common descriptor used in identifying the ability of the construction to reduce impact noise. As with STC, a higher IIC rating indicates a more robust performance. Similarly, an installed construction generally performs roughly 5 points below its relevant IIC rating. The field performance of the assembly is called the Apparent Impact Insulation Class, or *AIIC*.

The International Building Code (IBC Chapter 12, Section 1207) recommends, at a minimum for partitions between dwelling units and between units and public spaces within the structure, performances of **STC 50** and **IIC 50** as tested in an acoustical laboratory. These criteria are consistent with the Uniform Building Code requirements. It is understood that compliance with IBC is required by the City of Grand Junction.

Due to the differences between a given construction's lab and field acoustical performance, Stantec generally recommends designing assemblies with a slightly higher STC/IIC rating than the target grade of construction. While the acoustical isolation expected between units is generally consistent with the level of finishes and rental cost, minimum STC requirements by the IBC have proven to be somewhat insufficient and problematic in multifamily dwellings.

When considering how much acoustical separation to add beyond the minimum requirements, it is helpful to consult the Federal Housing Administration's sound isolation criteria for three grades of construction: Grade I Luxury, Grade II Average, and Grade III Minimum. The full recommendations of the FHA's criteria are included here:

Table 2: Federal Housing Administration Guidelines

Partition Function Between Dwellings			Luxury Grade I		Average Grade II		Minimum Grade III	
Apt A		Apt B	STC	IIC	STC	IIC	STC	IIC
Bedroom	<i>above</i>	Bedroom	55	58	52	52	48	48
Living Room	<i>above</i>	Bedroom	57	60	54	57	60	53
Family Room	<i>above</i>	Bedroom	60	65	56	62	52	58
Corridor	<i>above</i>	Bedroom	55	65	52	62	48	48
Bedroom	<i>above</i>	Living Room	57	55	54	52	50	48
Living Room	<i>above</i>	Living Room	55	55	52	52	48	48
Family Room	<i>above</i>	Living Room	58	62	54	60	52	56
Corridor	<i>above</i>	Living Room	55	60	52	57	48	53
Bedroom	<i>above</i>	Family Room	60	50	56	48	52	46
Living Room	<i>above</i>	Family Room	58	52	54	50	52	48
Bathroom	<i>above</i>	Bathroom	55	55	50	50	48	48
Corridor	<i>above</i>	Corridor	50	50	48	48	46	46

The most basic wall is a single-stud demising wall, which may be upgraded to a double-stud partition. The double-stud construction is superior to the single-stud system at reducing low frequency noises and impacts, especially as generated by plumbing, grease exhaust fans, appliances, and kitchen cabinet/drawer use. A single-stud wall will generally transmit those sounds to adjacent units with little attenuation.

Project Information

C1010 PARTITIONS & FLOORS / CEILINGS

- A. Interior bearing walls, demising walls (double wall), and corridor walls to be constructed of 2x6 @ 16" O.C. Doug-Fir wall studs w/ 15/32" APA sheathing.
- B. Unit Demising Wall Assembly should have, from one side to the other
 - a. One layer of 5/8-inch type X gypsum board
 - b. Stud row of 2x6 studs
 - c. Batt insulation in the stud cavity

- d. An air gap at least 1-inch clear with no connection between the two rows of studs
 - e. Another stud row of 2x6 studs
 - f. Batt insulation in the stud cavity
 - g. One layer of 5/8-inch type X gypsum board
 - h. Any shear panels should only occur on the outside of the studs not between stud rows
- C. Unit Corridor Wall Assembly should have, from the corridor side to unit side
 - a. One layer of 5/8-inch type X gypsum board
 - b. Resilient channel drywall attachment, ClarkDietrich RC Deluxe RCSD or Cemco RC1-XD, no substitutions
 - c. Stud row of 2x6 studs
 - d. Batt insulation in the stud cavity
 - e. Two layers of 5/8-inch type X gypsum board. Alternatively, one layer of plywood shear panel and one layer of gypsum board.
 - f. Any shear panels should only occur on the unit side of the studs not between studs and resilient channel
- D. Unit at Stair or Elevator Framing - the stairs should be separated from the Unit demising wall. A furred wall should be built between the stairs and residential units. This furred wall stud row should remain 1 inch clear of the unit side stud rows.
 - a. One layer of 5/8-inch type X gypsum board
 - b. Stud row of 2x4 studs (2x6 at bearing walls)
 - c. Batt insulation in the stud cavity
 - d. An air gap at least 1-inch clear
 - e. Another stud row of 2x6 studs
 - f. Batt insulation in the stud cavity
 - g. One layer of 5/8-inch type X gypsum board
 - h. Any shear panels should only occur on the outside of the studs not between stud rows
- E. Unit at Mechanical Room, MDF/IDF, Laundry, Bike Storage, Trash Chute Assembly should have, from one side to the other
 - a. Two layers of 5/8-inch type X gypsum board
 - b. Stud row of 2x6 studs
 - c. Batt insulation in the stud cavity

- d. An air gap at least 1-inch clear
 - e. Another stud row of 2x6 studs
 - f. Batt insulation in the stud cavity
 - g. Two layers of 5/8-inch type X gypsum board
 - h. Any shear panels should only occur on the outside of the studs not between stud rows
- F. Public Toilet, Office and Conference on the ground level should have
 - a. Two layers of 5/8-inch type X gypsum board
 - b. Stud row of 2x4 studs
 - c. Batt insulation in the stud cavity
 - d. Two layers of 5/8-inch type X gypsum board
 - e. The partition with the door can have one layer of gypsum board removed, for three total layers.
- G. Plumbing Noise Isolation Requirements Affecting Stud Width Plumbing noise control measures within stud cavities may impact the width of the partitions. Appropriate clearances between the pipework and partition components will help reduce plumbing noise. Depending on the size of the pipe, the clearance requirement might increase the width of the walls beyond what is described above. Also, the type of penetration isolation will affect the clearance requirements.
- H. Refer to section C3020 for finish flooring; this is an integral part of the assembly for structure borne noise control.
- I. Structural live load deflection at floors should be limited to 0.33 inches or less. This limits low-frequency impact noise.
- J. Ceiling structure trusses should be spaced at intervals divisible by 4 inches.
- K. Unit Demising Floor Assembly should have, from top to bottom
 - a. 1.5-inch lightweight concrete topping
 - b. 3/8-inch thick entangled mesh underlayment
 - c. 3/4-inch plywood subfloor
 - d. Wood truss system 16 inches on-center
 - e. Batt insulation in the truss cavity, minimum thickness 3.5 inches
 - f. Resilient channel, ClarkDietrich RC Deluxe RCSD or Cemco RC1-XD, no substitutions

- g. 1 layer of 5/8-inch gypsum board, type C
- L. Corridor Floor Assembly should have, from top to bottom
 - a. 1.5-inch lightweight concrete topping
 - b. 3/8-inch thick entangled mesh underlayment
 - c. 3/4-inch plywood subfloor
 - d. Wood joists
 - e. Batt insulation in the truss cavity, minimum thickness 3.5 inches
 - f. Resilient channel, ClarkDietrich RC Deluxe RCSD or Cemco RC1-XD, no substitutions
 - g. 1 layer of 5/8-inch gypsum board, type X
- M. Level 2 Units above Mechanical/Electrical, Reception, Mailboxes, Packages, Bike Storage, Office and Conference Assembly should have, from top to bottom
 - a. 1.5-inch lightweight concrete topping
 - b. 3/8-inch thick entangled mesh underlayment
 - c. 3/4-inch plywood subfloor
 - d. Wood truss system 16 inches on-center
 - e. Batt insulation in the truss cavity, minimum thickness 3.5 inches
 - f. Resilient channel, ClarkDietrich RC Deluxe RCSD or Cemco RC1-XD, no substitutions
 - g. 2 layers of 5/8-inch gypsum board, type X
- N. Roof level ceiling can be directly attached. Resilient channel not necessary as shown in Assembly RA-01 on A021. Any mechanical equipment that is rooftop mounted could change this detail; no rooftop mechanical equipment is shown.

C1020 INTERIOR DOORS

- A. Unit Entry Solid-core wood with acoustical seal kit, including perimeter seals, bottom seal, and threshold.
- B. Mechanical/Electrical Room, MDF/IDF Room Metal door with acoustical seal kit, including perimeter seals, bottom seal, and threshold.
- C. Public Toilet Solid-core wood.

C1030 FITTINGS

- A. Casework, toilet accessories, signage, shelving, and similar interior fittings are anticipated to be standard institutional-grade components suitable for a first-year residence hall.

4.2 C20 Stairs

C2010 STAIR CONSTRUCTION

- A. Structural steel framed stairs and landings with concrete filled steel stair pan treads
- B. Stair walls shall be 5-ply CLT walls.
- C. Stairs should have support framing completely separate from Unit walls. Reference section C1010 A.3.

C2020 STAIR FINISHES

- A. Carpet is recommended but not required. This affects the impact noise transfer to adjacent bedrooms, especially at landings.

4.3 C30 Interior Finishes

C3010 WALL FINISHES

- A. Level 4 Drywall with Painted Finish: Assume on all walls within project unless noted otherwise on the finish plans. Price 1-2 coats primer and assume up to 5 colors unless noted otherwise. Paint all gypsum board surfaces.
 - a. Locations: Typical Walls
- B. Porcelain Wall Tile: Assume large format 12"x24" unless noted otherwise. Price \$14/SF for material. Installed full height to finished ceiling. Assume Schluter transitions along any exposed tile edge, or similar.
 - a. Locations: Resident Unit Restroom walls, public Restroom Walls
- C. Decorative Backsplash Tile: Assume Decorative Backsplash tile for all kitchens as back splash above millwork. Assume tile installed up to 8' unless noted otherwise. Price \$12/SF for material with multiple colors of similar product selected to be laid out in decorative pattern upon installation.

- a. Locations: Shared Kitchens, Mail room Above Millwork, Public Restroom behind sink
- D. Custom Digital Wall Covering: Assume High quality print vinyl product installed to finished level 4 dry wall. Assume \$30-35 SF, Type II (20 oz vinyl wallcovering minimum), Matte or low sheen finish, Factory applied protective topcoat, Class A fire rating ASTM E84/ NFPA 286 Compliant, Product BOD – Dreamscape
 - a. Locations: Lobby Reception Back wall, Break out and Study rooms, Conference Room, Bike Room
- E. Rubber Wall Base: Assume standard 4" rubber wall base at all walls unless noted otherwise.
 - a. Locations: Typ Walls

C3020 FLOOR FINISHES

- A. Sealed Concrete: GC provided concrete sealed finish
 - a. Locations: Entry Vestibule, Mechanical and Electrical Rooms, Bike Room
 - b. All ground floor level finishes - No acoustical considerations are necessary. Structure borne noise to slab-on-grade will have minimal transfer to other areas of the building.
- B. Luxury Vinyl Tile: Assume mid-range LVT Plank, include allowance for any anticipated floor prep. Price \$4-6 material. Price both glue down and loose lay install methods for comparison; see acoustic narrative for benefits and direction of installation.
 - a. Locations: Lobby, Corridors, Kitchens, Resident Unit Entries, Open Lounge Areas
- C. Porcelain Floor Tile: Assume large format 12"x24" unless noted otherwise. Price \$14/SF for material. Assume intergraded base board with Schluter condition, or similar.
 - a. Locations: Restroom Floors

- D. Carpet Tile: Assume Modular Square or plank carpet tile. Price \$26/Square Yard for material.
 - a. Locations: Conference Room, Private Offices, Enclosed Breakout and Study Rooms, Resident Unit Bedrooms

C3030 CEILING FINISHES

- A. Acoustic Ceiling Tile: Assume Mid-range ACT. See Acoustic Narrative for required NRC values. At all locations Unless noted otherwise
 - a. Locations: Lobby, Corridors, Private Office, Package Room, Laundry Room, Mechanical and Electrical Rooms
 - b. The conference room should have an acoustically absorptive ceiling treatment above the table. This is to mitigate flutter echo between the table and the ceiling, which is problematic for teleconferencing systems where the microphone is above or on the table. This can be a surface-applied material to the gypsum board ceiling with an acoustic core 1-inch thick. Alternatively, a separate ceiling tile could be suspended from the gypsum board ceiling.
- B. Gyp Ceilings: Assume typical Gyp ceilings with painted finish
 - a. Locations: Kitchen Soffits, Resident Unit Ceilings, Mail Room Ceiling, Reception Ceiling
- C. Specialty Acoustic Ceiling Clouds: Assume Mid to High quality specialty decorative acoustic ceiling treatment in selected areas. See RCP and Acoustic Narrative for details; BOD: "Turf – Plate Acoustic Ceiling Cloud"
 - a. Lobby Kitchen and Lounge

C3040 MILLWORK FINISHES

- A. Standard Kitchen Millwork: Assume Mid-range Plastic Laminate Cabinets with White Melamine interiors. Countertops to be Quartz in all locations unless noted otherwise. Provide +/-6" black rod drawer pulls Mockett DP55A or similar. All lower cabinets to be 34" high and 24" deep unless noted otherwise. All upper cabinets to be 50" high and 13" deep unless noted otherwise. Install

upper cabinets 24" – 26" above base cabinets. Lower cabinets to have one adjustable shelf within cabinet and one drawer. Drawers to have full extension white metal glides. Upper cabinets to have 3 adjustable shelves where applicable.

- a. Locations: Public Restroom, Mail room, Package Room, Conference Room

B. Standard Restroom Millwork: Assume Mid-range Plastic Laminate Cabinets with White Melamine interiors. Countertops to be Quartz in all locations unless noted otherwise. Provide +/-6" black rod drawer pulls Mockett DP55A or similar. All lower cabinets to be 34" high and 24" deep unless noted otherwise. Include Under mounted sinks per plan drawings.

- a. Locations: Resident Unit Restrooms

C. Upgraded Millwork: Assume Mid to High Range Plastic Laminate Cabinets with White Melamine interiors. Countertops to be Quartz in all locations unless noted otherwise. Provide +/-6" black rod drawer pulls Mockett DP55A or similar. All lower cabinets to be 34" high and 24" deep unless noted otherwise. Drawers to have full extension white metal glides. Upper cabinets have 3 adjustable shelves. Include line item for lockable hardware option for all upgraded millwork. Include a trough under mount sink with garbage disposal.

- a. Locations: Shared Kitchens, Reception

D. Built In Millwork Seating Feature: Assume Mid range Plastic laminate wrap for built in for step seating elements. Include painted solid wood top for seat pan and attached upholstered seat pad. Include integrated/ built in metal laptop tables with powder coated finish and power access point along vertical surface, assume 4 power points per installation. (see visual narrative for details.)

- a. Locations: Typ Flex Open Lounge

E. Built In Millwork Banquettes: Assume Plastic Laminate finish with upholstered seat and back. Include Power built in as base of seat, assume one power access per seat.

- a. Locations: Lobby, Open Lounges, Shared Kitchens

F. Unit "Mudroom" Millwork: Per unit assume on section of plastic laminate finished open base shelving with upholstered seat top to function as shoe

storage and seating. Include coat hooks and open shelving above. Typical dimensions 6' wide, 2' deep and 18" high for seat base. Assume shelving above to be 12" deep, 6' wide. See visual narrative for inspiration.

- a. Locations: Residential Unit Entries

C3050 MISCELLANEOUS FINISHES

- A. Shower Wet Walls: Assume Large format wet wall product. BOD: Wilsonart Wetwall Panels

- a. Locations: Resident Unit Showers

- B. Shower Base Pans: Assume off the shelf shower pans, Solid Surface Finish. BOD: Inpro Standard Shower Base.

- a. Locations: Resident Unit Shower

- C. General Window Coverings: Assume Mid-range Roller shades with Manual operation at all exterior glazing unless noted otherwise.

- a. Locations: all exterior glazing Unless noted otherwise

- D. Upgraded Window Coverings: Assume Mid-range Roller shades with remote electric operation with controls at reception desk for staff use.

- a. Location: Lobby Exterior Glazing

C3060 SIGNAGE & FEATURES

A. GENERAL NOTES

- a. Provide all code required signage. Provide allowance for room signage throughout and primary reception sign. Provide allowance of \$200/sign at each room and \$4,000 for primary sign.

B. Exterior Signage:

- a. Building Address signage: Assume \$2,000 for building applied dimensional street address
 - b. Exterior Entry signs: Assume 12" fabricated letters with external illumination. Price at \$10,000 per entry location (2).

- c. Monument Sign: Assume \$15,000 for freestanding building ID sign to live within the landscape and site design.
 - d. Miscellaneous Vinyl: Assume \$2,000 for regulatory applied vinyl signage as required
- C. Tactile Room Signage: Assume will be provided for all rooms in order to meet ADA compliance. Room signage will be custom finished to match the interior finishes.
- D. Resident Unit ID Sign: Assume 10 SF of decorative sign, finish to be precision cut plastic laminate and paint. See Visual Narrative for Design Inspiration. Include tactile signage as required for sign code.
 - a. Locations: All Resident Unit Entry Doors
- E. Building Entry Lobby Feature: Decorative feature wall divider to screen elevator entry and provide backdrop to seating lounge. Assume laminate or painted finish and solid high quality plywood construction. Assume 10' wide, 8" deep and 9' 6" high
 - a. Location: Lobby Lounge
- F. Brand Narrative Elements: Assume \$8,000 per floor for branded features, end cap lounge elements, etc.
- G. Wayfinding Signage: will be developed to clearly direct students and guests throughout the building and floor levels. Focused at key decision points, this signage will be custom in nature with changeable inserts and upgraded finishes. Analog content is planned. Assume \$1,000 per level (4)
- H. Digital Variable Message Board: Assume 65" wall mounted digital message board with required media player. Assume on in Lobby.

5 D. Services

5.1 D10 Conveying Systems

D1010 ELEVATORS & LIFTS

- A. Elevator walls shall be 5-ply CLT walls.
- B. Assume elevator will be a machine room-less hydraulic elevator, sized for stretcher capacity; Otis 3500lb Gen3 Edge or equal.

D1090 OTHER CONVEYING SYSTEMS

- A. xxx

5.2 D20 Plumbing Systems

Acoustic Considerations

- A. All supply piping should be isolated from the structure. If PEX piping is used, PEX Systems manifolds at the point of distribution to the fixtures. The manifold provides a common location from which all the plumbing fixtures are supplied. This manifold can act as a noise buffer if designed correctly. Typically this manifold will effectively reduce plumbing noise associated with supply piping if the radius of the manifold is two times that of the supply pipe entering it. This system allows for a softer connection between the plumbing fixtures and supply lines and therefore reduces the plumbing noise transmission to walls.
- B. If supply lines are to be made of copper piping or CPVC, we recommend using Hubbard HoldRite Silencer System isolators. If possible, collect vertical supply pipe runs and run them within a vertical chase. Locate the chase in a non-sensitive area of the building.
- C. Shower heads should also be isolated using the Hubbard HoldRite Silencer System, shower head clamp sku #265.
- D. Drainpipes (waste lines) travel vertically or slope horizontally downward inside walls and in ceiling cavities and join a larger, vertically descending waste stack(s). The

waste stack(s) gathers waste from the different floors as it descends through the building. The stack(s) is typically encased within a shaft wall type construction.

- i. All waste lines should be cast iron, continuous to the fixture connection.
- ii. No pipes should rigidly contact wall studs or floor/ceiling construction or gypsum wall; Hubbard HoldRite Silencer System isolators should be used.
- iii. If possible, collect vertical waste pipe lines and run them within a vertical chase. Run the chase in a non-sensitive area of the building such storage rooms and main core.
- iv. Isolate main riser supports for waste lines from direct floor or wall contact using neoprene and cork sandwich pads (Mason "NK") beneath all riser clamps.

E. Vent Lines

- i. Cast iron or ABS pipe material is acceptable.
- ii. Vent lines contain considerable noise and also need to be isolated from direct contact with structure using the same methods described above.

Project Information

D2010 PLUMBING FIXTURES

- A. Public plumbing fixtures will be standard grade, commercial quality. The water closets will be high efficiency 1.28 gpf flush valve type, wall-mounted water closets. Urinals will be 0.125 gpf high efficiency style. Flush valves will be manual. No sensor type will be acceptable. Lavatory faucets will be 0.3 gpm manual type. No sensor type will be acceptable. All plumbing fixtures shall be designed in accordance with CMU's standard plumbing fixture package.
- B. In-unit dormitory plumbing fixtures will be residential in nature. Water closets will be ADA, tank type, elongated, bottom outlet at maximum ADA height. Showers will be provided with ADA pressure balance/thermostatic mixing valves with volume control and lever diverter for shower head and hand spray control. Lavatories will be ADA, vitreous china, under-counter mount with manual ADA lever faucets. All plumbing fixtures shall be designed in accordance with CMU's standard plumbing fixture package.
- C. Exterior hose bibbs will be provided at select locations around the exterior of the building. It is anticipated that one (1) hose bib will be required at each exterior face of the building. Final location of hose bibs will be determined during design. All plumbing fixtures shall be designed in accordance with CMU's standard plumbing fixture package.

- D. Floor drainage with trap guards will be provided in select areas as determined during design. The drain locations and type will be coordinated with the architect and CMU during design.
- E. Custodial sinks shall be outfitted with individual hot and cold Waterford wall faucets rather than mop sink faucets to prevent cross connection in accordance with the CMU design standards.
- F. Floor sinks will be provided in strategic locations in the mechanical room to accommodate the backflow preventer station, fire water entry, domestic water heaters, etc. Floor sinks will be equivalent to J.R. Smith – 320 series, porcelain enameled cast iron body with grate, anti-splash dome. An ASSE 1072 rated mechanical trap seal will be provided with each floor sink equivalent to J.R. Smith – Quad Close Trap Seal.
- G. Floor drains will be provided in restroom groups, at heat pumps in heat pump mechanical closets, mechanical room, etc. Floor drains will be equivalent to a square J.R. Smith – 2005 series, nickel bronze strainer, vandal proof screws, (shape of floor drain will be coordinated with architect prior to scheduling). An ASSE 1072 rated mechanical trap seal will be provided with each floor sink equivalent to J.R. Smith – Quad Close Trap Seal.

D2020 DOMESTIC WATER DISTRIBUTION

- A. A new 4"Ø domestic cold water line will be routed to the building water entry from the site main.
- B. The 4"Ø domestic water entry in the building will include a strainer, isolation valves, PRVs, principle reduced pressure back flow preventor and pressure gauges. It is anticipated that the water entry will be located in the mechanical room at the West corner of the building.
- C. Domestic water piping will be crosslinked polyethylene (PEX) tubing complying with ASTM F877 or type "L" copper. All domestic cold, hot, and recirculation water will be insulated with fiberglass insulation according to IECC 2024 requirements. Domestic cold water will be insulated with 1/2" fiberglass insulation.
- D. A 2" irrigation tap with backflow prevention device and sub meter is anticipated to be tied into the main domestic water entry in the space. The irrigation system will be provided with three (3) 60 GPM, brazed plate heat exchangers for removal of heat from the geothermal loop system during summer.

D2030 SANITARY WASTE

- A. A new 8" sanitary sewer line will exit the building and tie to the sanitary main on site. Coordination with the civil consultant will be necessary to determine the final location of the sewer tap. In lieu of a single 8"Ø line, two separate 6" lines combined into an 8" line exterior of the building may be used.
- B. Sanitary waste & vent piping inside the building will be standard weight cast iron pipe with "No-hub" joints. Below slab waste & vent piping will be Schedule 40 solid-wall PVC pipe complying with ASTM D 2665 combined with PVC socket fittings made to ASTM D 3311 patterns.

D2040 RAINWATER DRAINAGE

- A. Building roof drainage will be accomplished via gutters and downspouts. Coordination with architectural and civil designs will be required to determine size and quantity. Roofs over vestibules or smaller flat roofs requiring primary and secondary roof drainage will be coordinated with the Architect, it is anticipated that these roofs will be provided with typical storm drainage leaders terminated exterior of the building at grade.

D2050 DOMESTIC HOT WATER GENERATION

- A. The domestic hot water plant will consist of (1) domestic water pre-heat R-513A heat pump with 850 gallon NSF Rated flanged horizontal jacketed insulated storage tank the system will be equivalent to a Nyle – C270WM, 208V/3PH/60HZ water source heat pump domestic water heater and Taco – BHL0850F 850-gallon buffer tank. The Domestic pre-heated water will be stored at 140°F. The main domestic water heating plant will be composed of five (5) 119-gallon, 399,000 BTU/HR A.O. Smith Cyclone – BTH-400 high efficiency gas fired domestic water heaters.

D2090 OTHER PLUMBING SYSTEMS

- A. Electric water coolers to be Elkay EZH2O® bottle filling stations, ADA Dual Level with bottle filler and green ticker, anti-microbial surfaces provided with wall carrier.

5.3 D30 HVAC Systems

Acoustic Considerations

Criteria

The acoustical design goal for HVAC systems is quiet enough that it does not interfere with the function of the space. This includes a balanced distribution of sound energy over a broad frequency range to create a bland, even sound character. No audible tones should occur, such as shines, hums, or rumbles. There should also not be any noticeable time-varying noise from aerodynamic instability or turbulence.

Recommended design Noise Criteria:

Bedrooms:	NC 30-35
Living Areas, Study Areas:	NC 35-40
Bathrooms:	NC 38-42
Reception, Circulation:	NC 40-45
Office, Conference:	NC 30-35

Vibration Isolation

All mechanical equipment should be vibration-isolated from the structure per ASHRAE Handbook Chapter 47, table 47. Flexible duct connectors shall be used between units and ducts.

D3040 DISTRIBUTION SYSTEMS

- A. Diffusers and grilles should be rated at 5 NC points below the room noise criteria at the design airflow.

Project Information

D3010 ENERGY SUPPLY

- A. The building will be served by the campus geo-loop. The campus geothermal piping entering the mechanical room will be 8"Ø. Motorized isolation valves on the main 8"Ø geothermal supply/return lines will be provided as well as a motorized three way valve for building only circulation. The total flow required for the new dorm facility is approximately 700 gpm. Three (3) variable frequency driven (VFD), variable speed end suction pumps capable of 700 gpm at 100 feet of head will be provided. The pumps will be located in the mechanical room. The system pumps shall be redundant in a lead/lag fashion

and controlled through the BAS system. The main end suction pumps will be equivalent to Taco – SFI14007D-A-2P-PD pumps and will be provided with 25HP VFD rated motor, 3 contactor bypass main fusing and disconnect 100Ka SCCR. Piping shall be either type “L” copper, Schedule 40 steel, or Niron/Nupi Clima PP-RCT SDR 11 series grey pipe. Expansion tank, side stream filter, air separator, coupon rack and other hydronic system appurtenances will be provided.

D3020 HEAT & COOLING GENERATING SYSTEMS

- A. Dormitory heating and cooling will be supplied by indoor water source heat pumps (WSHP). The indoor WSHP's will be similar to the Trane Axiom 2-Stage DXHV models for 2-6 tons and the Trane Axiom Single Stage EXHV for 0.5-1.5 tons. These units will be placed in mechanical closets accessed from the corridor. It is anticipated that a total of 76 heat pumps ranging from 1.5 ton to 2 tons will be required for the suites. These units will be high efficiency staged cooling/heating variable speed fan provided with manufacturer acoustic package, flexible hose connection kit, control valves, strainer, etc.
- B. Ventilation will be supplied in each dormitory by a ducted indoor energy recovery ventilator (ERV). Each ERV will be similar to the RenewAire EV Premium M. Fresh air will be ducted into the return air duct of the WSHP unit. Exhaust will be pulled from each restroom. Air inlets and outlets will be terminated to the exterior wall of the building. Locations of terminations to be determined during design, it is anticipated that the terminations will be at a Greenheck – Brick Louver with flange for fastening the frame to the exterior wall assembly.
- C. Common area heating and cooling will be supplied by indoor water source heat pumps (WSHP). The indoor WSHP's will be similar to the Trane Axiom 2-Stage DXHV models for 2-6 tons. These units will be placed in mechanical closets accessed from the corridor. It is anticipated that a total of 16 heat pumps ranging from 3 ton to 4 tons will be required for the common areas. These units will be high efficiency staged cooling/heating variable speed fan provided with manufacturer acoustic package, flexible hose connection kit, control valves, strainer, etc.
- D. IT & Electrical rooms will be provided with dedicated WSHP units, located in mechanical closets outside of the IT and Electrical rooms they supply. The indoor WSHP's will be similar to the Trane Axiom 2-Stage DXHV models for 2-6 tons. These units will be high efficiency staged cooling/heating variable speed fan provided with manufacturer acoustic package, flexible hose

connection kit, control valves, strainer, etc. Additionally these units will be provided with water-side economizers to add heat to the geothermal loop during winter. It is anticipated that five (5) WSHP units will be required for IT & Electrical spaces and will range from 2 tons to 5 tons.

- E. Ventilation will be supplied by a ducted indoor ERV. Each ERV will be similar to the RenewAire HE 15IN. Fresh air will be ducted into the return air duct of the WSHP unit. Exhaust will be pulled from each restroom/common area space. Air inlets and outlets will be terminated to the exterior wall of the building. Locations of terminations to be determined during design, it is anticipated that the terminations will be at a Greenheck – Brick Louver with flange for fastening the frame to the exterior wall assembly.
- F. Vestibules will be provided with recessed wall heaters as required to provide supplementary heat. Sizes and quantities of heaters to be determined during design. Recessed vestibule wall heaters will be controlled in compliance with the latest version of the adopted international energy conservation code by the authority having jurisdiction (2024 IECC).

D3040 DISTRIBUTION SYSTEMS

- B. Air will be distributed to each zone (heat pump) by steel ductwork built according to SMACNA standards and ceiling-mounted diffusers and grilles. Ductwork will be insulated as per the latest version of the adopted international energy conservation code by the authority having jurisdiction (2024 IECC). The supply and return ductwork will be lined with 1-1/2" duct liner.

D3060 CONTROLS & INSTRUMENTATION

- A. A direct digital control (DDC) building automation system (BAS) will be designed for the addition to control and monitor all aspects of the building mechanical system. A Trane SC system will be used to control all the WSHPs, and miscellaneous monitoring points. This system will be connected to the University's Trane BAS. The Trane system will be web-based and communicate to the university's maintenance location via the LAN.
- B. Building utility metering through the BAS will include: Whole building water usage, whole building gas usage, and whole building electrical usage and demand. These points will be added to the DDC system if they are not currently provided.

D3070 SYSTEMS TESTING & BALANCING

- A. Commissioning of building heating, cooling and service water heating systems will be performed by a certified commissioning agent per C408 of the IECC. This will be performed by an independent third-party agent that is contracted with the owner.

D3090 OTHER HVAC SYSTEMS & EQUIPMENT

- A. Fire dampers, ceiling radiation dampers fire-smoke dampers will be provided at appropriate assemblies identified by Architects. It is anticipated that ceiling penetrations and ceiling to floor assemblies between different levels will required fire protection mechanical devices or assemblies.
- B. The laundry spaces will be provided with dedicated plenums behind dryers with exterior wall mounted louver for make up air, thus reducing the amount of heating/cooling required in the laundry spaces and providing the dryers with a make up air directly from the exterior. The plenum space behind the dryers will be coordinated with the architect during design.

5.4 D40 Fire Protection Systems

D4010 SPRINKLERS

- A. The building will be fully sprinklered in accordance with NFPA 13. The system shall be designed and installed by a licensed fire sprinkler contractor. It is anticipated that the sprinkler demand will be ~500 GPM at 100psi. a 6" fire sprinkler entry is anticipated.

5.5 D50 Electrical Systems

Acoustic Considerations

- A. Recessed electrical boxes shall not be placed back-to-back. Separate electrical boxes in opposite sides of the partition by 18 inches, minimum.
- B. Recessed electrical boxes in demising partitions should have clay putty packs installed.
- C. All trims at demising partitions should be installed with resilient caulk.

Project Information

D5010 ELECTRICAL SERVICE & DISTRIBUTION

- D. The electrical service for the dormitory building is tentatively estimated to be a 3000A, 120/208V, 3PH service. The main distribution panel (MDP) is planned to be installed on the interior of the building immediately after the electrical enters the building. The MDP should be provided with arc energy reduction and surge protections devices in accordance with the 2023 NEC. The MDP is planned to provide power for all 120/208V distribution panels throughout the building. Multiple branch panels will be located in each floor's electrical room to serve the respective dormitory units and common areas on each floor. The dormitory units do not require a dedicated load center to be located within the dormitory units themselves since these units are not considered dwelling units. The final quantity and size of distribution panels will be determined throughout the design phase.
- E. Circuits serving the dormitory units should be provided with arc fault circuit interrupter protection and ground fault circuit interrupter protection for personnel in accordance with the 2023 NEC. Other spaces should also be provided with ground fault circuit interrupter protection for personnel in accordance with the 2023 NEC.
- F. Automatic receptacle control will be provided in accordance with 2024 IECC requirements. The basis of design is to provide half-controlled duplex receptacles that are controlled by occupancy sensors that may be integral to the lighting controls system in spaces where automatic receptacle control is a requirement. Otherwise, automatic receptacle control will not be provided.
- G. The electrical distribution will be designed to separate the loads across distribution panels to simplify the metering that will be provided per CMU standards and the 2024 IECC. Building metering following the CMU standards shall include, but not be limited to:
 - a. Mechanical/HVAC and plumbing system loads
 - b. Lighting loads
 - c. Receptacle plug loads
 - d. Process loads
 - e. IT and low voltage loads

- H. The power distribution design for the building will include an emergency backup generator. The generator will provide required or requested power for, but not limited to, lighting, life safety systems, security and access control systems, and fire alarm systems. The preliminary estimate for the generator is a natural gas generator that is not larger than 100kW. The final size will be determined during the design process. A 400A rated automatic transfer switch should be provided to support the EM distribution branch.
- I. Electrical ready requirements for combustion equipment will be provided in accordance with the Colorado Model Electric Ready and Solar Ready Code (CMERSRC). This includes but is not limited to an adequately sized branch circuit routed from the future electric equivalent equipment to the appropriate distribution panel.
- J. The electrical system will include provision for a future PV system. Appropriately sized conduit and available breaker spaces will be provided in the main gear to allow for a future PV system. A minimum of (1) 4" conduit shall be routed from the roof to the main gear location for future connection.

D5020 LIGHTING & BRANCH WIRING

- A. The general lighting system for the new construction will include the most energy efficient lighting available with consideration from a maintenance standpoint and to provide the most compatible light fixtures. The basis of design will include LED lighting and will conform to the CMU design standards. The lighting controls will follow the 2024 IECC requirements including occupancy sensing, timeclock controls, daylighting controls (where required), light reduction controls (dimming), and manual control switches. All lighting controls shall be commissioned by a qualified installer and documentation of this commissioning shall be provided to CMU. Task and undercabinet lighting will be provided based on the anticipated use of each space. Exit signage will be provided as required by the 2024 IBC and the 2024 NFPA 101. Exit signage will be strategically placed to ensure clear visibility and guidance for egress from the building. Exit signage will be positioned at all entrances, along exit pathways, and at any point where the direction to an exit may not be immediately apparent. Emergency lighting is planned to be powered from the natural gas backup generator for the building.
- B. Decorative type fixtures are planned to be installed in common areas such as the lobby, lounge, conference rooms, reception, and vestibules.

- C. Light fixtures that can easily be maintained and replaced should be planned to be installed within the dormitory units. The CMU campus standard is to limit integrated LED fixtures where possible. The bedroom and common areas should utilize a large diameter surface mount light fixture with two E26 base light sockets. The rest rooms and shower rooms should be provided with thin 4"-6" wet location listed surface mounted downlights. The vanity area should be provided with a 24" wall mount vanity type fixture with E26 base light sockets.
- D. All final lighting fixtures will be coordinated with the lighting design and architectural team.

D5030 COMMUNICATIONS & SECURITY

- A. Data and access control systems will be designed to meet the requirements of CMU design standards for dormitory units. Rough-in for low voltage systems will be included at locations approved by CMU and as determined during the design process, for systems not included in the low voltage design scope.

D5090 OTHER ELECTRICAL SYSTEMS

- A. A new fire alarm system will be installed throughout the entire building. This system shall meet the fire alarm standards of CMU and the latest governing codes such as NFPA 13, NFPA 72, and NFPA 101 for a dormitory building.

6 E. Equipment & Furnishings

6.1 E10 Equipment

E1010 COMMERCIAL EQUIPMENT

- A. Residential Grade Kitchen Equipment: Assume of an oven and stove top range with mid-range finishes. Residential grade appliance specification by client request.
 - a. Locations: One per Shared kitchen integrated into the design of the millwork.
- B. Lockable Undercounter Refrigerator: Assume mid-range under counter beverage fridge for staff use, with midrange finishes. BOD: Summit Appliance 24" Wide Built in Beverage Center ADA Compliant.
 - a. Locations: Conference room, Reception
- C. Full Refrigerator and Freezer: Assume one full height refrigerator and freezer with integrated ice maker and water filter and tap. Assume midrange finishes.
 - a. Location: Level One Apartment
- D. Under Counter water dispenser and Ice Maker: Assume one mid-range under counter ice maker. BOD: Follett Champion 7 Under Counter Icer and Water Dispenser
 - a. Location: One per shared kitchen

6.2 E20 Furnishings

E2010 FIXED FURNISHINGS

- A. Feature Kitchen Communal Tables: Assume one large custom designed kitchen table in lieu of a formal millwork island to serve as both prep and dining space with café style seating surrounding. Assume \$12,000 per table (4)

- a. Locations: Communal Kitchen

E2020 MOVEABLE FURNISHINGS

- A. Furniture Provided by others, layout and design intent provided for information only.
 - b. Assume all Resident Unit furniture to be sourced through Southwest Contract
 - c. Assume all Public real furniture to be sourced through ProSpace

7 G. Building Sitework

7.1 G10 Site Preparation

General Notes

Refer to Bid Package #1 drawings and specifications for all site preparation requirements.

7.2 G20 Site Improvements

General Notes

Refer to Bid Package #1 drawings and specifications for other site improvement requirements not listed in this section.

Project Information

G2020 PARKING LOTS

- A. All parking lots impacted by site construction and/or laydown areas shall be returned to their existing conditions upon project completion.

G2030 PEDESTRIAN PAVING

- A. Refer to Appendix A for conceptual landscape plan and zonal breakdown of anticipated space compositions.
- B. Minor Pedestrian Walkways/Plazas:
 - a. Cast-in-place concrete, 4" thickness over 4" compacted base (98% modified proctor).
 - b. Standard gray, light broom finish, saw-cut control joints.
 - c. Micro fiber included in mix.
 - d. Estimated area: approx. 40% of paved area
- C. Major Pedestrian Walkways/Plazas & Fire Lanes (at entry courts, oval gathering areas):
 - a. Cast-in-place concrete, 6" thickness over 6" compacted base (98% modified proctor).

- b. Standard gray, light broom finish, saw-cut control joints.
- c. Micro fiber included in mix.
- d. Steel reinforcement as per engineer's recommendations.
- e. Estimated area: approx. 60% of paved area.

D. Garden Pathways (at hammock grove, slackline):

- a. Decomposed granite, stabilized, 3" thickness over filter fabric, 4" compacted base.
- b. Steel edger.
- c. Estimated area: 200 linear feet of 3 foot wide pathway.
- d. Steel reinforcement as per engineer's recommendations.

E. Stairs (at southwest building corner):

- a. Cast-in-place concrete, 6" riser by 12" tread.
- b. Handrails, stainless steel, minimum both sides of stair.

F. Stairs (ADD-ALTERNATE)(at oval gathering area):

- a. Stone, locally sourced, 6" height by 12" depth each.

G2040 SITE DEVELOPMENT

A. Refer to Appendix B for conceptual landscape plan and zonal breakdown of anticipated space compositions.

B. Retaining Walls (at southeast building corner):

- a. Cast-in-place concrete, 12" thickness, 30" maximum height.
- b. Standard gray, rubbed finish.

C. Site/Seat Walls (ADD-ALTERNATE)(at hammock grove, oval gathering area, entry courts):

- a. Stone, locally sourced, 18" to 24" width.

D. Site Furnishings:

- a. Benches: Metal, backed, 6' length, surface mounted.
- b. Tables & Chairs: Metal, 36" dia. Round tabletop, 4 chairs, freestanding.
- c. Communal Tables: Metal, 96" length, benches, freestanding.
- d. Trash Receptacles: Metal, 36 gal. capacity, surface mounted.
- e. Bike Racks: Metal, in-ground mounted.
- f. Hammock Posts: Metal, 6' height, concrete footing.
- g. Slackline Posts: Metal, 6' height, concrete footing.

E. Exterior Canopies & Railings

- a. Refer to Appendix B for conceptual design and location of exterior canopies and site railings near the North and South building entrances

G2050 LANDSCAPING

- A. Refer to Appendix A for conceptual landscape plan and zonal breakdown of anticipated space compositions.

B. Soil Preparation:

- a. Contractor to perform soil analysis.
- b. Imported Topsoil: friable sandy loam, free of roots, rocks larger than ½", foreign matter, weeds, pH of 7.2 or less, and less than an electro-conductivity of 2 mmhos. Tilled 4" into existing soil to avoid soil texture issues.
- c. Soil Amendments: applied at rate of 6 cu. yd. per 1,000 sf, to minimum depth of 12".
- d. Fertilizers: slow-release, balanced homogenous fertilizer.
- e. Planting areas to be excavated to a sufficient depth to receive topsoil/soil amendments/fertilizer and to remove unsatisfactory materials.

C. Planting Area Type 1 (mixed perennial planting):

- a. 5 gal. shrubs, 3' o.c., 70% of total area.
- b. 1 gal. perennials/grasses, 14" o.c., 30% of total area.
- c. Rock mulch, granite, 3/8" minus, orange.
- d. No weed fabric.

D. Planting Area Type 2 (desert planting):

- a. 5 gal. shrubs, 3' o.c., 40% of total area.
- b. 1 gal. grasses, 14" o.c., 20% of total area.
- c. Rock mulch, granite, 3/8" minus, orange.
- d. No weed fabric.

E. Sodded Lawns: Kentucky bluegrass mix, large rolls where possible

F. Deciduous Shade Trees: 1 ½" caliper minimum, approx. 70% of total count.

G. Specimen Deciduous Shade Trees: 2 ½" caliper minimum, approx. 30% of total count.

- H. Coniferous Trees: 6' height minimum.
- I. Ornamental Trees: 1 ½" caliper minimum for single stem, 6' height minimum for multi-stem/clump.
- J. Irrigation:
 - a. Fully automatic underground system, Hunter.
 - b. Separate zones for sodded lawn and planting areas.
 - c. Controller:
 - i. Hunter ACC-D, wireless rain sensor.
 - ii. Stainless steel wall mount or pedestal depending on location.
 - iii. 1" electrical schedule 40 PVC conduit to IT room for CAT cabling for IMMS central controls with trace wire.
 - iv. All decoders to be Hunter ICD 100, single station decoders only.
 - v. Grounding/wire connectors per Hunter specs for clocks and decoders.
 - vi. 2 wire: Hunter 2 wire.
 - vii. Remotes: Hunter Roam XL.
 - d. Backflow Preventer:
 - i. Febco RP 825, sized appropriately (minimum 1").
 - ii. Pipe in/out to be threaded brass or Type K copper.
 - iii. Enclosure: VIT Products, Strong Box aluminum backflow enclosure, SBBC series. Polar Bearier slip on insulating cover.
 - e. Sleeves: 1 sleeve per pipe (lateral and mainlines), 1 sleeve for 2-wire path/trace wire, 1 extra sleeve per crossing. C 900 pipe, sized to allow pipe and couple/bell to fit.
 - f. Pipe:
 - i. Mainline: 4" and larger C 900, gasketed, brass saddle for valves/quick couplers, MJ ductile iron tees, ells, reducer fittings, mega-lug fitting restraints. 3" and smaller Schedule 80 (and fittings). 18" installed depth.
 - ii. Lateral Lines: Schedule 40, no laterals smaller than 1". 12" installed depth.
 - g. Valves:
 - i. Solenoid Valves: Hunter ICV w/ filter sentry.
 - ii. Small Isolation Valves: Upstream of solenoid valves, brass gate valve, 2" max. PVC ball valves, brass ball valves, and angle valves not allowed.

- iii. Zone Isolation Valves: Muller resilient wedge valves. Ends to be either gasketed, MJ, or flanged depending on location. 2" square head.
- h. Quick Couplers: Hunter HQ-5RC (non acme threads). Located by backflow preventer and end of mainlines. Additional quick couplers located by electric valves and spaced no farther than 400' apart.
- i. Heads & Nozzles:
 - i. Hunter MP Rotaters.
 - ii. Hunter Pro Fixed nozzles where spray nozzles are the only option.
 - iii. Hunter Pro-Spray PRS 40 (for MP and sprays).
 - iv. Hunter I-20s.
 - v. Hunter I-25s.
 - vi. Tree Bubblers: Hunter RZWS-10, 3 per tree.
 - vii. Perennial Bubblers: one 0.25 gpm bubbler per plant.
 - viii. Shrub Bubblers: two 0.25 gpm bubbler per plant.

7.3 G40 Site Electrical Utilities

Acoustic Considerations

Pertinent Criteria and Codes

Outdoor equipment is subject to Colorado Revised Statute 25-12-103 *Maximum permissible noise levels*. The Code requires noise from a residential zone to not exceed 55 dBA during daytime hours. This applies to emergency generator routine testing and maintenance.

G4090 OTHER SITE ELECTRICAL UTILITIES

A. Emergency Generator

The standby generator is located at the west end of the building; the nearest applicable property line is to the residence to the west. Manufacturer sound data should be reviewed for Code compliance. A solid wall as high as the top elevation of the generator may be required.

Project Information

G4010 ELECTRICAL DISTRIBUTION

- A. Due to the project location, the main power for the building is planned to be from the CMU Campus power distribution loop. It is anticipated that a new

transformer will be located to provide power for the building. All work that is completed on the CMU Campus power distribution loop up to the new transformer will be by CMU.

- B. The natural gas emergency generator will be located outside adjacent to the main electrical room. The generator should be located away from openings and have a minimum of 5 ft of clearance around the unit. A sound attenuating weather protective enclosure should be provided given the proximity to the building and neighboring residential zoning.
- C. A temporary docking station for a temporary generator should also be provided on the exterior of the building if the permanent backup generator fails, needs maintenance, or is not operational. This should be located where a portable generator can physically be connected to.
- D. There is no dedicated parking which serves this dormitory unit. Therefore, no electrical vehicle provisions are provided for this project.
- E. General receptacle power will be located on the exterior for maintenance and convenience purposes.

G4020 SITE LIGHTING

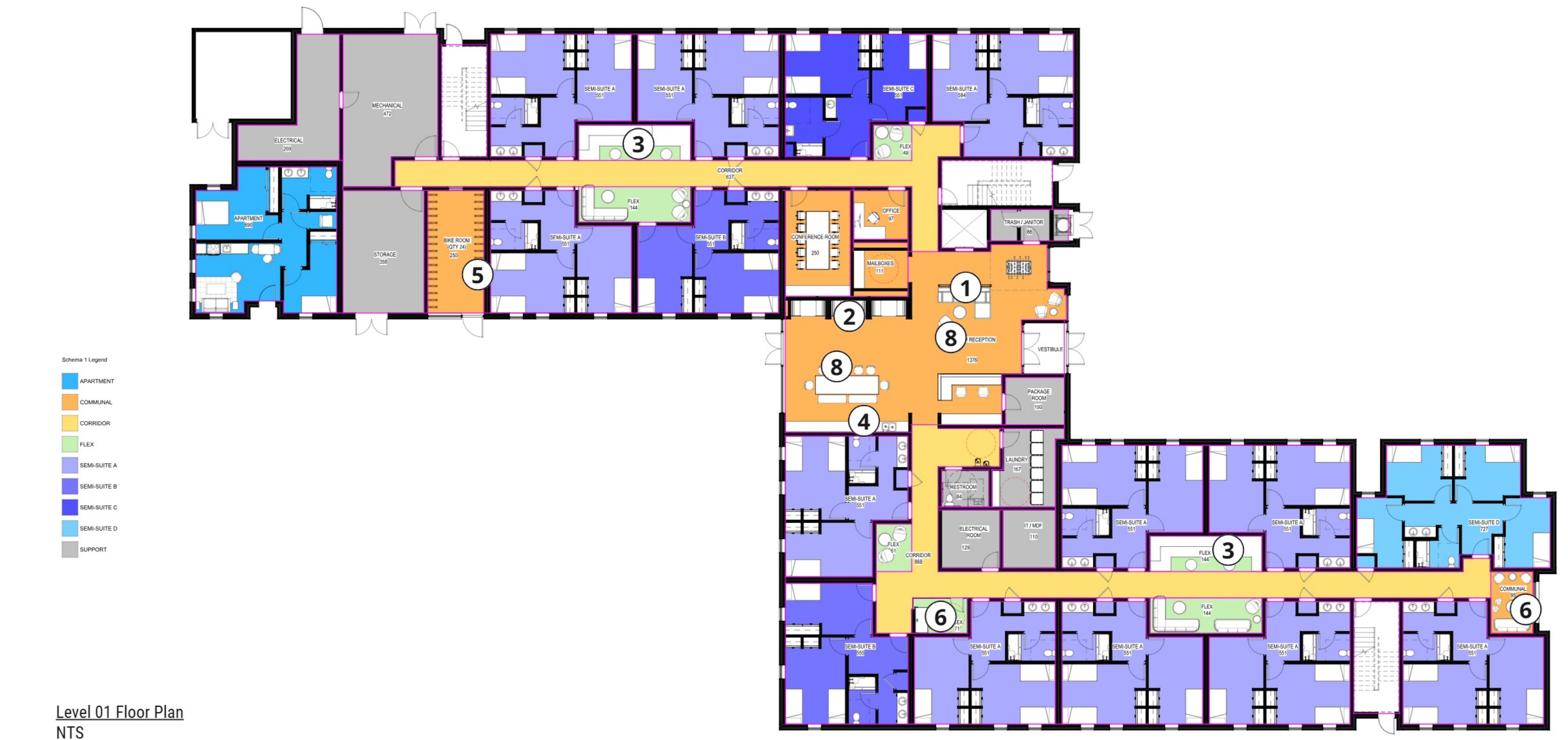
- A. Exterior lighting will be designed to the CMU Campus Standards. Building mounted general lights are planned to be LED fixtures specified by the lighting design team. Building entry locations are planned to include additional wall sconces or downlights (for canopy or overhang locations). Additional exterior lighting will be provided as necessary for pedestrian walkways, exterior steps/stairs, exterior Architectural features (sitting areas, aesthetic displays, etc.), and exterior signage.

G4030 SITE COMMUNICATIONS & SECURITY

- A. Exterior rated security cameras, wireless access points, and access control per CMU campus standards will be located along the exterior at entrances and walkways to ensure safety and connectivity across the dormitory site. Rough-in for low voltage systems will be included at locations approved by CMU and as determined during the design process, for systems not included in the low voltage design scope.

Appendix A

INTERIOR DESIGN REFERENCE MATERIAL



1 - Building Entry Lobby Feature

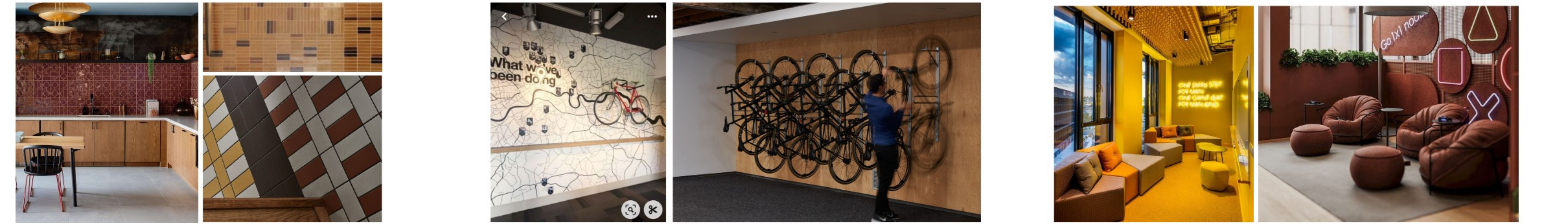
- Sculptural cut wood screen feature

2 - Kitchen Booth Seating Niches

- Inset Seating booths with accent paint and or wall graphic

3 - Built in Millwork Seating Feature

- Millwork installed stepped seating with built in tables and power access.



4 - Kitchen Millwork and Decorative Tile

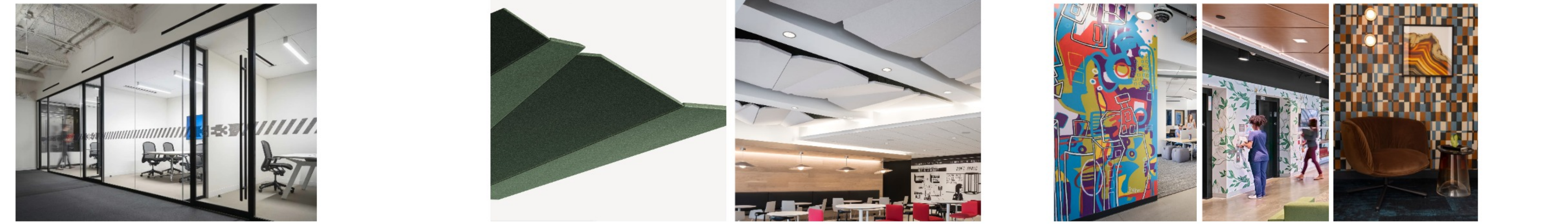
- PLam Base Cabinets, Quartz Counter and patterned accent backsplash tile above

5 - Bike Room Wall Graphic

- Custom printed vinyl wall graphic for bike room
- Wall mounter rack system

6 - Communal Lounge End Cap

- Immersive lounge area with wall graphic and accent colors, and playful seating



6 - Enclosed Break Out Flex Rooms

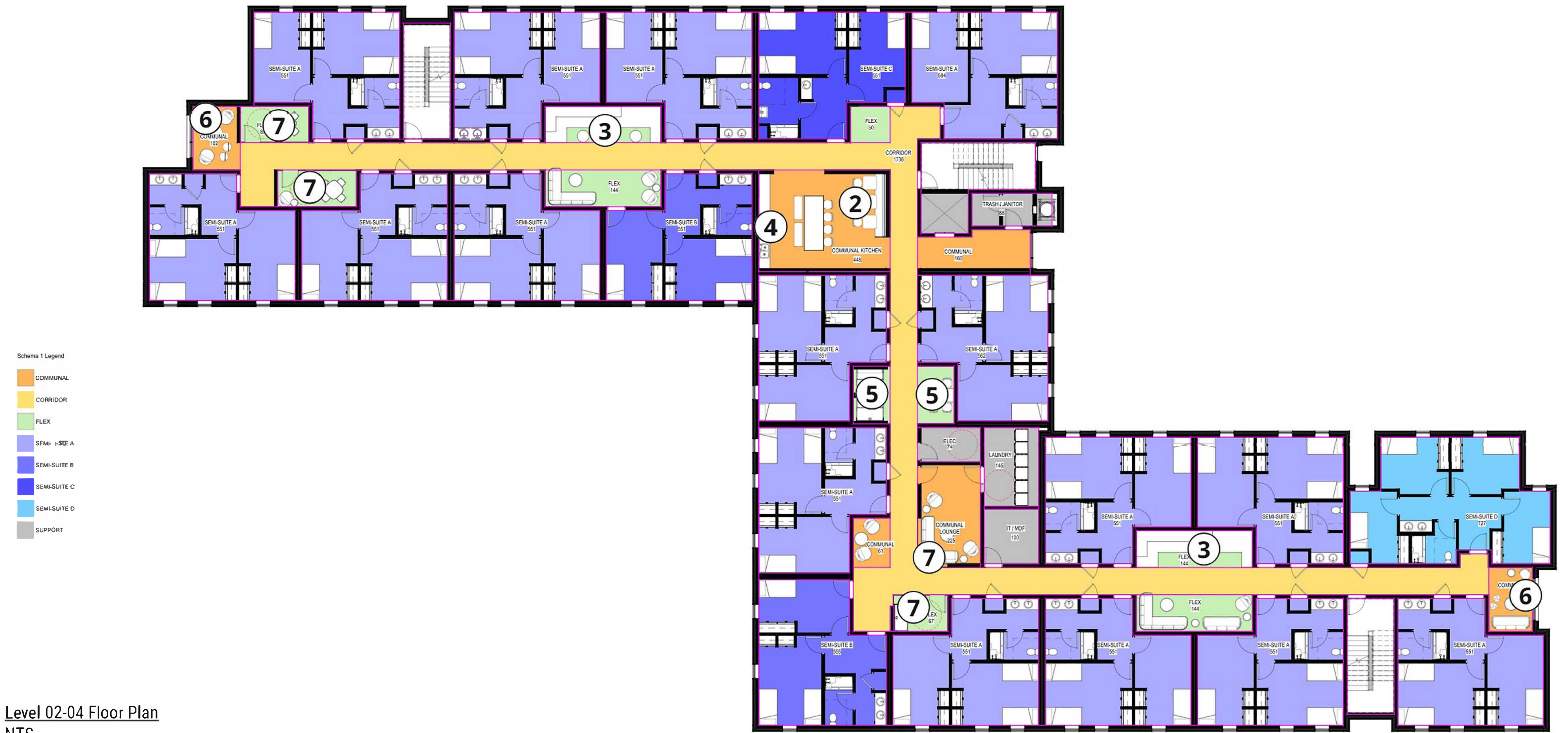
- Demountable glass partitions with integrated doors and applied privacy graphics
- Corner glazing conditions where applicable

8 - Decorative Acoustic Ceiling Clouds Over Kitchen and Lounge

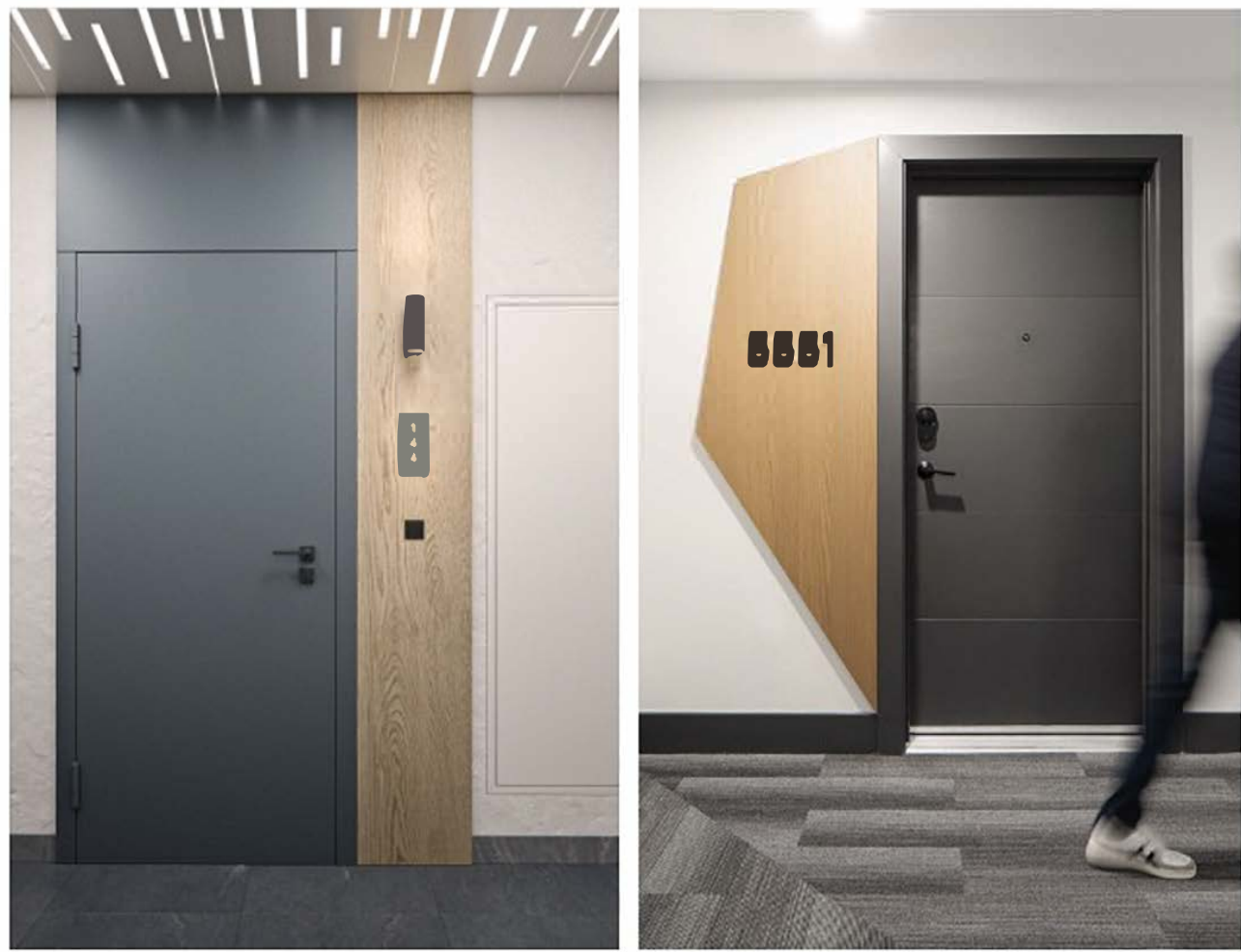
- Floating ceiling cloud within ACT and Gyp areas.
- BOD: Turf Plate Acoustic Ceiling Cloud

Vinyl Wall Graphics - Typical Quality

- Typical Quality of Applied custom vinyl wall graphics artwork TBD, BOD: Dreamscape



Level 02-04 Floor Plan
NTS



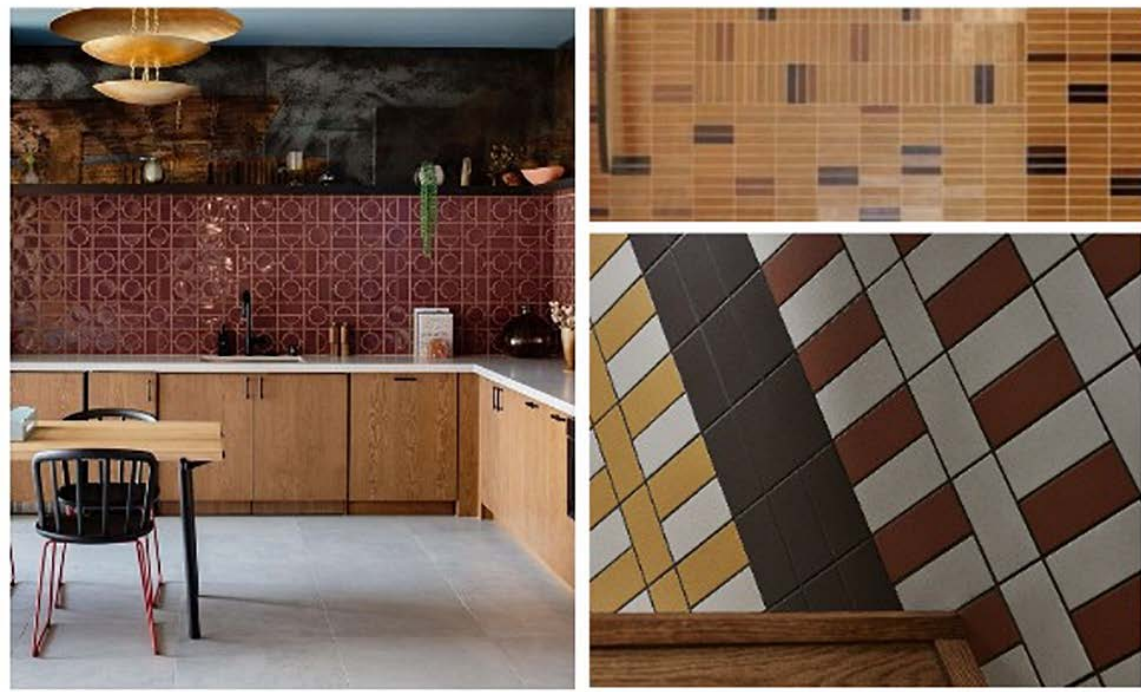
1 - TYP Resident Unit Entry Signs
• Feature sign for all unit doors



2 - Kitchen Banquette Seating
• Built in dining seating zones



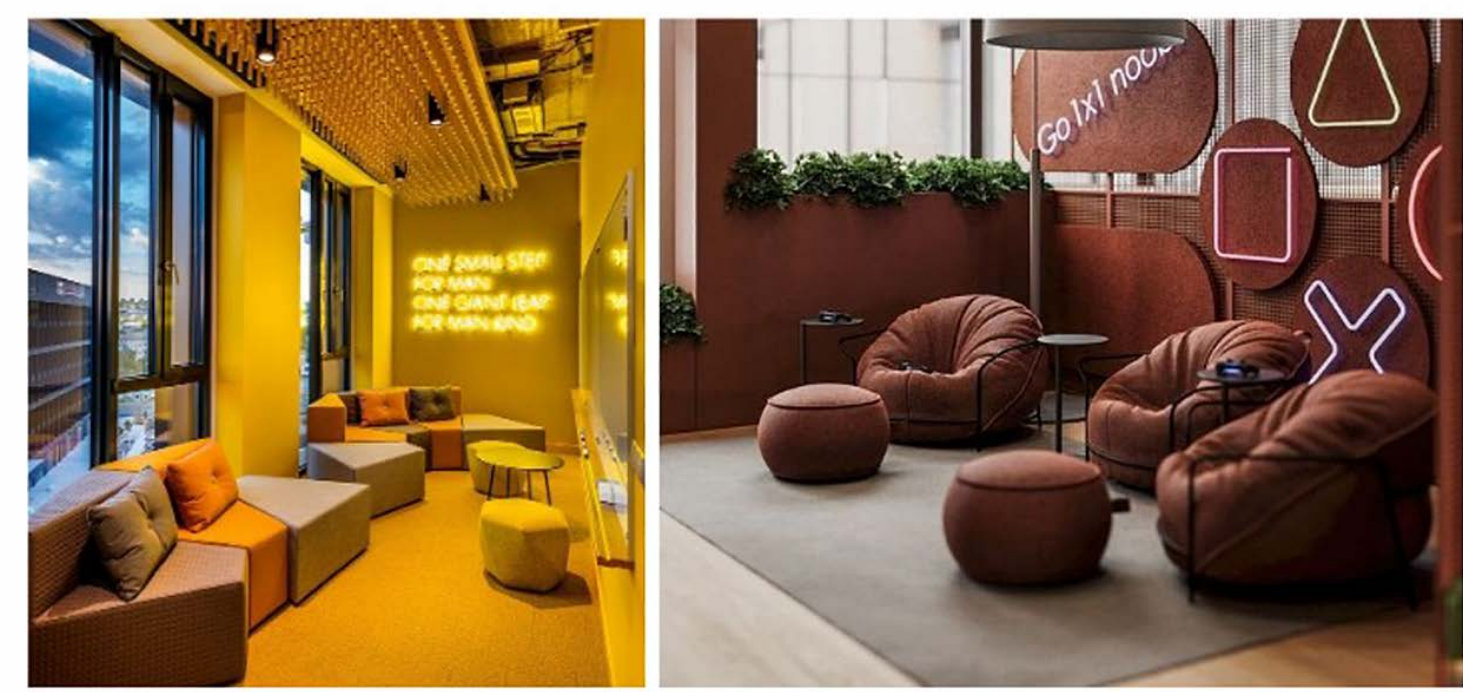
3 - Built in Millwork Seating Feature
• Millwork installed stepped seating with built in tables and power access.



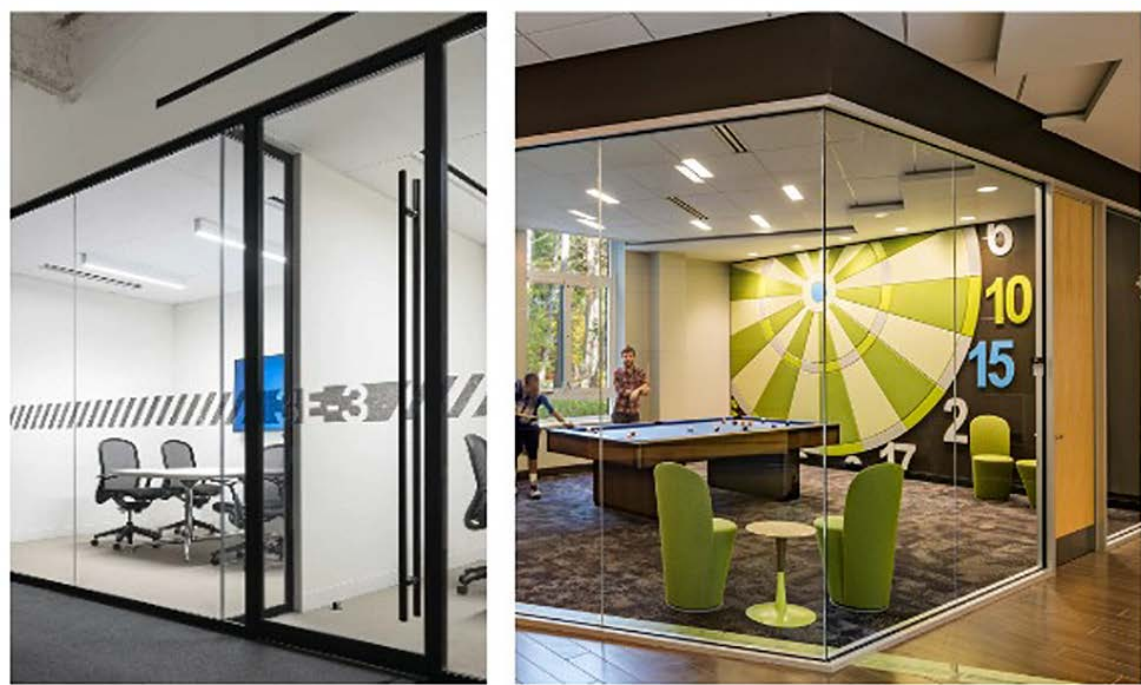
4 - Kitchen Millwork and Decorative Tile
• Plam Base Cabinets, Quartz Counter and patterned accent backsplash tile above



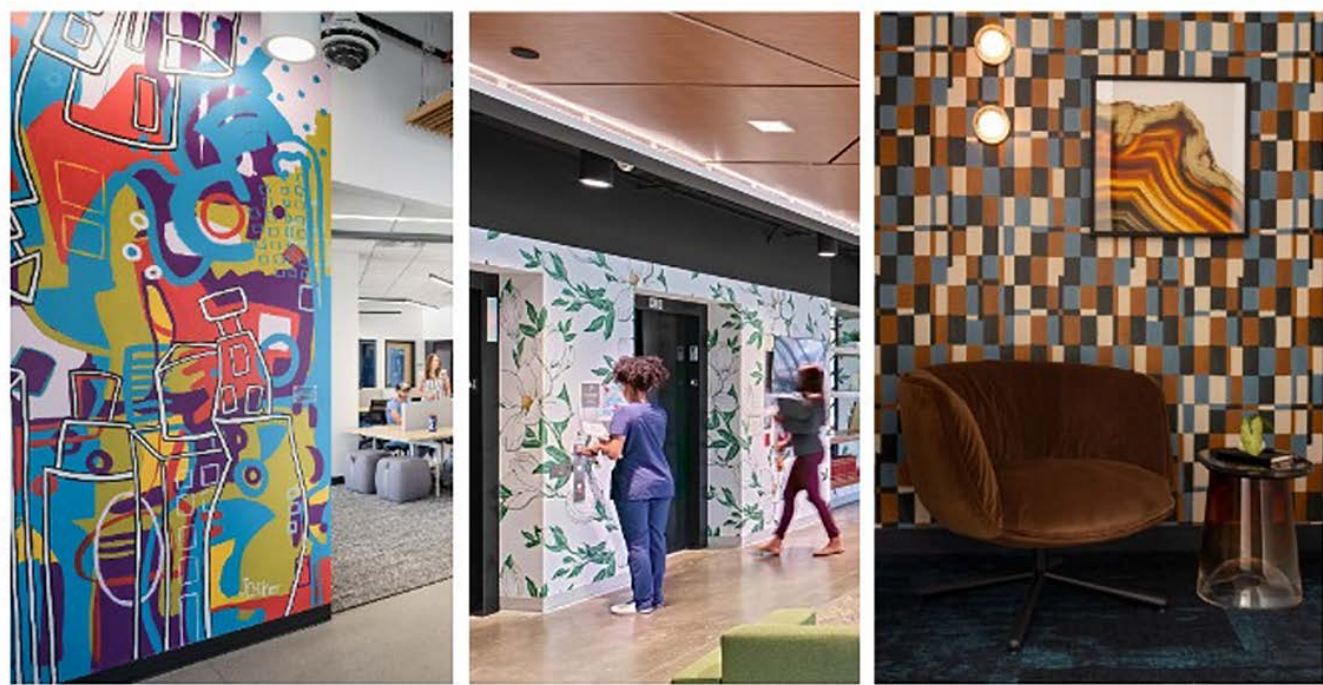
5 - Open Break out Zones
• Built in Seating niches for study and collaboration



6 - Communal Lounge End Cap
• more immersive lounge area with wall graphic and accent colors, and playful seating



7 - Enclosed Break Out Flex Rooms
• Demountable glass partitions with integrated doors and applied privacy graphics
• Corner glazing conditions where applicable



8- Vinyl Wall Graphics - Typical Quality
• Typical Quality of Applied custom vinyl wall graphics artwork TBD, BOD: Dreamscape



9- Unit Mudroom millwork
• Per unit include one item of millwork to function as mudroom style storage and seating

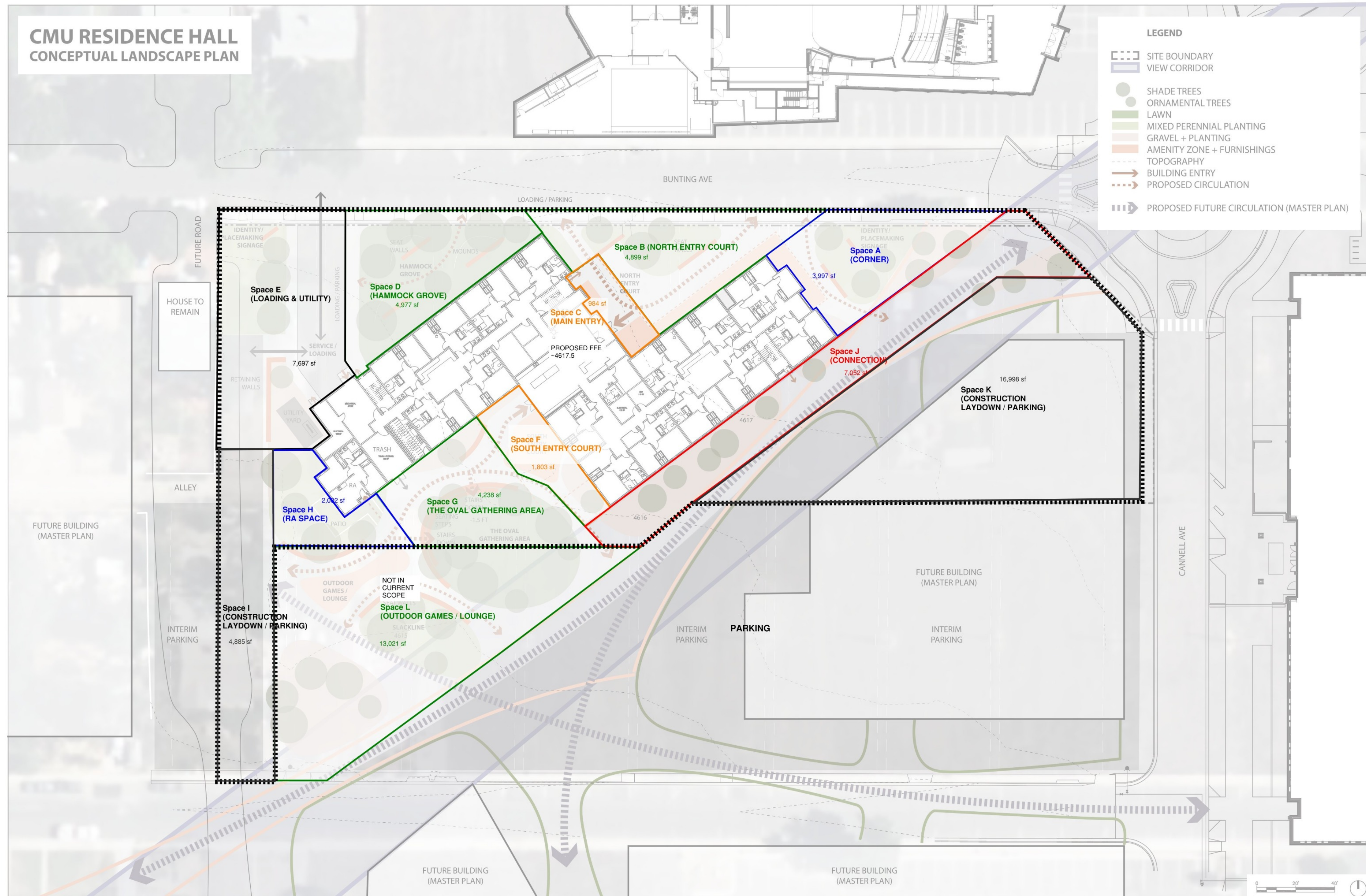
Appendix B

LANDSCAPE DESIGN REFERENCE MATERIAL

LANDSCAPE CONCEPT DESIGN



LANDSCAPE CONCEPT DESIGN



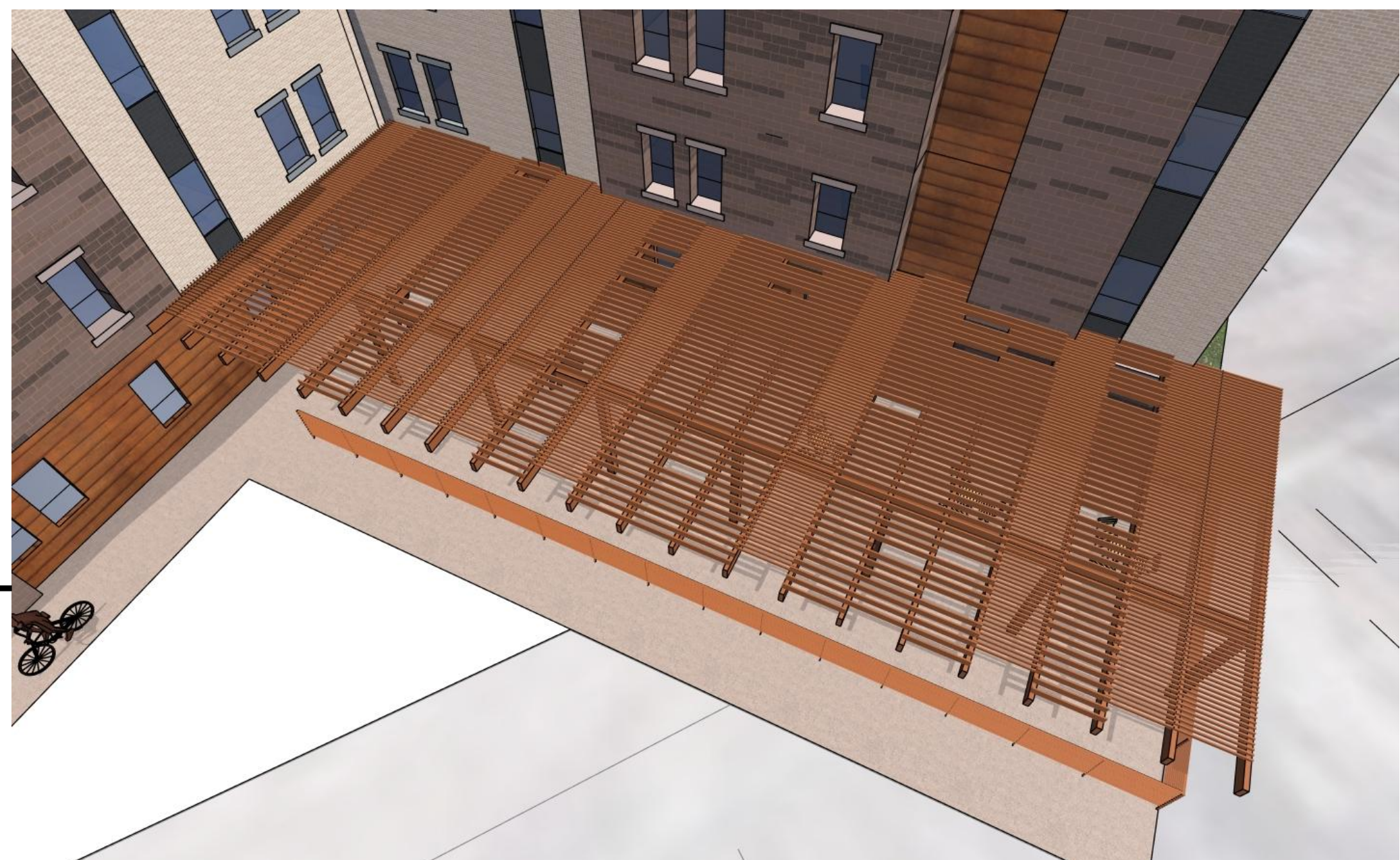
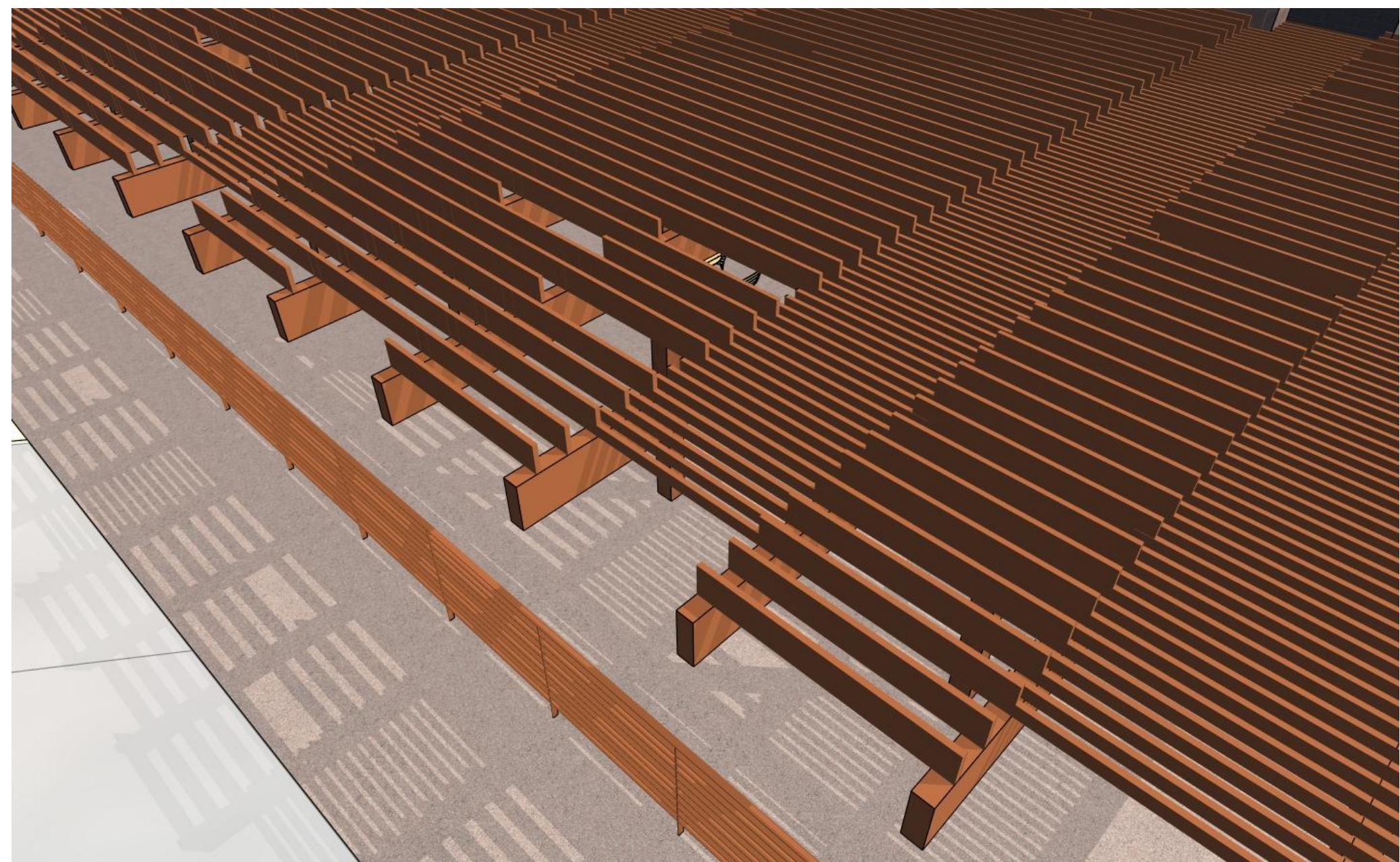
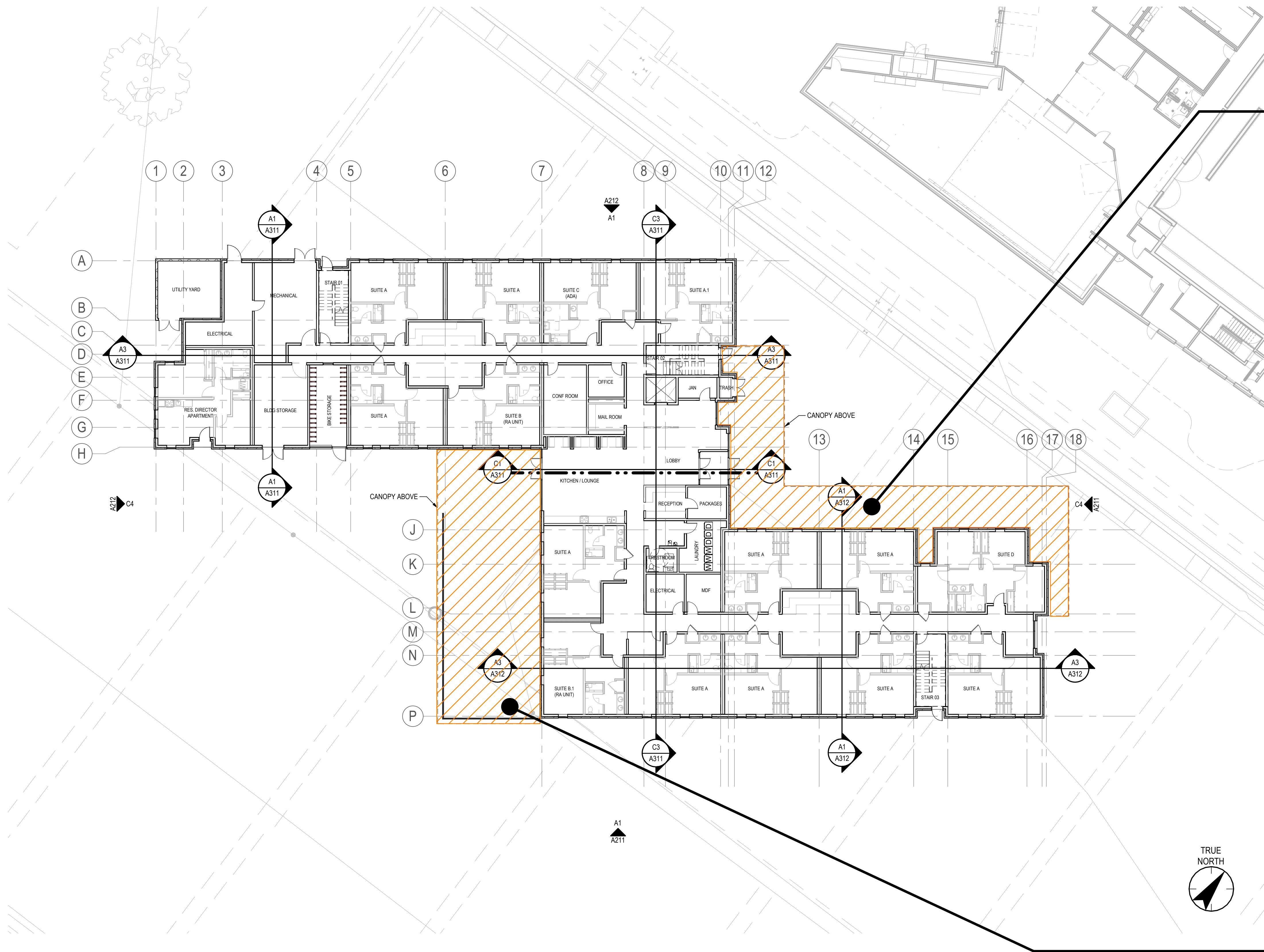
LANDSCAPE CONCEPT | EXPERIENCE



A social gathering space for everyday use-
Respite, play, and connection

- Of the place
- Contiguous indoor/outdoor spaces
- Seamlessly connects campus
- Inviting and accessible for all students
- Builds upon campus master plan





B2 CONSTRUCTION PLAN - LEVEL 1 - OVERALL
A110A 1/16" = 1'-0"