Food Science & Technology

BREWERY

PROGRAM REQUIREMENTS

Net sq. ft.: 2,400 *Assignable sq. ft.:* 2,400 *Number of rooms:* 1

Program function: The Brewery provides space for a 1.5 barrel pilot beer brewing facility. The facility is used for both research and teaching, including extension classes. There may be up to two brewing sessions in one day and an average of 12 brewing sessions per year. Existing brewing equipment will be relocated from the existing facilty in Cruess Hall.

Adjacencies: Required: The Brewery shall be immediately adjacent to and continuously visible from the Corridor through a public viewing window. The Brewery shall be immediately adjacent to and accessible from the Brewery Receiving Area. The entrance to the Brewery shall be immediately adjacent or very close to the Brewery & Food Lab Main Entrance.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person to small classes or tours.

Typical # of occupants: 2 *Maximum # of occupants:* 15

Major equipment: Brewhouse and fermentation tanks. See "Equipment List Sorted by Room" for complete list.

Process operations: The majority of process loads are related to large scale fermentation operations involving bio-chemical heat generation plus mechanical heating and/or cooling. Fermentation operations occur at intermittent periods throughout the year, typically about 9 times during the spring quarter and about 3 times at other seasons. Other process loads include heat from the intermittent operation of mobile pumps, bottling machines, crowing machines. Cleaning of floors, walls and tanks also introduces intermittent heat loads from hot water.

Audio/visual equipment: Marker Board, 4' x 8' (1). Public address system with cordless microphones (2).

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Bamforth & Candace Wallin

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Provide visitor assembly area within the room for approximately 15 persons adjacent to the corridor entry door. Minimum 15 feet work area between brewhouse equipment and Brewery Fermentation Tanks. Minimum 10 feet clearance adjacent to brewhouse equipment viewing platform. Large open work area adjacent to crowning and bottling equipment.

Ceiling clearances: 18 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

BREWERY

Floors:	Floors shall withstand forklift traffic and have resistance to impacts, to slippage when wet, and to chemicals including castic cleaners. Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete or industrial grade quarry tile.
Floors base:	Provide coved base to 6 inches minimum above floor with materials integral to the floor.
Walls:	All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.
Ceilings:	Hard, smooth, washable, light color, non-organic materials. Open trusses acceptable.
Doors:	Insulated galvanized steel rollup door (120"w x 120"h) from Brewery Receiving Area (1); glazed entry door from Corridor (1).
Casework:	None.
Acoustics:	To the extent practical without compromising cleanability and durability, utilize finishes and materials that reduce acoustic reverberation, absorb equipment noise and enhance a classroom teaching environment. HVAC air noise shall not impair normal conversation.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Extensive interior windows required to view into Brewery from the Corridor. Indirect exterior views out of the Brewery through the Corridor highly desirable. High exterior windows allowed but not required; low exterior windows not permitted. Direct sun not permitted.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	50 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Dual level switching. Photo sensor to switch electric lights off if daylight meets footcandle criteria. Manual on/off. Automatic time clock off.

POWER & LOW VOLTAGE SYSTEMS

BREWERY

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	Control wiring from central processing unit to all brewery equipment.
Telephone outlets:	(1) outlet near main entry door.
Data outlets:	(4) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	See equipment requirements.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 62 min. to 82 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Four air changes per hour (to be verified).
Pressurization:	Positive to adjacent rooms.
C02 exhaust:	Sensors, warning lights and exhaust fans required to maintain CO2 levels below Federal/OSHA standards of 5,000 ppm average over 8 hours and a peak of not more than 30,000 ppm over 15 minutes.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	Canopy hoods and dedicated direct vents required for the brew kettle and the cooker. See equipment requirements for all requirements.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(2) hand washing sinks near the corridor door and the receiving door; (2) hose stations on opposite walls; (1) large 3 compartment service sink provided by University with all fittings provided by Contractor.
Eyewashes/showers:	Provide combination emergency eyewash and shower within 100 feet of any location within the room - may be in corridor.
Floor drains:	Provide continuous stainless steel trench drain, 12 inches wide, with completely removeable grate section rated for forklift traffic. Drain lines from the Brewery shall be dedicated and shall not connect to a common sanitary sewer main until outside of the building perimeter line.

BREWERY

Grey water systems:	None.
Domestic water:	Cold and hot to the hand wash sinks; cold and hot to the shower/eyewash.
Industrial water:	Provide hot and cold industrial water to two hose stations with a quick disconnect hose bib (to be used for initial washdown).
Treated water:	Provide deionized water to the service sink, the hose stations, the brewhouse and the fermentation tank area. Approximately 300 gallons of deionized water are required per brewing session and there may be up to two brewing sessions per day.
Industrial steam:	Provide industrial steam at 25 to 30 psi, not exceeding 50 psi - see equipment requirements.
Culinary steam:	None.
Compressed air:	Provide compressed air at 2 locations at 50 psi or higher.
Natural gas:	None.
Nitrogen:	None.
Glycol:	Provide glycol cooling and heating piping for the fermentation tanks.
Clean in Place:	See equipment requirements for CIP for tanks. Information to be provided by Michael Chase at Anheuser Busch.
Other special piping:	Provide racks for 6 cylinders for gases such as carbon dioxide, oxygen, high pressure air and nitrogen. Distribution piping is not required.
Metering:	Configure piping so that process loads for the brewery could be metered in the future, separate from other building functions, including steam, industrial water, treated water and waste water.

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BREWERY FREEZER

PROGRAM REQUIREMENTS

Net sq. ft.:	250	*Assignable sq. ft.:*	250	*Number of rooms:*	1

Program function: The Brewery Freezer provides space for aging brews from the Brewery.

Adjacencies: Required: The Brewery Freezer shall be immediately adjacent to and accessible from the Brewery. Preferred: The Brewery Freezer should be as close as possible to the Brewery Fermentation Tanks in the Brewery.

Hours of occupancy: Infrequent access for short durations throughout the entire year, Monday through Friday, 8am to 6pm, except holidays.

Typical # of occupants: 0 *Maximum # of occupants:* 0

Major equipment: None.

Process operations: Process loads are almost entirely generated by the requirement to maintain temperature at all times throughout the year. The insertion of liquids at room temperature generates transitory additional cooling requirements.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Bamforth & Candace Wallin

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 8 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic and have resistance to impacts, to slippage when wet, and to chemicals including castic cleaners. Slope 1/4" per foot toward door; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: Stainless steel.

Ceilings: Stainless steel.

Doors: Stainless steel (48"w x 84"h) to General Food Processing (1).

Casework: None.

BREWERY FREEZER

Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Small vision panel required in door. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36". Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	None (to be confirmed).
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	None.
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(1) outlet with 2 cables each.
Security systems:	None.
Equipment alarms:	Room temperature alarm connected to central campus building information system.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 25 min. to 32 max., controlled by user setpoint anywhere within range, +/- 1.
Humidity control:	Uncontrolled.
Ventilation rate:	Minimum allowed by code.
Pressurization:	None.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).

BREWERY FREEZER

Chemical hoods: None.

Equipment exhaust: None.

Controls: Dedicated to individual room and user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures: None.

Eyewashes/showers: None.

Floor drains: None. Slope floor to drain towards door.

Grey water systems: None.

Domestic water: None.

Industrial water: None.

Treated water: None.

Industrial steam: None.

Culinary steam: None.

Compressed air: None.

Natural gas: None.

Nitrogen: None.

Glycol: None.

Clean in Place: None.

Other special piping: None.

Metering: See Brewery.

Food Science & Technology

BREWERY GLYCOL & C.I.P. EQUIPMENT ROOM

PROGRAM REQUIREMENTS

Net sq. ft.: 200 *Assignable sq. ft.:* 200 *Number of rooms:* 1

Program function: The Glycol Equipment Room shall house glycol cooling equipment used to cool the Brewery Fermentation Tanks in the Brewery. Access is required for outside air. Access and appropriate clearances are required for periodic maintenance. This room does not need to be a dedicated room and may be combined with other mechanical areas and functions. Provide space for the storage of cleaning chemicals, including caustic soda solution, food grade phosphoric acid, a quaternary ammonium sanitizer and a chorinated floor/drain cleaner.

Adjacencies: Preferred: The Glycol & C.I.P. Equipment Room should be located as close as possible to the Brewery Fermentation Tanks to minimize piping, pumping energy and thermal loss.

Hours of occupancy: Variable durations for infrequent maintenance throughout entire year, Monday through Friday, 8am to 6pm, except holidays.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Glycol cooling system and clean-in-place system for brewery fermenters. See "Equipment List Sorted by Room" for complete list.

Process operations:

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Bamforth & Candace Wallin

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width or greater if required for adequate equipment clearance.

Ceiling clearances: 10 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Floors shall withstand forklift traffic and have resistance to impacts, to slippage when wet, and to chemicals including castic cleaners. Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: No requirements.

Ceilings: No requirements.

BREWERY GLYCOL & C.I.P. EQUIPMENT ROOM

Doors:	Galvanized steel double door, 72"w x 84"h (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Not permitted.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	NONE?
Telephone outlets:	None.
Data outlets:	(1) outlet with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: Uncontrolled.
Humidity control:	Uncontrolled.
Ventilation rate:	As required for equipment cooling.
Pressurization:	None.
C02 exhaust:	None.

BREWERY GLYCOL & C.I.P. EQUIPMENT ROOM

Supply air filtration:	None.
Chemical hoods:	None.
Equipment exhaust:	See equipment requirements.
Controls:	None.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	See equipment requirements.
Eyewashes/showers:	None.
Floor drains:	Area drain. Drain lines from the Brewery Glycol & Equipment Room shall be dedicated and shall not connect to a common sanitary sewer main until outside of the building perimeter line.
Grey water systems:	None.
Domestic water:	See equipment requirements.
Industrial water:	See equipment requirements.
Treated water:	See equipment requirements.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	See equipment requirements.
Other special piping:	None.
Metering:	See Brewery.

Food Science & Technology

BREWERY MILLING & DRY STORAGE ROOM

PROGRAM REQUIREMENTS

Net sq. ft.: 500 *Assignable sq. ft.:* 500 *Number of rooms:* 1

Program function: The Brewery Milling & Dry Storage Room provides space for the malt mill, dry brewing ingredients and miscellaneous equipment storage for the Brewery. Special code requirements related to the creation of air-borne dust during the milling operation may apply.

Adjacencies: Required: The Milling & Dry Storage Room shall be immediately adjacent to the Brewery. The malt mill shall be as close to where the milled malt is placed into Mash Tank #1. The malt mill shall be immediately adjacent to the dry bin storage containers. The malt mill shall be immediately adjacent to and visible from the Corridor through a public viewing window.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person to small classes and tour groups.

Typical # of occupants: 1 *Maximum # of occupants:* 6

Major equipment: Malt mill; large and small sheet filters; Carlsberg flask and rolling cart; portable pumps; gas cylinder stands for oxygen/nitrogen/compressed air; counterflow wort chiller; shop dry vacuum; Opteck-Danulet turbidmeter; Metler-Toledo dissolved oxygen meter; upright freezer; brewery spare parts; 20 to 32 gallon malt storage bins (20); 32 gallon compost bin (1). See "Equipment List Sorted by Room" for complete list.

Process operations: The milling of malted barley occurs approximately 12 times per year and takes approximately 5 minutes to mill 50 to 70 pounds.

Audio/visual equipment: None.

Furniture: File cabinet (1); spare parts cabinet (1); storage shelving for brewery supplies (30 lineal feet).

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Bamforth & Candace Wallin

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 10 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

BREWERY MILLING & DRY STORAGE ROOM

Walls:	Gypsum wallboard.
Ceilings:	Hard, smooth, washable, light color, non-organic materials.
Doors:	Galvanized steel door, 42"w x 84"h from Brewery (2).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Interior viewing window from public Corridor desirable but not required. Exterior window not permitted.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	None.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide with special precautions for dust from milling operations.

BREWERY MILLING & DRY STORAGE ROOM

Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 64 min. to 82 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	As required by code for occasional milling operations.
Pressurization:	Negative to adjoining rooms.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	See equipment requirements.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	None.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	See Brewery.

Food Science & Technology

BREWERY OFFICE

PROGRAM REQUIREMENTS

Net sq. ft.:	130	*Assignable sq. ft.:*	130	*Number of rooms:*	1

Program function: The Brewery Office provides office space for the brewery manager, a write-up space for researchers and records storage for the Brewery.

Adjacencies: Required: The Brewery Office shall be immediately adjacent to and accessible from the Brewery and shall be located near the entry door to the Brewery from the Corridor.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person to up to 3 persons.

Typical # of occupants: 1 *Maximum # of occupants:* 3

Major equipment: None.

Process operations: None.

Audio/visual equipment: Marker Board, 4' x 4' (1).

Furniture: Desk with Return (1), Desk Chair (1), Stacking Chair (2), File Cabinet (2), Bookshelf (144"long x 72"h).

Signage: Campus standard room sign.

Program contact: Charles Bamforth

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum or vinyl composition tile.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance.

Doors: Galvanized steel door (36"w x 84"h) to Brewery.

Casework: None.

Acoustics: HVAC air noise shall not impair normal conversation.

Sound transmission: Walls and ceilings shall be constructed to prevent audible transmission of conversation or equipment noise from adjoining rooms.

FENESTRATION, SKYLIGHTS & LIGHTING

BREWERY OFFICE

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	View to Brewery preferred. Exterior operable window with limited opening area preferred.
Window treatment:	Shading for sun control as appropriate.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(2) outlets.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 68 min. to 76 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.
C02 exhaust:	None.

BREWERY OFFICE

Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Zone may be combined with other offices.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	None.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	None.

Food Science & Technology

FOOD PROCESSING COOLER #1

PROGRAM REQUIREMENTS

Net sq. ft.: 300 *Assignable sq. ft.:* 300 *Number of rooms:* 1

Program function: The Food Processing Cooler #1 provides low temperature storage of ingredients and products for the General Processing Facility. Codes applying to this room include, but are not limited to, the Code of Federal Regulations, Title 21, Chapter 1, Part 110 "Current Good Manufacturing Practice in Manufacturing, Packing, or Hold Human Food" and the State of California Health & Safety Code, Part 6, Article 1 Food Processing Establishments, Section 111950-112055 "The California Food Sanitation Act".

Adjacencies: Required: The Food Processing Cooler #1 shall be immediately adacent to and accessible from General Food Processing and Food Processing Equipment Storage Area.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied but may have up to 2 persons for short durations.

Typical # of occupants: 0 *Maximum # of occupants:* 1

Major equipment: None.

Process operations:

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Molly Nolan

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 15 feet nominal width.

Ceiling clearances: 10 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic and have resistance to impacts, to slippage when wet, and to chemicals including castic cleaners. Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 12 inches minimum above floor with materials integral to the floor.

Walls: Stainless steel.

FOOD PROCESSING COOLER #1

Ceilings:	Stainless steel.
Doors:	Stainless steel door, 60"w x 96"h, from General Food Processing (1); stainless steel sliding sealed door, 96"w x 108", from Food Processing Receiving Area (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Small vision panel required in door. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36". Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	None.
Security systems:	None.
Equipment alarms:	Room temperature alarm connected to central campus building information system.
Access control systems:	None.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 34 min. to 40 max., controlled by user setpoint anywhere within range, +/- 1.
Humidity control:	Uncontrolled.
Ventilation rate:	Minimum allowed by code.

FOOD PROCESSING COOLER #1

Pressurization:	None.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room and user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib.
Eyewashes/showers:	None.
Floor drains:	Area drain (2). Drain lines from the Food Processing Cooler #1, Food Processing Cooler #2, Food Processing Freezer and General Food Processing may be combined with each other but shall not be combined with any other drains and shall not connect to a common sanitary sewer main until outside of the building perimeter line.
Grey water systems:	None.
Domestic water:	Cold to hose bib.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Food Science & Technology

FOOD PROCESSING COOLER #2

PROGRAM REQUIREMENTS

Net sq. ft.: 300 *Assignable sq. ft.:* 300 *Number of rooms:* 1

Program function: The Food Processing Cooler #2 provides low temperature storage of ingredients and products for the General Processing Facility. Codes applying to this room include, but are not limited to, the Code of Federal Regulations, Title 21, Chapter 1, Part 110 "Current Good Manufacturing Practice in Manufacturing, Packing, or Hold Human Food" and the State of California Health & Safety Code, Part 6, Article 1 Food Processing Establishments, Section 111950-112055 "The California Food Sanitation Act".

Adjacencies: Required: The Food Processing Cooler shall be immediately adacent to and accessible from General Food Processing.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied but may have up to 2 persons for short durations.

Typical # of occupants: 0 *Maximum # of occupants:* 1

Major equipment: None.

Process operations:

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Molly Nolan

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic and have resistance to impacts, to slippage when wet, and to chemicals including castic cleaners. Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: Stainless steel.

Ceilings: Stainless steel.

FOOD PROCESSING COOLER #2

Doors:	Stainless steel door, 60"w x 96"h, from General Food Processing (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Small vision panel required in door. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36". Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	None.
Security systems:	None.
Equipment alarms:	Room temperature alarm connected to central campus building information system.
Access control systems:	None.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 34 min. to 40 max., controlled by user setpoint anywhere within range, +/- 1.
Humidity control:	Uncontrolled.
Ventilation rate:	Minimum allowed by code.
Pressurization:	None.

FOOD PROCESSING COOLER #2

C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room and user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib.
Eyewashes/showers:	None.
Floor drains:	Area drain (2). Drain lines from the Food Processing Cooler #1, Food Processing Cooler #2, Food Processing Freezer and General Food Processing may be combined with each other but shall not be combined with any other drains and shall not connect to a common sanitary sewer main until outside of the building perimeter line.
Grey water systems:	None.
Domestic water:	Cold to hose bib.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Food Science & Technology

FOOD PROCESSING EQUIPMENT STORAGE AREA

PROGRAM REQUIREMENTS

Net sq. ft.: 800 *Assignable sq. ft.:* 800 *Number of rooms:* 1

Program function: The Food Processing Equipment Storage provides protected but unconditioned space for the storage of equipment and materials used infrequently or seasonally in the General Food Processing Facility, including small equipment (pipes, pumps, mixers), packaging materials (cans, plastic, cardboard), a fork lift and a pallette jack. Codes applying to this room include, but are not limited to, the Code of Federal Regulations, Title 21, Chapter 1, Part 110 "Current Good Manufacturing Practice in Manufacturing, Packing, or Hold Human Food" and the State of California Health & Safety Code, Part 6, Article 1 Food Processing Establishments, Section 111950-112055 "The California Food Sanitation Act".

Adjacencies: Required: Food Processing Equipment Storage Area shall be immediately adjacent to and directly accessible from General Food Processing, the Food Processing Cooler #1 and the Service Road.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Large and small food processing equipment typically used in General Food Processing but stored in Food Processing Equipment Storage. Also tool storage in a locked cage area and chemical dispensing in a locked cage area. See "Equipment List Sorted by Room" for complete list.

Process operations: None.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Molly Nolan

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width.

Ceiling clearances: 16 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: Provide chain link cage and locking gate for tool storage, approximately 10 feet wide by 20 feet long. Provide chain link cage and locking gate for chemical storage, approximately 5 feet wide by 5 feet long.

FOOD PROCESSING EQUIPMENT STORAGE AREA

Ceilings:	No requirements.
Doors:	Insulated galvanized steel rollup door, 144"w x 144"h, from Food Processing Receiving Area (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Not permitted.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	30 footcandles at +36" in high level position. 1.0 watts/sf maximum. Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Manual on/off. Automatic time clock off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Card key access from exterior.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

FOOD PROCESSING EQUIPMENT STORAGE AREA

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: Uncontrolled.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.
C02 exhaust:	None.
Supply air filtration:	None.
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	None.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) Hose station.
Eyewashes/showers:	None.
Floor drains:	Area drain (2).
Grey water systems:	None.
Domestic water:	None.
Industrial water:	Cold to hose station.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	3 drops, including one in the tool storage area.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	None.

Food Science & Technology

FOOD PROCESSING FREEZER #1

PROGRAM REQUIREMENTS

Net sq. ft.: 300 *Assignable sq. ft.:* 300 *Number of rooms:* 1

Program function: The Food Processing Freezer #1 provides below freezing temperature storage of ingredients and products for the General Processing Facility. Codes applying to this room include, but are not limited to, the Code of Federal Regulations, Title 21, Chapter 1, Part 110 "Current Good Manufacturing Practice in Manufacturing, Packing, or Hold Human Food" and the State of California Health & Safety Code, Part 6, Article 1 Food Processing Establishments, Section 111950-112055 "The California Food Sanitation Act".

Adjacencies: Required: The Food Processing Freezer #1 shall be immediately adacent to and accessible from General Food Processing. The Food Processing Freezer #1 shall be close to the door to Food Processing Equipment Storage Area.

Hours of occupancy: Infrequent access for short durations throughout the entire year, Monday through Friday, 8am to 6pm, except holidays.

Typical # of occupants: 0 *Maximum # of occupants:* 0

Major equipment: None.

Process operations:

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Molly Nolan

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic and have resistance to impacts, to slippage when wet, and to chemicals including castic cleaners. Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: Stainless steel.

Ceilings: Stainless steel.

FOOD PROCESSING FREEZER #1

Doors:	Stainless steel, 60"w x 96"h, from General Food Processing (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Small vision panel required in door. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36". 1.0 watts/sf maximum. Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	None.
Security systems:	None.
Equipment alarms:	Room temperature alarm connected to central campus building information system.
Access control systems:	None.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: -18 min. to -3 max., controlled by user setpoint anywhere within range, +/- 1.
Humidity control:	Uncontrolled.
Ventilation rate:	Minimum allowed by code.
Pressurization:	None.

FOOD PROCESSING FREEZER #1

C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room and user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	None.
Eyewashes/showers:	None.
Floor drains:	Area drains (2). Drain lines from the Food Processing Cooler #1, Food Processing Cooler #2, Food Processing Freezer and General Food Processing may be combined with each other but shall not be combined with any other drains and shall not connect to a common sanitary sewer main until outside of the building perimeter line.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Food Science & Technology

FOOD PROCESSING OFFICE

PROGRAM REQUIREMENTS

Net sq. ft.:	130	*Assignable sq. ft.:*	130	*Number of rooms:*	1

Program function: These Food Processing offices provide office space the food pilot plant manager, write-up space for researchers and students and records storage for General Food Processing.

Adjacencies: Required: The Food Processing Office shall be immediately adjacent to and accessible from the Corridor. The Food Processing Office shall have visual contact with General Food Processing.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person up to 3 persons.

Typical # of occupants: 1 *Maximum # of occupants:* 3

Major equipment: None.

Process operations: None.

Audio/visual equipment: Marker Board, 4' x 4' (1).

Furniture: Desk with Return (1), Desk Chair (1), Stacking Chair (2), File Cabinet (2), Bookshelf (144"long x 72"h).

Signage:

Program contact: Molly Nolan

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 8 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum or vinyl composition tile.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance.

Doors: Wood door, 36"w x 84"h, from Corridor (1) or Galvanized steel door, 36"w x 84"h, from General Food Processing (1).

Casework: None.

Acoustics: HVAC air noise shall not impair normal conversation.

Sound transmission: Walls and ceilings shall be constructed to prevent audible transmission of conversation

or equipment noise from adjoining rooms.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Interior window viewing into General Food Processing preferred. Exterior operable window with limited opening area preferred but not required.
Window treatment:	Shading for sun control as appropriate.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(2) outlets.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 68 min. to 76 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.

FOOD PROCESSING OFFICE

Pressurization:	None.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Zone may be combined with other offices.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	None.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	None.

Food Science & Technology

FOOD SCIENCE ANALYTICAL LAB

PROGRAM REQUIREMENTS

Net sq. ft.: 600 *Assignable sq. ft.:* 600 *Number of rooms:* 1

Program function: The Food Science Analytical Lab provides a laboratory facility to analyze products from the Brewery, Dairy Innovations and General Food Processing. The facility includes a chemical fume hood. Typical uses include tomato evaluation.

Adjacencies: Required: The Food Science Laboratory shall be near to but not directly accessible from the Brewery, General Food Processing and the Milk Processing Teaching & Research Lab. Preferred: The Food Science Laboratory should be immediately adjacent to and visible from the Corridor through a public viewing window.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied up to 5 persons.

Typical # of occupants: 1 *Maximum # of occupants:* 4

Major equipment: Benchtop analytical equipment and possibly a refrigerator and/or freezer. See "Equipment List Sorted by Room" for complete list.

Process operations:

Audio/visual equipment: Marker Board, 4' x 4' (1).

Furniture: Laboratory Stool (3).

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Bamforth, Candace Wallin & Diane Barrett

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 21 feet actual width. Minimum 5 ft. aisle width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum or sheet vinyl, welded seams.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: Gypsum wallboard.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance. No exposed structure, ducts, fixtures, piping, conduit or other surfaces which could attract dust or debris.

Doors: Wood door with glass viewing window or sidelight, 42"w x 84"h, from Corridor (2).

Casework: Epoxy countertop, undercounter drawers and cabinets, overhead reagent shelving and closed cabinets (approx. 65 lineal feet). Materials and construction per Campus Standards & Design Guide.

FOOD SCIENCE ANALYTICAL LAB

Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Interior viewing window to Corridor highly desirable. High fixed exterior windows permitted but not required; low exterior windows not permitted. Direct sun not permitted.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	60 footcandles at +36" in high level position. 1.1 watts/sf maximum, including task lighting. Lamp temperature 4,100 degrees K.
Special lighting:	Provide moveable under-shelf LED task lights with manual switches at all casework kneespaces.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	Chemical fume hood and one dedicated outlet for future needs.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(1) outlet near main entry door.
Data outlets:	(4) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times, constant 72, +/- 2.

FOOD SCIENCE ANALYTICAL LAB

Humidity control:	Uncontrolled.
Ventilation rate:	Minimum 6 air changes per hour per campus standard for laboratories.
Pressurization:	Negative to adjoining rooms.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	One four foot wide chemical hood per Campus Standards & Design Guide.
Equipment exhaust:	None.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) Lab sink (epoxy); (1) Cupsink in fume hood.
Eyewashes/showers:	Emergency shower and eyewash combination within 100 feet of any point in the room. May be in corridor. Provide a separate sink eyewash if the emergency shower and eyewash combination is not provided within the room.
Floor drains:	None.
Grey water systems:	None.
Domestic water:	Cold and hot to emergency showers and eyewashes.
Industrial water:	Hot and cold to all lab sinks and cupsinks.
Treated water:	Deionized hot and cold water to all sinks.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	(4) locations on bench.
Natural gas:	Provide natural gas outlets at three locations to be determined.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	NONE?
Metering:	

Food Science & Technology

FOOD SCIENCE CLASSROOM

PROGRAM REQUIREMENTS

Net sq. ft.:	600	*Assignable sq. ft.:*	600	*Number of rooms:*	1

Program function: The Food Science Classroom provides space for lectures, audio-visual presentations and break-out workgroups for the Winery, Dairy Innovations and General Food Processing.

Adjacencies: Required: The Food Science Classroom shall be immediately adjacent to and accessible from the Corridor. The Food Science Classroom shall be close to the Brewery and General Food Processing.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to up to 19 persons.

Typical # of occupants: 0 *Maximum # of occupants:* 20

Major equipment: None.

Process operations: None.

Audio/visual equipment: Marker Board, 4' x 20' (1); Projection Screen, motorized, 8' x 12' (1).

Furniture: Class Room Table, 30"d x 72"w x 30"h (6); Stacking Chairs (18).

Signage: Campus standard room sign. Donor recognition plaque.

Program contact: Charles Bamforth

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width.

Ceiling clearances: 12 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum, vinyl composition tile or carpet.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard and/or window wall.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance.

Doors: Wood door with glass viewing window or sidelight, 36"w x 84"h, from Corridor (1).

Casework: Counter and undercounter storage (approx. 15 lineal feet).

Acoustics: Provide finishes and materials that enhance minimize reverberation and enhance a classroom lecture environment. HVAC air noise shall not impair normal conversation.

Sound transmission: Walls and ceilings shall be constructed to prevent audible transmission of conversation or equipment noise from adjoining rooms.

FOOD SCIENCE CLASSROOM

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Exterior windows preferred but sun, glare and light must be controlled for audio-visual presentations.
Window treatment:	Shading for sun control as appropriate and for complete room darkening for audio-visual presentations.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted. Complete darkening for audio-visual presentations required.
General lighting:	50 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	Provide low level lighting for note-taking during audio-visual presentations.
Lighting controls:	Triple level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(1) outlet at rear wall.
Data outlets:	(8) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 68 min. to 76 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.

FOOD SCIENCE CLASSROOM

Pressurization:	None.
C02 exhaust:	CO2 sensing required for occupant load.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) Stainless steel bar sink.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	Hot and cold treated water to bar sink.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Food Science & Technology

GENERAL FOOD PROCESSING

PROGRAM REQUIREMENTS

Net sq. ft.: 4,000 *Assignable sq. ft.:* 4,000 *Number of rooms:* 1

Program function: General Food Processing provides a large and flexible facility for a wide range of pilot-scale food processing activites for research and teaching. The facility includes both fixed equipment and mobile equipment used on an infrequent or seasonal schedule. Potential activities include tomato processing, peach processing and olive oil production. Utilities shall typically be provided from catwalks and utility racks above the ceiling - see Ceilings for more details. Codes applying to this room include, but are not limited to, the Code of Federal Regulations, Title 21, Chapter 1, Part 110 "Current Good Manufacturing Practice in Manufacturing, Packing, or Hold Human Food" and the State of California Health & Safety Code, Part 6, Article 1 Food Processing Establishments, Section 111950-112055 "The California Food Sanitation Act".

Adjacencies: Required: General Food Processing shall be immediately adacent to and accessible from the Corridor and the Food Processing Equipment Storage Area Room. General Food Processing shall be visible through public viewing windows for the full length of the adjacent Corridor.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person to small classes and tour groups.

Typical # of occupants: 1 *Maximum # of occupants:* 20

Major equipment: Provide extensive utilities and power connections at a range of voltages to accommodate a wide variety of fixed and portable food processing equipment. Major equipment anticipated at move-in include blast freezer, canning line, dehydrator, seamer, extruder, flash steam pealer, freeze dryer, ice machine, lye line, olive press, peach pitter, power washer, refrigerator, rotary sterilizer, steam jacketed mixer, steam kettles and tomato peeler. See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations:

Audio/visual equipment: Marker Board, 4'x6', (1). Public address system with cordless microphones (2).

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Michael McCarthy

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 50 feet nominal width. No equipment or casework other than sinks and hose stations may be within 18 inches of the perimeter walls to facilitate cleaning access.

Ceiling clearances: 18 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for

spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic and have resistance to impacts, to slippage when wet, and to chemicals including caustic cleaners. Slope 1/8" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete or industrial grade quarry tile.

Floors base: Provide coved base to 12 inches minimum above floor with materials integral to the floor.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.

Ceilings: Hard, smooth, washable, light color, non-organic materials. Capable of withstanding a washdown 1 to 5 times per week. No exposed structure, ducts, fixtures, piping, conduit or other surfaces which could attract dust or debris shall extend below ceiling except at utility drops. Utilities shall be distributed from catwalks and piping/conduit racks above the ceiling. The catwalks and piping/conduit main racks shall be spaced no more than 20 feet on center and no more than 10 feet from perimeter walls.

Doors: Insulated galvanized steel rollup door, 144"w x 144"h, from Food Science Equipment Storage Area (1); Glass and aluminum double door, 72"w x 84"h, from Corridor (1).

Casework: None.

Acoustics: To the extent practical without compromising cleanability and durability, utilize finishes and materials that reduce acoustic reverberation, absorb equipment noise and enhance a classroom teaching environment. HVAC air noise shall not impair normal conversation.

Sound transmission: No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting: Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.

Windows: Extensive interior windows required to view room from public corridor. Indirect exterior views out from General Food Processing through the Corridor highly desirable. High fixed exterior windows permitted but not required; low exterior windows not permitted. Direct sun not permitted.

Window treatment: None.

Skylights: Diffuse skylights permitted; direct sunlight penetration not permitted.

General lighting: 50 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.

GENERAL FOOD PROCESSING

Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Manual on/off Automatic time clock off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	None.
Special power reqmnts.	Ceiling drops, 12 feet on center on main lines not more than 20 feet apart (total 15 drops). Each drop to provide 120 volt, 240 volt and 440 volt power. Drops shall be waterproof & food grade.
Process wiring:	None.
Telephone outlets:	(1) outlet near main entry door.
Data outlets:	(5) wall outlets with 2 cables each and (5) ceiling drops with 1 cable each.
Security systems:	None.
Equipment alarms:	See equipment requirements.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 62 min. to 82 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max. uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	Positive to adjoining rooms.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	See equipment requirements.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	Handwashing sinks adjacent to entry doors and one other location in the open lab (3 total); Hose stations (4).
Eyewashes/showers:	None.

GENERAL FOOD PROCESSING

Floor drains:	6 inch to 8 inch diameter area drains, with strainers, less than 20 feet on center. Slope floor to drains at 1/4 inch per foot. Coordinate drain locations with utility drops and anticipated equipment locations - place drains in aisles and not under equipment. Drain lines from the Food Processing Cooler #1, Food Processing Cooler #2, Food Processing Freezer and General Food Processing may be combined with each other but shall not be combined with any other drains and shall not connect to a common sanitary sewer main until outside of the building perimeter line. Provide sufficient space between building perimeter and connection to common sanitary sewer main to allow for the future installation of a grease trap.
Grey water systems:	None.
Domestic water:	Cold and hot to handwashing sinks.
Industrial water:	Hot industrial water (120 degrees F) at hose stations for cleaning.
Treated water:	Deionized water ceiling drops, 12 feet on center on main lines not more than 20 feet apart (total 15 drops).
Industrial steam:	See equipment requirements.
Culinary steam:	Ceiling drops, 12 feet on center on main lines not more than 20 feet apart (total 15 drops).
Compressed air:	Ceiling drops, 12 feet on center on main lines not more than 20 feet apart (total 15 drops at 20 psi); see equipment requirements for additional requirements.
Natural gas:	Provide capped natural gas drops to five locations to be determined; see equipment requirements.
Nitrogen:	NONE?
Glycol:	None.
Clean in Place:	None.
Other special piping:	Vacuum line ceiling drops, 12 feet on center on main lines not more than 20 feet apart (total 15 drops).
Metering:	

Food Science & Technology

MILK PROCESSING TEACHING & RESEARCH LAB

PROGRAM REQUIREMENTS

Net sq. ft.:	800	*Assignable sq. ft.:*	800	*Number of rooms:*	1

Program function: The Milk Processing Teaching & Research Laboratory provides a controlled facility for benchtop dairy and cheese making pilot equipment for teaching, demonstration, research and human tasting and consumption. Codes applying to this room include, but are not limited to, the Code of Federal Regulations, Title 21, Chapter 1, Part 110 "Current Good Manufacturing Practice in Manufacturing, Packing, or Hold Human Food", the Federal Pasteurized Milk Ordinance (PMO), the State of California Health & Safety Code, Part 6, Article 1 Food Processing Establishments, Section 111950-112055 "The California Food Sanitation Act" and all California state requlations pertaining to raw milk processing and the production of dairy products for human consumption.

Adjacencies: Required: The Milk Processing Teaching & Research Lab shall be immediately adjacent to and directly accessible from the Corridor.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person to small classes and tour groups.

Typical # of occupants: 1 *Maximum # of occupants:* 15

Major equipment: Benchtop and small scale floor mounted equipment for milk processing, cheesemaking and tofu making. Small walk-in package cooler. See "Equipment List Sorted by Room" for complete list.

Process operations: Process loads are related to a variety of small scale or bench top equipment. Equipment is used intermittently for varying periods of time throughout the year and may continue through unoccupied hours. See equipment list for additional information.

Audio/visual equipment: Marker board, 4' x 6' (1).

Furniture: Adjustable height equipment tables with epoxy tops, 30"x72" (8).

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: John Krochta

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width.

Ceiling clearances: 12 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption. Special requirements include conformance to the Pasteurized Milk Ordinance (PMO).

Floors: Floors shall withstand forklift traffic and have resistance to impacts, to slippage when wet, and to chemicals including castic cleaners. Slope 1/4" per foot; ponding not

	acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.
Floors base:	Provide coved base to 6 inches minimum above floor with materials integral to the floor.
Walls:	Gypsum wallboard.
Ceilings:	Hard, smooth, washable, light color, non-organic materials. No exposed structure, ducts, fixtures, piping, conduit or other surfaces which could attract dust or debris.
Doors:	Aluminum and glass double entry door, 72"w x 84"h, from Corridor (1).
Casework:	Epoxy countertop, undercounter drawers and cabinets, overhead reagent shelving and closed cabinets (approx. 50 lineal feet). Materials and construction per Campus Standards & Design Guide.
Acoustics:	To the extent practical without compromising cleanability and durability, utilize finishes and materials that reduce acoustic reverberation, absorb equipment noise and enhance a classroom teaching environment. HVAC air noise shall not impair normal conversation.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Extensive interior windows required to view Dairy Innovations from the Corridor. Indirect exterior views from Dairy Innovations through the Corridor highly desirable. High exterior windows allowed but not required; low exterior windows not permitted. Direct sun not permitted.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	50 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Manual on/off. Automatic time clock off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	None.
Special power reqmnts.	Provide (8) general ceiling drops, each with 120/240/480 volt power.
Process wiring:	None.
Telephone outlets:	(1) outlet near main entry door.

MILK PROCESSING TEACHING & RESEARCH LAB

Data outlets:	(4) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	See equipment requirements.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.`

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 62 min. to 82 max., controlled by user setpoints anywhere within range, +/- 2.
Humidity control:	Uncontrolled.
Ventilation rate:	100% fresh air supply; air change rate per code. The air supply and exhaust for this room must be separate from all other rooms.
Pressurization:	Negative to Corridor.
C02 exhaust:	None.
Supply air filtration:	HEPA filtration for all supply air. Supply air must be dedicated to this room.
Chemical hoods:	None.
Equipment exhaust:	See equipment requirements.
Controls:	Dedicated to individual room and user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) handwashing sink near main entry door; (2) stainless steel sinks with multiple large and deep compartments.
Eyewashes/showers:	None.
Floor drains:	Area drains. Drain lines from Dairy Innovations shall be dedicated and shall not connect to a common sanitary sewer main until outside of the building perimeter line.
Grey water systems:	None.
Domestic water:	See equipment requirements.
Industrial water:	See equipment requirements.
Treated water:	Hot and cold to multiple compartment sinks. (4) general ceiling drops. See equipment requirements for additional requirements.
Industrial steam:	(4) general ceiling drops. See equipment requirements for additional requirements.
Culinary steam:	(4) general ceiling drops. See equipment requirements for additional requirements.
Compressed air:	(4) general ceiling drops. See equipment requirements for additional requirements.
Natural gas:	(4) general ceiling drops. See equipment requirements for additional requirements.

MILK PROCESSING TEACHING & RESEARCH LAB

Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	(2) chilled water ceiling drops.
Metering:	None.

Viticulture & Enology

WINERY ANALYTICAL LAB

PROGRAM REQUIREMENTS

Net sq. ft.: 600 *Assignable sq. ft.:* 600 *Number of rooms:* 1

Program function: The Winery Analytical Lab provides a laboratory facility for winemaking analysis by the winemaker and researchers. The lab also serves as a prep lab for classes held in the winery. The lab includes a chemical fume hood.

Adjacencies: Required: The Winery Analytical Laboratory shall be adjacent to and immediately accessible from the Winery Fermentation Room. Preferred: The Winery Analytical Laboratory shall be immediately adjacent to, accessible from and visible from the Corridor through a public viewing window.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied up to 4 persons.

Typical # of occupants: 1 *Maximum # of occupants:* 4

Major equipment: Refrigerator and miscellaneous benchtop analytical equipment. See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations:

Audio/visual equipment: Marker Board, 4' x 4' (1).

Furniture: Lab Stool (3); full height storage cabinets (12 linear feet x 24 inches deep).

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 21 feet actual width; 5 feet minimum aisle width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum or sheet vinyl, welded seams.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: Gypsum wallboard and window wall.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance. No exposed structure, ducts, fixtures, piping, conduit or other surfaces which could attract dust or debris.

Doors: Galvanized steel door with viewing window or sidelight, 42"w x 84"h from Winery Fermentation Room (1); wood door with viewing window or sidelight, 42"w x 84"h, from Corridor (1).

Casework: Epoxy countertop, undercounter drawers and cabinets, overhead reagent shelving and

	closed cabinets (approx. 65 lineal feet). Materials and construction per Campus Standards & Design Guide.
Acoustics:	HVAC air noise shall not impair normal conversation.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Interior viewing window to Corridor highly desirable. High fixed exterior windows permitted but not required; low exterior windows not permitted. Direct sun not permitted.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	60 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	Provide moveable under-shelf LED task lights with manual switches at all casework kneespaces.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	Chemical fume hood and one dedicated outlet for future needs.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(1) outlet near main entry door.
Data outlets:	(4) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

WINERY ANALYTICAL LAB

Temp. range (deg F):	At all times: constant 72, +/- 2.
Humidity control:	Uncontrolled.
Ventilation rate:	Minimum 6 air changes per hour per campus standard for laboratories
Pressurization:	Negative to adjoining rooms.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	One four foot wide chemical hood per Campus Standards & Design Guide.
Equipment exhaust:	None.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) Lab sink (epoxy; (1) cupsink in fume hood (epoxy); OTHER DRAINS AT LAB COUNTERTOPS?
Eyewashes/showers:	Emergency shower and eyewash combination within 100 feet of any point in the room. May be in corridor. Provide a separate sink eyewash if the emergency shower and eyewash combination is not provided within the room.
Floor drains:	None.
Grey water systems:	None.
Domestic water:	Hot and cold to emergency showers and eyewashes.
Industrial water:	Hot and cold to lab sinks and cupsinks.
Treated water:	Cold to lab sinks.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	(4) locations on lab bench.
Natural gas:	Provide natural gas outlets to three locations to be determined.
Nitrogen:	NONE?
Glycol:	None.
Clean in Place:	None.
Other special piping:	NONE?
Metering:	

Viticulture & Enology

WINERY CELLAR #1

PROGRAM REQUIREMENTS

Net sq. ft.: 430 *Assignable sq. ft.:* 430 *Number of rooms:* 1

Program function: The Winery Cellar provides a flexible space for barrel aging and other research activities in an environment precisely controlled for temperature, humidity and light. The space shall accommodate up to 24 barrels stacked 1 high.

Adjacencies: Required: The Winery Cellar #1 shall be immediately adjacent to and accessible from the Winery Fermentation Room.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Barrels and barrel racks, pump (occasional use), power wash (occasional use) and mobile bottling line (occasional use). See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations: Chik to identify fermentation heat loads.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width and as required for four rows of barrels.

Ceiling clearances: 14 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic, resist impacts and scratching, resist staining, resist slippage when wet, withstand daily steam or hot water washdown and withstand caustics and acids (potasium hydroxide, tank washdown PH 11-12, wine PH 3-4, acid rinse PH2). Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete,

	pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.
Ceilings:	Hard, smooth, washable, light color, non-organic materials. Suitable materials included painted aluminum insulated panels.
Doors:	Insulated, sealed galvanized steel rollup or sliding door, 120"w x 144"h, from Winery Fermentation Room (1); galvanized steel door with viewing window or sidelight, 36"w x 84"h, from Winery Fermentation Room (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Small vision panel required in door. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	Two duplex 110 volt outlets on each wall, waterproof outlet covers, GFI.
Dedicated power:	See equipment requirements.
Back-up power:	None, except for HVAC system.
Special power reqmnts.	208 volt, single phase for occasional use of pump; 480 volt, 30 amp for occasional use of mobile bottling line.
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	Room temperature alarm and humidity alarm connected to central campus building information system.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.

WINERY CELLAR #1

Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 50 min. to 90 max., controlled by user setpoint anywhere within range, +/- 1.
Humidity control:	Variable, controlled by user between 50% and 100%, +/- 1%, steam in-line injection.
Ventilation rate:	Minimum allowed by code.
Pressurization:	None.
C02 exhaust:	Sensors, warning lights and exhaust fans required to maintain CO2 levels below Federal/OSHA standards of 5,000 ppm average over 8 hours and a peak of not more than 30,000 ppm over 15 minutes. Capture in underfloor manifold and duct to exhaust or scrubber.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Thermostat and humidistat dedicated to individual room, both user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib.
Eyewashes/showers:	None.
Floor drains:	None (slope floor at 1/4 inch per foot to drain to outside of room.)
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	Treated water for humidification; 1 hose bib for RO water or charcoal filtered water.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	One outlet with quick connection.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

WINERY CELLAR #2

PROGRAM REQUIREMENTS

Net sq. ft.: 430 *Assignable sq. ft.:* 430 *Number of rooms:* 1

Program function: The Winery Cellar provides a flexible space for barrel aging and other research activities in an environment precisely controlled for temperature, humidity and light. The space shall accommodate up to 24 barrels stacked 1 high.

Adjacencies: Required: The Winery Cellar #2 shall be immediately adjacent to and accessible from the Winery Fermentation Room.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Barrels and barrel racks, pump (occasional use) and power wash (occasional use). See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations: Chik to identify fermentation heat loads.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width as required for four rows of barrels.

Ceiling clearances: 14 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic, resist impacts and scratching, resist staining, resist slippage when wet, withstand daily steam or hot water washdown and withstand caustics and acids (potasium hydroxide, tank washdown PH 11-12, wine PH 3-4, acid rinse PH2). Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that

	all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.
Ceilings:	Hard, smooth, washable, light color, non-organic materials. Suitable materials included painted aluminum insulated panels.
Doors:	Insulated, sealed galvanized steel rollup or sliding door, 120"w x 144"h, from Winery Fermentation Room (1); galvanized steel door with viewing window or sidelight, 36"w x 84"h, from Winery Fermentation Room (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Small vision panel required in door. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	Two duplex 110 volt outlets on each wall, waterproof outlet covers, GFI.
Dedicated power:	See equipment requirements.
Back-up power:	None, except for HVAC system.
Special power reqmnts.	208 volt, single phase for occasional use of pump.
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	Room temperature alarm and humidity alarm connected to central campus building information system.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection.

WINERY CELLAR #2

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 50 min. to 90 max., controlled by user setpoint anywhere within range, +/- 1.
Humidity control:	Variable, controlled by user between 50% and 100%, +/- 1%, steam in-line injection.
Ventilation rate:	Minimum allowed by code
Pressurization:	None.
C02 exhaust:	Sensors, warning lights and exhaust fans required to maintain CO2 levels below Federal/OSHA standards of 5,000 ppm average over 8 hours and a peak of not more than 30,000 ppm over 15 minutes. Capture in underfloor manifold and duct to exhaust or scrubber.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Thermostat and humidistat dedicated to individual room, both user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib.
Eyewashes/showers:	None.
Floor drains:	None (slope floor at 1/4 inch per foot to drain to outside of room.)
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	Treated water for humidification; 1 hose bib for RO water or charcoal filtered water.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	One outlet with quick connection.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

WINERY CELLAR #3

PROGRAM REQUIREMENTS

Net sq. ft.:	430	*Assignable sq. ft.:*	430	*Number of rooms:*	1

Program function: The Winery Cellar provides a flexible space for barrel aging and other research activities in an environment precisely controlled for temperature, humidity and light. The space shall accommodate up to 24 barrels stacked 1 high.

Adjacencies: Required: The Winery Cellar #3 shall be immediately adjacent to and accessible from the Winery Fermentation Room.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Barrels and barrel racks, pump (occasional use) and power wash (occasional use). See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations: Chik to identify fermentation heat loads.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width as required for four rows of barrels.

Ceiling clearances: 14 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic, resist impacts and scratching, resist staining, resist slippage when wet, withstand daily steam or hot water washdown and withstand caustics and acids (potasium hydroxide, tank washdown PH 11-12, wine PH 3-4, acid rinse PH2). Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that

	all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.
Ceilings:	Hard, smooth, washable, light color, non-organic materials. Suitable materials included painted aluminum insulated panels.
Doors:	Insulated, sealed galvanized steel rollup or sliding door, 120"w x 144"h, from Winery Fermentation Room (1); galvanized steel door with viewing window or sidelight, 36"w x 84"h, from Winery Fermentation Room (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Small vision panel required in door. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	Two duplex 110 volt outlets on each wall, waterproof outlet covers, GFI.
Dedicated power:	See equipment requirements.
Back-up power:	None, except for HVAC system.
Special power reqmnts.	208 volt, single phase for occasional use of pump.
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	Room temperature alarm and humidity alarm connected to central campus building information system.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection.

WINERY CELLAR #3

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 50 min. to 90 max., controlled by user setpoint anywhere within range, +/- 1.
Humidity control:	Variable, controlled by user between 50% and 100%, +/- 1%, steam in-line injection.
Ventilation rate:	Minimum allowed by code.
Pressurization:	None.
C02 exhaust:	Sensors, warning lights and exhaust fans required to maintain CO2 levels below Federal/OSHA standards of 5,000 ppm average over 8 hours and a peak of not more than 30,000 ppm over 15 minutes. Capture in underfloor manifold and duct to exhaust or scrubber.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Thermostat and humidistat dedicated to individual room, both user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib.
Eyewashes/showers:	None.
Floor drains:	None (slope floor at 1/4 inch per foot to drain to outside of room.)
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	Treated water for humidification; 1 hose bib for RO water or charcoal filtered water.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	One outlet with quick connection.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Viticulture & Enology

WINERY CLASSROOM

PROGRAM REQUIREMENTS

Net sq. ft.: 850 *Assignable sq. ft.:* 850 *Number of rooms:* 1

Program function: The Winery Classroom provides space for lectures and demonstrations for academic and extension courses. The room should be furnished with moveable tables to facilitate a variety of uses, including lectures, small workgroup breakouts and formal and informal hospitality functions. The room must be acoustically isolated and have the capability for room darkening to facilitate audio/visual presentations.

Adjacencies: Required: The Winery Classroom shall be immediately adjacent to, accessible from and visible from the Winery Fermentation Room and the Corridor through public viewing windows. The view from the Winery Classroom toward the Winery Fermentation Room shall include the area for the Teaching Fermentation Tanks. Preferred: The door from the Corridor to the Winery Classroom should be close to the Winery Main Entrance.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to full classes or events.

Typical # of occupants: 0 *Maximum # of occupants:* 30

Major equipment: None.

Process operations: None.

Audio/visual equipment: Marker Board, 4' x 20' (1); Projection Screen, motorized, 8' x 12' (1).

Furniture: Class Room Table, 30"d x 72"w (9); Stacking Chairs (26),

Signage: Campus standard room sign. Donor recognition plaque.

Program contact: Andrew Waterhouse

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 30 feet nominal width.

Ceiling clearances: 12 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum, vinyl composition tile or carpet.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard and window wall.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance.

Doors: Wood door with viewing windows or sidelights, 36"w x 84"h, from Corridor; galvanized steel door with viewing window or sidelights, 36"w x 84"h, from Winery Fermentation Room (3).

WINERY CLASSROOM

Casework:	Counter and undercounter storage (approx. 20 lineal feet). Open cubicle storage for student backpacks (20 cubicles).
Acoustics:	Provide finishes and materials that enhance minimize reverberation and enhance a classroom lecture environment. HVAC air noise shall not impair normal conversation.
Sound transmission:	Walls and ceilings shall be constructed to prevent audible transmission of conversation or equipment noise from adjoining rooms.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Extensive interior viewing windows to the Fermentation Room teaching tank area and to the public Corridor required. Exterior windows preferred but sun, glare and light must be controlled for audio-visual presentations. Exterior views to vineyard desirable if possible but not required.
Window treatment:	Shading for sun control as appropriate and for complete room darkening for audio-visual presentations.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted. Complete darkening for audio-visual presentations required.
General lighting:	50 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	Provide low level lighting for note-taking during audio-visual presentations.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(1) outlet at rear wall.
Data outlets:	(10) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.

WINERY CLASSROOM

Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 68 min. to 76 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.
C02 exhaust:	CO2 sensing required for occupant load.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) Stainless steel bar sink.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	Hot and cold treated water to bar sink.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	None.

Viticulture & Enology

WINERY CLEAN-IN-PLACE ROOM

PROGRAM REQUIREMENTS

Net sq. ft.: 300 *Assignable sq. ft.:* 300 *Number of rooms:* 1

Program function: The Winery Clean-in-Place Room provides space for clean-in-place equipment and chemicals for the fermentation tanks and barrels to be cleaned in the Winery Fermentation Room.

Adjacencies: Required: The Winery Clean in Place Room shall be immediately adacent to and accessible from the Winery Fermentation Room. Preferred: Centrally located for the future expansion of the Winery Fermentation Room.

Hours of occupancy: Variable durations for infrequent maintenance throughout entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Winery clean-in-place system and load cell. See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations:

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Roger Boulton

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width and as required for adequate equipment clearance.

Ceiling clearances: 10 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Floors shall withstand forklift traffic, resist impacts and scratching, resist staining, resist slippage when wet, withstand daily steam or hot water washdown and withstand caustics and acids (potasium hydroxide, tank washdown PH 11-12, wine PH 3-4, acid rinse PH2). Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete. DYKE FOR LEAKS?

Floors base: Integral cove base.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth and

	surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.
Ceilings:	No requirements.
Doors:	Galvanized steel double door with viewing windows or sidelights, 72"w x 84"h (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Small vision panel required in door. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	NONE?
Telephone outlets:	None.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Card key access

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.

WINERY CLEAN-IN-PLACE ROOM

Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 62 min. to 82 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	No special requirements.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	See equipment requirements; (1) hose bib.
Eyewashes/showers:	Emergency shower and eyewash combination within 100 feet of any point in the room. May be in corridor. Provide a separate sink eyewash if the emergency shower and eyewash combination is not provided within the room.
Floor drains:	NONE? FLOOR DYKED FOR LEAKS?
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	RO or charcoal-filtered water required for the CIP system.
Industrial steam:	See equipment requirements.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	Approximately 2 inch diameter stainless steel supply and return piping to the Winery Fermentation Room. Capacity approximately 30 gallons per minute at 130 degrees F (55 degrees C). Supply and return pumps. Supply consists of 3 pipes for a KHSO4 solution, a KOH solution and deionized & reverse osmosis filtered rinse water. Single pipe return.Tanks. 2.5 gallons required per 1.0 foot of circumference of large fermentation tanks. Gallo Livingston is the only known CIP system in the wine industry at the present time.
Other special piping:	None.
Metering:	None.

Viticulture & Enology

WINERY DATA ROOM

PROGRAM REQUIREMENTS

Net sq. ft.:	150	*Assignable sq. ft.:*	150	*Number of rooms:*	1

Program function: The Winery Data Room provides space data equipment that provides precise and remote control of all aspects of the fermentation process.

Adjacencies: Preferred: The Winery Data Room should be located as close as possible to the Winery Fermentation Room and the common Telecom/Data Room.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to up to 2 persons.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Custom fermentation control and monitoring system. Computers, monitors and printers. See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations:

Audio/visual equipment: Marker Board, 4' x 4' (1).

Furniture: Desk chair (2), Desk (2).

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Roger Boulton

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance.

Doors: Galvanized steel door with viewing window or sidelight, 36"w x 84"h (1).

Casework: None.

Acoustics: No requirements.

Sound transmission: No requirements.

WINERY DATA ROOM

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	Fermentation control system.
Special power reqmnts.	
Process wiring:	Control wiring to winery fermentation tanks.
Telephone outlets:	(2) outlets.
Data outlets:	(4) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	See equipment requirements.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 68 min. to 76 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code and as required for heat extraction from computer equipment.
Pressurization:	Positive to adjoining rooms.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room.

WINERY DATA ROOM

PLUMBING & PROCESS PIPING

Sinks & fixtures:	None - pipes cannot be routed through this room.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	None - pipes cannot be routed through this room.
Domestic water:	None - pipes cannot be routed through this room.
Industrial water:	None - pipes cannot be routed through this room.
Treated water:	None - pipes cannot be routed through this room.
Industrial steam:	None - pipes cannot be routed through this room.
Culinary steam:	None - pipes cannot be routed through this room.
Compressed air:	None - pipes cannot be routed through this room.
Natural gas:	None - pipes cannot be routed through this room.
Nitrogen:	None - pipes cannot be routed through this room.
Glycol:	None - pipes cannot be routed through this room.
Clean in Place:	None - pipes cannot be routed through this room.
Other special piping:	None - pipes cannot be routed through this room.
Metering:	None.

Viticulture & Enology

WINERY EQUIPMENT STORAGE

PROGRAM REQUIREMENTS

Net sq. ft.:	700	*Assignable sq. ft.:*	700	*Number of rooms:*	1

Program function: Winery Storage provides space for pumps, hoses, miscellaneous equipment and tools. Caged and locked are for chemical storage, including acids, bases, solvents, lubricants and grease. Charging station for electric forklift.

Adjacencies: Required: The Winery Equipment Storage shall be immediately adjacent to and accessible from the Winery Fermentation Room.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants:	0	*Maximum # of occupants:*	2

Major equipment: Pallet jack, fork lift, miscellaneous pumps, equipment, hoses and fittings. See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations: None.

Audio/visual equipment: None.

Furniture: Storage shelving.

Signage: Campus standard room sign. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width.

Ceiling clearances: 14 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant; or linoleum; or sheet vinyl; or vinyl composition tile.

Floors base: Rubber with molded corners.

Walls: Walls shall be durable and have impact resistance.

Ceilings: No requirements.

Doors: Insulated galvanized steel rollup door, 120"w x 144"h, from Winery Fermentation Room (1); galvanized steel door with viewing window or sidelight, 36'w x 84"h, from Winery Fermenation Room (1).

Casework: None.

Acoustics: No requirements.

Sound transmission: No requirements.

WINERY EQUIPMENT STORAGE

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Not required.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Manual on/off. Automatic time clock off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	208 volt, 30 amp, 3 phase outlet.
Back-up power:	None.
Special power reqmnts.	Charging station for electric forklift.
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	None.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: Uncontrolled.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.
C02 exhaust:	None.
Supply air filtration:	None.

WINERY EQUIPMENT STORAGE

Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	None.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib; (1) stainless steel sink with two large and deep compartments.
Eyewashes/showers:	None.
Floor drains:	Floor drains.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	1 hose bib for RO water or charcoal filtered water.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	(2) locations.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	None.

Viticulture & Enology

WINERY FERMENTATION ROOM

PROGRAM REQUIREMENTS

Net sq. ft.: 6,000 *Assignable sq. ft.:* 6,000 *Number of rooms:* 1

Program function: The Winery Fermentation Room provides space for winery fermentation at a pilot-scale for teaching and at a small scale for research. Activities include sorting, destemming, pressing, fermentation, barrel preparation, blending, bottling and equipment demonstration. Equipment includes 14 teaching fermentation tanks (2,000 liter at 1:1 h/w ratio equals approx. 54 inch diameter by 10 feet high with stand) and 150 research fermentation tanks (60 gallon). The teaching tanks are semi-fixed. The research tanks will be mounted in pairs on 3'x5' skids moveable by pallet jack and placed in rows with 5 feet of clearance between tanks. Utilities servicing all tanks will be from overhead carriers.

Adjacencies: Required: The Winery Fermentation Room shall be adjacent to and directly accessible from the Corridor, the Winery Classroom, Long Term Barrel Storage Room, Wine Cellar #1, Wine Cellar #2, Wine Cellar #3, Fruit Cellar and Winery Receiving Area. The Winery Fermentation Room shall be expandable in a lengthwise direction without displacing any existing program areas listed in the preceding sentence.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person to small classes or tours.

Typical # of occupants: 2 *Maximum # of occupants:* 35

Major equipment: Major equipment includes fourteen 2,000 liter teaching tanks, 150 fifty gallon research tanks, sorting and destemming equipment, crush equipment, barrel wash, portable power wash, pumps and bottling line. See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations:

Audio/visual equipment: Marker Board, 4' x 6' (1). Public address system with cordless microphones (2).

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Brenneman & Roger Boulton

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 60 foot nominal width, preferrably column-free. Provide adequate clearance (12 feet or more) for forklift access to all adjoining rooms and major equipment. Provide 5 foot minimum aisle clearance between research tanks.

Ceiling clearances: 18 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

WINERY FERMENTATION ROOM

Floors:	Floors shall withstand forklift traffic, resist impacts and scratching, resist staining, resist slippage when wet, withstand daily steam or hot water washdown and withstand caustics and acids (potasium hydroxide, tank washdown PH 11-12, wine PH 3-4, acid rinse PH2). Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.
Floors base:	Provide coved base to 6 inches minimum above floor with materials integral to the floor.
Walls:	All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.
Ceilings:	Hard, smooth, washable, light color, non-organic materials. Suitable materials included painted aluminum insulated panels.
Doors:	Insulated galvanized steel rollup door, 120"w x 144"h, from Winery Receiving Area (1); galvanized steel door, 36'w x 84"h from Winery Receiving Area; galvanized steel double door with viewing windows and sidelights, 72"w x 84"h, from Corridor (1).
Casework:	None.
Acoustics:	To the extent practical without compromising cleanability and durability, utilize finishes and materials that reduce acoustic reverberation, absorb equipment noise and enhance a classroom teaching environment. HVAC air noise shall not impair normal conversation.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Interior viewing window from Corridor required. High exterior windows permitted but not required; low exterior windows not permitted. Direct sun not permitted.
Window treatment:	None.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	40 footcandles at +36" in high level position. Good color rendition required. UV filtration required. Verify if flourescent lights are permitted.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Manual on/off. Automatic timer off.

POWER & LOW VOLTAGE SYSTEMS

WINERY FERMENTATION ROOM

General power:	
Dedicated power:	See equipment requirements.
Back-up power:	As required to continue fermentation operations during a power failure.
Special power reqmnts.	480 volt, 30 amp outlet for the mobile bottling line.
Process wiring:	Control wiring to all fermentation tanks. Monitoring/control includes temperature, pressure, brix, heat in, heat out, cool in, cool out.
Telephone outlets:	(1) outlet near main entry door.
Data outlets:	(10) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	See equipment requirements.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 62 min. to 82 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max. uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.
C02 exhaust:	Sensors, warning lights and exhaust fans required to maintain CO2 levels below Federal/OSHA standards of 5,000 ppm average over 8 hours and a peak of not more than 30,000 ppm over 15 minutes. Capture in underfloor manifold and duct to exhaust or scrubber. WHERE IS THE SCRUBBER TO BE LOCATED? HOW MUCH AREA DOES THE SCRUBBER REQUIRE? WHAT UTILITIES ARE REQUIRED FOR THE SCRUBBER?
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hand wash sink near main entry door; (4) hose stations.
Eyewashes/showers:	One; may be shared by the Winery Clean-In-Place Room and the Winery Analytical Laboratory if all are within 100 feet of the emergency eyewash/shower.
Floor drains:	Provide continuous 8 to 12 inch wide trench drains capable of withstanding caustics and acids described in the flooring requirements. Coordinate layout of trench drains with layout of fermentation tanks, equipment and forklift access. Trench drains shall

	be spaced no farther than 20 feet on center and the floor shall be sloped at 1/4 inch per foot with no ponding tolerated. Drains shall be easily accessed for cleaning. Grates shall be rated for heavy traffic and shall be in small sections that can be removed by one person. The catch basins should drain completely, be trapped and primed, and contain custom fitted, stainless steel baskets with 3/8" holes top and sides. Drains from all winery rooms shall be manifolded separately from all other drains in building and shall not connect to the building sanitary sewer main until outside of the building perimeter. Drain lines shall be directed to exit the building into the Winery Service Yard for possible future capture, treatment and re-use. Finishes for the grates, grate rails, drain liners, catch basins and piping must withstand the anticipated cleaning agents and the caustic substances that are byproducts of fermentation.
Grey water systems:	None.
Domestic water:	Hot and cold to hand wash sink.
Industrial water:	None.
Treated water:	RO water or charcoal filtered water for hose stations.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	Stub to teaching and research fermentation tanks - see equipment requirements.
Natural gas:	None.
Nitrogen:	Stub to two locations at the teaching fermentation tanks and to one location at the clean-in-place station.
Glycol:	None.
Clean in Place:	1 central cleaning station for research fermenters (fermenters will be moved to the cleaning station). 2 drops for the teaching fermenters. Supply consists of 3 pipes for a KHSO4 solution, a KOH solution and deionized & reverse osmosis filtered rinse water. Single pipe return.
Other special piping:	Heating and cooling jacket piping for the research and teaching fermentation tanks. SPECIFICATIONS.
Metering:	

Viticulture & Enology

WINERY FRUIT CELLAR

PROGRAM REQUIREMENTS

Net sq. ft.: 430 *Assignable sq. ft.:* 430 *Number of rooms:* 1

Program function: The Fruit Cellar shall be capable of cooling of up to 16 tons of fruit from 85 degrees F to 50 degrees F within twelve hours. Fruit typically arrives in one-half ton bins. The fruit will be stored in macrobins stacked two high and two deep with adequate space for air circulation in between the bins. Access to the bins from opposite sides will facilitate the easy removal of small lots; access is required from the Winery Fermentation Room and the Winery Service Yard.

Adjacencies: Required: The Fruit Cellar shall be adjacent to the Winery Receiving Area and directly accessible to the Service Yard and the Winery Fermentation Room.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Major equipment includes grape bins. See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations: Fruit is delivered between the beginning of August through the end of November. Fruit typically arrives early in the morning and is chilled for up to 24 hours.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width.

Ceiling clearances: 14 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic, resist impacts and scratching, resist staining, resist slippage when wet, withstand daily steam or hot water washdown and withstand caustics and acids (potasium hydroxide, tank washdown PH 11-12, wine PH 3-4, acid rinse PH2). Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: Provide coved base to 6 inches minimum above floor with materials integral to the floor.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls

	within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.
Ceilings:	Hard, smooth, washable, light color, non-organic materials. Suitable materials included painted aluminum insulated panels.
Doors:	Insulated galvanized steel rollup doors, 120"w x 144"h, from Winery Fermentation Room and from Winery Service Yard (2); galvanized steel door with viewing window or sidelight, 36'w x 84"h, from Winery Fermenation Room (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Small vision panel in interior door only.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K. Sealed and shatterproof lenses.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	Two duplex 110 volt outlets on each wall, waterproof outlet covers, GFI.
Dedicated power:	See equipment requirements.
Back-up power:	None, except for HVAC system.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	Room temperature alarm and humidity alarm connected to central campus building information system.
Access control systems:	Card key access.

WINERY FRUIT CELLAR

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 25 min. to 90 max., controlled by user setpoint anywhere within range, +/- 1.
Humidity control:	Variable, controlled by user between 50% and 100%, +/- 1%, , steam in-line injection.
Ventilation rate:	Minimum allowed by code.
Pressurization:	None.
C02 exhaust:	Sensors, warning lights and exhaust fans required to maintain CO2 levels below Federal/OSHA standards of 5,000 ppm average over 8 hours and a peak of not more than 30,000 ppm over 15 minutes. Capture in underfloor manifold and duct to exhaust or scrubber.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Thermostat and humidistat dedicated to individual room, both user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib.
Eyewashes/showers:	None.
Floor drains:	Slope to drain outside of room.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	Treated water for humidification; 1 hose bib for RO water or charcoal filtered water.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	One outlet with quick connection.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Viticulture & Enology

WINERY LONG TERM BARREL STORAGE ROOM

PROGRAM REQUIREMENTS

Net sq. ft.: 600 *Assignable sq. ft.:* 600 *Number of rooms:* 1

Program function: The Winery Long Term Barrell Storage Room provides space for the long term aging of up to 40 barrels, 1 high on Western Square racks.

Adjacencies: Required: The Long Term Barrel Storage Room shall be immediately adjacent to and accessible from the Winery Fermentation Room. The Long Term Barrel Storage Room shall be immediately adjacent to and visible from the Corridor through a public viewing window.

Hours of occupancy: Typically short durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies up to 2 persons.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Barrels and barrel racks; pump (occasional use); power wash (occasional use). See "Equipment List Sorted by Room" for complete list of research equipment.

Process operations: Chik to identify fermentation heat loads.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 20 feet nominal width as required for four rows of barrels.

Ceiling clearances: 14 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability. Finishes shall meet all applicable local, state and federal regulations and guidelines for spaces in which food or beverages are prepared for human consumption.

Floors: Floors shall withstand forklift traffic, resist impacts and scratching, resist staining, resist slippage when wet, withstand daily steam or hot water washdown and withstand caustics and acids (potasium hydroxide, tank washdown PH 11-12, wine PH 3-4, acid rinse PH2). Slope 1/4" per foot; ponding not acceptable at any location in room. Provide vapor barrier under structural slab. Suitable floor materials include modified urethane concrete.

Floors base: None.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall have strong impact resistance, shall be suitable for daily power washdown and shall provide significant thermal mass. Suitable

	assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating. Walls above 60 inches above the floor shall withstand periodic washdown and humidity. Suitable assemblies for walls greater than 60 inches above the floor include aluminum or galvanized metal insulated panels with integrally sealed joints and appropriate paint coatings.
Ceilings:	Hard, smooth, washable, light color, non-organic materials. Suitable materials included painted aluminum insulated panels.
Doors:	Insulated, sealed galvanized steel rollup or sliding door, 120"w x 144"h, from Winery Fermentation Room (1); galvanized steel door with viewing window or sidelight, 36'w x 84"h, from Winery Fermenation Room (1).
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Interior viewing window from Corridor required. Small vision panel required in door to Fermentation Room.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Manual on/off. Automatic time clock off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	
Back-up power:	None, except for HVAC system.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	Room temperature alarm and humidity alarm connected to central campus building information system.
Access control systems:	Card key access.

FIRE PROTECTION

WINERY LONG TERM BARREL STORAGE ROOM

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 50 min. to 90 max, controlled by user setpoint anywhere within range, +/- 1
Humidity control:	Variable, controlled by user between 50% and 100%, +/- 1%, steam in-line injection.
Ventilation rate:	Minimum allowed by code.
Pressurization:	None.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Thermostat and humidistat dedicated to individual room, both user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib.
Eyewashes/showers:	None.
Floor drains:	TRENCH DRAIN?
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	Treated water for humidification; 1 hose bib for RO water or charcoal filtered water.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	One outlet with quick connection.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Viticulture & Enology

WINERY OFFICE #1

PROGRAM REQUIREMENTS

Net sq. ft.: 130 *Assignable sq. ft.:* 130 *Number of rooms:* 1

Program function: Winery Office #1 provides office space for the winery manager and storage space for the winery records.

Adjacencies: Required: The Winery Office shall be adjacent to and directly accessible from the Corridor. Preferred: The Winery Office should be close to the Winery Analytical Laboratory and the Fermentation Room.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person up to 3 persons.

Typical # of occupants: 1 *Maximum # of occupants:* 3

Major equipment: None.

Process operations: None.

Audio/visual equipment: Marker Board, 4' x 4' (1).

Furniture: Desk with Return (1), Desk Chair (1), Stacking Chair (2), File Cabinet (2), Bookshelf (144"long x 72"h).

Signage: Campus standard room sign. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum or vinyl composition tile.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance.

Doors: Wood door with viewing window or sidelight, 36"w x 84"h, from Corridor (1).

Casework: None.

Acoustics: HVAC air noise shall not impair normal conversation.

Sound transmission: Walls and ceilings shall be constructed to prevent audible transmission of conversation or equipment noise from adjoining rooms.

WINERY OFFICE #1

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Interior sidelight or door vision panel to Corrdor required. Exterior operable window with limited opening area required.
Window treatment:	Shading for sun control as appropriate.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(2) outlets.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 68 min. to 76 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.

WINERY OFFICE #1

C02 exhaust: None.

Supply air filtration: Filter for dust (MIRV 11).

Chemical hoods: None.

Equipment exhaust: None.

Controls: Zone may be combined with other offices.

PLUMBING & PROCESS PIPING

Sinks & fixtures: None.

Eyewashes/showers: None.

Floor drains: None.

Grey water systems: None.

Domestic water: None.

Industrial water: None.

Treated water: None.

Industrial steam: None.

Culinary steam: None.

Compressed air: None.

Natural gas: None.

Nitrogen: None.

Glycol: None.

Clean in Place: None.

Other special piping: None.

Metering: None.

Viticulture & Enology

WINERY OFFICE #2

PROGRAM REQUIREMENTS

Net sq. ft.: 130 *Assignable sq. ft.:* 130 *Number of rooms:* 1

Program function: Winery Office #2 provides flexible office space for the other staff, students and visiting faculty and researchers.

Adjacencies: Required: The Winery Office shall be adjacent to and directly accessible from the Corridor. Preferred: The Winery Office should be close to the Winery Analytical Laboratory and the Fermentation Room.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to 1 person up to 3 persons.

Typical # of occupants: 1 *Maximum # of occupants:* 3

Major equipment: None.

Process operations: None.

Audio/visual equipment: Marker Board, 4' x 4' (1).

Furniture: Desk with Return (1), Desk Chair (1), Stacking Chair (2), File Cabinet (2), Bookshelf (144"long x 72"h).

Signage: Campus standard room sign. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 10 feet nominal width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum, vinyl composition tile or carpet.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance.

Doors: Wood door with viewing window or sidelight, 36"w x 84"h, from Corridor (1).

Casework: None.

Acoustics: HVAC air noise shall not impair normal conversation.

Sound transmission: Walls and ceilings shall be constructed to prevent audible transmission of conversation or equipment noise from adjoining rooms.

WINERY OFFICE #2

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Interior sidelight or door vision panel to public Corridor required. Exterior operable window with limited opening area required.
Window treatment:	Shading for sun control as appropriate.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(2) outlets.
Data outlets:	(2) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 68 min. to 76 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.

WINERY OFFICE #2

C02 exhaust: None.

Supply air filtration: Filter for dust (MIRV 11).

Chemical hoods: None.

Equipment exhaust: None.

Controls: Zone may be combined with other offices.

PLUMBING & PROCESS PIPING

Sinks & fixtures: None.

Eyewashes/showers: None.

Floor drains: None.

Grey water systems: None.

Domestic water: None.

Industrial water: None.

Treated water: None.

Industrial steam: None.

Culinary steam: None.

Compressed air: None.

Natural gas: None.

Nitrogen: None.

Glycol: None.

Clean in Place: None.

Other special piping: None.

Metering: None.

Viticulture & Enology

WINERY RESEARCH BOTTLE STORAGE

PROGRAM REQUIREMENTS

Net sq. ft.: 1,000 *Assignable sq. ft.:* 1,000 *Number of rooms:* 1

Program function: The Research Bottle Storage room provides storage shelving for the aging of research wines. Temperature, humidity and light control must be precise, stable and user-controllable.

Adjacencies: Preferred: Generally accessible to the Winery Fermentation Room and the Winery Analytical Laboratory.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied but population may vary up to 2 staff persons, with occasional tours of short duration of up to 10 persons.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: None.

Process operations: None.

Audio/visual equipment: None.

Furniture: Work Table, 4' x 8' (1); Desk and chair for computer input; fixed and mobile shelving to provide maximum capacity storage for bottles, cases and jugs.

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Charles Brenneman

ARCHITECTURAL SYSTEMS

Floor plan dimensions: As required to provide minimum 4 feet wide main aisles and 3 feet wide secondary aisles.

Ceiling clearances: 10 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth and surfaced with epoxy or equivalent coating.

Ceilings: Hard, smooth, washable, light color, non-organic materials. Suitable materials included painted aluminum insulated panels.

Doors: Galvanized double door with double-glazed viewing window or sidelights, 72"w x 84"h,

from Winery Fermentation Room or Corridor (1).

Casework: None.

Acoustics: No requirements.

Sound transmission: No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting: None.

Windows: Not permitted.

Window treatment: None.

Skylights: Not permitted.

General lighting: 30 footcandles at +36" in high level position. Flourescent lights not permitted. Good color rendition and ultra-violet filtration required.

Special lighting: UV filtration required.

Lighting controls: Dual level switching. Photosensor to switch electric lights off if daylight meets footcandle criteria. Manual on/off. Automatic timer off.

POWER & LOW VOLTAGE SYSTEMS

General power:

Dedicated power:

Back-up power: None, except for HVAC system.

Special power reqmnts.

Process wiring: None.

Telephone outlets: None.

Data outlets: (2) outlets with 2 cables each.

Security systems: None.

Equipment alarms: Room temperature alarm and humidity alarm connected to central campus building information system.

Access control systems: Card key access.

FIRE PROTECTION

Fire alarm: Required per campus policy and designed per Campus Standards & Design Guide.

Fire spinklers: Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F): At all times: constant 58, controlled +/- 1.

Humidity control: Constant 70%, +/- 1%, steam in-line injection.

Ventilation rate: Minimum allowed by code. Air may be recycled from other spaces if it is HEPA or UV filtered to avoid cross-contamination.

WINERY RESEARCH BOTTLE STORAGE

Pressurization: None.

C02 exhaust: None.

Supply air filtration: Filter for dust (MIRV 11).

Chemical hoods: None.

Equipment exhaust: None.

Controls: Thermostat and humidistat dedicated to individual room, both user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures: None.

Eyewashes/showers: None.

Floor drains: None.

Grey water systems: None.

Domestic water: None.

Industrial water: None.

Treated water: None.

Industrial steam: None.

Culinary steam: None.

Compressed air: None.

Natural gas: None.

Nitrogen: None.

Glycol: None.

Clean in Place: None.

Other special piping: None.

Metering:

Viticulture & Enology

WINERY SPECIAL COLLECTIONS CELLAR

PROGRAM REQUIREMENTS

Net sq. ft.:	400	*Assignable sq. ft.:*	400	*Number of rooms:*	1

Program function: The Special Collections Cellar provides space to store a library of rare and donated wines. The room should have the capacity to store 5,500 bottles initially and up to 8,000 bottles in the future. Small group tastings require a table and chairs.

Adjacencies: Required: Immediately adjacent to and visible from the Corridor through a public viewing window close to the Winery Main Entrance. Preferred: Close to the Winery Classroom and to the public viewing window into the Long Term Barrel Storage Room.

Hours of occupancy: Short durations of up to 1 hour on infrequent special occasions throughout the entire year. Typically unoccupied but population varies up to 6 persons for short tasting sessions.

Typical # of occupants: 0 *Maximum # of occupants:* 6

Major equipment: None.

Process operations: None.

Audio/visual equipment: None.

Furniture: Chairs (6); Pouring Table (1).

Signage: Campus standard room sign. Educational room function description/display. Donor recognition plaque.

Program contact: Andrew Waterhouse

ARCHITECTURAL SYSTEMS

Floor plan dimensions: As required to provide minimum 4 feet wide main aisles and 3 feet wide secondary aisles.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Linoleum, stained concrete or quarry tile.

Floors base: Tile or hardwood.

Walls: All walls shall be smooth, durable, cleanable and resistant to mold and humidity. Walls within 60 inches above the floor shall provide significant thermal mass. Suitable assemblies for walls within 60 inches above the floor include cast-in-place concrete, pre-cast concrete, tilt-up concrete, shot-crete or concrete masonry units, provided that all surface voids and mortar joints exposed to the interior are filled smooth. Final finish of all walls shall be architectural limestone plaster with integral color.

Ceilings: Hard, smooth, washable, light color, non-organic materials.

Doors: Wood door with double-glazed glass viewing window and/or sidelights, 36"w x 84"h, from Corridor (1).

WINERY SPECIAL COLLECTIONS CELLAR

Casework:	Wood shelving for 5,000 bottles. Storage cabinet for tasting glasses.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Interior viewing window from Corridor required. Exterior windows not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	20 footcandles at +36" in high level position.. Flourescent lights not permitted. Good color rendition and ultra-violet filtration required.
Special lighting:	UV filtration required. Provide special architectural accent lighting.
Lighting controls:	Dual level switching. Manual on/off. Automatic time off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	
Back-up power:	None, except for HVAC system.
Special power reqmnts.	None.
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(1) outlet with 2 cables each near door.
Security systems:	None.
Equipment alarms:	Room temperature alarm and humidity alarm connected to central campus building information system.
Access control systems:	Card key access.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: constant 58, +/- 1.
Humidity control:	Constant 70%, +/- 1%, steam in-line injection.
Ventilation rate:	Minimum allowed by code.
Pressurization:	None.
C02 exhaust:	None.

WINERY SPECIAL COLLECTIONS CELLAR

Supply air filtration: Filter for dust (MIRV 11).

Chemical hoods: None.

Equipment exhaust: None.

Controls: Thermostat and humidistat dedicated to individual room, both user controllable.

PLUMBING & PROCESS PIPING

Sinks & fixtures: Small stainless steel bar sink.

Eyewashes/showers: None.

Floor drains: None.

Grey water systems: None.

Domestic water: None.

Industrial water: None.

Treated water: None.

Industrial steam: None.

Culinary steam: None.

Compressed air: None.

Natural gas: None.

Nitrogen: None.

Glycol: None.

Clean in Place: None.

Other special piping: None.

Metering:

Common Use

CORRIDOR

PROGRAM REQUIREMENTS

Net sq. ft.: As required *Assignable sq. ft.:* 0 *Number of rooms:* 1

Program function: The main Corridor provides controlled access and public visual observation to all major functional areas within the building. The Corridor provides visual transparency into the building and the major functional areas from the exterior courtyard. The Corridor provides wall and floor space for two dimensional wall graphics and three dimensional object displays. This space should be welcoming, light and attractive but does not need to be fully conditioned.

Adjacencies: Required: The main public Corridor shall be directly accessible from the Robert Mondavi Institute courtyard and shall provide public access and/or public viewing into all of the main winery, brewery and food lab operational areas as identified in the program. Preferred: The Corriodor should be adjacent to and visible from the Robert Mondavi Institute corridor for most of its length.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays. Population varies from unoccupied to tour groups.

Typical # of occupants: 2 *Maximum # of occupants:* 30

Major equipment: None.

Process operations: None except for possible future flat screen display panels near the two main building entrances.

Audio/visual equipment: Extensive display cases, tack boards and poster board mounting systems.

Furniture: Recycling containers per Campus Standards & Design Guide (2 sets).

Signage: Educational descriptions/displays. Donor recognition plaque.

Program contact: Gary Dahl

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Provide 8 feet to 10 feet nominal width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, linoleum or vinyl composition tile.

Floors base: Rubber with molded corners.

Walls: Window wall system for visibility from the courtyard and corridor into the operational spaces.

Ceilings: No requirements.

Doors: Aluminum and glass double entry doors from Courtyard and Winery Service Yard, 72"

	x 84" (3); additional doors if required by code for fire exiting.
Casework:	None.
Acoustics:	No requirements.
Sound transmission:	No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Extensive interior viewing windows required into main rooms as noted. Extensive fixed exterior windows to provide light and views into and out of the facility toward the courtyard required.
Window treatment:	Shading for sun control as appropriate.
Skylights:	Diffuse skylights permitted; direct sunlight penetration not permitted.
General lighting:	Ambient 10 footcandles at +36". Flourescent wallwashers and spotlights at all display areas. Lamp temperature 4,100 degrees K.
Special lighting:	Provide wall washers and display lighting at walls near main entrances.
Lighting controls:	Photosensor to switch electric lights off if daylight meets footcandle criteria. Automatic time clock on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	Convenience outlets for cleaning equipment and small displays near the two main building entrances.
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	(4) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Card key access from exterior.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

CORRIDOR

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 62 min. to 82 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max. uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	Positive to Winery Analytical Laboratory and Food Science Analytical Laboratory.
C02 exhaust:	None.
Supply air filtration:	None.
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(2) Drinking fountain, non-cooled. (2) Emergency shower/eyewash combination.
Eyewashes/showers:	Preferred location for emergency shower and eyewash combinations - see individual room sheets for rooms that require access to an emergency shower and eyewash within 100 feet.
Floor drains:	None.
Grey water systems:	None.
Domestic water:	Cold and hot to emergency showers.
Industrial water:	None.
Treated water:	Cold treated water to drinking fountain.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	None.

Common Use

ELECTRICAL ROOM

PROGRAM REQUIREMENTS

Net sq. ft.:	120	*Assignable sq. ft.:*	0	*Number of rooms:*	1

Program function: The Electrical Room is a dedicated room for the common building electrical switchgear.

Adjacencies: Required: None

Hours of occupancy: Variable durations for infrequent maintenance throughout entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants:	0	*Maximum # of occupants:*	1

Major equipment: None.

Process operations: None.

Audio/visual equipment: None.

Furniture: None.

Signage:

Program contact: Ernesto Sigurney

ARCHITECTURAL SYSTEMS

Floor plan dimensions: As required for service access requirements and by code.

Ceiling clearances: None.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard.

Ceilings: No requirements.

Doors: Galvanized steel double door, 72"w x 84"h (1).

Casework: None.

Acoustics: No requirements.

Sound transmission: No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting: None.

Windows: Not permitted.

ELECTRICAL ROOM

Window treatment: None.

Skylights: Not permitted.

General lighting: 20 footcandles at +36". Lamp temperature 4,100 degrees K.

Special lighting: None.

Lighting controls: Manual on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:

Dedicated power: None.

Back-up power: None.

Special power reqmnts.

Process wiring: None.

Telephone outlets: None.

Data outlets: None.

Security systems: None.

Equipment alarms: None.

Access control systems: Keyed lock.

FIRE PROTECTION

Fire alarm: Required per campus policy and designed per Campus Standards & Design Guide.

Fire spinklers: Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F): At all times: Uncontrolled.

Humidity control: Uncontrolled.

Ventilation rate: Per code.

Pressurization: None.

C02 exhaust: None

Supply air filtration: None.

Chemical hoods: None.

Equipment exhaust: None.

Controls: None.

PLUMBING & PROCESS PIPING

Sinks & fixtures: None.

Eyewashes/showers: None.

ELECTRICAL ROOM

Floor drains:	None.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Common Use

JANITORIAL STORAGE ROOM

PROGRAM REQUIREMENTS

Net sq. ft.:	60	*Assignable sq. ft.:*	0	*Number of rooms:*	1

Program function: The Janitorial Storage Room provides storage for custodial equipment. Access to this room is restricted to the custodial staff. Departmental storage is to be accommodated in other space.

Adjacencies: Required: The Janitorial Storage Room shall be accessible from the Corridor.

Hours of occupancy: Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 1

Major equipment: None.

Process operations: None.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign.

Program contact: Julie Nola

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum 5 feet nominal width.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard.

Ceilings: No requirements.

Doors: Wood door, 36"w x 84"h, from Corridor (1).

Casework: None.

Acoustics: No requirements.

Sound transmission: No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting: None.

Windows: Not permitted.

JANITORIAL STORAGE ROOM

Window treatment:	None.
Skylights:	Not permitted.
General lighting:	10 footcandles at +36". Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	None.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 50 min. to 90 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	Negative to Corridor.
C02 exhaust:	None.
Supply air filtration:	None.
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	No special requirements.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) Mop sink.
Eyewashes/showers:	None.

JANITORIAL STORAGE ROOM

Floor drains:	None.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	Hot and cold water to mop sink.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Common Use

MECHANICAL ROOM

PROGRAM REQUIREMENTS

Net sq. ft.: As required. *Assignable sq. ft.:* 0 *Number of rooms:* 1

Program function: The Mechanical Room includes space for shared building HVAC equipment, water treatment equipment, laboratory and process utilities and specialized research equipment.

Adjacencies: Required: The Mechanical Room shall be located adjacent to service vehicle access. The Mechanical Room(s) shall not be adjacent to the Winery Classroom or the Food Science Classroom for acoustical and vibration reasons. Preferred: The Mechanical Room location should be optimized to minimize exterior utility runs from the points of connnection and interior piping & ducting.

Hours of occupancy: Variable durations for infrequent maintenance throughout entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 2

Major equipment: Air compressor, vacuum system, deionized water system, reverse osmosis water system, water heaters, HVAC equipment. See "Equipment List Sorted by Room" for complete list of research equipment in addition to building systems equipment.

Process operations: None.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign. Educational room function description/display.

Program contact: Julie Nola

ARCHITECTURAL SYSTEMS

Floor plan dimensions: As required for adequate equipment clearance.

Ceiling clearances: As required.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: No requirements.

Ceilings: No requirements.

Doors: Galvanized steel double door, 72"w x 84"h, from Winery Service Yard (1).

Casework: None.

Acoustics: No requirements.

MECHANICAL ROOM

Sound transmission:	Walls and ceilings shall be constructed to prevent audible transmission of conversation or equipment noise to adjoining rooms.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting:	None.
Windows:	Not permitted.
Window treatment:	Not applicable.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual switching. Manual on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	As required.
Back-up power:	Fire alarm system.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(1) outlet.
Data outlets:	(4) outlets with 2 cables each.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	None.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: Uncontrolled.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	None.
C02 exhaust:	None.
Supply air filtration:	None.
Chemical hoods:	None.

MECHANICAL ROOM

Equipment exhaust:	As required.
Controls:	None.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(1) hose bib; see equipment requirements.
Eyewashes/showers:	None.
Floor drains:	Area drain.
Grey water systems:	None.
Domestic water:	None.
Industrial water:	Cold to hose bib; see equipment requirements.
Treated water:	None.
Industrial steam:	As required.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	As required.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Common Use

MEN

PROGRAM REQUIREMENTS

Net sq. ft.: 300 *Assignable sq. ft.:* 0 *Number of rooms:* 1

Program function: Common restroom facilities for the building. Includes lockers, showers and changing area for staff, faculty and students.

Adjacencies: Required: The Men's room shall be immediately adjacent to and directy accessible from the Corridor at a location central to all facilities.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays.

Typical # of occupants: 1 *Maximum # of occupants:* 4

Major equipment: None.

Process operations: None.

Audio/visual equipment: None.

Furniture: Bench (1) in shower changing area. Half-height metal changing lockers (12).

Signage: Campus standard room sign.

Program contact: Julie Nola

ARCHITECTURAL SYSTEMS

Floor plan dimensions: As required by access code.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard and ceramic tile in wet locations.

Ceilings: No requirements.

Doors: Wood door, 36"w x 84"h, from Corridor (1).

Casework: Clothes hooks (12).

Acoustics: No requirements.

Sound transmission: No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting: Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct

	sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Fixed high exterior window permitted but not required.
Window treatment:	None.
Skylights:	Permitted.
General lighting:	10 footcandles at +36". Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	None.
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	None.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	None.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 62 min. to 82 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max. uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	Negative to Corridor.
C02 exhaust:	None.
Supply air filtration:	None.
Chemical hoods:	None.

MEN

Equipment exhaust:	Adequately ventilate shower area.
Controls:	Zone may be combined with Women.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(2) Sinks. (1) Waterless Urinal. (2) Toilets. (2) Showers.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	Greywater to toilets.
Domestic water:	Hot and cold to sinks and showers.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None.
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	

Common Use

TELECOM / DATA ROOM

PROGRAM REQUIREMENTS

Net sq. ft.: 120 *Assignable sq. ft.:* 0 *Number of rooms:* 1

Program function: The Telecom/Data Room is a dedicated room for common building telephone and data equipment. Access to this room is restricted to Communications Resources staff only. Departmental computer servers are to be accommodated in other space.

Adjacencies: Required: The Telecom/Data Room shall be located where there is low risk of damage from water, heat and humidity.

Hours of occupancy: Variable durations for infrequent maintenance throughout entire year, Monday through Friday, 8am to 6pm, except holidays. Typically unoccupied.

Typical # of occupants: 0 *Maximum # of occupants:* 1

Major equipment: None.

Process operations: Continous 365 days per year, 24 hours per day.

Audio/visual equipment: None.

Furniture: None.

Signage: Campus standard room sign.

Program contact: Diane Behr

ARCHITECTURAL SYSTEMS

Floor plan dimensions: Minimum clearances as required per Campus Standards and Design Guide and as required for adequate access and rack clearance.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard.

Ceilings: Suspended acoustical tile, 2'x2' tegular, high light reflectance.

Doors: Door, 42"w x 84"h, wood if from Corridor or galvanized steel if from exterior (1).

Casework: None.

Acoustics: No requirements.

Sound transmission: No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

TELECOM / DATA ROOM

Daylighting:	None.
Windows:	Not permitted.
Window treatment:	None.
Skylights:	Not permitted.
General lighting:	30 footcandles at +36" in high level position. Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Dual level switching. Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	See campus standards.
Back-up power:	All equipment.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	(1) outlet.
Data outlets:	Racks, backboards, etc. - see campus standards.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	Keyed lock.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy, provide pre-action type sprinklers for freeze protection. Sprinkler mains cannot be routed through this room.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	At all times: 68 min. to 76 max., uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	Positive to adjoining rooms.
C02 exhaust:	None.
Supply air filtration:	Filter for dust (MIRV 11).
Chemical hoods:	None.
Equipment exhaust:	None.
Controls:	Dedicated to individual room.

TELECOM / DATA ROOM

PLUMBING & PROCESS PIPING

Sinks & fixtures:	None - pipes cannot be routed through this room.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	None - pipes cannot be routed through this room.
Domestic water:	None - pipes cannot be routed through this room.
Industrial water:	None - pipes cannot be routed through this room.
Treated water:	None - pipes cannot be routed through this room.
Industrial steam:	None - pipes cannot be routed through this room.
Culinary steam:	None - pipes cannot be routed through this room.
Compressed air:	None - pipes cannot be routed through this room.
Natural gas:	None - pipes cannot be routed through this room.
Nitrogen:	None - pipes cannot be routed through this room.
Glycol:	None - pipes cannot be routed through this room.
Clean in Place:	None - pipes cannot be routed through this room.
Other special piping:	None - pipes cannot be routed through this room.
Metering:	None.

Common Use

WOMEN

PROGRAM REQUIREMENTS

Net sq. ft.:	300	*Assignable sq. ft.:*	0	*Number of rooms:*	1

Program function: Common restroom facilities for the building. Includes lockers, showers and changing area for staff, faculty and students.

Adjacencies: Required: The Men's room shall be immediately adjacent to and directy accessible from the Corridor at a location central to all facilities.

Hours of occupancy: Variable durations and intermittent frequency throughout the entire year, Monday through Friday, 8am to 6pm, except holidays.

Typical # of occupants: 1 *Maximum # of occupants:* 4

Major equipment: None.

Process operations: None.

Audio/visual equipment: None.

Furniture: Bench (1) in shower changing area. Half-height metal changing lockers (12).

Signage: Campus standard room sign.

Program contact: Julie Nola

ARCHITECTURAL SYSTEMS

Floor plan dimensions: As required by access code.

Ceiling clearances: 9 feet minimum clear.

General requirements: All finishes shall be smooth, washable, durable and light in color. All finishes shall be selected for applications as recommended by the manufacturer and shall be installed in accordance with manufacturer's written installation instructions. All finishes, sealants and adhesives shall meet Campus Standards & Design Guide requirements, including limitations on volatile organic compounds, chemical constituents and flammability.

Floors: Sealed concrete, slip resistant.

Floors base: Rubber with molded corners.

Walls: Gypsum wallboard and ceramic tile at wet locations.

Ceilings: No requirements.

Doors: Wood door, 36"w x 84"h, from Corridor (1).

Casework: Clothes hooks (12).

Acoustics: No requirements.

Sound transmission: No requirements.

FENESTRATION, SKYLIGHTS & LIGHTING

Daylighting: Provide a minimum of 50 footcandles of daylighting for at least 4 hours on a clear winter solstice day. Daylighting shall be evenly diffused throughout the space; direct

	sunlight penetration is not permitted. The minimum footcandle requirement shall be measured at +36 inches above the floor over at least 90% of the room floor area. Glazing for skylights, clerestories and windows shall be minimized such that calculated energy savings from daylighting shall exceed the energy increase from heat loss and heat gain.
Windows:	Fixed high exterior window permitted but not required.
Window treatment:	None.
Skylights:	Permitted.
General lighting:	10 footcandles at +36". Lamp temperature 4,100 degrees K.
Special lighting:	None.
Lighting controls:	Occupancy sensor on/off.

POWER & LOW VOLTAGE SYSTEMS

General power:	
Dedicated power:	
Back-up power:	None.
Special power reqmnts.	
Process wiring:	None.
Telephone outlets:	None.
Data outlets:	None.
Security systems:	None.
Equipment alarms:	None.
Access control systems:	None.

FIRE PROTECTION

Fire alarm:	Required per campus policy and designed per Campus Standards & Design Guide.
Fire spinklers:	Required per campus policy and designed per Campus Standards & Design Guide.

HEATING, VENTILATING & AIR CONDITIONING

Temp. range (deg F):	Occupied hours: 62 min. to 82 max., uncontrolled within range. Unoccupied hours: 50 min. to 90 max. uncontrolled within range.
Humidity control:	Uncontrolled.
Ventilation rate:	Per code.
Pressurization:	Negative to Corridor.
C02 exhaust:	None.
Supply air filtration:	None.
Chemical hoods:	None.

WOMEN

Equipment exhaust:	Adequately ventilate shower area.
Controls:	Zone may be combined with Men.

PLUMBING & PROCESS PIPING

Sinks & fixtures:	(2) Sinks. (3) Toilets. (2) Showers.
Eyewashes/showers:	None.
Floor drains:	None.
Grey water systems:	Greywater to toilets.
Domestic water:	Hot and cold domestic water to sinks and showers.
Industrial water:	None.
Treated water:	None.
Industrial steam:	None.
Culinary steam:	None.
Compressed air:	None
Natural gas:	None.
Nitrogen:	None.
Glycol:	None.
Clean in Place:	None.
Other special piping:	None.
Metering:	None.